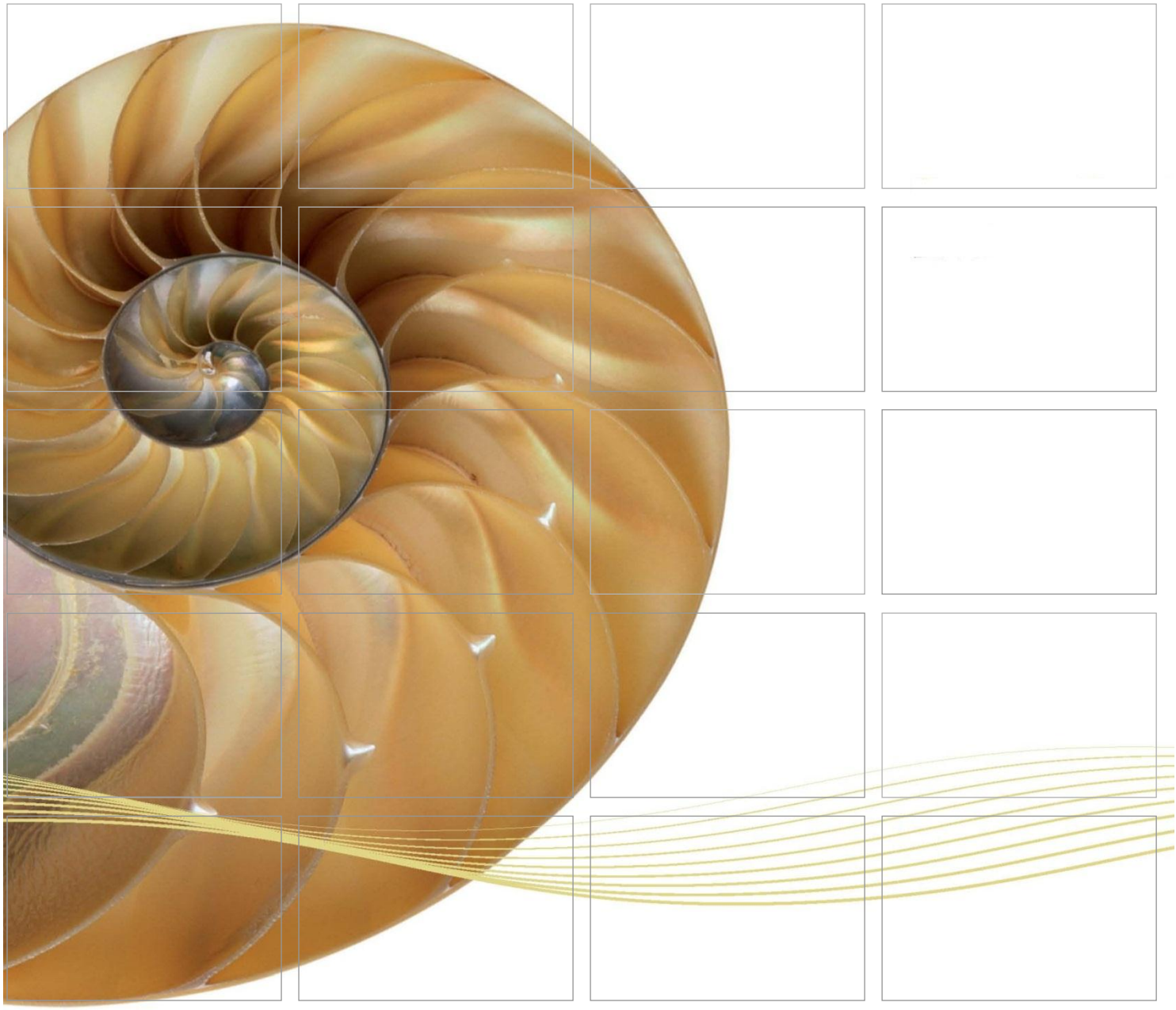
Report



Contract No. HY/2012/07
Tuen Mun – Chek Lap Kok Link – Southern Connection Viaduct Section

Fourth Quarterly Environmental Monitoring & Audit (EM&A) Report

13 July 2015

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

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The world's leading sustainability consultancy

Contract No. HY/2012/07
Tuen Mun – Chek Lap Kok Link – Southern Connection Viaduct Section

Fourth Quarterly Environmental Monitoring & Audit (EM&A) Report

Document Code:
0215660_4th Qtr EM&A_20150708.doc

Environmental Resources Management

16/F, Berkshire House
25 Westlands Road
Quarry Bay, Hong Kong
Telephone: (852) 2271 3000
Facsimile: (852) 2723 5660
E-mail: post.hk@erm.com
http://www.erm.com

Client:	Project No:
Gammon	0215660
Summary: This document presents the Fourth Quarterly EM&A Report for Tuen Mun – Chek Lap Kok Link Southern Connection Viaduct Section.	Date: 13 July 2015 Approved by:  *Mr Craig Reid* *Partner* Certified by:  *Mr Jovy Tam* *ET Leader*

Revision	Description	By	Checked	Approved	Date
	4th Quarterly EM&A Report	VAR	JT	CAR	13/07/15

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RAMBOLL ENVIRON

Ref.: HYDHZMBEEM00_0_3186L.15

17 July 2015

AECOM
Supervising Officer's Representative's Office
780 Cheung Tung Road, Lantau, N.T.

By Fax (3691 2899) and By Post

Attention: Mr. Daniel Ip

Dear Mr. Ip,

Re: Agreement No. CE 48/2011 (EP)
Environmental Project Office for the
HZMB Hong Kong Link Road, HZMB Hong Kong Boundary Crossing Facilities, and Tuen Mun-Chek Lap Kok Link – Investigation

Contract No. HY/2012/07 TM-CLKL Southern Connection Viaduct Section
Fourth Quarterly EM&A Report (Sep - Nov 2014) (EP-354/2009/D)

Reference is made to the Fourth Quarterly Environmental Monitoring and Audit (EM&A) Report (ET's ref.: "0215660_4th Qtr EM&A_20150708.doc" dated 13 July 2015) certified by the ET Leader and provided to us via e-mail on 13 July 2015.

Pleased be informed that we have no adverse comments on the captioned EM&A Report.

Thank you for your attention. Please do not hesitate to contact the undersigned or the ENPO Leader Mr. Y. H. Hui should you have any queries.

Yours sincerely,

F. C. Tsang
Independent Environmental Checker
Tuen Mun – Chek Lap Kok Link

c.c. HyD – Mr. Stephen Chan (By Fax: 3188 6614)
HyD – Mr. Matthew Fung (By Fax: 3188 6614)
AECOM – Mr. Conrad Ng (By Fax: 3922 9797)
ERM – Mr. Jovy Tam (By Fax: 2723 5660)
Gammon – Mr. Roy Leung (By Fax: 3520 0486)

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Ramboll Environ Hong Kong Limited 英環香港有限公司
Room 2403, 24/F., Jubilee Centre, 18 Fenwick Street, Wanchai, Hong Kong Tel: 852.3465 2888 Fax: 852.3465 2899
www.Ramboll-Environ.com

TABLE OF CONTENTS

List of Appendices

Under *Contract No. HY/2012/07*, Gammon Construction Limited (GCL) is commissioned by the Highways Department (HyD) to undertake the design and construction of the Southern Connection Viaduct Section of the Tuen Mun – Chek Lap Kok Link Project (TM-CLK Link Project) while AECOM Asia Company Limited was appointed by HyD as the Supervising Officer. For implementation of the environmental monitoring and audit (EM&A) programme under the Contract, ERM-Hong Kong, Limited (ERM) has been appointed as the Environmental Team (ET). ENVIRON Hong Kong Ltd. was employed by the HyD as the Independent Environmental Checker (IEC) and Environmental Project Office (ENPO) in accordance with *Environmental Permit No. EP-354/2009/A*. Another application for variation of environmental permit (VEP) (*EP-354/2009/B*) was granted on 28 January 2014.

The construction phase of the Contract commenced on 31 October 2013 and will be tentatively be completed by 2018. The impact monitoring of the EM&A programme, including air quality, noise, water quality and marine ecological monitoring as well as environmental site inspections, commenced on 31 October 2013.

This is the fourth quarterly EM&A report presenting the EM&A works carried out during the period from 1 September to 30 November 2014 for the Southern Connection Viaduct Section in accordance with the Updated EM&A Manual of the TM-CLK Link Project. As informed by the Contractor, major activities in the reporting period included:

<u>September 2014</u>

Marine-based Works

- Construction of Pile caps at Viaduct B;
- Marine piling platform installation;
- Marine Piling at Viaducts B & E; and
- Additional marine ground investigation (GI) and laboratory testing.

Land-based Works

- Construction of pile cap superstructure of Viaduct B;
- Fence installation and relocation of Area 2, Viaducts A, B, C & D;
- Land Piling at Viaducts B & C;
- Piling platform installation for Viaducts B, C, D & E;
- Additional land GI, trial pits & lab testing
- Utility surveys; and
- Slope work of Slope 9SE-B/C8, 9SE-B/C9 & 9SE-B/F9.

<u>October 2014</u>

Marine-based Works

- Construction of Pile caps at Viaduct B;

- Marine piling platform installation for Viaducts A, B, C, D & E;
- Marine Piling at Viaducts B, C, D & E; and
- Additional marine ground investigation (GI) and laboratory testing.

Land-based Works

- Construction of pile cap superstructure of Viaduct B;
- Channel re-construction at Area 1;
- Land Piling at Viaducts B, C & D;
- Construction of pile cap at Viaducts B & D;
- Additional land GI, trial pits & lab testing;
- Utility surveys; and
- Slope work of Slopes 9SE-B/C8, 9SE-B/C9 & 9SE-B/F9.

November 2014

Marine-based Works

- Construction of Pile caps at Viaducts B & E;
- Marine piling platform installation for Viaducts A, B, C, D & E;
- Marine Piling at Viaducts B, C, D & E; and
- Additional marine ground investigation (GI) and laboratory testing.

Land-based Works

- Construction of pile cap superstructure of Viaduct B;
- Channel re-construction at Area 1;
- Land Piling at Viaducts B, C & D;
- Pre-drilling works at Viaduct A;
- Construction of pile cap at Viaducts B & D;
- Additional land GI, trial pits & lab testing;
- Utility surveys; and
- Slope work of Slopes 9SE-B/C8, 9SE-B/C9 & 9SE-B/F9.

A summary of monitoring and audit activities conducted in the reporting period is listed below:

24-hour TSP monitoring	16 sessions at ASR8; 17 sessions at ASR8A
1-hour TSP monitoring	16 sessions at ASR8; 17 sessions at ASR8A
Noise monitoring	16 sessions
Water quality monitoring	37 sessions
Dolphin monitoring	6 sessions
Joint Environmental site inspection	13 sessions
Post-Translocation Coral monitoring	1 session

Breaches of Action and Limit Levels for Air Quality
No exceedance of Action and Limit Levels was recorded for air quality monitoring in the reporting period.

Breaches of Action and Limit Levels for Noise
No exceedance of Action and Limit Levels was recorded for construction noise monitoring in the reporting period.

Breaches of Action and Limit Levels for Water Quality

No exceedance of Action and Limit Levels was recorded for impact water quality monitoring in the reporting period.

Impact Dolphin Monitoring

Whilst two (2) Action Level exceedances were observed for the quarterly dolphin monitoring data between September and November 2014, no unacceptable impact from the construction activities of the TM-CLKL Southern Connection Viaduct Section on Chinese White Dolphins was noticeable from general observations during the dolphin monitoring in this reporting quarter. The exceedances are considered to be the natural variation of Chinese White Dolphin ranging pattern upon further investigation.

Daily marine mammal exclusion zone monitoring was undertaken during the period of marine works under this Contract. Passive Acoustic Monitoring (PAM) was also implemented for the detection of marine mammal when marine works were carried out outside the daylight hours under this Contract. No sighting of the Indo-Pacific humpback dolphin *Sousa chinensis* (i.e. Chinese White Dolphin) was recorded in the monitoring period during the exclusion zone monitoring.

Post-Translcoation Coral Monitoring

The Fourth Quarterly Post-Translocation Coral Monitoring was conducted on 23 October 2014 and no exceedance of Action and Limit Levels was recorded. The results were detailed in the *Fourth Quarterly Post- Translocation Coral Monitoring Report* and were submitted under a separate cover.

Environmental Complaints, Non-compliance & Summons

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

Reporting Change

There was no reporting change required in the reporting period.

Upcoming Works for the Next Reporting Period

Works to be undertaken in the coming quarter include the following:

<u>December 2014</u>

Marine Works

- Construction of Pile caps at Viaducts B & E;
- Marine piling platform installation for Viaducts A, B, C, D & E;
- Marine Piling at Viaducts B, C, D & E; and
- Additional marine ground investigation (GI) and laboratory testing.

Land-based Works

- Construction of pile cap superstructure of Viaduct B;
- Channel re-construction at Area 1;
- Land Piling at Viaducts B, C & D;
- Pre-drilling works at Viaduct A;
- Construction of pile cap at Viaducts B & D;
- Additional land GI, trial pits & lab testing;
- Utility surveys; and
- Slope work of Slopes 9SE-B/C8, 9SE-B/C9 & 9SE-B/F9.

January 2015

Marine Works

- Construction of Pile caps at Viaducts B & E;
- Marine piling platform installation for Viaducts A, B, C, D & E;
- Marine Piling at Viaducts B, C, D & E; and
- Additional marine ground investigation (GI) and laboratory testing.

Land-based Works

- Construction of pile cap superstructure of Viaduct B;
- Channel re-construction at Area 1;
- Land Piling at Viaducts B, C & D;
- Pre-drilling works at Viaduct A;
- Construction of pile cap at Viaducts B & D;
- Additional land GI, trial pits & lab testing;
- Utility surveys; and
- Slope work of Slopes 9SE-B/C8, 9SE-B/C9 & 9SE-B/F9.

February 2015

Marine Works

- Construction of Pile caps at Viaducts B & E;
- Marine piling platform installation for Viaducts A, B, C, D & E;
- Marine Piling at Viaducts B, C, D & E; and
- Additional marine ground investigation (GI) and laboratory testing.

Land-based Works

- Construction of pile cap superstructure of Viaduct B;
- Channel re-construction at Area 1;
- Land Piling at Viaducts B, C & D;
- Pre-drilling works at Viaduct A;
- Construction of pile cap at Viaducts B & D;

- Additional land GI, trial pits & lab testing;
- Utility surveys; and
- Slope work of Slopes 9SE-B/C8, 9SE-B/C9 & 9SE-B/F9.

Future Key Issues

Potential environmental impacts arising from the above upcoming construction activities in the coming quarterly period are mainly associated with air quality, noise, marine water quality, marine ecology and waste management issue.

1 INTRODUCTION

1.1 BACKGROUND

According to the findings of the Northwest New Territories (NWNT) Traffic and Infrastructure Review conducted by the Transport Department, Tuen Mun Road, Ting Kau Bridge, Lantau Link and North Lantau Highway would be operating beyond capacity after 2016. This forecast has been based on the estimated increase in cross boundary traffic, developments in the Northwest New Territories (NWNT), and possible developments in North Lantau, including the Airport developments, the Lantau Logistics Park (LLP) and the Hong Kong – Zhuhai – Macao Bridge (HZMB). In order to cope with the anticipated traffic demand, two new road sections between NWNT and North Lantau – Tuen Mun – Chek Lap Kok Link (TM-CLKL) and Tuen Mun Western Bypass (TMWB) are proposed.

An Environmental Impact Assessment (EIA) of TM-CLKL (the Project) was prepared in accordance with the EIA Study Brief (No. *ESB-175/2007*) and the *Technical Memorandum of the Environmental Impact Assessment Process* (*EIAO-TM*). The EIA Report was submitted under the Environmental Impact Assessment Ordinance (EIAO) in August 2009. Subsequent to the approval of the EIA Report (EIAO Register Number: *AEIAR-146/2009*), an Environmental Permit (EP-354/2009) for TM-CLKL was granted by the Director of Environmental Protection (DEP) on 4 November 2009, and EP variation (*EP-354/2009A*) was issued on 8 December 2010. Another application for variation of environmental permit (VEP) (*EP-354/2009/B*) was granted on 28 January 2014.

Under *Contract No. HY/2012/07*, Gammon Construction Limited (GCL) is commissioned by the Highways Department (HyD) to undertake the design and construction of the Southern Connection Viaduct Section of TM-CLKL ("the Contract") while AECOM Asia Company Limited was appointed by HyD as the Supervising Officer. For implementation of the environmental monitoring and audit (EM&A) programme under the Contract, ERM-Hong Kong, Limited (ERM) has been appointed as the Environmental Team (ET). ENVIRON Hong Kong Ltd. was employed by HyD as the Independent Environmental Checker (IEC) and Environmental Project Office (ENPO) in accordance with *Environmental Permit No. EP-354/2009/A*.

The construction phase of the Contract commenced on 31 October 2013 and will be tentatively be completed by 2018. The impact monitoring phase of the EM&A programme, including air quality, noise, water quality and marine ecological monitoring as well environmental site inspections, commenced on 31 October 2013.

The general layout plan of the Contract components is presented in *Figures 1.1 & 1.2a to l.*

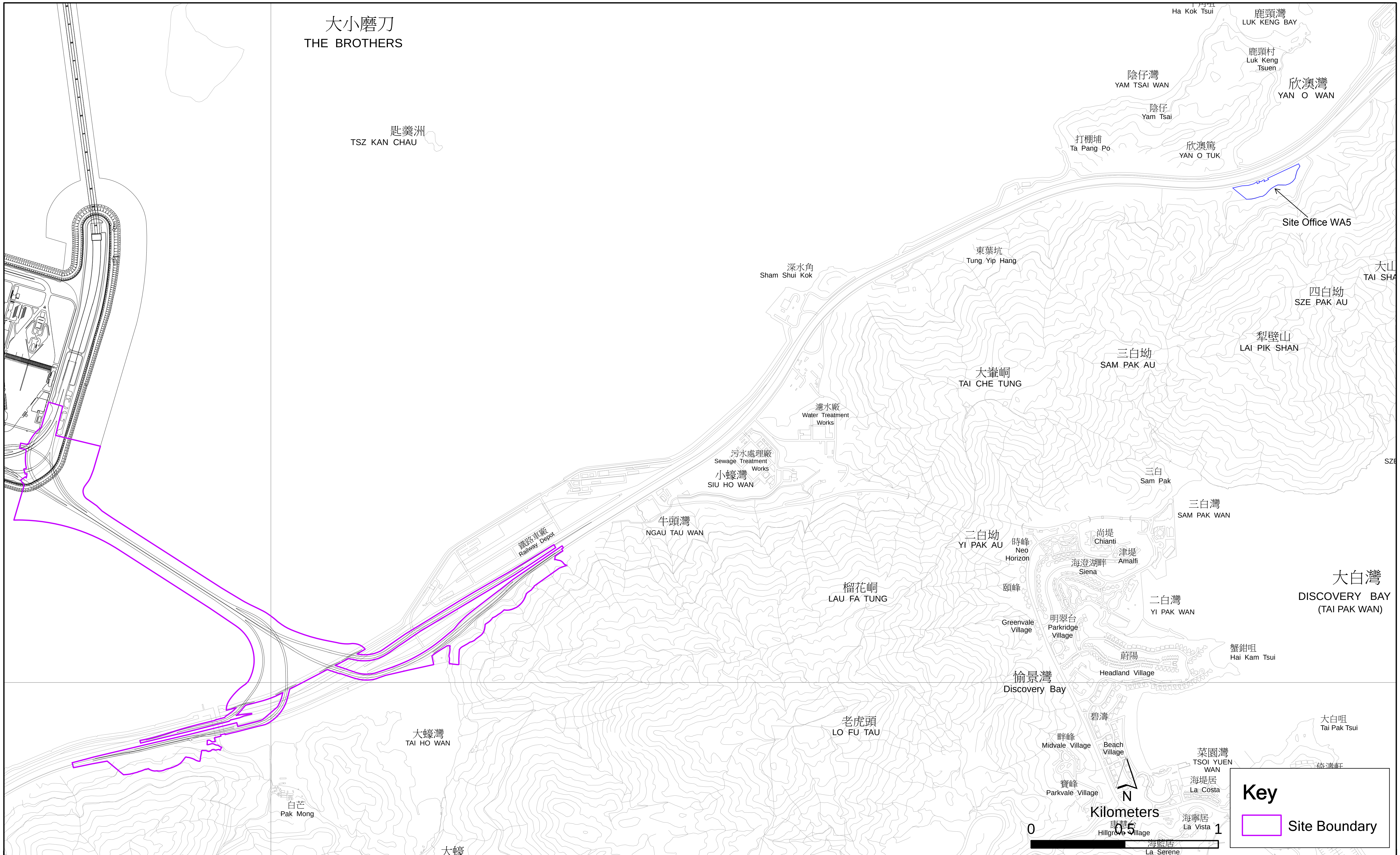

Figure 1.1

General Layout Plan of the Project

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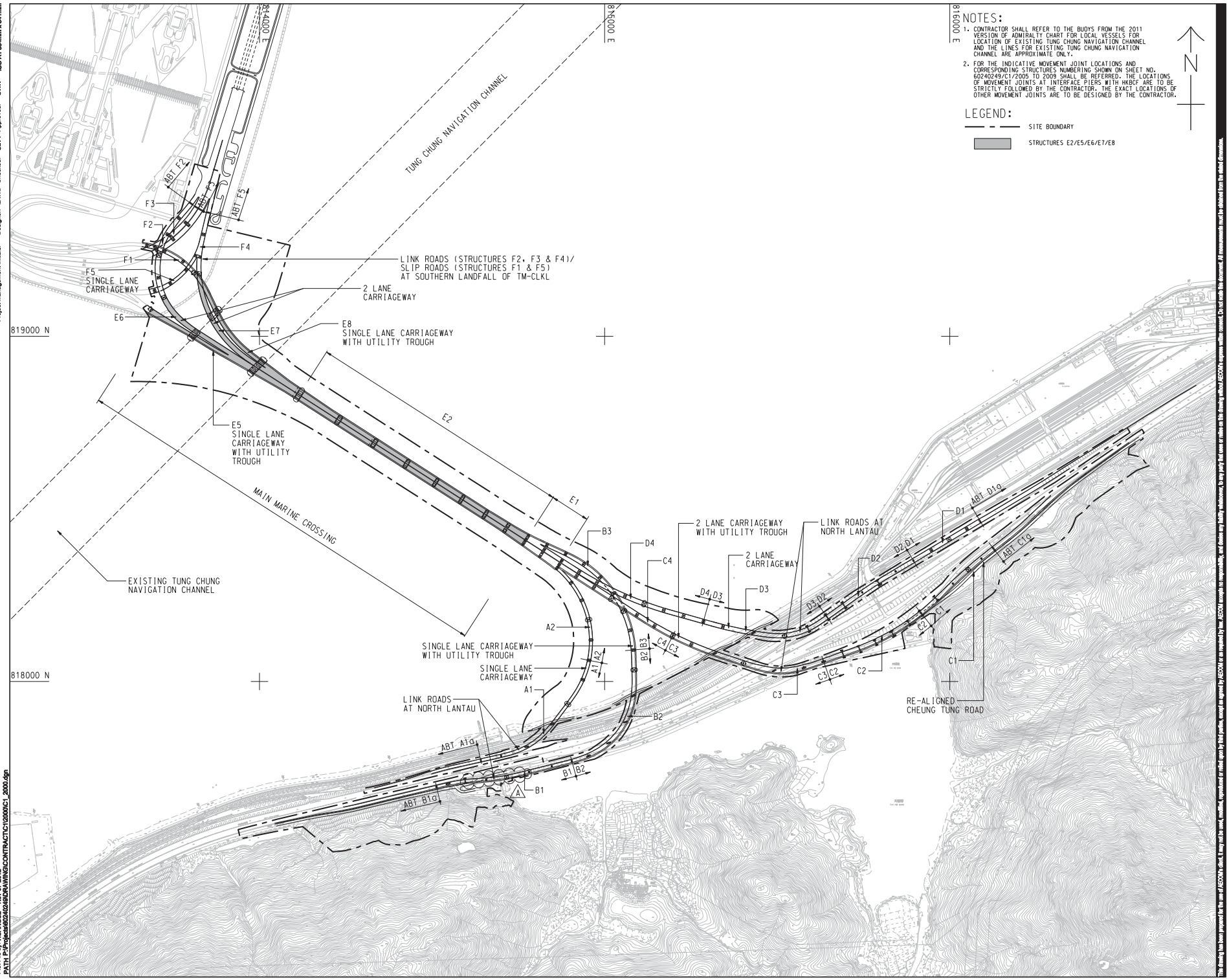
Environmental Resources Management

ERM



AECOM

PROJECT
TUEN MUN - CHEK LAP KOK LINK

CONTRACT TITLE
TUEN MUN - CHEK LAP KOK LINK - SOUTHERN CONNECTION VIADUCT SECTION

CLIENT
路政署 HIGHWAYS DEPARTMENT
港珠澳大橋香港工程管理處 Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office

CONSULTANT
AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS

Figure 1.2a

ISSUE/REVISION

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-	OCT. 12	TENDER DRAWING	CWN

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CONTRACT NO.: HY/2012/07

SHEET TITLE
SOUTHERN CONNECTION GENERAL LAYOUT PLAN

SHEET NUMBER
60240249/C1/2000A

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KEY PLAN

NOTES

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LEGEND

- SITE BOUNDARY
- GF1 FAULT

EXISTING G.I.STATIONS :

- BOREHOLE BY GIU DATA EXCLUDING VC
- BOREHOLE BY GCL CONTRACT HY/2012/04
- BOREHOLE BY GCL CONTRACT NL8/97
- BOREHOLE BY GCL CONTRACT HY/2009/23
- TRIAL PIT BY GCL CONTRACT HY/2012/04
- SLOPE STRIPPING BY GCL CONTRACT HY/2012/04

PROPOSED G.I.STATIONS :

- PBH01 PROPOSED BOREHOLE
- TP01 PROPOSED TRIAL PIT
- CH01 PROPOSED COREHOLE
- SS01 SS02 PROPOSED SLOPE STRIPPING

MATCH LINE
FOR CONTINUATION
SEE DRG J3518/P/OAP/04/01101

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Client: 路政署 HIGHWAYS DEPARTMENT, Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office

Supervising Officer: AECOM

Contractor: Gammon

Originator: ARUP

Project Title: Contract No. HY/2012/07
Tuen Mun - Chek Lap Kok Link
Southern Connection Viaduct Section

Drawing title: **Figure 1.2b**

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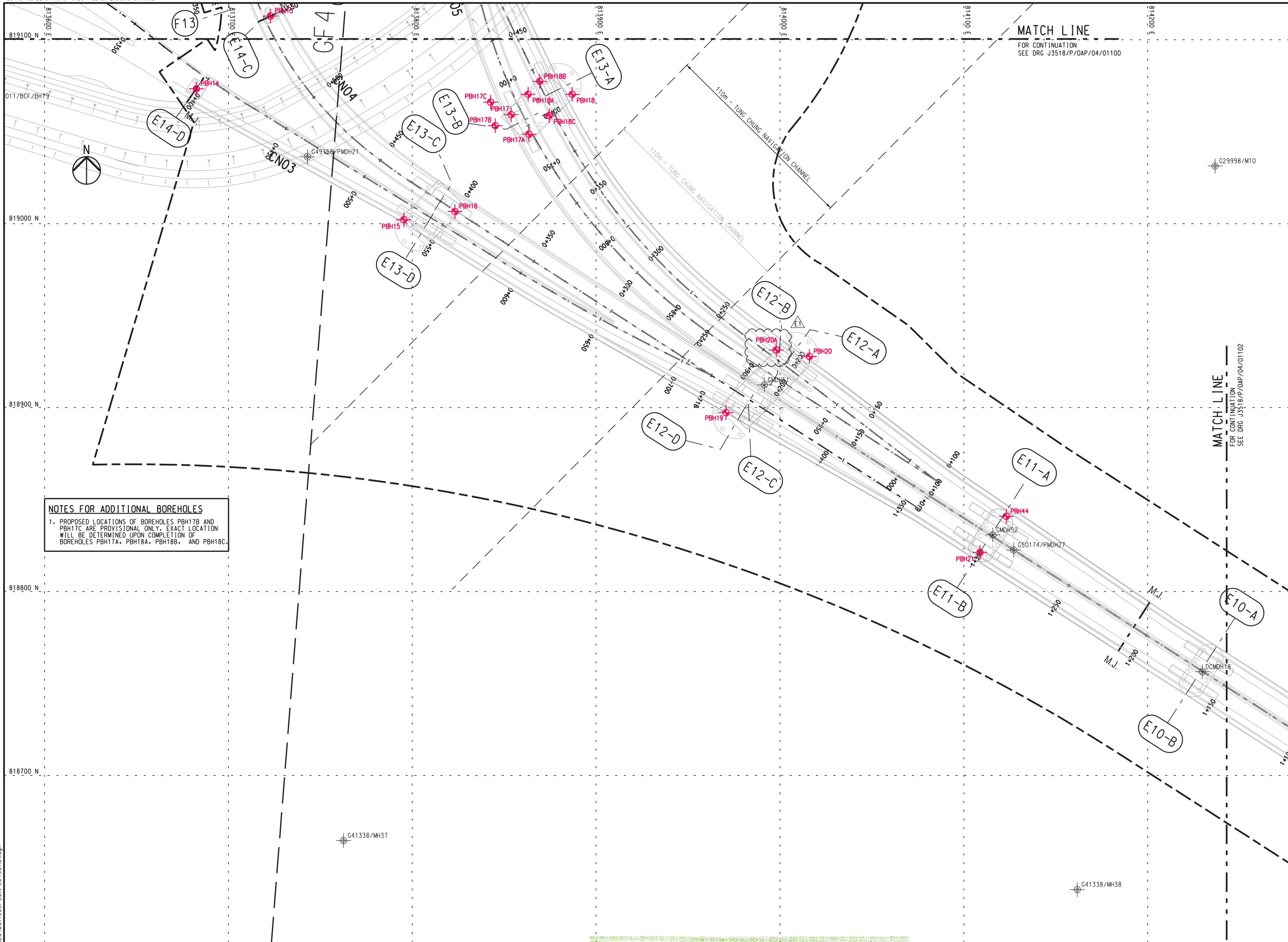
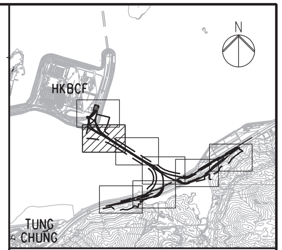


NOTES FOR ADDITIONAL BOREHOLES

1. PROPOSED LOCATIONS OF BOREHOLES PBH17B AND PBH17C ARE PROVISIONAL ONLY. EXACT LOCATION WILL BE DETERMINED UPON COMPLETION OF BOREHOLES PBH17A, PBH18A, PBH18B, AND PBH18C.



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LEGEND

- SITE BOUNDARY
- GF1 FAULT

EXISTING G.I.STATIONS :

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- BOREHOLE BY GCL CONTRACT HY/2012/04
- BOREHOLE BY GCL CONTRACT NL8/97
- BOREHOLE BY GCL CONTRACT HY/2009/23
- TRIAL PIT BY GCL CONTRACT HY/2012/04
- SLOPE STRIPPING BY GCL CONTRACT HY/2012/04

PROPOSED G.I.STATIONS :

- PBH01 PROPOSED BOREHOLE
- TP01 PROPOSED TRIAL PIT
- CH01 PROPOSED COREHOLE
- SS01 SS02 PROPOSED SLOPE STRIPPING

Rev	Description	By	Date	Rev	Description	By	Date
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Supervising Officer: AECOM

Contractor: Gammon

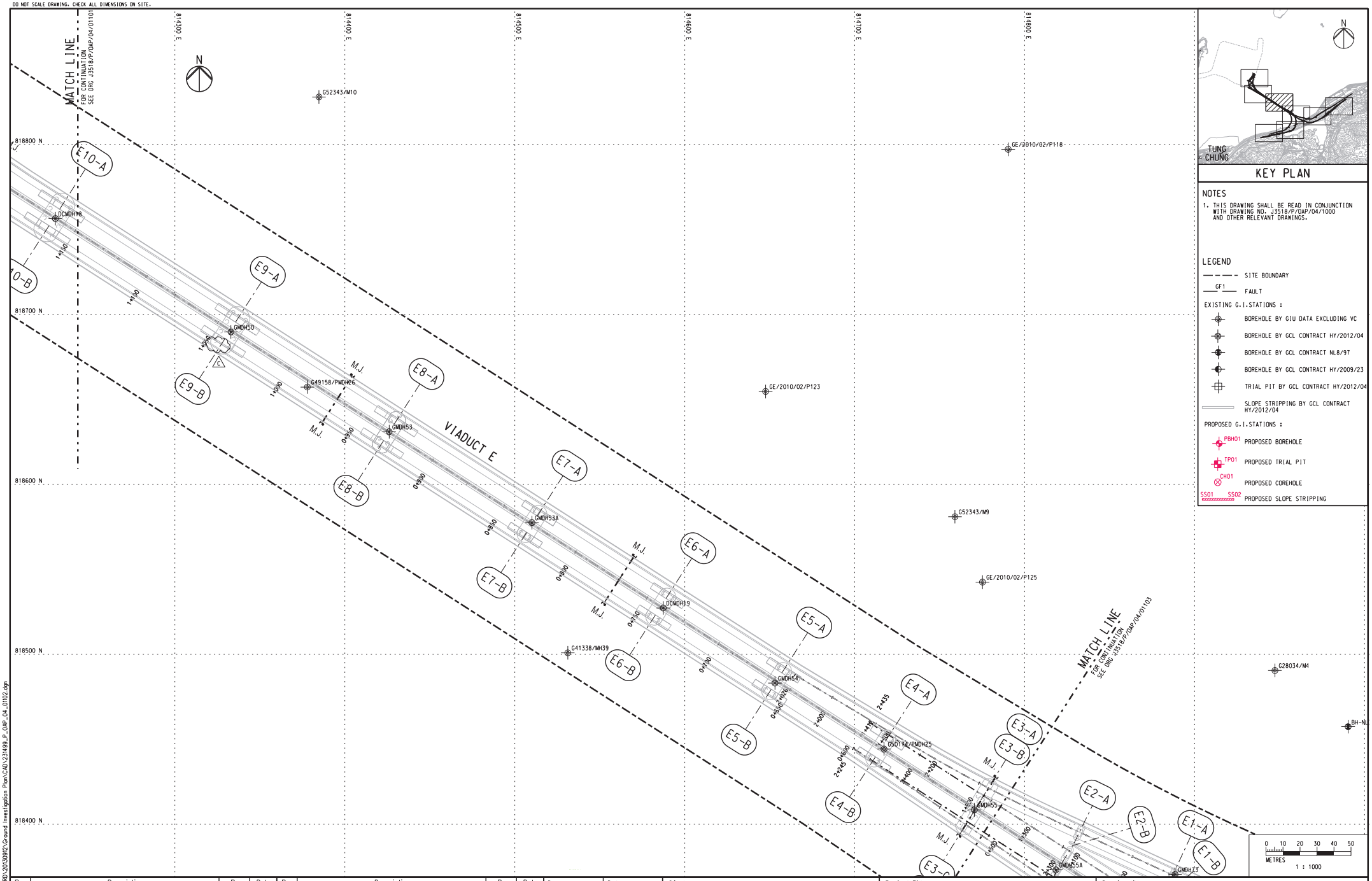
Project Title: Contract No. HY/2012/07 Tuen Mun - Chek Lap Kok Link Southern Connection Viaduct Section

Originator: ARUP

Drawing title

Figure 1.2c

Drawing no. J3518/P/OAP/04/01101 Rev. E1



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C	SUBMISSION	RC	09/13				

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Client: 路政署 HIGHWAYS DEPARTMENT 港珠澳大橋香港工程管理處 Hong Kong-Zhuhai-Macao Bridge Hong Kong Project Management Office

Project Title: Contract No. HY/2012/07
Tuen Mun - Chek Lap Kok Link
Southern Connection Viaduct Section

Supervising Officer: AECOM
Contractor: Gammon
Originator: ARUP

Drawing title: **Figure 1.2d**

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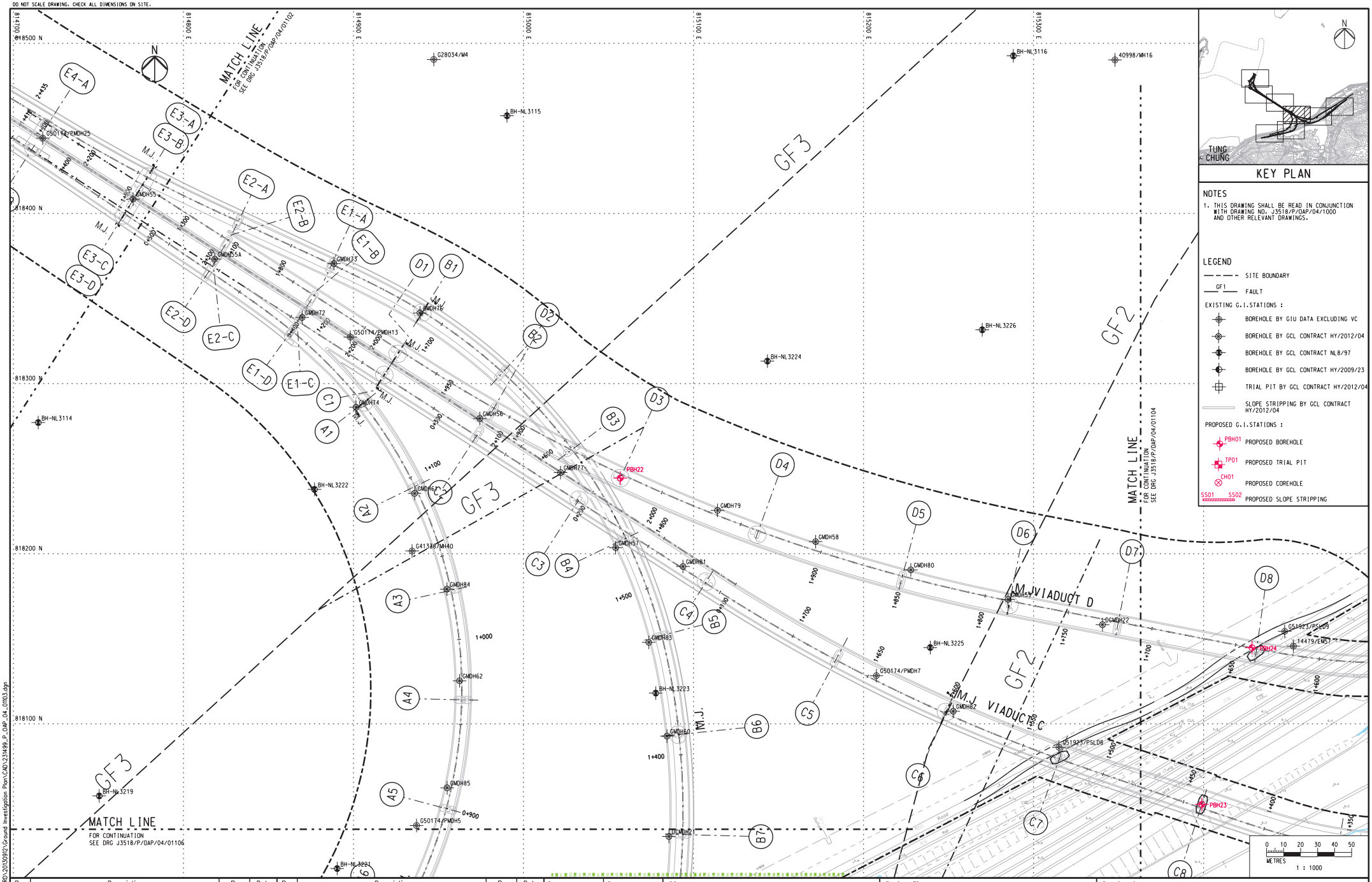

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C	SUBMISSION	RC	09/13				

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Client: 路政署 HIGHWAYS DEPARTMENT 港珠澳大橋香港工程管理處 Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office

Project Title: Contract No. HY/2012/07 Tuen Mun - Chek Lap Kok Link Southern Connection Viaduct Section

Supervising Officer: AECOM
Contractor: Gammon
Originator: ARUP

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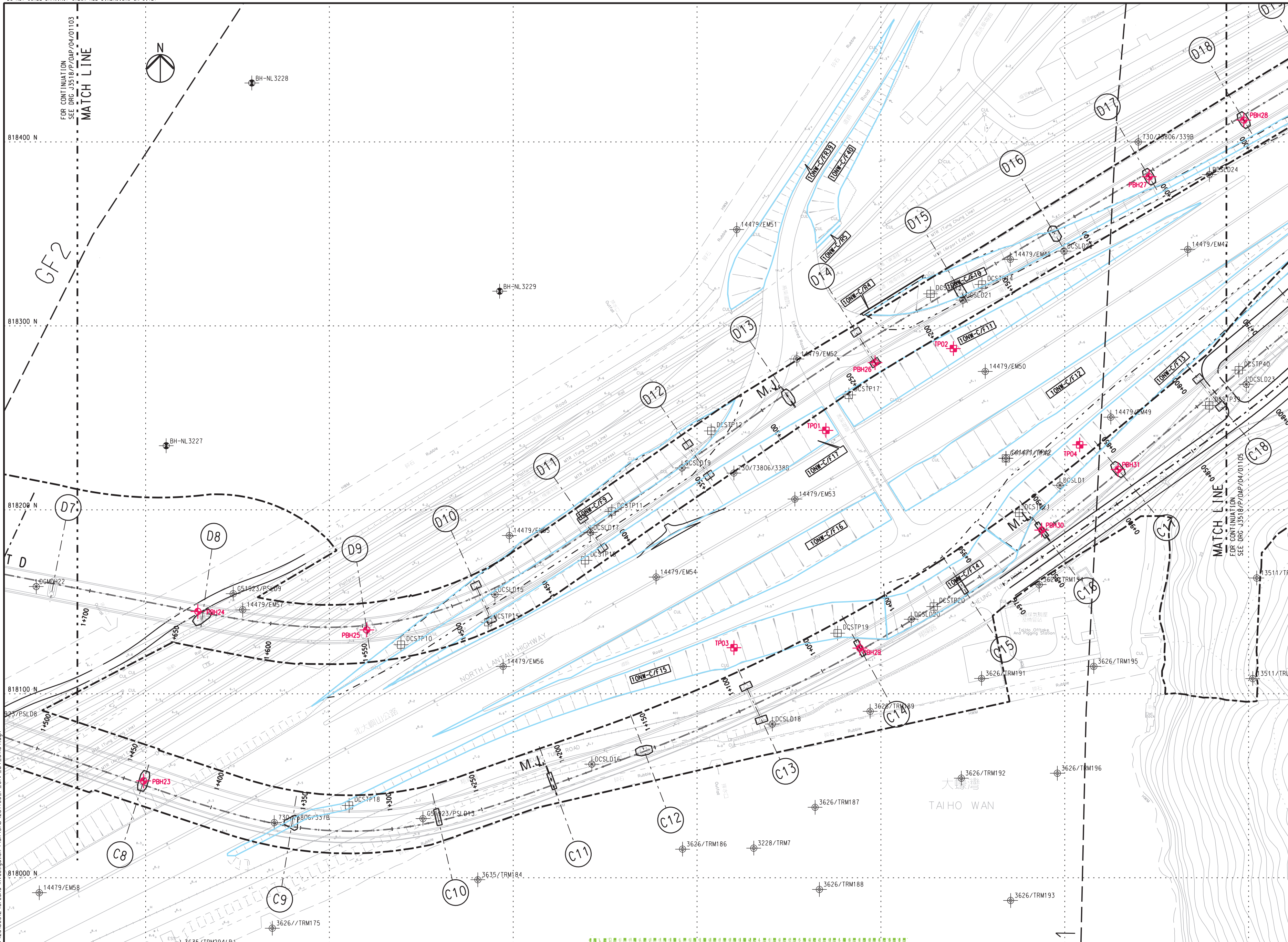

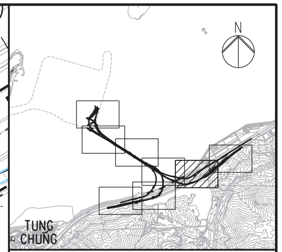

KEY PLAN

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LEGEND

SITE BOUNDARY

GF1 FAULT

EXISTING G.I. STATIONS :

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BOREHOLE BY GCL CONTRACT NL8/97

BOREHOLE BY GCL CONTRACT HY/2009/23

TRIAL PIT BY GCL CONTRACT HY/2012/04

SLOPE STRIPPING BY GCL CONTRACT HY/2012/04

PROPOSED G.I. STATIONS :

PBH01 PROPOSED BOREHOLE

TP01 PROPOSED TRIAL PIT

CH01 PROPOSED COREHOLE

SS01 SS02 PROPOSED SLOPE STRIPPING

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C	SUBMISSION	RC	09/13				

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Client: 路政署 HIGHWAYS DEPARTMENT 港珠澳大橋香港工程管理處 Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office

Project Title: Contract No. HY/2012/07 Tuen Mun - Chek Lap Kok Link Southern Connection Viaduct Section

Supervising Officer: AECOM

Contractor: Gammon

Originator: ARUP

Drawing title

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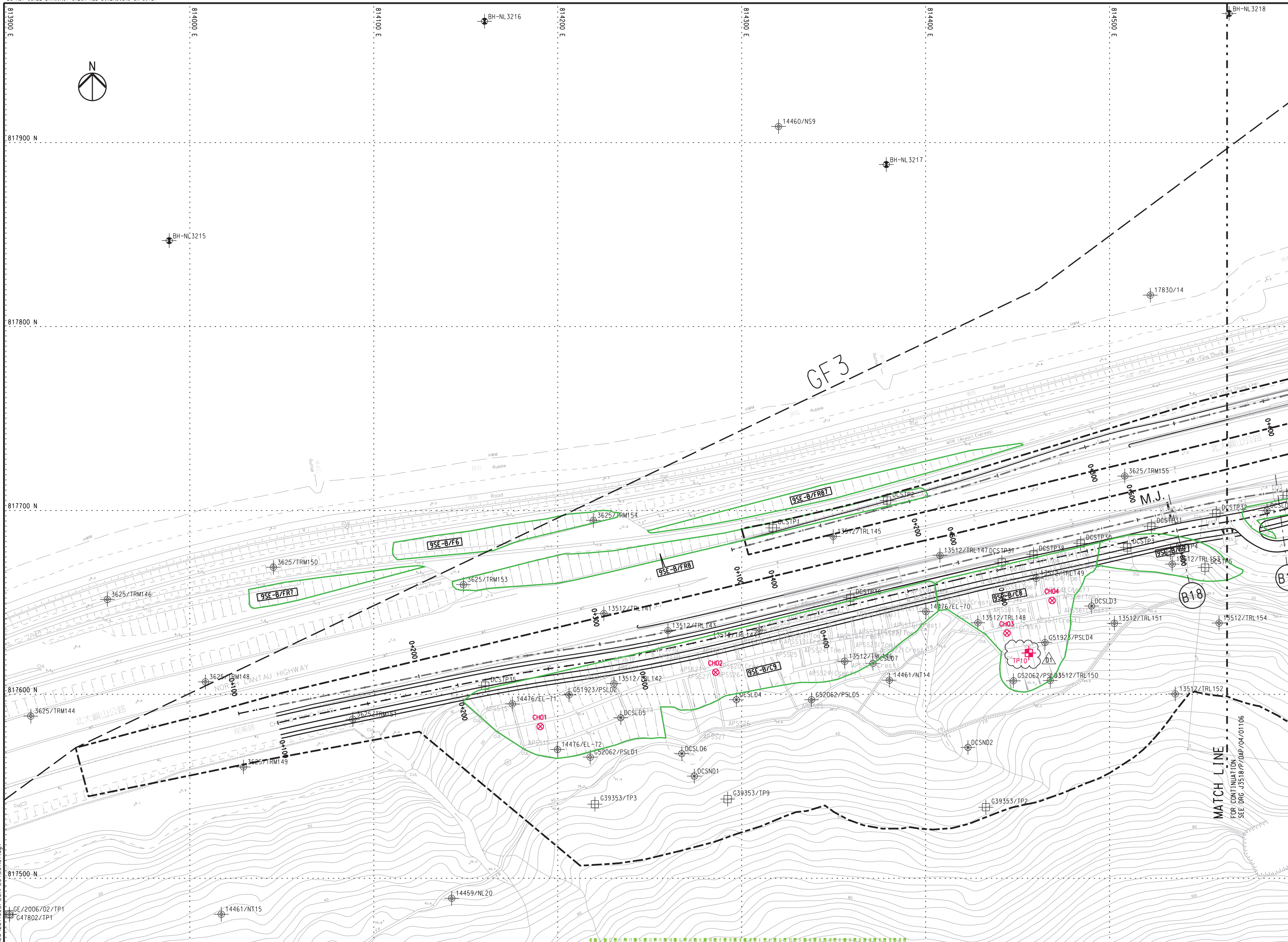

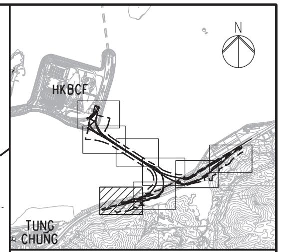

KEY PLAN

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GF1 FAULT

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- PBH01 PROPOSED BOREHOLE
- TP01 PROPOSED TRIAL PIT
- CH01 PROPOSED COREHOLE
- SS01 SS02 PROPOSED SLOPE STRIPPING

Rev	Description	By	Date	Rev	Description	By	Date
A	SUBMISSION	RC	07/13				
B	SUBMISSION	RC	07/13				
C	SUBMISSION	RC	09/13				
D1	FOR INTERNAL REVIEW	RC	11/13				

Drawn: RL | Date: 07/13
Checked: DS | Approved: DOP
Scale: 1:1000 @ A1 / 1:2000 @ A3

Client: 路政署 HIGHWAYS DEPARTMENT 港珠澳大橋香港工程管理處 Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office

Supervising Officer: AECOM

Contractor: Gammon

Originator: ARUP

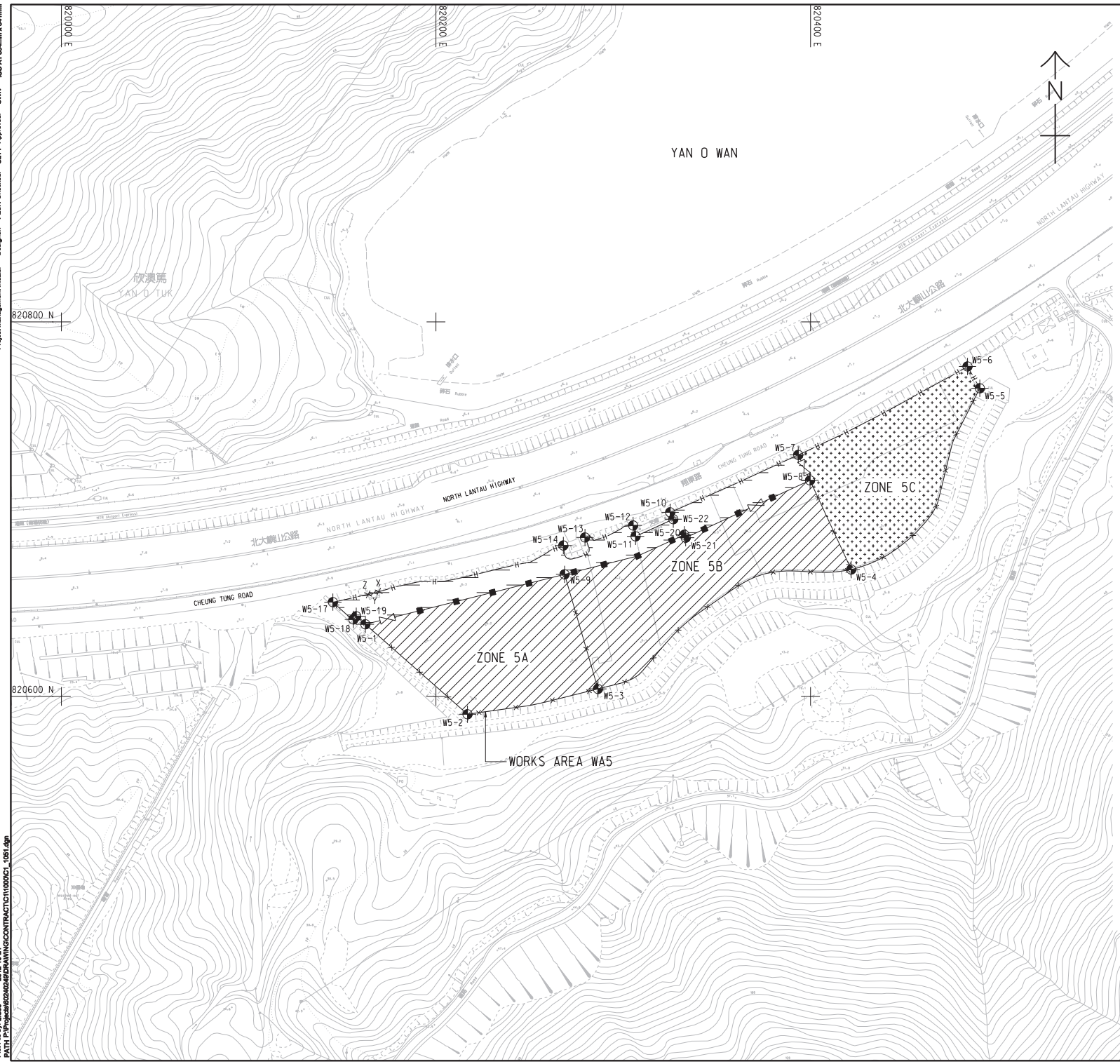
Project Title: Contract No. HY/2012/07 Tuen Mun - Chek Lap Kok Link Southern Connection Viaduct Section

Drawing title

Figure 1.2g

Drawing no. J3518/P/OAP/04/01107 Rev. D1

Printed by : 07/11/2013
Filename : J:\231499\ARUP\GEO\231499_P_OAP_04_01107.dgn



NOTES:

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE WORKS AREA KEY PLAN IN SHEET NO. 60240249/C1/1000.
2. THE SETTING OUT INFORMATION AND WORKS AREA CONDITIONS SHOWN IN THIS DRAWING ARE FOR REFERENCE ONLY. THE WORKS AREA BOUNDARY SHALL BE IN ACCORDANCE WITH THE ENGINEERING CONDITIONS FOR TEMPORARY GOVERNMENT LAND ALLOCATION NO. TIS 619. IN CASE OF DISCREPANCY BETWEEN THE BOUNDARY SHOWN ON THIS DRAWING AND THE BOUNDARY INDICATED ON THE ENGINEERING CONDITIONS, THE LATTER SHALL PREVAIL.
3. DEMARCATION OF THE WORKS AREA SHALL BE DETERMINED ON SITE.
4. REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NOS. H6110 AND H6111 FOR DETAILS OF HOARDING.
5. REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NOS. H6121 AND H6122 FOR DETAILS OF CHAIN LINK FENCE.
6. REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NO. H6121 FOR DETAILS OF GATE.
7. CHAIN LINK FENCE SHALL BE ERECTED ALONG THE WORKS AREA BOUNDARY. THE ALIGNMENT AND EXTENT OF CHAIN LINK FENCE SHOWN ARE INDICATIVE ONLY AND SHALL BE CONFIRMED BY THE SUPERVISING OFFICER.
8. THE LOCATION AND WIDTH OF GATE SHOWN ARE INDICATIVE ONLY AND SHALL BE CONFIRMED BY THE SUPERVISING OFFICER.
9. NO STRUCTURES SHALL BE ERECTED OTHER THAN SUCH STRUCTURES NOT EXCEEDING TWO STOREYS IN HEIGHT, WHICH ARE APPROVED BY THE DISTRICT LANDS OFFICER AS BEING APPROPRIATE FOR THE USE OF THE SITE AS A WORKS AREA.
10. THE TENTATIVE OCCUPATION PERIOD SHALL BE REFERRED TO EMPLOYER'S REQUIREMENTS PART 2 AND PART 14 SECTION 1 CLAUSE 1.45A.
11. THE WORKS AREAS SHOWN ON THIS DRAWING ARE TO BE SHARE-USED AMONG THE CONTRACTS OF TM-CLKL RELATED CONTRACTS.THE AREAS HATCHED WITH ▨ ARE TENTATIVELY ALLOCATED FOR THE USE BY THIS CONTRACT.
12. THE COMMON AREA SHALL BE CONCRETE PAVED BY THE CONTRACTOR.

LEGEND:

- WORKS AREA UNDER THIS CONTRACT
- COMMON AREA (MAINTAINED UNDER THIS CONTRACT) TO BE SHARE-USED WITH OTHER CONTRACTS
- WORKS AREA FOR THIS CONTRACT TO BE EARLY HANDED OVER BY THE CONTRACTOR.
- H — HOARDING AND GATE (TO BE ERECTED AND MAINTAINED UNDER THIS CONTRACT)
- CHAIN LINK FENCE AND GATE (TO BE ERECTED AND MAINTAINED BY OTHERS)
- CHAIN LINK FENCE AND GATE (TO BE ERECTED AND MAINTAINED UNDER THIS CONTRACT)

SETTING OUT COORDINATES OF WORKS AREA WA5

POINT	COORDINATES	
	EASTING	NORTHING
W5-1	820162.308	820638.492
W5-2	820216.839	820590.455
W5-3	820286.496	820603.985
W5-4	820421.757	820667.742
W5-5	820490.425	820764.554
W5-6	820483.839	820776.180
W5-7	820393.451	820728.958
W5-8	820399.746	820715.343
W5-9	820268.674	820665.173
W5-10	820325.075	820698.276
W5-11	820306.587	820685.458
W5-12	820305.269	820691.287
W5-13	820279.580	820684.863
W5-14	820268.027	820680.572
X	820169.407	820655.859
Y	820166.601	820655.172
Z	820163.794	820654.484
W5-17	820144.957	820650.334
W5-18	820155.899	820641.093
W5-19	820157.432	820642.788
W5-20	820332.642	820686.314
W5-21	820333.350	820684.738
W5-22	820326.723	820694.608

AECOM

PROJECT
TUEN MUN - CHEK LAP KOK LINK

CONTRACT TITLE
TUEN MUN - CHEK LAP KOK LINK - SOUTHERN CONNECTION VIADUCT SECTION

CLIENT
HIGHWAYS DEPARTMENT
路政署
Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office

CONSULTANT
AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS

ISSUE/REVISION

VR	DATE	DESCRIPTION	CHK.
-	OCT. 12	TENDER DRAWING	CWN

STATUS

SCALE: A1 1 : 1000
DIMENSION UNIT: METRES

KEY PLAN

Figure 1.2h

PROJECT NO.: 60240249
CONTRACT NO.: HY/2012/07

SHEET TITLE
WORKS AREA AND HOARDING PLAN

SHEET 1 OF 2

SHEET NUMBER
60240249/C1/1051

Project Management Initials: Designer: PLCK Checked: SLYY Approved: CWN ISO A1 594mm x 841mm

Plot File by: LIUJ3 2012-10-24
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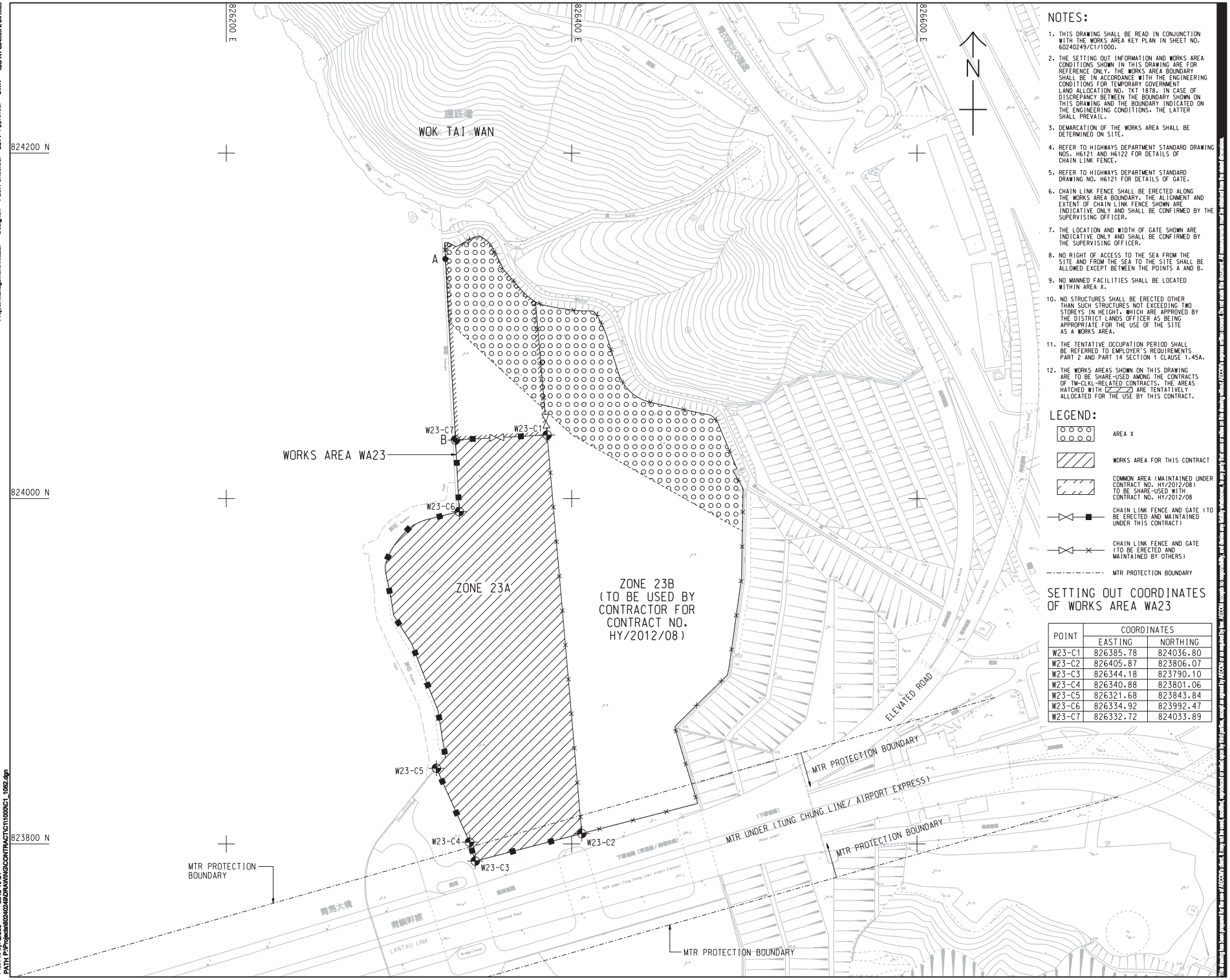

NOTES:

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE WORKS AREA KEY PLAN IN SHEET NO. 60240249/C1/1000.
2. THE SETTING OUT INFORMATION AND WORKS AREA CONDITIONS SHOWN IN THIS DRAWING ARE FOR REFERENCE ONLY. THE WORKS AREA BOUNDARY SHALL BE IN ACCORDANCE WITH THE ENGINEERING CONDITIONS FOR TEMPORARY GOVERNMENT LAND ALLOCATION NO. TKT 1878. IN CASE OF DISCREPANCY BETWEEN THE BOUNDARY SHOWN ON THIS DRAWING AND THE BOUNDARY INDICATED ON THE ENGINEERING CONDITIONS, THE LATTER SHALL PREVAIL.
3. DEMARCATION OF THE WORKS AREA SHALL BE DETERMINED ON SITE.
4. REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NOS. H6121 AND H6122 FOR DETAILS OF CHAIN LINK FENCE.
5. REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NO. H6121 FOR DETAILS OF GATE.
6. CHAIN LINK FENCE SHALL BE ERECTED ALONG THE WORKS AREA BOUNDARY. THE ALIGNMENT AND EXTENT OF CHAIN LINK FENCE SHOWN ARE INDICATIVE ONLY AND SHALL BE CONFIRMED BY THE SUPERVISING OFFICER.
7. THE LOCATION AND WIDTH OF GATE SHOWN ARE INDICATIVE ONLY AND SHALL BE CONFIRMED BY THE SUPERVISING OFFICER.
8. NO RIGHT OF ACCESS TO THE SEA FROM THE SITE AND FROM THE SEA TO THE SITE SHALL BE ALLOWED EXCEPT BETWEEN THE POINTS A AND B.
9. NO MANNED FACILITIES SHALL BE LOCATED WITHIN AREA X.
10. NO STRUCTURES SHALL BE ERECTED OTHER THAN SUCH STRUCTURES NOT EXCEEDING TWO STOREYS IN HEIGHT, WHICH ARE APPROVED BY THE DISTRICT LANDS OFFICER AS BEING APPROPRIATE FOR THE USE OF THE SITE AS A WORKS AREA.
11. THE TENTATIVE OCCUPATION PERIOD SHALL BE REFERRED TO EMPLOYER'S REQUIREMENTS PART 2 AND PART 14 SECTION 1 CLAUSE 1.45A.
12. THE WORKS AREAS SHOWN ON THIS DRAWING ARE TO BE SHARE-USED AMONG THE CONTRACTS OF TM-CLKL-RELATED CONTRACTS. THE AREAS HATCHED WITH ▨ ARE TENTATIVELY ALLOCATED FOR THE USE BY THIS CONTRACT.

LEGEND:

- AREA X
- WORKS AREA FOR THIS CONTRACT
- COMMON AREA (MAINTAINED UNDER CONTRACT NO. HY/2012/08) TO BE SHARE-USED WITH CONTRACT NO. HY/2012/08
- CHAIN LINK FENCE AND GATE (TO BE ERECTED AND MAINTAINED UNDER THIS CONTRACT)
- CHAIN LINK FENCE AND GATE (TO BE ERECTED AND MAINTAINED BY OTHERS)
- MTR PROTECTION BOUNDARY

SETTING OUT COORDINATES OF WORKS AREA WA23

POINT	COORDINATES	
	EASTING	NORTHING
W23-C1	826385.78	824036.80
W23-C2	826405.87	823806.07
W23-C3	826344.18	823790.10
W23-C4	826340.88	823801.06
W23-C5	826321.68	823843.84
W23-C6	826334.92	823992.47
W23-C7	826332.72	824033.89

AECOM

PROJECT
TUEN MUN - CHEK LAP KOK LINK

CONTRACT TITLE
TUEN MUN - CHEK LAP KOK LINK - SOUTHERN CONNECTION VIADUCT SECTION

CLIENT
HIGHWAYS DEPARTMENT
Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office

CONSULTANT
AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS

ISSUE/REVISION

VR	DATE	DESCRIPTION	CHK.
-	OCT. 12	TENDER DRAWING	CWN

STATUS

SCALE: A1 1 : 1000
DIMENSION UNIT: METRES

KEY PLAN

Figure 1.2i

PROJECT NO.: 60240249
CONTRACT NO.: HY/2012/07

SHEET TITLE
WORKS AREA AND HOARDING PLAN

SHEET 2 OF 2

SHEET NUMBER
60240249/C1/1052

Project Management Initials: Designer: PLCK Checked: SLYY Approved: CWN ISO A1 594mm x 841mm

Plot File by: LIUJ3 2012-10-24
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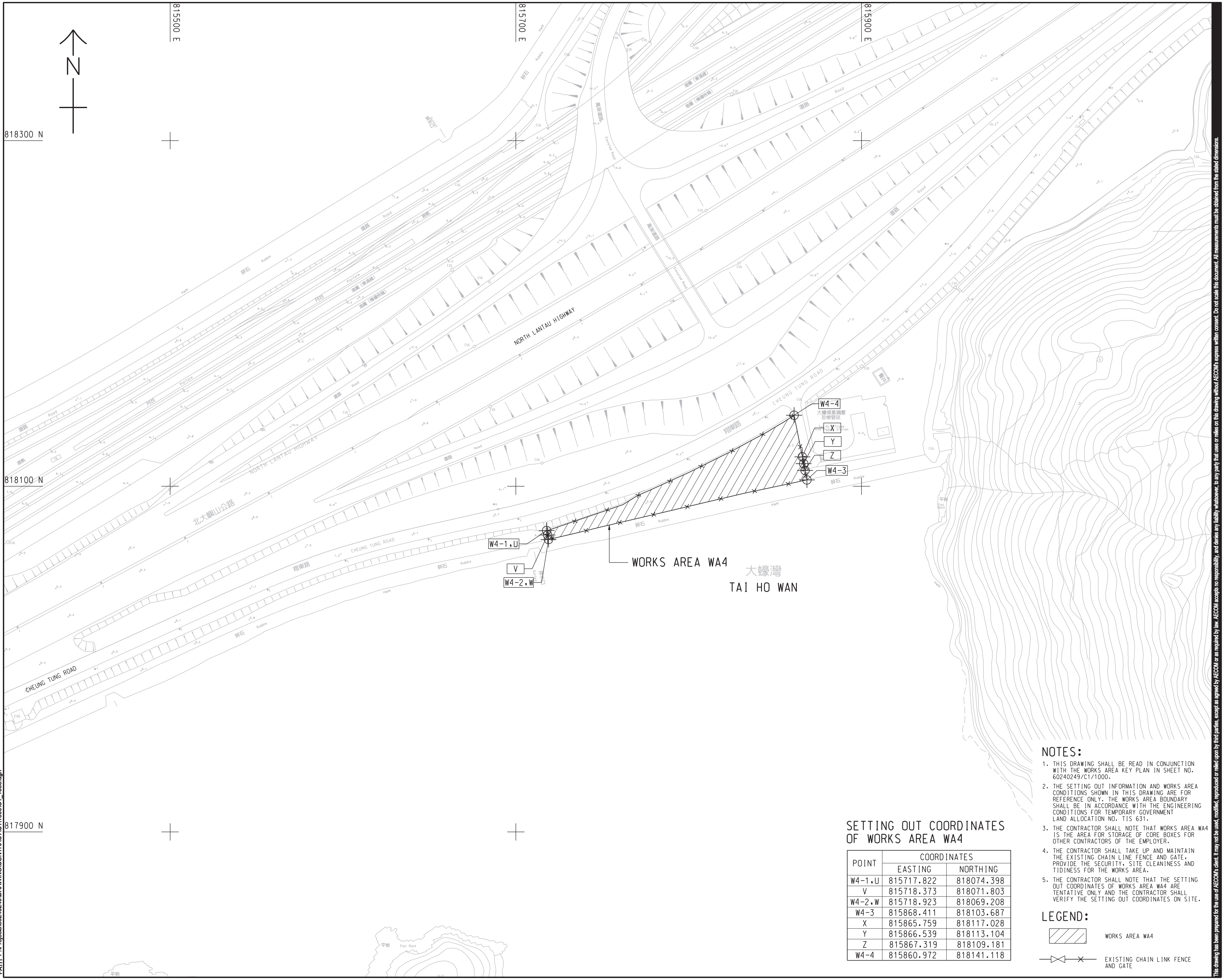


SETTING OUT COORDINATES OF WORKS AREA WA4

POINT	COORDINATES	
	EASTING	NORTHING
W4-1,U	815717.822	818074.398
V	815718.373	818071.803
W4-2,W	815718.923	818069.208
W4-3	815868.411	818103.687
X	815865.759	818117.028
Y	815866.539	818113.104
Z	815867.319	818109.181
W4-4	815860.972	818141.118

NOTES:

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE WORKS AREA KEY PLAN IN SHEET NO. 60240249/C1/1000.
2. THE SETTING OUT INFORMATION AND WORKS AREA CONDITIONS SHOWN IN THIS DRAWING ARE FOR REFERENCE ONLY. THE WORKS AREA BOUNDARY SHALL BE IN ACCORDANCE WITH THE ENGINEERING CONDITIONS FOR TEMPORARY GOVERNMENT LAND ALLOCATION NO. TIS 631.
3. THE CONTRACTOR SHALL NOTE THAT WORKS AREA WA4 IS THE AREA FOR STORAGE OF CORE BOXES FOR OTHER CONTRACTORS OF THE EMPLOYER.
4. THE CONTRACTOR SHALL TAKE UP AND MAINTAIN THE EXISTING CHAIN LINE FENCE AND GATE, PROVIDE THE SECURITY, SITE CLEANINESS AND TIDINESS FOR THE WORKS AREA.
5. THE CONTRACTOR SHALL NOTE THAT THE SETTING OUT COORDINATES OF WORKS AREA WA4 ARE TENTATIVE ONLY AND THE CONTRACTOR SHALL VERIFY THE SETTING OUT COORDINATES ON SITE.

LEGEND:

- WORKS AREA WA4
- EXISTING CHAIN LINK FENCE AND GATE

Project Management Initials: Designer: PLCK Checked: SLYY Approved: CWN ISO A1 594mm x 841mm

Plot File by: LIUJ3 2012/11/16
PATH P:\Projects\60240249\DRAWING\CONTRACT\C1\1000\C1_1053.dgn

AECOM

PROJECT 項目
TUEN MUN - CHEK LAP KOK LINK

CONTRACT TITLE
TUEN MUN - CHEK LAP KOK LINK - SOUTHERN CONNECTION VIADUCT SECTION

CLIENT 業主
路政署 HIGHWAYS DEPARTMENT
港珠澳大橋香港工程管理處
Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office

CONSULTANT 工程顧問公司
AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS 分判工程顧問公司

Figure 1.2j

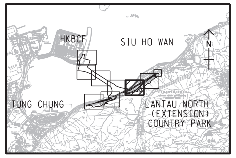
ISSUE/REVISION 修訂

I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 複核
-	NOV. 12	TENDER ADDENDUM NO. 1	CWN

STATUS 階段

SCALE 比例: A1 1 : 1000
DIMENSION UNIT 尺寸單位: METRES

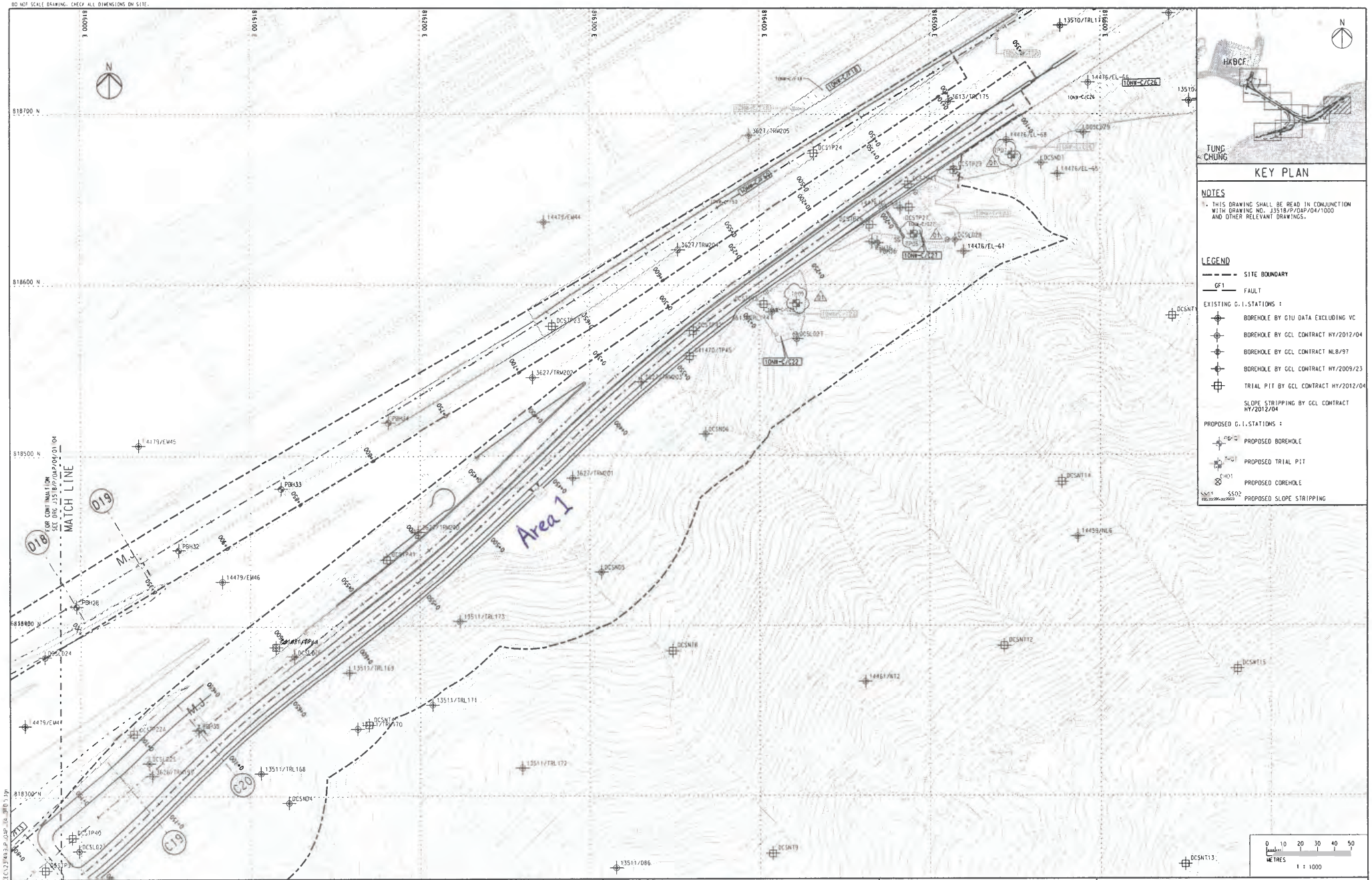
KEY PLAN 索引圖



PROJECT NO. 項目編號: 60240249
CONTRACT NO. 合約編號: HY/2012/07

SHEET TITLE 圖紙名稱
WORKS AREA WA4

SHEET NUMBER 圖紙編號
60240249/C1/1053



Rev.	Description	By	Date	Rev.	Description	By	Date
A	[illegible]	RL	07/13				
B	[illegible]	RL	07/13				
C	[illegible]	RL	09/13				
D1	ETA INTERNAL REVIEW	RL	10/13				

Drawn: RL	Date: 07/13
Checked: DS	Approved: DOP
Scale: 1:1000 @ A1 / 1:2000 @ A3	

Client: 路政署 HIGHWAYS DEPARTMENT 港珠澳大橋香港工程管理處 Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office

Project Title: Contract No. HY/2012/07 Tuen Mun - Chek Lap Kok Link Southern Connection Viaduct Section

Supervising Officer: AECOM

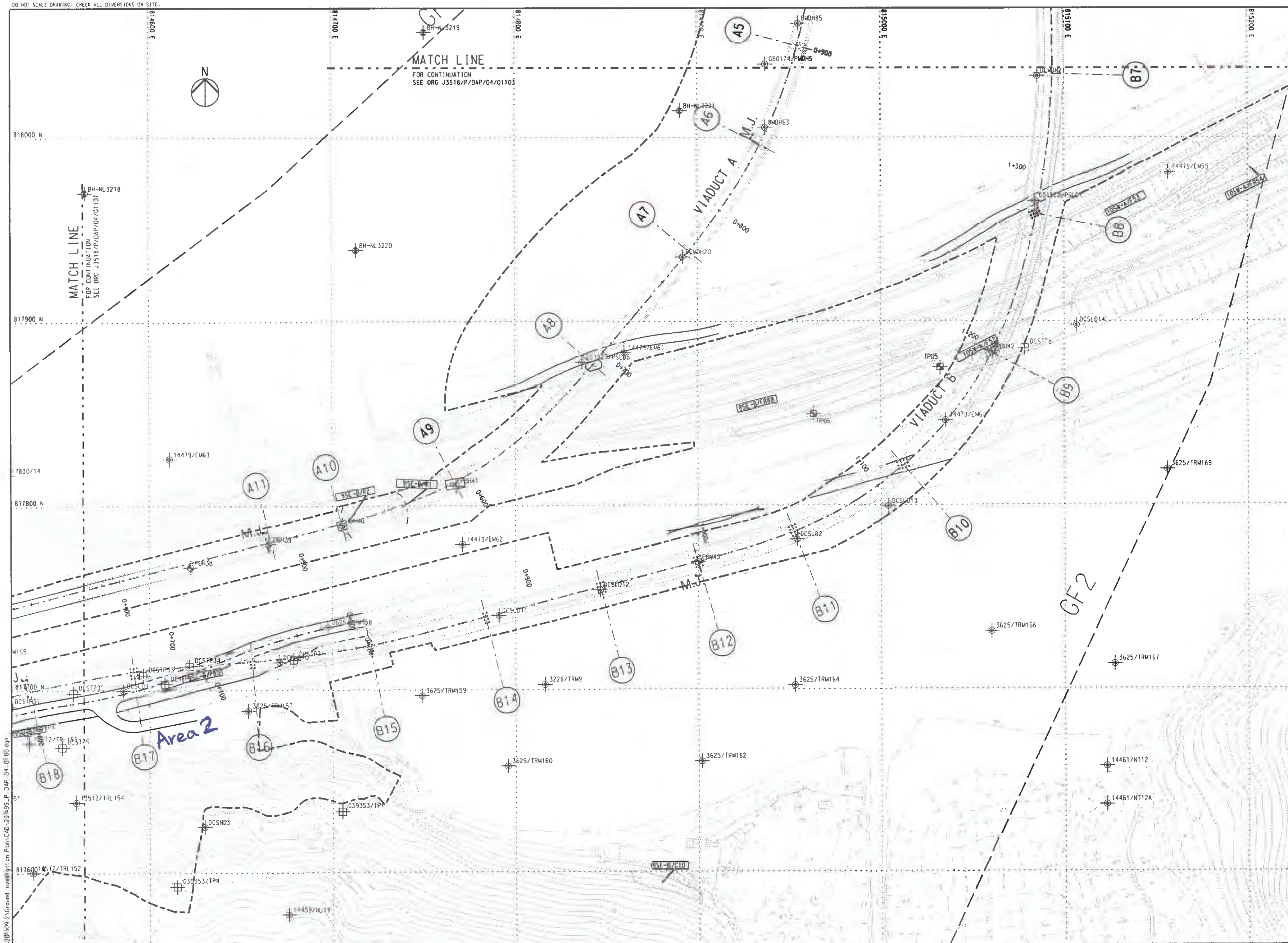
Contractor: Gammon

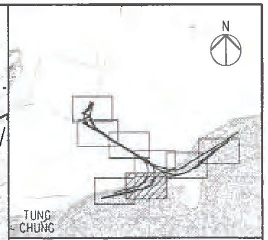
Originator: ARUP

Drawing title: **Figure 1.2k**

Drawing no. J3518/P/OAP/04/01105 Rev. D1

DO NOT SCALE DRAWING. CHECK ALL DIMENSIONS ON SITE.





KEY PLAN

NOTES

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NO. J3518/P/OAP/04/1000 AND OTHER RELEVANT DRAWINGS.

LEGEND

- SITE BOUNDARY
- GF1 FAULT

EXISTING G.I.STATIONS :

- BOREHOLE BY GIU DATA EXCLUDING VC
- BOREHOLE BY GCL CONTRACT HY/2012/04
- BOREHOLE BY GCL CONTRACT NL8/97
- BOREHOLE BY GCL CONTRACT HY/2009/23
- TRIAL PIT BY GCL CONTRACT HY/2012/04
- SLOPE STRIPPING BY GCL CONTRACT HY/2012/04

PROPOSED G.I.STATIONS :

- PB-01 PROPOSED BOREHOLE
- TP01 PROPOSED TRIAL PIT
- CH01 PROPOSED COREHOLE
- SS01 SS02 PROPOSED SLOPE STRIPPING

0 10 20 30 40 50 METRES 1 : 1000

Rev	Description	By	Date
A	SUBMISSION	RC	07/13
B	SUBMISSION	RC	07/13
C	SUBMISSION	RC	09/13

Drawn: RL	Date: 07/13	
Checked: DS	Approved: DOP	
Scale: 1:1000 @ A1 / 1:2000 @ A3		

Client: 路政署 HIGHWAYS DEPARTMENT 港珠澳大橋香港工程管理處 Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office

Supervising Officer: AECOM

Contractor: Gammon

Originator: ARUP

Project Title: Contract No. HY/2012/07 Tuen Mun - Chek Lap Kok Link Southern Connection Viaduct Section

Drawing title:

Figure 1.2I

Drawing no. J3518/P/OAP/04/01106 Rev C

1.2 SCOPE OF REPORT

This is the Fourth Quarterly EM&A Report under the *Contract No. HY/2012/07 Tuen Mun – Chek Lap Kok Link – Southern Connection Viaduct Section.* This report presents a summary of the environmental monitoring and audit works from 1 September 2014 to 30 November 2014.

1.3 ORGANIZATION STRUCTURE

The organization structure of the Contract is shown in *Appendix A*. The key personnel contact names and contact details are summarized in *Table 1.1* below.

Table 1.1 Contact Information of Key Personnel

Party	Position	Name	Telephone	Fax
SOR (AECOM Asia Company Limited)	Chief Resident Engineer	Daniel Ip	3553 3800	2492 2057
	Resident Engineer	Kingman Chan	3691 2950	3691 2899
ENPO / IEC (ENVIRON Hong Kong Ltd.)	ENPO Leader	Y.H. Hui	3465 2888	3465 2899
	IEC	Dr. F.C. Tsang	3465 2828	3465 2899
Contractor (Gammon Construction Limited)	Environmental Manager	Brian Kam	3520 0387	3520 0486
	Environmental Officer	Roy Leung	3520 0387	3520 0486
	24-hour Complaint Hotline		9738 4332	
ET (ERM-HK)	ET Leader	Jovy Tam	2271 3113	2723 5660

1.4 SUMMARY OF CONSTRUCTION WORKS

The construction phase of the Contract commenced on 31 October 2013. The rolling construction programme for the period of September to November 2014 is shown in *Appendix B*.

As informed by the Contractor, details of the major works carried out in this reporting period are listed below:

<u>September 2014</u>

Marine-based Works

- Construction of Pile caps at Viaduct B;
- Marine piling platform installation;
- Marine Piling at Viaducts B & E; and
- Additional marine ground investigation (GI) and laboratory testing.

Land-based Works

- Construction of pile cap superstructure of Viaduct B;
- Fence installation and relocation of Area 2, Viaducts A, B, C & D;
- Land Piling at Viaducts B & C;
- Piling platform installation for Viaducts B, C, D & E;
- Additional land GI, trial pits & lab testing
- Utility surveys; and
- Slope work of Slope 9SE-B/C8, 9SE-B/C9 & 9SE-B/F9.

October 2014

Marine-based Works

- Construction of Pile caps at Viaducts B & E;
- Marine piling platform installation for Viaducts A, B, C, D & E;
- Marine Piling at Viaducts B, C, D & E; and
- Additional marine ground investigation (GI) and laboratory testing.

Land-based Works

- Construction of pile cap superstructure of Viaduct B;
- Channel re-construction at Area 1;
- Land Piling at Viaducts B, C & D;
- Construction of pile cap at Viaducts B & D;
- Additional land GI, trial pits & lab testing;
- Utility surveys; and
- Slope work of Slopes 9SE-B/C8, 9SE-B/C9 & 9SE-B/F9.

November 2014

Marine-based Works

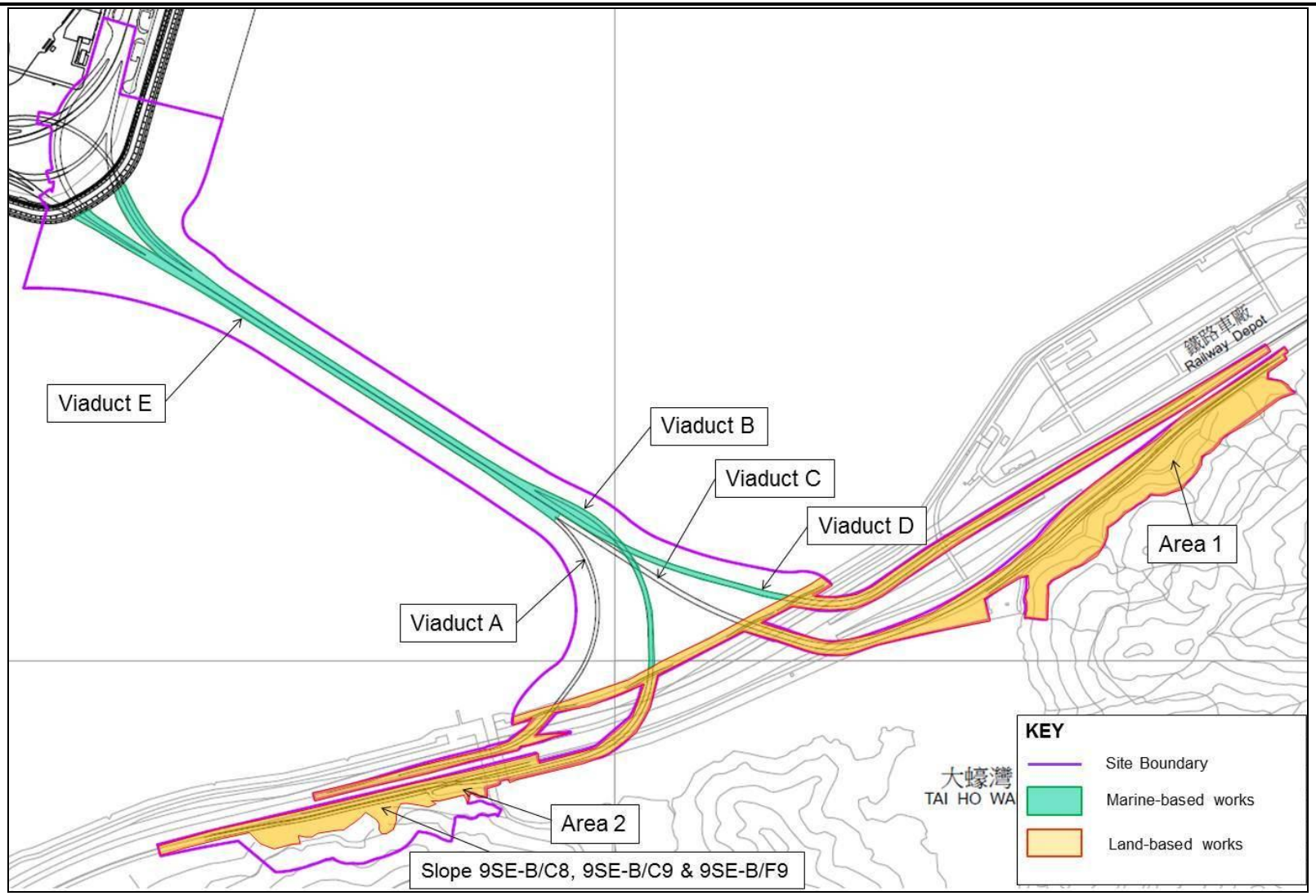
- Construction of Pile caps at Viaduct B & E;
- Marine piling platform installation for Viaducts A, B, C, D & E;
- Marine Piling at Viaducts B, C, D & E; and
- Additional marine ground investigation (GI) and laboratory testing.

Land-based Works

- Construction of pile cap superstructure of Viaduct B;
- Channel re-construction at Area 1;
- Land Piling at Viaducts B, C & D;
- Pre-drilling works at Viaduct A;
- Construction of pile cap at Viaducts B & D;
- Additional land GI, trial pits & lab testing;
- Utility surveys; and
- Slope work of Slopes 9SE-B/C8, 9SE-B/C9 & 9SE-B/F9.

The locations of the construction activities are shown in *Figure 1.3*. The Environmental Sensitive Receivers in the vicinity of the Project are shown in *Figure 1.4*.

Figure 1.3 Locations of Construction Activities in the Reporting Period



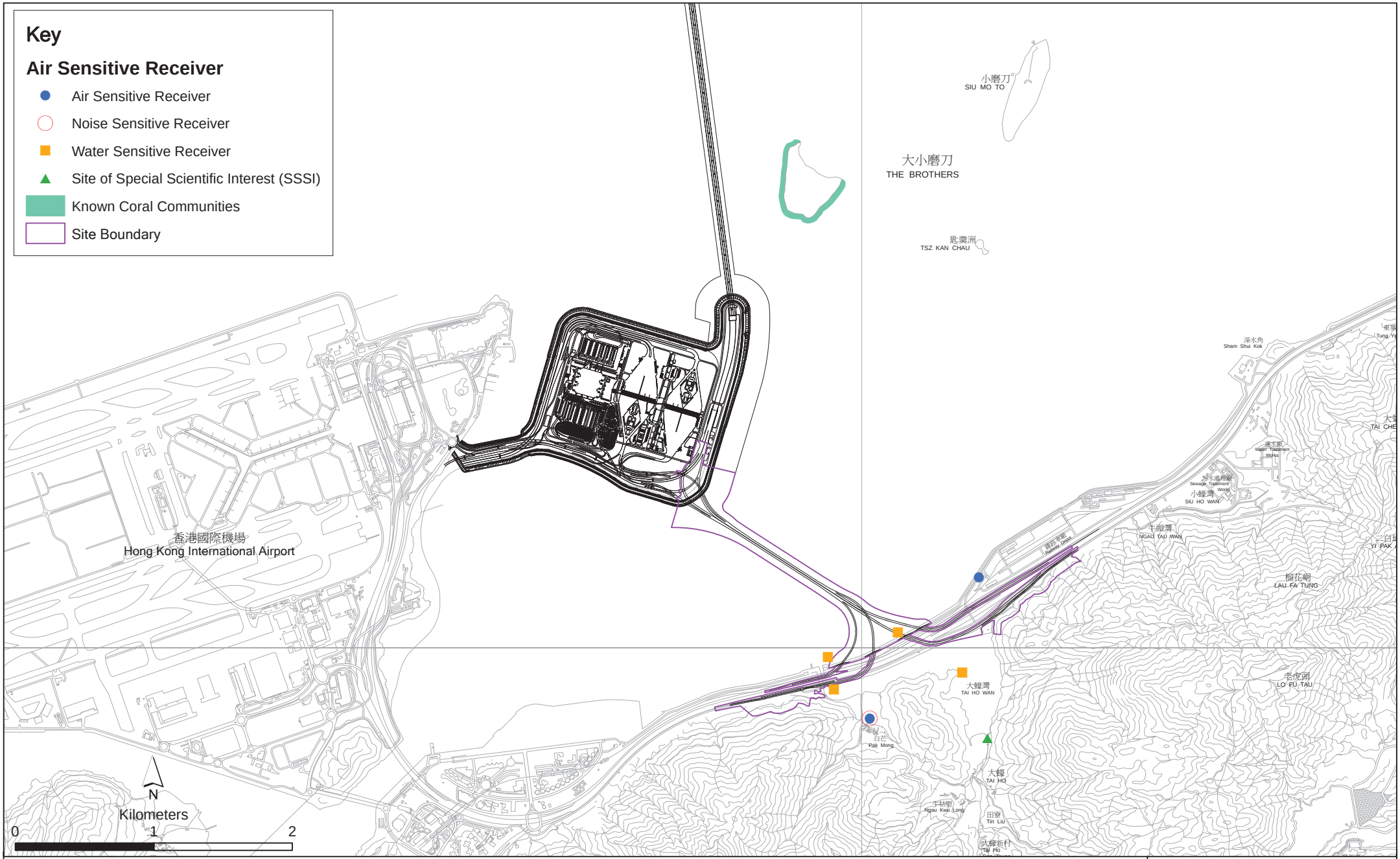


Figure 1.4

Environmental Sensitive Receivers in the Vicinity of Contract No. HY/2012/07
Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section

File: T:\GIS\CONTRACT\0215660\Mxd\0215660_Environmental_Sensitive_Receiver.mxd
Date: 7/8/2014

Environmental Resources Management

ERM

The environmental mitigation measures implementation schedule are presented in *Appendix C*.

1.5 SUMMARY OF EM&A PROGRAMME REQUIREMENTS

The EM&A programme required environmental monitoring for air quality, noise, water quality and marine ecology as well as environmental site inspections for air quality, noise, water quality, waste management, marine ecology and landscape and visual impacts. The EM&A requirements and related findings for each component are described in the following sections, which include:

- Monitoring parameters;
- Monitoring schedules for the reporting months and forthcoming months;
- Action and Limit levels for all environmental parameters;
- Event Action Plan;
- Results and observations;
- Environmental mitigation measures, as recommended in the approved EIA Report; and
- Environmental requirement in contract documents.

2 EM&A RESULTS

The EM&A programme required environmental monitoring for air quality, noise, water quality and marine ecology as well as environmental site inspections for air quality, noise, water quality, waste management, marine ecology and landscape and visual impacts. The EM&A requirements and related findings for each component are summarized in the following sections.

2.1 AIR QUALITY

The baseline air quality monitoring undertaken by the Hong Kong – Zhuhai – Macao Bridge Hong Kong Projects (HKZMB) during October 2011 has included the two monitoring stations ASR9A and ASR9C for this project. Thus, the baseline monitoring results and Action/ Limit Level presented in HKZMB Baseline Monitoring Report [1] are adopted for this Project.

2.1.1 *Monitoring Requirements and Equipment*

In accordance with the Updated EM&A Manual, impact 1-hour TSP monitoring was conducted three (3) times every six (6) days while the highest dust impact was expected. Impact 24-hour TSP monitoring was carried out once every six (6) days. The Action and Limit Level of the air quality monitoring is provided in *Appendix D*.

Air quality monitoring stations ASR9A and ASR9C in Siu Ho Wan MTRC Depot were the proposed locations in accordance with the Updated EM&A Manual. However, authorization of getting access into Siu Ho Wan MTRC Depot was not granted for the impact monitoring of the EM&A programme for the captioned Contract. Air quality monitoring stations in Siu Ho Wan MTRC Depot (ASR9A and ASR9C) were relocated to Area 4 (ASR8A) and rooftop of Pak Mong Village (ASR8) respectively since November 2013. A proposal for setting up alternative air quality monitoring stations at ASR8A (Area 4) and ASR8 (Rooftop of Pak Mong Village Watch Tower) was submitted on 13 November 2013 which was subsequently approved. Same baseline and Action/Limit Level for air quality, as derived from the baseline monitoring data recorded at Siu Ho Wan MTRC Depot, were adopted for these temporary air quality monitoring locations (*Figure 2.1; Table 2.1*).

High Volume Samplers (HVSs) were used for carrying out 1-hour and 24-hour TSP monitoring during the reporting period. The HVS meets all requirements of the Updated EM&A Manual. Brand and model of the equipment is given in *Table 2.2*.

Wind data monitoring equipment has been installed at the rooftop of Pak Mong Village Watch Tower during the reporting period for logging wind

[1] *Agreement No. CE 35/2011 (EP) Baseline Environmental Monitoring for Hong Kong - Zhuhai - Macao Bridge Hong Kong Projects - Investigation*. Baseline Environmental Monitoring Report (Version C). Submitted on 8 March 2012 and subsequently approved by EPD.

Key

- Original Monitoring Station
- Alternative Monitoring Station
- Site Boundary

AQMS	X	Y
ASR9A	815847.40	818508.64
ASR9C	816399.52	818946.65
ASR8	815059.45	817488.99
ASR8A	815856.14	818118.14

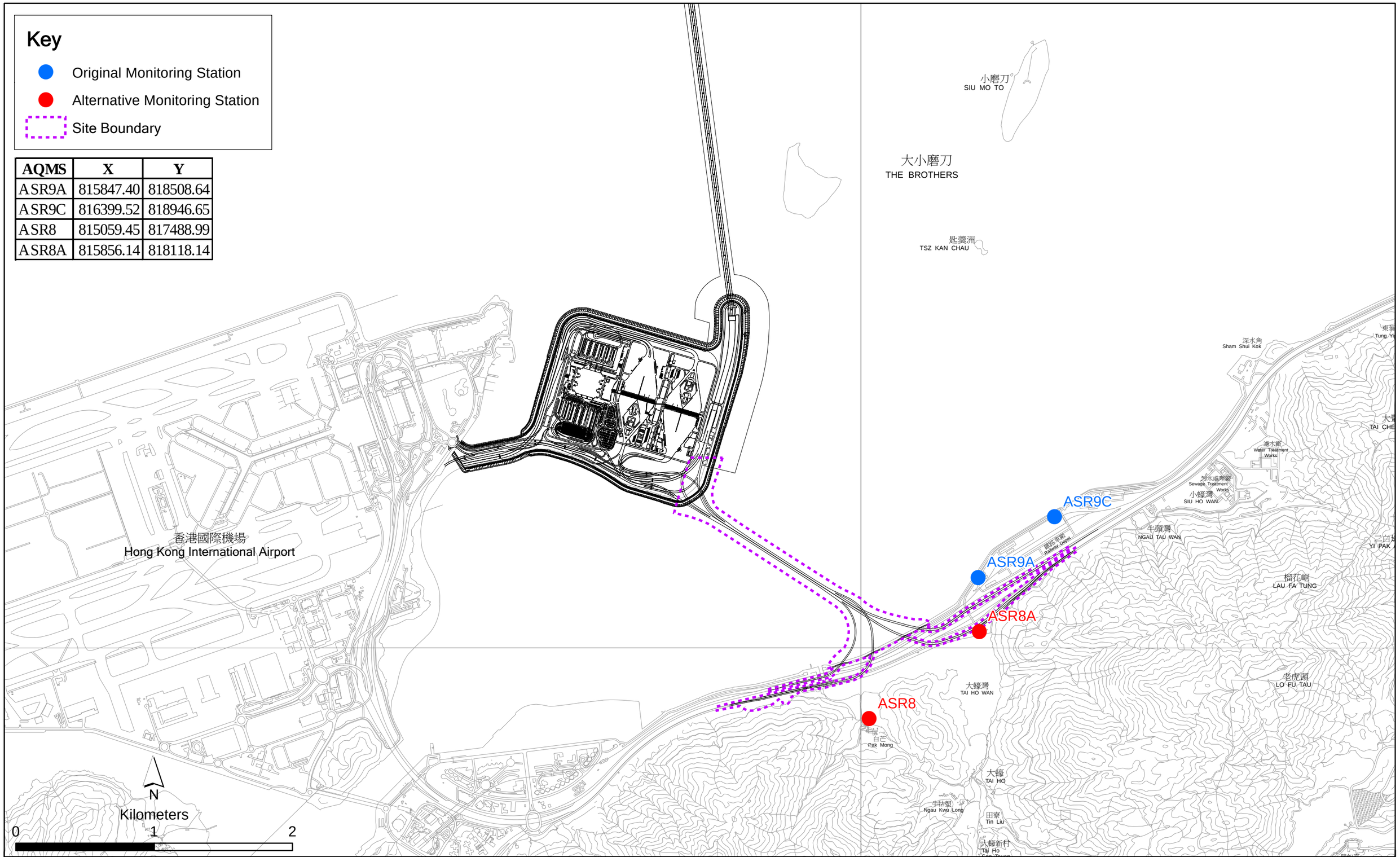


Figure 2.1

Locations of Air Quality Monitoring Stations

File: T:\GIS\CONTRACT\0215660\Mxd\0215660_AQMS.mxd
Date: 6/12/2013

Remark: Air Quality Monitoring Stations ASR9A and ASR9C (Siu Ho Wan MTRC Depot) proposed in accordance with the Updated EM&A were temporarily relocated to ASR8A and ASR8, respectively.

Environmental Resources Management

ERM

speed and wind direction. The wind sensor was setup such as it was clear of obstructions or turbulence caused by building. The wind data monitoring equipment is recalibrated at least once every six months.

Due to the rejection of access to Pak Mong Village, monitoring results of 1-hour TSP and 24-hour TSP at ASR 8 and meteorological data was not recorded on 26 November 2014. The *Proposal of Alternative Dust and Noise Monitoring Stations* [1] was submitted to EPD on 2 December 2014, in which the HVS at ASR 8 was proposed to be relocated to Entrance of MTR Depot and the wind anemometer to be relocated to ASR 8A in accordance with the requirements of the Updated EM&A Manual.

Table 2.1 Locations of Impact Air Quality Monitoring Stations and Monitoring Dates in this Reporting Period

Monitoring Station (1)	Monitoring Period	Location	Description	Parameters & Frequency
ASR8A	1, 5, 11, 17, 23 and 27 September 2014; 3, 9, 15, 21, 27 and 30 October 2014; 5, 11, 17, 20 and 26 November 2014	Area 4	On ground at the Area 4	• 1-hour Total Suspended Particulates (1-hour TSP, µg/m³), 3 times per day every 6 days • 24-hour Total Suspended Particulates (24-hour TSP, µg/m³), daily for 24-hour every 6 days
ASR8	1, 5, 11, 17, 23 and 27 September 2014; 3, 9, 15, 21, 27 and 30 October 2014; 5, 11, 17 and 20 November 2014	Pak Mong Village Watch Tower	Rooftop of the premise	

Note:
(1) Air Quality Monitoring Stations ASR9A and ASR9C at Siu Ho Wan MTRC Depot proposed in accordance with the Updated EM&A were temporarily relocated to ASR 8A and ASR8, respectively.
(2) Due to the rejection of access to ASR8, the monitoring on 26 at ASR8 was cancelled.

Table 2.2 Air Quality Monitoring Equipment

Equipment	Brand and Model
High Volume Sampler (1-hour TSP and 24-hour TSP)	Tisch Environmental Mass Flow Controlled Total Suspended Particulate (TSP) High Volume Sampler (Model No. TE-5170)
Wind Sensor	Global Water (Wind Speed Sensor: WE550; Wind Direction Sensor: WE570)
Wind Anemometer for calibration	Lutron (Model No. AM-4201)

2.1.2 Action & Limit Levels

The Action and Limit Levels of the air quality monitoring are provided in *Appendix D*. The Event and Action plan is presented in *Appendix J*.

(1) The *Proposal of Alternative Dust and Noise Monitoring Stations* with the agreement letter from IEC and SOR was submitted to EPD on 2 December 2014, and subsequently replied with no objection on 4 December 2014.

2.1.3 *Monitoring Schedule for the Reporting Quarter*

The schedules for air quality monitoring in the reporting quarter are provided in *Appendix E.*

2.1.4 *Results and Observations*

The monitoring results for 1-hour TSP and 24-hour TSP are summarized in *Tables 2.3* and *2.4,* respectively. Monitoring results are presented graphically in *Appendix F* and detailed impact air quality monitoring results and meteorological information were reported in the *Eleventh* to *Thirteenth Monthly EM&A Report.*

Table 2.3 Summary of 1-hour TSP Monitoring Results in this Reporting Period

Month	Station	Average (μg/m³)	Range (μg/m³)	Action Level (μg/m³)	Limit Level (μg/m³)
September 2014	ASR 8A	89	60 - 148	394	500
	ASR 8	80	59 - 130	393	500
October 2014	ASR 8A	106	54 - 175	394	500
	ASR 8	130	67 - 243	393	500
November 2014	ASR 8A	88	56 - 152	394	500
	ASR 8	106	54 - 235	393	500

Table 2.4 Summary of 24-hour TSP Monitoring Results in this Reporting Period

Month	Station	Average (μg/m³)	Range (μg/m³)	Action Level (μg/m³)	Limit Level (μg/m³)
September 2014	ASR 8A	51	41 - 60	178	260
	ASR 8	49	39 - 65	178	260
October 2014	ASR 8A	60	46 - 79	178	260
	ASR 8	71	46 - 101	178	260
November 2014	ASR 8A	63	46 - 83	178	260
	ASR 8	69	56 - 80	178	260

The major dust sources in the reporting period include construction activities under the Contract as well as nearby traffic emissions.

In this reporting period, a total of sixteen (16) monitoring events at ASR8 and seventeen (17) monitoring event at ASR8A were undertaken within the reporting period, in which no Action or Limit Level exceedances for 1-hour and 24-hour TSP for air quality were recorded during the reporting period.

2.2 NOISE MONITORING

The baseline noise monitoring undertaken by the Hong Kong – Zhuhai – Macao Bridge Hong Kong Projects (HKZMB) during the period of 18 October to 1 November 2011 has included the monitoring station NSR1 for this project. Thus, the baseline monitoring results and Action/ Limit Level presented in *HKZMB Baseline Monitoring Report* [1] are adopted for this Project.

2.2.1 Monitoring Requirements and Equipment

In accordance with the Updated EM&A Manual, impact noise monitoring was conducted once per week during the construction phase of the Contract at NSR1.

Monitoring location was set up at NSR1 in accordance with the Updated EM&A Manual. *Figure 2.2* shows the location of the monitoring station. *Table 2.5* describes the details of the monitoring station.

Noise monitoring was performed using sound level meter at each designated monitoring station. The sound level meters deployed comply with the International Electrotechnical Commission Publications (IEC) 651:1979 (Type 1) and 804:1985 (Type 1) specifications. Acoustic calibrator was deployed to check the sound level meters at a known sound pressure level. Brand and model of the equipment is given in *Table 2.6*.

Due to the rejection of access to Pak Mong Village, no noise monitoring results at NSR1 was recorded on 26 November 2014. The *Proposal of Alternative Dust and Noise Monitoring Stations* [2] was submitted to EPD on 2 December 2014, in which the noise monitoring station was proposed to be relocated to the Pak Mong Village Pavilion in accordance with the requirements of the Updated EM&A Manual.

Table 2.5 Location of Impact Noise Monitoring Station and Monitoring Dates in this Reporting Period

Monitoring Station	Monitoring Period	Location	Parameters & Frequency
NSR1	September 2014 to November 2014	Pak Mong Village Watch Tower	• 30-mins measurement at each monitoring station between 0700 and 1900 on normal weekdays (Monday to Saturday). L_{eq}, L_{10} and L_{90} would be recorded. • At least once a week

Note:
(1) Due to the rejection of access to NSR1, the monitoring on 26 at NSR1 was cancelled.

(1) *Agreement No. CE 35/2011 (EP) Baseline Environmental Monitoring for Hong Kong - Zhuhai - Macao Bridge Hong Kong Projects - Investigation*. Baseline Environmental Monitoring Report (Version C). Submitted on 8 March 2012 and subsequently approved by EPD.

(2) The *Proposal of Alternative Dust and Noise Monitoring Stations* with the agreement letter from IEC and SOR was submitted to EPD on 2 December 2014, and subsequently replied with no objection on 4 December 2014.

Key

- Noise Monitoring Station
- Site Boundary

NMS	X	Y
NSR1	815059.45	817488.99

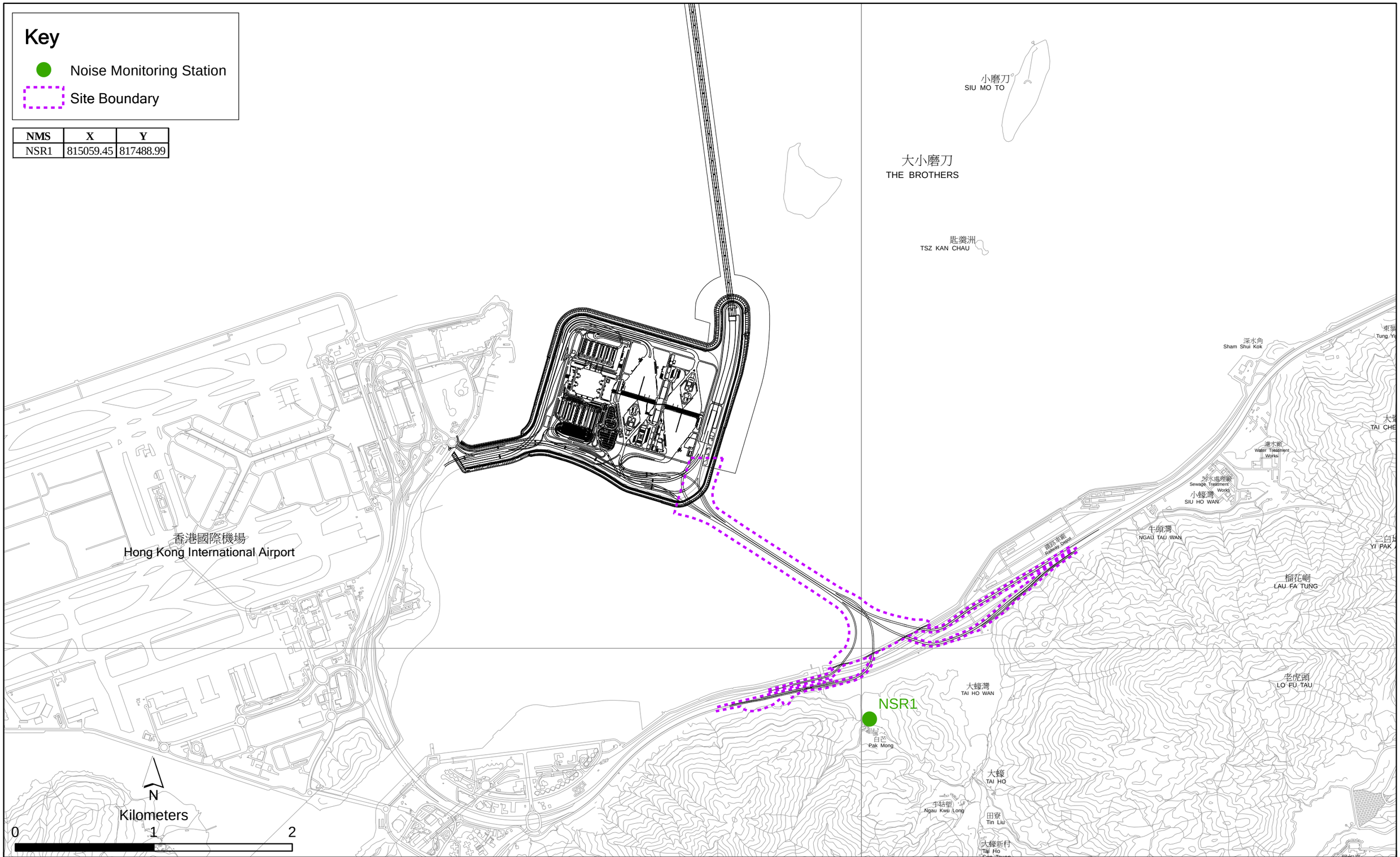


Figure 2.2

Locations of Noise Monitoring Stations

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Table 2.6 Noise Monitoring Equipment

Equipment	Brand and Model
Integrated Sound Level Meter	Rion NL-31
Acoustic Calibrator	Rion NC-73

2.2.2 Action and Limit Levels

The Action and Limit levels of the noise monitoring are provided in *Appendix D*. The Event and Action plan is presented in *Appendix J*.

2.2.3 Monitoring Schedule for the Reporting Quarter

The schedules for noise monitoring in the reporting quarter are provided in *Appendix E*.

2.2.4 Results and Observations

The monitoring results for noise monitoring are summarized in *Table 2.7*. Monitoring results are presented graphically in *Appendix G* and detailed impact noise monitoring results are reported in the *Eleventh* to *Thirteenth Monthly EM&A Report*.

Table 2.7 Summary of Construction Noise Monitoring Results at NSR1 in the Reporting Period

Month	Average , dB(A), L_{eq} (30mins)	Range, dB(A), L_{eq} (30mins)	Limit Level, dB(A), L_{eq} (30mins)
September 2014	57	55 - 59	75
October 2014	57	56 - 59	75
November 2014	58	57 – 59	75

A total of sixteen (16) monitoring events were undertaken in the reporting period with no Action Level and Limit Level exceedance recorded at all monitoring stations in the reporting period. No action is thus required to be undertaken in accordance with the Event Action Plan presented in *Appendix J*.

Major noise sources during the noise monitoring included construction activities, nearby traffic noise and aircraft noise.

2.3 WATER QUALITY MONITORING

The baseline water quality monitoring undertaken by the Hong Kong – Zhuhai – Macao Bridge Hong Kong Projects (HKZMB) between 6 and 31 October 2011 has included all monitoring stations except SR4a for the Project. Thus, the baseline monitoring results except for station SR4a and Action/Limit Level presented in HKZMB Baseline Monitoring Report [1] are adopted for this Project. Baseline water quality monitoring was conducted at station SR4a from 29 August to 24 September 2013.

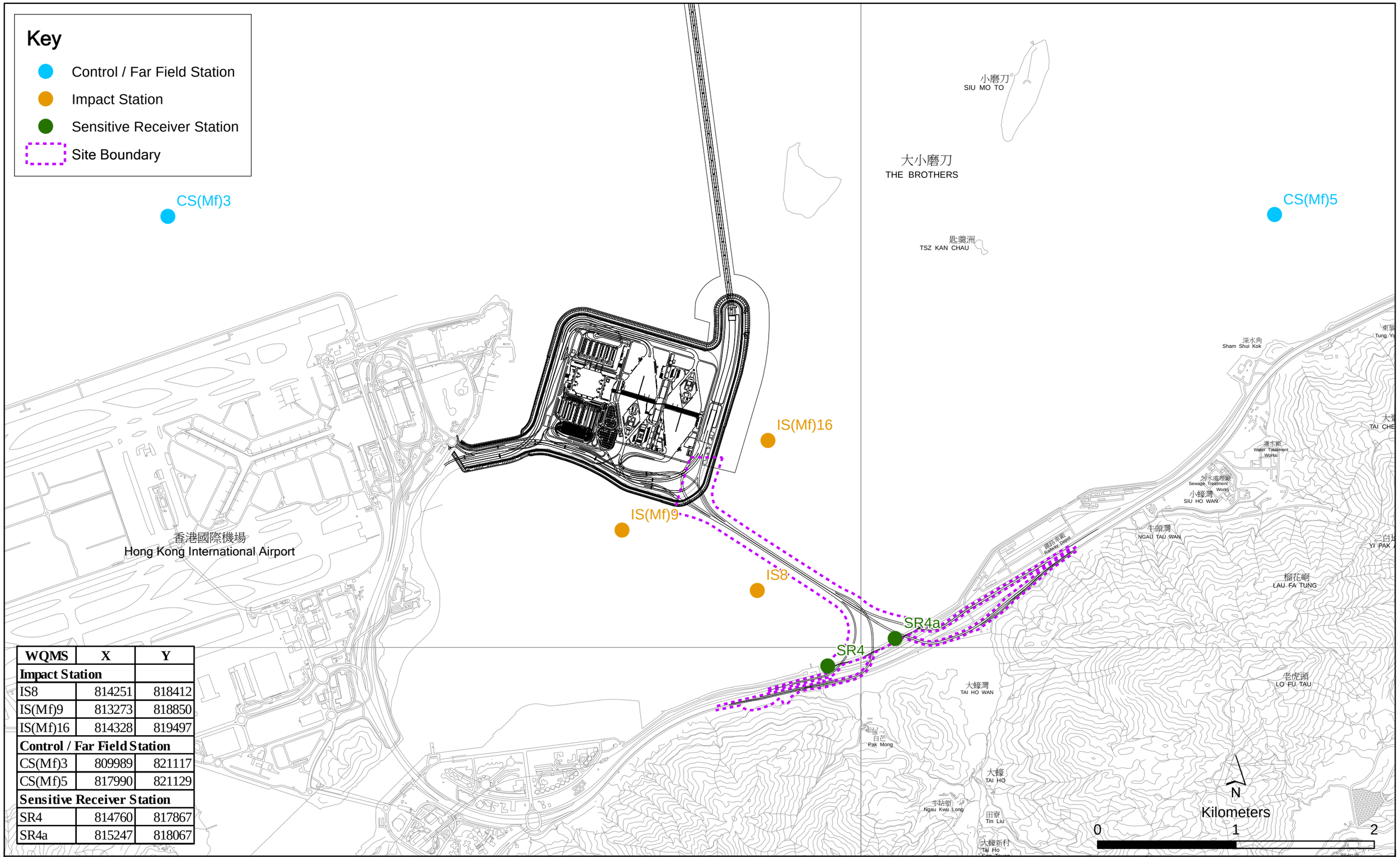
2.3.1 Monitoring Requirements and Equipment

Impact water quality monitoring was carried out to ensure that any deterioration of water quality was detected, and that timely action was taken to rectify the situation. Impact water quality monitoring was undertaken three days per week during the construction period at seven water quality monitoring stations in accordance with the Updated EM&A Manual (*Figure 2.3*; *Table 2.8*).

Table 2.8 Locations of Water Quality Monitoring Stations and the Corresponding Monitoring Requirements

Station ID	Type	Coordinates		*Parameters, unit	Depth	Frequency
		Easting	Northing			
IS(Mf)9	Impact Station (Close to HKBCF construction site)	813273	818850	• Temperature(°C) • pH(pH unit) • Turbidity (NTU) • Water depth (m) • Salinity (ppt) • DO (mg/L and % of saturation) • SS (mg/L)	3 water depths: 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth less than 6m, mid-depth may be omitted.	Impact monitoring: 3 days per week, at mid-flood and mid-ebb tides during the construction period of the Contract.
IS(Mf)16	Impact Station (Close to HKBCF construction site)	814328	819497			
IS8	Impact Station(Close to HKBCF construction site)	814251	818412			
SR4	Sensitive receiver (Tai Ho Inlet)	814760	817867			
SR4a	Sensitive receiver	815247	818067			
CS(Mf)3	Control Station	809989	821117			
CS(Mf)5	Control Station	817990	821129			

[1] *Agreement No. CE 35/2011 (EP) Baseline Environmental Monitoring for Hong Kong - Zhuhai - Macao Bridge Hong Kong Projects - Investigation*. Baseline Environmental Monitoring Report (Version C). Submitted on 8 March 2012 and subsequently approved by EPD.



WQMS	X	Y
Impact Station		
IS8	814251	818412
IS(Mf)9	813273	818850
IS(Mf)16	814328	819497
Control / Far Field Station		
CS(Mf)3	809989	821117
CS(Mf)5	817990	821129
Sensitive Receiver Station		
SR4	814760	817867
SR4a	815247	818067

Figure 2.3

Locations of Water Quality Monitoring Stations

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Date: 6/12/2013

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Station ID	Type	Coordinates		*Parameters, unit	Depth	Frequency
		Easting	Northing			
Notes: In addition to the parameters presented monitoring location/position, time, water depth, sampling depth, tidal stages, weather conditions and any special phenomena or works underway nearby were also recorded.						

Table 2.9 summarizes the equipment used in the impact water quality monitoring programme.

Table 2.9 Water Quality Monitoring Equipment

Equipment	Brand and Model
DO, Temperature meter and Salinity	YSI Pro2030
Turbidimeter	HACH Model 2100Q
pH meter	HANNA HI8314
Positioning Equipment	Koden913MK2 with KBG-3 DGPS antenna
Water Depth Detector	Speedtech Instrument SM-5
Water Sampler	Kemmerer 1520 (1520-C25) 2.2L with messenger

2.3.2 Action & Limit Levels

The Action and Limit Levels of the water quality monitoring are provided in *Appendix D*.

2.3.3 Monitoring Schedule for the Reporting Quarter

The schedules for water quality monitoring in the reporting quarter are provided in *Appendix E*. No impact water quality monitoring was conducted on 9 and 16 September 2014 due to suspension of marine works and adverse weather condition, respectively.

2.3.4 Results and Observations

Impact water quality monitoring was conducted at all designated monitoring stations in the reporting period. Monitoring results are presented graphically in *Appendix H* and detailed impact water quality monitoring results were reported in the *Eleventh* to *Thirteenth Monthly EM&A Report*.

In this reporting period, a total of Thirty-nine (37) monitoring events were undertaken in which no Action or Limit Level exceedance were recorded during the reporting quarter.

2.4 DOLPHIN MONITORING

2.4.1 Monitoring Requirements

Impact dolphin monitoring is required to be conducted by a qualified dolphin specialist team to evaluate whether there have been any effects on the dolphins. In order to fulfil the EM&A requirements and make good use of available resources, the on-going impact line transect dolphin monitoring data collected by HyD's *Contract No. HY/2011/03 Hong Kong-Zhuhai-Macao Bridge. Hong Kong Link Road - Section between Scenic Hill and Hong Kong Boundary Crossing Facilities* on the monthly basis is adopted to avoid duplicates of survey effort.

2.4.2 Monitoring Equipment

Table 2.10 summarises the equipment used for the impact dolphin monitoring.

Table 2.10 Dolphin Monitoring Equipment

Equipment	Model
Global Positioning System (GPS)	Garmin 18X-PC
	Geo One Phottix
Camera	Nikon D90 300m 2.8D fixed focus
	Nikon D90 20-300m zoom lens
Laser Binoculars	Infinitor LRF 1000
Marine Binocular	Bushell 7 x 50 marine binocular with compass and reticules
Vessel for Monitoring	65 foot single engine motor vessel with viewing platform 4.5m above water level

2.4.3 Monitoring Parameter, Frequencies & Duration

Dolphin monitoring should cover all transect lines in Northeast Lantau (NEL) and the Northwest Lantau (NWL) survey areas twice per month throughout the entire construction period. The monitoring data should be compatible with, and should be made available for, long-term studies of small cetacean ecology in Hong Kong. In order to provide a suitable long-term dataset for comparison, identical methodology and line transects employed in baseline dolphin monitoring was followed in the impact dolphin monitoring.

2.4.4 Monitoring Location

The impact dolphin monitoring was carried out in the NEL and NWL along the line transect as depicted in *Figure 2.4*. The co-ordinates of all transect lines are shown in *Table 2.11* below.

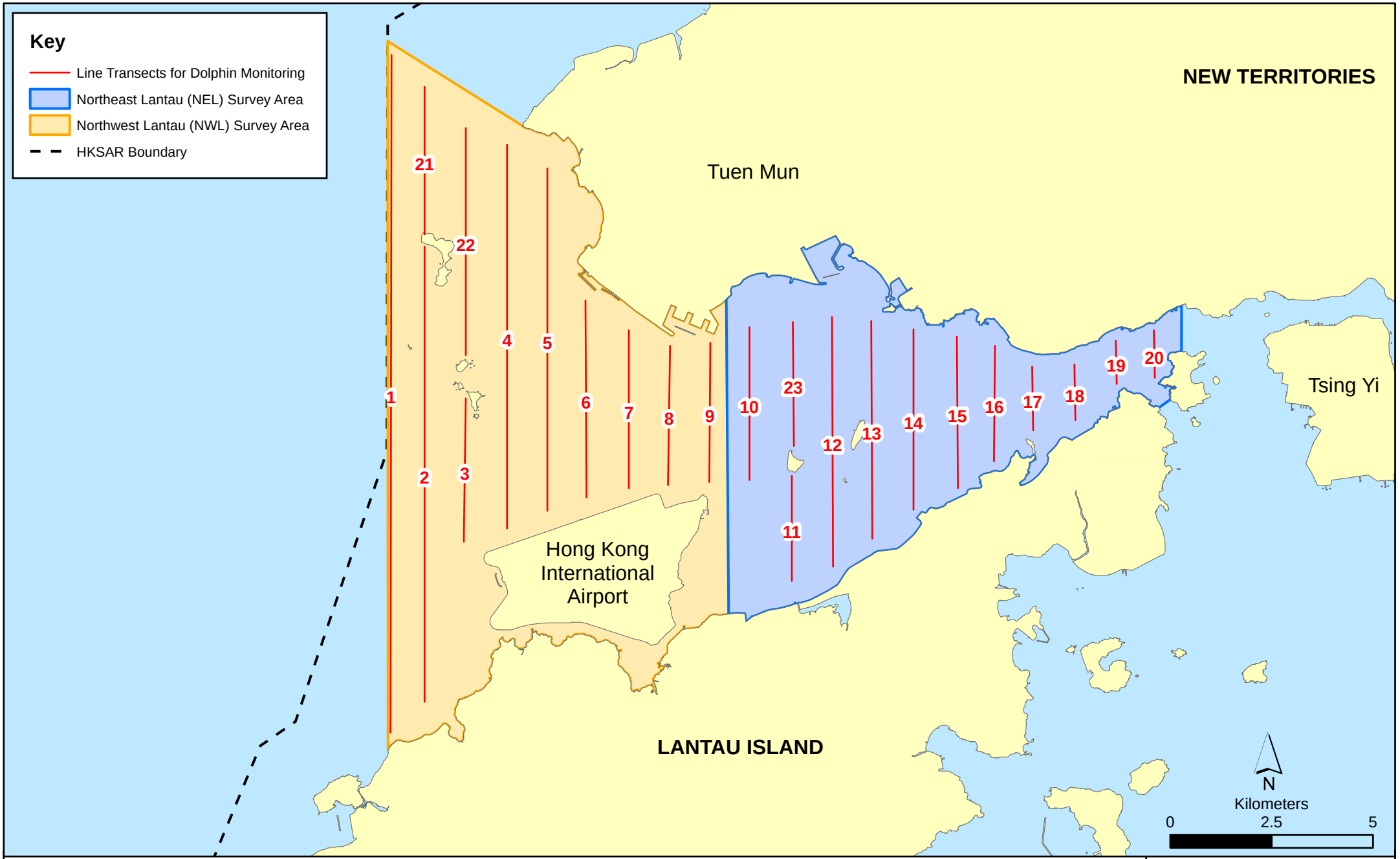

Figure 2.4

Layout of Transect Lines of Dolphin Monitoring in Northwest and Northeast Lantau Areas

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Table 2.11 Impact Dolphin Monitoring Line Transect Co-ordinates

Line No.		Easting	Northing	Line No.		Easting	Northing
1	Start Point	804671	814577	13	Start Point	816506	819480
1	End Point	804671	831404	13	End Point	816506	824859
2	Start Point	805475	815457	14	Start Point	817537	820220
2	End Point	805477	826654	14	End Point	817537	824613
3	Start Point	806464	819435	15	Start Point	818568	820735
3	End Point	806464	822911	15	End Point	818568	824433
4	Start Point	807518	819771	16	Start Point	819532	821420
4	End Point	807518	829230	16	End Point	819532	824209
5	Start Point	808504	820220	17	Start Point	820451	822125
5	End Point	808504	828602	17	End Point	820451	823671
6	Start Point	809490	820466	18	Start Point	821504	822371
6	End Point	809490	825352	18	End Point	821504	823761
7	Start Point	810499	820690	19	Start Point	822513	823268
7	End Point	810499	824613	19	End Point	822513	824321
8	Start Point	811508	820847	20	Start Point	823477	823402
8	End Point	811508	824254	20	End Point	823477	824613
9	Start Point	812516	820892	21	Start Point	805476	827081
9	End Point	812516	824254	21	End Point	805476	830562
10	Start Point	813525	820872	22	Start Point	806464	824033
10	End Point	813525	824657	22	End Point	806464	829598
11	Start Point	814556	818449	23	Start Point	814559	821739
11	End Point	814556	820992	23	End Point	814559	824768
12	Start Point	815542	818807				
12	End Point	815542	824882				

2.4.5 *Action & Limit Levels*

The action and limit levels of dolphin impact monitoring are shown in *Appendix D*. The Event and Action plan is presented in *Appendix J*.

2.4.6 *Monitoring Schedule for the Reporting Period*

The dolphin monitoring schedules for the reporting period are shown in *Appendix E*.

2.4.7 *Results & Observations*

A total of 892.88 km of survey effort was conducted, with 97.1% of the total survey effort being conducted under favourable weather conditions (i.e. Beaufort Sea State 3 or below with good visibility). Among the two areas,

343.71 km and 549.17 km of survey effort were conducted in NEL and NWL survey areas respectively. The total survey effort conducted on primary lines was 644.60 km, while the effort on secondary lines was 248.28 km. Both survey efforts conducted on primary and secondary lines were considered as on-effort survey data. The survey efforts are summarized in *Appendix I*.

During the six sets of monitoring surveys from September to November 2014, a total of twenty-four (24) groups of ninety-three (93) Chinese White Dolphins were sighted. All except four (4) dolphin sightings were made on primary lines during on-effort search and none of the dolphin groups was associated with operating fishing vessel. No sighting was made in the proximity of the Project's alignment. In this quarterly period, all dolphin groups were sighted in NWL, while none of them were sighted in NEL. Summary table of the dolphin sightings is shown in *Appendix I*.

For the detailed comparison of dolphin occurrence and usage of NEL and NWL survey area between the impact phase and baseline phase monitoring, only the quarterly data of September 2014 to November 2014 from the impact phase monitoring was used in the present report to tally with the three-month period of baseline monitoring (September 2011 to November 2011).

Another comparison in dolphin distribution was made between the two quarterly periods of autumn months in 2013 and 2014 was also made

Between the two autumn periods, none of the dolphin sightings was made in NEL in autumn 2014, while there were two (2) sightings made in autumn 2013. Moreover, more dolphin sightings were made in the middle and western portions of North Lantau waters in the autumn of 2013 than in the autumn of 2014.

Encounter rates of Chinese White Dolphins deduced from the survey effort and on-effort sighting data from the primary transect lines under favourable conditions (Beaufort 3 or below) in the reporting period with the results presented in *Tables 2.12* and *2.13*.

Table 2.12 Individual Survey Event Encounter Rates

Survey Area	**Survey period**	**Encounter rate (STG) (no. of on-effort dolphin sightings per 100 km of survey effort)**	**Encounter rate (ANI) (no. of dolphins from all on-effort sightings per 100 km of survey effort)**
		Primary Lines Only	Primary Lines Only
NEL	Set 1 (2 & 11 Sept 2014)	0.0	0.0
	Set 2 (19 & 22 Sept 2014)	0.0	0.0
	Set 3 (7 & 13 Oct 2014)	0.0	0.0
	Set 4 (16 & 23 Oct 2014)	0.0	0.0
	Set 5 (4 & 10 Nov 2014)	0.0	0.0
	Set 6 (12 & 18 Nov 2014)	0.0	0.0
NWL	Set 1 (2 & 11 Sept 2014)	5.7	28.6
	Set 2 (19 & 22 Sept 2014)	4.3	18.8
	Set 3 (7 & 13 Oct 2014)	13.1	42.7
	Set 4 (16 & 23 Oct 2014)	0.0	0.0

Survey Area	Survey period	Encounter rate (STG) (no. of on-effort dolphin sightings per 100 km of survey effort)	Encounter rate (ANI) (no. of dolphins from all on-effort sightings per 100 km of survey effort)
		Primary Lines Only	Primary Lines Only
	Set 5 (4 & 10 Nov 2014)	4.6	24.5
	Set 6 (12 & 18 Nov 2014)	2.8	8.5

Note: Dolphin Encounter Rates are deduced from the six sets of surveys (two surveys in each set) in the reporting period in Northeast (NEL) and Northwest Lantau (NWL)

Table 2.13 Quarterly Average Encounter Rates

Survey Area	Encounter rate (STG) (no. of on-effort dolphin sightings per 100 km of survey effort)		Encounter rate (ANI) (no. of dolphins from all on-effort sightings per 100 km of survey effort)	
	September – November 2014	**September - November 2011**	**September – November 2014**	**September - November 2011**
Northeast Lantau	0.00	6.00 ± 5.05	0.00	22.19 ± 26.81
Northwest Lantau	5.10 ± 4.40	9.85 ± 5.85	20.52 ± 15.10	44.66 ± 29.85

Note: encounter rates deduced from the baseline monitoring period have been recalculated based only on survey effort and on-effort sighting data made along the primary transect lines under favourable conditions

Group size of Chinese White Dolphins ranged from one (1) to thirteen (13) individuals per group in North Lantau region during September – November 2014. The average dolphin group sizes from these three months were compared with the ones deduced from the baseline period in September to November 2011, as shown in *Table 2.14*.

Table 2.14 Comparison of Quarterly Average Encounter Rates

	Average Dolphin Group Size	
	September – November 2014	**September -November 2011**
Overall	3.88 ± 2.69 (n = 24)	3.72 ± 3.13 (n = 66)
Northeast Lantau	0.00	3.18 ± 2.16 (n = 17)
Northwest Lantau	3.88 ± 2.69 (n = 24)	3.92 ± 3.40 (n = 49)

Two (2) Action Level exceedances (one Action Level exceedance for Northeast Lantau cluster; one Action Level exceedance for Northwest Lantau social cluster) and no Limit Level exceedance were observed for the quarterly dolphin monitoring data between September and November 2014. During this quarter of dolphin monitoring, no unacceptable impact from the activities of this Contract on Chinese White Dolphins was noticeable from the general observations.

Although the dolphins infrequently occurred along the alignment of TM-CLKL Southern Connection Viaduct Section in the past and during the baseline monitoring period, it is apparent that dolphin usage has been significantly reduced in NEL.

It is critical to monitor the dolphin usage in North Lantau region in the upcoming quarters, to determine whether the dolphins are continuously affected by the various construction activities in relation to the HZMB-related works, and whether suitable mitigation measure can be applied to revert the situation.

2.4.8 Marine Mammal Exclusion Zone Monitoring

Daily marine mammal exclusion zone monitoring was undertaken during the period of marine works under this Contract. Passive Acoustic Monitoring (PAM) was also implemented for the detection of marine mammal when marine works were carried out outside the daylight hours under this Contract. No sighting of the Indo-Pacific humpback dolphin *Sousa chinensis* (i.e. Chinese White Dolphin) was recorded in the monitoring period during the exclusion zone monitoring.

2.5 POST-TRANSLOCATION CORAL MONITORING

The Fourth Quarterly Post-Translocation Coral Monitoring was conducted on 23 October 2014 and no exceedance of Action and Limit Levels was recorded. The results were detailed in the *Fourth Quarterly Post- Translocation Coral Monitoring Report and* were submitted under a separate cover. The findings indicated that the Action or Limit Levels for coral monitoring were not exceeded as increase in percentage of partial mortality was not detected for both the tagged translocated and natural coral colonies when comparing to the pre-translocation dataset.

2.6 EM&A SITE INSPECTION

Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures under the Contract. Thirteen (13) site inspections were carried out in the reporting quarter on 4, 10, 19, 25 and 30 September 2014; 8, 16, 23 and 30 October 2014; 5, 12, 20 and 27 November 2014.

Key observations during the site inspections in this reporting period are summarized in *Table 2.15*.

Table 2.15 Specific Observations Identified during the Weekly Site Inspection in this Reporting Period

Inspection Date	Location & Environmental Observations	Recommendations/ Remarks
4 September 2014	Temporary platform at seafront • Welding machine was not placed on decoupling pad. Pier E9 • Grouting material was observed on the platform. • Chemical container was found disposed improperly. • Dumping permit was expired.	Temporary platform at seafront • Decoupling pad should be provided to the machine. Pier E9 • The excessive grouting material should be cleaned up. • The chemical container was removed immediately. • An updated dumping permit should be provided.
10 September 2014	Site Access 9B • Refuse was accumulated in the drainage on slope. Pak Mong • EP was missing Pier D9 • A chemical container was not placed in drip tray.	Site Access 9B • The container was reminded to remove the refuse in drainage on slope. Pak Mong • The contractor should place the updated EP at the gate. Pier D9 • The chemical container was removed immediately.
19 September 2014	Seafront • Chemical containers were found placed without drip tray. • Stagnant water was found ponding over the tarpaulin sheet inside a skip on rockfill platform. Pier B6 • A drip tray for generator was nearly overflowing. Pier E12 • The dumping permit was found expired.	Seafront • The chemical containers were removed immediately. • Stagnant water was removed immediately. Pier B6 • The contractor was reminded to clear stagnant water. Pier E12 • The contractor was reminded to update the dumping permit.
25 September 2014	Seafront • Stagnant water was accumulated in a drip tray for welding machine. • Waste container was full. • Refuse was accumulated in drainage. Pier B1 • Oil stain was found dispersed in the sea. WA5 • Refuse was accumulated at the site entrance. General reminder • The contractor was reminded to improve the watering system	Seafront • The contractor was reminded to clean up the stagnant water. • The contractor should routinely dispose the waste on site. • No waste should be accumulated in drainage. Pier B1 • The contractor should clean up the oil stain. WA5 • The contractor should remove the refuse.

Inspection Date	Location & Environmental Observations	Recommendations/ Remarks
30 September 2014	WA5 • Chemical containers were found placed without drip tray and oil stain was found at the bottom of them. • A locker was incorrectly labelled 'Chemical Waste'. • A drip tray for generator was unplugged. • Waste water from washing machine had no proper treatment. • Waste paint was found on site. • Chemical waste locker was found damaged. Slope BC9 • A drip tray was found damaged. • Grouting material was found accumulated in the grouting station. • Soil was accumulated on tarpaulin sheet. • Soil was accumulated near the bund on slope. • Refuse was found on slope. Pak Mong • Refuse was found in Tai Ho Steam Channel. • A chemical container was placed without drip tray. • Refuse was found on site.	WA5 • The contractor removed the chemical containers immediately and was reminded to remove the oil stain. • The incorrect label was removed immediately. • The drip tray should be plugged. • Proper treatment to waste water should be provided. • Waste paint should be disposed properly. • The contractor should repair the locker. Slope BC9 • The contractor should provide a drip tray which can avoid waste water runoff. • The contractor should avoid any runoff from grouting station. • Soil on tarpaulin sheet should be cleaned up regularly. • The contractor should avoid soil runoff from slope and accumulation at the bund. • Refuse should be removed. Pak Mong. • The contractor should avoid any disposal into water body and clean up the refuse. • The chemical container should be placed in drip tray. • Refuse should be disposed properly.
8 October 2014	Seafront • Waste water was potentially discharged offsite. • Chemical containers were not placed in drip tray. • A drip tray for chemical container was unplugged. • Refuse was found on the sea nearby pier. Pier B3 • Refuse was found in the sea. • An air compressor was placed without decoupling pad. Pier B1 • Sediment was not labelled on barge.	Seafront • The contractor should avoid the discharge offsite. • Drip tray should be provided to the chemical containers. • The drip tray should be plugged. • Refuse on sea should be cleaned up Pier B3 • Refuse in sea should be cleaned up • Decoupling pad should be provided. Pier B1 • Category of sediment should be labelled.

Inspection Date	Location & Environmental Observations	Recommendations/ Remarks
16 October 2014	Area 1 • Chemical containers were not placed in drip tray. • Waste was found disposed improperly onsite. • The traffic road was partially unpaved or not covered. • A welder was placed too closed to drainage. Pak Mong • Refuse was found disposed improperly nearby Pier B12 and subway • Waste water was potentially discharged to Tai Ho Stream. • A drip tray for generator was found unplugged.	Area 1 • The chemical containers were put into drip tray immediately. • Waste should be disposed properly. • The contractor should water or pave the unpaved traffic road. • The welder should not be placed next to drainage. Pak Mong • The contractor was reminded to clean up the refuse. • The contractor should avoid waste water discharge to Tai Ho Stream. • The drip tray should be plugged.
23 October 2014	Pier B3 • A chemical container was placed without drip tray. • A generator on Gammon 39 emitted dark smoke. Gammon 23 • A generator was placed without decoupling pad. • A chemical container was not placed in drip tray. Pier B1 • Stagnant water was found in a drip tray.	Pier B3 • The chemical container was removed immediately. • No dark smoke should be emitted from vessel for more than 3 minutes. Gammon 23 • Decoupling pad should be provided to the generator. • The chemical container was put into drip tray immediately. Pier B1 • The contractor should clean up drip tray regularly.
30 October 2014	Seafront • A rubbish bin was found full and refuse was found disposed improperly. • A drip tray for generator was found unplugged. Pak Mong • Refuse was found disposed improperly nearby drainage. • An unpaved slope was not well covered. • Trees at slope B/F8 were not fenced off properly.	Seafront • The contractor was reminded to clean up the refuse routinely. • A stopper should be provided to the drip tray. Pak Mong • The refuse should be disposed properly. • The unpaved slope should be covered properly. • The contractor was reminded to provide fencing to trees.
5 November 2014	Pier D13 • A drip tray for generator was not plugged. Pier D9 • A chemical container was not placed in drip tray. Pier D14 • Some chemical containers were not placed in drip tray. General reminder: • The unpaved area should be watered 8 times a day.	Pier D13 • The drip tray should be plugged. Pier D9 and D14 • Chemical containers should be placed in drip tray.
12 November 2014	Seafront • Stagnant water was accumulated in a drip tray for welder.	Seafront • Drip tray should have enough capacity to avoid leakage or runoff of chemical waste. The contractor was reminded to remove stagnant water regularly.

Inspection Date	Location & Environmental Observations	Recommendations/ Remarks
20 November 2014	Area 1 • A skip for waste was nearly full. • The traffic road was partially dry. Area 2 • Water dripping was observed and caused stagnant water in the works area.	Area 1 • The contractor was reminded to clean the refuse regularly. • The unpaved area should be watered or covered. Area 2 • The contractor was advised to avoid such leakage and clean up the stagnant water.
27 November 2014	Seafront • Oil stain was observed on the ground of project area. • Some chemical containers were not placed in drip tray. Barge M015 (Tung Shun 88) • Category of sediment was not labelled. Barge M021 (Kin Yip) • Sediment was not properly separated.	Seafront • The contractor should remove the oil stain. • Chemical containers should be placed in drip tray. Barge M015 (Tung Shun 88) • Category of sediment should be properly labelled. Barge M021 (Kin Yip) • Different categories of sediment should be properly separated.

2.7 *WASTE MANAGEMENT STATUS*

The Contractor has submitted application form for registration as chemical waste producer under the Contract. Sufficient numbers of receptacles were available for general refuse collection and sorting.

Wastes generated during this reporting period include mainly construction wastes (inert and non-inert), imported fill, recyclable materials, and marine sediments. Reference has been made to the waste flow table prepared by the Contractor (*Appendix K*). The quantities of different types of wastes are summarized in *Table 2.16*.

Table 2.16 Quantities of Different Waste Generated in the Reporting Period

Month / Year	Inert Construction Waste [a] (m^3)	Imported Fill (m^3)	Inert Construction Waste Re-used (m^3)	Non-inert Construction Waste [b] (tonnes)	Recyclable Materials [c] (kg)	Chemical Wastes (kg)	Marine Sediment (m^3)	
							Category L	Category M
September 2014	7,722	140	175	238,010	34,351	0	400	133
October 2014	13,860	109	943	268,180	105	0	441	222
November 2014	12,474	0	3,141	114,370	133	0	0	234
Total	**34,056**	**249**	**4,259**	**620,560**	**34,589**	**0**	**841**	**589**

Notes:

(a) Inert construction wastes include hard rock and large broken concrete, and materials disposed as public fill.

(b) Non-inert construction wastes include general refuse disposed at landfill.

(c) Recyclable materials include metals, paper, cardboard, plastics, timber and others.

The Contractor was advised to properly maintain on site C&D materials and waste collection, sorting and recording system, dispose of C&D materials and wastes at designated ground and maximize reuse/ recycle of C&D materials and wastes. The Contractor was also reminded to properly maintain the site tidiness and dispose of the wastes accumulated on site regularly and properly.

For chemical waste containers, the Contractor was reminded to treat properly and store temporarily in designated chemical waste storage area on site in accordance with the *Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes*.

2.8 *ENVIRONMENTAL LICENSES AND PERMITS*

The status of environmental licensing and permit is summarized in *Table 2.17* below.

Table 2.17 Summary of Environmental Licensing and Permit Status

License/ Permit	License or Permit No.	Date of Issue	Date of Expiry	License/ Permit Holder	Remarks
Environmental Permit	EP-354/2009/B	28 Jan 2014	N/A	HyD	Tuen Mun- Chek Lap Kok Link
Construction Dust Notification	361571	5 Jul 2013	N/A	GCL	-
Construction Dust Notification	362093	17 Jul 2013	N/A	GCL	For Area 23
Billing Account for Disposal	7017735	10 Jul 2013	End of Project	GCL	-
Chemical Waste Registration	5213-961-G2380-13	10 Oct 2013	N/A	GCL	Chemical waste produced in Contract HY/2012/07 (Area 1 adjacent to Cheng Tung Road, Siu Ho Wan)
Chemical Waste Registration	5213-961-G2380-14	10 Oct 2013	N/A	GCL	Chemical waste produced in Contract HY/2012/07 (Area 2 adjacent to Cheung Tung Road, Pak Mong Village)
Chemical Waste Registration	5213-974-G2588-03	4 Nov 2013	N/A	GCL	Chemical waste produced in Contract HY/2012/07 (WA5 adjacent to Cheung Tung Road, Yam O)
Construction Waste Disposal Account	7017735	10 Jul 2013	N/A	GCL	Waste disposal in Contract HY/2012/07
Waste Water Discharge License	WT00019017-2014	13 May 2014	31 May 2019	GCL	Discharge for marine portion
Waste Water Discharge License	WT00019018-2014	13 May 2014	31 May 2019	GCL	Discharge for land portion
Construction Noise Permit	GW-RS0419-14	15 May 2014	13 Nov 2014	GCL	For loading & unloading on NLH near Viaducts A & B
Construction Noise Permit	GW-RS0226-14	30 Mar 2014	29 Sep 2014	GCL	For loading & unloading on NLH near Viaduct D
Construction Noise Permit	GW-RS0792-14	31 Jul 2014	24 Dec 2014	GCL	Broad Permit for Works at Seafront & Marine Piers & Pier B9
Construction Noise Permit	GW-RS0700-14	21 Jul 2014	31 Dec 2014	GCL	For loading & unloading on NLH near Viaduct A & B
Dumping Permit/ Loading Permit (Type 1 – Open Sea Disposal)	(4) in EP/MD/14-075	25 Sep 2013	N/A	GCL	-
Chemical Waste Registration	5213-951-G2380-17	12 Jun 2014	N/A	GCL	Viaducts A, B, C, D & E
Construction Noise Permit for night works	GW-RS0646-14	27 Jun 2014	26 Oct 2014	GCL	Broad Permit for Works at Seafront &

License/ Permit	License or Permit No.	Date of Issue	Date of Expiry	License/ Permit Holder	Remarks
and works in general holidays					Marine Piers & Pier B9
Construction Noise Permit for night works and works in general holidays	GW-RS0647-14	28 Jun 2014	26 Oct 2014	GCL	Pier C7 & D8 at CEDD Access Road
Construction Waste Disposal Account	7017735	10 Jul 2013	N/A	GCL	-
Construction Noise Permit	GW-RW0640-14	28 Aug 2014	27 Feb 2015	GCL	General works at WA5
Marine Dumping Permit	EP/MD/15-066	28 Jul 2014	27 Jan 2015	GCL	For dumping Type I sediment
Construction Noise Permit for night works and works in general holidays	GW-RS0942-14	11 Sep 2014	14 Mar 2015	GCL	For Plant mobilization using tractor
Construction Noise Permit for night works and works in general holidays	GW-RS1032-14	25 Sep 2014	28 Mar 2015	GCL	For Load unload at NLH near Viaduct D
Marine Dumping Permit	EP/MD/15-098	1 Sep 2014	30 Sep 2014	GCL	For dumping Type I (Dedicated Site) and Type II sediment
Construction Noise Permit for night works and works in general holidays	GW-RS1129-14	17 Oct 2014	31 Dec 2014	GCL	For Safety Fences at Pier D9
Construction Noise Permit for night works and works in general holidays	GW-RS1130-14	20 Oct 2014	22 Apr 2015	GCL	For Plant mobilization using tractor
Construction Noise Permit for night works and works in general holidays	GW-RS1135-14	17 Oct 2014	15 Dec 2014	GCL	For TTA Case 60-2 Ch.1.3E-3.6E
Construction Noise Permit for night works and works in general holidays	GW-RS1188-14	30 Oct 2014	31 Dec 2014	GCL	For TTA Cases 50 Airport Road-5.3
Marine Dumping Permit	EP/MD/15-120	1 Oct 2014	31 Oct 2014	GCL	For dumping Type I (Dedicated Site) and Type II sediment

2.9 IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

In response to the site audit findings, the Contractor has carried out corrective actions.

A summary of the Environmental Mitigation and Enhancement Measure Implementation Schedules (EMIS) is presented in *Appendix C*. The necessary mitigation measures were implemented properly for this Contract.

2.10 SUMMARY OF EXCEEDANCES OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMIT

Results for 1-hour TSP, 24-hour TSP, construction noise and impact water quality monitoring complied with the Action/ Limit levels in the reporting period.

The construction impact on depth-averaged SS was assessed by comparing the quarterly mean values of depth-averaged SS with the relevant ambient mean values. Results showed that the quarterly mean values of depth-averaged SS at all monitoring stations are well below the ambient mean values (*Table 2.18*), thus no further action is required in accordance with the Updated EM&A Manual.

Table 2.18 Comparison between Quarterly Mean and Ambient Mean Values of Depth-averaged Suspended Solids

Station	Baseline Mean		Ambient Mean [a]		Quarterly Mean (September to November 2014)	
	Mid-ebb	Mid-flood	Mid-ebb	Mid-flood	Mid-ebb	Mid-flood
CS(Mf)3	9.2	12.8	12.0	16.6	9.5	9.1
CS(Mf)5	9.2	11.5	11.9	14.9	9.3	9.2
SR4	10.3	12.3	13.4	16.0	9.3	9.0
SR4a	9.1	9.8	11.9	12.7	9.2	8.9
IS8	11.3	13.5	14.6	17.6	9.2	8.9
IS(Mf)9	10.9	14.3	14.2	18.5	9.2	8.9
IS(Mf)16	11.4	10.3	14.8	13.4	9.4	9.1

Notes:
(a) Ambient mean value is defined as a 30% increase of the baseline mean value

Two (2) Action Level exceedances were recorded for impact dolphin monitoring in this reporting quarter. Following the review of the monitoring data and marine works details as per the procedure stipulated in the Event and Action Plan of the Updated EM&A Manual, there is no evidence showing that the sources of impact directly related to the construction works under this Contract that may have affected the dolphin usage in the NEL region. Investigation findings are detailed in *Appendix L*.

2.11 SUMMARY OF COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

The Environmental Complaint Handling Procedure is provided in *Figure 2.5*.

There was no complaint, notification of summons or successful prosecution recorded in the reporting period. Statistics on complaint, notification of summons of successful prosecution are summarized in *Appendix L*.

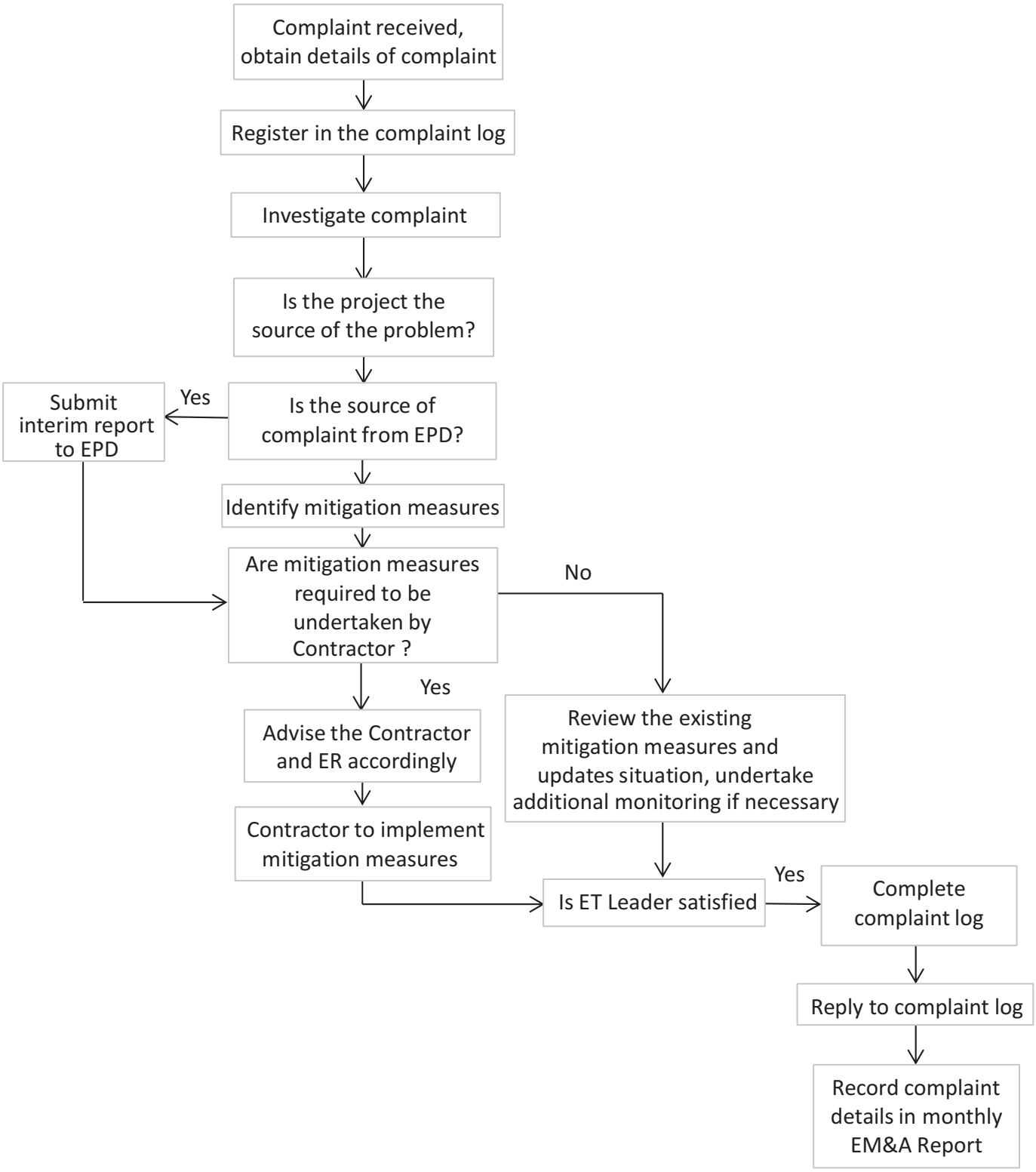

Figure 2.5 Environmental Complaint Handling Procedure

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DATE: 06/12/2013

Environmental Resources Management

ERM

3 FUTURE KEY ISSUES

3.1 CONSTRUCTION ACTIVITIES FOR THE COMING QUARTER

As informed by the Contractor, the major works for the Contract in the coming quarter are summarized below:

December 2014

Marine Works

- Construction of Pile caps at Viaducts B & E;
- Marine piling platform installation for Viaducts A, B, C, D & E;
- Marine Piling at Viaducts B, C, D & E; and
- Additional marine ground investigation (GI) and laboratory testing.

Land-based Works

- Construction of pile cap superstructure of Viaduct B;
- Channel re-construction at Area 1;
- Land Piling at Viaducts B, C & D;
- Pre-drilling works at Viaduct A;
- Construction of pile cap at Viaducts B & D;
- Additional land GI, trial pits & lab testing;
- Utility surveys; and
- Slope work of Slopes 9SE-B/C8, 9SE-B/C9 & 9SE-B/F9.

January 2015

Marine Works

- Construction of Pile caps at Viaducts B & E;
- Marine piling platform installation for Viaducts A, B, C, D & E;
- Marine Piling at Viaducts B, C, D & E; and
- Additional marine ground investigation (GI) and laboratory testing.

Land-based Works

- Construction of pile cap superstructure of Viaduct B;
- Channel re-construction at Area 1;
- Land Piling at Viaducts B, C & D;
- Pre-drilling works at Viaduct A;
- Construction of pile cap at Viaducts B & D;
- Additional land GI, trial pits & lab testing;
- Utility surveys; and
- Slope work of Slopes 9SE-B/C8, 9SE-B/C9 & 9SE-B/F9.

February 2015

Marine Works

- Construction of Pile caps at Viaducts B & E;
- Marine piling platform installation for Viaducts A, B, C, D & E;
- Marine Piling at Viaducts B, C, D & E; and
- Additional marine ground investigation (GI) and laboratory testing.

Land-based Works

- Construction of pile cap superstructure of Viaduct B;
- Channel re-construction at Area 1;
- Land Piling at Viaducts B, C & D;
- Pre-drilling works at Viaduct A;
- Construction of pile cap at Viaducts B & D;
- Additional land GI, trial pits & lab testing;
- Utility surveys; and
- Slope work of Slopes 9SE-B/C8, 9SE-B/C9 & 9SE-B/F9.

3.2 KEY ISSUES FOR THE COMING QUARTER

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

3.3 MONITORING SCHEDULE FOR THE COMING QUARTER

Impact monitoring for air quality, noise, marine water quality and marine ecology (include dolphin monitoring and post-translocation coral monitoring) are scheduled to continue for the next reporting period.

The monitoring programme has been reviewed and was considered as adequate to cater for the nature of works in progress.

4 CONCLUSIONS AND RECOMMENDATIONS

4.1 CONCLUSIONS

This Fourth Quarterly EM&A Report presents the findings of the EM&A activities undertaken during the period from 1 September to 30 November 2014, in accordance with the Updated EM&A Manual and the requirements of the *Environmental Permit* (*EP-354/2009/B*).

Neither Action Level nor Limit Level exceedances were observed for air quality, noise, water quality impact monitoring and post-translocation coral monitoring in this reporting period.

A total of twenty-four (24) groups of ninety-three (93) Chinese White Dolphins were sighted during the six sets of surveys from September 2014 to November 2014. Whilst two (2) Action Level exceedances were recorded for the quarterly dolphin monitoring data between September and November 2014, no unacceptable impact from the activities of this Contract on Chinese White Dolphins was noticeable from the general observations. It is critical to monitor the dolphin usage in North Lantau region in the upcoming quarters, to determine whether the dolphins are continuously affected by the various construction activities in relation to the HZMB-related works, and whether suitable mitigation measure can be applied to revert the situation.

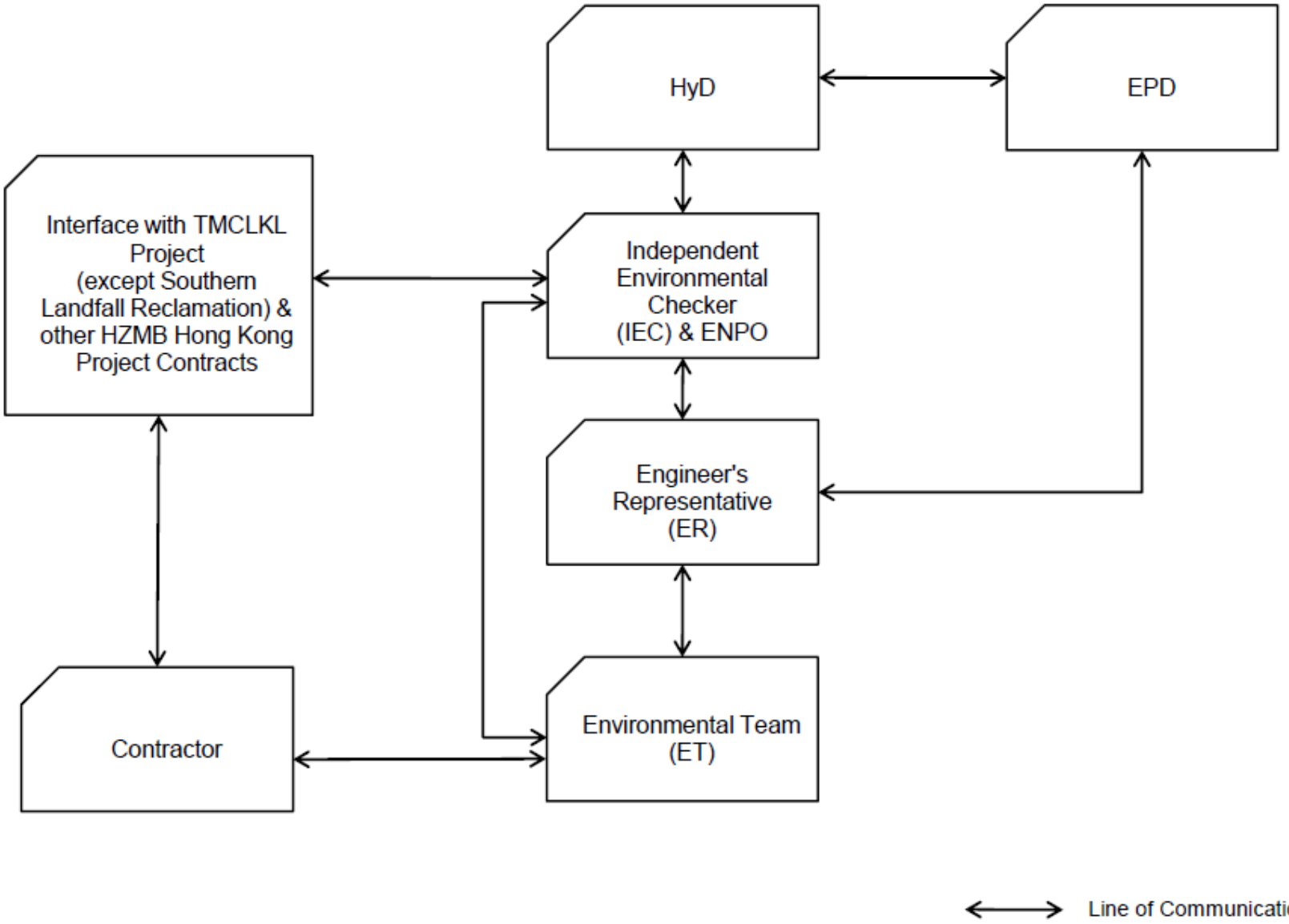
Environmental site inspection was carried out thirteen (13) times in the reporting period. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site audits.

No environmental complaint, summons/ prosecution were received during the reporting period.

The monitoring programme has been reviewed and was considered as adequate to cater for the nature of works in progress. Change to the monitoring programme was thus not recommended at this stage. The monitoring programme will be evaluated as appropriate in the next 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.

Appendix A

Project Organization for Environmental Works



Appendix A1

Contract No. HY/2012/07 Southern Connection Viaduct Section
Project Organization

DATE: 06/03/2013

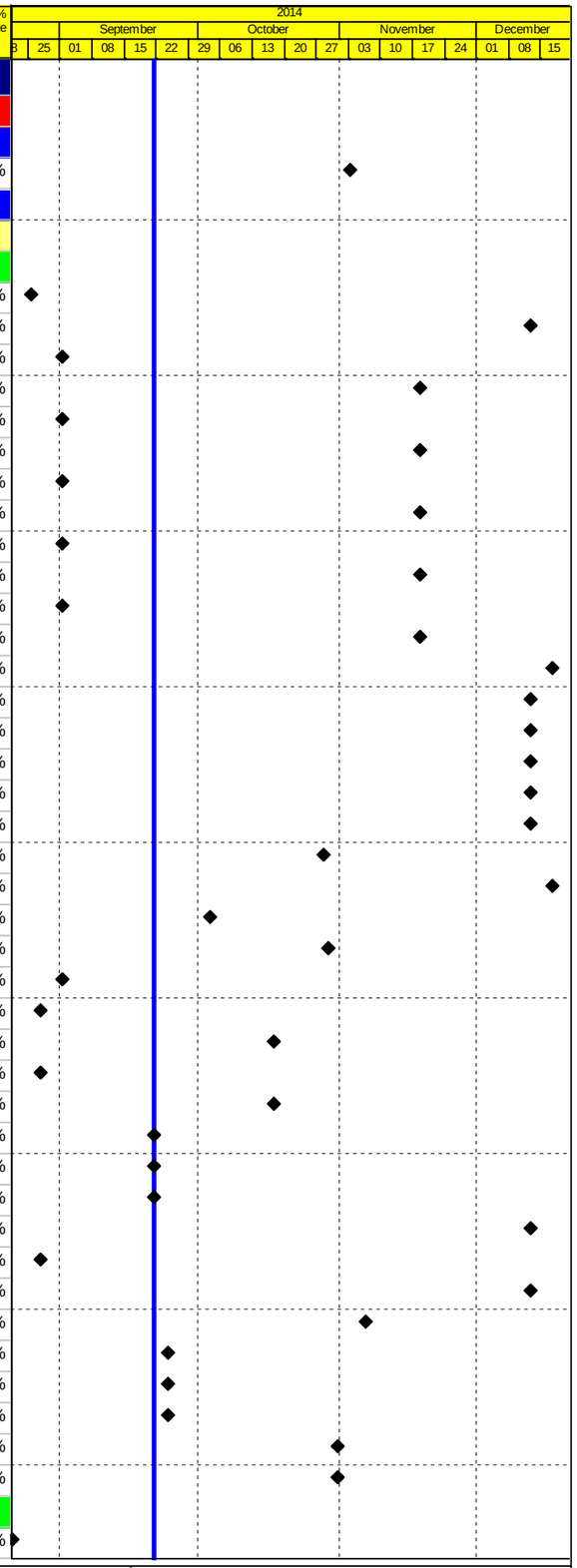
Environmental Resources Management

ERM

Appendix B

Construction Programme for the Reporting Quarter

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
HY/2012/07 - TM-CLK Link-SC [DWP rD1] - Status Update 21-09-2014											
Contract Key Dates											
Possession Dates / Access Period											
POS02	Portion A (Commencement of Works+499 days)	0.00	03-Nov-14*	0%	0.00		03-Nov-14		0.00	0.00	0%
IPS Milestones											
Cost Centre IPS Milestones											
CC 2 - Design and Design Checking of the Works											
MS2.006	Accept construction traffic impact assessment by the Supervising Officer	0.00		100%	0.00	25-Aug-14 A					100%
MS2.008	Accept ground investigation reports by the Supervising Officer	0.00		0%	0.00	12-Dec-14		02-Apr-17	842.00	308.00	0%
MS2.014	Approve AIP for Structure F1, excl Structure F1 between Pier F1c and Pier F1d, by the S.O.	0.00		100%	0.00	01-Sep-14 A					100%
MS2.015	Submit DDA for Structure F1, excluding Structure F1 between Pier F1c and Pier F1d	0.00		0%	0.00	18-Nov-14		02-Apr-17	866.00	156.00	0%
MS2.018	Approve AIP for Structure F1 between Pier F1c and Pier F1d by the Supervising Officer	0.00		100%	0.00	01-Sep-14 A					100%
MS2.019	Submit DDA for Structure F1 between Pier F1c and Pier F1d	0.00		0%	0.00	18-Nov-14		02-Apr-17	866.00	156.00	0%
MS2.030	Approve AIP for Structure F3 betw Pier F3c and Pier F3d by Supervising Officer	0.00		100%	0.00	01-Sep-14 A					100%
MS2.031	Submit DDA for Structure F3 between Pier F3c and Pier F3d	0.00		0%	0.00	18-Nov-14		02-Apr-17	866.00	156.00	0%
MS2.038	Approve AIP for Structure F5, excl Structure F5 betw Pier F5c & Pier F5d, by S.O.	0.00		100%	0.00	01-Sep-14 A					100%
MS2.039	Submit DDA for Structure F5, excluding Structure F5 between Pier F5c and Pier F5d	0.00		0%	0.00	18-Nov-14		02-Apr-17	866.00	142.00	0%
MS2.042	Approve AIP for Structure F5 betw Pier F5c and Pier F5d by the Supervising Officer	0.00		100%	0.00	01-Sep-14 A					100%
MS2.043	Submit DDA for Structure F5 between Pier F5c and Pier F5d	0.00		0%	0.00	18-Nov-14		02-Apr-17	866.00	142.00	0%
MS2.052	Approve DDA for Structure E2 by the Supervising Officer	0.00		0%	0.00	17-Dec-14		02-Apr-17	837.00	303.00	0%
MS2.056	Approve DDA for Structure E5, excl Structure E5 betw Pier E5c & Pier E5d, by S.O.	0.00		0%	0.00	12-Dec-14		02-Apr-17	842.00	308.00	0%
MS2.060	Approve DDA for Structure E5 betw Pier E5c & Pier E5d by Supervising Officer	0.00		0%	0.00	12-Dec-14		02-Apr-17	842.00	308.00	0%
MS2.064	Approve DDA for Structure E6 by the Supervising Officer	0.00		0%	0.00	12-Dec-14		02-Apr-17	842.00	308.00	0%
MS2.068	Approve DDA for Structure E7 by the Supervising Officer	0.00		0%	0.00	12-Dec-14		02-Apr-17	842.00	308.00	0%
MS2.072	Approve DDA for Structure E8 by the Supervising Officer	0.00		0%	0.00	12-Dec-14		02-Apr-17	842.00	308.00	0%
MS2.074	Approve AIP for Structure A by the Supervising Officer	0.00		0%	0.00	28-Oct-14		02-Apr-17	887.00	162.00	0%
MS2.075	Submit DDA for Structure A	0.00		0%	0.00	17-Dec-14		02-Apr-17	837.00	112.00	0%
MS2.080	Approve DDA for Structure B by the Supervising Officer	0.00		0%	0.00	03-Oct-14		02-Apr-17	912.00	378.00	0%
MS2.083	Submit DDA for Structure C	0.00		0%	0.00	29-Oct-14		02-Apr-17	886.00	120.00	0%
MS2.087	Submit DDA for Structure D	0.00		100%	0.00	01-Sep-14 A					100%
MS2.090	Approve AIP for At grade Roadworks and Other Works along NLH by the S.O.	0.00		100%	0.00	27-Aug-14 A					100%
MS2.091	Submit DDA for At grade Roadworks and Other Works along NLH	0.00		0%	0.00	17-Oct-14		02-Apr-17	898.00	105.00	0%
MS2.094	Approve AIP for At grade Roadworks & Other Works along Cheung Tung Road by S.O.	0.00		100%	0.00	27-Aug-14 A					100%
MS2.095	Submit DDA for At grade Roadworks and Other Works along Cheung Tung Road	0.00		0%	0.00	17-Oct-14		02-Apr-17	898.00	105.00	0%
MS2.097	Submit AIP for At grade Roadworks and Other Works at Southern Landfall	0.00		0%	0.00	21-Sep-14		02-Apr-17	924.00	0.00	0%
MS2.098	Approve AIP for At grade Roadwrks & Other Wrks at Southern Landfall by S.O.	0.00		0%	0.00	21-Sep-14		02-Apr-17	924.00	82.00	0%
MS2.099	Submit DDA for At grade Roadworks and Other Works at Southern Landfall	0.00		0%	0.00	21-Sep-14		02-Apr-17	924.00	82.00	0%
MS2.100	Approve DDA for At grade Roadwrks & Other Wrks at Southern Landfall by S.O.	0.00		0%	0.00	12-Dec-14		02-Apr-17	842.00	308.00	0%
MS2.102	Approve AIP for Watermains & All Assoc Wrks frm Tung Chung to South Landfall by S.O.	0.00		100%	0.00	27-Aug-14 A					100%
MS2.104	Approve DDA for Watermains & All Assoc Wrks frm Tung Chung to South Landfall by S.O.	0.00		0%	0.00	12-Dec-14		02-Apr-17	842.00	308.00	0%
MS2.107	Submit DDA for Irrigation System for Soft Landscape Works	0.00		0%	0.00	06-Nov-14		02-Apr-17	878.00	105.00	0%
MS2.108-3	Submit DDA for Fac Prov for TCSS Wrks for At grade Rds at Southern Landfall	0.00		0%	0.00	24-Sep-14		02-Apr-17	921.00	105.00	0%
MS2.111	Submit DDA for Facilities Provision for TCSS Works for Viaducts	0.00		0%	0.00	24-Sep-14		02-Apr-17	921.00	105.00	0%
MS2.115	Submit DDA for Fac Prov for TCSS Wrks for At grade Rds along NLH	0.00		0%	0.00	24-Sep-14		21-Mar-17	909.00	105.00	0%
MS2.120	Approve DDA for Facilities Provision for E&M Works by the Supervising Officer	0.00		0%	0.00	31-Oct-14		02-Apr-17	884.00	350.00	0%
MS2.121	Submit AIP for remaining works	0.00		0%	0.00	31-Oct-14		02-Apr-17	884.00	56.00	0%
CC 4.1 - Structure E2 and All Associated Works											
MS4.1.10	Complete piles of 50% of total pile length for Structure E2	0.00		100%	0.00	21-Aug-14 A					100%



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
Filter: TASK filters: 3-Month Lookahead, No Level of Effort.

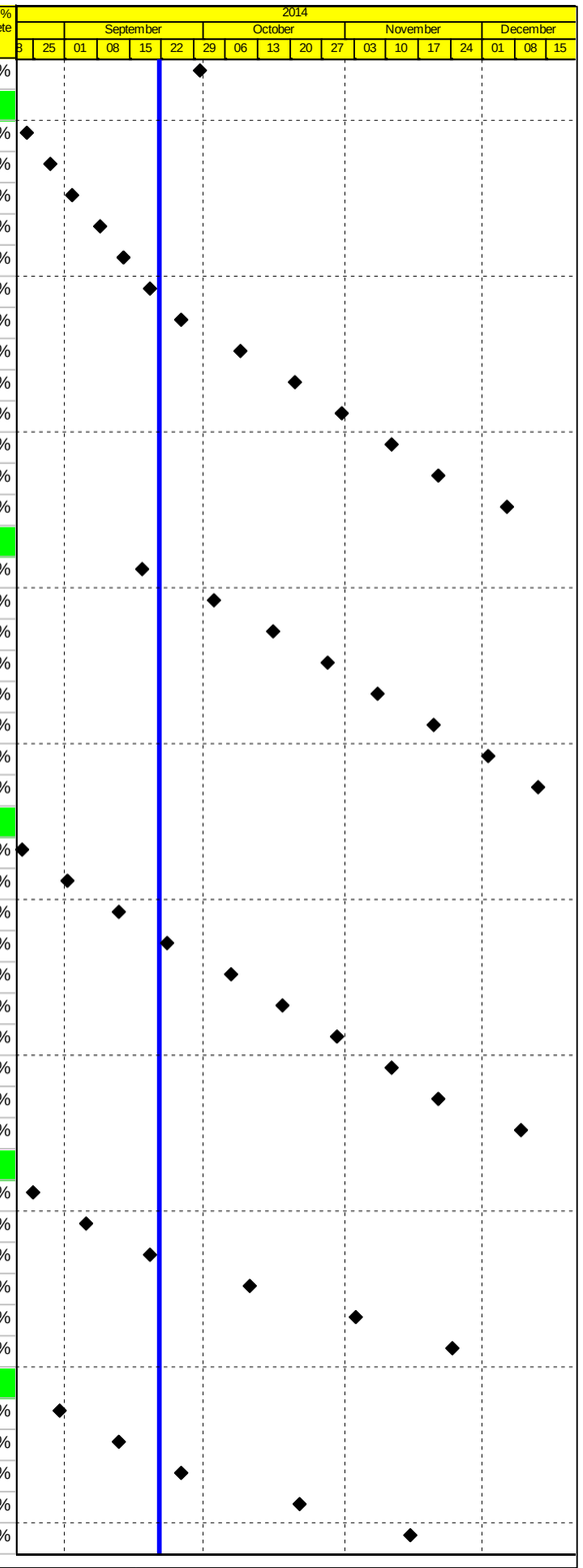
Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 1 of 35 Pages)
(Progress as of 21-Sep-14)

Date	Revision	Checked	Approved
29-Jul-14		FZ	
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
MS4.1.11	Complete piles of 55% of total pile length for Structure E2	0.00		0%	0.00	30-Sep-14*		02-Apr-17	916.00	141.00	0%
CC 4.2 - Structure E5, excl structure E5 betw Pier E5c & Pier E5d, & All Assoc Works											
MS4.2.03	Compl piles of 15% of total pile length for part of structure E5 under this CC No.	0.00		100%	0.00	23-Aug-14 A					100%
MS4.2.04	Compl piles of 20% of total pile length for part of structure E5 under this CC No.	0.00		100%	0.00	28-Aug-14 A					100%
MS4.2.05	Compl piles of 25% of total pile length for part of structure E5 under this CC No.	0.00		100%	0.00	02-Sep-14 A					100%
MS4.2.06	Compl piles of 30% of total pile length for part of structure E5 under this CC No.	0.00		100%	0.00	08-Sep-14 A					100%
MS4.2.07	Compl piles of 35% of total pile length for part of structure E5 under this CC No.	0.00		100%	0.00	13-Sep-14 A					100%
MS4.2.08	Compl piles of 40% of total pile length for part of structure E5 under this CC No.	0.00		100%	0.00	19-Sep-14 A					100%
MS4.2.09	Compl piles of 45% of total pile length for part of structure E5 under this CC No.	0.00		0%	0.00	26-Sep-14*		02-Apr-17	920.00	13.00	0%
MS4.2.10	Compl piles of 50% of total pile length for part of structure E5 under this CC No.	0.00		0%	0.00	09-Oct-14*		02-Apr-17	907.00	12.00	0%
MS4.2.11	Compl piles of 55% of total pile length for part of structure E5 under this CC No.	0.00		0%	0.00	21-Oct-14*		02-Apr-17	895.00	10.00	0%
MS4.2.12	Compl piles of 60% of total pile length for part of structure E5 under this CC No.	0.00		0%	0.00	31-Oct-14*		02-Apr-17	885.00	11.00	0%
MS4.2.13	Compl piles of 65% of total pile length for part of structure E5 under this CC No.	0.00		0%	0.00	11-Nov-14*		02-Apr-17	874.00	10.00	0%
MS4.2.14	Compl piles of 70% of total pile length for part of structure E5 under this CC No.	0.00		0%	0.00	21-Nov-14*		02-Apr-17	864.00	15.00	0%
MS4.2.15	Compl piles of 75% of total pile length for part of structure E5 under this CC No.	0.00		0%	0.00	06-Dec-14*		02-Apr-17	849.00	18.00	0%
CC 4.2A - Structure E5 between Pier E5c & Pier E5d, & All Assoc Works											
MS4.2A.01	Compl piles of 5% of total pile length for part of structure E5 under this CC No.	0.00		100%	0.00	17-Sep-14 A					100%
MS4.2A.02	Compl piles of 10% of total pile length for part of structure E5 under this CC No.	0.00		0%	0.00	03-Oct-14*		02-Apr-17	913.00	13.00	0%
MS4.2A.03	Compl piles of 15% of total pile length for part of structure E5 under this CC No.	0.00		0%	0.00	16-Oct-14*		02-Apr-17	900.00	12.00	0%
MS4.2A.04	Compl piles of 20% of total pile length for part of structure E5 under this CC No.	0.00		0%	0.00	28-Oct-14*		02-Apr-17	888.00	11.00	0%
MS4.2A.05	Compl piles of 25% of total pile length for part of structure E5 under this CC No.	0.00		0%	0.00	08-Nov-14*		02-Apr-17	877.00	12.00	0%
MS4.2A.06	Compl piles of 30% of total pile length for part of structure E5 under this CC No.	0.00		0%	0.00	20-Nov-14*		02-Apr-17	865.00	12.00	0%
MS4.2A.07	Compl piles of 35% of total pile length for part of structure E5 under this CC No.	0.00		0%	0.00	02-Dec-14*		02-Apr-17	853.00	11.00	0%
MS4.2A.08	Compl piles of 40% of total pile length for part of structure E5 under this CC No.	0.00		0%	0.00	13-Dec-14*		02-Apr-17	842.00	14.00	0%
CC 4.3 - Structure E6 and All Associated Works											
MS4.3.02	Complete piles of 10% of total pile length for Structure E6	0.00		100%	0.00	22-Aug-14 A					100%
MS4.3.03	Complete piles of 15% of total pile length for Structure E6	0.00		100%	0.00	01-Sep-14 A					100%
MS4.3.04	Complete piles of 20% of total pile length for Structure E6	0.00		100%	0.00	12-Sep-14 A					100%
MS4.3.05	Complete piles of 25% of total pile length for Structure E6	0.00		0%	0.00	23-Sep-14*		02-Apr-17	923.00	14.00	0%
MS4.3.06	Complete piles of 30% of total pile length for Structure E6	0.00		0%	0.00	07-Oct-14*		02-Apr-17	909.00	11.00	0%
MS4.3.07	Complete piles of 35% of total pile length for Structure E6	0.00		0%	0.00	18-Oct-14*		02-Apr-17	898.00	12.00	0%
MS4.3.08	Complete piles of 40% of total pile length for Structure E6	0.00		0%	0.00	30-Oct-14*		02-Apr-17	886.00	12.00	0%
MS4.3.09	Complete piles of 45% of total pile length for Structure E6	0.00		0%	0.00	11-Nov-14*		02-Apr-17	874.00	10.00	0%
MS4.3.10	Complete piles of 50% of total pile length for Structure E6	0.00		0%	0.00	21-Nov-14*		02-Apr-17	864.00	18.00	0%
MS4.3.11	Complete piles of 55% of total pile length for Structure E6	0.00		0%	0.00	09-Dec-14*		02-Apr-17	846.00	20.00	0%
CC 4.4 - Structure E7 and All Associated Works											
MS4.4.02	Complete piles of 10% of total pile length for Structure E7	0.00		100%	0.00	25-Aug-14 A					100%
MS4.4.03	Complete piles of 15% of total pile length for Structure E7	0.00		100%	0.00	05-Sep-14 A					100%
MS4.4.04	Complete piles of 20% of total pile length for Structure E7	0.00		100%	0.00	19-Sep-14 A					100%
MS4.4.05	Complete piles of 25% of total pile length for Structure E7	0.00		0%	0.00	11-Oct-14*		02-Apr-17	905.00	23.00	0%
MS4.4.06	Complete piles of 30% of total pile length for Structure E7	0.00		0%	0.00	03-Nov-14*		02-Apr-17	882.00	21.00	0%
MS4.4.07	Complete piles of 35% of total pile length for Structure E7	0.00		0%	0.00	24-Nov-14*		02-Apr-17	861.00	52.00	0%
CC 4.5 - Structure E8 and All Associated Works											
MS4.5.02	Complete piles of 10% of total pile length for Structure E8	0.00		100%	0.00	30-Aug-14 A					100%
MS4.5.03	Complete piles of 15% of total pile length for Structure E8	0.00		100%	0.00	12-Sep-14 A					100%
MS4.5.04	Complete piles of 20% of total pile length for Structure E8	0.00		0%	0.00	26-Sep-14*		02-Apr-17	920.00	26.00	0%
MS4.5.05	Complete piles of 25% of total pile length for Structure E8	0.00		0%	0.00	22-Oct-14*		02-Apr-17	894.00	24.00	0%
MS4.5.06	Complete piles of 30% of total pile length for Structure E8	0.00		0%	0.00	15-Nov-14*		02-Apr-17	870.00	34.00	0%



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
Filter: TASK filters: 3-Month Lookahead, No Level of Effort.

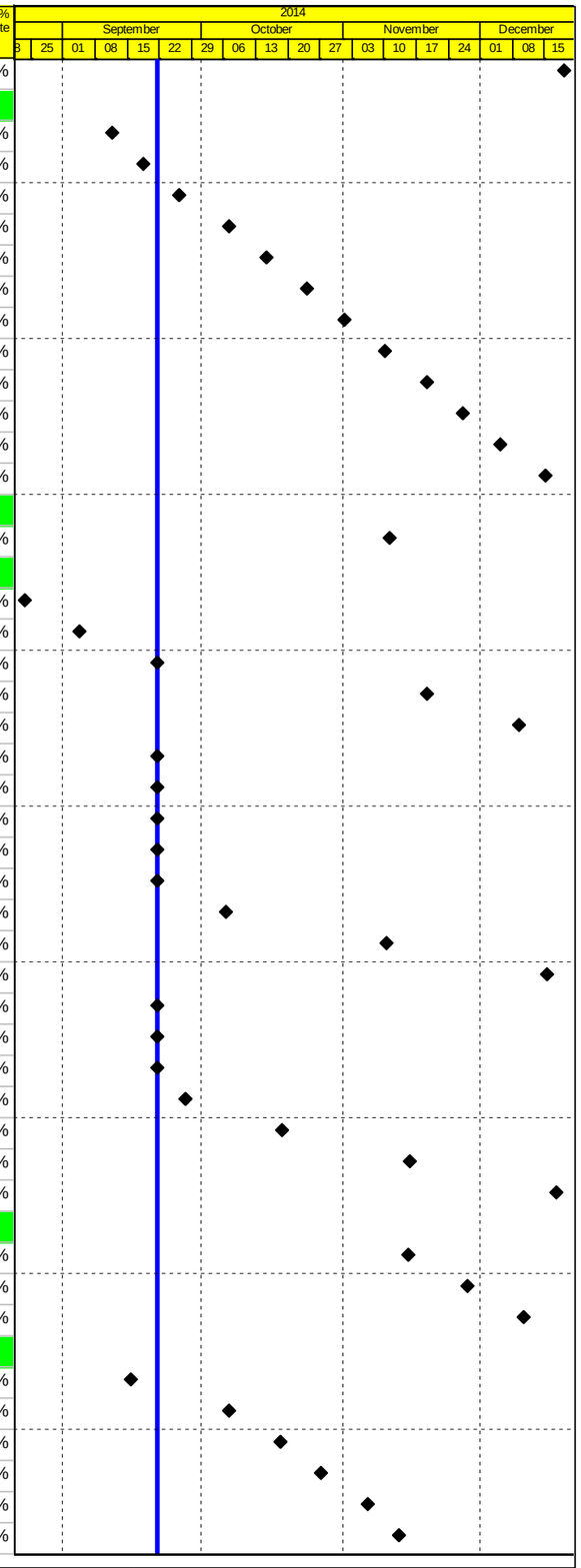
Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 2 of 35 Pages)
(Progress as of 21-Sep-14)

Date	Revision	Checked	Approved
29-Jul-14		FZ	
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
MS4.5.07	Complete piles of 35% of total pile length for Structure E8	0.00		0%	0.00	19-Dec-14*		02-Apr-17	836.00	33.00	0%
CC 5 - Structure E1 and All Associated Works											
MS5.07	Complete piles of 35% of total pile length for Structure E1	0.00		100%	0.00	11-Sep-14 A					100%
MS5.08	Complete piles of 40% of total pile length for Structure E1	0.00		100%	0.00	18-Sep-14 A					100%
MS5.09	Complete piles of 45% of total pile length for Structure E1	0.00		0%	0.00	26-Sep-14*		02-Apr-17	920.00	11.00	0%
MS5.10	Complete piles of 50% of total pile length for Structure E1	0.00		0%	0.00	07-Oct-14*		02-Apr-17	909.00	8.00	0%
MS5.11	Complete piles of 55% of total pile length for Structure E1	0.00		0%	0.00	15-Oct-14*		02-Apr-17	901.00	9.00	0%
MS5.12	Complete piles of 60% of total pile length for Structure E1	0.00		0%	0.00	24-Oct-14*		02-Apr-17	892.00	8.00	0%
MS5.13	Complete piles of 65% of total pile length for Structure E1	0.00		0%	0.00	01-Nov-14*		02-Apr-17	884.00	9.00	0%
MS5.14	Complete piles of 70% of total pile length for Structure E1	0.00		0%	0.00	10-Nov-14*		02-Apr-17	875.00	9.00	0%
MS5.15	Complete piles of 75% of total pile length for Structure E1	0.00		0%	0.00	19-Nov-14*		02-Apr-17	866.00	8.00	0%
MS5.16	Complete piles of 80% of total pile length for Structure E1	0.00		0%	0.00	27-Nov-14*		02-Apr-17	858.00	8.00	0%
MS5.17	Complete piles of 85% of total pile length for Structure E1	0.00		0%	0.00	05-Dec-14*		02-Apr-17	850.00	10.00	0%
MS5.18	Complete piles of 90% of total pile length for Structure E1	0.00		0%	0.00	15-Dec-14*		02-Apr-17	840.00	8.00	0%
CC 6 - Structure A and All Associated Works											
MS6.01	Complete piles of 5% of total pile length for Structure A	0.00		0%	0.00	11-Nov-14*		02-Apr-17	874.00	122.00	0%
CC 7 - Structure B and All Associated Works											
MS7.14	Complete piles of 70% of total pile length for Structure B	0.00		100%	0.00	23-Aug-14 A					100%
MS7.15	Complete piles of 75% of total pile length for Structure B	0.00		100%	0.00	04-Sep-14 A					100%
MS7.16	Complete piles of 80% of total pile length for Structure B	0.00		0%	0.00	21-Sep-14*		02-Apr-17	924.00	58.00	0%
MS7.17	Complete piles of 85% of total pile length for Structure B	0.00		0%	0.00	19-Nov-14*		02-Apr-17	866.00	20.00	0%
MS7.18	Complete piles of 90% of total pile length for Structure B	0.00		0%	0.00	09-Dec-14*		02-Apr-17	846.00	596.00	0%
MS7.21	Complete 10% of number of pile caps for Structure B	0.00		0%	0.00	21-Sep-14*		02-Apr-17	924.00	0.00	0%
MS7.22	Complete 20% of number of pile caps for Structure B	0.00		0%	0.00	21-Sep-14*		02-Apr-17	924.00	0.00	0%
MS7.23	Complete 30% of number of pile caps for Structure B	0.00		0%	0.00	21-Sep-14*		02-Apr-17	924.00	0.00	0%
MS7.24	Complete 40% of number of pile caps for Structure B	0.00		0%	0.00	21-Sep-14*		02-Apr-17	924.00	0.00	0%
MS7.25	Complete 50% of number of pile caps for Structure B	0.00		0%	0.00	21-Sep-14*		02-Apr-17	924.00	15.00	0%
MS7.26	Complete 60% of number of pile caps for Structure B	0.00		0%	0.00	06-Oct-14*		02-Apr-17	909.00	35.00	0%
MS7.27	Complete 70% of number of pile caps for Structure B	0.00		0%	0.00	10-Nov-14*		02-Apr-17	874.00	35.00	0%
MS7.28	Complete 80% of number of pile caps for Structure B	0.00		0%	0.00	15-Dec-14*		02-Apr-17	839.00	483.00	0%
MS7.31	Complete 10% of number of bridge piers for Structure B	0.00		0%	0.00	21-Sep-14*		02-Apr-17	924.00	0.00	0%
MS7.32	Complete 20% of number of bridge piers for Structure B	0.00		0%	0.00	21-Sep-14*		02-Apr-17	924.00	0.00	0%
MS7.33	Complete 30% of number of bridge piers for Structure B	0.00		0%	0.00	21-Sep-14*		02-Apr-17	924.00	6.00	0%
MS7.34	Complete 40% of number of bridge piers for Structure B	0.00		0%	0.00	27-Sep-14*		02-Apr-17	918.00	21.00	0%
MS7.35	Complete 50% of number of bridge piers for Structure B	0.00		0%	0.00	18-Oct-14*		02-Apr-17	897.00	28.00	0%
MS7.36	Complete 60% of number of bridge piers for Structure B	0.00		0%	0.00	15-Nov-14*		02-Apr-17	869.00	32.00	0%
MS7.37	Complete 70% of number of bridge piers for Structure B	0.00		0%	0.00	17-Dec-14*		02-Apr-17	837.00	20.00	0%
CC 8 - Structure C and All Associated Works											
MS8.01	Complete piles of 5% of total pile length for Structure C	0.00		0%	0.00	15-Nov-14*		02-Apr-17	870.00	13.00	0%
MS8.02	Complete piles of 10% of total pile length for Structure C	0.00		0%	0.00	28-Nov-14*		02-Apr-17	857.00	12.00	0%
MS8.03	Complete piles of 15% of total pile length for Structure C	0.00		0%	0.00	10-Dec-14*		02-Apr-17	845.00	13.00	0%
CC 9 - Structure D and All Associated Works											
MS9.01	Complete piles of 5% of total pile length for Structure D	0.00		100%	0.00	15-Sep-14 A					100%
MS9.02	Complete piles of 10% of total pile length for Structure D	0.00		0%	0.00	07-Oct-14*		02-Apr-17	909.00	11.00	0%
MS9.03	Complete piles of 15% of total pile length for Structure D	0.00		0%	0.00	18-Oct-14*		02-Apr-17	898.00	9.00	0%
MS9.04	Complete piles of 20% of total pile length for Structure D	0.00		0%	0.00	27-Oct-14*		02-Apr-17	889.00	10.00	0%
MS9.05	Complete piles of 25% of total pile length for Structure D	0.00		0%	0.00	06-Nov-14*		02-Apr-17	879.00	7.00	0%
MS9.06	Complete piles of 30% of total pile length for Structure D	0.00		0%	0.00	13-Nov-14*		02-Apr-17	872.00	9.00	0%



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
Filter: TASK filters: 3-Month Lookahead, No Level of Effort.

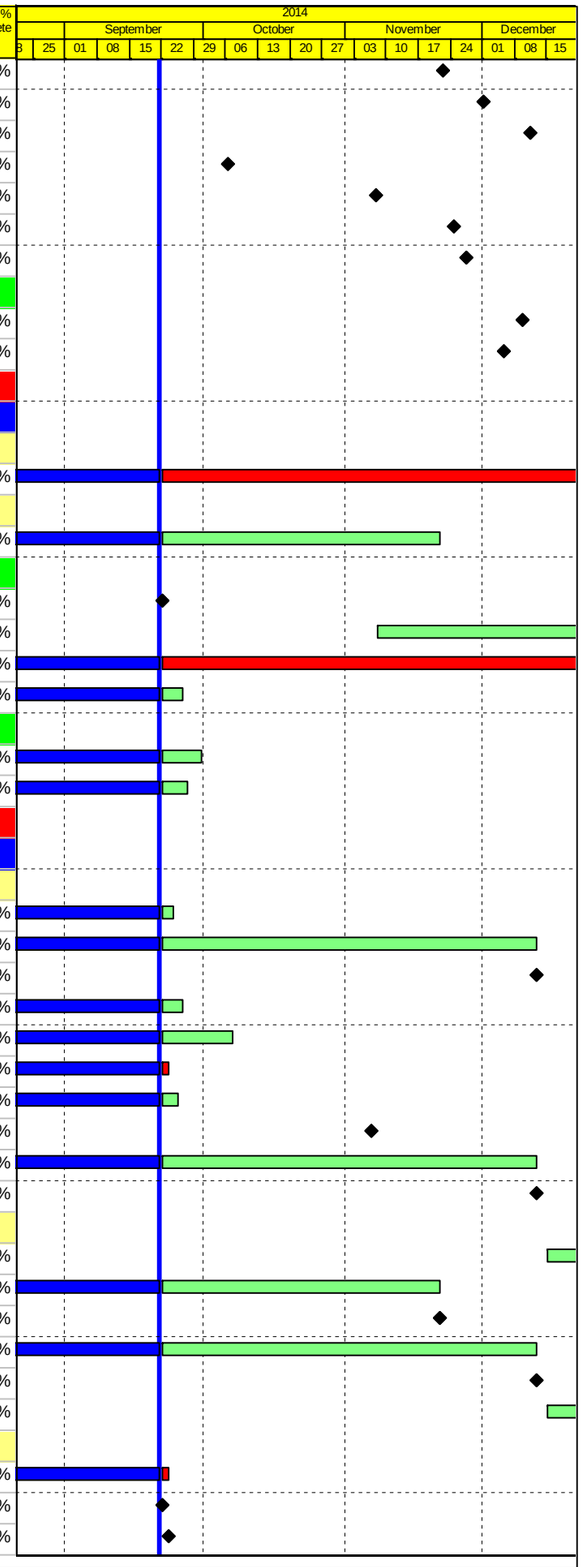
Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 3 of 35 Pages)
(Progress as of 21-Sep-14)

Date	Revision	Checked	Approved
29-Jul-14		FZ	
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
MS9.07	Complete piles of 35% of total pile length for Structure D	0.00		0%	0.00	22-Nov-14*		02-Apr-17	863.00	9.00	0%
MS9.08	Complete piles of 40% of total pile length for Structure D	0.00		0%	0.00	01-Dec-14*		02-Apr-17	854.00	10.00	0%
MS9.09	Complete piles of 45% of total pile length for Structure D	0.00		0%	0.00	11-Dec-14*		02-Apr-17	844.00	11.00	0%
MS9.21	Complete 10% of number of pile caps for Structure D	0.00		0%	0.00	06-Oct-14*		12-Mar-17	888.00	11.00	0%
MS9.22	Complete 20% of number of pile caps for Structure D	0.00		0%	0.00	07-Nov-14*		02-Apr-17	877.00	17.00	0%
MS9.23	Complete 30% of number of pile caps for Structure D	0.00		0%	0.00	24-Nov-14*		02-Apr-17	860.00	28.00	0%
MS9.31	Complete 10% of number of bridge piers for Structure D	0.00		0%	0.00	27-Nov-14*		02-Apr-17	857.00	25.00	0%
CC 11 - At grade Roadworks and Other Works along Cheung Tung Road											
MS11.13	Compl drainage instn 25% of total length (measured on plan) of drainage pipes	0.00		0%	0.00	09-Dec-14*		13-Mar-17	825.00	59.00	0%
MS11.18	Complete watermains instn of 25% of total length (measured on plan) of watermains	0.00		0%	0.00	05-Dec-14*		13-Mar-17	829.00	45.00	0%
General Submissions											
General Requirements											
Temporary Works Design											
PR00130	Unloading Jetty at HKBCF - Working Platform design and approval	90.00	02-Jun-14 A	10%	81.00	29-Dec-14	13-May-14	16-Aug-14	110.00	0.00	10%
Land Works											
PR00160	Propose/submit/approval of a performance review for piled fnds in accordance w/ ETWB TC	101.00	26-May-14 A	49.5%	51.00	21-Nov-14	02-Dec-15	02-Feb-16	355.00	30.00	50%
Land GI Works											
PR02190	Proposed Early Access date at Portion A	0.00	22-Sep-14*	0%	0.00		05-Jun-18		094.00	39.00	0%
PR02200	14No possible Boreholes for Pier E14 & Viaduct F - possible early access ahead of possessic	72.00	08-Nov-14	0%	72.00	03-Feb-15	05-Jun-18	29-Aug-18	055.00	1055.00	0%
PR02204	SQR Sampling & Testing and Approval	195.00	14-Aug-14 A	7.69%	180.00	04-May-15	08-May-14	09-Dec-14	114.00	0.00	7%
PR03110	Trial Pits along Cheung Tung Road	20.00	17-Feb-14 A	75%	5.00	26-Sep-14	24-Aug-18	29-Aug-18	161.00	1161.00	75%
Additional Land GI											
PR03200	Boreholes PBH25, 29, 30, 31 (Piers D9, C14, C16, C17)	33.00	11-Jan-14 A	75.76%	8.00	30-Sep-14	21-Aug-18	29-Aug-18	158.00	1158.00	75%
PR03210	Boreholes PBH38 & PBH45 (AR-A), PBH39 (A11) , PBH40 (A10), PBH41(A9)	30.00	09-Aug-14 A	80%	6.00	27-Sep-14	12-Jul-18	18-Jul-18	124.00	27.00	80%
Design Submissions											
Detailed Design (v17)											
Ground Investigation											
ARDD0009	Consultation with GEO	20.00	13-Aug-13 A	85%	3.00	24-Sep-14	29-Mar-17	31-Mar-17	657.00	57.00	85%
ARDD0010	IC/SO Approval of Ground Investigation Interpretative Report - AP03.00	75.00	13-Aug-13 A	20%	60.00	12-Dec-14	09-Jan-17	31-Mar-17	600.00	0.00	20%
ARDD0010-1	IC/SO Approval of Ground Investigation Interpretative Report - AP03.00	0.00		0%	0.00	12-Dec-14		31-Mar-17	600.00	0.00	0%
ARDD0013-1	Additional GI Fieldwork, Lab Testing and Permitting E5-E8	45.00	16-Jul-13 A	88.89%	5.00	26-Sep-14	23-Aug-18	29-Aug-18	023.00	55.00	90%
ARDD0013-2	Additional GI Fieldwork, Lab Testing and Permitting - Other areas	60.00	16-Jul-13 A	80%	12.00	07-Oct-14	14-Aug-18	29-Aug-18	016.00	48.00	80%
ARDD0015-1	E5-E8 Interpretation	15.00	17-Sep-13 A	86.67%	2.00	23-Sep-14	02-Jul-14	03-Jul-14	-58.00	58.00	85%
ARDD0015-2	Additional GI Interpretative Report - AP03.00	15.00	08-Oct-13 A	73.33%	4.00	25-Sep-14	13-Jul-18	18-Jul-18	994.00	0.00	75%
ARDD0017-1	Earliest IC certificate for DDA-AP03.00	0.00		0%	0.00	06-Nov-14		29-Aug-18	994.00	26.00	0%
ARDD0017-2	IC/SO Approval of Additional GI Interpretative Report - AP03.00	75.00	29-Jan-14 A	20%	60.00	12-Dec-14	07-Jun-18	29-Aug-18	968.00	0.00	20%
ARDD0017-4	IC/SO Approval of Additional GI Interpretative Report - AP03.00	0.00		0%	0.00	12-Dec-14		29-Aug-18	968.00	968.00	0%
General Submissions											
ARDD0037-1	Preparation of Seismic Performance Report - AP12.00	20.00	15-Dec-14	0%	20.00	09-Jan-15	23-Sep-15	20-Oct-15	202.00	0.00	0%
ARDD0039	IC/SO Approval of Maintenance Matrix - AP07.00	75.00	08-May-14 A	40%	45.00	21-Nov-14	08-Jul-15	08-Sep-15	207.00	0.00	40%
ARDD0039-1	IC/SO Approval of Maintenance Matrix - AP07.00	0.00		0%	0.00	21-Nov-14		08-Sep-15	207.00	130.00	0%
ARDD0041-2	IC/SO Approval of O&M Facility Provisions AIP - BP11.00	75.00	23-Jun-14 A	20%	60.00	12-Dec-14	07-Jan-15	31-Mar-15	77.00	0.00	20%
ARDD0041-4	IC/SO Approval of O&M Facility Provisions AIP - BP11.00	0.00		0%	0.00	12-Dec-14		31-Mar-15	77.00	0.00	0%
ARDD0042-1	Preparation of O&M Facility Provisions DDA - BP11.01	40.00	15-Dec-14	0%	40.00	06-Feb-15	01-Apr-15	26-May-15	77.00	0.00	0%
Gazette and Alignment (assume no gazette change)											
ARDD0071	IC/SO Approval of Alignment DDA - BP01.01	75.00	24-Jan-14 A	97.33%	2.00	23-Sep-14	02-Jul-14	03-Jul-14	-58.00	0.00	90%
ARDD0071-1	Earliest IC Cert for Alignment DDA - BP01.01	0.00		0%	0.00	22-Sep-14		03-Jul-14	-56.00	2.00	0%
ARDD0071-2	IC/SO Approval of Alignment DDA - BP01.01	0.00		0%	0.00	23-Sep-14		03-Jul-14	-58.00	8.00	0%



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
Filter: TASK filters: 3-Month Lookahead, No Level of Effort.

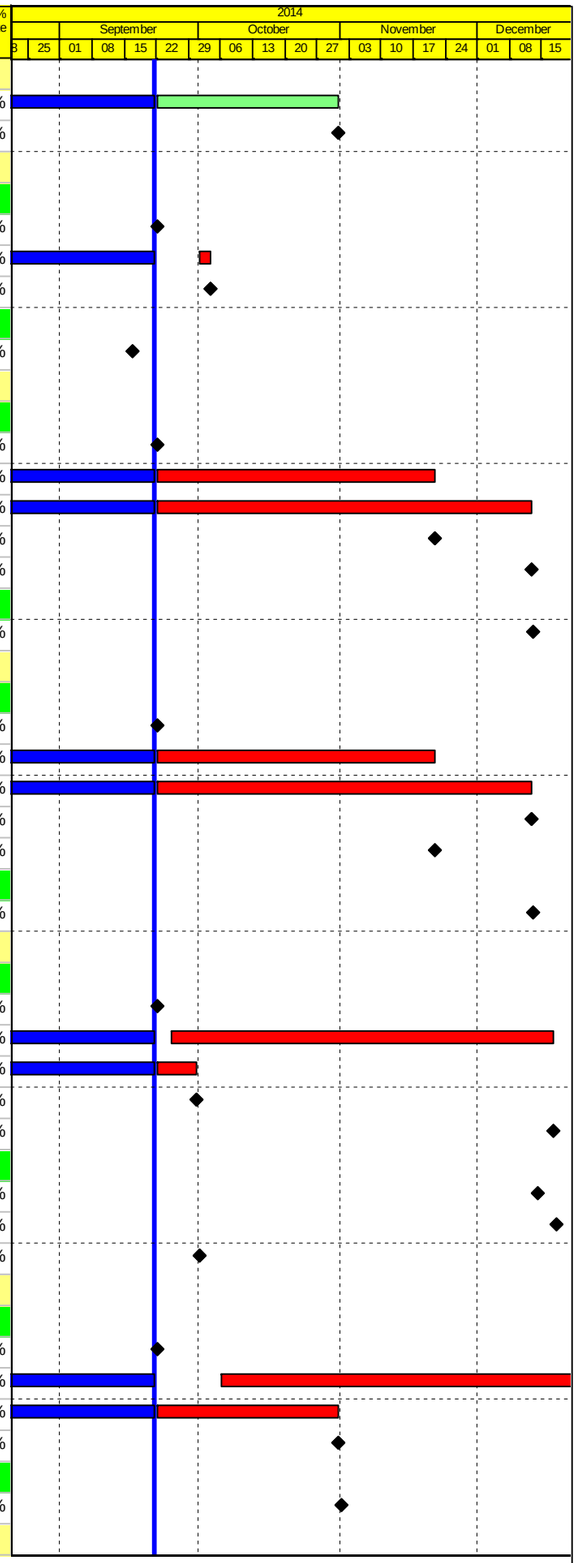
Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 4 of 35 Pages)
(Progress as of 21-Sep-14)

Date	Revision	Checked	Approved
29-Jul-14		FZ	
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
General Viaduct Submission											
ARDD0078	IC/SO Approval of Viaduct E&M Works DDA BP21.01	75.00	17-Jun-14 A	60%	30.00	31-Oct-14	17-Jun-15	28-Jul-15	192.00	0.00	60%
ARDD0078-1	IC/SO Approval of Viaduct E&M Works DDA BP21.01	0.00		0%	0.00	31-Oct-14		28-Jul-15	192.00	115.00	0%
Viaduct B											
Viaduct Design											
ARDD0099-1	Viaduct B - Earliest IC Certificate for DP12.03	0.00		0%	0.00	22-Sep-14		31-Jul-14	-36.00	10.00	0%
ARDD0099-3	Viaduct B - IC/SO Approval of Sub & Superstructure DDA - DP12.03	75.00	04-Mar-14 A	96%	3.00	03-Oct-14	29-Jul-14	31-Jul-14	-46.00	0.00	60%
ARDD0099-5	Viaduct B - IC/SO Approval of Sub & Superstructure DDA - DP12.03	0.00		0%	0.00	03-Oct-14		31-Jul-14	-46.00	0.00	0%
Associated Construction Milestones											
ARDD0129	Viaduct B - DDA approval ready for Initial Segment Casting	0.00	16-Sep-14 A	100%	0.00						100%
Viaduct E5 and E6											
Viaduct Design											
ARDD0150-1	Viaduct E5 & E6 - Earliest IC certificate for DDA for Viaduct E5 & E6 - DP15.09	0.00		0%	0.00	22-Sep-14		22-May-14	-86.00	30.00	0%
ARDD0150-3	Viaduct E5 & E6 - IC/SO Approval of Pile Cap Precast Shells DDA DP15.05	75.00	15-Apr-14 A	40%	45.00	21-Nov-14	02-May-14	03-Jul-14	101.00	0.00	40%
ARDD0150-4	Viaduct E5 & E6 - IC/SO Approval (late) of Sub & Superstructure DDA DP15.09	75.00	09-Jul-14 A	20%	60.00	12-Dec-14	11-Apr-14	03-Jul-14	116.00	0.00	20%
ARDD0150-6	Viaduct E5 & E6 - IC/SO Approval of Pile Cap Precast Shells DDA DP15.05	0.00		0%	0.00	21-Nov-14		03-Jul-14	101.00	15.00	0%
ARDD0150-8	Viaduct E5 & E6 - IC/SO Approval (late) of Sub & Superstructure DDA DP15.09	0.00		0%	0.00	12-Dec-14		03-Jul-14	116.00	0.00	0%
Associated Construction Milestones											
ARDD0175	Viaduct E5 & E6 - DDA approval ready for Initial Segment Casting	0.00	13-Dec-14	0%	0.00		09-Sep-14		-95.00	40.00	0%
Viaduct E7 & E8											
Viaduct Design											
ARDD0195-1	Viaduct E7 & E8 - Earliest IC certificate for Pilecap Precast Shells DDA - DP15.08	0.00		0%	0.00	22-Sep-14		06-May-14	-98.00	18.00	0%
ARDD0195-3	Viaduct E7 & E8 - IC/SO Approval of Pilecap Precast Shells DDA - DP15.08	75.00	15-Apr-14 A	40%	45.00	21-Nov-14	02-May-14	03-Jul-14	101.00	0.00	40%
ARDD0195-4	Viaduct E7 & E8 - IC/SO Approval of Sub & Superstructure DDA - DP15.09	75.00	09-Jul-14 A	20%	60.00	12-Dec-14	11-Apr-14	03-Jul-14	116.00	0.00	20%
ARDD0195-5	Viaduct E7 & E8 - IC/SO Approval of Sub & Superstructure DDA - DP15.09	0.00		0%	0.00	12-Dec-14		03-Jul-14	116.00	0.00	0%
ARDD0195-6	Viaduct E7 & E8 - IC/SO Approval of Pilecap Precast Shells DDA - DP15.08	0.00		0%	0.00	21-Nov-14		03-Jul-14	101.00	15.00	0%
Associated Construction Milestones											
ARDD0220	Viaduct E7 & E8 - DDA approval ready for Initial Segment Casting	0.00	13-Dec-14	0%	0.00		10-Sep-14		-94.00	41.00	0%
Viaduct E2											
Viaduct Design											
ARDD0241-1	Viaduct E2 - Earliest IC certificate for Pilecap Precast Shells DDA - DP15.05	0.00		0%	0.00	22-Sep-14		17-Jun-14	-68.00	21.00	0%
ARDD0241-3	Viaduct E2 - IC/SO Approval (Late) of Sub & Superstructure DDA - DP15.06	75.00	04-Jul-14 A	20%	60.00	17-Dec-14	23-May-14	14-Aug-14	-89.00	0.00	20%
ARDD0241-4	Viaduct E2 - IC/SO Approval Pilecap Precast Shells DDA - DP15.05	75.00	15-Apr-14 A	90.67%	7.00	30-Sep-14	15-May-14	23-May-14	-92.00	0.00	90%
ARDD0241-5	Viaduct E2 - IC/SO Approval Pilecap Precast Shells DDA - DP15.05	0.00		0%	0.00	30-Sep-14		23-May-14	-92.00	0.00	0%
ARDD0241-6	Viaduct E2 - IC/SO Approval (Late) of Sub & Superstructure DDA - DP15.06	0.00		0%	0.00	17-Dec-14		14-Aug-14	-89.00	0.00	0%
Associated Construction Milestones											
ARDD0265	Viaduct E2 - DDA approval ready for Commencement of Pilecaps	0.00	14-Dec-14	0%	0.00		31-Jul-14		135.13	1.00	0%
ARDD0266	Viaduct E2 - DDA approval ready for Initial Segment Casting	0.00	18-Dec-14	0%	0.00		15-Aug-14		125.00	35.00	0%
ARDD0266-1	Viaduct E2 - DDA approval ready for Pile Cap Shell Casting	0.00	01-Oct-14	0%	0.00		25-May-14		128.13	0.00	0%
Viaduct E1											
Viaduct Design											
ARDD0287-1	Viaduct E1 - Earliest IC Certificate for DDA - DP15.02	0.00		0%	0.00	22-Sep-14		05-Aug-14	-33.00	10.00	0%
ARDD0287-3	Viaduct E1 - IC/SO Approval (Late) of Sub & Superstructure DDA DP15.03	75.00	30-Jul-14 A	20%	60.00	26-Dec-14	06-Aug-14	28-Oct-14	-43.00	0.00	20%
ARDD0287-5	Viaduct E1 - IC/SO Approval of Pilecap Precast Shells DDA DP15.02	75.00	20-May-14 A	60%	30.00	31-Oct-14	17-Jun-14	28-Jul-14	-69.00	0.00	60%
ARDD0287-6	Viaduct E1 - IC/SO Approval of Pilecap Precast Shells DDA DP15.02	0.00		0%	0.00	31-Oct-14		28-Jul-14	-69.00	0.00	0%
Associated Construction Milestones											
ARDD0311	Viaduct E1 - DDA approval ready for Commencement of Pilecaps	0.00	01-Nov-14	0%	0.00		30-Aug-14		-62.88	13.00	0%
Viaduct D											



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
Filter: TASK filters: 3-Month Lookahead, No Level of Effort.

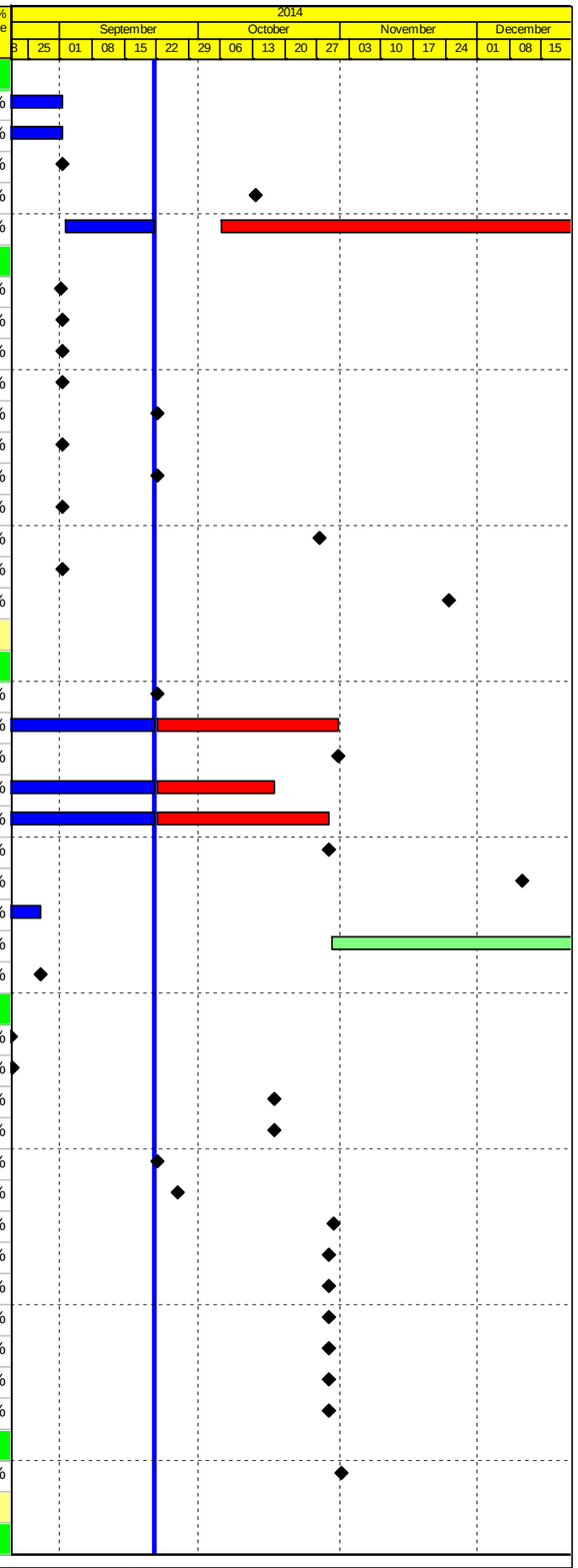
Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 5 of 35 Pages)
(Progress as of 21-Sep-14)

Date	Revision	Checked	Approved
29-Jul-14		FZ	
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
Viaduct Design											
ARDD0330	Viaduct D - Preparation of Substructure DDA - DP14.03	50.00	19-Feb-14 A	100%	0.00	01-Sep-14 A					100%
ARDD0331	Viaduct D - Preparation of Superstructure DDA - DP14.03	70.00	19-Feb-14 A	100%	0.00	01-Sep-14 A					100%
ARDD0332	Viaduct D - Submission of Sub & Superstructure DDA - DP14.03	0.00		100%	0.00	01-Sep-14 A					100%
ARDD0333-1	Viaduct D - Earliest IC Certificate for Sub & Superstructure DDA - DP14.03	0.00		0%	0.00	13-Oct-14		27-Aug-14	-33.00	12.00	0%
ARDD0333-3	Viaduct D - IC/SO Approval of Sub & Superstructure DDA - DP14.03	75.00	02-Sep-14 A	20%	60.00	26-Dec-14	04-Aug-14	24-Oct-14	-45.00	0.00	20%
Information to Contractor											
ARDD0343	Viaduct D - Final Pilecap Reinforcement	0.00	01-Sep-14 A	100%	0.00						100%
ARDD0345	Viaduct D - Final Pier Shapes and Reinforcement	0.00		100%	0.00	01-Sep-14 A					100%
ARDD0346	Viaduct D - Typical Segment Shapes for Moulds	0.00		100%	0.00	01-Sep-14 A					100%
ARDD0347	Viaduct D - Typical Segment Reinforcement	0.00		100%	0.00	01-Sep-14 A					100%
ARDD0348	Viaduct D - Final Segment Types and Reinforcement	0.00		0%	0.00	22-Sep-14		23-Sep-14	2.00	76.00	0%
ARDD0349	Viaduct D - Typical Anchorage and Tendon Types	0.00		100%	0.00	01-Sep-14 A					100%
ARDD0350	Viaduct D - Final Anchorage and PT Requirements	0.00		0%	0.00	22-Sep-14		15-Sep-14	-4.00	70.00	0%
ARDD0351	Viaduct D - Provisional Bearing Schedule	0.00		100%	0.00	01-Sep-14 A					100%
ARDD0352	Viaduct D - Final Bearing Schedule	0.00		0%	0.00	27-Oct-14		09-Jul-14	-78.00	0.00	0%
ARDD0353	Viaduct D - Provisional Movement Joint (MJ) Schedule	0.00		100%	0.00	01-Sep-14 A					100%
ARDD0354	Viaduct D - Final Movement Joint (MJ) Schedule	0.00		0%	0.00	24-Nov-14		26-Feb-15	68.00	47.00	0%
Viaduct C											
Viaduct Design											
ARDD0379-1	Viaduct C - Earliest IC Certificate for Foundation DDA - DP13.01	0.00		0%	0.00	22-Sep-14		05-Sep-14	-10.00	28.00	0%
ARDD0379-2	Viaduct C - IC/SO Approval of Foundation DDA - DP13.01	75.00	22-Jul-14 A	60%	30.00	31-Oct-14	30-Sep-14	10-Nov-14	6.00	0.00	60%
ARDD0379-4	Viaduct C - IC/SO Approval of Foundation DDA - DP13.01	0.00		0%	0.00	31-Oct-14		10-Nov-14	6.00	0.00	0%
ARDD0381	Viaduct C - Preparation of Substructure DDA -DP13.03	50.00	04-Aug-14 A	60%	20.00	17-Oct-14	11-Aug-14	05-Sep-14	-30.00	0.00	60%
ARDD0382	Viaduct C - Preparation of Superstructure DDA -DP13.03	70.00	04-Aug-14 A	60%	28.00	29-Oct-14	30-Jul-14	05-Sep-14	-38.00	0.00	60%
ARDD0383	Viaduct C - Submission of Sub & Superstructure DDA - DP13.03	0.00		0%	0.00	29-Oct-14		05-Sep-14	-38.00	0.00	0%
ARDD0384-1	Viaduct C - Earliest IC Certificate for Sub & Superstructure DDA - DP13.03	0.00		0%	0.00	10-Dec-14		09-Mar-15	63.00	56.00	0%
ARDD0384-2	Viaduct C - IC/SO Approval Pilecap Precast Shells DDA - DP13.02	75.00	06-Aug-14 A	100%	0.00	27-Aug-14 A					100%
ARDD0384-3	Viaduct C - IC/SO Approval of Sub & Superstructure DDA - DP13.03	75.00	30-Oct-14	0%	75.00	11-Feb-15	25-Nov-14	09-Mar-15	18.00	11.00	0%
ARDD0384-4	Viaduct C - IC/SO Approval Pilecap Precast Shells DDA - DP13.02	0.00		100%	0.00	27-Aug-14 A					100%
Information to Contractor											
ARDD0392	Viaduct C - Typical Pilecap Reinforcement - Stainless Steel Rebar	0.00	21-Aug-14 A	100%	0.00						100%
ARDD0393	Viaduct C - Typical Pilecap Reinforcement - Regular Rebar	0.00		100%	0.00	21-Aug-14 A					100%
ARDD0394	Viaduct C - Final Pilecap Reinforcement	0.00		0%	0.00	17-Oct-14		12-Dec-14	40.00	0.00	0%
ARDD0396	Viaduct C - Final Pier Shapes and Reinforcement	0.00		0%	0.00	17-Oct-14		26-Feb-15	94.00	31.00	0%
ARDD0397	Viaduct C - Typical Segment Shapes for Moulds	0.00		0%	0.00	22-Sep-14		15-Oct-14	18.00	0.00	0%
ARDD0398	Viaduct C - Typical Segment Reinforcement	0.00		0%	0.00	26-Sep-14		04-Dec-14	49.00	0.00	0%
ARDD0399	Viaduct C - Final Segment Types and Reinforcement	0.00		0%	0.00	30-Oct-14		07-Jan-15	49.00	31.00	0%
ARDD0400	Viaduct C - Typical Anchorage and Tendon Types	0.00		0%	0.00	29-Oct-14		01-Apr-15	110.00	92.00	0%
ARDD0401	Viaduct C - Final Anchorage and PT Requirements	0.00		0%	0.00	29-Oct-14		07-Jan-15	50.00	32.00	0%
ARDD0402	Viaduct C - Provisional Bearing Schedule	0.00		0%	0.00	29-Oct-14		05-Sep-14	-38.00	0.00	0%
ARDD0403	Viaduct C - Final Bearing Schedule	0.00		0%	0.00	29-Oct-14		05-Sep-14	-38.00	42.00	0%
ARDD0404	Viaduct C - Provisional Movement Joint (MJ) Schedule	0.00		0%	0.00	29-Oct-14		26-Feb-15	86.00	0.00	0%
ARDD0405	Viaduct C - Final Movement Joint (MJ) Schedule	0.00		0%	0.00	29-Oct-14		26-Feb-15	86.00	65.00	0%
Associated Construction Milestones											
ARDD0412	Viaduct C - DDA approval ready for Commencement of Piling	0.00	01-Nov-14	0%	0.00		10-Dec-14		39.00	0.00	0%
Viaduct A											
Viaduct Design											



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
Filter: TASK filters: 3-Month Lookahead, No Level of Effort.

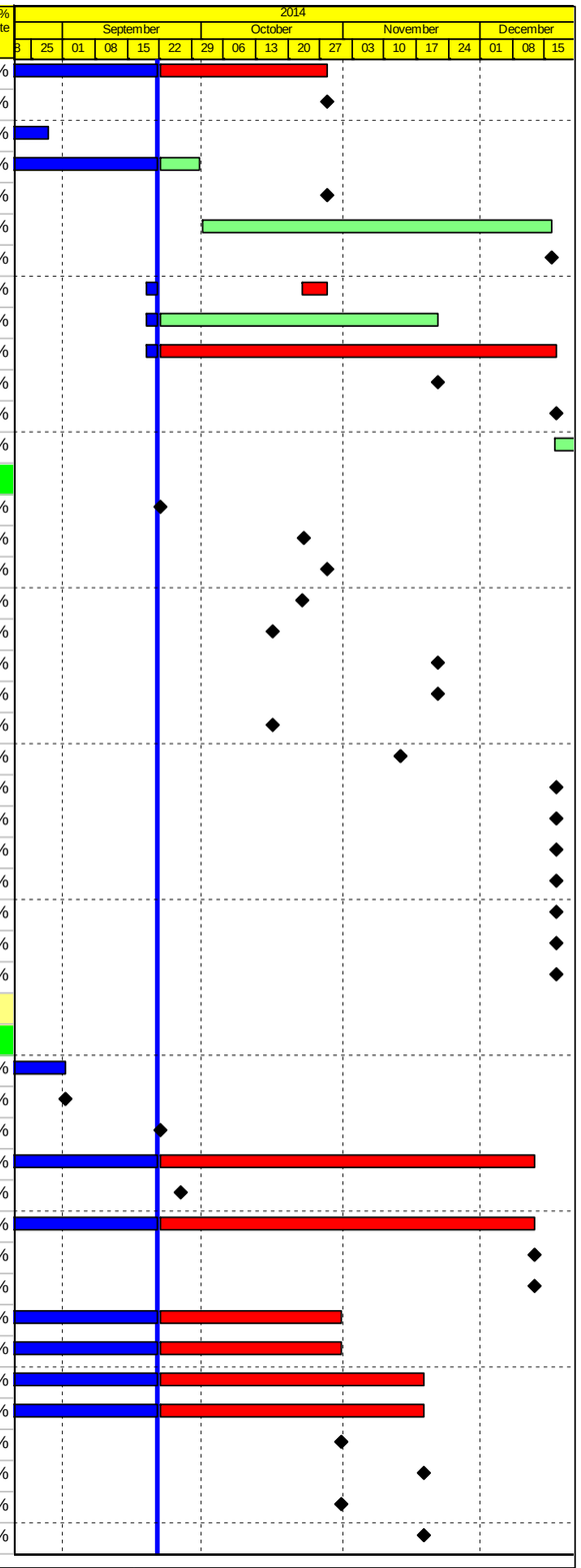
Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 6 of 35 Pages)
(Progress as of 21-Sep-14)

Date	Revision	Checked	Approved
29-Jul-14		FZ	
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
ARDD0425	Viaduct A - IC/SO Approval of Viaduct AIP - DP11.00	68.00	19-Jul-14 A	60.29%	27.00	28-Oct-14	11-Sep-14	17-Oct-14	-7.00	0.00	60%
ARDD0425-1	Viaduct A - IC/SO Approval of Viaduct AIP - DP11.00	0.00		0%	0.00	28-Oct-14		17-Oct-14	-7.00	0.00	0%
ARDD0428	Viaduct A - Final Pile Loads and Global Analysis	15.00	18-Jul-14 A	100%	0.00	28-Aug-14 A					100%
ARDD0429	Viaduct A - Foundation DDA - DP11.01	45.00	18-Jul-14 A	84.44%	7.00	30-Sep-14	09-Dec-14	17-Dec-14	56.00	0.00	85%
ARDD0430-1	Viaduct A - Earliest IC Certificate for Foundation DDA DP11.01	0.00		0%	0.00	28-Oct-14		04-Mar-15	91.00	35.00	0%
ARDD0430-2	Viaduct A - IC/SO Approval of Foundation DDA - DP11.01	55.00	01-Oct-14	0%	55.00	16-Dec-14	18-Dec-14	04-Mar-15	56.00	0.00	0%
ARDD0430-4	Viaduct A - IC/SO Approval of Foundation DDA - DP11.01	0.00		0%	0.00	16-Dec-14		04-Mar-15	56.00	0.00	0%
ARDD0431	Viaduct A - Preparation of Pilecap Precast Shells DDA - DP11.02	40.00	19-Sep-14 A	90%	4.00	28-Oct-14	14-Oct-14	17-Oct-14	-7.00	0.00	90%
ARDD0432	Viaduct A - Preparation of Substructure DDA - DP11.03	50.00	19-Sep-14 A	10%	45.00	21-Nov-14	30-Oct-14	31-Dec-14	28.00	0.00	10%
ARDD0433	Viaduct A - Preparation of Superstructure DDA - DP11.03	70.00	19-Sep-14 A	10%	63.00	17-Dec-14	23-Jul-14	17-Oct-14	-43.00	0.00	10%
ARDD0434-1	Viaduct A - Submission of DDA - DP11.02	0.00		0%	0.00	21-Nov-14		04-Mar-15	73.00	17.00	0%
ARDD0434-2	Viaduct A - Submission of DDA - DP11.03	0.00		0%	0.00	17-Dec-14		17-Oct-14	-43.00	0.00	0%
ARDD0435-2	Viaduct A - IC/SO Approval of DDA DP11.02	75.00	17-Dec-14	0%	75.00	31-Mar-15	05-Mar-15	17-Jun-15	56.00	0.00	0%
Information to Contractor											
ARDD0439	Viaduct A - Typical Pile Reinforcement - Stainless Rebar	0.00	22-Sep-14	0%	0.00		08-Jan-15		78.00	0.00	0%
ARDD0440	Viaduct A - Final Pile Reinforcement and Socket H Pile Details	0.00		0%	0.00	23-Oct-14		10-Feb-15	78.00	0.00	0%
ARDD0441	Viaduct A - Precast Pilecap Shell Shape and Reinforcement	0.00		0%	0.00	28-Oct-14		28-Jan-15	66.00	38.00	0%
ARDD0443	Viaduct A - Typical Pilecap Reinforcement - Stainless Steel Rebar	0.00	23-Oct-14	0%	0.00		01-Jan-15		50.00	22.00	0%
ARDD0444	Viaduct A - Typical Pilecap Reinforcement - Regular Rebar	0.00		0%	0.00	16-Oct-14		31-Dec-14	54.00	26.00	0%
ARDD0445	Viaduct A - Final Pilecap Reinforcement	0.00		0%	0.00	21-Nov-14		31-Dec-14	28.00	0.00	0%
ARDD0447	Viaduct A - Final Pier Shapes and Reinforcement	0.00		0%	0.00	21-Nov-14		21-May-15	129.00	11.00	0%
ARDD0448	Viaduct A - Typical Segment Shapes for Moulds	0.00		0%	0.00	16-Oct-14		28-May-15	160.00	0.00	0%
ARDD0449	Viaduct A - Typical Segment Reinforcement	0.00		0%	0.00	13-Nov-14		28-May-15	140.00	24.00	0%
ARDD0450	Viaduct A - Final Segment Types and Reinforcement	0.00		0%	0.00	17-Dec-14		09-Jul-15	146.00	30.00	0%
ARDD0451	Viaduct A - Typical Anchorage and Tendon Types	0.00		0%	0.00	17-Dec-14		28-May-15	116.00	0.00	0%
ARDD0452	Viaduct A - Final Anchorage and PT Requirements	0.00		0%	0.00	17-Dec-14		09-Jul-15	146.00	30.00	0%
ARDD0453	Viaduct A - Provisional Bearing Schedule	0.00		0%	0.00	17-Dec-14		17-Oct-14	-43.00	0.00	0%
ARDD0454	Viaduct A - Final Bearing Schedule	0.00		0%	0.00	17-Dec-14		06-Jul-15	143.00	50.00	0%
ARDD0455	Viaduct A - Provisional Movement Joint (MJ) Schedule	0.00		0%	0.00	17-Dec-14		15-Jan-15	21.00	0.00	0%
ARDD0456	Viaduct A - Final Movement Joint (MJ) Schedule	0.00		0%	0.00	17-Dec-14		15-Jan-15	21.00	0.00	0%
Viaduct F1 & F3											
Viaduct Design											
ARDD0476	Viaduct F1 & F3 - IC/SO Approval of Viaduct AIP - DP16.00	68.00	03-Jun-14 A	100%	0.00	01-Sep-14 A					100%
ARDD0476-1	Viaduct F1 & F3 - IC/SO Approval of Viaduct AIP - DP16.00	0.00		100%	0.00	01-Sep-14 A					100%
ARDD0477	Viaduct F1 & F3 - Receipt of Data for Final Analysis	0.00		0%	0.00	22-Sep-14		29-Aug-18	028.00	1028.00	0%
ARDD0481	Viaduct F1 & F3 - IC/SO Approval of Foundation DDA - DP16.01	75.00	16-Aug-14 A	20%	60.00	12-Dec-14	28-Aug-14	19-Nov-14	-17.00	0.00	20%
ARDD0481-1	Viaduct F1 & F3 - Earliest IC Certificate for DDA - DP16.01 DP16.07	0.00		0%	0.00	26-Sep-14		19-Nov-14	38.00	55.00	0%
ARDD0481-2	Viaduct F1 & F3 - IC/SO Approval of Foundation DDA - DP16.07	75.00	16-Aug-14 A	20%	60.00	12-Dec-14	28-Aug-14	19-Nov-14	-17.00	0.00	20%
ARDD0481-3	Viaduct F1 & F3 - IC/SO Approval of Foundation DDA - DP16.07	0.00		0%	0.00	12-Dec-14		19-Nov-14	-17.00	0.00	0%
ARDD0481-4	Viaduct F1 & F3 - IC/SO Approval of Foundation DDA - DP16.01	0.00		0%	0.00	12-Dec-14		19-Nov-14	-17.00	0.00	0%
ARDD0482	Viaduct F1 & F3 - Preparation of Substructure DDA - DP16.02	50.00	15-Aug-14 A	40%	30.00	31-Oct-14	08-Sep-14	17-Oct-14	-10.00	0.00	40%
ARDD0482-2	Viaduct F1 & F3 - Preparation of Substructure DDA - DP16.08	50.00	15-Aug-14 A	40%	30.00	31-Oct-14	08-Sep-14	17-Oct-14	-10.00	0.00	40%
ARDD0483	Viaduct F1 & F3 - Preparation of Superstructure DDA - DP16.03	70.00	15-Aug-14 A	40%	42.00	18-Nov-14	21-Aug-14	17-Oct-14	-22.00	0.00	40%
ARDD0483-2	Viaduct F1 & F3 - Preparation of Superstructure DDA - DP16.09	70.00	15-Aug-14 A	40%	42.00	18-Nov-14	21-Aug-14	17-Oct-14	-22.00	0.00	40%
ARDD0484-1	Viaduct F1 & F3 - Submission of DDA - DP16.02	0.00		0%	0.00	31-Oct-14		17-Oct-14	-10.00	9.00	0%
ARDD0484-2	Viaduct F1 & F3 - Submission of DDA - DP16.03	0.00		0%	0.00	18-Nov-14		17-Oct-14	-22.00	0.00	0%
ARDD0484-3	Viaduct F1 & F3 - Submission of DDA - DP16.08	0.00		0%	0.00	31-Oct-14		17-Oct-14	-10.00	9.00	0%
ARDD0484-4	Viaduct F1 & F3 - Submission of DDA - DP16.09	0.00		0%	0.00	18-Nov-14		17-Oct-14	-22.00	0.00	0%



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
Filter: TASK filters: 3-Month Lookahead, No Level of Effort.

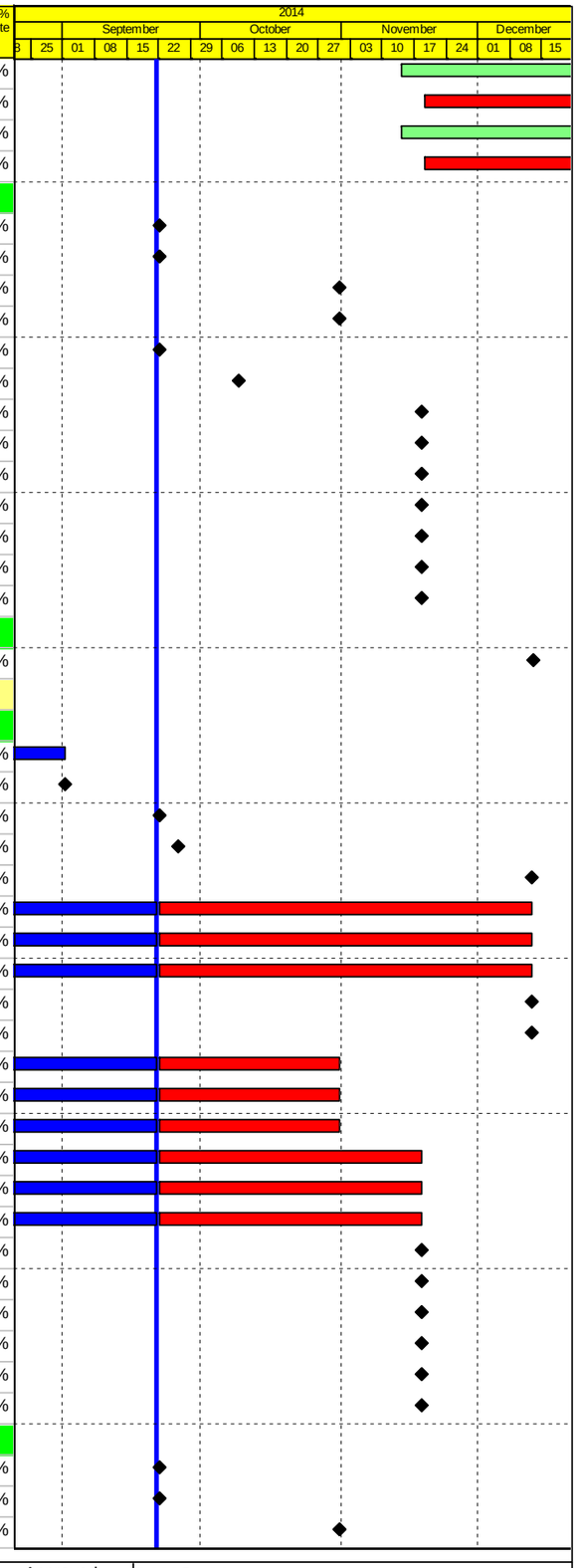
Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 7 of 35 Pages)
(Progress as of 21-Sep-14)

Date	Revision	Checked	Approved
29-Jul-14		FZ	
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
ARDD0485-2	Viaduct F1 & F3 - IC/SO Approval of DDA - DP16.02	75.00	14-Nov-14	0%	75.00	26-Feb-15	26-Nov-14	10-Mar-15	8.00	40.00	0%
ARDD0485-4	Viaduct F1 & F3 - IC/SO Approval of DDA - DP16.03	75.00	19-Nov-14	0%	75.00	03-Mar-15	26-Nov-14	10-Mar-15	5.00	0.00	0%
ARDD0485-6	Viaduct F1 & F3 - IC/SO Approval of DDA - DP16.08	75.00	14-Nov-14	0%	75.00	26-Feb-15	26-Nov-14	10-Mar-15	8.00	40.00	0%
ARDD0485-8	Viaduct F1 & F3 - IC/SO Approval of DDA - DP16.09	75.00	19-Nov-14	0%	75.00	03-Mar-15	26-Nov-14	10-Mar-15	5.00	0.00	0%
Information to Contractor											
ARDD0492	Viaduct F1 & F3 - Typical Pilecap Reinforcement - Stainless Steel Rebar	0.00	22-Sep-14	0%	0.00		04-Nov-14		31.00	6.00	0%
ARDD0493	Viaduct F1 & F3 - Typical Pilecap Reinforcement - Regular Rebar	0.00		0%	0.00	22-Sep-14		03-Nov-14	31.00	6.00	0%
ARDD0494	Viaduct F1 & F3 - Final Pilecap Reinforcement	0.00		0%	0.00	31-Oct-14		05-Dec-14	25.00	0.00	0%
ARDD0496	Viaduct F1 & F3 - Final Pier Shapes and Reinforcement	0.00		0%	0.00	31-Oct-14		08-Jan-15	49.00	41.00	0%
ARDD0497	Viaduct F1 & F3 - Typical Segment Shapes for Moulds	0.00		0%	0.00	22-Sep-14		27-Nov-14	49.00	0.00	0%
ARDD0498	Viaduct F1 & F3 - Typical Segment Reinforcement	0.00		0%	0.00	09-Oct-14		27-Nov-14	35.00	28.00	0%
ARDD0499	Viaduct F1 & F3 - Final Segment Types and Reinforcement	0.00		0%	0.00	18-Nov-14		19-Feb-15	67.00	60.00	0%
ARDD0500	Viaduct F1 & F3 - Typical Anchorage and Tendon Types	0.00		0%	0.00	18-Nov-14		27-Nov-14	7.00	0.00	0%
ARDD0501	Viaduct F1 & F3 - Final Anchorage and PT Requirements	0.00		0%	0.00	18-Nov-14		08-Jan-15	37.00	30.00	0%
ARDD0502	Viaduct F1 & F3 - Provisional Bearing Schedule	0.00		0%	0.00	18-Nov-14		17-Oct-14	-22.00	0.00	0%
ARDD0503	Viaduct F1 & F3 - Final Bearing Schedule	0.00		0%	0.00	18-Nov-14		17-Oct-14	-22.00	57.00	0%
ARDD0504	Viaduct F1 & F3 - Provisional Movement Joint (MJ) Schedule	0.00		0%	0.00	18-Nov-14		26-Feb-15	72.00	0.00	0%
ARDD0505	Viaduct F1 & F3 - Final Movement Joint (MJ) Schedule	0.00		0%	0.00	18-Nov-14		26-Feb-15	72.00	43.00	0%
Associated Construction Milestones											
ARDD0507	Viaduct F1 & F3 - DDA approval ready for Commencement of Piling	0.00	13-Dec-14	0%	0.00		10-Dec-14		-3.00	143.00	0%
Viaduct F2, F4 and F5											
Viaduct Design											
ARDD0520	Viaduct F2, F4 & F5 - IC/SO Approval of Viaduct AIP - DP16.00	68.00	03-Jun-14 A	100%	0.00	01-Sep-14 A					100%
ARDD0520-1	Viaduct F2, F4 & F5 - IC/SO Approval of Viaduct AIP - DP16.00	0.00		100%	0.00	01-Sep-14 A					100%
ARDD0521	Viaduct F2, F4 & F5 - Receipt of Data for Final Analysis	0.00		0%	0.00	22-Sep-14		29-Aug-18	028.00	1028.00	0%
ARDD0525-1	Viaduct F2, F4 & F5 - Earliest IC certificate for DDA - DP16.04, 10, 13	0.00	26-Sep-14	0%	0.00		19-Dec-14		60.00	35.00	0%
ARDD0525-10	Viaduct F2, F4 & F5 - IC/SO Approval of Foundation DDA - DP16.13	0.00		0%	0.00	12-Dec-14		03-Dec-14	-7.00	0.00	0%
ARDD0525-2	Viaduct F2, F4 & F5 - IC/SO Approval of Foundation DDA - DP16.04	75.00	16-Aug-14 A	20%	60.00	12-Dec-14	11-Sep-14	03-Dec-14	-7.00	0.00	20%
ARDD0525-4	Viaduct F2, F4 & F5 - IC/SO Approval of Foundation DDA - DP16.10	75.00	16-Aug-14 A	20%	60.00	12-Dec-14	11-Sep-14	03-Dec-14	-7.00	0.00	20%
ARDD0525-6	Viaduct F2, F4 & F5 - IC/SO Approval of Foundation DDA - DP16.13	75.00	16-Aug-14 A	20%	60.00	12-Dec-14	11-Sep-14	03-Dec-14	-7.00	0.00	20%
ARDD0525-7	Viaduct F2, F4 & F5 - IC/SO Approval of Foundation DDA - DP16.10	0.00		0%	0.00	12-Dec-14		03-Dec-14	-7.00	0.00	0%
ARDD0525-8	Viaduct F2, F4 & F5 - IC/SO Approval of Foundation DDA - DP16.04	0.00		0%	0.00	12-Dec-14		03-Dec-14	-7.00	0.00	0%
ARDD0526	Viaduct F2, F4 & F5 - Preparation of Substructure DDA - DP16.05	50.00	15-Aug-14 A	40%	30.00	31-Oct-14	08-Sep-14	17-Oct-14	-10.00	0.00	40%
ARDD0526-4	Viaduct F2, F4 & F5 - Preparation of Substructure DDA - DP16.11	50.00	15-Aug-14 A	40%	30.00	31-Oct-14	08-Sep-14	17-Oct-14	-10.00	0.00	40%
ARDD0526-6	Viaduct F2, F4 & F5 - Preparation of Substructure DDA - DP16.14	50.00	15-Aug-14 A	40%	30.00	31-Oct-14	08-Sep-14	17-Oct-14	-10.00	0.00	40%
ARDD0527	Viaduct F2, F4 & F5 - Preparation of Superstructure DDA - DP16.06	70.00	15-Aug-14 A	40%	42.00	18-Nov-14	21-Aug-14	17-Oct-14	-22.00	0.00	40%
ARDD0527-4	Viaduct F2, F4 & F5 - Preparation of Superstructure DDA - DP16.12	70.00	15-Aug-14 A	40%	42.00	18-Nov-14	21-Aug-14	17-Oct-14	-22.00	0.00	40%
ARDD0527-6	Viaduct F2, F4 & F5 - Preparation of Superstructure DDA - DP16.15	70.00	15-Aug-14 A	40%	42.00	18-Nov-14	21-Aug-14	17-Oct-14	-22.00	0.00	40%
ARDD0528-1	Viaduct F2, F4 & F5 - Submission of DDA -DP16.05	0.00		0%	0.00	18-Nov-14		17-Oct-14	-22.00	0.00	0%
ARDD0528-2	Viaduct F2, F4 & F5 - Submission of DDA -DP16.06	0.00		0%	0.00	18-Nov-14		17-Oct-14	-22.00	0.00	0%
ARDD0528-3	Viaduct F2, F4 & F5 - Submission of DDA -DP16.11	0.00		0%	0.00	18-Nov-14		17-Oct-14	-22.00	0.00	0%
ARDD0528-4	Viaduct F2, F4 & F5 - Submission of DDA -DP16.12	0.00		0%	0.00	18-Nov-14		17-Oct-14	-22.00	0.00	0%
ARDD0528-5	Viaduct F2, F4 & F5 - Submission of DDA -DP16.14	0.00		0%	0.00	18-Nov-14		17-Oct-14	-22.00	0.00	0%
ARDD0528-6	Viaduct F2, F4 & F5 - Submission of DDA -DP16.15	0.00		0%	0.00	18-Nov-14		17-Oct-14	-22.00	0.00	0%
Information to Contractor											
ARDD0536	Viaduct F2, F4 & F5 - Typical Pilecap Reinforcement - Stainless Steel Rebar	0.00	22-Sep-14	0%	0.00		25-Feb-15		112.13	6.00	0%
ARDD0537	Viaduct F2, F4 & F5 - Typical Pilecap Reinforcement - Regular Rebar	0.00		0%	0.00	22-Sep-14		25-Feb-15	112.13	6.00	0%
ARDD0538	Viaduct F2, F4 & F5 - Final Pilecap Reinforcement	0.00		0%	0.00	31-Oct-14		31-Mar-15	106.13	9.00	0%



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
Filter: TASK filters: 3-Month Lookahead, No Level of Effort.

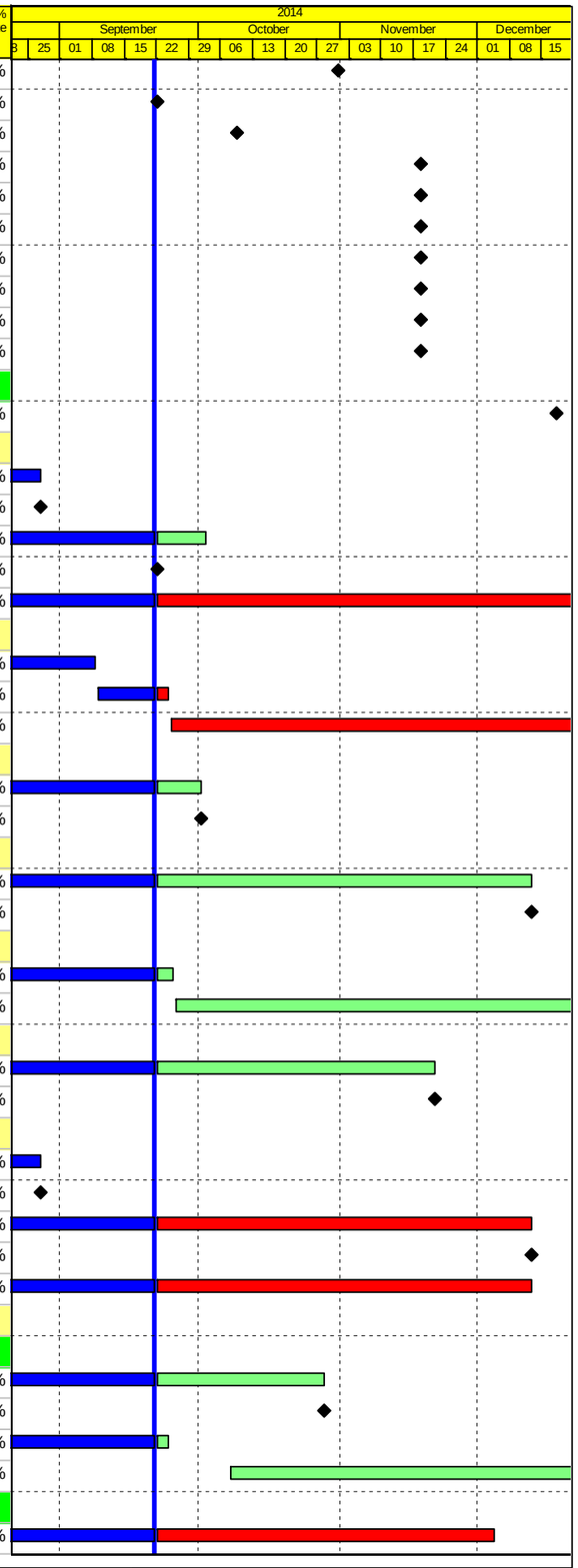
Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 8 of 35 Pages)
(Progress as of 21-Sep-14)

Date	Revision	Checked	Approved
29-Jul-14		FZ	
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
ARDD0540	Viaduct F2, F4 & F5 - Final Pier Shapes and Reinforcement	0.00		0%	0.00	31-Oct-14		23-Mar-15	100.13	31.00	0%
ARDD0541	Viaduct F2, F4 & F5 - Typical Segment Shapes for Moulds	0.00		0%	0.00	22-Sep-14		27-Nov-14	49.00	0.00	0%
ARDD0542	Viaduct F2, F4 & F5 - Typical Segment Reinforcement	0.00		0%	0.00	09-Oct-14		08-Jan-15	65.00	58.00	0%
ARDD0543	Viaduct F2, F4 & F5 - Final Segment Types and Reinforcement	0.00		0%	0.00	18-Nov-14		19-Feb-15	67.00	60.00	0%
ARDD0544	Viaduct F2, F4 & F5 - Typical Anchorage and Tendon Types	0.00		0%	0.00	18-Nov-14		27-Nov-14	7.00	0.00	0%
ARDD0545	Viaduct F2, F4 & F5 - Final Anchorage and PT Requirements	0.00		0%	0.00	18-Nov-14		19-Feb-15	67.00	60.00	0%
ARDD0546	Viaduct F2, F4 & F5 - Provisional Bearing Schedule	0.00		0%	0.00	18-Nov-14		17-Oct-14	-22.00	0.00	0%
ARDD0547	Viaduct F2, F4 & F5 - Final Bearing Schedule	0.00		0%	0.00	18-Nov-14		17-Oct-14	-22.00	57.00	0%
ARDD0548	Viaduct F2, F4 & F5 - Provisional Movement Joint (MJ) Schedule	0.00		0%	0.00	18-Nov-14		26-Feb-15	72.00	0.00	0%
ARDD0549	Viaduct F2, F4 & F5 - Final Movement Joint (MJ) Schedule	0.00		0%	0.00	18-Nov-14		26-Feb-15	72.00	43.00	0%
Associated Construction Milestones											
ARDD0551	Viaduct F2, F4 & F5 - DDA approval ready for Commencement of Piling	0.00	18-Dec-14	0%	0.00		06-Mar-15		78.13	0.00	0%
Parapet and Utility Trough											
ARDD0560	IC/SO Approval of AIP - DP30.00	68.00	17-Apr-14 A	100%	0.00	27-Aug-14 A					100%
ARDD0560-1	IC/SO Approval of AIP - DP30.00	0.00		100%	0.00	27-Aug-14 A					100%
ARDD0563	Preparation of Utility Truss DDA	60.00	23-Jun-14 A	85%	9.00	02-Oct-14	17-Aug-18	29-Aug-18	019.00	1019.00	85%
ARDD0565	Submission of Utility Truss DDA - DP30.02	0.00		0%	0.00	22-Sep-14		29-Aug-18	028.00	1028.00	0%
ARDD0566	IC/SO Approval of DDA -DP30.01 & DP30.02	75.00	31-Jul-14 A	9.33%	68.00	24-Dec-14	20-Aug-14	21-Nov-14	-23.00	0.00	10%
TCSS Provisions											
ARDD0571	Finalisation of TCSS Civil Provisions	30.00	01-Jul-14 A	100%	0.00	08-Sep-14 A					100%
ARDD0572	Preparation of DDA for TCSS civil provisions - BP10.01	10.00	09-Sep-14 A	70%	3.00	24-Sep-14	06-Aug-14	08-Aug-14	-33.00	0.00	70%
ARDD0573	IC/SO Approval of DDA for TCSS civil provisions - BP10.01	75.00	25-Sep-14	0%	75.00	07-Jan-15	11-Aug-14	21-Nov-14	-33.00	0.00	0%
Slopeworks for Viaduct C: 10NW -C/C22, C/C26, C/C27, C/F13, C/F14. C/F15											
ARDD0587	IC/SO Approval of Slope Combined AIP/DDA -CP13.01	75.00	20-Nov-13 A	89.33%	8.00	01-Oct-14	15-Oct-14	24-Oct-14	17.00	0.00	90%
ARDD0587-1	IC/SO Approval of Slope Combined AIP/DDA -CP13.01	0.00		0%	0.00	01-Oct-14		24-Oct-14	17.00	52.00	0%
Slopeworks for Viaduct A: 9SE-B/FR8, B/R1, B/R2											
ARDD0595	IC/SO Approval of Slope Combined AIP/DDA -CP11.01	75.00	31-Jul-14 A	20%	60.00	12-Dec-14	02-Jul-15	23-Sep-15	203.00	0.00	20%
ARDD0595-1	IC/SO Approval of Slope Combined AIP/DDA -CP11.01	0.00		0%	0.00	12-Dec-14		23-Sep-15	203.00	150.00	0%
Slopeworks for Viaduct D: 10NW -C/R4, C/F9, C/F10, C/F11, C/F17, C/F50											
ARDD0602	Preparation of Slope Combined AIP/DDA - CP14.01	20.00	10-Dec-13 A	80%	4.00	25-Sep-14	23-Oct-14	28-Oct-14	23.00	0.00	80%
ARDD0603	IC/SO Approval of Slope Combined AIP/DDA -CP14.01	75.00	26-Sep-14	0%	75.00	08-Jan-15	29-Oct-14	10-Feb-15	23.00	0.00	0%
Natural Terrian Hazard Assessment											
ARDD0613	GEO Approval of NTHM Combined AIP/DDA - CP20.02, CP21.02	75.00	16-Jul-14 A	40%	45.00	21-Nov-14	19-Jan-15	20-Mar-15	85.00	0.00	40%
ARDD0613-1	GEO Approval of NTHM Combined AIP/DDA - CP20.02, CP21.02	0.00		0%	0.00	21-Nov-14		20-Mar-15	85.00	0.00	0%
Waterworks, Drainage & Utility Diversions											
ARDD0622	IC/SO Approval of Waterworks, Drainage & Utility AIP - BP20.00	68.00	03-Jan-14 A	100%	0.00	27-Aug-14 A					100%
ARDD0622-1	IC/SO Approval of Waterworks, Drainage & Utility AIP - BP20.00	0.00		100%	0.00	27-Aug-14 A					100%
ARDD0629	IC/SO Approval of Waterworks, Drainage & Utility DDA - BP20.01	75.00	22-Jul-14 A	20%	60.00	12-Dec-14	04-Aug-14	24-Oct-14	-35.00	0.00	20%
ARDD0629-1	IC/SO Approval of Waterworks, Drainage & Utility DDA - BP20.01	0.00		0%	0.00	12-Dec-14		24-Oct-14	-35.00	0.00	0%
ARDD0630	Gov't Approval of Submissions for Waterworks, Drainage & Utility Diversions	75.00	22-Jul-14 A	20%	60.00	12-Dec-14	04-Aug-14	24-Oct-14	-35.00	0.00	20%
Viaduct Approach Ramp Retaining Walls											
Approach Ramp D											
ARDD0650	Approach D - IC/SO Approval of Approach Ramp D AIP - DP21.00	68.00	05-Jul-14 A	60.29%	27.00	28-Oct-14	13-Oct-14	18-Nov-14	15.00	0.00	60%
ARDD0650-1	Approach D - IC/SO Approval of Approach Ramp D AIP - DP21.00	0.00		0%	0.00	28-Oct-14		18-Nov-14	15.00	0.00	0%
ARDD0651	Approach D - Preparation of Approach Ramp D DDA Submission - DP20.01	30.00	07-Aug-14 A	90%	3.00	24-Sep-14	24-Oct-14	28-Oct-14	24.00	9.00	90%
ARDD0652	Approach D - IC/SO Approval of Approach Ramp D DDA - DP20.01	75.00	08-Oct-14	0%	75.00	20-Jan-15	29-Oct-14	10-Feb-15	15.00	0.00	0%
Approach Ramp C											
ARDD0656	Approach C - IC/SO Approval of Approach Ramp C AIP -DP20.00	68.00	18-Jun-14 A	20.59%	54.00	04-Dec-14	01-Oct-14	15-Dec-14	7.00	0.00	20%



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
Filter: TASK filters: 3-Month Lookahead, No Level of Effort.

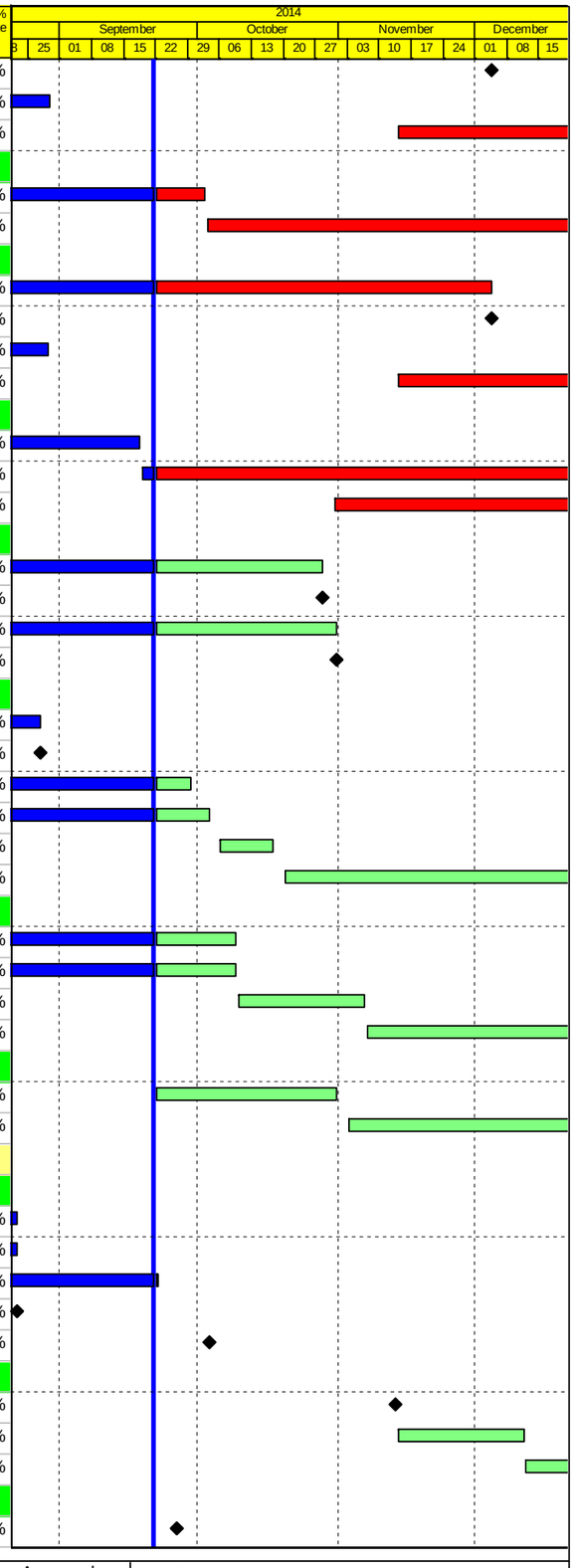
Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 9 of 35 Pages)
(Progress as of 21-Sep-14)

Date	Revision	Checked	Approved
29-Jul-14		FZ	
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
ARDD0656-1	Approach C - IC/SO Approval of Approach Ramp C AIP -DP20.00	0.00		0%	0.00	04-Dec-14		15-Dec-14	7.00	0.00	0%
ARDD0657	Approach C - Preparation of Approach Ramp C DDA Submission - DP20.01	30.00	18-Jul-14 A	100%	0.00	29-Aug-14 A					100%
ARDD0658	Approach C - IC/SO Approval of Approach Ramp C DDA -DP20.01	75.00	14-Nov-14	0%	75.00	26-Feb-15	25-Nov-14	09-Mar-15	7.00	0.00	0%
Approach Ramp B											
ARDD0663	Approach B - Preparation of Approach Ramp B DDA Submission -DP21.01	30.00	09-Jun-14 A	70%	9.00	02-Oct-14	01-Jul-14	11-Jul-14	-59.00	0.00	70%
ARDD0664	Approach B - IC/SO Approval of Approach Ramp B DDA -DP21.01	75.00	03-Oct-14	0%	75.00	15-Jan-15	14-Jul-14	24-Oct-14	-59.00	0.00	0%
Approach A											
ARDD0668	Approach A - IC/SO Approval of Approach Ramp A AIP -DP20.00	68.00	18-Jun-14 A	20.59%	54.00	04-Dec-14	14-Aug-14	28-Oct-14	-27.00	0.00	20%
ARDD0668-1	Approach A - IC/SO Approval of Approach Ramp A AIP -DP20.00	0.00		0%	0.00	04-Dec-14		28-Oct-14	-27.00	0.00	0%
ARDD0669	Approach A - Preparation of Approach Ramp A DDA Submission -DP20.01	30.00	18-Jul-14 A	100%	0.00	29-Aug-14 A					100%
ARDD0670	Approach A - IC/SO Approval of Approach Ramp A DDA - DP20.01	75.00	14-Nov-14	0%	75.00	26-Feb-15	08-Oct-14	20-Jan-15	-27.00	0.00	0%
Approach F											
ARDD0673	Approach F - Preparation of Approach Ramp F AIP Submission -DP22.00 Update	40.00	03-Jul-14 A	100%	0.00	18-Sep-14 A					100%
ARDD0674	Approach F - IC/SO Approval of Approach Ramp F AIP -DP22.00	68.00	19-Sep-14 A	0%	68.00	24-Dec-14	23-Jun-14	24-Sep-14	-65.00	0.00	0%
ARDD0675	Approach F - Preparation of Approach Ramp F DDA Submission -DP22.01	50.00	31-Oct-14	0%	50.00	08-Jan-15	01-Aug-14	09-Oct-14	-65.00	0.00	0%
Viaduct Pavement											
ARDD867	Viaduct Pavement - IC/SO Approval of AIP - BP02.00	68.00	27-Jun-14 A	60.29%	27.00	28-Oct-14	24-Jul-18	29-Aug-18	001.00	0.00	60%
ARDD867-1	Viaduct Pavement - IC/SO Approval of AIP - BP02.00	0.00		0%	0.00	28-Oct-14		29-Aug-18	001.00	1001.00	0%
ARDD871	Viaduct Pavement - IC/SO Approval of DDA - BP02.01	75.00	27-Jun-14 A	60%	30.00	31-Oct-14	23-Oct-14	03-Dec-14	23.00	0.00	60%
ARDD871-1	Viaduct Pavement - IC/SO Approval of DDA - BP02.01	0.00		0%	0.00	31-Oct-14		03-Dec-14	23.00	0.00	0%
Signs, Markings and Street Furniture											
ARDD0683	IC/SO Approval of Signs, Markings & Street Furniture AIP - BP03.00	68.00	01-Mar-14 A	100%	0.00	27-Aug-14 A					100%
ARDD0683-1	IC/SO Approval of Signs, Markings & Street Furniture AIP - BP03.00	0.00		100%	0.00	27-Aug-14 A					100%
ARDD0685	Preparation of Final Signs and Markings Plans	30.00	04-Jun-14 A	80%	6.00	29-Sep-14	01-Jan-15	08-Jan-15	73.00	4.00	80%
ARDD0686	Preparation of Detail Sign Gantry Structures	50.00	16-Jul-14 A	80%	10.00	03-Oct-14	26-Dec-14	08-Jan-15	69.00	0.00	80%
ARDD0687	Preparation of Signs, Markings & Street Furniture DDA Submission - BP03.01	10.00	06-Oct-14	0%	10.00	17-Oct-14	09-Jan-15	22-Jan-15	69.00	0.00	0%
ARDD0688	IC/SO Approval of Signs, Markings & Street Furniture DDA - BP03.01	75.00	20-Oct-14	0%	75.00	30-Jan-15	23-Jan-15	07-May-15	69.00	0.00	0%
Landscape											
ARDD0697	Prepare Final Planting Plans and Schedules	20.00	14-Aug-14 A	30%	14.00	09-Oct-14	04-Aug-15	21-Aug-15	226.00	0.00	30%
ARDD0698	Prepare Irrigation Plans	20.00	14-Aug-14 A	30%	14.00	09-Oct-14	04-Aug-15	21-Aug-15	226.00	0.00	30%
ARDD0699	Preparation of DDA Submission for landscape works - BP22.01	20.00	10-Oct-14	0%	20.00	06-Nov-14	24-Aug-15	18-Sep-15	226.00	0.00	0%
ARDD0700	IC/SO Approval of DDA for landscape works - BP22.01	75.00	07-Nov-14	0%	75.00	19-Feb-15	21-Sep-15	01-Jan-16	226.00	0.00	0%
Remaining Works											
ARDD0704	Preparation of Remaining Works AIP - ZP01.00	30.00	22-Sep-14	0%	30.00	31-Oct-14	02-May-16	10-Jun-16	420.00	0.00	0%
ARDD0705	IC/SO Approval of Remaining Works AIP - ZP01.00	40.00	03-Nov-14	0%	40.00	26-Dec-14	13-Jun-16	05-Aug-16	420.00	0.00	0%
Segment Target Geometry And Erection Engineering											
Viaduct B											
ARDD0712	Viaduct B - Erection Sequence Analysis	20.00	09-Jan-14 A	100%	0.00	22-Aug-14 A					100%
ARDD0713	Viaduct B - Target Geometry Analysis	20.00	06-Feb-14 A	100%	0.00	22-Aug-14 A					100%
ARDD0714	Viaduct B - Segment Geometry Schedules	10.00	06-Mar-14 A	90%	1.00	22-Sep-14	19-Jun-14	19-Jun-14	-67.00	9.00	90%
ARDD0714-1	Viaduct B - Final Erection Geometry (Bridge B3)	0.00		100%	0.00	22-Aug-14 A					100%
ARDD0714-2	Viaduct B - Final Erection Geometry (Bridge B2 & B1)	0.00		0%	0.00	03-Oct-14		19-Jun-14	-76.00	0.00	0%
Viaduct A											
ARDD0716	Viaduct A - Confirmation of Erection Sequence from Freyssinet	0.00		0%	0.00	13-Nov-14		22-Jan-15	50.00	0.00	0%
ARDD0717	Viaduct A - Erection Sequence Analysis	20.00	14-Nov-14	0%	20.00	11-Dec-14	23-Jan-15	19-Feb-15	50.00	0.00	0%
ARDD0718	Viaduct A - Target Geomtery Analysis	20.00	12-Dec-14	0%	20.00	08-Jan-15	20-Feb-15	19-Mar-15	50.00	0.00	0%
Viaduct C											
ARDD0721	Viaduct C - Confirmation of Erection Sequence from Freyssinet	0.00		0%	0.00	26-Sep-14		03-Nov-14	26.00	0.00	0%



Actual Work
Planned Bar
Critical Bar
Milestone

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Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 10 of 35 Pages)
(Progress as of 21-Sep-14)

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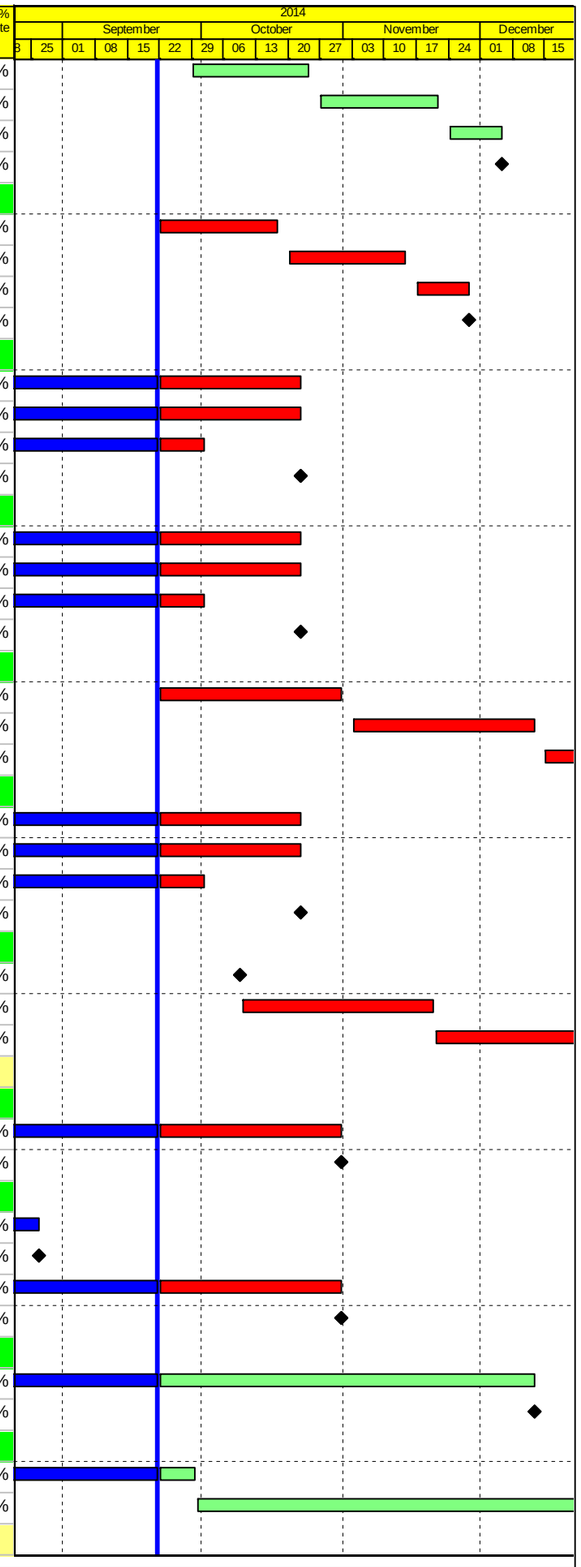
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
ARDD0722	Viaduct C - Erection Sequence Analysis	20.00	29-Sep-14	0%	20.00	24-Oct-14	04-Nov-14	01-Dec-14	26.00	0.00	0%
ARDD0723	Viaduct C - Target Geomtery Analysis	20.00	27-Oct-14	0%	20.00	21-Nov-14	02-Dec-14	29-Dec-14	26.00	0.00	0%
ARDD0724	Viaduct C - Segment Geometry Schedules	10.00	24-Nov-14	0%	10.00	05-Dec-14	30-Dec-14	12-Jan-15	26.00	0.00	0%
ARDD0724-1	Viaduct C - Final Erection Geometry (Bridge C4 & C3)	0.00		0%	0.00	05-Dec-14		12-Jan-15	26.00	0.00	0%
Viaduct D											
ARDD0727	Viaduct D - Erection Sequence Analysis	20.00	22-Sep-14	0%	20.00	17-Oct-14	10-Jun-14	07-Jul-14	-74.00	0.00	0%
ARDD0728	Viaduct D - Target Geomtery Analysis	20.00	20-Oct-14	0%	20.00	14-Nov-14	08-Jul-14	04-Aug-14	-74.00	0.00	0%
ARDD0729	Viaduct D - Segment Geometry Schedules	10.00	17-Nov-14	0%	10.00	28-Nov-14	05-Aug-14	18-Aug-14	-74.00	0.00	0%
ARDD0729-1	Viaduct D - Final Erection Geometry (Bridge D3)	0.00		0%	0.00	28-Nov-14		18-Aug-14	-74.00	0.00	0%
Viaduct E5 and E6											
ARDD0732	Viaduct E5 & E6 - Erection Sequence Analysis	30.00	24-Dec-13 A	23.33%	23.00	22-Oct-14	08-May-14	09-Jun-14	-97.00	0.00	25%
ARDD0733	Viaduct E5 & E6 - Target Geometry Analysis	30.00	04-Feb-14 A	23.33%	23.00	22-Oct-14	08-May-14	09-Jun-14	-97.00	0.00	25%
ARDD0734	Viaduct E5 & E6 - Segment Geometry Schedules	10.00	18-Mar-14 A	20%	8.00	01-Oct-14	29-May-14	09-Jun-14	-82.00	15.00	25%
ARDD0734-1	Viaduct E5 & E6 - Final Erection Geometry	0.00		0%	0.00	22-Oct-14		09-Jun-14	-97.00	0.00	0%
Viaduct E7 & E8											
ARDD0737	Viaduct E7 & E8 - Erection Sequence Analysis	30.00	24-Dec-13 A	23.33%	23.00	22-Oct-14	30-Apr-14	30-May-14	103.00	0.00	25%
ARDD0738	Viaduct E7 & E8 - Target Geometry Analysis	30.00	04-Feb-14 A	23.33%	23.00	22-Oct-14	30-Apr-14	30-May-14	103.00	0.00	25%
ARDD0739	Viaduct E7 & E8 - Segment Geometry Schedules	10.00	18-Mar-14 A	20%	8.00	01-Oct-14	21-May-14	30-May-14	-88.00	15.00	25%
ARDD0739-1	Viaduct E7 & E8 - Final Erection Geometry	0.00		0%	0.00	22-Oct-14		30-May-14	103.00	0.00	0%
Viaduct E1											
ARDD0742	Viaduct E1 - Erection Sequence Analysis	30.00	22-Sep-14	0%	30.00	31-Oct-14	20-Jun-14	31-Jul-14	-66.00	0.00	0%
ARDD0743	Viaduct E1 - Target Geometry Analysis	30.00	03-Nov-14	0%	30.00	12-Dec-14	01-Aug-14	11-Sep-14	-66.00	0.00	0%
ARDD0744	Viaduct E1 - Segment Geometry Schedules	10.00	15-Dec-14	0%	10.00	26-Dec-14	12-Sep-14	25-Sep-14	-66.00	0.00	0%
Viaduct E2											
ARDD0747	Viaduct E2 - Erection Sequence Analysis	30.00	24-Dec-13 A	23.33%	23.00	22-Oct-14	15-Apr-14	15-May-14	114.00	0.00	25%
ARDD0748	Viaduct E2 - Target Geometry Analysis	30.00	04-Feb-14 A	23.33%	23.00	22-Oct-14	15-Apr-14	15-May-14	114.00	0.00	25%
ARDD0749	Viaduct E2 - Segment Geometry Schedules	10.00	18-Mar-14 A	20%	8.00	01-Oct-14	06-May-14	15-May-14	-99.00	15.00	25%
ARDD0749-1	Viaduct E2 - Final Erection Geometry	0.00		0%	0.00	22-Oct-14		15-May-14	114.00	0.00	0%
Viaduct F											
ARDD0751	Viaduct F - Confirmation of Erection Sequence from Freyssinet	0.00		0%	0.00	09-Oct-14		20-Oct-14	7.00	0.00	0%
ARDD0752	Viaduct F - Erection Sequence Analysis	30.00	10-Oct-14	0%	30.00	20-Nov-14	21-Oct-14	01-Dec-14	7.00	0.00	0%
ARDD0753	Viaduct F - Target Geometry Analysis	30.00	21-Nov-14	0%	30.00	01-Jan-15	02-Dec-14	12-Jan-15	7.00	0.00	0%
Reprovisioning Works											
Chung Tung Road Realignment Viaduct B											
ARDD0807	Viaduct B - IC/SO Approval of CTR Reprovisioning Works DDA - BP33.01	75.00	11-Jun-14 A	60%	30.00	31-Oct-14	15-Sep-14	24-Oct-14	-5.00	0.00	60%
ARDD0807-1	Viaduct B - IC/SO Approval of CTR Reprovisioning Works DDA - BP33.01	0.00		0%	0.00	31-Oct-14		24-Oct-14	-5.00	65.00	0%
Chung Tung Road Realignment Viaduct C											
ARDD0881	Viaduct C - IC/SO Approval of AIP of CTR Reprovisioning Works AIP - BP34.00	68.00	04-Apr-14 A	100%	0.00	26-Aug-14 A					100%
ARDD0881-1	Viaduct C - IC/SO Approval of AIP of CTR Reprovisioning Works AIP - BP34.00	0.00		100%	0.00	26-Aug-14 A					100%
ARDD0887	Viaduct C - IC/SO Approval of CTR Reprovisioning Works DDA - BP34.01	75.00	20-Jun-14 A	60%	30.00	31-Oct-14	26-May-14	04-Jul-14	-85.00	0.00	60%
ARDD0887-1	Viaduct C - IC/SO Approval of CTR Reprovisioning Works DDA - BP34.01	0.00		0%	0.00	31-Oct-14		04-Jul-14	-85.00	30.00	0%
Remaining Reprovisioning Works (Viaduct A&D)											
ARDD0815	Viaduct A&D - IC/SO Approval of DDA of Remaining Reprovisioning Works BP35.01	75.00	26-Jun-14 A	20%	60.00	12-Dec-14	30-Jun-15	21-Sep-15	201.00	0.00	20%
ARDD0815-1	Viaduct A&D - IC/SO Approval of DDA of Remaining Reprovisioning Works BP35.01	0.00		0%	0.00	12-Dec-14		21-Sep-15	201.00	35.00	0%
CEDD Access Track											
ARDD0808	Preparation of Combined AIP/DDA for CEDD Access Track - BP32.01	30.00	09-Sep-13 A	80%	6.00	29-Sep-14	19-Feb-16	26-Feb-16	369.00	0.00	80%
ARDD0809	IC/SO Approval of Combined AIP/DDA for CEDD Access Track - BP32.01	75.00	30-Sep-14	0%	75.00	12-Jan-15	29-Feb-16	10-Jun-16	369.00	0.00	0%
Construction Traffic Impact Assessment											



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
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Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 11 of 35 Pages)
(Progress as of 21-Sep-14)

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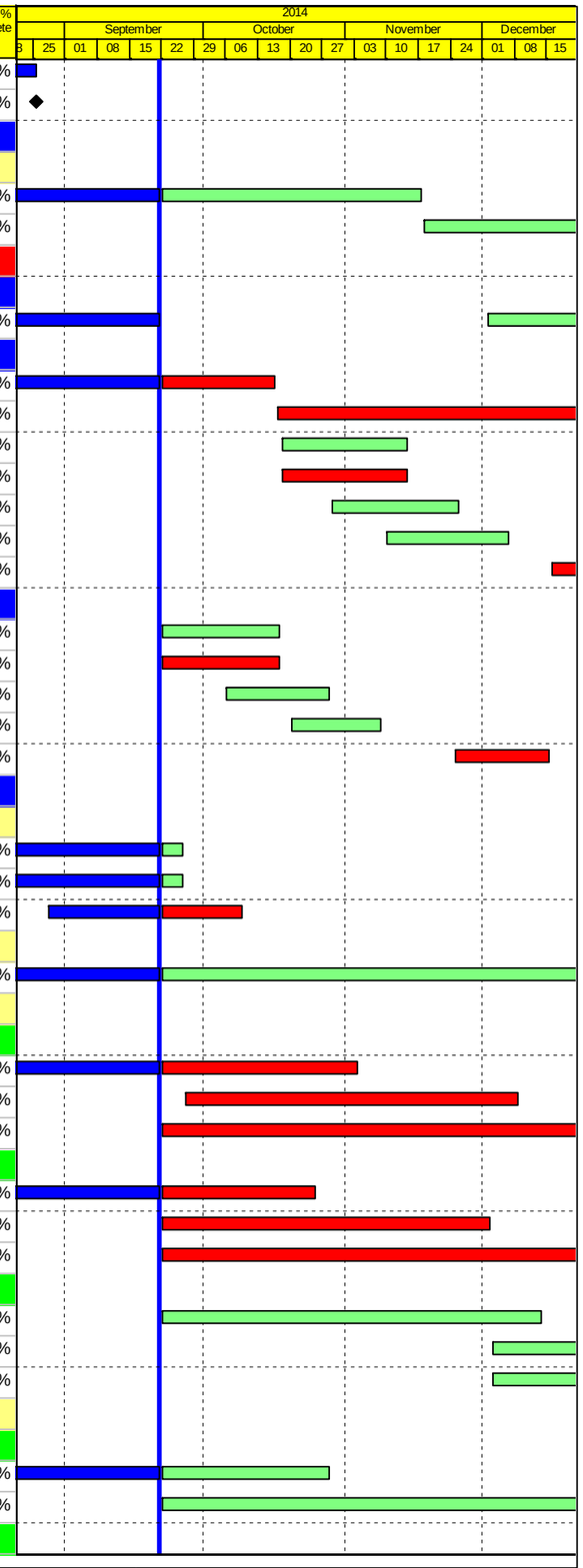
ARDD0811	IC/SO Approval of CTIA - AP05.00	75.00	25-Feb-14 A	100%	0.00	25-Aug-14 A					100%
ARDD0816	IC/SO Approval of CTIA - AP05.00	0.00		100%	0.00	25-Aug-14 A					100%
Other Design											
Marine Permanent Navigation Aids											
BMT0135	Preparation of MPNA DDA - BP36.01	46.00	11-Jun-14 A	10.87%	41.00	17-Nov-14	20-Feb-15	17-Apr-15	109.00	0.00	10%
BMT0140	IC/SO Approval of MPNA DDA BP36.01	75.00	18-Nov-14	0%	75.00	02-Mar-15	20-Apr-15	31-Jul-15	109.00	0.00	0%
Major Procurement											
Marine Permanent Navigaion Aids											
PR65011	Design & Approvals for Marine Navigation Aids	150.00	16-Dec-13 A	52%	72.00	02-Mar-15	06-May-15	31-Jul-15	122.00	0.00	52%
Tower Cranes											
PR66010	Procure Tower Crane Supplier	96.00	23-Jun-14 A	79.17%	20.00	16-Oct-14	06-Sep-14	30-Sep-14	-12.00	0.00	0%
PR66011	Procure & Deliver Tower Cranes	325.00	17-Oct-14	0%	325.00	19-Nov-15	03-Oct-14	05-Nov-15	-12.00	1.00	0%
PR66012	Erect & Commission Tower Crane @ E3	24.00	18-Oct-14	0%	24.00	14-Nov-14	18-Dec-14	17-Jan-15	52.00	116.00	0%
PR66013	Erect & Commission Tower Crane @ E4	24.00	18-Oct-14	0%	24.00	14-Nov-14	03-Oct-14	01-Nov-14	-11.00	89.00	0%
PR66018	Erect & Commission Tower Crane @ E9	24.00	29-Oct-14	0%	24.00	25-Nov-14	10-Jun-15	27-Jul-15	166.00	82.00	0%
PR66019	Erect & Commission Tower Crane @ E10	24.00	10-Nov-14	0%	24.00	06-Dec-14	16-Jan-15	12-Feb-15	55.00	70.00	0%
PR66020	Erect & Commission Tower Crane @ E11	24.00	16-Dec-14	0%	24.00	15-Jan-15	17-Nov-14	13-Dec-14	-25.00	122.00	0%
Equipment Platforms for Tower Cranes											
PR66025	Inst.Temp.Eqpt.Platform (piles & deck) @ E3	18.00	22-Sep-14	0%	18.00	17-Oct-14	27-Nov-14	17-Dec-14	52.00	0.00	0%
PR66026	Inst.Temp.Eqpt.Platform (piles & deck) @ E4	18.00	22-Sep-14	0%	18.00	17-Oct-14	05-Sep-14	30-Sep-14	-11.00	0.00	0%
PR66031	Inst.Temp.Eqpt.Platform (piles & deck) @ E9	18.00	06-Oct-14	0%	18.00	28-Oct-14	11-May-15	08-Jun-15	166.00	0.00	0%
PR66032	Inst.Temp.Eqpt.Platform (piles & deck) @ E10	18.00	20-Oct-14	0%	18.00	08-Nov-14	23-Dec-14	15-Jan-15	55.00	0.00	0%
PR66033	Inst.Temp.Eqpt.Platform (piles & deck) @ E11	18.00	25-Nov-14	0%	18.00	15-Dec-14	27-Oct-14	15-Nov-14	-25.00	0.00	0%
Deck Segment Installation Equipment											
Launching Gantry 1											
PR67040	Launching Gantry Design	95.00	05-Feb-14 A	94.74%	5.00	26-Sep-14	08-Nov-14	13-Nov-14	39.00	31.00	95%
PR67041	Launching Gantry 1 Fabrication	95.00	15-May-14 A	94.74%	5.00	26-Sep-14	24-Aug-18	29-Aug-18	161.00	1161.00	95%
PR67042	Launching Gantry 1 Delivery	20.00	28-Aug-14 A	30%	14.00	09-Oct-14	13-Sep-14	29-Sep-14	-7.00	79.00	30%
Launching Gantry 2											
PR67043	Launching Gantry 2 Fabrication	105.00	16-Jun-14 A	20%	84.00	02-Jan-15	03-Oct-14	12-Jan-15	8.00	56.00	20%
Lifting Frames											
Lifting Frames 1 & 2											
PR68011	Lifting Frame 1&2 Design	70.00	02-Jun-14 A	50%	35.00	03-Nov-14	13-Aug-14	23-Sep-14	-33.00	0.00	50%
PR68012	Lifting Frame 1&2 Approval	60.00	27-Sep-14	0%	60.00	08-Dec-14	05-Sep-14	17-Nov-14	-18.00	15.00	0%
PR68013	Lifting Frame 1&2 Fabrication	140.00	22-Sep-14	0%	140.00	12-Mar-15	13-Aug-14	29-Jan-15	-33.00	0.00	0%
Lifting Frames 3 & 4											
PR68015	Lifting Frame 3&4 Design	70.00	02-Jun-14 A	60%	28.00	25-Oct-14	26-Jul-14	27-Aug-14	-48.00	2.00	60%
PR68016	Lifting Frame 3&4 Approval	60.00	22-Sep-14	0%	60.00	02-Dec-14	19-Aug-14	30-Oct-14	-28.00	20.00	0%
PR68017	Lifting Frame 3&4 Fabrication	140.00	22-Sep-14	0%	140.00	12-Mar-15	26-Jul-14	12-Jan-15	-48.00	0.00	0%
Lifting Frames 5 & 6											
PR68019	Lifting Frame 5&6 Design	70.00	22-Sep-14	0%	70.00	13-Dec-14	08-Nov-14	31-Jan-15	39.00	0.00	0%
PR68020	Lifting Frame 5&6 Approval	60.00	03-Dec-14	0%	60.00	13-Feb-15	13-Feb-15	02-May-15	59.00	20.00	0%
PR68021	Lifting Frame 5&6 Fabrication	140.00	03-Dec-14	0%	140.00	28-May-15	21-Jan-15	15-Jul-15	39.00	0.00	0%
Unloading Frames											
Type 1											
PR69100	Unloading Frame Type 1 Design	50.00	05-May-14 A	40%	30.00	28-Oct-14	10-Oct-14	13-Nov-14	14.00	17.00	40%
PR69110	Unloading Frame Type 1 Fabrication	95.00	22-Sep-14	0%	95.00	15-Jan-15	10-Oct-14	31-Jan-15	14.00	0.00	0%
Type 2											



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Tuen Mun - Chek Lap Kok Link - Southern Connection
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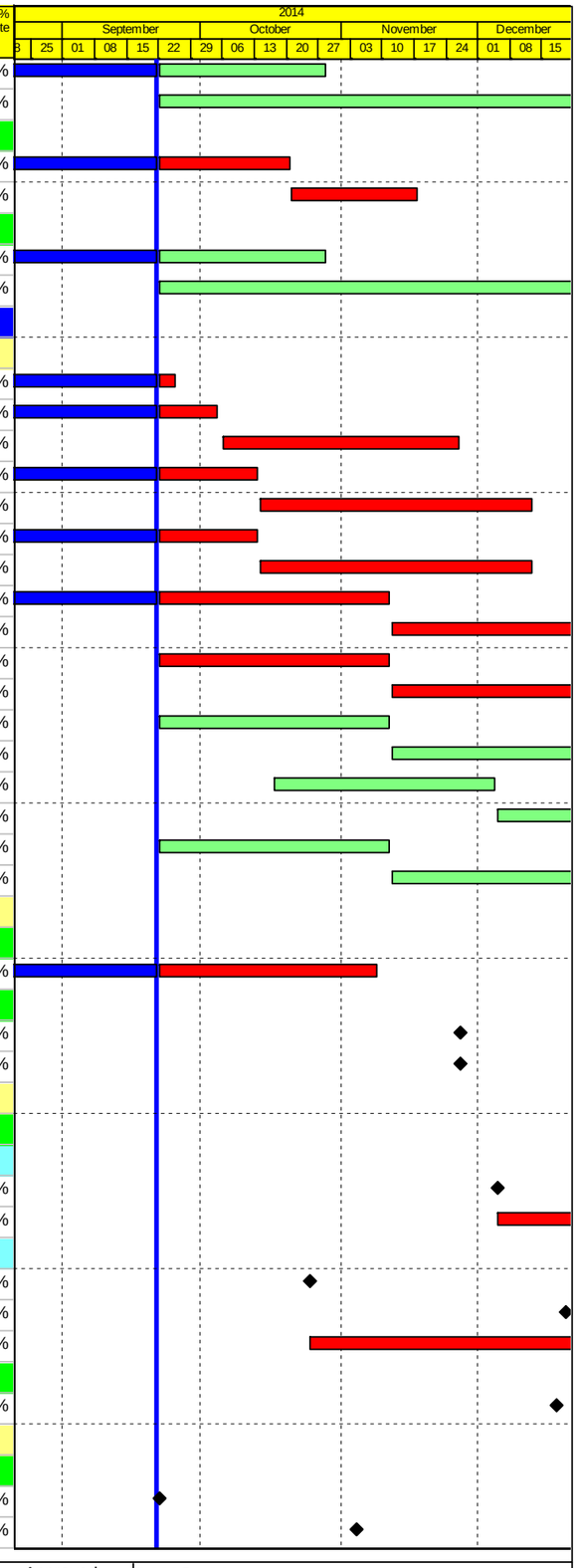
PR69170	Unloading Frame Type 2 Design	50.00	05-May-14 A	40%	30.00	28-Oct-14	18-May-15	23-Jun-15	191.00	17.00	40%
PR69180	Unloading Frame Type 2 Fabrication	95.00	22-Sep-14	0%	95.00	15-Jan-15	18-May-15	08-Sep-15	191.00	0.00	0%
Type 3											
PR69230	Unloading Frame Type 3 (Lantau) Fabrication	95.00	16-Jun-14 A	75.79%	23.00	20-Oct-14	18-Jul-14	13-Aug-14	-55.00	0.00	75%
PR69240	Unloading Frame Type 3 Delivery	24.00	21-Oct-14	0%	24.00	17-Nov-14	14-Aug-14	11-Sep-14	-55.00	0.00	0%
Type 4											
PR69250	Unloading Frame Type 4 Design	50.00	05-May-14 A	40%	30.00	28-Oct-14	29-Oct-14	02-Dec-14	30.00	17.00	40%
PR69260	Unloading Frame Type 4 (BCF) Fabrication	95.00	22-Sep-14	0%	95.00	15-Jan-15	29-Oct-14	23-Feb-15	30.00	0.00	0%
Deck Segments & Precast Pile Cap Shells											
Preliminaries											
MBBE0012	Precast Segment Mould Design (Viaduct B)	42.00	15-Oct-13 A	90.48%	4.00	25-Sep-14	04-Jun-14	07-Jun-14	-92.00	6.00	90%
MBBE0014	Precast Segment Mould Fabrication & Assembly (Viaduct B)	52.00	04-Mar-14 A	80.77%	10.00	04-Oct-14	27-May-14	07-Jun-14	-98.00	0.00	80%
MBBE0016	Trial Precast Segments (in pair) and Approval	45.00	06-Oct-14	0%	45.00	26-Nov-14	09-Jun-14	31-Jul-14	-98.00	0.00	0%
MBBE0018	Precast Segment Mould Design (Viaduct E5, E6, E7 & E8)	42.00	15-Oct-13 A	59.52%	17.00	13-Oct-14	19-Jun-14	09-Jul-14	-79.00	0.00	60%
MBBE0020	Precast Segment Mould Fabrication & Assembly (Viaduct E5, E6, E7 & E8)	52.00	14-Oct-14	0%	52.00	12-Dec-14	10-Jul-14	08-Sep-14	-79.00	32.00	0%
MBBE0024	Precast Segment Mould Design (Viaduct E2)	42.00	15-Oct-13 A	59.52%	17.00	13-Oct-14	26-May-14	14-Jun-14	-99.00	0.00	60%
MBBE0026	Precast Segment Mould Fabrication & Assembly (Viaduct E2)	52.00	14-Oct-14	0%	52.00	12-Dec-14	16-Jun-14	15-Aug-14	-99.00	32.00	0%
MBBE0030	Precast Segment Mould Design (Viaduct E1)	42.00	30-Jul-14 A	0%	42.00	11-Nov-14	09-Jul-14	26-Aug-14	-63.00	0.00	0%
MBBE0032	Precast Segment Mould Fabrication & Assembly (Viaduct E1)	52.00	12-Nov-14	0%	52.00	14-Jan-15	27-Aug-14	29-Oct-14	-63.00	13.00	0%
MBBE0036	Precast Segment Mould Design (Viaduct D)	42.00	22-Sep-14	0%	42.00	11-Nov-14	07-Jul-14	23-Aug-14	-65.00	0.00	0%
MBBE0038	Precast Segment Mould Fabrication & Assembly (Viaduct D)	52.00	12-Nov-14	0%	52.00	14-Jan-15	25-Aug-14	27-Oct-14	-65.00	20.00	0%
MBBE0042	Precast Segment Mould Design (Viaduct C)	42.00	22-Sep-14	0%	42.00	11-Nov-14	06-Dec-14	27-Jan-15	63.00	0.00	0%
MBBE0044	Precast Segment Mould Fabrication & Assembly (Viaduct C)	52.00	12-Nov-14	0%	52.00	14-Jan-15	28-Jan-15	01-Apr-15	63.00	41.00	0%
MBBE0048	Precast Segment Mould Design (Viaduct A)	42.00	17-Oct-14	0%	42.00	04-Dec-14	23-Jul-15	09-Sep-15	225.00	0.00	0%
MBBE0050	Precast Segment Mould Fabrication & Erection (Viaduct A)	52.00	05-Dec-14	0%	52.00	06-Feb-15	10-Sep-15	12-Nov-15	225.00	91.00	0%
MBBE0054	Precast Segment Mould Design (Viaduct F1 to F5)	42.00	22-Sep-14	0%	42.00	11-Nov-14	16-Jan-15	09-Mar-15	95.00	0.00	0%
MBBE0056	Precast Segment Mould Fabrication & Erection (Viaduct F1 to F5)	52.00	12-Nov-14	0%	52.00	14-Jan-15	10-Mar-15	14-May-15	95.00	87.00	0%
Viaduct B											
Precast Pile Caps											
MBBC0130-1	B: Progressive Pile Cap Shell Manufacture & Delivery remaining shells (6/7 Nr in total)	81.00	05-Jul-14 A	50.62%	40.00	08-Nov-14	15-Aug-14	04-Oct-14	-30.88	1126.00	20%
Precast Deck Segments											
MBBE0120	B: Commence Segment Casting on Approval of DDA	0.00	27-Nov-14	0%	0.00		01-Aug-14		-98.00	0.00	0%
PP1032-1	Viaduct B - Pier Head Segment Casting	0.00	27-Nov-14	0%	0.00		01-Aug-14		-98.00	0.00	0%
Viaduct E											
Precast Pile Caps											
Viaduct E1											
MBEC0120-1	E1: Commence Pile Cap Shell Casting on Approval of DDA	0.00	05-Dec-14	0%	0.00		30-Aug-14		-79.88	0.00	0%
PP7330	Production of Viaduct E1 Marine Precast Pile Cap Shells	80.00	05-Dec-14	0%	80.00	14-Mar-15	30-Aug-14	05-Dec-14	-79.88	0.00	0%
Viaduct E2											
MBEC0120-3	E2: Commence Pile Cap Shell Casting on Approval of DDA	0.00	25-Oct-14	0%	0.00		18-Jun-14		106.13	0.00	0%
MBEC0130-4	E2: Commence Pile Cap Shell Delivery	0.00	20-Dec-14	0%	0.00		14-Aug-14		106.13	3.00	0%
PP7260	Production of Viaduct E2 Marine Precast Pile Cap Shells	80.00	25-Oct-14	0%	80.00	29-Jan-15	08-Aug-14	12-Nov-14	-64.00	0.00	0%
Precast Deck Segments											
MBE00014	Viaduct E2 - Pier Head Segment Casting	0.00	18-Dec-14	0%	0.00		16-Aug-14		103.00	28.00	0%
Viaduct D											
Precast Pile Caps											
MBDC0120	D: Commence Pile Cap Shell Casting on Approval of DDA	0.00	22-Sep-14	0%	0.00		16-Aug-14		-30.00	0.00	0%
MBDC0130	D: Commence Pile Cap Shell Delivery	0.00	04-Nov-14	0%	0.00		27-Sep-14		-30.00	0.00	0%



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
Filter: TASK filters: 3-Month Lookahead, No Level of Effort.

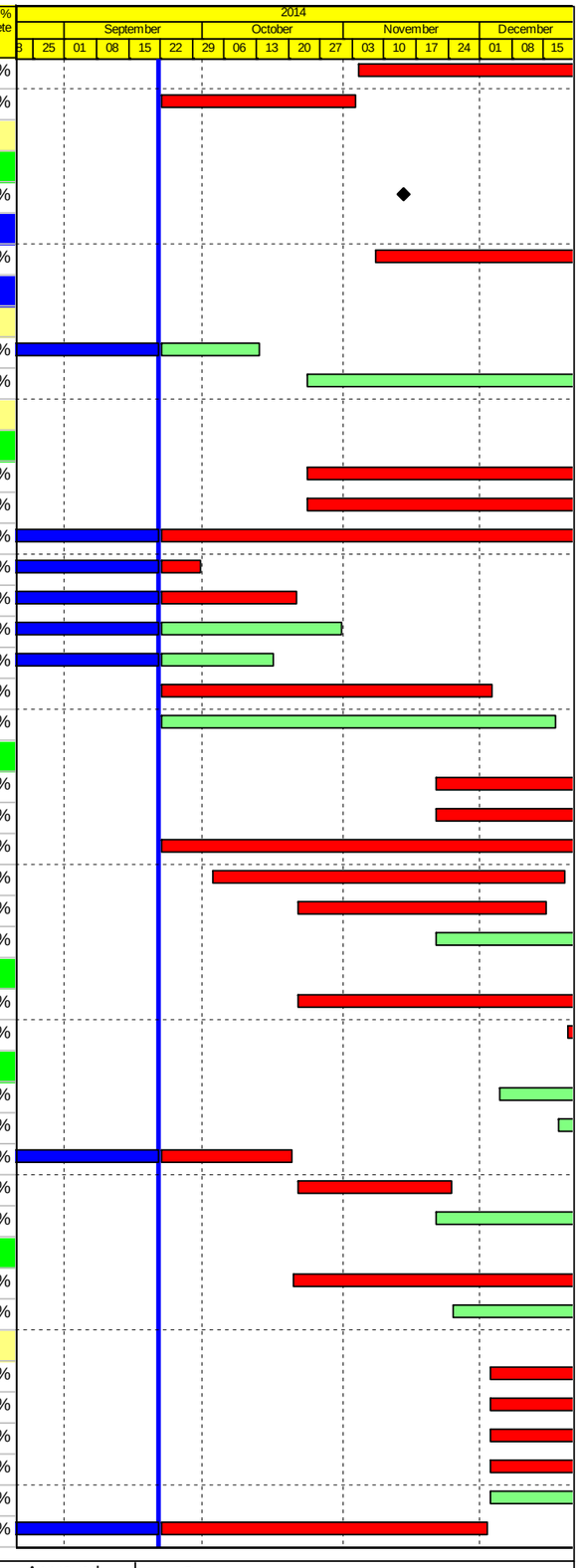
Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 13 of 35 Pages)
(Progress as of 21-Sep-14)

Date	Revision	Checked	Approved
29-Jul-14		FZ	
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
MBDC0130-8	D: Progressive Pile Cap Shell Manufacture & Delivery remaining shells	90.00	04-Nov-14	0%	90.00	23-Feb-15	27-Sep-14	15-Jan-15	-30.00	25.00	0%
PP7410	Production of initial Viaduct D Marine Precast Pile Cap Shells	35.00	22-Sep-14	0%	35.00	03-Nov-14	16-Aug-14	26-Sep-14	-30.00	0.00	0%
Viaduct C											
Precast Pile Caps											
MBCC0120	C: Commence Pile Cap Shell Casting on Approval of DDA	0.00	14-Nov-14	0%	0.00		27-Nov-14		11.00	101.00	0%
Parapets											
PP6010	Procure Sub-Contractor for Precast Parapets/Barriers	40.00	08-Nov-14	0%	40.00	24-Dec-14	07-Oct-14	21-Nov-14	-28.00	9.00	0%
Materials											
H-Piles											
PP7470	Procurement of Viaduct C Socketted H-Piles	70.00	21-Jul-14 A	75.71%	17.00	13-Oct-14	22-Oct-14	10-Nov-14	24.00	16.00	40%
PP7550	Procurement of Viaduct A Socketted H-Piles	70.00	24-Oct-14	0%	70.00	16-Jan-15	11-Feb-15	12-May-15	91.00	0.00	0%
Reinforcement											
Bored Piles											
PP7100	Rebar - Cut, Bend & Fabricate Pile Cage for Viaduct E5 & E6 Piles	185.00	24-Oct-14	0%	185.00	10-Jun-15	19-Feb-14	04-Oct-14	201.00	0.00	0%
PP7170	Rebar - Cut, Bend & Fabricate Pile Cage for Viaduct E7 & E8 Piles	185.00	24-Oct-14	0%	185.00	10-Jun-15	28-Apr-14	06-Dec-14	147.00	0.00	0%
PP7240	Rebar - Cut, Bend & Fabricate Pile Cage for Viaduct E2 Piles	106.00	15-Apr-14 A	19.81%	85.00	03-Jan-15	30-Apr-14	11-Aug-14	119.00	100.00	20%
PP7310	Rebar - Cut, Bend & Fabricate Pile Cage for Viaduct E1 Piles	36.00	09-Jul-14 A	77.78%	8.00	30-Sep-14	30-Sep-14	10-Oct-14	7.00	0.00	0%
PP7380	Rebar - Cut, Bend & Fabricate Pile Cage for Viaduct D Piles	25.00	08-Aug-14 A	4%	24.00	21-Oct-14	01-Aug-14	28-Aug-14	-43.00	0.00	0%
PP7460	Rebar - Cut, Bend & Fabricate Pile Cage for Viaduct C Piles	35.00	18-Aug-14 A	5.71%	33.00	31-Oct-14	01-Nov-14	09-Dec-14	33.00	0.00	0%
PP7540	Rebar - Cut, Bend & Fabricate Pile Cage for Viaduct A Piles	21.00	12-Aug-14 A	4.76%	20.00	16-Oct-14	18-Apr-15	12-May-15	167.00	59.00	0%
PP7620	Rebar - Cut, Bend & Fabricate Pile Cage for Viaduct F1 & F3 Piles	61.00	22-Sep-14	0%	61.00	03-Dec-14	27-Sep-14	09-Dec-14	5.00	1.00	0%
PP7690	Rebar - Cut, Bend & Fabricate Pile Cage for Viaduct F2, F4 & F5 Piles	73.00	22-Sep-14	0%	73.00	17-Dec-14	04-Dec-14	06-Mar-15	61.13	0.00	0%
Marine Pile Caps											
PP7110	Rebar - Cut, Bend & Fabricate for Viaduct E5 & E6 Pile Caps	245.00	21-Nov-14	0%	245.00	18-Sep-15	19-Mar-14	14-Jan-15	201.00	0.00	0%
PP7180	Rebar - Cut, Bend & Fabricate for Viaduct E7 & E8 Pile Caps	102.00	21-Nov-14	0%	102.00	26-Mar-15	28-May-14	26-Sep-14	147.00	0.00	0%
PP7250	Rebar - Cut, Bend & Fabricate for Viaduct E2 Pile Caps	185.00	22-Sep-14	0%	185.00	09-May-15	30-Apr-14	09-Dec-14	119.00	0.00	0%
PP7320	Rebar - Cut, Bend & Fabricate for Viaduct E1 Pile Caps	67.00	03-Oct-14	0%	67.00	19-Dec-14	11-Oct-14	30-Dec-14	7.00	0.00	0%
PP7400	Rebar - Cut, Bend & Fabricate for Viaduct D Marine Pile Caps	47.00	22-Oct-14	0%	47.00	15-Dec-14	29-Aug-14	25-Oct-14	-43.00	8.00	0%
PP7480	Rebar - Cut, Bend & Fabricate for Viaduct C Marine Pile Caps	42.00	21-Nov-14	0%	42.00	12-Jan-15	16-Jan-15	09-Mar-15	45.00	101.00	0%
Marine Piers - Viaduct E											
PP7270	Rebar - Cut, Bend & Fabricate for Viaduct E2 Piers	180.00	22-Oct-14	0%	180.00	02-Jun-15	30-May-14	03-Jan-15	119.00	0.00	0%
PP7340	Rebar - Cut, Bend & Fabricate for Viaduct E1 Piers	31.00	20-Dec-14	0%	31.00	28-Jan-15	31-Dec-14	05-Feb-15	7.00	89.00	0%
Land Pile Caps											
PP7630	Rebar - Cut, Bend & Fabricate for Viaduct F1 & F3 Pile Caps	47.00	05-Dec-14	0%	47.00	31-Jan-15	09-Jan-15	07-Mar-15	27.00	0.00	0%
PP7700	Rebar - Cut, Bend & Fabricate for Viaduct F2, F4 & F5 Pile Caps	24.00	18-Dec-14	0%	24.00	17-Jan-15	04-May-15	02-Jun-15	106.13	0.00	0%
PP7752	Rebar - Cut, Bend & Fabricate for Viaduct B Land Pile Caps	26.00	16-Jul-14 A	11.54%	23.00	20-Oct-14	06-Aug-14	01-Sep-14	-39.00	0.00	10%
PP7754	Rebar - Cut, Bend & Fabricate for Viaduct D Land Pile Caps	29.00	22-Oct-14	0%	29.00	24-Nov-14	20-Sep-14	25-Oct-14	-25.00	0.00	0%
PP7756	Rebar - Cut, Bend & Fabricate for Viaduct C Land Pile Caps	34.00	21-Nov-14	0%	34.00	02-Jan-15	26-Jan-15	09-Mar-15	53.00	0.00	0%
Land / Marine Piers - Viaduct A, B, C, D & F											
PP7060	Bending of Rebar for Viaduct B Piers	64.00	21-Oct-14	0%	64.00	06-Jan-15	02-Sep-14	18-Nov-14	-39.00	0.00	0%
PP7420	Bending of Rebar for Viaduct D Piers	71.00	25-Nov-14	0%	71.00	18-Feb-15	14-Mar-15	11-Jun-15	88.00	136.50	0%
In-Situ Formworks / Falseworks											
PP7070	On-Site Preparation & Assembly of Pier Formwork for Viaduct B Piers	70.00	03-Dec-14	0%	70.00	28-Feb-15	30-Aug-14	22-Nov-14	-78.00	0.00	0%
PP7140	On-Site Preparation & Assembly of Pier Formwork for Viaduct E5 & E6 Piers	90.00	03-Dec-14	0%	90.00	24-Mar-15	15-Sep-14	02-Jan-15	-66.00	96.00	0%
PP7280	On-Site Preparation & Assembly of Pier Formwork for Viaduct E2 Piers	90.00	03-Dec-14	0%	90.00	24-Mar-15	27-Jun-14	14-Oct-14	132.00	0.00	0%
PP7430	On-Site Preparation & Assembly of Pier Formwork for Viaduct D Piers	90.00	03-Dec-14	0%	90.00	24-Mar-15	20-Oct-14	05-Feb-15	-37.88	0.00	0%
PP7510	On-Site Preparation & Assembly of Pier Formwork for Viaduct C Piers	90.00	03-Dec-14	0%	90.00	24-Mar-15	26-Mar-15	17-Jul-15	91.00	135.00	0%
PPPF02	Design & Fabrication of Falsework / Formwork & Delivery	120.00	20-Feb-14 A	50%	60.00	02-Dec-14	11-Apr-14	26-Jun-14	132.00	0.00	50%



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
Filter: TASK filters: 3-Month Lookahead, No Level of Effort.

Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 14 of 35 Pages)
(Progress as of 21-Sep-14)

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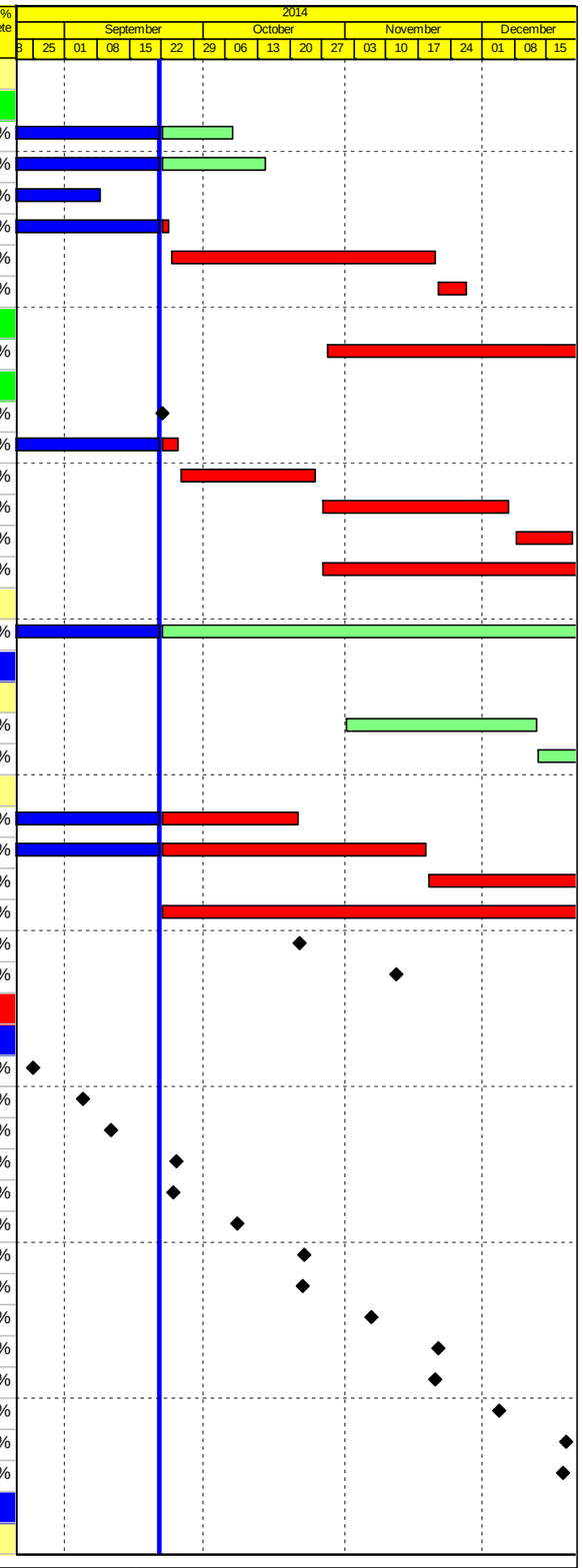
29-Jul-14		FZ	
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
Bearings											
Viaduct B											
PPBRB4	Design check by ICE - Viaduct B	24.00	06-Jun-14 A	50%	12.00	07-Oct-14	16-Oct-14	29-Oct-14	19.00	38.00	50%
PPBRB5	SO review & comment on design submission - Viaduct B	36.00	06-Jun-14 A	50%	18.00	14-Oct-14	09-Oct-14	29-Oct-14	13.00	32.00	50%
PPBRB6	Bearing Design Amendment & re-issue - Viaduct B	12.00	22-Jul-14 A	100%	0.00	08-Sep-14 A					100%
PPBRB8	Testing Bearing - Viaduct B	18.00	30-Jun-14 A	88.89%	2.00	23-Sep-14	29-Aug-14	30-Aug-14	-19.00	0.00	90%
PPBRB9	Bearing Delivery - Viaduct B	48.00	24-Sep-14	0%	48.00	20-Nov-14	01-Sep-14	29-Oct-14	-19.00	0.00	0%
PPBRB99	Site preparation Bearings for Viaduct B	6.00	21-Nov-14	0%	6.00	27-Nov-14	30-Oct-14	05-Nov-14	-19.00	65.00	0%
Viaduct D											
PPBRD1	Preliminary Design of Bearings - Viaduct D	50.00	28-Oct-14	0%	50.00	24-Dec-14	10-Jul-14	05-Sep-14	-91.00	0.00	0%
Viaduct E											
PPBRE2	Confirmation of bearing assumption - Viaduct E (E1, E2, E5, E6, E7 & E8)	0.00		0%	0.00	22-Sep-14		31-Jul-14	-43.00	4.00	0%
PPBRE3	Bearing design and submission - Viaduct E (E1, E2, E5, E6, E7 & E8)	12.00	06-Jan-14 A	66.67%	4.00	25-Sep-14	28-Jul-14	31-Jul-14	-47.00	0.00	70%
PPBRE4	Design check by ICE - Viaduct E (E1, E2, E5, E6, E7 & E8)	24.00	26-Sep-14	0%	24.00	25-Oct-14	01-Aug-14	28-Aug-14	-47.00	0.00	0%
PPBRE5	SO review & comment on design submission - Viaduct E (E1, E2, E5, E6, E7 & E8)	36.00	27-Oct-14	0%	36.00	06-Dec-14	29-Aug-14	13-Oct-14	-47.00	0.00	0%
PPBRE6	Bearing Design Amendment & re-issue - Viaduct E (E1, E2, E5, E6, E7 & E8)	12.00	08-Dec-14	0%	12.00	20-Dec-14	21-Oct-14	03-Nov-14	-41.00	6.00	0%
PPBRE7	Manufacture of Bearing - Viaduct E (E1, E2, E5, E6, E7 & E8)	54.00	27-Oct-14	0%	54.00	30-Dec-14	29-Aug-14	03-Nov-14	-47.00	0.00	0%
Movement Joints											
PPMJ01	Design & Submission of MJ	138.00	08-Feb-14 A	29.71%	97.00	17-Jan-15	30-Oct-14	26-Feb-15	31.00	9.00	30%
Other Sub-Contract Procurement											
Pavement											
PP7760-2	Procure Pavement Viaduct Sub-Contractor	36.00	01-Nov-14	0%	36.00	12-Dec-14	02-Oct-15	13-Nov-15	271.00	0.00	0%
PP7760-4	Pavement Viaduct Sub-Contractor - Materials approvals & MS	90.00	13-Dec-14	0%	90.00	08-Apr-15	14-Nov-15	04-Mar-16	271.00	381.00	0%
Structural Health Monitoring System (SHMS)											
PP7774	SHMS - So approval of Preliminary System Proposal	30.00	29-Jul-14 A	20%	24.00	21-Oct-14	16-May-14	13-Jun-14	107.00	24.00	20%
PP7776	SHMS - Prepare & Submit Final System Proposal	48.00	29-Jul-14 A	0%	48.00	18-Nov-14	12-Apr-14	13-Jun-14	131.00	0.00	0%
PP7778	SHMS - So approval of Final System Proposal	30.00	19-Nov-14	0%	30.00	23-Dec-14	14-Jun-14	19-Jul-14	131.00	0.00	0%
PP7780	SHMS - Prepare Civil Work Provision	90.00	22-Sep-14	0%	90.00	09-Jan-15	14-May-14	28-Aug-14	109.00	0.00	0%
PP7782	SHMS - Submit Precast Pile Cap Shell SHMS details for E5-E6-E7-E8	0.00	22-Oct-14	0%	0.00		25-Jun-14		-98.00	35.00	0%
PP7786	SHMS - Submit Segment SHMS details for E5-E6-E7-E8	0.00	12-Nov-14	0%	0.00		18-Jul-14		-97.00	14.00	0%
Site Preparation / Mobilisations											
Temp Traffic Mgt Submission & Approval											
TTM00460	Earliest Implementation of TTM after TMLG Meeting No. 12	0.00	25-Aug-14 A	100%	0.00						100%
TTM00470	Send TTMs to SO & Govt Depts for TMLG Meeting No. 13	0.00		100%	0.00	05-Sep-14 A					100%
TTM00480	TMLG Meeting No. 13	0.00		100%	0.00	11-Sep-14 A					100%
TTM00490	Earliest Implementation of TTM after TMLG Meeting No. 13	0.00	25-Sep-14	0%	0.00		22-Sep-15		258.00	20.00	0%
TTM00500	Send TTMs to SO & Govt Depts for TMLG Meeting No. 14	0.00		0%	0.00	24-Sep-14		07-Nov-14	32.00	0.00	0%
TTM00510	TMLG Meeting No. 14	0.00		0%	0.00	08-Oct-14*		21-Nov-14	32.00	0.00	0%
TTM00520	Earliest Implementation of TTM after TMLG Meeting No. 14	0.00	23-Oct-14	0%	0.00		22-Sep-15		238.00	21.00	0%
TTM00530	Send TTMs to SO & Govt Depts for TMLG Meeting No. 15	0.00		0%	0.00	22-Oct-14		05-Dec-14	32.00	1.00	0%
TTM00540	TMLG Meeting No. 15	0.00		0%	0.00	06-Nov-14*		13-Jan-15	48.00	0.00	0%
TTM00550	Earliest Implementation of TTM after TMLG Meeting No. 15	0.00	21-Nov-14	0%	0.00		22-Sep-15		217.00	20.00	0%
TTM00560	Send TTMs to SO & Govt Depts for TMLG Meeting No. 16	0.00		0%	0.00	20-Nov-14		27-Jan-15	48.00	0.00	0%
TTM00570	TMLG Meeting No. 16	0.00		0%	0.00	04-Dec-14*		10-Feb-15	48.00	0.00	0%
TTM00580	Earliest Implementation of TTM after TMLG Meeting No. 16	0.00	19-Dec-14	0%	0.00		22-Sep-15		197.00	25.00	0%
TTM00590	Send TTMs to SO & Govt Depts for TMLG Meeting No. 17	0.00		0%	0.00	18-Dec-14		24-Feb-15	48.00	0.00	0%
Tree Felling / Transplant											
Approved Trees in Contract											



Actual Work
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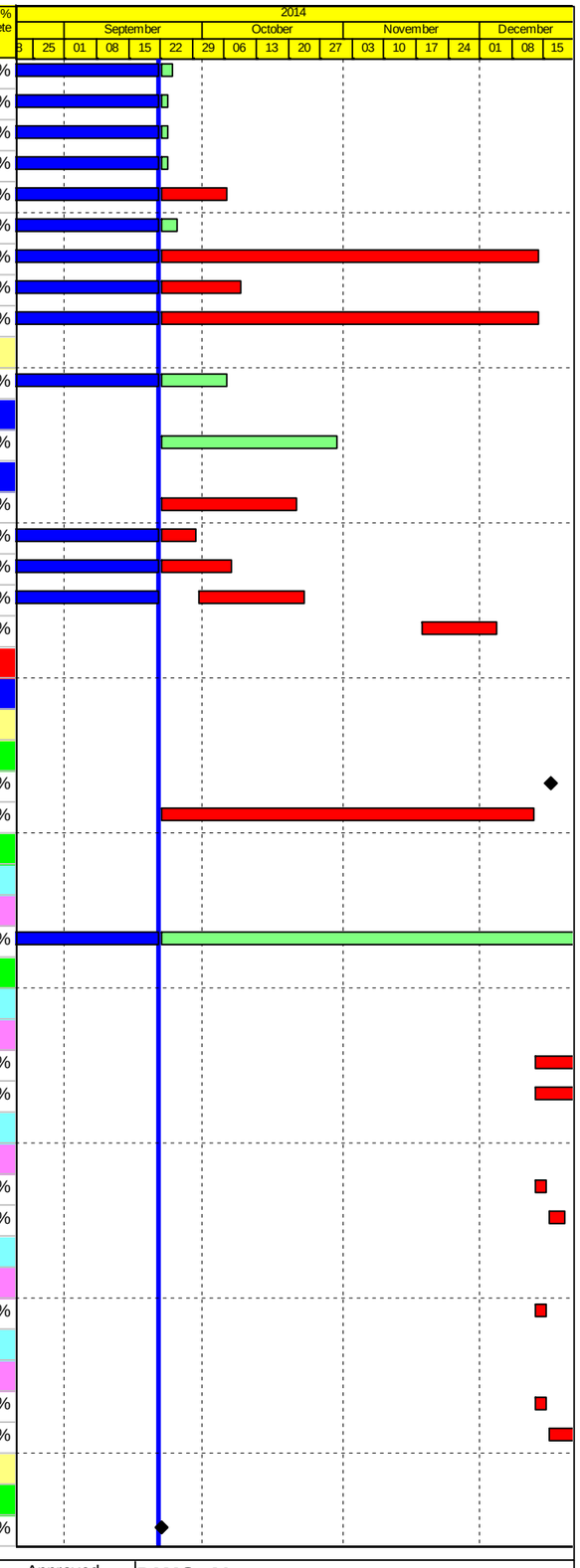
Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 15 of 35 Pages)
(Progress as of 21-Sep-14)

Date	Revision	Checked	Approved
29-Jul-14		FZ	
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
TR00140	SO Approval of Base Tree Survey Report	30.00	14-Oct-13 A	90%	3.00	24-Sep-14	27-Aug-18	29-Aug-18	025.00	1025.00	90%
TR00200	Tree transplant for Viaduct B - affecting Piers B11 to B17	90.00	17-Feb-14 A	97.78%	2.00	23-Sep-14	15-Feb-16	16-Feb-16	379.00	1050.00	98%
TR00220	Tree transplant for Viaduct B - affecting Pier B18 & Abutment B	90.00	17-Feb-14 A	97.78%	2.00	23-Sep-14	01-Nov-14	03-Nov-14	31.00	16.00	98%
TR00240	Tree transplant for Viaduct B - affecting realigned CTR	90.00	17-Feb-14 A	97.78%	2.00	23-Sep-14	24-Oct-14	25-Oct-14	24.00	65.00	98%
TR00250	Tree felling for Viaduct B - affecting Slopes 9SE-B/F9, C8 & C9	48.00	05-May-14 A	77.08%	11.00	06-Oct-14	05-Jul-14	19-Jul-14	-55.00	1.00	13%
TR00260	Tree felling for Viaduct C - affecting Piers C9 to Abutment C	24.00	30-Jan-14 A	83.33%	4.00	25-Sep-14	31-Oct-14	04-Nov-14	30.00	64.00	35%
TR00270	Tree transplant for Viaduct C - affecting Piers C9 to Abutment C	90.00	17-Feb-14 A	24.44%	68.00	13-Dec-14	05-Aug-14	04-Nov-14	-34.00	0.00	20%
TR00280	Tree felling for Viaduct C - affecting realigned CTR	30.00	30-Jan-14 A	56.67%	13.00	09-Oct-14	14-Jun-14	05-Jul-14	-67.00	55.00	35%
TR00290	Tree transplant for Viaduct C - affecting realigned CTR	90.00	17-Feb-14 A	24.44%	68.00	13-Dec-14	17-Mar-14	05-Jul-14	122.00	0.00	20%
Additional Trees											
TR01010	Additional tree felling for Viaduct B along CTR	48.00	19-May-14 A	77.08%	11.00	06-Oct-14	13-Oct-14	25-Oct-14	15.00	56.00	42%
Site Set Up for Works Area 3 and Site Offices along CEDD Access Road											
PR30030	Works Area 3-A1/3-A2 - Construct 1.5m steel access bridge	30.00	22-Sep-14	0%	30.00	30-Oct-14	24-Jul-18	29-Aug-18	022.00	1022.00	0%
Temporary Working Platform at North Lantau											
PR08020	Temp. Working Platform at N.Lantau - Install boundary fence	22.00	22-Sep-14	0%	22.00	21-Oct-14	11-Aug-14	11-Sep-14	-30.00	23.00	0%
PR08030	Temp. Working Platform at N.Lantau - Modify top of existing seawall	24.00	25-Nov-13 A	70.83%	7.00	29-Sep-14	24-Jan-14	04-Feb-14	163.00	5.00	71%
PR08050	Temp. Working Platform at N.Lantau - Temp. rockfill & paving between existing & Temp.Seav	42.00	17-Feb-13 A	71.43%	12.00	07-Oct-14	18-Jan-14	04-Feb-14	168.00	0.00	71%
PR08070	Temp. Working Platform at N.Lantau - Construct steel deck / bollards / fenders	24.00	02-May-14 A	29.17%	17.00	23-Oct-14	27-Jan-14	18-Feb-14	168.00	0.00	30%
PR08080	Inst.Unloading Frame incl. T&C for seg.lift (incl. Load Test)	15.00	18-Nov-14	0%	15.00	04-Dec-14	12-Sep-14	29-Sep-14	-53.00	31.00	0%
CONSTRUCTION											
PILING AND SUBSTRUCTURE											
Viaduct A											
General											
ZA00010	Viaduct A - Approval of Foundation DDA DP11.01	0.00		0%	0.00	16-Dec-14		12-May-15	105.00	51.00	0%
ZA00060	Prepare/submit/approval of MTR Protective Fence submission for Viaduct A	60.00	22-Sep-14	0%	60.00	12-Dec-14	27-Jun-14	18-Sep-14	-61.00	0.00	0%
Bridge A2											
Pier A1 (A2e)											
Foundation Works											
GFXX144	A1 (A2e) - Bored Piles (1.80m dia. x 3 nos)	88.00	12-Aug-14 A	5.68%	83.00	31-Dec-14	24-Apr-15	03-Aug-15	172.00	0.00	6%
Bridge A1											
Pier A8 (A1d)											
Preliminary Works for Land Piling											
PA080020	A08 (A1d) - Erect MTR protective fence / Remove existing fence	12.00	13-Dec-14	0%	12.00	29-Dec-14	19-Sep-14	04-Oct-14	-69.00	0.00	0%
PA080030	A8 (A1d) - Install Geo. Instru. & Baseline Monitoring	36.00	13-Dec-14	0%	36.00	27-Jan-15	19-Sep-14	01-Nov-14	-71.00	0.00	0%
Pier A9 (A1c)											
Preliminary Works for Land Piling											
PA090010	A9 (A1c) - Implement TTMS along north side of NLH E/B	2.00	13-Dec-14	0%	2.00	15-Dec-14	24-Oct-14	25-Oct-14	-43.00	0.00	0%
PA090020	A9 (A1c) - Erect boundary fence, site clearance & set up site ingress	4.00	16-Dec-14	0%	4.00	19-Dec-14	27-Oct-14	30-Oct-14	-43.00	6.00	0%
Pier A10 (A1b)											
Preliminary Works for Land Piling											
PA100010	A10 (A1b) - Implement TTMS along north side of NLH E/B	2.00	13-Dec-14	0%	2.00	15-Dec-14	05-Nov-14	06-Nov-14	-33.00	0.00	0%
Pier A11 (A1a) & Abutment A											
Preliminary Works for Land Piling											
PA110010	A11 (A1a) to Abutment A - Implement TTMS along north side of NLH E/B	2.00	13-Dec-14	0%	2.00	15-Dec-14	05-Nov-14	06-Nov-14	-33.00	0.00	0%
PA110020	A11 (A1a) to Approach Ramp A - Erect boundary fence / water filled barrier & set up site ingr	14.00	16-Dec-14	0%	14.00	03-Jan-15	07-Nov-14	22-Nov-14	-33.00	0.00	0%
Viaduct B											
Milestones - Marine Foundation											
GFXX155-1	B7 (B2f) - Completion of piling works	0.00		0%	0.00	22-Sep-14		08-Sep-14	-10.00	7.00	0%



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
Filter: TASK filters: 3-Month Lookahead, No Level of Effort.

Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 16 of 35 Pages)
(Progress as of 21-Sep-14)

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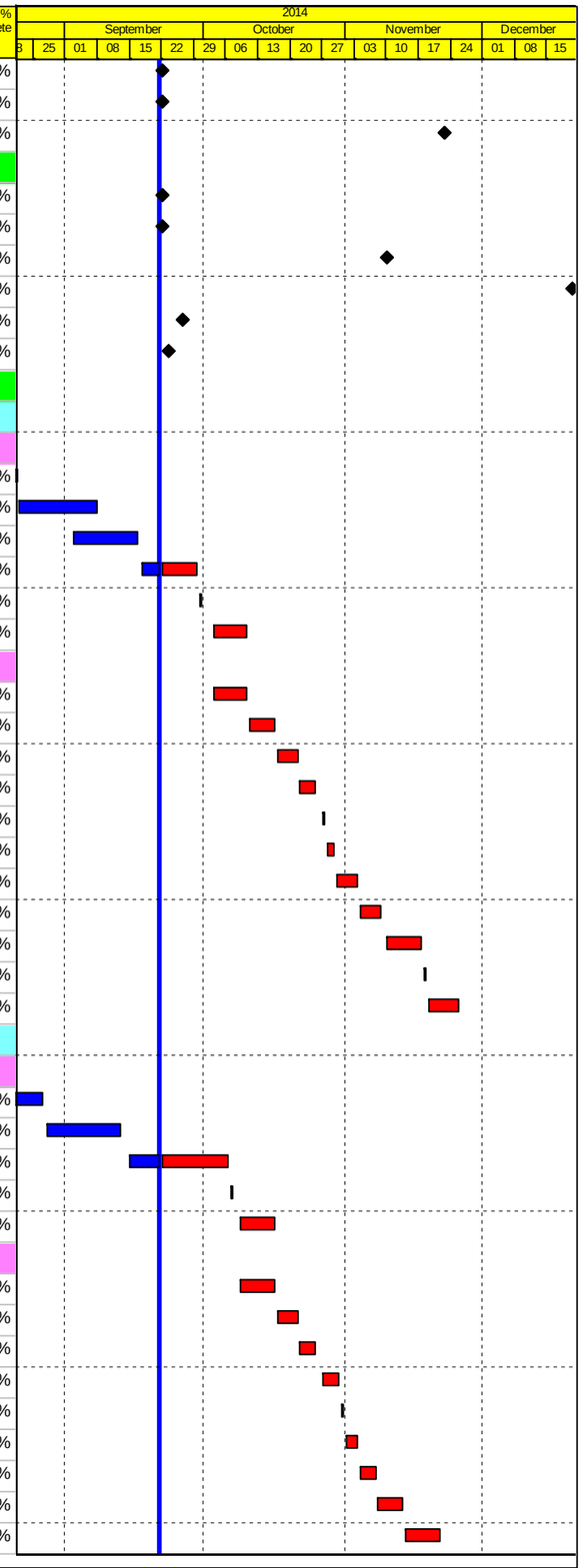
29-Jul-14		FZ	
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
GFXX160-1	B6 (B3a) - Completion of piling works	0.00		0%	0.00	22-Sep-14		13-Sep-14	-6.00	8.00	0%
GFXX170-1	B4 (B3c) - Completion of piling works	0.00		0%	0.00	22-Sep-14		01-Sep-14	-16.00	8.00	0%
GFXX175-1	B3 (B3d) - Completion of piling works	0.00		0%	0.00	22-Nov-14		02-Sep-14	-67.00	7.00	0%
Milestones - Land Foundation											
ZB00101	B14 (B1f) - Completion of piling works	0.00		0%	0.00	22-Sep-14		27-Sep-14	6.00	0.00	0%
ZB00111	B13 (B1g) - Completion of piling works	0.00		0%	0.00	22-Sep-14		29-Aug-18	166.00	1166.00	0%
ZB00140	B10 (B2c) - Start date for piling	0.00	10-Nov-14	0%	0.00		26-Sep-14		-36.00	0.00	0%
ZB00141	B10 (B2c) - Completion of piling works	0.00		0%	0.00	20-Dec-14		08-Nov-14	-36.00	0.00	0%
ZB00151	B9 (B2d) - Completion of piling works	0.00		0%	0.00	26-Sep-14		16-Oct-14	15.00	0.00	0%
ZB00161	B8 (B2e) - Completion of piling works	0.00		0%	0.00	23-Sep-14		25-Jul-14	-50.00	0.00	0%
Bridge B3											
Pier B1 (B3f)											
Pile Cap Works											
SB3F0100	B1 (B3f) - Marine Pile Cap M2 - Weld Fin plates/Plug Rebar & Concrete	9.00	15-Aug-14 A	100%	0.00	21-Aug-14 A					100%
SB3F0110	B1 (B3f) - Marine Pile Cap M2 - Dewater precast shell / Remove Lifting Frame	2.00	22-Aug-14 A	100%	0.00	08-Sep-14 A					100%
SB3F0120	B1 (B3f) - Marine Pile Cap M2 - Pile cut down	12.00	03-Sep-14 A	100%	0.00	17-Sep-14 A					100%
SB3F0130	B1 (B3f) - Marine Pile Cap M2 - Rebar fixing, inst.inserts etc	12.00	18-Sep-14 A	50%	6.00	29-Sep-14	16-Aug-14	25-Aug-14	-24.00	0.00	0%
SB3F0140	B1 (B3f) - Marine Pile Cap M2 - Concreting	1.00	30-Sep-14	0%	1.00	30-Sep-14	26-Aug-14	26-Aug-14	-24.00	0.00	0%
SB3F0164	B1 (B3f) - Marine Pile Cap M2 - Curing incl. CJ preparation	6.00	03-Oct-14	0%	6.00	10-Oct-14	28-Aug-14	04-Sep-14	-24.00	0.00	0%
Pier Works											
SB3F0170	B1 (B3f) - Type 4B-MJ Pier Temp. Support Platform	6.00	03-Oct-14	0%	6.00	10-Oct-14	28-Aug-14	04-Sep-14	-24.00	0.00	0%
SB3F0172	B1 (B3f) - Type 4B-MJ Pier Scaffolding (1st Lift)	4.00	11-Oct-14	0%	4.00	16-Oct-14	05-Sep-14	11-Sep-14	-24.00	0.00	0%
SB3F0180	B1 (B3f) - Type 4B-MJ Pier Rebarwork (1st Lift)	4.00	17-Oct-14	0%	4.00	21-Oct-14	12-Sep-14	16-Sep-14	-24.00	0.00	0%
SB3F0190	B1 (B3f) - Type 4B-MJ Pier Formwork & Prep for Concreting (1st Lift)	4.00	22-Oct-14	0%	4.00	25-Oct-14	18-Sep-14	22-Sep-14	-24.00	0.00	0%
SB3F0200	B1 (B3f) - Type 4B-MJ Pier Concreting (1st Lift)	1.00	27-Oct-14	0%	1.00	27-Oct-14	23-Sep-14	23-Sep-14	-24.00	0.00	0%
SB3F0202	B1 (B3f) - Type 4B-MJ Pier Curing & Striking of Forms incl. CJ prep (1st Lift)	2.00	28-Oct-14	0%	2.00	29-Oct-14	25-Sep-14	26-Sep-14	-24.00	0.00	0%
SB3F0300	B1 (B3f) - Type 4B-MJ Pier Head Scaffolding	4.00	30-Oct-14	0%	4.00	03-Nov-14	27-Sep-14	04-Oct-14	-23.00	0.00	0%
SB3F0310	B1 (B3f) - Type 4B-MJ Pier Head Rebarwork	5.00	04-Nov-14	0%	5.00	08-Nov-14	06-Oct-14	11-Oct-14	-23.00	0.00	0%
SB3F0320	B1 (B3f) - Type 4B-MJ Pier Head Formwork & Prep for Concreting	7.00	10-Nov-14	0%	7.00	17-Nov-14	13-Oct-14	21-Oct-14	-23.00	0.00	0%
SB3F0330	B1 (B3f) - Type 4B-MJ Pier Head Concreting	1.00	18-Nov-14	0%	1.00	18-Nov-14	22-Oct-14	22-Oct-14	-23.00	0.00	0%
SB3F0340	B1 (B3f) - Type 4B-MJ Pier Head Curing/Striking of Forms/Remove Scaffolding	6.00	19-Nov-14	0%	6.00	25-Nov-14	23-Oct-14	29-Oct-14	-23.00	0.00	0%
Pier B2 (B3e)											
Pile Cap Works											
SB3E0120	B2 (B3e) - Marine Pile Cap M1 - Dewater precast shell / Remove Lifting Frame	2.00	21-Aug-14 A	100%	0.00	27-Aug-14 A					100%
SB3E0130	B2 (B3e) - Marine Pile Cap M1 - Pile cut down	8.00	28-Aug-14 A	100%	0.00	13-Sep-14 A					100%
SB3E0140	B2 (B3e) - Marine Pile Cap M1 - Rebar fixing, inst.inserts etc	12.00	15-Sep-14 A	16.67%	10.00	06-Oct-14	28-Jul-14	12-Aug-14	-36.00	0.00	0%
SB3E0150	B2 (B3e) - Marine Pile Cap M1 - Concreting	1.00	07-Oct-14	0%	1.00	07-Oct-14	14-Aug-14	14-Aug-14	-36.00	0.00	0%
SB3E0160	B2 (B3e) - Marine Pile Cap M1 - Curing incl. CJ Preparation	6.00	09-Oct-14	0%	6.00	16-Oct-14	15-Aug-14	23-Aug-14	-36.00	0.00	0%
Pier Works											
SB3E0170	B2 (B3e) - Type 4B Pier Temp. Support Platform	6.00	09-Oct-14	0%	6.00	16-Oct-14	15-Aug-14	23-Aug-14	-36.00	0.00	0%
SB3E0172	B2 (B3e) - Type 4B Pier Scaffolding (1st Lift)	4.00	17-Oct-14	0%	4.00	21-Oct-14	25-Aug-14	29-Aug-14	-36.00	0.00	0%
SB3E0180	B2 (B3e) - Type 4B Pier Rebarwork (1st Lift)	4.00	22-Oct-14	0%	4.00	25-Oct-14	30-Aug-14	04-Sep-14	-36.00	0.00	0%
SB3E0190	B2 (B3e) - Type 4B Pier Formwork & Prep for Concreting (1st Lift)	4.00	27-Oct-14	0%	4.00	30-Oct-14	05-Sep-14	11-Sep-14	-36.00	0.00	0%
SB3E0200	B2 (B3e) - Type 4B Pier Concreting (1st Lift)	1.00	31-Oct-14	0%	1.00	31-Oct-14	12-Sep-14	12-Sep-14	-36.00	0.00	0%
SB3E0202	B2 (B3e) - Type 4B Pier Curing & Striking of Forms incl. CJ prep (1st Lift)	2.00	01-Nov-14	0%	2.00	03-Nov-14	13-Sep-14	15-Sep-14	-36.00	0.00	0%
SB3E0300	B2 (B3e) - Type 4B Pier Head Scaffolding	4.00	04-Nov-14	0%	4.00	07-Nov-14	16-Sep-14	20-Sep-14	-36.00	0.00	0%
SB3E0310	B2 (B3e) - Type 4B Pier Head Rebarwork	5.00	08-Nov-14	0%	5.00	13-Nov-14	22-Sep-14	27-Sep-14	-36.00	0.00	0%
SB3E0320	B2 (B3e) - Type 4B Pier Head Formwork & Prep for Concreting	7.00	14-Nov-14	0%	7.00	21-Nov-14	29-Sep-14	09-Oct-14	-36.00	0.00	0%



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
Filter: TASK filters: 3-Month Lookahead, No Level of Effort.

Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 17 of 35 Pages)
(Progress as of 21-Sep-14)

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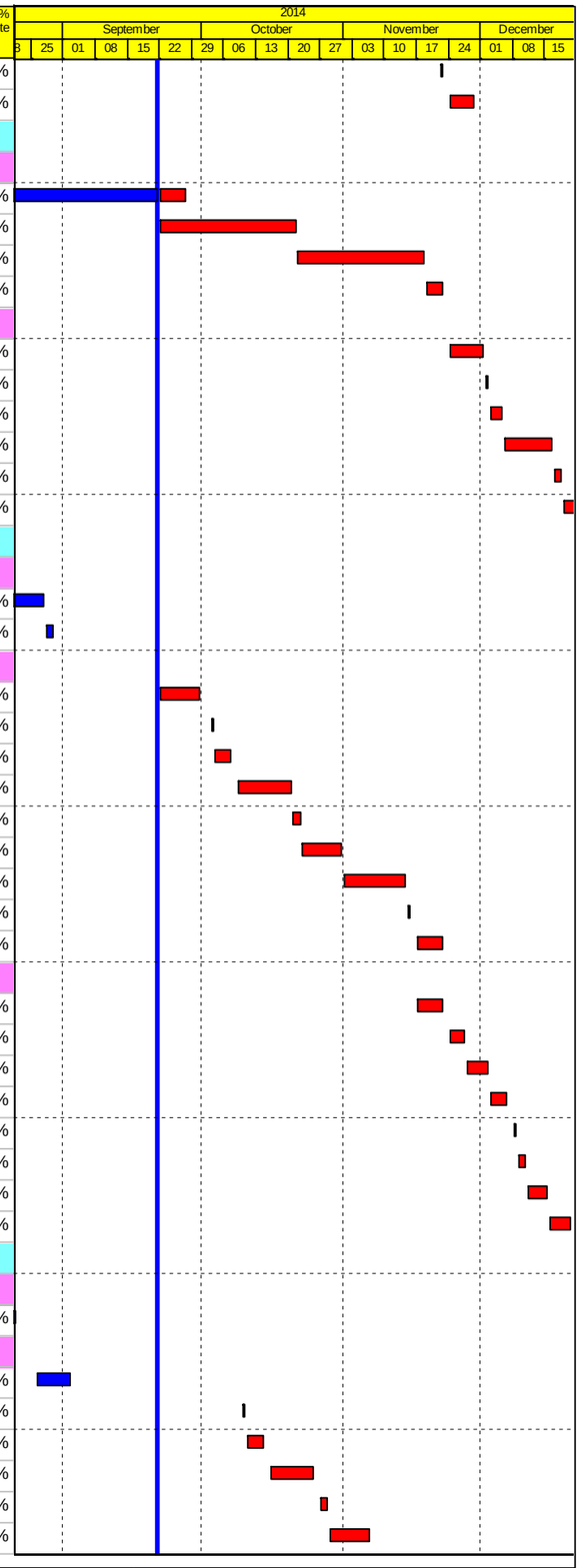
DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
SB3E0330	B2 (B3e) - Type 4B Pier Head Concreting	1.00	22-Nov-14	0%	1.00	22-Nov-14	10-Oct-14	10-Oct-14	-36.00	0.00	0%
SB3E0340	B2 (B3e) - Type 4B Pier Head Curing/Striking of Forms/Remove Scaffolding	6.00	24-Nov-14	0%	6.00	29-Nov-14	11-Oct-14	18-Oct-14	-36.00	0.00	0%
Pier B3 (B3d)											
Foundation Works											
GFXX174	B3 (B3d) - Sonic & Interface Coring	12.00	08-Aug-14 A	50%	6.00	27-Sep-14	16-Jul-14	22-Jul-14	-57.00	18.00	50%
GFXX174-1	B3 (B3d) - Selection of bored pile for Full Depth Coring	24.00	22-Sep-14	0%	24.00	21-Oct-14	24-Jun-14	22-Jul-14	-75.00	0.00	0%
GFXX174-2	B3 (B3d) - Bored Pile Full Depth Coring & Testing	24.00	22-Oct-14	0%	24.00	18-Nov-14	23-Jul-14	19-Aug-14	-75.00	0.00	0%
GFXX175	B3 (B3d) - Dismantle removable panels of temp. platform	4.00	19-Nov-14	0%	4.00	22-Nov-14	20-Aug-14	23-Aug-14	-75.00	0.00	0%
Pile Cap Works											
SB3D0070	B3 (B3d) - Marine Pile Cap M1 - Inst.Floating Seal & Casing Head Steelwork	7.00	24-Nov-14	0%	7.00	01-Dec-14	25-Aug-14	02-Sep-14	-68.00	0.00	0%
SB3D0080	B3 (B3d) - Marine Pile Cap M1 - Install precast shell in position	1.00	02-Dec-14	0%	1.00	02-Dec-14	04-Sep-14	04-Sep-14	-68.00	0.00	0%
SB3D0090	B3 (B3d) - Marine Pile Cap M1 - Inst.Access & make Watertight	3.00	03-Dec-14	0%	3.00	05-Dec-14	05-Sep-14	08-Sep-14	-68.00	0.00	0%
SB3D0100	B3 (B3d) - Marine Pile Cap M1 - Weld Fin plates/Plug Rebar & Concrete	9.00	06-Dec-14	0%	9.00	16-Dec-14	11-Sep-14	22-Sep-14	-68.00	0.00	0%
SB3D0120	B3 (B3d) - Marine Pile Cap M1 - Dewater precast shell / Remove Lifting Frame	2.00	17-Dec-14	0%	2.00	18-Dec-14	23-Sep-14	25-Sep-14	-68.00	0.00	0%
SB3D0130	B3 (B3d) - Marine Pile Cap M1 - Pile cut down	8.00	19-Dec-14	0%	8.00	30-Dec-14	26-Sep-14	07-Oct-14	-68.00	0.00	0%
Pier B4 (B3c)											
Foundation Works											
GFXX169	B4 (B3c) - Sonic & Interface Coring	12.00	11-Aug-14 A	100%	0.00	27-Aug-14 A					100%
GFXX170	B4 (B3c) - Dismantle removable panels of temp. platform	4.00	28-Aug-14 A	100%	0.00	29-Aug-14 A					100%
Pile Cap Works											
SB3C0070	B4 (B3c) - Marine Pile Cap M1 - Inst.Floating Seal & Casing Head Steelwork	7.00	22-Sep-14	0%	7.00	30-Sep-14	23-Aug-14	01-Sep-14	-20.00	0.00	0%
SB3C0080	B4 (B3c) - Marine Pile Cap M1 - Install precast shell in position	1.00	03-Oct-14	0%	1.00	03-Oct-14	02-Sep-14	02-Sep-14	-20.00	0.00	0%
SB3C0090	B4 (B3c) - Marine Pile Cap M1 - Inst.Access & make Watertight	3.00	04-Oct-14	0%	3.00	07-Oct-14	04-Sep-14	06-Sep-14	-20.00	0.00	0%
SB3C0100	B4 (B3c) - Marine Pile Cap M1 - Weld Fin plates/Plug Rebar & Concrete	9.00	09-Oct-14	0%	9.00	20-Oct-14	08-Sep-14	20-Sep-14	-20.00	0.00	0%
SB3C0120	B4 (B3c) - Marine Pile Cap M1 - Dewater precast shell / Remove Lifting Frame	2.00	21-Oct-14	0%	2.00	22-Oct-14	22-Sep-14	25-Sep-14	-19.00	0.00	0%
SB3C0130	B4 (B3c) - Marine Pile Cap M1 - Pile cut down	8.00	23-Oct-14	0%	8.00	31-Oct-14	26-Sep-14	07-Oct-14	-19.00	0.00	0%
SB3C0140	B4 (B3c) - Marine Pile Cap M1 - Rebar fixing, inst.inserts etc	12.00	01-Nov-14	0%	12.00	14-Nov-14	09-Oct-14	23-Oct-14	-19.00	0.00	0%
SB3C0150	B4 (B3c) - Marine Pile Cap M1 - Concreting	1.00	15-Nov-14	0%	1.00	15-Nov-14	24-Oct-14	24-Oct-14	-19.00	0.00	0%
SB3C0160	B4 (B3c) - Marine Pile Cap M1 - Curing incl. CJ Preparation	6.00	17-Nov-14	0%	6.00	22-Nov-14	25-Oct-14	31-Oct-14	-19.00	0.00	0%
Pier Works											
SB3C0170	B4 (B3c) - Type 4B Pier Temp. Support Platform	6.00	17-Nov-14	0%	6.00	22-Nov-14	25-Oct-14	31-Oct-14	-19.00	0.00	0%
SB3C0172	B4 (B3c) - Type 4B Pier Scaffolding (1st Lift)	4.00	24-Nov-14	0%	4.00	27-Nov-14	01-Nov-14	05-Nov-14	-19.00	0.00	0%
SB3C0180	B4 (B3c) - Type 4B Pier Rebarwork (1st Lift)	4.00	28-Nov-14	0%	4.00	02-Dec-14	06-Nov-14	10-Nov-14	-19.00	0.00	0%
SB3C0190	B4 (B3c) - Type 4B Pier Formwork & Prep for Concreting (1st Lift)	4.00	03-Dec-14	0%	4.00	06-Dec-14	11-Nov-14	14-Nov-14	-19.00	0.00	0%
SB3C0200	B4 (B3c) - Type 4B Pier Concreting (1st Lift)	1.00	08-Dec-14	0%	1.00	08-Dec-14	15-Nov-14	15-Nov-14	-19.00	0.00	0%
SB3C0202	B4 (B3c) - Type 4B Pier Curing & Striking of Forms incl. CJ prep (1st Lift)	2.00	09-Dec-14	0%	2.00	10-Dec-14	17-Nov-14	18-Nov-14	-19.00	0.00	0%
SB3C0300	B4 (B3c) - Type 4B Pier Head Scaffolding	4.00	11-Dec-14	0%	4.00	15-Dec-14	19-Nov-14	22-Nov-14	-19.00	0.00	0%
SB3C0310	B4 (B3c) - Type 4B Pier Head Rebarwork	5.00	16-Dec-14	0%	5.00	20-Dec-14	24-Nov-14	28-Nov-14	-19.00	0.00	0%
Pier B5 (B3b)											
Foundation Works											
GFXX165	B5 (B3b) - Dismantle removable panels of temp. platform	4.00	12-Aug-14 A	100%	0.00	21-Aug-14 A					100%
Pile Cap Works											
SB3B0070	B5 (B3b) - Marine Pile Cap M1 - Inst.Floating Seal & Casing Head Steelwork	7.00	26-Aug-14 A	100%	0.00	02-Sep-14 A					100%
SB3B0080	B5 (B3b) - Marine Pile Cap M1 - Install precast shell in position	1.00	10-Oct-14	0%	1.00	10-Oct-14	01-Sep-14	02-Sep-14	-25.88	0.00	0%
SB3B0090	B5 (B3b) - Marine Pile Cap M1 - Inst.Access & make Watertight	3.00	11-Oct-14	0%	3.00	14-Oct-14	02-Sep-14	08-Sep-14	-24.88	0.00	0%
SB3B0100	B5 (B3b) - Marine Pile Cap M1 - Weld Fin plates/Plug Rebar & Concrete	9.00	16-Oct-14	0%	9.00	25-Oct-14	08-Sep-14	22-Sep-14	-24.88	0.00	0%
SB3B0120	B5 (B3b) - Marine Pile Cap M1 - Dewater precast shell / Remove Lifting Frame	2.00	27-Oct-14	0%	2.00	28-Oct-14	22-Sep-14	25-Sep-14	-24.88	0.00	0%
SB3B0130	B5 (B3b) - Marine Pile Cap M1 - Pile cut down	8.00	29-Oct-14	0%	8.00	06-Nov-14	25-Sep-14	07-Oct-14	-24.88	0.00	0%



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
Filter: TASK filters: 3-Month Lookahead, No Level of Effort.

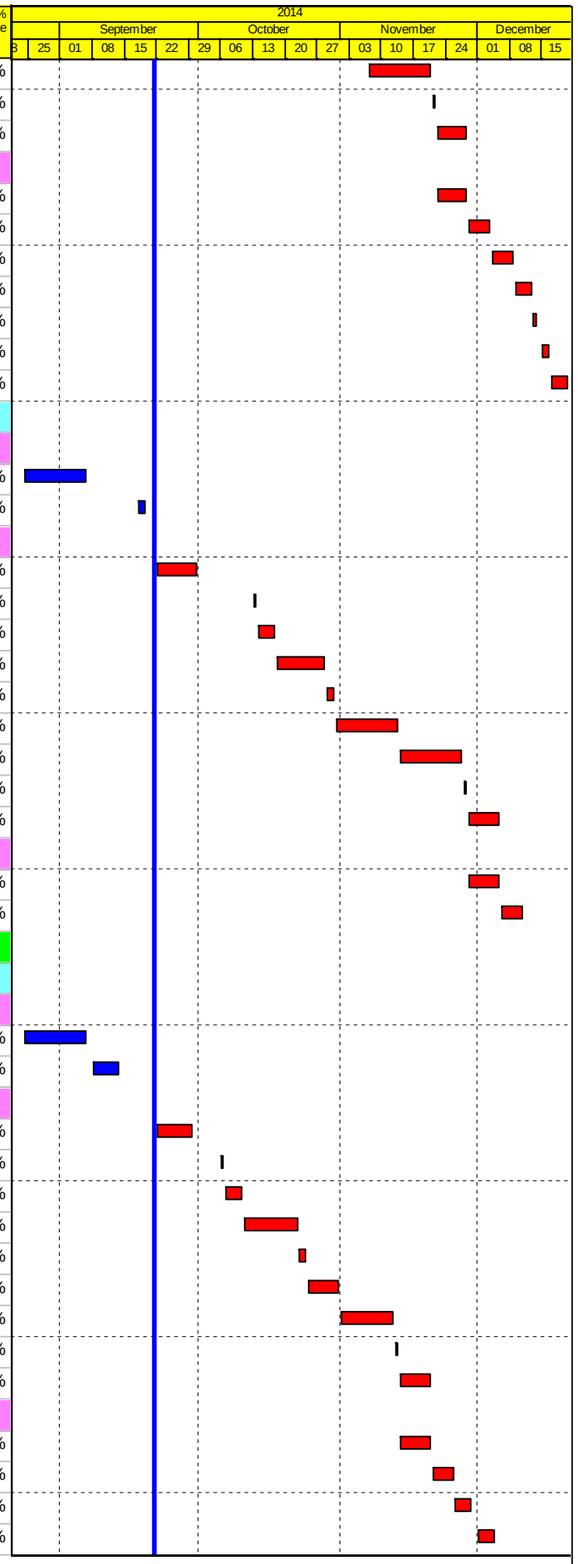
Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 18 of 35 Pages)
(Progress as of 21-Sep-14)

Date	Revision	Checked	Approved
29-Jul-14		FZ	
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
SB3B0140	B5 (B3b) - Marine Pile Cap M1 - Rebar fixing, inst.inserts etc	12.00	07-Nov-14	0%	12.00	20-Nov-14	07-Oct-14	23-Oct-14	-24.88	0.00	0%
SB3B0150	B5 (B3b) - Marine Pile Cap M1 - Concreting	1.00	21-Nov-14	0%	1.00	21-Nov-14	23-Oct-14	24-Oct-14	-24.88	0.00	0%
SB3B0160	B5 (B3b) - Marine Pile Cap M1 - Curing incl. CJ Preparation	6.00	22-Nov-14	0%	6.00	28-Nov-14	24-Oct-14	31-Oct-14	-24.88	0.00	0%
Pier Works											
SB3B0170	B5 (B3b) - Type 4B Pier Temp. Support Platform	6.00	22-Nov-14	0%	6.00	28-Nov-14	24-Oct-14	31-Oct-14	-24.00	0.00	0%
SB3B0172	B5 (B3b) - Type 4B Pier Scaffolding (1st Lift)	4.00	29-Nov-14	0%	4.00	03-Dec-14	01-Nov-14	05-Nov-14	-24.00	0.00	0%
SB3B0180	B5 (B3b) - Type 4B Pier Rebarwork (1st Lift)	4.00	04-Dec-14	0%	4.00	08-Dec-14	06-Nov-14	10-Nov-14	-24.00	0.00	0%
SB3B0190	B5 (B3b) - Type 4B Pier Formwork & Prep for Concreting (1st Lift)	4.00	09-Dec-14	0%	4.00	12-Dec-14	11-Nov-14	14-Nov-14	-24.00	0.00	0%
SB3B0200	B5 (B3b) - Type 4B Pier Concreting (1st Lift)	1.00	13-Dec-14	0%	1.00	13-Dec-14	15-Nov-14	15-Nov-14	-24.00	0.00	0%
SB3B0202	B5 (B3b) - Type 4B Pier Curing & Striking of Forms incl. CJ prep (1st Lift)	2.00	15-Dec-14	0%	2.00	16-Dec-14	17-Nov-14	18-Nov-14	-24.00	0.00	0%
SB3B0300	B5 (B3b) - Type 4B Pier Head Scaffolding	4.00	17-Dec-14	0%	4.00	20-Dec-14	19-Nov-14	22-Nov-14	-24.00	0.00	0%
Pier B6 (B3a)											
Foundation Works											
GFXX159	B6 (B3a) - Sonic & Interface Coring	12.00	24-Aug-14 A	100%	0.00	06-Sep-14 A					100%
GFXX160	B6 (B3a) - Dismantle removable panels of temp. platform	4.00	18-Sep-14 A	100%	0.00	19-Sep-14 A					100%
Pile Cap Works											
SB3A0070	B6 (B3a) - Marine Pile Cap M2 - Inst.Floating Seal & Casing Head Steelwork	7.00	22-Sep-14	0%	7.00	30-Sep-14	04-Sep-14	13-Sep-14	-12.00	7.00	0%
SB3A0080	B6 (B3a) - Marine Pile Cap M2 - Install precast shell in position	1.00	13-Oct-14	0%	1.00	13-Oct-14	15-Sep-14	15-Sep-14	-19.00	0.00	0%
SB3A0090	B6 (B3a) - Marine Pile Cap M2 - Inst.Access & make Watertight	3.00	14-Oct-14	0%	3.00	17-Oct-14	16-Sep-14	19-Sep-14	-19.00	0.00	0%
SB3A0100	B6 (B3a) - Marine Pile Cap M2 - Weld Fin plates/Plug Rebar & Concrete	9.00	18-Oct-14	0%	9.00	28-Oct-14	20-Sep-14	03-Oct-14	-19.00	0.00	0%
SB3A0110	B6 (B3a) - Marine Pile Cap M2 - Dewater precast shell / Remove Lifting Frame	2.00	29-Oct-14	0%	2.00	30-Oct-14	04-Oct-14	06-Oct-14	-19.00	0.00	0%
SB3A0120	B6 (B3a) - Marine Pile Cap M2 - Pile cut down	12.00	31-Oct-14	0%	12.00	13-Nov-14	07-Oct-14	22-Oct-14	-19.00	0.00	0%
SB3A0130	B6 (B3a) - Marine Pile Cap M2 - Rebar fixing, inst.inserts etc	12.00	14-Nov-14	0%	12.00	27-Nov-14	23-Oct-14	05-Nov-14	-19.00	0.00	0%
SB3A0140	B6 (B3a) - Marine Pile Cap M2 - Concreting	1.00	28-Nov-14	0%	1.00	28-Nov-14	06-Nov-14	06-Nov-14	-19.00	0.00	0%
SB3A0164	B6 (B3a) - Marine Pile Cap M2 - Curing incl. CJ preparation	6.00	29-Nov-14	0%	6.00	05-Dec-14	07-Nov-14	13-Nov-14	-19.00	0.00	0%
Pier Works											
SB3A0170	B6 (B3a) - Type 4B-MJ Pier Temp. Support Platform	6.00	29-Nov-14	0%	6.00	05-Dec-14	07-Nov-14	13-Nov-14	-19.00	0.00	0%
SB3A0172	B6 (B3a) - Type 4B-MJ Pier Scaffolding (1st Lift)	4.00	06-Dec-14	0%	4.00	10-Dec-14	14-Nov-14	18-Nov-14	-19.00	20.00	0%
Bridge B2											
Pier B7 (B2f)											
Foundation Works											
GFXX154	B7 (B2f) - Sonic & Interface Coring	12.00	24-Aug-14 A	100%	0.00	06-Sep-14 A					100%
GFXX155	B7 (B2f) - Dismantle removable panels of temp. platform	4.00	08-Sep-14 A	100%	0.00	13-Sep-14 A					100%
Pile Cap Works											
SB2F0070	B7 (B2f) - Marine Pile Cap M1 - Inst.Floating Seal & Casing Head Steelwork	6.00	22-Sep-14	0%	6.00	29-Sep-14	01-Sep-14	08-Sep-14	-14.00	3.00	0%
SB2F0080	B7 (B2f) - Marine Pile Cap M1 - Install precast shell in position	1.00	06-Oct-14	0%	1.00	06-Oct-14	11-Sep-14	11-Sep-14	-17.00	0.00	0%
SB2F0090	B7 (B2f) - Marine Pile Cap M1 - Inst.Access & make Watertight	3.00	07-Oct-14	0%	3.00	10-Oct-14	12-Sep-14	15-Sep-14	-17.00	0.00	0%
SB2F0100	B7 (B2f) - Marine Pile Cap M1 - Weld Fin plates/Plug Rebar & Concrete	9.00	11-Oct-14	0%	9.00	22-Oct-14	16-Sep-14	27-Sep-14	-17.00	0.00	0%
SB2F0120	B7 (B2f) - Marine Pile Cap M1 - Dewater precast shell / Remove Lifting Frame	2.00	23-Oct-14	0%	2.00	24-Oct-14	29-Sep-14	30-Sep-14	-17.00	0.00	0%
SB2F0130	B7 (B2f) - Marine Pile Cap M1 - Pile cut down	6.00	25-Oct-14	0%	6.00	31-Oct-14	03-Oct-14	10-Oct-14	-17.00	0.00	0%
SB2F0140	B7 (B2f) - Marine Pile Cap M1 - Rebar fixing, inst.inserts etc	10.00	01-Nov-14	0%	10.00	12-Nov-14	11-Oct-14	23-Oct-14	-17.00	0.00	0%
SB2F0150	B7 (B2f) - Marine Pile Cap M1 - Concreting	1.00	13-Nov-14	0%	1.00	13-Nov-14	24-Oct-14	24-Oct-14	-17.00	0.00	0%
SB2F0160	B7 (B2f) - Marine Pile Cap M1 - Curing incl. CJ Preparation	6.00	14-Nov-14	0%	6.00	20-Nov-14	25-Oct-14	31-Oct-14	-17.00	0.00	0%
Pier Works											
SB2F0170	B7 (B2f) - Type 4B Pier Temp. Support Platform	6.00	14-Nov-14	0%	6.00	20-Nov-14	25-Oct-14	31-Oct-14	-17.00	0.00	0%
SB2F0172	B7 (B2f) - Type 4B Pier Scaffolding (1st Lift)	4.00	21-Nov-14	0%	4.00	25-Nov-14	01-Nov-14	05-Nov-14	-17.00	0.00	0%
SB2F0180	B7 (B2f) - Type 4B Pier Rebarwork (1st Lift)	4.00	26-Nov-14	0%	4.00	29-Nov-14	06-Nov-14	10-Nov-14	-17.00	0.00	0%
SB2F0190	B7 (B2f) - Type 4B Pier Formwork & Prep for Concreting (1st Lift)	4.00	01-Dec-14	0%	4.00	04-Dec-14	11-Nov-14	14-Nov-14	-17.00	0.00	0%



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
Filter: TASK filters: 3-Month Lookahead, No Level of Effort.

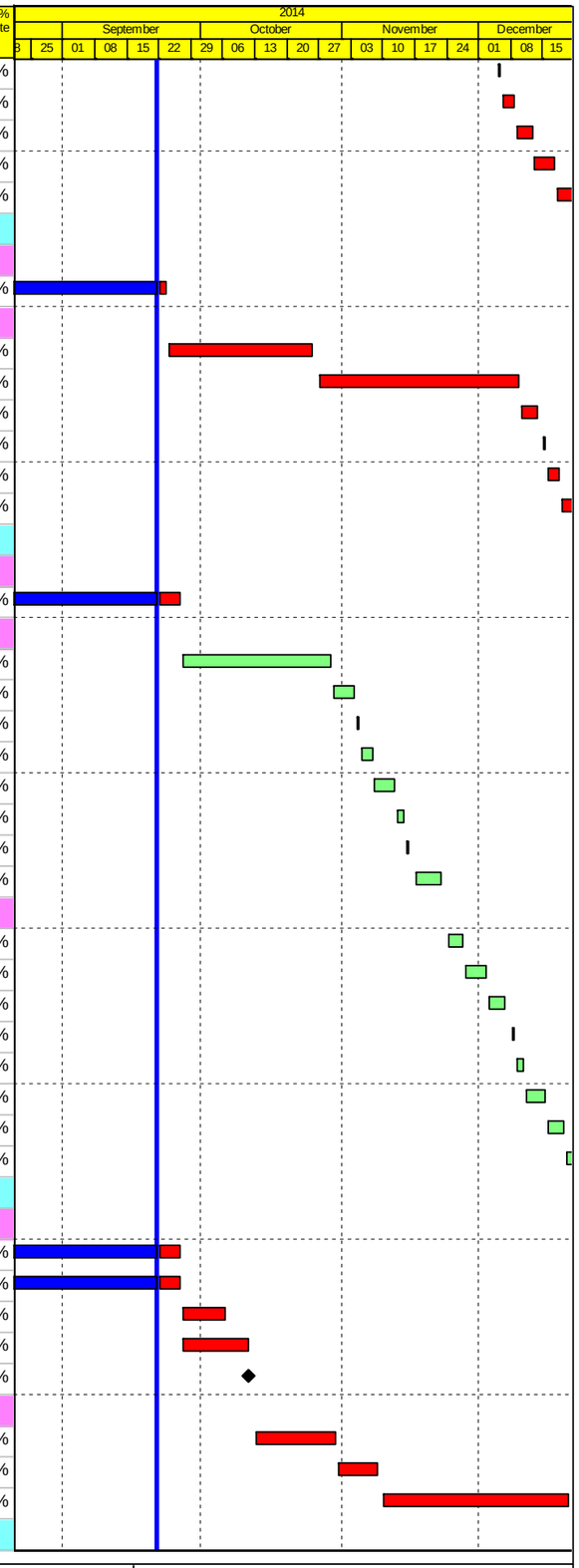
Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 19 of 35 Pages)
(Progress as of 21-Sep-14)

Date	Revision	Checked	Approved
29-Jul-14		FZ	
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
SB2F0200	B7 (B2f) - Type 4B Pier Concreting (1st Lift)	1.00	05-Dec-14	0%	1.00	05-Dec-14	15-Nov-14	15-Nov-14	-17.00	0.00	0%
SB2F0202	B7 (B2f) - Type 4B Pier Curing & Striking of Forms incl. CJ prep (1st Lift)	2.00	06-Dec-14	0%	2.00	08-Dec-14	17-Nov-14	18-Nov-14	-17.00	0.00	0%
SB2F0210	B7 (B2f) - Type 4B Pier Scaffolding (2nd Lift)	4.00	09-Dec-14	0%	4.00	12-Dec-14	19-Nov-14	22-Nov-14	-17.00	0.00	0%
SB2F0220	B7 (B2f) - Type 4B Pier Rebarwork (2nd Lift)	4.00	13-Dec-14	0%	4.00	17-Dec-14	24-Nov-14	27-Nov-14	-17.00	0.00	0%
SB2F0230	B7 (B2f) - Type 4B Pier Formwork & Prep for Concreting (2nd Lift)	4.00	18-Dec-14	0%	4.00	22-Dec-14	28-Nov-14	02-Dec-14	-17.00	0.00	0%
Pier B8 (B2e)											
Socketted H-Pile Installation											
GFXX353	B8 (B2e) - Install SH Pile (14 nr)	60.00	25-Jun-14 A	96.67%	2.00	23-Sep-14	18-Jun-14	19-Jun-14	-80.00	0.00	96%
Pile Cap Works											
SB2E0088	B8 (B2e) - Pile cap - Pipe Pile Wall for ELS	24.00	24-Sep-14	0%	24.00	25-Oct-14	26-Jul-14	30-Aug-14	-41.00	0.00	0%
SB2E0090	B8 (B2e) - Pile cap Excavation / ELS	38.00	27-Oct-14	0%	38.00	09-Dec-14	01-Sep-14	22-Oct-14	-41.00	0.00	0%
SB2E0092	B8 (B2e) - Pile Breakdown to cut-off etc.	4.00	10-Dec-14	0%	4.00	13-Dec-14	23-Oct-14	27-Oct-14	-41.00	0.00	0%
SB2E0100	B8 (B2e) - Pile cap Blinding	1.00	15-Dec-14	0%	1.00	15-Dec-14	28-Oct-14	28-Oct-14	-41.00	0.00	0%
SB2E0110	B8 (B2e) - Pile cap Formwork	3.00	16-Dec-14	0%	3.00	18-Dec-14	29-Oct-14	31-Oct-14	-41.00	0.00	0%
SB2E0120	B8 (B2e) - Pile cap Rebarwork	4.00	19-Dec-14	0%	4.00	23-Dec-14	01-Nov-14	05-Nov-14	-41.00	0.00	0%
Pier B9 (B2d)											
Socketted H-Pile Installation											
GFXX348	B9 (B2d) - Install SH Pile (14 nr)	71.00	22-Jul-14 A	92.96%	5.00	26-Sep-14	14-Aug-14	19-Aug-14	-32.00	0.00	94.21%
Pile Cap Works											
SB2D0090	B9 (B2d) - ELS / Pile cap Excavation	24.00	27-Sep-14	0%	24.00	29-Oct-14	17-Oct-14	13-Nov-14	13.00	0.00	0%
SB2D0092	B9 (B2d) - Pile Breakdown to cut-off etc.	4.00	30-Oct-14	0%	4.00	03-Nov-14	14-Nov-14	18-Nov-14	13.00	0.00	0%
SB2D0100	B9 (B2d) - Pile cap Blinding	1.00	04-Nov-14	0%	1.00	04-Nov-14	19-Nov-14	19-Nov-14	13.00	0.00	0%
SB2D0110	B9 (B2d) - Pile cap Formwork	3.00	05-Nov-14	0%	3.00	07-Nov-14	20-Nov-14	22-Nov-14	13.00	0.00	0%
SB2D0120	B9 (B2d) - Pile cap Rebarwork	4.00	08-Nov-14	0%	4.00	12-Nov-14	24-Nov-14	27-Nov-14	13.00	0.00	0%
SB2D0122	B9 (B2d) - Pile cap Kicker Formwork	2.00	13-Nov-14	0%	2.00	14-Nov-14	28-Nov-14	29-Nov-14	13.00	0.00	0%
SB2D0130	B9 (B2d) - Pile cap Concreting	1.00	15-Nov-14	0%	1.00	15-Nov-14	01-Dec-14	01-Dec-14	13.00	0.00	0%
SB2D0140	B9 (B2d) - Pile cap Curing & Striking of Forms incl. CJ prep	6.00	17-Nov-14	0%	6.00	22-Nov-14	02-Dec-14	08-Dec-14	13.00	0.00	0%
Pier Works											
SB2D0150	B9 (B2d) - Type 5B Pier Scaffolding (1st Lift)	4.00	24-Nov-14	0%	4.00	27-Nov-14	09-Dec-14	13-Dec-14	14.00	0.00	0%
SB2D0160	B9 (B2d) - Type 5B Pier Rebarwork (1st Lift)	4.00	28-Nov-14	0%	4.00	02-Dec-14	15-Dec-14	18-Dec-14	14.00	0.00	0%
SB2D0170	B9 (B2d) - Type 5B Pier Formwork & Prep for Concreting (1st Lift)	4.00	03-Dec-14	0%	4.00	06-Dec-14	19-Dec-14	23-Dec-14	14.00	0.00	0%
SB2D0180	B9 (B2d) - Type 5B Pier Concreting (1st Lift)	1.00	08-Dec-14	0%	1.00	08-Dec-14	24-Dec-14	24-Dec-14	14.00	0.00	0%
SB2D0182	B9 (B2d) - Type 5B Pier Curing & Striking of Forms incl. CJ prep (1st Lift)	2.00	09-Dec-14	0%	2.00	10-Dec-14	27-Dec-14	29-Dec-14	14.00	0.00	0%
SB2D0190	B9 (B2d) - Type 5B Pier Scaffolding (2nd Lift)	4.00	11-Dec-14	0%	4.00	15-Dec-14	30-Dec-14	03-Jan-15	14.00	0.00	0%
SB2D0200	B9 (B2d) - Type 5B Pier Rebarwork (2nd Lift)	4.00	16-Dec-14	0%	4.00	19-Dec-14	05-Jan-15	08-Jan-15	14.00	0.00	0%
SB2D0210	B9 (B2d) - Type 5B Pier Formwork & Prep for Concreting (2nd Lift)	4.00	20-Dec-14	0%	4.00	24-Dec-14	09-Jan-15	13-Jan-15	14.00	0.00	0%
Pier B10 (B2c)											
Preliminary Works for Land Piling											
PB100070	B10 (B2c) - Construct new Gate G8	20.00	23-Jun-14 A	75%	5.00	26-Sep-14	26-Apr-14	03-May-14	-95.00	0.00	75%
PB100080	B10 (B2c) - Construct new Gate G9	20.00	23-Jun-14 A	75%	5.00	26-Sep-14	26-Apr-14	03-May-14	-95.00	0.00	75%
PB100100	B10 (B2c) - Remove original gates G8 & G9	6.00	27-Sep-14	0%	6.00	06-Oct-14	08-May-14	15-May-14	-95.00	0.00	0%
PB100110	B10 (B2c) - Fence existing openings of orig.gates & convert area to construction site	10.00	27-Sep-14	0%	10.00	11-Oct-14	08-May-14	20-May-14	-95.00	0.00	0%
PB100120	B10 (B2c) - Complete Civil Preparation Works for piling to commence	0.00		0%	0.00	11-Oct-14		20-May-14	-95.00	0.00	0%
Socketted H-Pile Installation											
GFXX340	B10 (B2c) - Predrilling (2 nos)	16.00	13-Oct-14*	0%	16.00	30-Oct-14	22-May-14	10-Jun-14	118.00	0.00	0%
GFXX340-1	B10 (B2c) - Confirm Rockhead Levels	8.00	31-Oct-14	0%	8.00	08-Nov-14	11-Jun-14	19-Jun-14	118.00	0.00	0%
GFXX341	B10 (B2c) - Install SH Pile (14 nr)	36.00	10-Nov-14	0%	36.00	20-Dec-14	20-Jun-14	01-Aug-14	118.00	0.00	0%
Pier B11 (B2b)											



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
Filter: TASK filters: 3-Month Lookahead, No Level of Effort.

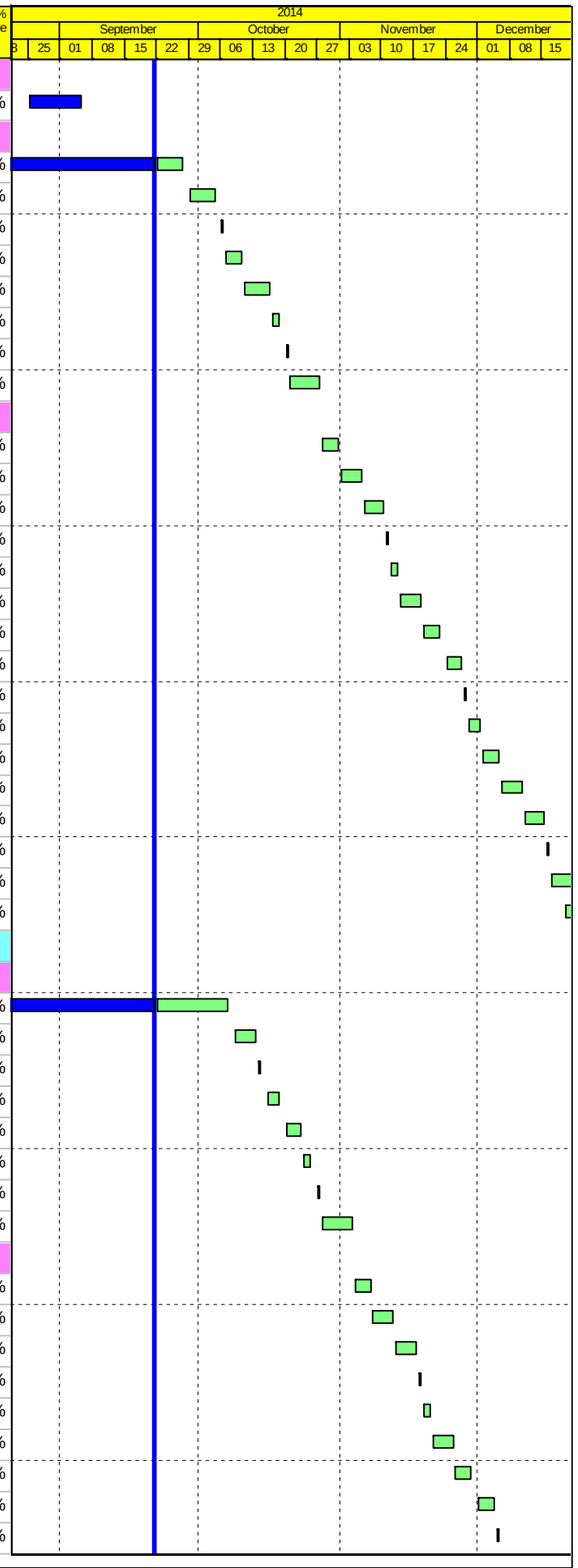
Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 20 of 35 Pages)
(Progress as of 21-Sep-14)

Date	Revision	Checked	Approved
29-Jul-14		FZ	
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
Socketted H-Pile Installation											
GFXX335	B11 (B2b) - Loading Test for pre-bored H-pile	12.00	25-Aug-14 A	100%	0.00	05-Sep-14 A					100%
Pile Cap Works											
SB2B0091	B11 (B2b) - Pile cap Excavation / ELS	24.00	19-Jul-14 A	75%	6.00	27-Sep-14	09-Jan-15	15-Jan-15	87.00	0.00	75%
SB2B0092	B11 (B2b) - Pile Breakdown to cut-off etc.	4.00	29-Sep-14	0%	4.00	04-Oct-14	16-Jan-15	20-Jan-15	87.00	0.00	0%
SB2B0100	B11 (B2b) - Pile cap Blinding	1.00	06-Oct-14	0%	1.00	06-Oct-14	21-Jan-15	21-Jan-15	87.00	0.00	0%
SB2B0110	B11 (B2b) - Pile cap Formwork	3.00	07-Oct-14	0%	3.00	10-Oct-14	22-Jan-15	24-Jan-15	87.00	0.00	0%
SB2B0120	B11 (B2b) - Pile cap Rebarwork	4.00	11-Oct-14	0%	4.00	16-Oct-14	26-Jan-15	29-Jan-15	87.00	0.00	0%
SB2B0122	B11 (B2b) - Pile cap Kicker Formwork	2.00	17-Oct-14	0%	2.00	18-Oct-14	30-Jan-15	31-Jan-15	87.00	0.00	0%
SB2B0130	B11 (B2b) - Pile cap Concreting	1.00	20-Oct-14	0%	1.00	20-Oct-14	02-Feb-15	02-Feb-15	87.00	0.00	0%
SB2B0140	B11 (B2b) - Pile cap Curing & Striking of Forms incl. CJ prep	6.00	21-Oct-14	0%	6.00	27-Oct-14	03-Feb-15	09-Feb-15	87.00	0.00	0%
Pier Works											
SB2B0150	B11 (B2b) - Type 5B-B Pier Scaffolding (1st Lift)	4.00	28-Oct-14	0%	4.00	31-Oct-14	10-Feb-15	13-Feb-15	87.00	0.00	0%
SB2B0160	B11 (B2b) - Type 5B-B Pier Rebarwork (1st Lift)	4.00	01-Nov-14	0%	4.00	05-Nov-14	14-Feb-15	18-Feb-15	87.00	0.00	0%
SB2B0170	B11 (B2b) - Type 5B-B Pier Formwork & Prep for Concreting (1st Lift)	4.00	06-Nov-14	0%	4.00	10-Nov-14	23-Feb-15	26-Feb-15	87.00	0.00	0%
SB2B0180	B11 (B2b) - Type 5B-B Pier Concreting (1st Lift)	1.00	11-Nov-14	0%	1.00	11-Nov-14	27-Feb-15	27-Feb-15	87.00	0.00	0%
SB2B0182	B11 (B2b) - Type 5B-B Pier Curing & Striking of Forms incl. CJ prep (1st Lift)	2.00	12-Nov-14	0%	2.00	13-Nov-14	28-Feb-15	02-Mar-15	87.00	0.00	0%
SB2B0190	B11 (B2b) - Type 5B-B Pier Scaffolding (2nd Lift)	4.00	14-Nov-14	0%	4.00	18-Nov-14	03-Mar-15	07-Mar-15	88.00	0.00	0%
SB2B0200	B11 (B2b) - Type 5B-B Pier Rebarwork (2nd Lift)	4.00	19-Nov-14	0%	4.00	22-Nov-14	09-Mar-15	12-Mar-15	88.00	0.00	0%
SB2B0210	B11 (B2b) - Type 5B-B Pier Formwork & Prep for Concreting (2nd Lift)	4.00	24-Nov-14	0%	4.00	27-Nov-14	13-Mar-15	17-Mar-15	88.00	0.00	0%
SB2B0220	B11 (B2b) - Type 5B-B Pier Concreting (2nd Lift)	1.00	28-Nov-14	0%	1.00	28-Nov-14	18-Mar-15	18-Mar-15	88.00	0.00	0%
SB2B0222	B11 (B2b) - Type 5B-B Pier Curing & Striking of Forms incl. CJ prep (2nd Lift)	2.00	29-Nov-14	0%	2.00	01-Dec-14	19-Mar-15	20-Mar-15	88.00	0.00	0%
SB2B0230	B11 (B2b) - Type 5B-B Pier Head Scaffolding	4.00	02-Dec-14	0%	4.00	05-Dec-14	21-Mar-15	25-Mar-15	88.00	0.00	0%
SB2B0240	B11 (B2b) - Type 5B-B Pier Head Rebarwork	4.00	06-Dec-14	0%	4.00	10-Dec-14	26-Mar-15	30-Mar-15	88.00	0.00	0%
SB2B0250	B11 (B2b) - Type 5B-B Pier Head Formwork & Prep for Concreting	4.00	11-Dec-14	0%	4.00	15-Dec-14	31-Mar-15	10-Apr-15	88.00	0.00	0%
SB2B0260	B11 (B2b) - Type 5B-B Pier Head Concreting	1.00	16-Dec-14	0%	1.00	16-Dec-14	11-Apr-15	11-Apr-15	88.00	0.00	0%
SB2B0270	B11 (B2b) - Type 5B-B Pier Head Curing & Striking of Forms & Remove Scaffolding	6.00	17-Dec-14	0%	6.00	23-Dec-14	13-Apr-15	21-Apr-15	89.00	0.00	0%
SB2B0280	B11 (B2b) - Type 5B-B Pier Backfilling Works	4.00	20-Dec-14	0%	4.00	24-Dec-14	18-Apr-15	22-Apr-15	89.00	0.00	0%
Pier B12 (B2a)											
Pile Cap Works											
SB2A0091	B12 (B2a) - Pile cap Excavation / ELS (incl. sheet piling)	24.00	13-Aug-14 A	50%	12.00	07-Oct-14	03-Jan-15	16-Jan-15	82.00	0.00	50%
SB2A0092	B12 (B2a) - Pile Breakdown to cut-off etc.	4.00	09-Oct-14	0%	4.00	13-Oct-14	17-Jan-15	21-Jan-15	82.00	0.00	0%
SB2A0100	B12 (B2a) - Pile cap Blinding	1.00	14-Oct-14	0%	1.00	14-Oct-14	22-Jan-15	22-Jan-15	82.00	0.00	0%
SB2A0110	B12 (B2a) - Pile cap Formwork	3.00	16-Oct-14	0%	3.00	18-Oct-14	23-Jan-15	27-Jan-15	83.00	0.00	0%
SB2A0120	B12 (B2a) - Pile cap Rebarwork	4.00	20-Oct-14	0%	4.00	23-Oct-14	28-Jan-15	31-Jan-15	83.00	0.00	0%
SB2A0122	B12 (B2a) - Pile cap Kicker Formwork	2.00	24-Oct-14	0%	2.00	25-Oct-14	02-Feb-15	03-Feb-15	83.00	0.00	0%
SB2A0130	B12 (B2a) - Pile cap Concreting	1.00	27-Oct-14	0%	1.00	27-Oct-14	04-Feb-15	04-Feb-15	83.00	0.00	0%
SB2A0140	B12 (B2a) - Pile cap Curing & Striking of Forms incl. CJ prep	6.00	28-Oct-14	0%	6.00	03-Nov-14	05-Feb-15	11-Feb-15	83.00	0.00	0%
Pier Works											
SB2A0150	B12 (B2a) - Type 5B-MJ Pier Scaffolding (1st Lift)	4.00	04-Nov-14	0%	4.00	07-Nov-14	12-Feb-15	16-Feb-15	83.00	0.00	0%
SB2A0160	B12 (B2a) - Type 5B-MJ Pier Rebarwork (1st Lift)	4.00	08-Nov-14	0%	4.00	12-Nov-14	17-Feb-15	24-Feb-15	83.00	0.00	0%
SB2A0170	B12 (B2a) - Type 5B-MJ Pier Formwork & Prep for Concreting (1st Lift)	4.00	13-Nov-14	0%	4.00	17-Nov-14	25-Feb-15	28-Feb-15	83.00	0.00	0%
SB2A0180	B12 (B2a) - Type 5B-MJ Pier Concreting (1st Lift)	1.00	18-Nov-14	0%	1.00	18-Nov-14	02-Mar-15	02-Mar-15	83.00	0.00	0%
SB2A0182	B12 (B2a) - Type 5B-MJ Pier Curing & Striking of Forms incl. CJ prep (1st Lift)	2.00	19-Nov-14	0%	2.00	20-Nov-14	03-Mar-15	04-Mar-15	83.00	0.00	0%
SB2A0190	B12 (B2a) - Type 5B-MJ Pier Scaffolding (2nd Lift)	4.00	21-Nov-14	0%	4.00	25-Nov-14	05-Mar-15	10-Mar-15	84.00	0.00	0%
SB2A0200	B12 (B2a) - Type 5B-MJ Pier Rebarwork (2nd Lift)	4.00	26-Nov-14	0%	4.00	29-Nov-14	11-Mar-15	14-Mar-15	84.00	0.00	0%
SB2A0210	B12 (B2a) - Type 5B-MJ Pier Formwork & Prep for Concreting (2nd Lift)	4.00	01-Dec-14	0%	4.00	04-Dec-14	16-Mar-15	19-Mar-15	84.00	0.00	0%
SB2A0220	B12 (B2a) - Type 5B-MJ Pier Concreting (2nd Lift)	1.00	05-Dec-14	0%	1.00	05-Dec-14	20-Mar-15	20-Mar-15	84.00	0.00	0%



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
Filter: TASK filters: 3-Month Lookahead, No Level of Effort.

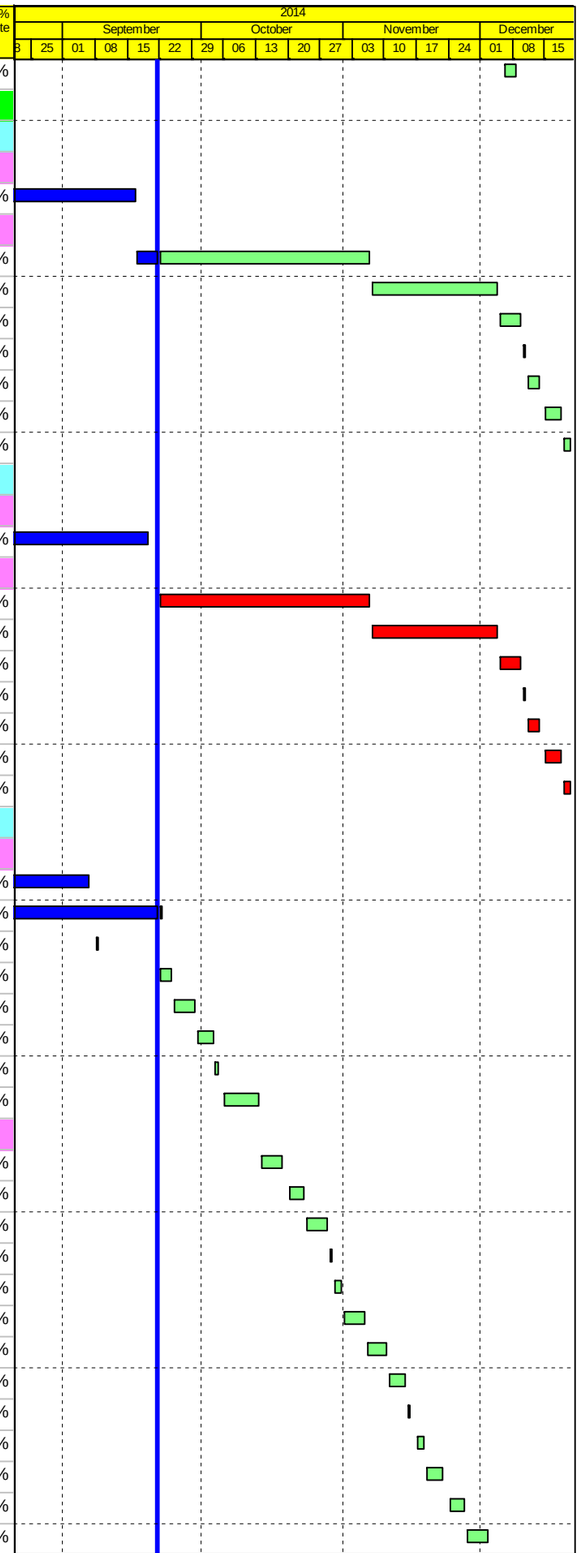
Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 21 of 35 Pages)
(Progress as of 21-Sep-14)

Date	Revision	Checked	Approved
29-Jul-14		FZ	
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
SB2A0222	B12 (B2a) - Type 5B-MJ Pier Curing & Striking of Forms incl. CJ prep (2nd Lift)	2.00	06-Dec-14	0%	2.00	08-Dec-14	21-Mar-15	23-Mar-15	84.00	110.00	0%
Bridge B1											
Pier B13 (B1g)											
Socketted H-Pile Installation											
GFXX334-3	B13 (B1g) - Install SH Pile (13 nr)	52.00	09-Jul-14 A	100%	0.00	16-Sep-14 A					100%
Pile Cap Works											
SB1G0090	B13 (B1g) - Utility diversion & Cut slope	36.00	17-Sep-14 A	0%	36.00	06-Nov-14	15-Nov-14	29-Dec-14	43.00	0.00	0%
SB1G0091	B13 (B1g) - Pile cap Excavation / ELS (incl. sheet piling)	24.00	07-Nov-14	0%	24.00	04-Dec-14	30-Dec-14	27-Jan-15	43.00	0.00	0%
SB1G0092	B13 (B1g) - Pile Breakdown to cut-off etc.	4.00	05-Dec-14	0%	4.00	09-Dec-14	28-Jan-15	31-Jan-15	43.00	0.00	0%
SB1G0100	B13 (B1g) - Pile cap Blinding	1.00	10-Dec-14	0%	1.00	10-Dec-14	02-Feb-15	02-Feb-15	43.00	0.00	0%
SB1G0110	B13 (B1g) - Pile cap Formwork	3.00	11-Dec-14	0%	3.00	13-Dec-14	03-Feb-15	05-Feb-15	43.00	0.00	0%
SB1G0120	B13 (B1g) - Pile cap Rebarwork	4.00	15-Dec-14	0%	4.00	18-Dec-14	06-Feb-15	10-Feb-15	43.00	0.00	0%
SB1G0122	B13 (B1g) - Pile cap Kicker Formwork	2.00	19-Dec-14	0%	2.00	20-Dec-14	11-Feb-15	12-Feb-15	43.00	0.00	0%
Pier B14 (B1f)											
Socketted H-Pile Installation											
GFXX334-4	B14 (B1f) - Install SH Pile (13 nr)	52.00	23-Jun-14 A	100%	0.00	19-Sep-14 A					100%
Pile Cap Works											
SB1F0090	B14 (B1f) - Utility diversion & Cut slope	36.00	22-Sep-14	0%	36.00	06-Nov-14	29-Sep-14	13-Nov-14	6.00	0.00	0%
SB1F0091	B14 (B1f) - Pile cap Excavation / ELS (incl. sheet piling)	24.00	07-Nov-14	0%	24.00	04-Dec-14	14-Nov-14	11-Dec-14	6.00	0.00	0%
SB1F0092	B14 (B1f) - Pile Breakdown to cut-off etc.	4.00	05-Dec-14	0%	4.00	09-Dec-14	12-Dec-14	16-Dec-14	6.00	0.00	0%
SB1F0100	B14 (B1f) - Pile cap Blinding	1.00	10-Dec-14	0%	1.00	10-Dec-14	17-Dec-14	17-Dec-14	6.00	0.00	0%
SB1F0110	B14 (B1f) - Pile cap Formwork	3.00	11-Dec-14	0%	3.00	13-Dec-14	18-Dec-14	20-Dec-14	6.00	0.00	0%
SB1F0120	B14 (B1f) - Pile cap Rebarwork	4.00	15-Dec-14	0%	4.00	18-Dec-14	22-Dec-14	27-Dec-14	6.00	0.00	0%
SB1F0122	B14 (B1f) - Pile cap Kicker Formwork	2.00	19-Dec-14	0%	2.00	20-Dec-14	29-Dec-14	30-Dec-14	6.00	0.00	0%
Pier B15 (B1e)											
Pile Cap Works											
SB1E0095	B15 (B1e) - Pile cap Excavation / ELS (incl. sheet piling)	24.00	09-Jun-14 A	100%	0.00	06-Sep-14 A					100%
SB1E0096	B15 (B1e) - Pile Breakdown to cut-off etc.	4.00	18-Aug-14 A	75%	1.00	22-Sep-14	29-Aug-18	29-Aug-18	051.00	1051.00	90%
SB1E0102	B15 (B1e) - Pile cap Blinding	1.00	08-Sep-14 A	100%	0.00	08-Sep-14 A					100%
SB1E0112	B15 (B1e) - Pile cap Formwork	3.00	22-Sep-14	0%	3.00	24-Sep-14	06-Feb-15	09-Feb-15	111.00	0.00	0%
SB1E0124	B15 (B1e) - Pile cap Rebarwork	4.00	25-Sep-14	0%	4.00	29-Sep-14	10-Feb-15	13-Feb-15	111.00	0.00	0%
SB1E0126	B15 (B1e) - Pile cap Kicker Formwork	2.00	30-Sep-14	0%	2.00	03-Oct-14	14-Feb-15	16-Feb-15	111.00	0.00	0%
SB1E0132	B15 (B1e) - Pile cap Concreting	1.00	04-Oct-14	0%	1.00	04-Oct-14	17-Feb-15	17-Feb-15	111.00	0.00	0%
SB1E0142	B15 (B1e) - Pile cap Curing & Striking of Forms incl. CJ prep	6.00	06-Oct-14	0%	6.00	13-Oct-14	18-Feb-15	27-Feb-15	111.00	0.00	0%
Pier Works											
SB1E0150	B15 (B1e) - Type 5B Pier Scaffolding (1st Lift)	4.00	14-Oct-14	0%	4.00	18-Oct-14	28-Feb-15	04-Mar-15	111.00	0.00	0%
SB1E0160	B15 (B1e) - Type 5B Pier Rebarwork (1st Lift)	4.00	20-Oct-14	0%	4.00	23-Oct-14	05-Mar-15	09-Mar-15	111.00	0.00	0%
SB1E0170	B15 (B1e) - Type 5B Pier Formwork & Prep for Concreting (1st Lift)	4.00	24-Oct-14	0%	4.00	28-Oct-14	10-Mar-15	13-Mar-15	111.00	0.00	0%
SB1E0180	B15 (B1e) - Type 5B Pier Concreting (1st Lift)	1.00	29-Oct-14	0%	1.00	29-Oct-14	14-Mar-15	14-Mar-15	111.00	0.00	0%
SB1E0182	B15 (B1e) - Type 5B Pier Curing & Striking of Forms incl. CJ prep (1st Lift)	2.00	30-Oct-14	0%	2.00	31-Oct-14	16-Mar-15	17-Mar-15	111.00	0.00	0%
SB1E0190	B15 (B1e) - Type 5B Pier Scaffolding (2nd Lift)	4.00	01-Nov-14	0%	4.00	05-Nov-14	18-Mar-15	21-Mar-15	111.00	0.00	0%
SB1E0200	B15 (B1e) - Type 5B Pier Rebarwork (2nd Lift)	4.00	06-Nov-14	0%	4.00	10-Nov-14	23-Mar-15	26-Mar-15	111.00	0.00	0%
SB1E0210	B15 (B1e) - Type 5B Pier Formwork & Prep for Concreting (2nd Lift)	4.00	11-Nov-14	0%	4.00	14-Nov-14	27-Mar-15	31-Mar-15	111.00	0.00	0%
SB1E0220	B15 (B1e) - Type 5B Pier Concreting (2nd Lift)	1.00	15-Nov-14	0%	1.00	15-Nov-14	01-Apr-15	01-Apr-15	111.00	0.00	0%
SB1E0222	B15 (B1e) - Type 5B Pier Curing & Striking of Forms incl. CJ prep (2nd Lift)	2.00	17-Nov-14	0%	2.00	18-Nov-14	08-Apr-15	11-Apr-15	112.00	0.00	0%
SB1E0230	B15 (B1e) - Type 5B Pier Head Scaffolding	4.00	19-Nov-14	0%	4.00	22-Nov-14	13-Apr-15	17-Apr-15	112.00	0.00	0%
SB1E0240	B15 (B1e) - Type 5B Pier Head Rebarwork	4.00	24-Nov-14	0%	4.00	27-Nov-14	18-Apr-15	22-Apr-15	112.00	0.00	0%
SB1E0250	B15 (B1e) - Type 5B Pier Head Formwork & Prep for Concreting	4.00	28-Nov-14	0%	4.00	02-Dec-14	24-Apr-15	28-Apr-15	112.00	0.00	0%



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
Filter: TASK filters: 3-Month Lookahead, No Level of Effort.

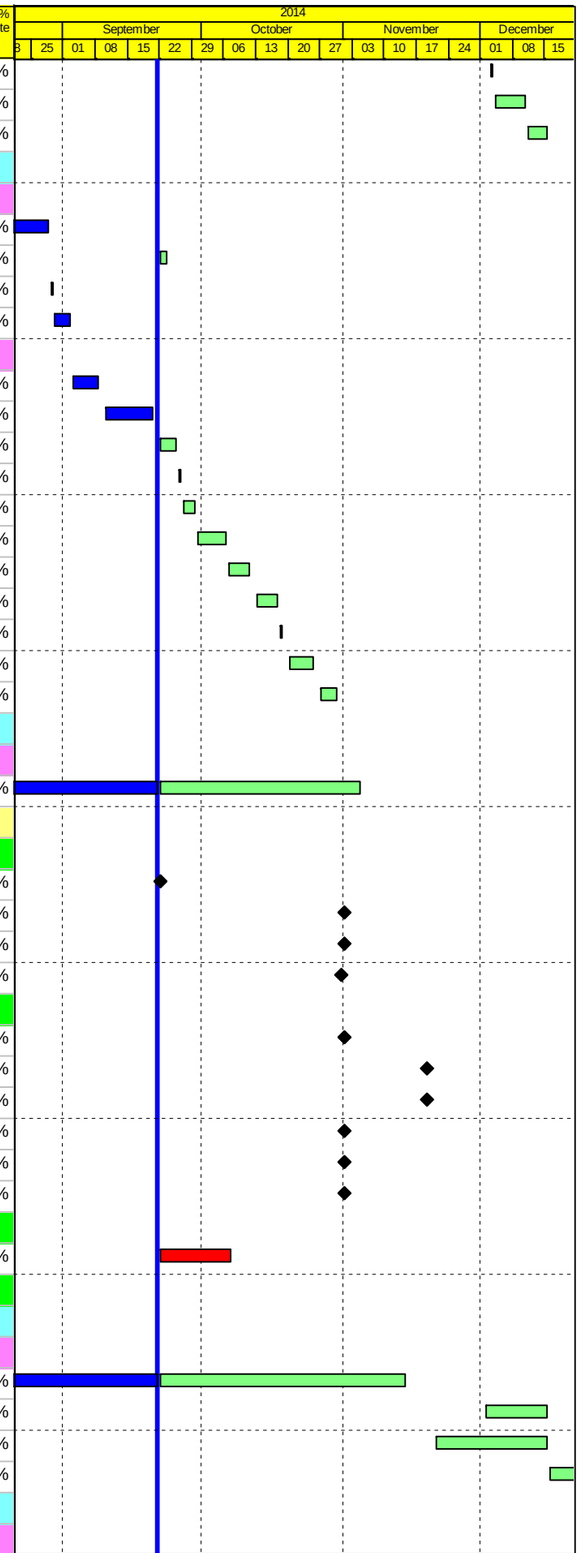
Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 22 of 35 Pages)
(Progress as of 21-Sep-14)

Date	Revision	Checked	Approved
29-Jul-14		FZ	
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
SB1E0260	B15 (B1e) - Type 5B Pier Head Concreting	1.00	03-Dec-14	0%	1.00	03-Dec-14	29-Apr-15	29-Apr-15	112.00	0.00	0%
SB1E0270	B15 (B1e) - Type 5B Pier Head Curing & Striking of Forms & Remove Scaffolding	6.00	04-Dec-14	0%	6.00	10-Dec-14	02-May-15	11-May-15	112.00	0.00	0%
SB1E0280	B15 (B1e) - Type 5B Pier Backfilling Works	4.00	11-Dec-14	0%	4.00	15-Dec-14	12-May-15	16-May-15	112.00	44.00	0%
Pier B16 (B1d)											
Pile Cap Works											
SB1D0120	B16 (B1d) - Pile cap Rebarwork	4.00	19-Jul-14 A	100%	0.00	28-Aug-14 A					100%
SB1D0122	B16 (B1d) - Pile cap Kicker Formwork	2.00	22-Sep-14	0%	2.00	23-Sep-14	28-Aug-18	29-Aug-18	050.00	1050.00	0%
SB1D0130	B16 (B1d) - Pile cap Concreting	1.00	29-Aug-14 A	100%	0.00	29-Aug-14 A					100%
SB1D0140	B16 (B1d) - Pile cap Curing & Striking of Forms incl. CJ prep	6.00	30-Aug-14 A	100%	0.00	02-Sep-14 A					100%
Pier Works											
SB1D0150	B16 (B1d) - Type 5B Pier Scaffolding (1st Lift)	4.00	03-Sep-14 A	100%	0.00	08-Sep-14 A					100%
SB1D0160	B16 (B1d) - Type 5B Pier Rebarwork (1st Lift)	4.00	10-Sep-14 A	100%	0.00	20-Sep-14 A					100%
SB1D0170	B16 (B1d) - Type 5B Pier Formwork & Prep for Concreting (1st Lift)	4.00	22-Sep-14	0%	4.00	25-Sep-14	25-Apr-15	02-May-15	167.13	0.00	0%
SB1D0180	B16 (B1d) - Type 5B Pier Concreting (1st Lift)	1.00	26-Sep-14	0%	1.00	26-Sep-14	02-May-15	04-May-15	167.13	0.00	0%
SB1D0182	B16 (B1d) - Type 5B Pier Curing & Striking of Forms incl. CJ prep (1st Lift)	2.00	27-Sep-14	0%	2.00	29-Sep-14	04-May-15	08-May-15	167.13	0.00	0%
SB1D0190	B16 (B1d) - Type 5B Pier Head Scaffolding	4.00	30-Sep-14	0%	4.00	06-Oct-14	08-May-15	13-May-15	167.13	0.00	0%
SB1D0200	B16 (B1d) - Type 5B Pier Head Rebarwork	4.00	07-Oct-14	0%	4.00	11-Oct-14	13-May-15	19-May-15	167.13	0.00	0%
SB1D0210	B16 (B1d) - Type 5B Pier Head Formwork & Prep for Concreting	4.00	13-Oct-14	0%	4.00	17-Oct-14	19-May-15	26-May-15	167.13	0.00	0%
SB1D0220	B16 (B1d) - Type 5B Pier Head Concreting	1.00	18-Oct-14	0%	1.00	18-Oct-14	26-May-15	27-May-15	167.13	0.00	0%
SB1D0270	B16 (B1d) - Type 5B Pier Head Curing & Striking of Forms & Remove Scaffolding	6.00	20-Oct-14	0%	6.00	25-Oct-14	27-May-15	10-Jun-15	168.13	0.00	0%
SB1D0280	B16 (B1d) - Type 5B Pier Backfilling Works	4.00	27-Oct-14	0%	4.00	30-Oct-14	10-Jun-15	19-Jun-15	168.13	83.00	0%
Pier B18 (B1b) & Abutment B											
Preliminary Works for Land Piling											
PB180030	B18 (B1b) - Install Geo. Instru. & Baseline Monitoring	36.00	13-Jun-14 A	0%	36.00	04-Nov-14	03-Nov-15	14-Dec-15	330.00	469.00	0%
Viaduct C											
Milestones - Marine Foundation											
GFXX192	Viaduct C - ARUP issues Pile Spacing & Diameter for Temporary Platform Design	0.00		0%	0.00	22-Sep-14		18-Nov-14	48.00	73.00	0%
GFXX204-1	C4 (C4b) - Start date for piling	0.00	01-Nov-14	0%	0.00		29-Dec-14		47.00	0.00	0%
GFXX214-1	C2 (C4d) - Start date for piling	0.00	01-Nov-14	0%	0.00		19-Dec-14		41.00	16.00	0%
ZC00010	Viaduct C - Approval of Foundation DDA	0.00		0%	0.00	31-Oct-14		10-Nov-14	6.00	0.00	0%
Milestones - Land Foundation											
ZC00020	C20 (C1c) - Start date for piling	0.00	01-Nov-14	0%	0.00		10-Mar-15		104.00	104.00	0%
ZC00030	C19 (C1d) - Start date for piling	0.00	19-Nov-14	0%	0.00		25-Apr-15		125.00	0.00	0%
ZC00040	C18 (C1e) - Start date for piling	0.00	19-Nov-14	0%	0.00		21-Apr-15		121.00	89.00	0%
ZC00092	C11 (C3a) - Start date for piling	0.00	01-Nov-14	0%	0.00		13-Feb-15		86.00	70.00	0%
ZC00093	C10 (C3b) - Start date for piling	0.00	01-Nov-14	0%	0.00		19-Jan-15		64.00	70.00	0%
ZC00095	C8 (C3d) - Start date for piling	0.00	01-Nov-14	0%	0.00		10-Feb-15		83.00	52.00	0%
General - Preliminary Works for Land Piling											
ZC80050	Implement TTMS for C9 to C20 for land piling preliminary works	12.00	22-Sep-14	0%	12.00	07-Oct-14	05-Sep-14	20-Sep-14	-12.00	0.00	0%
Bridge C4											
Pier C1 (C4e)											
Foundation Works											
GFXX220	C1 (C4e) - Bored Piles (1.80m dia. x 3 nos)	84.00	18-Aug-14 A	46.43%	45.00	14-Nov-14	17-Nov-14	10-Jan-15	46.00	5.00	46.36%
GFXX221	C1 (C4e) - Sonic & Interface Coring	12.00	02-Dec-14	0%	12.00	15-Dec-14	22-Jan-15	04-Feb-15	41.00	0.00	0%
GFXX221-1	C1 (C4e) - Selection of bored pile for Full Depth Coring	21.00	21-Nov-14	0%	21.00	15-Dec-14	12-Jan-15	04-Feb-15	41.00	0.00	0%
GFXX221-2	C1 (C4e) - Bored Pile Full Depth Coring & Testing	20.00	16-Dec-14	0%	20.00	10-Jan-15	05-Feb-15	03-Mar-15	41.00	0.00	0%
Pier C2 (C4d)											
Foundation Works											



Actual Work
Planned Bar
Critical Bar
Milestone

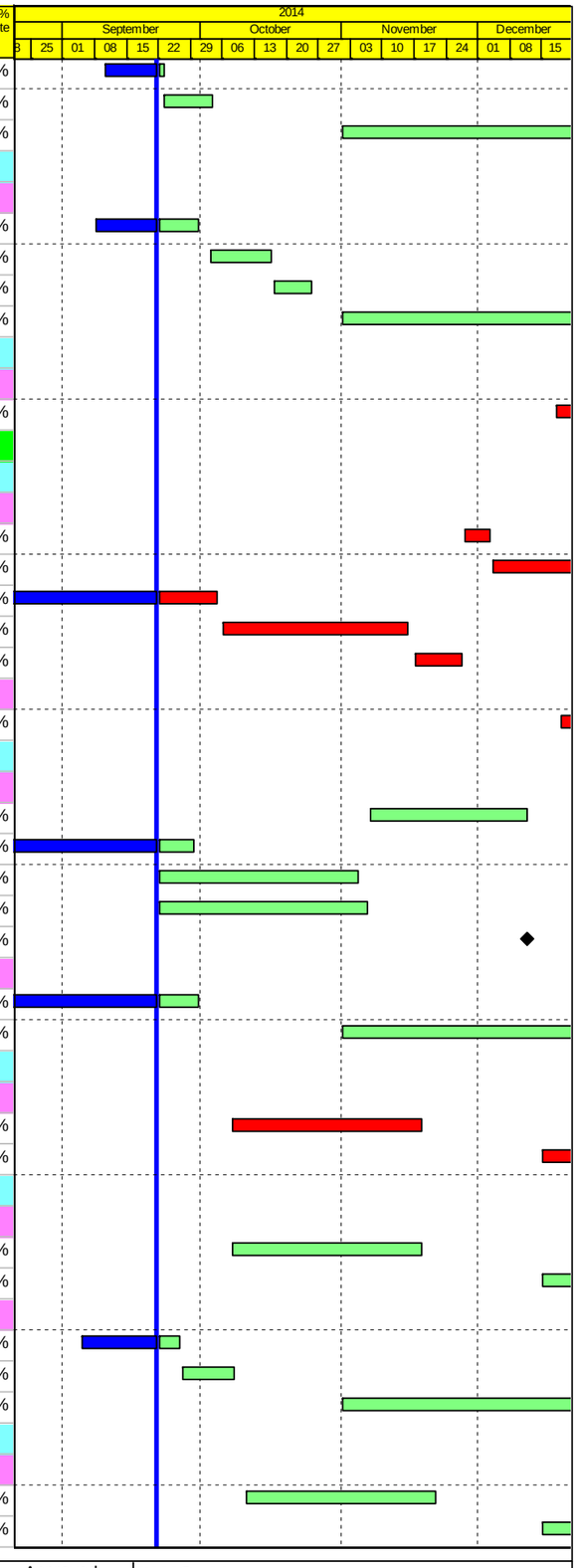
Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
Filter: TASK filters: 3-Month Lookahead, No Level of Effort.

Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 23 of 35 Pages)
(Progress as of 21-Sep-14)

Date	Revision	Checked	Approved
29-Jul-14		FZ	
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:
J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
GFXX214	C2 (C4d) - Predrilling (2 nos)	12.00	10-Sep-14 A	91.67%	1.00	23-Sep-14	29-Nov-14	29-Nov-14	57.00	0.00	91.67%
GFXX214-2	C2 (C4d) - Confirm Rockhead Levels	8.00	23-Sep-14	0%	8.00	03-Oct-14	14-Feb-15	26-Feb-15	119.00	94.00	0%
GFXX215	C2 (C4d) - Bored Piles (2.20m dia. x 2 nos)	70.00	01-Nov-14	0%	70.00	24-Jan-15	01-Dec-14	26-Feb-15	25.00	0.00	0%
Pier C4 (C4b)											
Foundation Works											
GFXX203	C4 (C4b) - Inst.Temp.Working Platform	12.00	08-Sep-14 A	33.33%	8.00	30-Sep-14	03-Dec-14	11-Dec-14	60.00	0.00	40%
GFXX204	C4 (C4b) - Predrilling (3 nos)	12.00	03-Oct-14	0%	12.00	16-Oct-14	12-Dec-14	27-Dec-14	60.00	0.00	0%
GFXX204-2	C4 (C4b) - Confirm Rockhead Levels	8.00	17-Oct-14	0%	8.00	25-Oct-14	03-Jan-15	12-Jan-15	64.00	17.00	0%
GFXX205	C4 (C4b) - Bored Piles (2.00m dia. x 3 nos)	76.00	01-Nov-14	0%	76.00	31-Jan-15	29-Dec-14	31-Mar-15	47.00	0.00	0%
Pier C5 (C4a)											
Foundation Works											
GFXX198	C5 (C4a) - Inst.Temp.Working Platform	12.00	18-Dec-14	0%	12.00	03-Jan-15	19-Nov-14	02-Dec-14	-25.00	0.00	0%
Bridge C3											
Pier C7 (C3e)											
Preliminary Works for Land Piling											
GFXX360	C7 (C3e) - Set up for Pregrouting	5.00	28-Nov-14	0%	5.00	03-Dec-14	21-Oct-14	25-Oct-14	-33.00	0.00	0%
GFXX361-1	C7 (C3e) - Pre-grouting Works	30.00	04-Dec-14	0%	30.00	10-Jan-15	27-Oct-14	29-Nov-14	-33.00	0.00	0%
PC070030	C7 (C3e) - Erect MTR protective fence / Remove existing fence	12.00	07-Aug-14 A	16.67%	10.00	04-Oct-14	08-Aug-14	21-Aug-14	-32.00	0.00	0%
PC070040	C7 (C3e) - Install Geo. Instru. & Baseline Monitoring	36.00	06-Oct-14	0%	36.00	15-Nov-14	22-Aug-14	06-Oct-14	-35.00	0.00	0%
PC070050	C7 (C3e) - Set up piling platform	10.00	17-Nov-14	0%	10.00	27-Nov-14	07-Oct-14	20-Oct-14	-33.00	0.00	0%
Socketted H-Pile Installation											
GFXX397	C7 (C3e) - Predrilling	17.00	19-Dec-14*	0%	17.00	10-Jan-15	11-Nov-14	29-Nov-14	-33.00	0.00	0%
Pier C8 (C3d)											
Preliminary Works for Land Piling											
GFXX361-3	C8 (C3d) - Pre-grouting Works	30.00	07-Nov-14	0%	30.00	11-Dec-14	26-Jul-18	29-Aug-18	098.00	0.00	0%
PC080040	C8 (C3d) - Erect boundary fence / water filled barrier	12.00	21-Jul-14 A	41.67%	7.00	29-Sep-14	12-Jun-18	22-Jun-18	994.00	1045.00	40%
PC080050	C8 (C3d) - Install Geo. Instru. & Baseline Monitoring	36.00	22-Sep-14	0%	36.00	04-Nov-14	12-Jun-18	25-Jul-18	100.00	2.00	0%
PC080060	C8 (C3d) - Set up piling platform	36.00	22-Sep-14	0%	36.00	06-Nov-14	02-Jun-18	25-Jul-18	988.00	0.00	0%
PC080070	C8 (C3d) - Complete Civil Preparation Works for piling to commence	0.00		0%	0.00	11-Dec-14		29-Aug-18	986.00	986.00	0%
Socketted H-Pile Installation											
GFXX392-1	C8 (C3d) - Confirm Rockhead Levels	8.00	20-Aug-14 A	0%	8.00	30-Sep-14	31-Jan-15	09-Feb-15	108.00	25.00	0%
GFXX393	C8 (C3d) - Install SH Pile (16 no.)	108.00	01-Nov-14	0%	108.00	13-Mar-15	10-Feb-15	26-Jun-15	83.00	0.00	0%
Pier C9 (C3c)											
Preliminary Works for Land Piling											
PC090010	C9 (C3c) - Install Geo. Instru. & Baseline Monitoring	36.00	08-Oct-14	0%	36.00	18-Nov-14	22-Sep-14	04-Nov-14	-12.00	0.00	0%
PC090020	C9 (C3c) - Erect fencing, site clearance & form piling platform	12.00	15-Dec-14	0%	12.00	30-Dec-14	05-Nov-14	18-Nov-14	-34.00	0.00	0%
Pier C10 (C3b)											
Preliminary Works for Land Piling											
PC100010	C10 (C3c) - Install Geo. Instru. & Baseline Monitoring	36.00	08-Oct-14	0%	36.00	18-Nov-14	16-Feb-15	01-Apr-15	109.00	0.00	0%
PC100020	C10 (C3c) - Erect fencing, site clearance & form piling platform	8.00	15-Dec-14	0%	8.00	23-Dec-14	20-Aug-18	29-Aug-18	976.00	0.00	0%
Foundation Works											
GFXX414-2	C10 (C3b) - Predrilling (2 nos)	13.00	05-Sep-14 A	61.54%	5.00	26-Sep-14	03-Jan-15	08-Jan-15	84.00	0.00	67%
GFXX414-5	C10 (C3b) - Confirm Rockhead Levels	8.00	27-Sep-14	0%	8.00	08-Oct-14	09-Jan-15	17-Jan-15	84.00	20.00	0%
GFXX418	C10 (C3b) - Bored Pile (2.20m dia. x 2 nos)	110.00	01-Nov-14	0%	110.00	16-Mar-15	19-Jan-15	05-Jun-15	64.00	0.00	0%
Pier C11 (C3a)											
Preliminary Works for Land Piling											
PC110010	C11 (C3a) - Install Geo. Instru. & Baseline Monitoring	36.00	11-Oct-14	0%	36.00	21-Nov-14	23-Feb-15	09-Apr-15	109.00	0.00	0%
PC110020	C11 (C3a) - Erect fencing, site clearance & form piling platform	8.00	15-Dec-14	0%	8.00	23-Dec-14	20-Aug-18	29-Aug-18	976.00	0.00	0%



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
Filter: TASK filters: 3-Month Lookahead, No Level of Effort.

Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 24 of 35 Pages)
(Progress as of 21-Sep-14)

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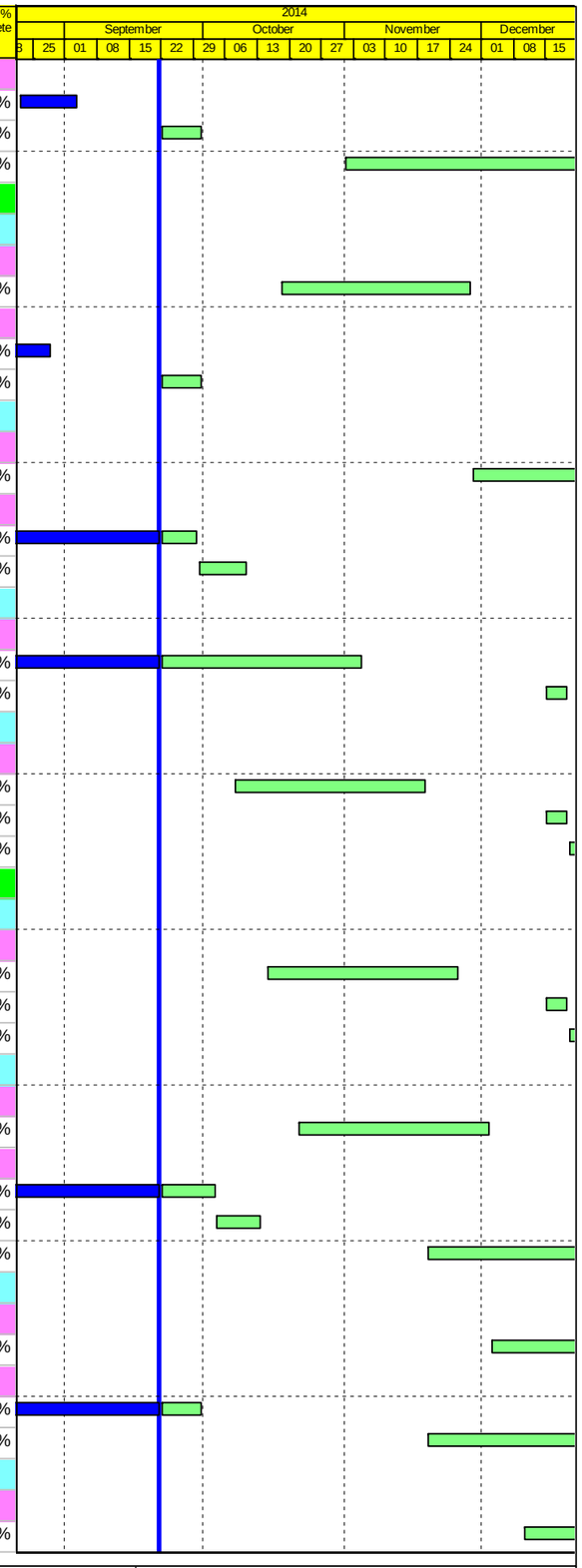
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
Foundation Works											
GFXX414-3	C11 (C3a) - Predrilling (2 nos)	13.00	22-Aug-14 A	100%	0.00	03-Sep-14 A					100%
GFXX414-6	C11 (C3a) - Confirm Rockhead Levels	8.00	22-Sep-14	0%	8.00	30-Sep-14	04-Feb-15	12-Feb-15	111.00	25.00	0%
GFXX416	C11 (C3a) - Bored Pile (2.00m dia. x 2 nos)	110.00	01-Nov-14	0%	110.00	16-Mar-15	13-Feb-15	03-Jul-15	86.00	0.00	0%
Bridge C2											
Pier C12 (C2f)											
Preliminary Works for Land Piling											
PC120010	C12 (C2f) - Install Geo. Instru. & Baseline Monitoring	36.00	18-Oct-14	0%	36.00	28-Nov-14	02-Mar-15	16-Apr-15	109.00	0.00	0%
Foundation Works											
GFXX410	C12 (C2f) - Predrilling (2 nos)	13.00	19-Aug-14 A	100%	0.00	28-Aug-14 A					100%
GFXX411	C12 (C2f) - Confirm Rockhead Levels	8.00	22-Sep-14	0%	8.00	30-Sep-14	17-Apr-15	25-Apr-15	166.00	118.00	0%
Pier C13 (C2e) Portal											
Preliminary Works for Land Piling											
PC130010	C13 (C2e) - Install Geo. Instru. & Baseline Monitoring	36.00	29-Nov-14	0%	36.00	13-Jan-15	17-Apr-15	30-May-15	109.00	0.00	0%
Socketted H-Pile Installation											
GFXX387	C13 (C2e) - Predrilling (2 Nr)	14.00	11-Aug-14 A	50%	7.00	29-Sep-14	27-Apr-15	05-May-15	174.00	0.00	50%
GFXX387-1	C13 (C2e) - Confirm Rockhead Levels	8.00	30-Sep-14	0%	8.00	10-Oct-14	06-May-15	14-May-15	174.00	64.00	0%
Pier C15 (C2c)											
Preliminary Works for Land Piling											
PC150010	C15 (C2c) - Install Geo. Instru. & Baseline Monitoring	36.00	16-Aug-14 A	0%	36.00	04-Nov-14	23-Jun-15	04-Aug-15	220.00	34.00	0%
PC150020	C15 (C2c) - Erect fencing & site clearance	5.00	15-Dec-14	0%	5.00	19-Dec-14	05-Aug-15	11-Aug-15	162.00	74.00	0%
Pier C16 (C2b)											
Preliminary Works for Land Piling											
PC160010	C16 (C2b) - Install Geo. Instru. & Baseline Monitoring	36.00	08-Oct-14	0%	36.00	18-Nov-14	22-Jan-15	07-Mar-15	88.00	0.00	0%
PC160020	C16 (C2b) - Erect fencing & site clearance	5.00	15-Dec-14	0%	5.00	19-Dec-14	20-Apr-15	25-Apr-15	95.00	0.00	0%
PC160030	C16(C2b) - Set up piling platform	15.00	20-Dec-14	0%	15.00	09-Jan-15	27-Apr-15	19-May-15	95.00	0.00	0%
Bridge C1											
Pier C17 (C2a)											
Preliminary Works for Land Piling											
PC170010	C17 (C2a) - Install Geo. Instru. & Baseline Monitoring	36.00	15-Oct-14	0%	36.00	25-Nov-14	29-Jan-15	14-Mar-15	88.00	0.00	0%
PC170020	C17 (C2a) - Erect fencing & site clearance	5.00	15-Dec-14	0%	5.00	19-Dec-14	16-Mar-15	20-Mar-15	72.00	0.00	0%
PC170030	C17(C2a) - Set up piling platform	15.00	20-Dec-14	0%	15.00	09-Jan-15	21-Mar-15	14-Apr-15	72.00	0.00	0%
Pier C18 (C3d) Portal											
Preliminary Works for Land Piling											
PC180010	C18 (C1e) - Install Geo. Instru. & Baseline Monitoring	36.00	22-Oct-14	0%	36.00	02-Dec-14	29-May-18	11-Jul-18	064.00	0.00	0%
Socketted H-Pile Installation											
GFXX368-1	C18 (C1e) - Predrilling (2 Nr)	18.00	07-Aug-14 A	50%	9.00	03-Oct-14	27-Mar-15	10-Apr-15	152.00	0.00	50%
GFXX368-4	C18 (C1e) - Confirm Rockhead Levels	8.00	04-Oct-14	0%	8.00	13-Oct-14	11-Apr-15	20-Apr-15	152.00	31.00	0%
GFXX374	C18 (C1e) - Install SH Pile (10 nr)	56.00	19-Nov-14	0%	56.00	26-Jan-15	21-Apr-15	27-Jun-15	121.00	0.00	0%
Pier C19 (C1d)											
Preliminary Works for Land Piling											
PC190010	C19 (C1d) - Install Geo. Instru. & Baseline Monitoring	36.00	03-Dec-14	0%	36.00	16-Jan-15	12-Jul-18	22-Aug-18	064.00	0.00	0%
Socketted H-Pile Installation											
GFXX368-5	C19 (C1d) - Confirm Rockhead Levels	8.00	08-Aug-14 A	0%	8.00	30-Sep-14	16-Apr-15	24-Apr-15	165.00	40.00	0%
GFXX369-2	C19 (C1d) - Install SH Pile (9 nr)	56.00	19-Nov-14	0%	56.00	26-Jan-15	25-Apr-15	03-Jul-15	125.00	0.00	0%
Pier C20 (C1c) & Abutment C											
Preliminary Works for Land Piling											
PC200010	C20 (C1c) - Install Geo. Instru. & Baseline Monitoring	36.00	10-Dec-14	0%	36.00	23-Jan-15	19-Jul-18	29-Aug-18	064.00	1064.00	0%



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
Filter: TASK filters: 3-Month Lookahead, No Level of Effort.

Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 25 of 35 Pages)
(Progress as of 21-Sep-14)

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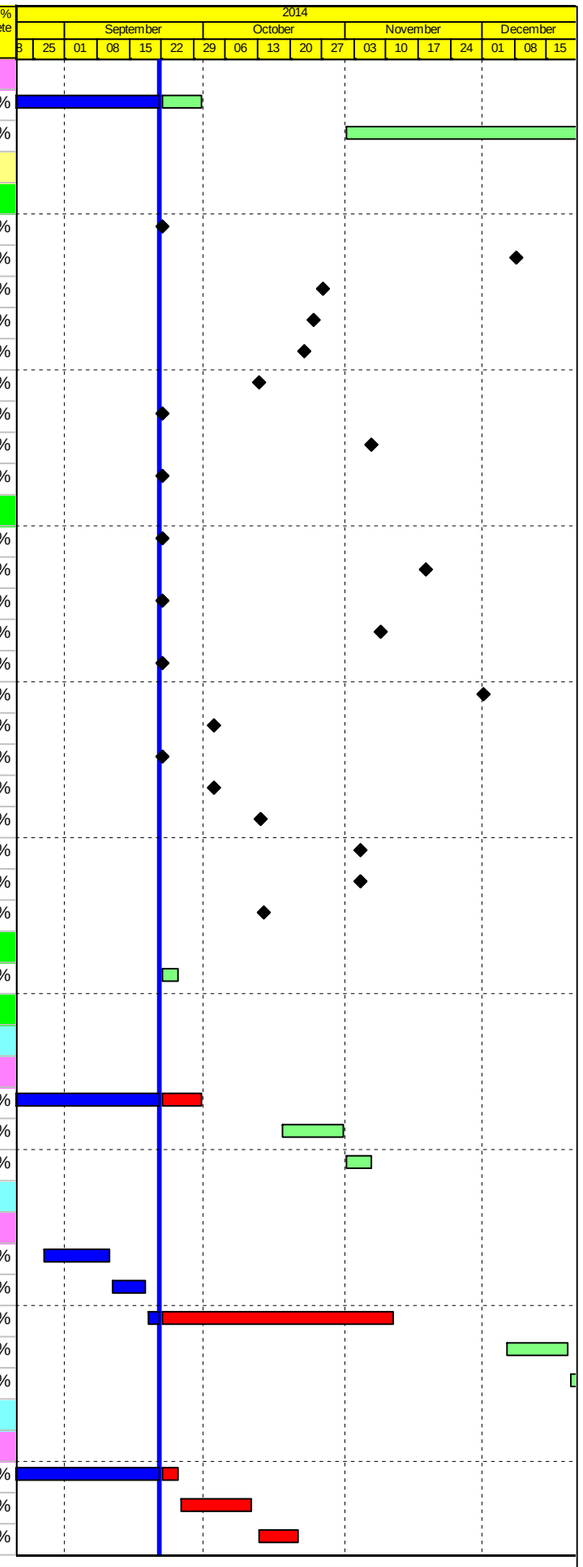
29-Jul-14		FZ	
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
Socketted H-Pile Installation											
GFXX368-6	C20 (C1c) - Confirm Rockhead Levels	8.00	14-Aug-14 A	0%	8.00	30-Sep-14	28-Feb-15	09-Mar-15	129.00	25.00	0%
GFXX369-3	C20 (C1c) - Install SH Pile (6 nr)	56.00	01-Nov-14	0%	56.00	08-Jan-15	10-Mar-15	19-May-15	104.00	0.00	0%
Viaduct D											
Milestones - Marine Foundation											
GFXX228	Viaduct D - ARUP issuses Pile Spacing & Diameter for Temporary Platform Design	0.00		0%	0.00	22-Sep-14		26-Jul-14	-47.00	0.00	0%
GFXX230-1	Pier D7 (D3e) - Start date for piling	0.00	08-Dec-14	0%	0.00		11-Oct-14		-49.00	0.00	0%
GFXX235-1	Pier D6 (D4a) - Start date for piling	0.00	27-Oct-14	0%	0.00		08-Oct-14		-16.00	0.00	0%
GFXX240-1	Pier D5 (D4b) - Start date for piling	0.00	25-Oct-14	0%	0.00		13-Sep-14		-34.00	0.00	0%
GFXX245-1	Pier D4 (D4c) - Start date for piling	0.00	23-Oct-14	0%	0.00		26-Aug-14		-47.00	0.00	0%
GFXX250-1	Pier D3 (D4d) - Start date for piling	0.00	13-Oct-14	0%	0.00		19-Jul-14		-70.00	0.00	0%
GFXX255-1	Pier D2 (D4e) - Start date for piling	0.00	22-Sep-14	0%	0.00		20-May-15		193.00	0.00	0%
GFXX263-1	Pier D1 (D4f) - Completion of Piling Works	0.00		0%	0.00	06-Nov-14		22-Jan-15	63.00	41.00	0%
ZD00010	Viaduct D - Approval of Foundation DDA	0.00		0%	0.00	22-Sep-14		11-Feb-15	103.00	9.00	0%
Milestones - Land Foundation											
GFXX438-4	D18 (D1c) - Start date for piling	0.00	22-Sep-14	0%	0.00		07-Nov-14		38.00	0.00	0%
GFXX438-4A	D18 (D1c) - Completion of piling works	0.00		0%	0.00	18-Nov-14		30-Jan-15	60.00	22.00	0%
GFXX438-5	D19 (D1b) - Start date for piling	0.00	22-Sep-14	0%	0.00		18-Nov-14		47.00	29.00	0%
GFXX438-5A	D19 (D1b) - Completion of piling works	0.00		0%	0.00	08-Nov-14		10-Feb-15	77.00	59.00	0%
GFXX439A	D17 (D1d) -Start date for piling	0.00	22-Sep-14	0%	0.00		04-Dec-14		61.00	9.00	0%
GFXX439A1	D17 (D1d) - Completion of piling works	0.00		0%	0.00	01-Dec-14		02-Mar-15	73.00	21.00	0%
GFXX446A1	D14 (D2c) - Start date for piling	0.00	03-Oct-14	0%	0.00		17-Jul-14		-64.00	0.00	0%
GFXX446C	D16 (D2a) - Start date for piling	0.00	22-Sep-14	0%	0.00		15-Jul-14		-58.00	0.00	0%
GFXX454A	D13 (D2d) - Start date for piling	0.00	03-Oct-14	0%	0.00		23-Mar-15		140.00	0.00	0%
GFXX461A	D10 (D3b) - Start date for piling	0.00	13-Oct-14	0%	0.00		31-Jul-14		-60.50	0.00	0%
GFXX461B	D11 (D3a) - Start date for piling	0.00	04-Nov-14	0%	0.00		18-Jun-14		115.00	1.00	0%
GFXX461C	D12 (D2e) - Start date for piling	0.00	04-Nov-14	0%	0.00		16-Sep-14		-40.00	97.00	0%
GFXX471-1	D8 (D3d) - Start date for piling	0.00	14-Oct-14	0%	0.00		20-Aug-14		-44.00	0.00	0%
General - Preliminary Works for Land Piling											
ZD20010	Viaduct D works area between MTR and NLH - Setup TTMS	4.00	22-Sep-14	0%	4.00	25-Sep-14	10-Aug-18	14-Aug-18	036.00	0.00	0%
Bridge D3											
Pier D1 (D4f)											
Foundation Works											
GFXX261	D1 (D4f) - Bored Piles (1.80m dia. x 3 nos)	58.00	08-Aug-14 A	86.21%	8.00	30-Sep-14	14-Aug-14	22-Aug-14	-32.00	0.00	86.58%
GFXX262	D1 (D4f) - Sonic & Interface Coring	12.00	18-Oct-14	0%	12.00	31-Oct-14	03-Jan-15	16-Jan-15	63.00	0.00	0%
GFXX263	D1 (D4f) - Dismantle removable panels of temp. platform	5.00	01-Nov-14	0%	5.00	06-Nov-14	17-Jan-15	22-Jan-15	63.00	0.00	0%
Pier D2 (D4e)											
Foundation Works											
GFXX255	D2 (D4e) - Predrilling (2 nos)	12.00	27-Aug-14 A	100%	0.00	10-Sep-14 A					100%
GFXX255-2	D2 (D4e) - Confirm Rockhead Levels	8.00	11-Sep-14 A	100%	0.00	18-Sep-14 A					100%
GFXX256	D2 (D4e) - Bored Piles (2.35m dia. x 2 nos)	63.00	19-Sep-14 A	33.33%	42.00	11-Nov-14	25-Jul-14	12-Sep-14	-49.00	0.00	34.25%
GFXX257	D2 (D4e) - Sonic & Interface Coring	12.00	06-Dec-14	0%	12.00	19-Dec-14	05-Aug-15	18-Aug-15	193.00	0.00	0%
GFXX258	D2 (D4e) - Dismantle removable panels of temp. platform	5.00	20-Dec-14	0%	5.00	27-Dec-14	19-Aug-15	24-Aug-15	193.00	0.00	0%
Pier D3 (D4d)											
Foundation Works											
GFXX249	D3 (D4d) - Inst.Temp.Working Platform	20.00	21-Aug-14 A	80%	4.00	25-Sep-14	30-Jun-14	04-Jul-14	-70.00	0.00	80%
GFXX250	D3 (D4d) - Predrilling for Piles (3 nos)	12.00	26-Sep-14	0%	12.00	11-Oct-14	05-Jul-14	18-Jul-14	-70.00	0.00	0%
GFXX250-2	D3 (D4d) - Confirm Rockhead Levels	8.00	13-Oct-14	0%	8.00	21-Oct-14	19-Jul-14	28-Jul-14	-70.00	0.00	0%



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
Filter: TASK filters: 3-Month Lookahead, No Level of Effort.

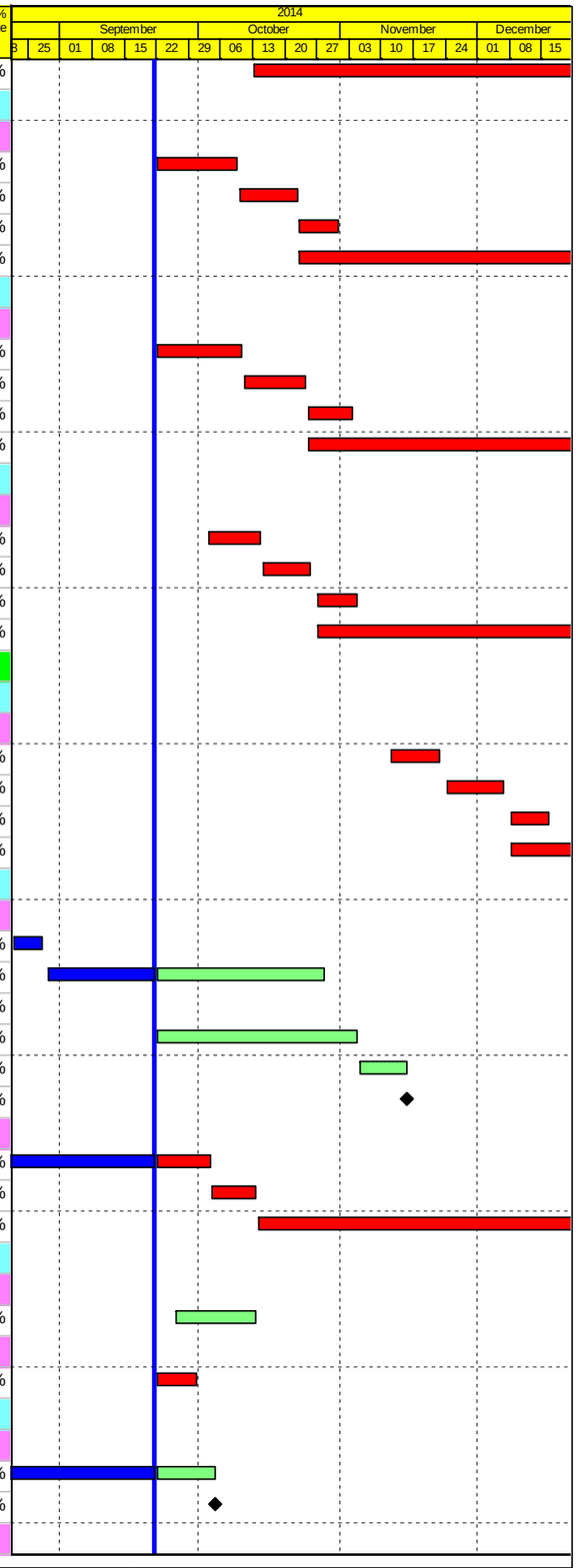
Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 26 of 35 Pages)
(Progress as of 21-Sep-14)

Date	Revision	Checked	Approved
29-Jul-14		FZ	
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
GFXX251	D3 (D4d) - Bored Piles (2.00m dia. x 3 nos)	65.00	13-Oct-14	0%	65.00	29-Dec-14	19-Jul-14	06-Oct-14	-70.00	0.00	0%
Pier D4 (D4c)											
Foundation Works											
GFXX244	D4 (D4c) - Inst.Temp.Working Platform	14.00	22-Sep-14	0%	14.00	09-Oct-14	28-Jul-14	12-Aug-14	-47.00	0.00	0%
GFXX245	D4 (D4c) - Predrilling (3 nos)	11.00	10-Oct-14	0%	11.00	22-Oct-14	13-Aug-14	25-Aug-14	-47.00	0.00	0%
GFXX245-2	D4 (D4c) - Confirm Rockhead Levels	8.00	23-Oct-14	0%	8.00	31-Oct-14	26-Aug-14	03-Sep-14	-47.00	0.00	0%
GFXX246	D4 (D4c) - Bored Piles (2.00m dia. x 3 nos)	70.00	23-Oct-14	0%	70.00	15-Jan-15	26-Aug-14	18-Nov-14	-47.00	0.00	0%
Pier D5 (D4b)											
Foundation Works											
GFXX239	D5 (D4b) - Inst.Temp.Working Platform	15.00	22-Sep-14	0%	15.00	10-Oct-14	12-Aug-14	28-Aug-14	-34.00	0.00	0%
GFXX240	D5 (D4b) - Predrilling (2 nos)	12.00	11-Oct-14	0%	12.00	24-Oct-14	29-Aug-14	12-Sep-14	-34.00	0.00	0%
GFXX240-2	D5 (D4b) - Confirm Rockhead Levels	8.00	25-Oct-14	0%	8.00	03-Nov-14	13-Sep-14	22-Sep-14	-34.00	0.00	0%
GFXX241	D5 (D4b) - Bored Piles (2.35m dia. x 2 nos)	78.00	25-Oct-14	0%	78.00	27-Jan-15	13-Sep-14	15-Dec-14	-34.00	0.00	0%
Pier D6 (D4a)											
Foundation Works											
GFXX234	D6 (D4a) - Inst.Temp.Working Platform	10.00	03-Oct-14	0%	10.00	14-Oct-14	23-Aug-14	03-Sep-14	-32.00	0.00	0%
GFXX235	D6 (D4a) - Predrilling (3 nos)	10.00	15-Oct-14	0%	10.00	25-Oct-14	04-Sep-14	16-Sep-14	-32.00	0.00	0%
GFXX235-2	D6 (D4a) - Confirm Rockhead Levels	8.00	27-Oct-14	0%	8.00	04-Nov-14	17-Sep-14	25-Sep-14	-32.00	0.00	0%
GFXX236	D6 (D4a) - Bored Piles (2.00m dia. x 3 nos)	62.00	27-Oct-14	0%	62.00	09-Jan-15	17-Sep-14	29-Nov-14	-32.00	0.00	0%
Bridge D2											
Pier D7 (D3e)											
Foundation Works											
GFXX229	D7 (D3e) - Inst.Temp.Working Platform	10.00	12-Nov-14	0%	10.00	22-Nov-14	13-Sep-14	24-Sep-14	-49.00	0.00	0%
GFXX230	D7 (D3e) - Predrilling (2 nos)	12.00	24-Nov-14	0%	12.00	06-Dec-14	25-Sep-14	10-Oct-14	-49.00	0.00	0%
GFXX230-2	D7 (D3e) - Confirm Rockhead Levels	8.00	08-Dec-14	0%	8.00	16-Dec-14	11-Oct-14	20-Oct-14	-49.00	0.00	0%
GFXX231	D7 (D3e) - Bored Piles (2.35m dia. x 2 nos)	67.00	08-Dec-14	0%	67.00	02-Mar-15	11-Oct-14	30-Dec-14	-49.00	0.00	0%
Pier D8 (D3d)											
Preliminary Works for Land Piling											
GFXX432	D8 (D3d) - Set up for Pregrouting	5.00	22-Aug-14 A	100%	0.00	28-Aug-14 A					100%
GFXX433-1	D8 (D3d) - Pregrouting Works	30.00	29-Aug-14 A	0%	30.00	28-Oct-14	26-Jul-18	29-Aug-18	136.00	16.00	0%
PD080030	D8 (D3d) - Erect MTR protective fence / remove existing fence	12.00	07-Aug-14 A	100%	0.00	21-Aug-14 A					100%
PD080032	D8 (D3d) - Install Geo. Instru. & Baseline Monitoring	36.00	22-Sep-14	0%	36.00	04-Nov-14	06-Jul-18	16-Aug-18	.119.00	0.00	0%
PD080040	D8 (D3d) - Set up piling platform	10.00	05-Nov-14	0%	10.00	15-Nov-14	17-Aug-18	29-Aug-18	008.00	0.00	0%
PD080050	D8 (D3d) - Complete Civil Preparation Works for piling to commence	0.00		0%	0.00	15-Nov-14		29-Aug-18	008.00	1008.00	0%
Socketted H-Pile Installation											
GFXX470	D8 (D3d) - Predrilling (2 Nr)	17.00	25-Jul-14 A	47.06%	9.00	03-Oct-14	31-Jul-14	09-Aug-14	-44.00	0.00	50%
GFXX470-1	D8 (D3d) - Confirm Rockhead Levels	8.00	04-Oct-14	0%	8.00	13-Oct-14	11-Aug-14	19-Aug-14	-44.00	0.00	0%
GFXX471	D8 (D3d) - Installation of SH Pile (16 nr)	122.00	14-Oct-14	0%	122.00	11-Mar-15	20-Aug-14	15-Jan-15	-44.00	0.00	0%
Pier D9 (D3c)											
Preliminary Works for Land Piling											
PD090010	D9 (D3c) - Erect MTR boundary fence / remove existing fence	12.00	26-Sep-14	0%	12.00	13-Oct-14	15-Aug-18	29-Aug-18	036.00	1036.00	0%
Socketted H-Pile Installation											
GFXX465-1	D9 (D3c) - Confirm Rockhead Levels	8.00	22-Sep-14	0%	8.00	30-Sep-14	24-Jul-14	01-Aug-14	-50.00	68.00	0%
Pier D10 (D3b)											
Preliminary Works for Land Piling											
PD100020	D10 (D3b) - Set up piling platform	10.00	23-Jul-14 A	0%	10.00	04-Oct-14	17-Aug-18	29-Aug-18	042.00	0.00	0%
PD100030	D10 (D3b) - Complete Civil Preparation Works for piling to commence	0.00		0%	0.00	04-Oct-14		29-Aug-18	042.00	1042.00	0%
Socketted H-Pile Installation											



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
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Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 27 of 35 Pages)
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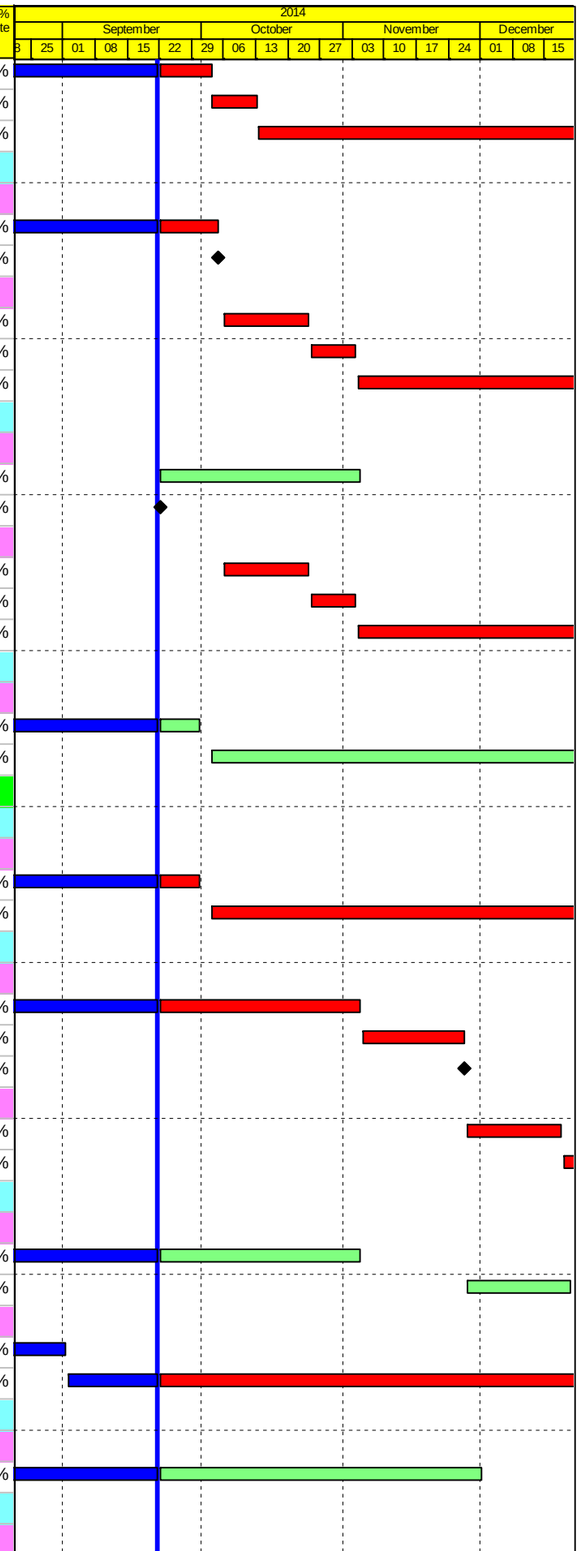
J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
GFXX460-1	D10 (D3b) - Predrilling (2 Nr)	17.00	14-Aug-14 A	50%	8.50	03-Oct-14	19-May-14	28-May-14	105.00	0.00	50%
GFXX460-4	D10 (D3b) - Confirm Rockhead Levels	8.00	03-Oct-14	0%	8.00	13-Oct-14	22-Jul-14	30-Jul-14	-60.50	0.00	0%
GFXX461-1	D10 (D3b) - Installation of SH Pile (12 nr)	153.00	13-Oct-14	0%	153.00	21-Apr-15	31-Jul-14	31-Jan-15	-60.50	0.00	0%
Pier D11 (D3a)											
Preliminary Works for Land Piling											
PD110020	D11 (D3a) - Set up piling platform	10.00	23-Jul-14 A	0%	10.00	04-Oct-14	02-May-14	17-May-14	-92.00	0.00	0%
PD110030	D11(D3a) - Complete Civil Preparation Works for piling to commence	0.00		0%	0.00	04-Oct-14		17-May-14	-92.00	0.00	0%
Socketted H-Pile Installation											
GFXX460-2	D11 (D3a) - Predrilling	17.00	06-Oct-14	0%	17.00	24-Oct-14	19-May-14	07-Jun-14	115.00	0.00	0%
GFXX460-5	D11 (D3a) - Confirm Rockhead Levels	8.00	25-Oct-14	0%	8.00	03-Nov-14	09-Jun-14	17-Jun-14	115.00	0.00	0%
GFXX461-2	D11 (D3a) - Installation of SH Pile (14 nr)	153.00	04-Nov-14	0%	153.00	13-May-15	18-Jun-14	17-Dec-14	115.00	0.00	0%
Pier D12 (D2e)											
Preliminary Works for Land Piling											
PD120012	D12 (D2e) - Install Geo. Instru. & Baseline Monitoring	36.00	22-Sep-14	0%	36.00	04-Nov-14	19-Jul-18	29-Aug-18	130.00	1130.00	0%
PD120030	D12 (D2e) - Complete Civil Preparation Works for piling to commence	0.00		0%	0.00	22-Sep-14		15-Aug-14	-26.00	10.00	0%
Socketted H-Pile Installation											
GFXX460-3	D12 (D2e) - Predrilling	17.00	06-Oct-14	0%	17.00	24-Oct-14	16-Aug-14	04-Sep-14	-40.00	0.00	0%
GFXX460-6	D12 (D2e) - Confirm Rockhead Levels	8.00	25-Oct-14	0%	8.00	03-Nov-14	05-Sep-14	15-Sep-14	-40.00	0.00	0%
GFXX461-3	D12 (D2e) - Installation of SH Pile (16 nr)	153.00	04-Nov-14	0%	153.00	13-May-15	16-Sep-14	21-Mar-15	-40.00	0.00	0%
Pier D13 (D2d)											
Socketted H-Pile Installation											
GFXX452-8	D13 (D2d) - Confirm Rockhead Levels	8.00	31-May-14 A	0%	8.00	30-Sep-14	03-Feb-15	11-Feb-15	110.00	0.00	0%
GFXX454	D13 (D2d) - Installation of SH Pile (16 nos)	71.00	03-Oct-14	0%	71.00	24-Dec-14	12-Feb-15	14-May-15	110.00	0.00	0%
Bridge D1											
Pier D14 (D2c)											
Socketted H-Pile Installation											
GFXX445-	D14 (D2c) - Confirm Rockhead Levels	8.00	17-Jun-14 A	0%	8.00	30-Sep-14	08-Jul-14	16-Jul-14	-64.00	0.00	0%
GFXX446-	D14 (D2c) - Installation of SH Pile (10 nr)	121.00	03-Oct-14	0%	121.00	27-Feb-15	17-Jul-14	08-Dec-14	-64.00	0.00	0%
Pier D15 (D2b)											
Preliminary Works for Land Piling											
PD150012	D15 (D2b) - Install Geo. Instru. & Baseline Monitoring	36.00	26-Jul-14 A	0%	36.00	04-Nov-14	14-Apr-14	30-May-14	130.00	0.00	0%
PD150020	D15 (D2b) - Set up piling platform	20.00	05-Nov-14	0%	20.00	27-Nov-14	31-May-14	07-Jul-14	107.00	0.00	0%
PD150030	D15 (D2b) - Complete Civil Preparation Works for piling to commence	0.00		0%	0.00	27-Nov-14		07-Jul-14	107.00	0.00	0%
Socketted H-Pile Installation											
GFXX445-2	D15 (D2b) - Predrilling	18.00	28-Nov-14	0%	18.00	18-Dec-14	08-Jul-14	28-Jul-14	120.00	0.00	0%
GFXX445-4	D15 (D2b) - Confirm Rockhead Levels	8.00	19-Dec-14	0%	8.00	30-Dec-14	29-Jul-14	06-Aug-14	120.00	0.00	0%
Pier D16 (D2a)											
Preliminary Works for Land Piling											
PD160012	D16 (D2a) - Install Geo. Instru. & Baseline Monitoring	36.00	26-Jul-14 A	0%	36.00	04-Nov-14	22-Jun-18	03-Aug-18	108.00	20.00	0%
PD160020	D16 (D2a) - Set up piling platform	20.00	28-Nov-14	0%	20.00	20-Dec-14	04-Aug-18	29-Aug-18	978.00	978.00	0%
Socketted H-Pile Installation											
GFXX445-5	D16 (D2a) - Confirm Rockhead Levels	8.00	23-Jul-14 A	100%	0.00	01-Sep-14 A					100%
GFXX446-3	D16 (D2a) - Installation of SH Pile (13 nr)	121.00	02-Sep-14 A	6.61%	113.00	06-Feb-15	15-Jul-14	27-Nov-14	-58.00	0.00	6.61%
Pier D17 (D1d)											
Socketted H-Pile Installation											
GFXX439-1	D17 (D1d) - Installation of SH Pile (10 nr)	70.00	14-Aug-14 A	17.14%	58.00	01-Dec-14	04-Dec-14	13-Feb-15	61.00	0.00	17.14%
Pier D18 (D1c)											
Socketted H-Pile Installation											



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
Filter: TASK filters: 3-Month Lookahead, No Level of Effort.

Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 28 of 35 Pages)
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29-Jul-14		FZ	
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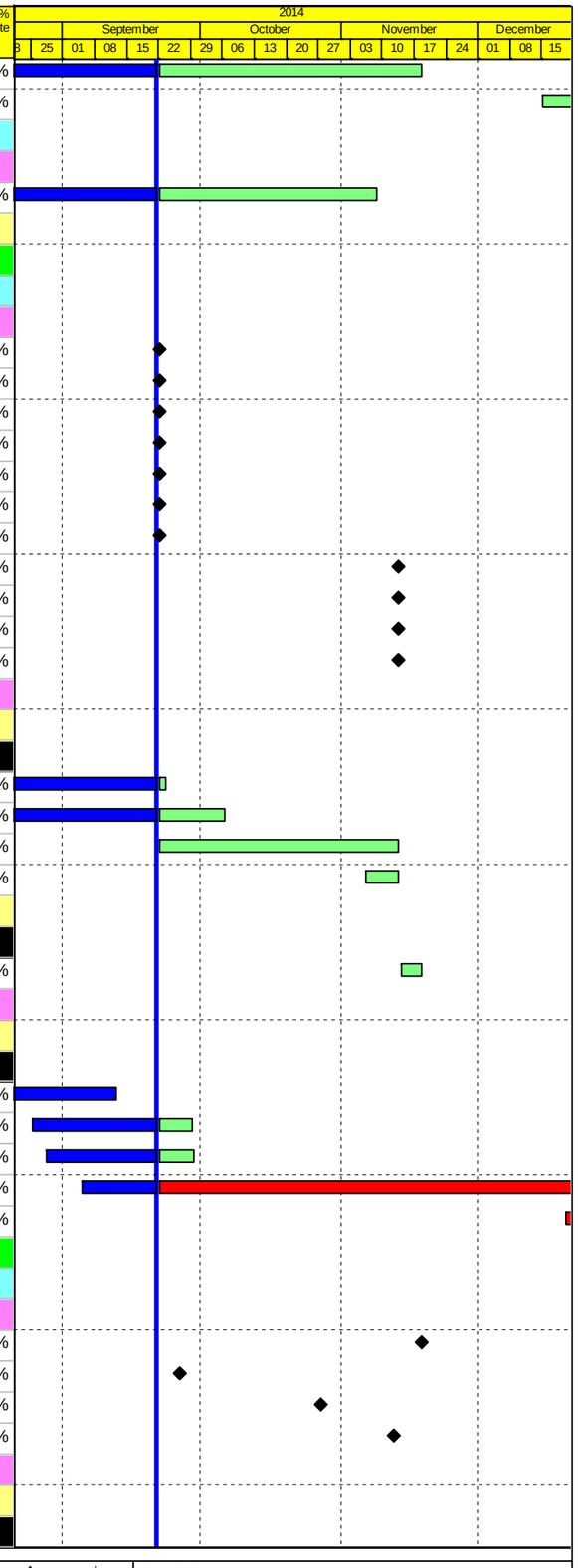
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
GFXX439-2	D18 (D1c) - Installation of SH Pile (10 nr)	70.00	09-Aug-14 A	31.43%	48.00	18-Nov-14	07-Nov-14	05-Jan-15	38.00	0.00	32.28%
GFXX439-5	D18 (D1c) - Selction of pile for Loading test	24.00	15-Dec-14	0%	24.00	14-Jan-15	31-Jan-15	03-Mar-15	38.00	0.00	0%
Pier D19 (D1b) & Abutment D											
Socketted H-Pile Installation											
GFXX439-3	D19 (D1b) - Installation of SH Pile (6 nr)	70.00	29-Jul-14 A	42.86%	40.00	08-Nov-14	18-Nov-14	06-Jan-15	47.00	0.00	44.13%
Viaduct E											
Viaduct E1											
Bridge E1 - Piling & Substructure											
Milestones											
GFXX023A	E1D (E1a1) - Start date for piling	0.00	22-Sep-14	0%	0.00		10-Oct-14		14.13	0.00	0%
GFXX023A	E1C (E1a2) - Start date for piling	0.00	22-Sep-14	0%	0.00		10-Oct-14		14.13	0.00	0%
GFXX023A	E1B (E1a3) - Start date for piling	0.00	22-Sep-14	0%	0.00		10-Oct-14		14.13	0.00	0%
GFXX023A	E1A (E1a4) - Start date for piling	0.00	22-Sep-14	0%	0.00		10-Oct-14		14.13	0.00	0%
GFXX028A	E2C/E2D (E1b2/E1b1) - Start date for piling	0.00	22-Sep-14	0%	0.00		17-Jul-14		-56.00	0.00	0%
GFXX028A	E2B (E1b3) - Start date for piling	0.00	22-Sep-14	0%	0.00		17-Jul-14		-56.00	0.00	0%
GFXX028A	E2A (E1b4) - Start date for piling	0.00	22-Sep-14	0%	0.00		17-Jul-14		-56.00	0.00	0%
GFXX031-1	E1D (E1a1) - Piling Works Completion	0.00		0%	0.00	13-Nov-14		20-Jan-16	350.75	257.00	0%
GFXX031-2	E1C (E1a2) - Piling Works Completion	0.00		0%	0.00	13-Nov-14		17-Mar-15	99.88	118.00	0%
GFXX031-3	E1B (E1a3) - Piling Works Completion	0.00		0%	0.00	13-Nov-14		09-Jan-15	46.00	105.00	0%
GFXX031-4	E1A (E1a4) - Piling Works Completion	0.00		0%	0.00	13-Nov-14		01-Dec-14	14.13	0.00	0%
E1A, E1B, E1C & E1D (E1a1-2-3-4)											
Foundation Works E1A, E1B, E1C & E1D											
Foundation Works											
GFXX02	E1A/E1B/E1C/E1D (E1a4/3/2/1) - Confirm Rockhead levels	8.00	05-Jul-14 A	75%	2.00	23-Sep-14	28-Aug-18	29-Aug-18	164.00	1164.00	79%
GFXX02	E1A/E1B/E1C/E1D (E1a4/3/2/1) - Bored Piles (2.00m dia. x 8 nos)	125.00	09-Jul-14 A	91.2%	11.00	06-Oct-14	10-Oct-14	23-Oct-14	14.13	0.00	90.99%
GFXX02	E1A/E1B/E1C/E1D (E1a4/3/2/1) - Sonic & Interface Coring	44.00	22-Sep-14	0%	44.00	13-Nov-14	10-Oct-14	01-Dec-14	14.13	0.00	0%
GFXX02	E1A/E1B/E1C/E1D (E1a4/3/2/1) - Dismantle Temporary Piling Platform in Pier E1	7.00	06-Nov-14	0%	7.00	13-Nov-14	22-Nov-14	01-Dec-14	14.13	0.00	0%
Pile Cap Works - E1A, E1B, E1C & E1D											
Pile Cap Works - E1A (E1a4)											
SE1A4070	E1A (E1a4) - Marine Pile Cap - Inst.prefab.collar frame to perm.casing of Bored pile	4.00	14-Nov-14	0%	4.00	18-Nov-14	01-Dec-14	05-Dec-14	14.13	94.00	0%
E2A, E2B, E2C & E2D (E1b1-2-3-4)											
Foundation Works - E2A, E2B, E2C & E2D											
Foundation Works											
GFXX02	E2A/E2B/E2C/E2D (E1b4/3/2/1) - Inst.Temp.Working Platforms (Heavy & Light)	34.00	28-Jun-14 A	100%	0.00	12-Sep-14 A					100%
GFXX02	E2A/E2B/E2C/E2D (E1b4/3/2/1) - Predrilling (7 nos)	21.00	25-Aug-14 A	71.42%	6.00	29-Sep-14	25-Mar-17	01-Apr-17	744.00	79.00	71.42%
GFXX02	E2A/E2B/E2C/E2D (E1b4/3/2/1) - Confirm Rockhead levels	8.00	28-Aug-14 A	12.5%	7.00	29-Sep-14	20-Oct-14	27-Oct-14	22.00	78.00	12%
GFXX02	E2A/E2B/E2C/E2D (E1b4/3/2/1) - Bored Piles (2.00m dia. x 7 nr)	88.00	05-Sep-14 A	3.41%	85.00	03-Jan-15	17-Jul-14	27-Oct-14	-56.00	0.00	4.25%
GFXX02	E2A/E2B/E2C/E2D (E1b4/3/2/1) - Sonic & Interface Coring	34.00	20-Dec-14	0%	34.00	31-Jan-15	16-Oct-14	24-Nov-14	-56.00	0.00	0%
Viaduct E2											
Bridge E2 - Piling & Substructure											
Milestones											
GFXX075	E3 (E2a) - Completion of piling works	0.00		0%	0.00	18-Nov-14		03-Nov-14	-13.00	22.00	0%
GFXX076	E4 (E2b) - Completion of piling works	0.00		0%	0.00	26-Sep-14		14-Aug-14	-36.13	73.00	0%
GFXX077-5	E9 (E2g) - Completion of piling works	0.00		0%	0.00	27-Oct-14		26-Mar-15	123.00	41.00	0%
GFXX078	E10 (E2h) - Completion of piling works	0.00		0%	0.00	12-Nov-14		26-Nov-14	12.00	27.00	0%
E3A, E3B, E3C & E3D (E2a - 1/2/3/4)											
Foundation Works - E3A, E3B, E3C & E3D											
Foundation Works											



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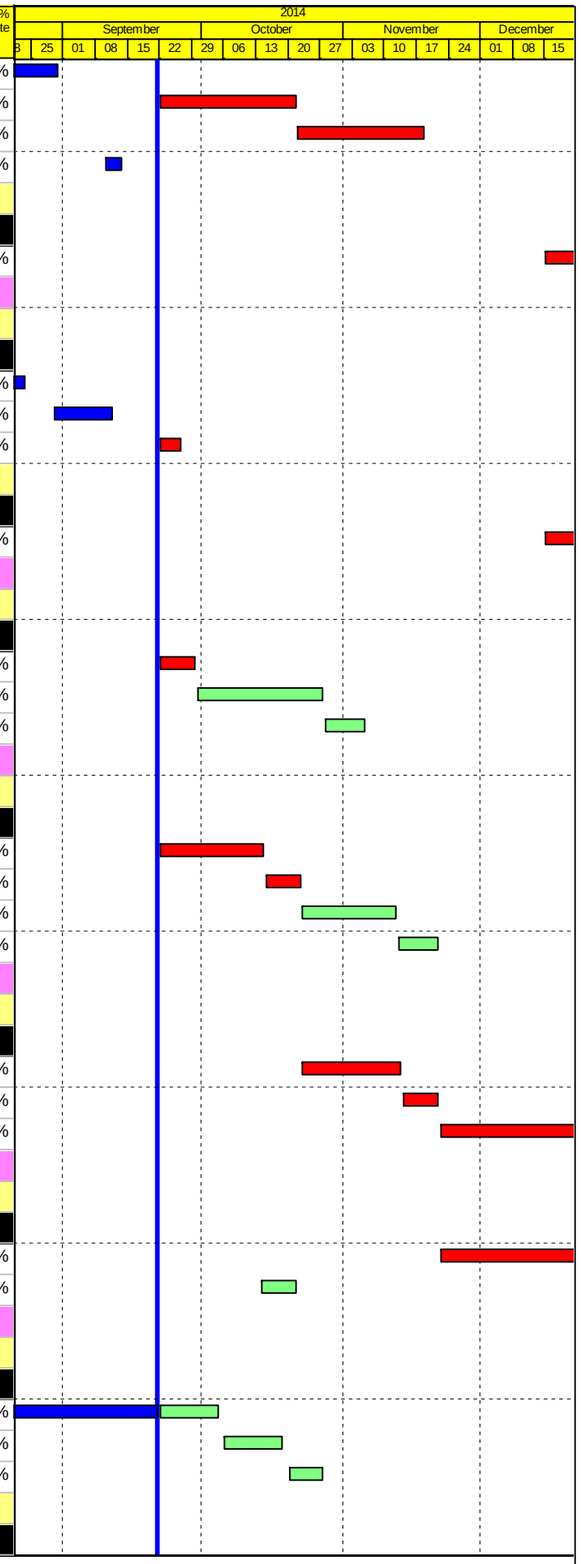
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
GFXX038	E3 (E2a) - Sonic & Interface Coring x6no.	20.00	03-Aug-14 A	100%	0.00	30-Aug-14 A					100%
GFXX03	E3 (E2a) - Selection of bored pile for Full Depth Coring	24.00	22-Sep-14	0%	24.00	21-Oct-14	05-Sep-14	06-Oct-14	-13.00	0.00	0%
GFXX03	E3 (E2a) - Bored Pile Full Depth Coring & Testing	24.00	22-Oct-14	0%	24.00	18-Nov-14	07-Oct-14	03-Nov-14	-13.00	0.00	0%
GFXX039	E3 (E2a) - Dismantle Temporary Removable Piling Platform	5.00	10-Sep-14 A	100%	0.00	13-Sep-14 A					100%
Pile Cap Works - E3A, E3B, E3C & E3D											
Pile Cap Works											
SE2A1070	E3 (E2a1/2/3/4)- Marine Pile Cap - Inst.Floating Seal & Casing Head Steelwork	8.00	15-Dec-14	0%	8.00	23-Dec-14	04-Nov-14	12-Nov-14	-35.00	29.00	0%
E4A & E4B (E2b - 1/2)											
Foundation Works - E4A & E4B											
Foundation Works											
GFXX042	E4 (E2b) - Bored Piles (2.20m dia. x 4 nos)	90.00	19-Jun-14 A	100%	0.00	23-Aug-14 A					100%
GFXX043	E4 (E2b) - Sonic & Interface Coring x 4no.	12.00	30-Aug-14 A	100%	0.00	11-Sep-14 A					100%
GFXX044	E4 (E2b) - Dismantle Temporary Removable Piling Platform	5.00	22-Sep-14	0%	5.00	26-Sep-14	25-Jul-14	31-Jul-14	-48.13	0.00	0%
Pile Cap Works - E4A & E4B											
Pile Cap Works											
SE2B0070	E4 (E2b1/2) - Marine Pile Cap - Inst.Floating Seal & Casing Head Steelwork	8.00	15-Dec-14	0%	8.00	23-Dec-14	31-Jul-14	14-Aug-14	100.13	0.00	0%
E5A & E5B (E2c - 1/2)											
Foundation Works - E5A & E5B											
Foundation Works											
GFXX04	E5 (E2c) - Inst.Temp.Working Platform (Light)	7.00	22-Sep-14	0%	7.00	29-Sep-14	17-Jul-14	24-Jul-14	-56.00	0.00	0%
GFXX046	E5 (E2c) - Predrilling (4 nos)	22.00	30-Sep-14	0%	22.00	27-Oct-14	13-Oct-14	06-Nov-14	9.00	0.00	0%
GFXX04	E5 (E2c) - Confirm Rockhead levels	8.00	28-Oct-14	0%	8.00	05-Nov-14	07-Nov-14	15-Nov-14	9.00	65.00	0%
E6A & E6B (E2d - 1/2)											
Foundation Works - E6A & E6B											
Foundation Works											
GFXX050	E6 (E2d) - Inst.Temp.Working Platform (Heavy)	18.00	22-Sep-14	0%	18.00	14-Oct-14	04-Jul-14	24-Jul-14	-67.00	0.00	0%
GFXX05	E6 (E2d) - Inst.Temp.Working Platform (Light)	7.00	15-Oct-14	0%	7.00	22-Oct-14	25-Jul-14	01-Aug-14	-67.00	0.00	0%
GFXX051	E6 (E2d) - Predrilling (4 nos)	18.00	23-Oct-14	0%	18.00	12-Nov-14	27-Nov-14	17-Dec-14	30.00	0.00	0%
GFXX05	E6 (E2d) - Confirm Rockhead levels	8.00	13-Nov-14	0%	8.00	21-Nov-14	18-Dec-14	29-Dec-14	30.00	183.00	0%
E7A & E7B (E2e - 1/2)											
Foundation Works - E7A & E7B											
Foundation Works											
GFXX055	E7 (E2e) - Inst.Temp.Working Platforms (Heavy)	19.00	23-Oct-14	0%	19.00	13-Nov-14	02-Aug-14	23-Aug-14	-67.00	0.00	0%
GFXX05	E7 (E2e) - Inst.Temp.Working Platforms (Light)	7.00	14-Nov-14	0%	7.00	21-Nov-14	25-Aug-14	01-Sep-14	-67.00	0.00	0%
GFXX056	E7 (E2e) - Predrilling (5 nos)	26.00	22-Nov-14	0%	26.00	22-Dec-14	18-Oct-14	17-Nov-14	-30.00	0.00	0%
E8A & E8B (E2f - 1/2)											
Foundation Works - E8A & E8B											
Foundation Works											
GFXX060	E8 (E2f) - Inst.Temp.Working Platforms (Heavy)	32.00	22-Nov-14	0%	32.00	31-Dec-14	02-Sep-14	11-Oct-14	-67.00	0.00	0%
GFXX06	E8 (E2f) - Relocation & Install Temporary Removable Platform from E3, Plant & Equipment fr	7.00	14-Oct-14	0%	7.00	21-Oct-14	12-Nov-14	19-Nov-14	25.00	92.00	0%
E9A & E9B (E2g - 1/2)											
Foundation Works - E9A & E9B											
Foundation Works											
GFXX067	E9 (E2g) - Bored Piles (2.00m dia. x 6 nr)	105.00	17-May-14 A	90.48%	10.00	04-Oct-14	18-Feb-15	04-Mar-15	123.00	0.00	91.01%
GFXX068	E9 (E2g) - Sonic & Interface Coring	12.00	06-Oct-14	0%	12.00	18-Oct-14	05-Mar-15	18-Mar-15	123.00	0.00	0%
GFXX069	E9 (E2g) - Dismantle temp. removable piling platform	7.00	20-Oct-14	0%	7.00	27-Oct-14	19-Mar-15	26-Mar-15	123.00	0.00	0%
Pile Cap Works - E9A & E9B											
Pile Cap Works											



Actual Work
Planned Bar
Critical Bar
Milestone

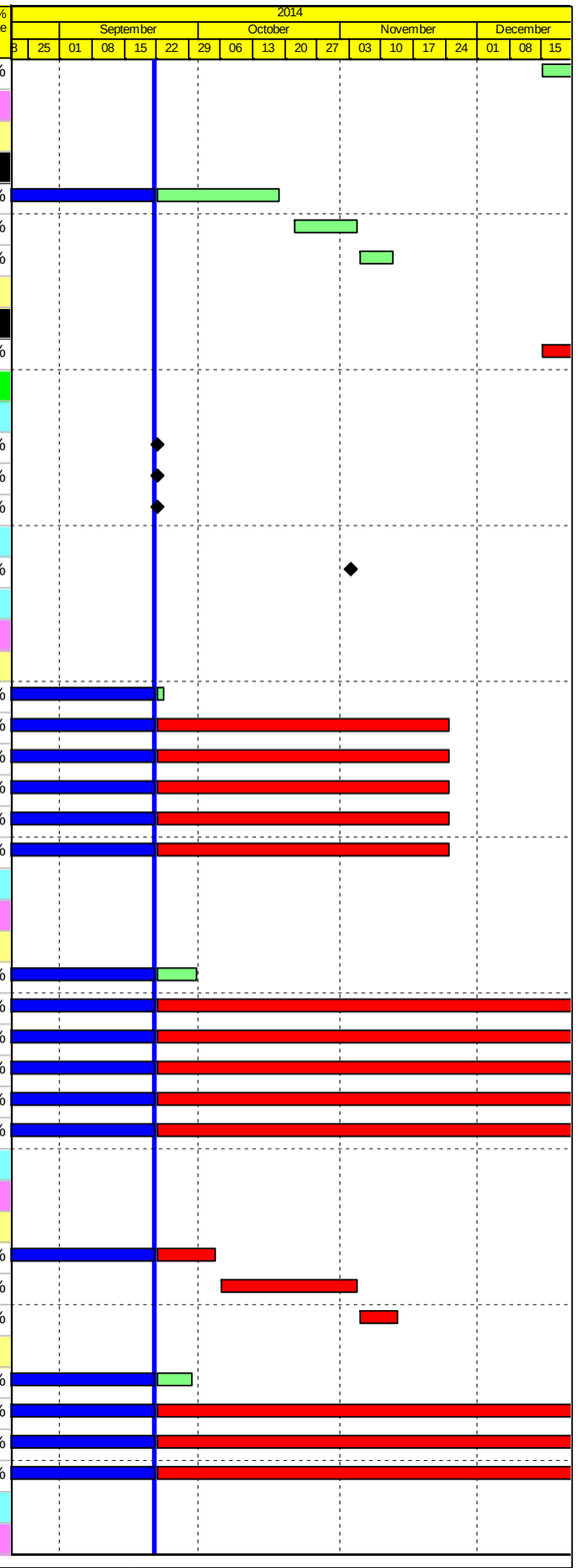
Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
Filter: TASK filters: 3-Month Lookahead, No Level of Effort.

Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 30 of 35 Pages)
(Progress as of 21-Sep-14)

Date	Revision	Checked	Approved
29-Jul-14		FZ	
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:
J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
SE2G007	E9 (E2g1/2) - Marine Pile Cap - Inst.Floating Seal & Casing Head Steelwork	8.00	15-Dec-14	0%	8.00	23-Dec-14	27-Mar-15	11-Apr-15	82.00	0.00	0%
E10A & E10B (E2h - 1/2)											
Foundation Works - E10A & E10B											
Foundation Works											
GFXX072	E10 (E2h) - Bored Piles (2.20m dia. x 6 nr)	132.00	15-May-14 A	83.33%	22.00	18-Oct-14	10-Oct-14	04-Nov-14	14.00	0.00	83.81%
GFXX073	E10 (E2h) - Sonic & Interface Coring	12.00	22-Oct-14	0%	12.00	04-Nov-14	05-Nov-14	18-Nov-14	12.00	0.00	0%
GFXX074	E10 (E2h) - Dismantle temp. removable piling platform	7.00	05-Nov-14	0%	7.00	12-Nov-14	19-Nov-14	26-Nov-14	12.00	0.00	0%
Pile Cap Works - E10A & E10B											
Pile Cap Works											
SE2H007	E10 (E2h1/2) - Marine Pile Cap - Inst.Floating Seal & Casing Head Steelwork	8.00	15-Dec-14	0%	8.00	23-Dec-14	27-Nov-14	05-Dec-14	-15.00	0.00	0%
Viaduct E5, E6, E7 & E8											
Milestones - Marine Foundation											
GFXX084-1	E11 (E5E6a/E7E8a) - Start date for piling	0.00	22-Sep-14	0%	0.00		21-Mar-14		149.00	0.00	0%
GFXX089-1	E12 (E5b/E6b/E7b/E8b + Dolphins) - Start date for piling	0.00	22-Sep-14	0%	0.00		17-Mar-14		153.00	0.00	0%
GFXX095-1	E13C/D (E6c/E5c+ dolphin) - Start date for piling	0.00	22-Sep-14	0%	0.00		10-Apr-14		133.00	0.00	0%
Milestones - Land Foundation											
GFXX012	Land Access to BCF (Available in Month 17)	0.00	03-Nov-14	0%	0.00		05-Nov-14		2.00	0.00	0%
E11A & E11B (E5E6a/E7E8a)											
Foundation Works - E11A & E11B											
Foundation Works											
GFXX083	E11 (E5E6a/E7E8a) - Confirm Rockhead levels	8.00	12-Jun-14 A	75%	2.00	23-Sep-14	28-Aug-18	29-Aug-18	164.00	1164.00	80%
GFXX084	E11 (E5E6a/E7E8a) - Bored Piles (2.35m dia. x 7 nr)	130.00	10-Jul-14 A	59.23%	53.00	24-Nov-14	21-Mar-14	28-May-14	149.00	0.00	59%
GFXX084	E11 (E5E6a/E7E8a) - Bored Piles (2.35m dia. x 2 nr (Total 7 Nr))	130.00	10-Jul-14 A	59.23%	53.00	24-Nov-14	21-Mar-14	28-May-14	149.00	0.00	59%
GFXX084	E11 (E5E6a/E7E8a) - Bored Piles (2.35m dia. x 2 nr (Total 7 Nr))	130.00	10-Jul-14 A	59.23%	53.00	24-Nov-14	21-Mar-14	28-May-14	149.00	0.00	59%
GFXX084	E11 (E5E6a/E7E8a) - Bored Piles (2.35m dia. x 2 nr(Total 7 Nr))	130.00	10-Jul-14 A	59.23%	53.00	24-Nov-14	21-Mar-14	28-May-14	149.00	0.00	59%
GFXX084	E11 (E5E6a/E7E8a) - Bored Piles (2.35m dia. x 1 nr(Total 7 Nr))	130.00	10-Jul-14 A	59.23%	53.00	24-Nov-14	21-Mar-14	28-May-14	149.00	0.00	59%
E12A, E12B, E12C & E12D (E8b/E7b/E6b/E5b)											
Foundation Works - E12											
Foundation Works											
GFXX088	E12 (E5b/E6b, E7b/E8b + Dolphins) - Confirm Rockhead levels	8.00	21-Jun-14 A	0%	8.00	30-Sep-14	21-Aug-18	29-Aug-18	158.00	1158.00	0%
GFXX089	E12 (E5b/E6b/E7b/E8b + Dolphins) - Bored Piles (2.35m dia. x 14 nr ; 2.00m dia x 6 nr)	216.00	11-Jul-14 A	35.19%	140.00	12-Mar-15	17-Mar-14	04-Sep-14	153.00	0.00	35%
GFXX089	E12D (E5b+ Dolphins) - Bored Piles (2.35m dia. x 4 nr (total 14) ; 2.00m dia x 3 nr (total 6))	216.00	11-Jul-14 A	35.19%	140.00	12-Mar-15	17-Mar-14	04-Sep-14	153.00	0.00	35%
GFXX089	E12C (E6b) - Bored Piles (2.35m dia. x 3 nr)	216.00	11-Jul-14 A	35.19%	140.00	12-Mar-15	17-Mar-14	04-Sep-14	153.00	0.00	35%
GFXX089	E12B (E7b) - Bored Piles (2.35m dia. x 3 nr)	216.00	11-Jul-14 A	35.19%	140.00	12-Mar-15	17-Mar-14	04-Sep-14	153.00	0.00	35%
GFXX089	E12A (E8b + Dolphins) - Bored Piles (2.35m dia. x 4 nr (total 14) ; 2.00m dia x 3 nr (total 6))	216.00	11-Jul-14 A	35.19%	140.00	12-Mar-15	17-Mar-14	04-Sep-14	153.00	0.00	35%
E13A, E13B, E13C & E13D (E8c/E7c/E6c/E5c)											
Foundation Works - E13											
Foundation Works - E13A (E8c) & E13B (E7c)											
GFXX099	E13A/B (E8c/E7c) Inst.Temp.Working Platform (Heavy)	39.00	10-Jul-14 A	74.36%	10.00	04-Oct-14	27-Aug-14	06-Sep-14	-21.00	0.00	75%
GFXX100	E13A/B (E8c/E7c & Dolphin) - Predrilling	26.00	06-Oct-14	0%	26.00	04-Nov-14	08-Sep-14	10-Oct-14	-21.00	0.00	0%
GFXX100	E13A/B (E8c/E7c & Dolphin) - Confirm Rockhead levels	8.00	05-Nov-14	0%	8.00	13-Nov-14	11-Oct-14	20-Oct-14	-21.00	108.00	0%
Foundation Works - E13C (E6c) & E13D (E5c)											
GFXX094	E13C/D (E6c/E5c + Dolphin) - Confirm Rockhead levels	8.00	21-Jul-14 A	12.5%	7.00	29-Sep-14	22-Aug-18	29-Aug-18	159.00	1159.00	8%
GFXX095	E13C/D (E6c/E5c + Dolphin) - Bored Piles (2.20m dia. x 8 nr; 2.00m dia x 3nr))	128.00	14-Aug-14 A	8.59%	117.00	10-Feb-15	10-Apr-14	01-Sep-14	133.00	0.00	8%
GFXX095	E13D (E5c + Dolphin) - Bored Piles (2.20m dia. x 4 nr; 2.00m dia x 3nr))	128.00	14-Aug-14 A	8.59%	117.00	10-Feb-15	10-Apr-14	01-Sep-14	133.00	0.00	8%
GFXX615	E13C (E6c) - Bored Piles (2.20m dia. x 4 nr)	128.00	14-Aug-14 A	8.59%	117.00	10-Feb-15	10-Apr-14	01-Sep-14	133.00	0.00	8%
E14A, E14B, E14C & E14D (E8d/E7d/E6d/E5d)											
Foundation Works - E14											



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
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Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 31 of 35 Pages)
(Progress as of 21-Sep-14)

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29-Jul-14		FZ	
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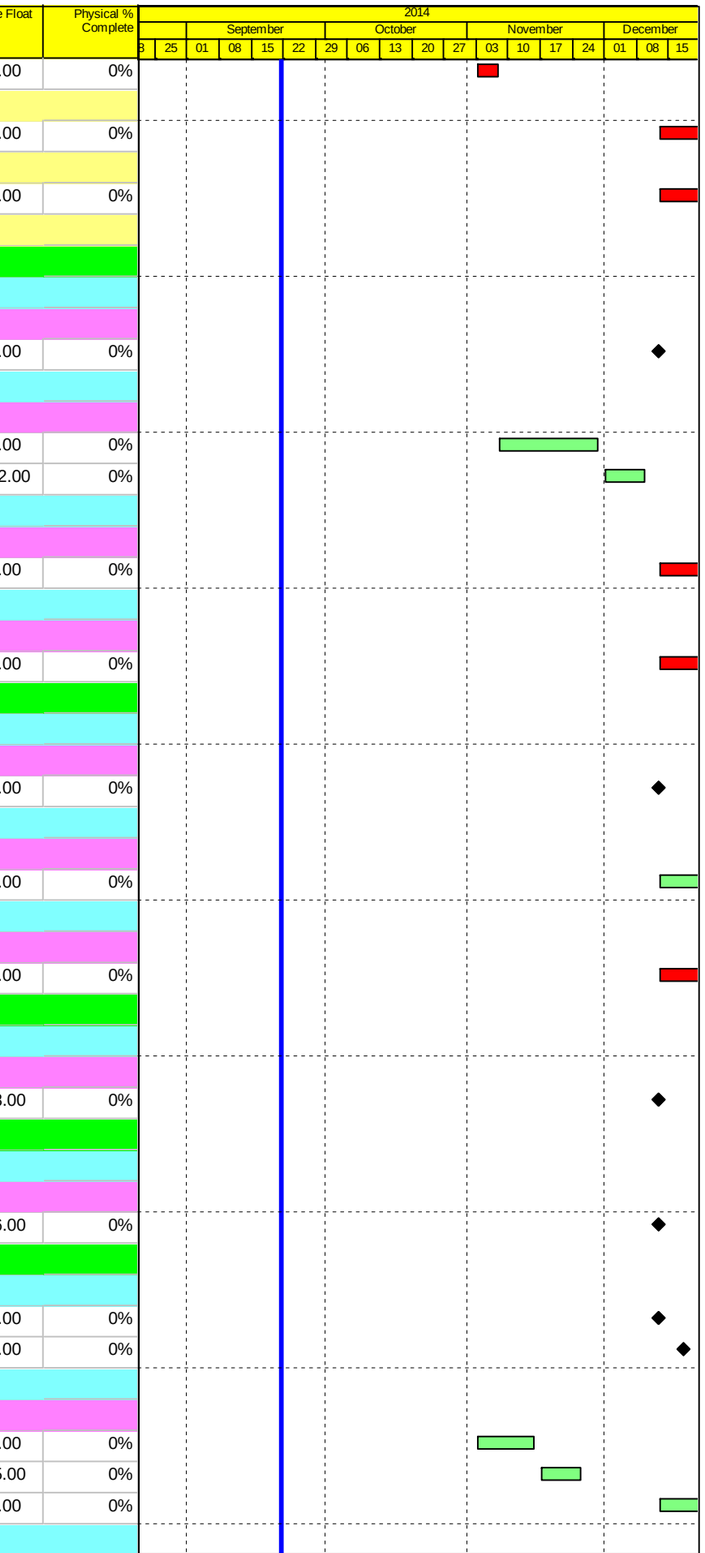
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
GFXX545	Mobilization & Assembling Bored Pile Plant & Equipment for Viaducts in HKBCF	5.00	03-Nov-14	0%	5.00	07-Nov-14	05-Nov-14	10-Nov-14	2.00	0.00	0%
Foundation Works - E14A (E8d)											
GFXX544	E14A (E8d) - Pre-drilling for Piles (4 nos)	24.00	13-Dec-14	0%	24.00	13-Jan-15	26-Nov-14	23-Dec-14	-15.00	0.00	0%
Foundation Works - E14B (E7d)											
GFXX544	E14B (E7d) - Pre-drilling for Piles (3 nos)	24.00	13-Dec-14	0%	24.00	13-Jan-15	05-Nov-14	02-Dec-14	-33.00	0.00	0%
Viaduct F											
Viaduct F1											
General F1											
Milestones											
F10010	Viaduct F1 - Approval of Foundation DDA	0.00		0%	0.00	12-Dec-14		19-Nov-14	-17.00	0.00	0%
F1 (F1b)											
Foundation Works											
GFXX553-1	F1 (F1b) - Pre-drilling for Piles (2 nos)	19.00	08-Nov-14	0%	19.00	29-Nov-14	18-Nov-14	09-Dec-14	8.00	0.00	0%
GFXX553-4	F1 (F1b) - Confirm Rockhead Levels	8.00	01-Dec-14	0%	8.00	09-Dec-14	10-Dec-14	18-Dec-14	8.00	122.00	0%
F2 (F1c)											
Foundation Works											
GFXX553-2	F2 (F1c) - Pre-drilling for Piles (2 nos)	19.00	13-Dec-14	0%	19.00	07-Jan-15	20-Nov-14	11-Dec-14	-20.00	0.00	0%
F3 (F1d)											
Foundation Works											
GFXX553-3	F3 (F1d) - Pre-drilling for Piles (2 nos)	19.00	13-Dec-14	0%	19.00	07-Jan-15	20-Nov-14	12-Dec-14	-19.88	0.00	0%
Viaduct F2											
General F2											
Milestones											
F20010	Viaduct F2 - Approval of Foundation DDA	0.00		0%	0.00	12-Dec-14		03-Dec-14	-7.00	0.00	0%
F5 (F2c)											
Foundation Works											
GFXX561-2	F5 (F2c) - Pre-drilling for Piles (2 nos)	19.00	13-Dec-14	0%	19.00	07-Jan-15	17-Mar-15	11-Apr-15	74.00	0.00	0%
F6 (F2d)											
Foundation Works											
GFXX561-3	F6 (F2d) - Pre-drilling for Piles (2 nos)	19.00	13-Dec-14	0%	19.00	07-Jan-15	04-Dec-14	27-Dec-14	-8.00	0.00	0%
Viaduct F3											
General F3											
Milestones											
F30010	Viaduct F3 - Approval of Foundation DDA	0.00		0%	0.00	12-Dec-14		30-Jan-15	35.00	18.00	0%
Viaduct F5											
General F5											
Milestones											
F50010	Viaduct F5 - Approval of foundation DDA	0.00		0%	0.00	12-Dec-14		06-Jul-15	146.00	56.00	0%
Viaduct F4											
General F4											
F40010	Viaduct F4 - Approval of foundation DDA	0.00		0%	0.00	12-Dec-14		26-Jun-15	140.00	0.00	0%
GFXX579-8	F17 (F4b) - Start date for piling	0.00	18-Dec-14	0%	0.00		29-Jun-15		152.00	0.00	0%
F17 (F4b)											
Foundation Works											
GFXX579-2	F17 (F4b) - Pre-drilling for Piles (2 nos)	12.00	03-Nov-14	0%	12.00	15-Nov-14	04-Jun-15	17-Jun-15	171.00	0.00	0%
GFXX579-6	F17 (F4b) - Confirm Rockhead Levels	8.00	17-Nov-14	0%	8.00	25-Nov-14	18-Jun-15	27-Jun-15	171.00	15.00	0%
GFXX581	F17 (F4b) - Bored Piles (2.20m dia. x 2 nos)	70.00	13-Dec-14	0%	70.00	11-Mar-15	29-Jun-15	18-Sep-15	156.00	4.00	0%
F18 (F4c) & Abutment											



Actual Work
Planned Bar
Critical Bar
Milestone

Project ID: J3518DWPrD1-M16
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Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 32 of 35 Pages)
(Progress as of 21-Sep-14)

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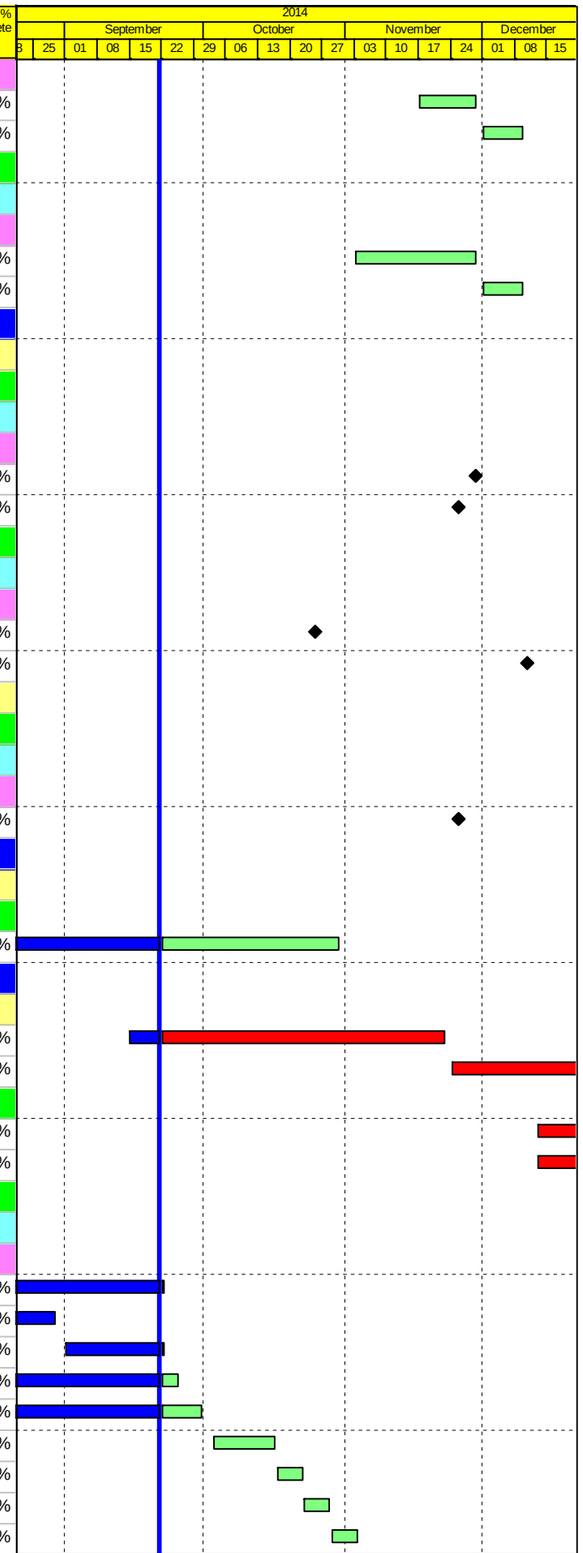
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
Foundation Works											
GFXX579-3	F18 (F4c) - Pre-drilling for Piles (2 nos)	12.00	17-Nov-14	0%	12.00	29-Nov-14	10-Sep-15	23-Sep-15	241.00	0.00	0%
GFXX579-7	F18 (F4c) - Confirm Rockhead Levels	8.00	01-Dec-14	0%	8.00	09-Dec-14	24-Sep-15	05-Oct-15	241.00	89.00	0%
Approach Ramp F											
Approach Ramp Land Foundation - HKBCF											
Approach Ramp F Piling											
GFXX593	AR-F - Pre-drilling for Piles (28 nos)	24.00	03-Nov-14	0%	24.00	29-Nov-14	13-Dec-14	13-Jan-15	35.00	0.00	0%
GFXX594	AR-F - Confirm Rockhead Levels	8.00	01-Dec-14	0%	8.00	09-Dec-14	14-Jan-15	22-Jan-15	35.00	106.00	0%
SUPERSTRUCTURE											
Viaduct B Superstructure											
Bridge B3 Superstructure											
Milestones											
Milestones Ready for PH Segment Erection											
B300050-1	Pier B2 (B3e) ready for Viaduct B3 PH segment erection	0.00		0%	0.00	29-Nov-14		18-Oct-14	-36.00	57.00	0%
B300060-1	Pier B1 (B3f) ready for Viaduct B3 PH segment erection	0.00		0%	0.00	25-Nov-14		29-Oct-14	-23.00	61.00	0%
Bridge B1 Superstructure											
Milestones											
Milestones Ready for PH Segment Erection											
B100030-1	Pier B16 (B1d) ready for Viaduct B1 PH segment erection	0.00		0%	0.00	25-Oct-14		10-Jun-15	182.13	0.00	0%
B100040-1	Pier B15 (B1e) ready for Viaduct B1 PH segment erection	0.00		0%	0.00	10-Dec-14		11-May-15	119.00	0.00	0%
Viaduct E											
Bridge E1 Superstructure											
Milestones											
Milestones Ready for PH Segment Erection											
E100040-1	Pier B1 (B3f) ready for Viaduct E1 PH segment erection	0.00		0%	0.00	25-Nov-14		29-Oct-14	-23.00	61.00	0%
At-Grade Roadworks & Other Works along NLH											
Viaduct D Slope Works											
Slope 10NW-C/F10											
M201215	10NW-C/F10 - Install Geo. Instru. & Baseline Monitoring	30.00	26-Jul-14 A	0%	30.00	30-Oct-14	28-Jul-16	08-Sep-16	489.00	418.00	0%
At-Grade Roadworks and Other Works along Cheung Tung Road											
Re-alignment of Cheung Tung Road adjacent to Viaduct B											
RP00020	Construct new ESS adjacent to Viaduct B	60.00	15-Sep-14 A	16.67%	50.00	22-Nov-14	12-Mar-14	26-May-14	126.00	0.00	15%
RP00030	Inst. new equip. & testing / commissioning of new ESS	60.00	24-Nov-14	0%	60.00	04-Feb-15	27-May-14	29-Aug-14	126.00	0.00	0%
Box Culvert Extension											
BCE0010	Excavate to expose existing culvert / cascade	18.00	13-Dec-14*	0%	18.00	06-Jan-15	26-Nov-14	16-Dec-14	-15.00	0.00	0%
BCE0020	Construct temporary drainage diversion	18.00	13-Dec-14	0%	18.00	06-Jan-15	26-Nov-14	16-Dec-14	-15.00	0.00	0%
Viaduct B Slope Works											
Slope 9SE-B/C9											
Zone A											
SWVB1090	9SE-B/C9 Zone A - Excav. to +21.00	5.00	04-Aug-14 A	80%	1.00	22-Sep-14	01-Apr-17	01-Apr-17	682.00	169.00	80%
SWVB1110	9SE-B/C9 Zone A - Excav. to +19.00 Zone A/B	5.00	04-Aug-14 A	100%	0.00	29-Aug-14 A					100%
SWVB1120	9SE-B/C9 Zone A - Soil nail 32 nr.@ +20.5	11.00	01-Sep-14 A	90.91%	1.00	22-Sep-14	29-Aug-18	29-Aug-18	051.00	1051.00	90%
SWVB1140	9SE-B/C9 Zone A - Soil nail 37 nr. @ +18.5	12.00	01-Aug-14 A	66.67%	4.00	25-Sep-14	25-Aug-18	29-Aug-18	048.00	1048.00	66%
SWVB1160	9SE-B/C9 Zone A - Soil nail 29 nr. @ +16.5	11.00	18-Aug-14 A	27.27%	8.00	30-Sep-14	13-Oct-14	22-Oct-14	15.00	0.00	30%
SWVB1170	9SE-B/C9 Zone A - Inst. 300UC @ +15.0	10.00	03-Oct-14	0%	10.00	16-Oct-14	23-Oct-14	03-Nov-14	15.00	0.00	0%
SWVB1180	9SE-B/C9 Zone A - Excav. to +14.5	5.00	17-Oct-14	0%	5.00	22-Oct-14	04-Nov-14	08-Nov-14	15.00	0.00	0%
SWVB1190	9SE-B/C9 Zone A - Raking Drain 14 nr @ +16.0	5.00	23-Oct-14	0%	5.00	28-Oct-14	10-Nov-14	14-Nov-14	15.00	0.00	0%
SWVB1200	9SE-B/C9 Zone A - Excav. to +11.5	5.00	29-Oct-14	0%	5.00	03-Nov-14	15-Nov-14	20-Nov-14	15.00	0.00	0%



Actual Work
Planned Bar
Critical Bar
Milestone

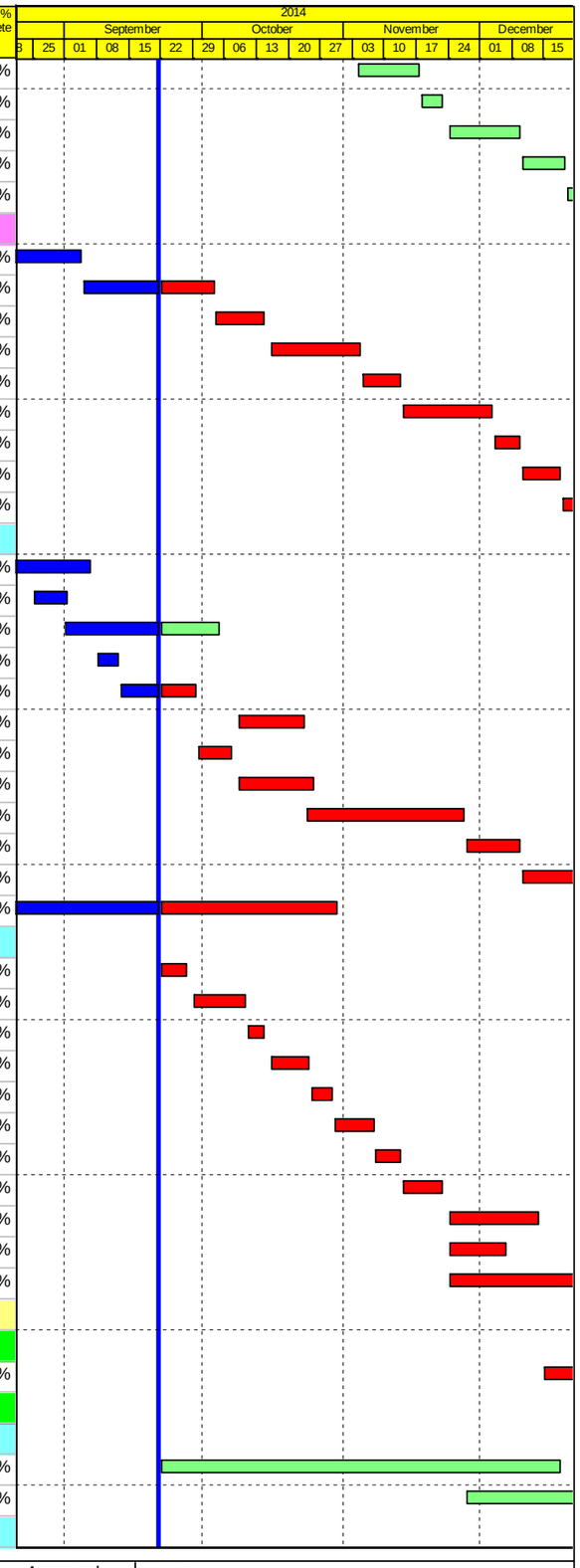
Project ID: J3518DWPrD1-M16
Layout: J3518-DWP-3MRP Submission - M16
Filter: TASK filters: 3-Month Lookahead, No Level of Effort.

Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 33 of 35 Pages)
(Progress as of 21-Sep-14)

Date	Revision	Checked	Approved
29-Jul-14		FZ	
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:
J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
SWVB1210	9SE-B/C9 Zone A - Soil nail 42 nr @ +13.0	12.00	04-Nov-14	0%	12.00	17-Nov-14	21-Nov-14	04-Dec-14	15.00	0.00	0%
SWVB1220	9SE-B/C9 Zone A - Excav. to +9.0	5.00	18-Nov-14	0%	5.00	22-Nov-14	05-Dec-14	10-Dec-14	15.00	0.00	0%
SWVB1230	9SE-B/C9 Zone A - Soil nail 55 nr @ +11.0	14.00	24-Nov-14	0%	14.00	09-Dec-14	11-Dec-14	29-Dec-14	15.00	0.00	0%
SWVB1240	9SE-B/C9 Zone A - Raking Drain 27 nr @ +10.5	9.00	10-Dec-14	0%	9.00	19-Dec-14	30-Dec-14	09-Jan-15	15.00	0.00	0%
SWVB1250	9SE-B/C9 Zone A - Excav. to +7.0	5.00	20-Dec-14	0%	5.00	27-Dec-14	10-Jan-15	15-Jan-15	15.00	0.00	0%
Zone B & C											
SWVB1410	9SE-B/C9 Zone B & C - Excav. to +21.00 (Zone B/C)	8.00	18-Aug-14 A	100%	0.00	04-Sep-14 A					100%
SWVB1420	9SE-B/C9 Zone B & C - Soil nail 61 nr. @ +22.5 (Zone B/C)	14.00	05-Sep-14 A	35.71%	9.00	03-Oct-14	03-Jul-14	14-Jul-14	-57.00	0.00	32%
SWVB1430	9SE-B/C9 Zone B & C - Excav. to +19.00	8.00	04-Oct-14	0%	8.00	14-Oct-14	15-Jul-14	25-Jul-14	-57.00	0.00	0%
SWVB1440	9SE-B/C9 Zone B & C - Soil nail 87 nr. @+20.5	17.00	16-Oct-14	0%	17.00	04-Nov-14	26-Jul-14	19-Aug-14	-57.00	0.00	0%
SWVB1450	9SE-B/C9 Zone B & C - Excav. to +17.00	8.00	05-Nov-14	0%	8.00	13-Nov-14	21-Aug-14	30-Aug-14	-57.00	0.00	0%
SWVB1460	9SE-B/C9 Zone B & C - Soil nail 92 nr. @ +18.5	17.00	14-Nov-14	0%	17.00	03-Dec-14	01-Sep-14	23-Sep-14	-57.00	0.00	0%
SWVB1470	9SE-B/C9 Zone B & C - Raking Drain 13 nr @ +18.6	5.00	04-Dec-14	0%	5.00	09-Dec-14	24-Sep-14	29-Sep-14	-57.00	0.00	0%
SWVB1480	9SE-B/C9 Zone B & C - Excav. to approx +15	8.00	10-Dec-14	0%	8.00	18-Dec-14	30-Sep-14	11-Oct-14	-57.00	0.00	0%
SWVB1490	9SE-B/C9 Zone B & C - Soil nail 35 nr. @+16.5	12.00	19-Dec-14	0%	12.00	05-Jan-15	13-Oct-14	27-Oct-14	-57.00	0.00	0%
Slope 9SE-B/C8											
SWVB2030	9SE-B/C8 -Soil nail 39 nr. @ +21.0	10.00	02-Jul-14 A	100%	0.00	06-Sep-14 A					100%
SWVB2040	9SE-B/C8 -Excav. to +18.50	4.00	25-Aug-14 A	100%	0.00	01-Sep-14 A					100%
SWVB2050	9SE-B/C8 -Soil nail 44 nr. @ +19.0	11.00	01-Sep-14 A	9.09%	10.00	04-Oct-14	17-Aug-18	29-Aug-18	042.00	1042.00	9%
SWVB2060	9SE-B/C8 -Excav. to +16.50	5.00	08-Sep-14 A	100%	0.00	12-Sep-14 A					100%
SWVB2070	9SE-B/C8 -Soil nail 53 nr. @ +17.0	12.00	13-Sep-14 A	41.67%	7.00	29-Sep-14	04-Jul-14	12-Jul-14	-56.00	0.00	40%
SWVB2080	9SE-B/C8 -Raking Drain 9 nr	12.00	09-Oct-14	0%	12.00	23-Oct-14	21-Jul-14	07-Aug-14	-56.00	0.00	0%
SWVB2090	9SE-B/C8 -Excav. to +15.50	5.00	30-Sep-14	0%	5.00	07-Oct-14	14-Jul-14	19-Jul-14	-56.00	0.00	0%
SWVB2100	9SE-B/C8 -Inst. 225UC & railings @ approx +15.0	14.00	09-Oct-14	0%	14.00	25-Oct-14	30-Aug-14	18-Sep-14	-28.00	28.00	0%
SWVB2110	9SE-B/C8 -Rock excav. to +7.00	30.00	24-Oct-14	0%	30.00	27-Nov-14	08-Aug-14	18-Sep-14	-56.00	0.00	0%
SWVB2120	9SE-B/C8 -Raking Drain 9 nr	10.00	28-Nov-14	0%	10.00	09-Dec-14	19-Sep-14	30-Sep-14	-56.00	0.00	0%
SWVB2130	9SE-B/C8 -Inst. 225UC	12.00	10-Dec-14	0%	12.00	23-Dec-14	03-Oct-14	18-Oct-14	-56.00	0.00	0%
SWVB2140	9SE-B/C8 - Install Geo. Instru. & Baseline Monitoring	30.00	09-Jun-14 A	0%	30.00	30-Oct-14	08-Sep-14	18-Oct-14	-10.00	46.00	0%
Slope 9SE-B/F9											
SWVB3010	9SE-B/F9 - Form access track over crest of slope & remove loose fill less than 1m thick	6.00	22-Sep-14	0%	6.00	27-Sep-14	27-Jun-14	05-Jul-14	-60.00	0.00	0%
SWVB3020	9SE-B/F9 - Excav. to +10.5	8.00	29-Sep-14	0%	8.00	10-Oct-14	07-Jul-14	17-Jul-14	-60.00	0.00	0%
SWVB3030	9SE-B/F9 - Soil nail pull out test	3.00	11-Oct-14	0%	3.00	14-Oct-14	18-Jul-14	21-Jul-14	-60.00	0.00	0%
SWVB3040	9SE-B/F9 - Soil nail 16 nr.	8.00	16-Oct-14	0%	8.00	24-Oct-14	22-Jul-14	01-Aug-14	-60.00	0.00	0%
SWVB3050	9SE-B/F9 - Excav. to +8.5	4.00	25-Oct-14	0%	4.00	29-Oct-14	02-Aug-14	08-Aug-14	-60.00	0.00	0%
SWVB3060	9SE-B/F9 - Soil nail 22 nr.	8.00	30-Oct-14	0%	8.00	07-Nov-14	09-Aug-14	19-Aug-14	-60.00	0.00	0%
SWVB3070	9SE-B/F9 - Raking Drain 4 nr	5.00	08-Nov-14	0%	5.00	13-Nov-14	21-Aug-14	26-Aug-14	-60.00	0.00	0%
SWVB3080	9SE-B/F9 - Excav. to +7.5	8.00	14-Nov-14	0%	8.00	22-Nov-14	28-Aug-14	06-Sep-14	-60.00	0.00	0%
SWVB3090	9SE-B/F9 - Inst. 600 width conc. maintenance staircase w/ railings & 450UC	18.00	24-Nov-14	0%	18.00	13-Dec-14	24-Sep-14	18-Oct-14	-48.00	12.00	0%
SWVB3100	9SE-B/F9 - Inst. 225UC	12.00	24-Nov-14	0%	12.00	06-Dec-14	03-Oct-14	18-Oct-14	-42.00	18.00	0%
SWVB3110	9SE-B/F9 - Install Geo. Instru. & Baseline Monitoring	30.00	24-Nov-14	0%	30.00	30-Dec-14	08-Sep-14	18-Oct-14	-60.00	0.00	0%
Re-alignment of Cheung Tung Road adjacent to Viaduct C											
West Portion											
RW61000	Realign CTR (West of Abut. C) - Site Clearance	42.00	15-Dec-14	0%	42.00	04-Feb-15	07-Jul-14	04-Sep-14	122.00	0.00	0%
East Portion											
Emergency Gates G6 & G7											
RP10060	Prepare /submit TTM (NLH W/B & CTR (E/B) for installing gate G6 & G7	72.00	22-Sep-14	0%	72.00	18-Dec-14	17-Feb-15	03-Jun-15	120.00	0.00	0%
RP10061	TTM (NLH W/B & CTR (E/B) approval for installing new gate G6 & G7	48.00	28-Nov-14	0%	48.00	26-Jan-15	08-May-15	24-Jul-15	120.00	116.00	0%
ESS Sub-Station											



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Critical Bar
Milestone

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Layout: J3518-DWP-3MRP Submission - M16
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Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 34 of 35 Pages)
(Progress as of 21-Sep-14)

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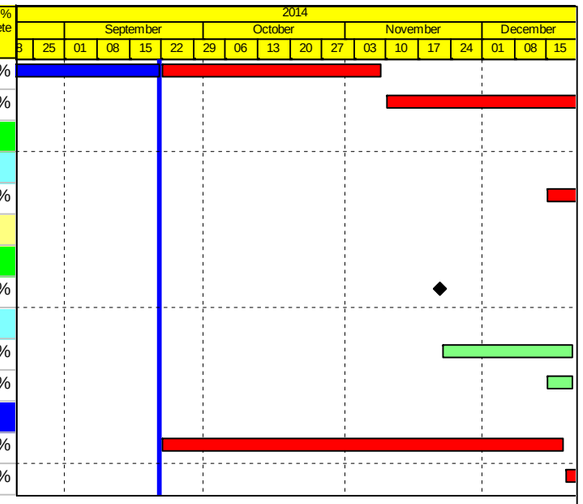
29-Jul-14		FZ	
29-Aug-14		FZ	
07-Oct-14			

DWG. No.:

J3518/GCL/PGM/3MRP-M16

Activity ID	Activity Name	Orig. Durn.	Act. Start / FC Early Start	Duration % Complete	Rem. Durn.	Act. Finish / FC Early Finish	Late Start	Late Finish	Total Float	Free Float	Physical % Complete
RP10020	Construct new ESS-C Sub.Stn. adjacent to Viaduct C	48.00	13-Aug-14 A	20.83%	38.00	08-Nov-14	22-Sep-14	08-Nov-14	0.00	0.00	20%
RP10030	Inst.Eqpt. & Testing / commissioning of new ESS	60.00	10-Nov-14	0%	60.00	21-Jan-15	10-Nov-14	21-Jan-15	0.00	0.00	0%
Viaduct C Slope Works											
Slope 10NW-C/C22											
SWVC1000	10NW-C/C22 - Slope works	18.00	15-Dec-14	0%	18.00	07-Jan-15	27-Oct-14	15-Nov-14	-42.00	0.00	0%
Natural Terrain Hazard Mitigation Works											
NTHM Works - West Portion											
NTW0010	DDA Approval for Natural Terrain Hazard Mitigation Measures	0.00		0%	0.00	21-Nov-14		20-Mar-15	85.00	0.00	0%
Check Dam no. 1 (CD1)											
GFXX497	Predrilling Works for Check Dams	25.00	22-Nov-14	0%	25.00	20-Dec-14	23-Mar-15	29-Apr-15	97.00	0.00	0%
GFXX499	CD1 - Mobilization of rig for MiniPile	6.00	15-Dec-14	0%	6.00	20-Dec-14	22-Apr-15	29-Apr-15	97.00	0.00	0%
Watermains & All Assoc Works from Tung Chung to Southern Landfall											
WM00100	Prepare / submit TTMS for watermain laying along realigned CTR	72.00	22-Sep-14	0%	72.00	18-Dec-14	08-Sep-14	06-Dec-14	-10.00	0.00	0%
WM00110	TTMS approval for watermain laying along realigned CTR	48.00	19-Dec-14	0%	48.00	16-Feb-15	08-Dec-14	04-Feb-15	-10.00	0.00	0%



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Planned Bar
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Project ID: J3518DWPrD1-M16
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Tuen Mun - Chek Lap Kok Link - Southern Connection
3-Month Rolling Programme (Page 35 of 35 Pages)
(Progress as of 21-Sep-14)

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29-Jul-14		FZ	
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07-Oct-14			

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J3518/GCL/PGM/3MRP-M16

Appendix C

Environmental Mitigation and Enhancement Measure Implementation Schedules

(In reference to CINOTECH (2011) Agreement No. CE35/2011 EP Baseline Environmental Monitoring for Hong Kong-Zhuhai-Macao BridgeTuen Mun-Chep Lap Kok Link – Investigation. UpdatedEM&A Manual for Tuen Mun-Chek Lap Kok Link)

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
AIR QUALITY									
4.8.1	3.8	An effective watering programme of eight daily watering with complete coverage, is estimated to reduce by 50%. This is recommended for all areas in order to reduce dust levels to a minimum;	All areas / throughout construction period	Contractor	TMEIA Avoid smoke impacts and disturbance		Y		<>
4.8.1	3.8	The Contractor shall, to the satisfaction of the Engineer, install effective dust suppression measures and take such other measures as may be necessary to ensure that at the Site boundary and any nearby sensitive receiver, dust levels are kept to acceptable levels.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		<>
4.8.1	3.8	The Contractor shall not burn debris or other materials on the works areas.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8. 1	3.8	In hot, dry or windy weather, the watering programme shall maintain all exposed road surfaces and dust sources wet.	All unpaved haul roads / throughout construction period in hot, dry or windy weather	Contractor	TMEIA Avoid smoke impacts and disturbance		Y		<>
4.8.1	3.8	Where breaking of oversize rock/concrete is required, watering shall be implemented to control dust. Water spray shall be used during the handling of fill material at the site and at active cuts, excavation and fill sites where dust is likely to be created.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8. 1	3.8	Open dropping heights for excavated materials shall be controlled to a maximum height of 2m to minimise the fugitive dust arising from unloading.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	During transportation by truck, materials shall not be loaded to a level higher than the side and tail boards, and shall be dampened or covered before transport.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
4.8.1	3.8	Materials having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin. The tarpaulin shall be properly secured and shall extend at least 300mm over the edges of the side and tail boards.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	No earth, mud, debris, dust and the like shall be deposited on public roads. Wheel washing facility shall be usable prior to any earthworks excavation activity on the site.	All site exits / throughout construction period	Contractor	TMEIA Avoid dust		Y		<>
4.8.1	3.8	Areas of exposed soil shall be minimised to areas in which works have been completed shall be restored as soon as is practicable.	All exposed surfaces / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		<>
4.8.1	3.8	All stockpiles of aggregate or spoil shall be enclosed or covered and water applied in dry or windy condition.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.11	Section 3	EM&A in the form of 1 hour and 24 hour dust monitoring and site audit	All representative existing ASRs / throughout construction period	Contractor	EM&A Manual		Y		✓
NOISE									
5.11	Section 4	Noise monitoring	All existing representative sensitive receivers / during North Lantau Viaduct construction	Contractor	EM&A Manual		Y		✓
WATER QUALITY									
General Marine Works									
6.10	-	Bored piling to be undertaken within a metal casing.	Marine viaducts of TM-CLKL and HKLR/ bored piling	Contractor	TM-EIAO		Y		✓
6.10	-	Barges and hopper dredgers shall have tight fitting seals to their bottom openings to prevent leakage of material.	All areas/ throughout construction period	Contractor	Marine Fill Committee Guidelines. DASO permit conditions.		Y		<>

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
6.10	-	Any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes.	All areas/ throughout construction period	Contractor	Marine Fill Committee Guidelines. DASO permit conditions.		Y		<>
6.10	-	Loading of barges and hoppers shall be controlled to prevent splashing of dredged material to the surrounding water. Barges or hoppers shall not be filled to a level which will cause overflow of materials or pollution of water during loading or transportation.	All areas/ throughout construction period	Contractor	Marine Fill Committee Guidelines. DASO permit conditions.		Y		✓
6.10	-	Excess material shall be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved	All areas/ throughout construction period	Contractor	Marine Fill Committee Guidelines. DASO permit conditions.		Y		<>
6.10	-	Adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action;	All areas/ throughout construction period	Contractor	Marine Fill Committee Guidelines. DASO permit conditions.		Y		✓
6.10	-	All vessels shall be sized such that adequate clearance is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash.	All areas/ throughout construction period	Contractor	Marine Fill Committee Guidelines. DASO permit conditions.		Y		✓
6.10	-	The 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.	All areas/ throughout construction period	Contractor	Marine Fill Committee Guidelines. DASO permit conditions.		Y		✓
Temporary Staging work									
	5.2	Regular inspection for the accumulation of floating refuse and collection of floating refuse if required	During temporary staging works	Contractor			Y		<>
	5.2	Provision of temporary drainage system on the temporary staging for collection of construction site runoff to allow appropriate treatment before discharge into the sea	During temporary staging works	Contractor			Y		✓
	5.2	Wastewater generated from construction works such as bored / drilling water will be collected, treated, neutralized and de-silted through silt trap or sedimentation tank before disposal	During temporary staging works	Contractor			Y		<>
	5.2	One additional water quality monitoring station is	During temporary	Contractor			Y		✓

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
		proposed at station SR4a In case elevated SS or turbidity is identified during the water quality monitoring, the source of pollution will be tracked down and be removed as soon as possible. In case depletion of dissolved oxygen is identified, artificial aeration will be arranged at the monitoring station SR4a,	staging works						
Land Works									
6.10	-	Wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Sewage effluent and discharges from on- site kitchen facilities shall be directed to Government sewer in accordance with the requirements of the WPCO or collected for disposal offsite. The use of soakaways shall be avoided.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Temporary access roads should be surfaced with crushed stone or gravel.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		<>
6.10	-	Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		<>

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
6.10	-	Open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		<>
6.10	5.8	Manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	All vehicles and plant should be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads. A wheel washing bay should be provided at every site exit.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		<>
6.10	-	Section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		<>
6.10	-	Wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Vehicle and plant servicing areas, vehicle wash bays and lubrication facilities shall be located under roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor in accordance with the requirements of the WPCO or collected for offsite disposal.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	The Contractor shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance.	All areas/ throughout construction period	Contractor	TM-EIAO Waste Disposal Ordinance		Y		✓

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
6.10	-	All fuel tanks and chemical storage areas should be provided with locks and be sited on sealed areas. The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the stormwater system.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Roadside gullies to trap silt and grit shall be provided prior to discharging the stormwater into the marine environment. The sumps will be maintained and cleaned at regular intervals.	Roadside/design and operation	Design Consultant/ Contractor	TM-EIAO	Y		Y	✓
6.10	Section 5	All construction works shall be subject to routine audit to ensure implementation of all EIA recommendations and good working practice.	All areas/ throughout construction period	Contractor	EM&A Manual		Y		✓
Water Quality Monitoring									
6.10	Section 5	Water quality monitoring shall be undertaken for suspended solids, turbidity, and dissolved oxygen. Nutrients and metal parameters shall also be measured for Mf sediment operations (only HKBCF and HKLR required handling of Mf sediment) during baseline, backfilling and post construction period. One year operation phase water quality monitoring at designated stations	Designated monitoring stations as defined in EM&A Manual, Section 5/ Before, through-out marine construction period, post construction and monthly operational phase water quality monitoring for a year.	Contractor	EM&A Manual		Y	Y	✓
ECOLOGY									
8.14	6.3	Specification for and implement pre, during and post construction dolphin abundance monitoring.	All Areas/Detailed Design/ during construction works/post construction	Design Consultant/ Contractor	TMEIA	Y	Y	Y	✓
8.14	6.3	Specification for bored piling monitoring	Detailed Design	Design Consultant	TMEIA	Y			✓
8.14	6.3	Implement any recommendations of the bored piling monitoring	Southern marine viaduct/Throughout	Contractor	TMEIA		Y		✓

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
			construction during bored piling						
8.14	6.3,6.5	Avoidance of peak CWD calving season in May and June for driving of metal caissons during bored piling works	Southern marine viaduct/ May and June during bored piling	Contractor	TMEIA		Y		n/a
8.14	6.3,6.5	Specification and implementation of 250m dolphin exclusion zone.	All marine bored piling and temporary staging works areas/Detailed Design/during all marine bored piling and temporary staging works	Design Consultant/ Contractor	TMEIA	Y	Y		✓
8.15	6.3, 6.5	Specification and deployment of an artificial reef of an area of 3,600 m² in an area where fishing activities are prohibited.	Area of prohibited fishing activities/Detailed Design/towards end of construction period	TM-CLKL/ HKBCF Design Consultant/ TM-CLKL/ HKBCF Contractor	TMEIA	Y		Y	n/a To be enforced by AFCD.
8.14	6.3, 6.5	Specification and implementation of marine vessel control specifications	All areas/Detailed Design/during construction works	Design Consultant/ Contractor	TMEIA	Y	Y		✓
8.14	6.3, 6.5	Design and implementation of acoustic decoupling methods for marine bored piling and the whole lifespan of temporary staging works.	All areas/ Detailed Design/during marine bored piling and temporary staging works	Design Consultant/ Contractor	TMEIA	Y	Y		✓
8.15	6.3, 6.4	Pre-construction phase survey and coral translocation	Tai Ho Wan (donar site) and Yam Tsui Wan (receptor site) /Detailed Design/Prior to construction	Design Consultant/ Contractor	TMEIA	Y	Y		n/a
8.15	6.5	Audit coral translocation success	Yam Tsui Wan (receptor site)/Post translocation	Contractor	TMEIA		Y		✓
7.13	6.5	Undertaken gabion wall works in Stream NL1 in the dry season	North Lantau slope works/dry	Contractor	TMEIA		Y		✓

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
			season/construction phase						
7.13	6.5	The loss of habitat shall be supplemented by enhancement planting in accordance with the landscape mitigation schedule.	All areas / As soon as accessible	Contractor	TMEIA		Y		n/a. To be approved by AFCD/LCSD
7.13	6.5	Spoil heaps shall be covered at all times.	All areas / Throughout construction period	Contractor	TMEIA		Y		✓
7.13	6.5	Avoid damage and disturbance to the remaining and surrounding natural habitat	All areas / Throughout construction period	Contractor	TMEIA		Y		✓
7.13	6.5	Placement of equipment in designated areas within the existing disturbed land	All areas / Throughout construction period	Contractor	TMEIA		Y		✓
7.13	6.5	Disturbed areas to be reinstated immediately after completion of the works.	All areas / Throughout construction period	Contractor	TMEIA		Y		✓
7.13	6.5	Construction activities should be restricted to the proposed works boundary	All areas / Throughout construction period	Contractor	TMEIA		Y		✓
LANDSCAPE AND VISUAL									
10.9	7.6	Round angle, patterned finishes, and oval shaped pier were considered in the viaduct design, and further details will be developed under ACABAS submission (DM3)	All areas/detailed design	Design Consultant	TMEIA	Y			n/a
10.9	7.6	Details of the street furniture will be developed in the detailed design stage (DM4)	All areas/detailed design	Design Consultant	TMEIA	Y			n/a
10.9	7.6	Aesthetic design of the viaduct, retaining wall and other structures will be developed under ACABAS submission (DM5)	All areas/detailed design	Design Consultant	TMEIA	Y			n/a
10.9	7.6	Existing trees on boundary of the Project Area shall be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		<>

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
		prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage) (CM1)							
10.9	7.6	Trees unavoidably affected by the works shall be transplanted where practical. Trees will be transplanted straight to their final receptor site and not held in a temporary nursery. A detailed Tree Transplanting Specification shall be provided in the Contract Specification. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme (CM2)	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		<>
10.9	7.6	Hillside and roadside screen planting to proposed roads, associated structures and slope works (CM3).	All areas/detailed design/ during construction/post construction	Design Consultant/	TMEIA	Y	Y		✓
10.9	7.6	Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone) (CM4)	All areas/detailed design/ during construction/post construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Screening of construction works by hoardings around works area in visually unobtrusive colours, to screen works (CM5)	All areas/detailed design/ during construction/post construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Control night-time lighting and glare by hooding all lights (CM6)	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		n/a
10.9	7.6	Ensure no run-off into water body adjacent to the Project Area (CM7)	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		<>
10.9	7.6	Avoidance of excessive height and bulk of buildings and structures (CM8)	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Recycle/Reuse all felled trees and vegetation, e.g.	All areas/detailed	Design	TMEIA	Y	Y		<>

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
		mulching (CM9)	design/ during construction	Consultant/ Contractor					
10.9	7.6	Compensatory tree planting shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling Application process under ETWBTC 3/2006 (CM10).	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Re-vegetation of affected woodland/shrubland with native species (OM1)	All areas/detailed design/ during construction/ during operation	Design Consultant/ Contractor	TMEIA	Y	Y	Y	n/a. To be implemented by AFCD/HyD/ L CSD
10.9	7.6	Tall buffer screen tree / shrub / climber planting should be incorporated to soften hard engineering structures and facilities (OM2)	All areas/detailed design/ during construction/ during operation	Design Consultant/ Contractor	TMEIA	Y	Y	Y	n/a To be implemented by HyD/LCSD
10.9	7.6	Streetscape elements (e.g. paving, signage, street furniture, lighting etc.) shall be sensitively designed in a manner that responds to the local context, and minimises potential negative landscape and visual impacts. Lighting units should be directional and minimise unnecessary light spill (OM3)	All areas/detailed design/ during construction / during operation	Design Consultant/ Contractor	TMEIA	Y	Y	Y	n/a. To be implemented by HyD/LCSD
10.9	7.6	Structure, ornamental tree / shrub / climber planting should be provided along roadside amenity strips, central dividers and newly formed slopes to enhance the townscape quality and further greenery enhancement (OM4)	All areas/detailed design/ during construction / during operation	Design Consultant/ Contractor	TMEIA	Y	Y	Y	n/a. To be implemented by HyD/LCSD
10.9	7.6	Aesthetically pleasing design (visually unobtrusive and non-reflective) as regard to the form, material and	All areas/detailed design/ during	Design Consultant/	TMEIA	Y	Y	Y	n/a. To be

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
		finishes	construction / during operation	Contractor					implemented by HyD
WASTE									
12.6		The Contractor shall identify a coordinator for the management of waste.	Contract mobilisation	Contractor	TMEIA		Y		✓
12.6		The Contractor shall prepare and implement a Waste Management Plan which specifies procedures such as a ticketing system, to facilitate tracking of loads and to ensure that illegal disposal of wastes does not occur, and protocols for the maintenance of records of the quantities of wastes generated, recycled and disposed. A recording system for the amount of waste generated, recycled and disposed (locations) should be established.	Contract mobilisation	Contractor	TMEIA, Works Branch Technical Circular No. 5/99 for the Trip-ticket System for Disposal of Construction and Demolition Material		Y		✓
12.6		The Contractor shall apply for and obtain the appropriate licenses for the disposal of public fill, chemical waste and effluent discharges.	Contract mobilisation	Contractor	TMEIA, Land (Miscellaneous Provisions) Ordinance (Cap 28); Waste Disposal Ordinance (Cap 354); Dumping at Sea Ordinance (Cap 466); Water Pollution Control Ordinance.		Y		✓
12.6	8.1	Training shall be provided to workers about the concepts of site cleanliness and appropriate waste management procedures including waste reduction, reuse and recycling.	Contract Mobilisation	Contractor	TMEIA		Y		✓
12.6	8.1	The extent of cutting operation should be optimised where possible. Earth retaining structures and bored pile walls should be proposed to minimise the extent of cutting.	All areas / throughout construction period	Contractor	TMEIA		Y		✓

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
12.6	8.1	Rock armour from the existing seawall should be reused on the new sloping seawall as far as possible	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	The site and surroundings shall be kept tidy and litter free.	All areas / throughout construction period	Contractor	TMEIA		Y		<>
12.6	8.1	No waste shall be burnt on site.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Provisions to be made in contract documents to allow and promote the use of recycled aggregates where appropriate.	Detailed Design	Design Consultant	TMEIA	Y			<>
12.6	8.1	The Contractor shall be prohibited from disposing of C&D materials at any sensitive locations. The Contractor should propose the final disposal sites in the EMP and WMP for approval before implementation.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Stockpiled material shall be covered by tarpaulin and /or watered as appropriate to prevent windblown dust/ surface run off.	All areas / throughout construction period	Contractor	TMEIA		Y		<>
12.6	8.1	Excavated material in trucks shall be covered by tarpaulins to reduce the potential for spillage and dust generation.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Wheel washing facilities shall be used by all trucks leaving the site to prevent transfer of mud onto public roads.	All areas / throughout construction period	Contractor	TMEIA		Y		<>
12.6	8.1	Standard formwork or pre-fabrication should be used as far as practicable so as to minimise the C&D materials arising. The use of more durable formwork/plastic facing for construction works should be considered. The use of wooden hoardings should be avoided and metal hoarding should be used to facilitate recycling. Purchasing of construction materials should avoid over-ordering and wastage.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	The Contractor should recycle as many C&D	All areas / throughout	Contractor	TMEIA		Y		✓

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
		materials (this is a waste section) as possible on-site. The public fill and C&D waste should be segregated and stored in separate containers or skips to facilitate the reuse or recycling of materials and proper disposal. Where practicable, the concrete and masonry should be crushed and used as fill materials. Steel reinforcement bar should be collected for use by scrap steel mills. Different areas of the sites should be considered for segregation and storage activities.	construction period						
12.6	8.1	All falsework will be steel instead of wood.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Chemical waste producers should register with the EPD. Chemical waste should be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes as follows: - suitable for the substance to be held, resistant to corrosion, maintained in good conditions and securely closed; - Having a capacity of <450L unless the specifications have been approved by the EPD; and - Displaying a label in English and Chinese according to the instructions prescribed in Schedule 2 of the Regulations. Clearly labelled and used solely for the storage of chemical wastes; - Enclosed with at least 3 sides; - Impermeable floor and bund with capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in the area, whichever is greatest; - Adequate ventilation; - Sufficiently covered to prevent rainfall entering	All areas / throughout construction period	Contractor	TMEIA		Y		✓

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
		(water collected within the bund must be tested and disposed of as chemical waste, if necessary); and - Incompatible materials are adequately separated.							
12.6	8.1	Waste oils, chemicals or solvents shall not be disposed of to drain,	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Adequate numbers of portable toilets should be provided for on-site workers. Portable toilets should be maintained in reasonable states, which will not deter the workers from utilising them.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Night soil should be regularly collected by licensed collectors.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	General refuse arising on-site should be stored in enclosed bins or compaction units separately from C&D and chemical wastes. Sufficient dustbins shall be provided for storage of waste as required under the Public Cleansing and Prevention of Nuisances By-laws. In addition, general refuse shall be cleared daily and shall be disposed of to the nearest licensed landfill or refuse transfer station. Burning of refuse on construction sites is prohibited.	All areas / throughout construction period	Contractor	TMEIA		Y		<>
12.6	8.1	All waste containers shall be in a secure area on hardstanding;	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Training shall be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including waste reduction, reuse and recycling.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Office wastes can be reduced by recycling of paper if such volume is sufficiently large to warrant collection. Participation in a local	Site Offices/ throughout construction period	Contractor	TMEIA		Y		<>

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
		collection scheme by the Contractor should be advocated. Waste separation facilities for paper, aluminium cans, plastic bottles, etc should be provided on-site.							
12.6	Section 8	EM&A of waste handling, storage, transportation, disposal procedures and documentation through the site audit programme shall be undertaken.	All areas / throughout construction period	Contractor	EM&A Manual		Y		<>
CULTURAL HERITAGE									
11.8	Section 9	EM&A in the form of audit of the mitigation measures	All areas / throughout construction period	Highways Department	EIAO-TM		Y		n/a

Notes:

Legend: D=Design, C=Construction, O=Operation

Note: Funding Agent for all mitigation measures will be the Highways Department of the Hong Kong SAR Government

Status:

✓	Compliance of Mitigation Measures
<>	Compliance of Mitigation but need improvement
x	Non-compliance of Mitigation Measures
▲	Non-compliance of Mitigation Measures but rectified by Contractor
Δ	Deficiency of Mitigation Measures but rectified by Contractor
n/a	Not Applicable in Reporting Period

Appendix D

Summary of Action and Limit Levels

Table D1 ***Action and Limit Levels for 1-hour and 24-hour TSP***

Parameters	Action	Limit
24 Hour TSP Level in µg/m³	ASR9A/ASR8A = 178 ASR9C/ASR8 = 178	260
1 Hour TSP Level in µg /m³	ASR9A/ASR8A = 394 ASR9C/ASR8 = 393	500

Table D2 ***Action and Limit Levels for Construction Noise (0700-1900 hrs of normal weekdays)***

Time Period	Action	Limit
0700-1900 hrs on normal weekdays	When one documented complaint is received	75* dB(A)

Table D3 ***Action and Limit Levels for Water Quality***

Parameter	Action Level#	Limit Level#
DO in mg/L [(a)]	Surface and Middle **5.0 mg/L** Bottom **4.7 mg/L**	Surface and Middle **4.2 mg/L** Bottom **3.6 mg/L**
Turbidity in NTU (Depth-averaged [(b), (c)])	120% of upstream control station at the same tide of the same day and 95%-ile of baseline data, i.e., **27.5 NTU**	130% of upstream control station at the same tide of the same day and 99%-ile of baseline data, i.e., **47.0 NTU**
SS in mg/L (Depth-averaged [(b), (c)])	120% of upstream control station at the same tide of the same day and 95%-ile of baseline data, i.e., **23.5 mg/L**	130% of upstream control station at the same tide of the same day and 10mg/L for WSD Seawater Intakes at Tuen Mun and 99%-ile of baseline data, i.e., **34.4 mg/L**

Notes:

Baseline data: data from HKZMB Baseline Water Quality Monitoring between 6 and 31 October 2011.

(a) For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

(b) "Depth-averaged" is calculated by taking the arithmetic means of reading of all three depths

(c) For turbidity and SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

(d) All figures given in the table are used for reference only, and EPD may amend the figures whenever it is considered as necessary

Parameter	Action Level#	Limit Level#
(e) The 1%-ile of baseline data for surface and middle DO is 4.2 mg/L, whilst for bottom DO is 3.6 mg/L.		

Table D4 Action and Limit Levels for Impact Dolphin Monitoring

	North Lantau Social Cluster	
	NEL	**NWL**
Action Level	STG < 70% of baseline & ANI < 70% of baseline	STG < 70% of baseline & ANI < 70% of baseline
Limit Level	[STG < 40% of baseline & ANI < 40% of baseline] and STG < 40% of baseline & ANI < 40% of baseline	

Notes:

1. STG means quarterly encounter rate of number of dolphin sightings, which is **6.00 in NEL** and **9.85 in NWL** during the baseline monitoring period
2. ANI means quarterly encounter rate of total number of dolphins, which is **22.19 in NEL** and **44.66 in NWL** during the baseline monitoring period
3. For North Lantau Social Cluster, AL will be trigger if NEL or NWL fall below the criteria; LL will be triggered if both NEL and NWL fall below the criteria.

Table D5 Derived Value of Action Level (AL) and Limit Level (LL)

	North Lantau Social Cluster	
	NEL	**NWL**
Action Level	STG < 4.2 & ANI< 15.5	STG < 6.9 & ANI < 31.3
Limit Level	[STG < 2.4 & ANI <8.9] and [STG < 3.9 & ANI <17.9]	

Appendix E

EM&A Monitoring Schedules

HY/2012/07 Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section
Impact Marine Water Quality Monitoring (WQM) Schedule (September 14)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Sep	2-Sep	3-Sep	4-Sep	5-Sep	6-Sep
		WQM Mid-Flood 12:49 (11:04 - 14:34) Mid-Ebb 18:15 (16:30 - 20:00)		WQM Mid-Ebb 8:20 (6:35 - 10:05) Mid-Flood 16:07 (14:22 - 17:52)		WQM Mid-Ebb 10:33 (8:48 - 12:18) Mid-Flood 17:47 (16:02 - 19:32)
7-Sep	8-Sep	P. Holiday 9-Sep	10-Sep	11-Sep	12-Sep	13-Sep
		Cancelled (Site closed)		WQM Mid-Flood 8:13 (6:28 - 9:58) Mid-Ebb 14:25 (12:40 - 16:10)		WQM Mid-Flood 9:59 (8:14 - 11:44) Mid-Ebb 15:47 (14:02 - 17:32)
14-Sep	15-Sep	16-Sep	17-Sep	18-Sep	19-Sep	20-Sep
		Cancelled (Adverse weather T3 & T8)		WQM Mid-Ebb 8:58 (7:13 - 10:43) Mid-Flood 16:47 (15:02 - 18:32)		WQM Mid-Ebb 10:48 (9:03 - 12:33) Mid-Flood 17:42 (15:57 - 19:27)
21-Sep	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep
		WQM Mid-Ebb 12:45 (10:50 - 14:20) Mid-Flood 18:50 (17:05 - 20:35)		WQM Mid-Ebb 13:37 (11:52 - 15:22) Mid-Flood 19:37 (17:52 - 21:22)		WQM Mid-Flood 8:44 (6:59 - 10:29) Mid-Ebb 14:43 (12:58 - 16:28)
28-Sep	29-Sep	30-Sep				
		WQM Mid-Flood 11:28 (9:43 - 13:13) Mid-Ebb 17:00 (15:15 - 18:45)				

HY/2012/07 - Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section
Impact Marine Water Quality Monitoring (WQM) Schedule (October 14)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			01-Oct	02-Oct	03-Oct	04-Oct
				WQM Mid-Flood 14:37 (12:52 - 16:22) Mid-Ebb 20:04 (19:50 - 21:15)		**WQM** Mid-Ebb 9:04 (07:19 - 10:49) Mid-Flood 16:31 (14:46 - 18:16)
05-Oct	06-Oct	07-Oct	08-Oct	09-Oct	10-Oct	11-Oct
		WQM Mid-Ebb 11:52 (10:07 - 13:37) Mid-Flood 18:19 (16:34 - 20:04)		**WQM** Mid-Ebb 13:21 (11:36 - 15:06) Mid-Flood 19:20 (17:35 - 21:05)		**WQM** Mid-Flood 9:02 (07:17 - 10:47) Mid-Ebb 14:46 (13:01 - 16:31)
12-Oct	13-Oct	14-Oct	15-Oct	16-Oct	17-Oct	18-Oct
		WQM Mid-Flood 11:51 (10:06 - 13:36) Mid-Ebb 16:57 (15:12 - 18:42)		**WQM** Mid-Ebb 6:17 (04:32 - 08:02) Mid-Flood 19:02 (17:17 - 20:47)		**WQM** Mid-Ebb 9:06 (07:21 - 10:51) Mid-Flood 16:25 (14:40 - 18:10)
19-Oct	20-Oct	21-Oct	22-Oct	23-Oct	24-Oct	25-Oct
		WQM Mid-Ebb 11:27 (09:42 - 13:12) Mid-Flood 17:38 (15:53 - 19:23)		**WQM** Mid-Ebb 12:36 (10:51 - 14:21) Mid-Flood 18:27 (16:42 - 20:12)		**WQM** Mid-Flood 7:59 (06:14 - 09:44) Mid-Ebb 13:49 (12:04 - 15:34)
26-Oct	27-Oct	28-Oct	29-Oct	30-Oct	31-Oct	
		WQM Mid-Flood 10:26 (08:41 - 12:11) Mid-Ebb 16:00 (14:15 - 17:45)		**WQM** Mid-Flood 12:42 (10:57 - 14:27) Mid-Ebb 18:08 (16:30 - 19:45)		

HY/2012/07 - Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section
Impact Marine Water Quality Monitoring (WQM) Schedule (November 14)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						01-Nov
						WQM Mid-Ebb 7:08 (05:38 - 08:53) Mid-Flood 15:04 (13:19 - 16:49)
02-Nov	03-Nov	04-Nov	05-Nov	06-Nov	07-Nov	08-Nov
		WQM Mid-Ebb 10:40 (08:55 - 12:25) Mid-Flood 17:07 (15:22 - 18:52)		**WQM** Mid-Ebb 12:18 (10:33 - 14:03) Mid-Flood 18:11 (16:26 - 19:56)		**WQM** Mid-Flood 8:13 (06:28 - 09:58) Mid-Ebb 13:49 (12:04 - 15:34)
09-Nov	10-Nov	11-Nov	12-Nov	13-Nov	14-Nov	15-Nov
		WQM Mid-Flood 10:36 (08:51 - 12:21) Mid-Ebb 15:48 (14:03 - 17:33)		**WQM** Mid-Flood 12:25 (10:40 - 14:10) Mid-Ebb 17:10 (16:00 - 18:15)		**WQM** Mid-Flood 14:36 (12:51 - 16:21) Mid-Ebb 20:37 (18:52 - 22:22)
16-Nov	17-Nov	18-Nov	19-Nov	20-Nov	21-Nov	22-Nov
		WQM Mid-Ebb 10:00 (08:15 - 11:45) Mid-Flood 16:20 (14:35 - 18:05)		**WQM** Mid-Ebb 11:28 (09:43 - 13:13) Mid-Flood 17:14 (15:29 - 18:59)		**WQM** Mid-Flood 7:14 (05:29 - 08:59) Mid-Ebb 12:51 (11:06 - 14:36)
23-Nov	24-Nov	25-Nov	26-Nov	27-Nov	28-Nov	29-Nov
		WQM Mid-Flood 9:32 (07:47 - 11:17) Mid-Ebb 15:04 (13:19 - 16:49)		**WQM** Mid-Flood 11:16 (09:31 - 13:01) Mid-Ebb 16:46 (15:01 - 18:31)		**WQM** Mid-Flood 13:22 (11:37 - 15:07) Mid-Ebb 19:24 (17:39 - 21:09)
30-Nov	01-Dec	02-Dec	03-Dec	04-Dec	05-Dec	06-Dec

HY/2012/07 Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section
Tentative Impact Noise Monitoring Schedule (1 September to 30 September 2014)

Noise Monitoring at rooftop of Pak Mong Village Watch Tower

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	01-Sep	02-Sep	03-Sep	04-Sep	05-Sep	06-Sep
	Noise Monitoring				Noise Monitoring	
07-Sep	08-Sep	Public Holiday 09-Sep	10-Sep	11-Sep	12-Sep	13-Sep
				Noise Monitoring		
14-Sep	15-Sep	16-Sep	17-Sep	18-Sep	19-Sep	20-Sep
			Noise Monitoring			
21-Sep	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep
		Noise Monitoring				Noise Monitoring
28-Sep	29-Sep	30-Sep				

HY/2012/07 Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section
Tentative Impact Air Quality Monitoring Schedule (1 September to 30 September 2014)

Air Quality Monitoring at WA4 and rooftop of Pak Mong Village Watch Tower

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	01-Sep	02-Sep	03-Sep	04-Sep	05-Sep	06-Sep
	1-hr TSP Monitoring 24-hr TSP Monitoring				1-hr TSP Monitoring 24-hr TSP Monitoring	
07-Sep	08-Sep	Public Holiday 09-Sep	10-Sep	11-Sep	12-Sep	13-Sep
				1-hr TSP Monitoring 24-hr TSP Monitoring		
14-Sep	15-Sep	16-Sep	17-Sep	18-Sep	19-Sep	20-Sep
			1-hr TSP Monitoring 24-hr TSP Monitoring			
21-Sep	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep
		1-hr TSP Monitoring 24-hr TSP Monitoring				1-hr TSP Monitoring 24-hr TSP Monitoring
28-Sep	29-Sep	30-Sep				

HY/2012/07 Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section
Tentative Impact Noise Monitoring Schedule (1 to 31 October 2014)

Noise Monitoring at rooftop of Pak Mong Village Watch Tower

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			Public Holiday 01-Oct	Public Holiday 02-Oct	03-Oct	04-Oct
					Noise Impact Monitoring	
05-Oct	06-Oct	07-Oct	08-Oct	09-Oct	10-Oct	11-Oct
				Noise Impact Monitoring		
12-Oct	13-Oct	14-Oct	15-Oct	16-Oct	17-Oct	18-Oct
			Noise Impact Monitoring			
19-Oct	20-Oct	21-Oct	22-Oct	23-Oct	24-Oct	25-Oct
		Noise Impact Monitoring				
26-Oct	27-Oct	28-Oct	29-Oct	30-Oct	31-Oct	
	Noise Impact Monitoring			Noise Impact Monitoring		

HY/2012/07 Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section
Tentative Impact Air Quality Monitoring Schedule (1 to 31 October 2014)

Air Quality Monitoring at WA4 and rooftop of Pak Mong Village Watch Tower

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			Public Holiday 01-Oct	Public Holiday 02-Oct	03-Oct	04-Oct
					1-hr TSP Monitoring 24-hr TSP Monitoring	
05-Oct	06-Oct	07-Oct	08-Oct	09-Oct	10-Oct	11-Oct
				1-hr TSP Monitoring 24-hr TSP Monitoring		
12-Oct	13-Oct	14-Oct	15-Oct	16-Oct	17-Oct	18-Oct
			1-hr TSP Monitoring 24-hr TSP Monitoring			
19-Oct	20-Oct	21-Oct	22-Oct	23-Oct	24-Oct	25-Oct
		1-hr TSP Monitoring 24-hr TSP Monitoring				
26-Oct	27-Oct	28-Oct	29-Oct	30-Oct	31-Oct	
	1-hr TSP Monitoring 24-hr TSP Monitoring			1-hr TSP Monitoring 24-hr TSP Monitoring		

HY/2012/07 Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section
Tentative Impact Noise Monitoring Schedule (1 to 30 November 2014)

Noise Monitoring at rooftop of Pak Mong Village Watch Tower

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						01-Nov
02-Nov	03-Nov	04-Nov	05-Nov	06-Nov	07-Nov	08-Nov
			Noise Impact Monitoring			
09-Nov	10-Nov	11-Nov	12-Nov	13-Nov	14-Nov	15-Nov
		Noise Impact Monitoring				
16-Nov	17-Nov	18-Nov	19-Nov	20-Nov	21-Nov	22-Nov
	Noise Impact Monitoring			Noise Impact Monitoring		
23-Nov	24-Nov	25-Nov	26-Nov	27-Nov	28-Nov	29-Nov
			(Monitoring cancelled due to rejection of access to the monitoring station)			
30-Nov						

HY/2012/07 Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section
Tentative Impact Air Quality Monitoring Schedule (1 to 30 November 2014)

Air Quality Monitoring at WA4 and rooftop of Pak Mong Village Watch Tower

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						01-Nov
02-Nov	03-Nov	04-Nov	05-Nov	06-Nov	07-Nov	08-Nov
			1-hr TSP Monitoring 24-hr TSP Monitoring			
09-Nov	10-Nov	11-Nov	12-Nov	13-Nov	14-Nov	15-Nov
		1-hr TSP Monitoring 24-hr TSP Monitoring				
16-Nov	17-Nov	18-Nov	19-Nov	20-Nov	21-Nov	22-Nov
	1-hr TSP Monitoring 24-hr TSP Monitoring			1-hr TSP Monitoring 24-hr TSP Monitoring *		
23-Nov	24-Nov	25-Nov	26-Nov	27-Nov	28-Nov	29-Nov
			1-hr TSP Monitoring 24-hr TSP Monitoring *(Monitoring at Pak Mong Watch Tower cancelled due to rejection of access to the monitoring station)*			
30-Nov						

* 20 November was the completion date of 24-hr TSP monitoring.

HY/2012/07 Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section
Impact Dolphin Monitoring Survey Schedule (1 September to 30 September 2014)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	01-Sep	02-Sep	03-Sep	04-Sep	05-Sep	06-Sep
		Impact Dolphin Monitoring				
07-Sep	08-Sep	P. Holiday 09-Sep	10-Sep	11-Sep	12-Sep	13-Sep
				Impact Dolphin Monitoring		
14-Sep	15-Sep	16-Sep	17-Sep	18-Sep	19-Sep	20-Sep
					Impact Dolphin Monitoring	
21-Sep	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep
	Impact Dolphin Monitoring					
28-Sep	29-Sep	30-Sep				

HY/2012/07 Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section
Impact Dolphin Monitoring Survey Schedule (1 November to 30 November 2014)

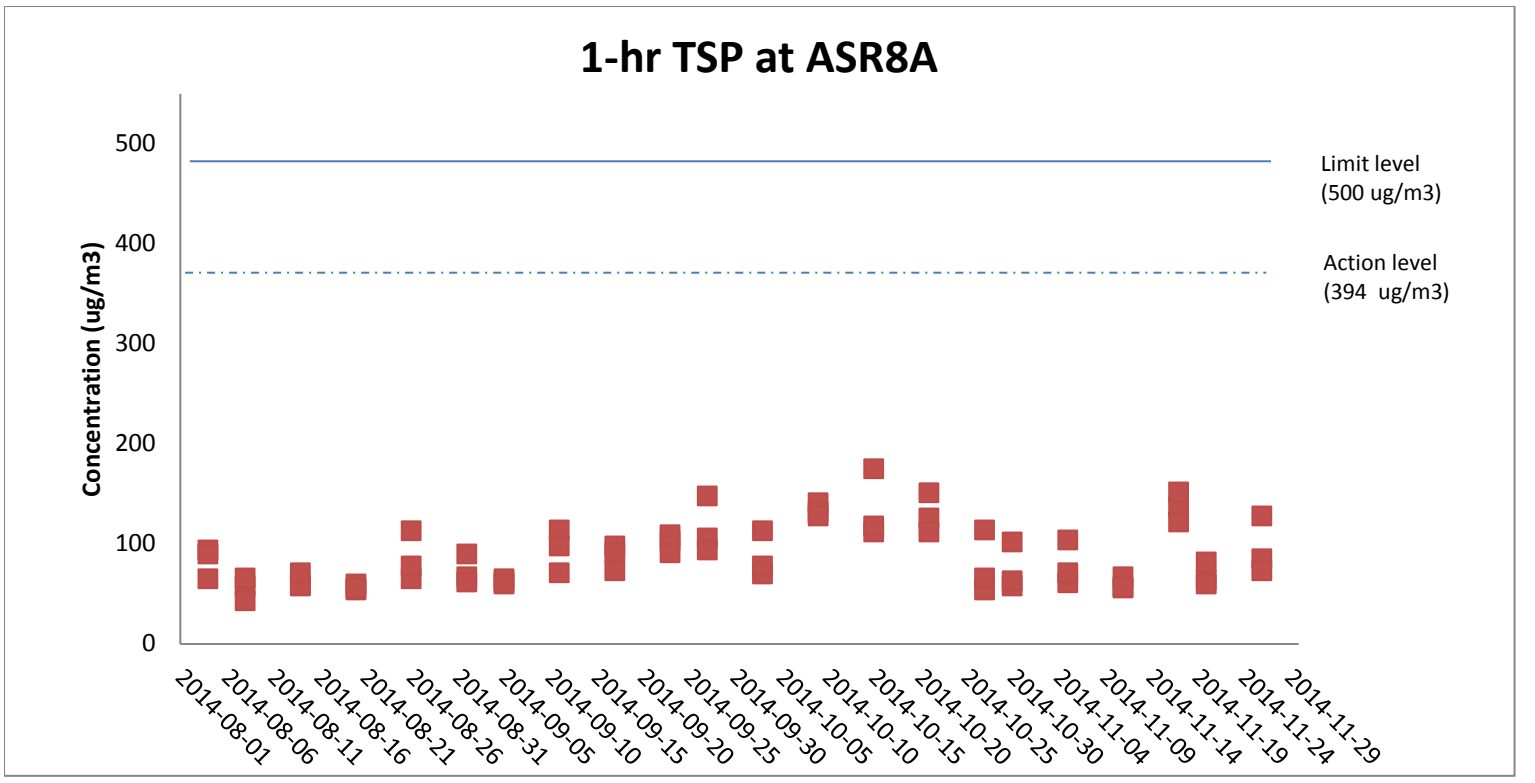
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						01-Nov
02-Nov	03-Nov	04-Nov	05-Nov	06-Nov	07-Nov	08-Nov
		Impact Dolphin Monitoring				
09-Nov	10-Nov	11-Nov	12-Nov	13-Nov	14-Nov	15-Nov
	Impact Dolphin Monitoring		Impact Dolphin Monitoring			
16-Nov	17-Nov	18-Nov	19-Nov	20-Nov	21-Nov	22-Nov
		Impact Dolphin Monitoring				
23-Nov	24-Nov	25-Nov	26-Nov	27-Nov	28-Nov	29-Nov
30-Nov						

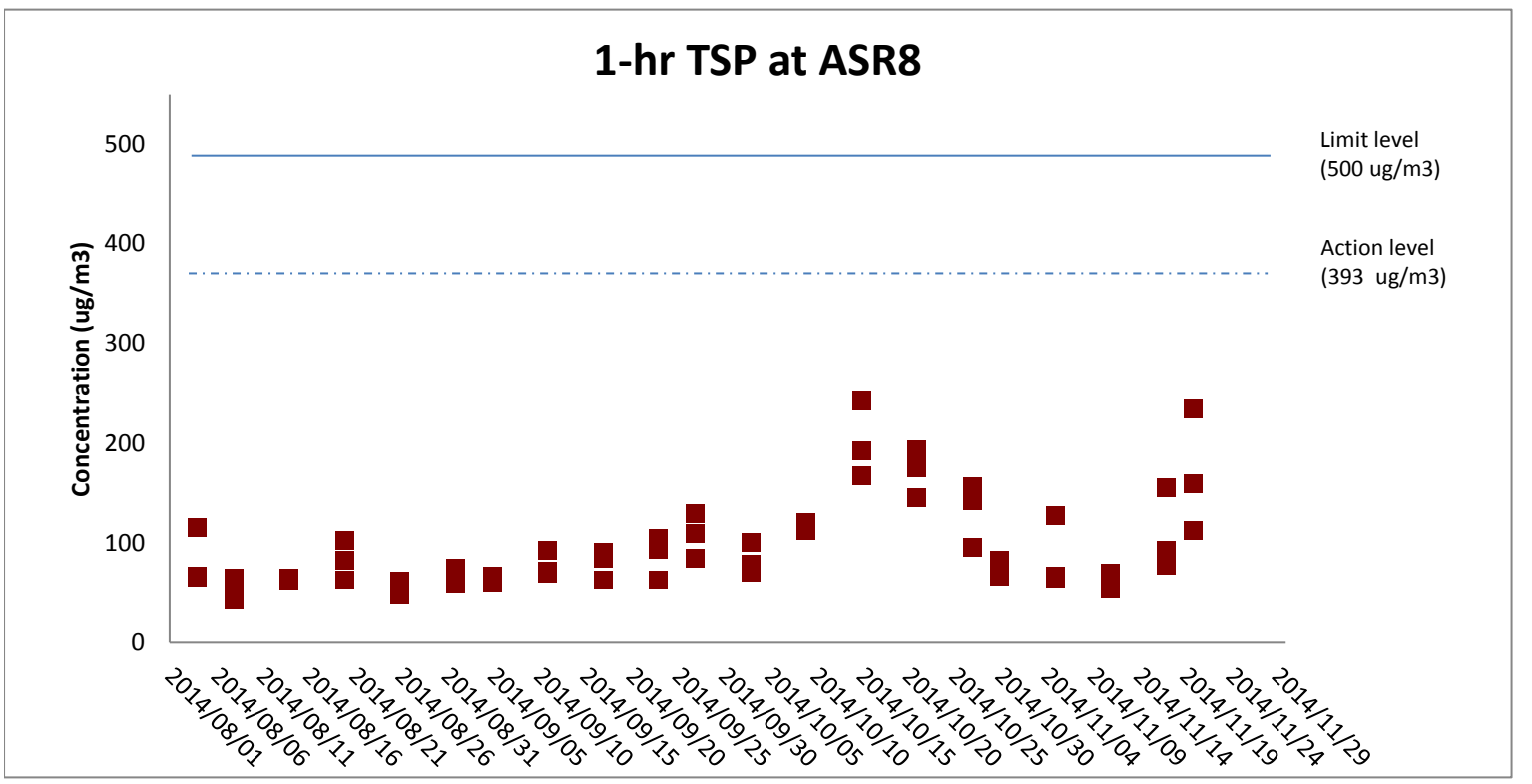
HY/2012/07 Tuen Mun - Chek Lap Kok Link - Southern Connection Viaduct Section
Impact Dolphin Monitoring Survey Schedule (1 October to 31 October 2014)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			P. Holiday 01-Oct	P. Holiday 02-Oct	03-Oct	04-Oct
05-Oct	06-Oct	07-Oct	08-Oct	09-Oct	10-Oct	11-Oct
		Impact Dolphin Monitoring				
12-Oct	13-Oct	14-Oct	15-Oct	16-Oct	17-Oct	18-Oct
	Impact Dolphin Monitoring			Impact Dolphin Monitoring		
19-Oct	20-Oct	21-Oct	22-Oct	23-Oct	24-Oct	25-Oct
				Impact Dolphin Monitoring		
26-Oct	27-Oct	28-Oct	29-Oct	30-Oct	31-Oct	

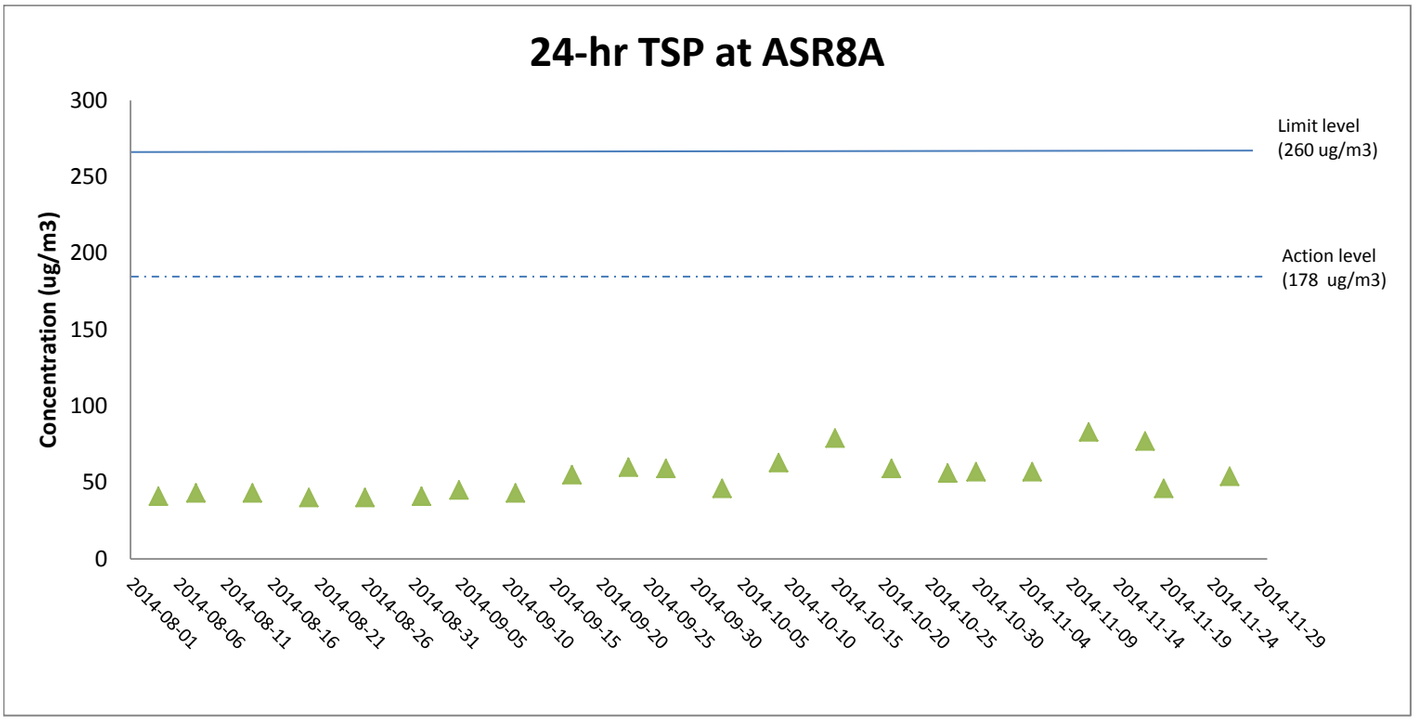
Appendix F

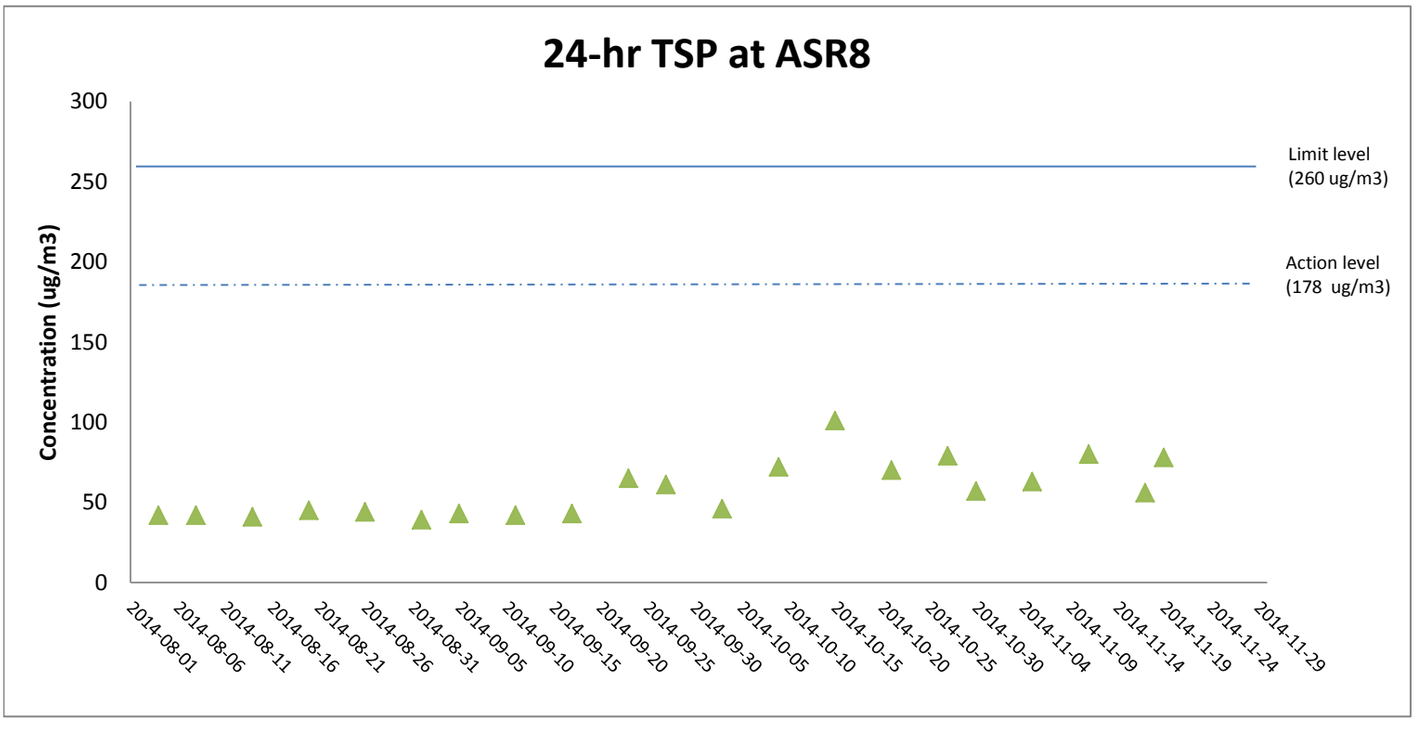
Impact Air Quality Monitoring Graphical Presentation





Weather condition within the reporting period varied between sunny to rainy.
Major construction works undertaken within the reporting period include Construction of pile cap superstructure; Channel re-construction; Land Piling; Pre-drilling work; Construction of pile cap; Additional land GI, trial pits & lab testing; Utility surveys; and Slope work.
Marine works within the reporting period include Construction of Pile caps; Marine piling platform installation; Marine Piling at Viaducts; and Additional marine ground investigation (GI) and laboratory testing.
TSP monitoring at ASR8 on 26 November was cancelled due to rejection of entry of monitoring station.

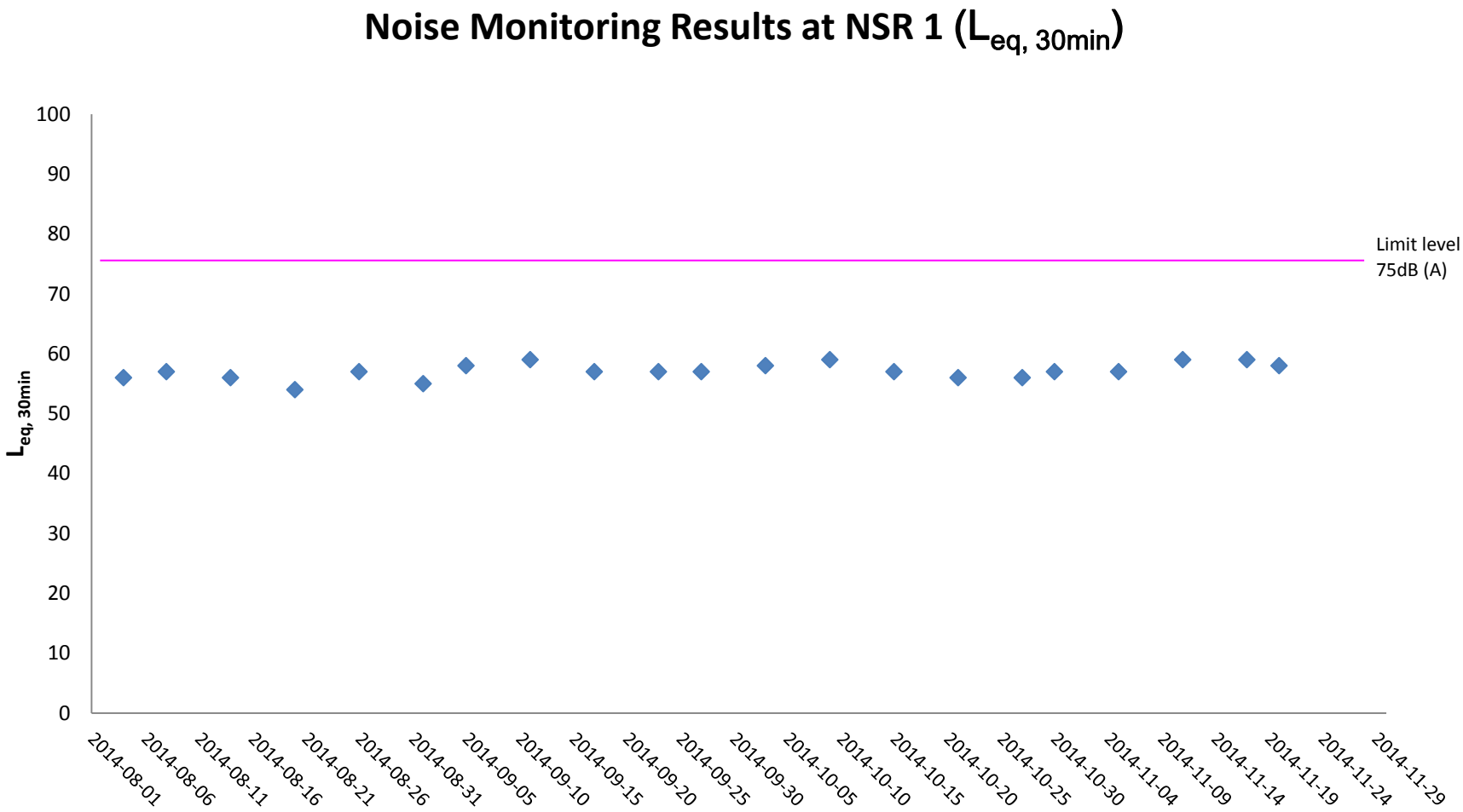




Weather condition within the reporting period varied between sunny to rainy.
Major construction works undertaken within the reporting period include Construction of pile cap superstructure; Channel re-construction; Land Piling; Pre-drilling work; Construction of pile cap; Additional land GI, trial pits & lab testing; Utility surveys; and Slope work.
Marine works within the reporting period include Construction of Pile caps; Marine piling platform installation; Marine Piling at Viaducts; and Additional marine ground investigation (GI) and laboratory testing.
TSP monitoring at ASR8 on 26 November was cancelled due to rejection of entry of monitoring station.

Appendix G

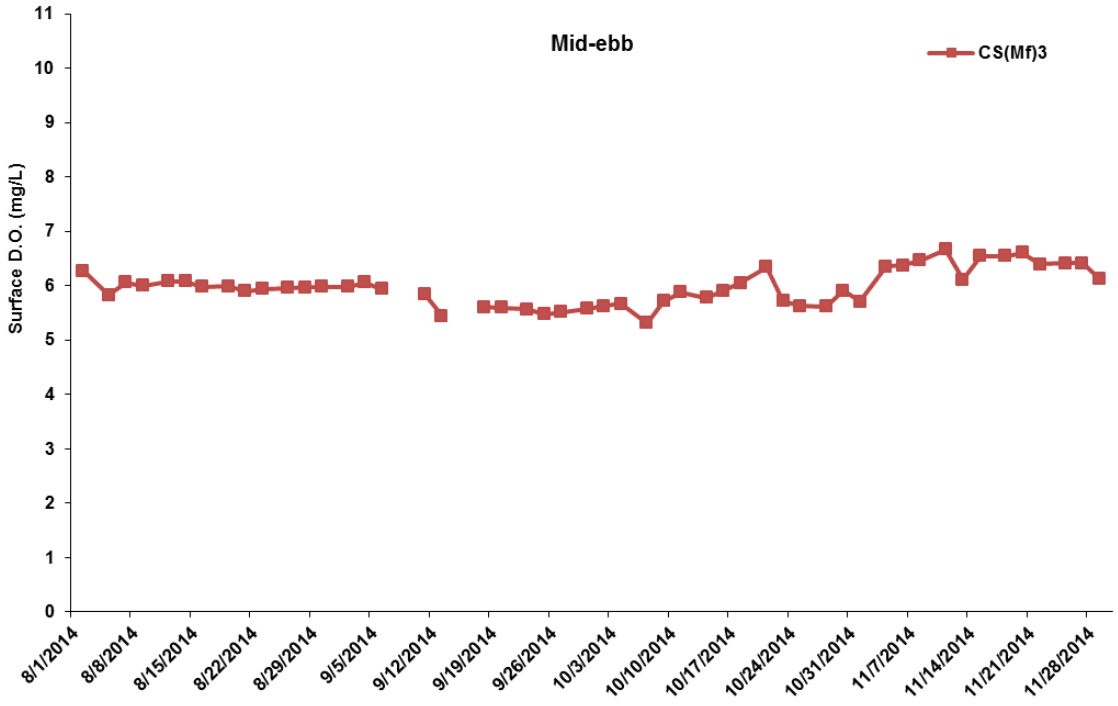
Impact Noise Monitoring Graphical Presentation



Weather condition within the reporting period varied between sunny to rainy.
Major construction works undertaken within the reporting period include Construction of pile cap superstructure; Channel re-construction; Land Piling; Pre-drilling work; Construction of pile cap; Additional land GI, trial pits & lab testing; Utility surveys; and Slope work.
Marine works within the reporting period include Construction of Pile caps; Marine piling platform installation; Marine Piling at Viaducts; and Additional marine ground investigation (GI) and laboratory testing.
Noise monitoring on 26 November was cancelled due to rejection of access to monitoring station.

Appendix H

Impact Water Quality Monitoring Graphical Presentation



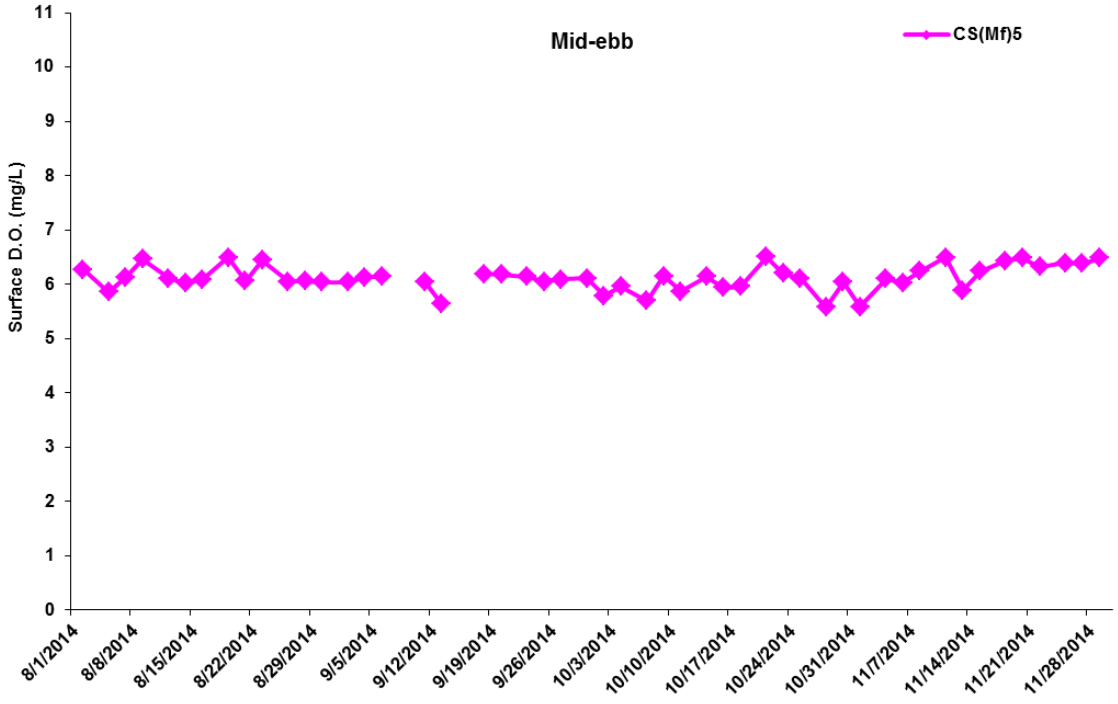
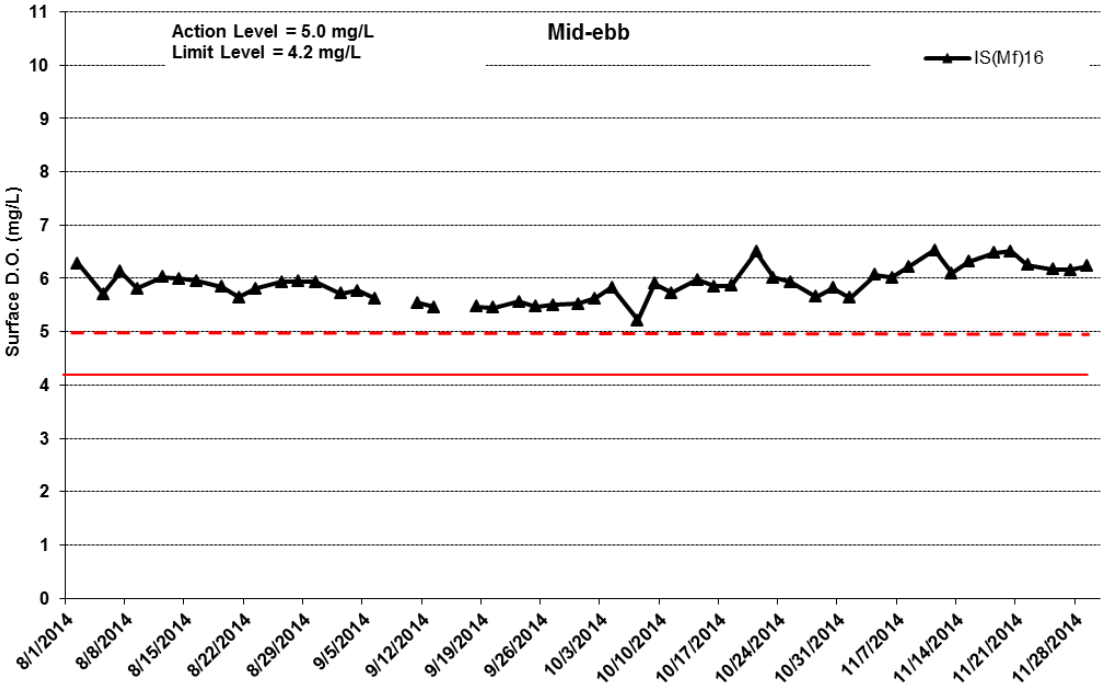


Figure H1 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in surface waters during mid-ebb tide between 1 August and 30 November 2014 at CS(Mf)3 and CS(Mf)5.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

Environmental Resources Management

ERM



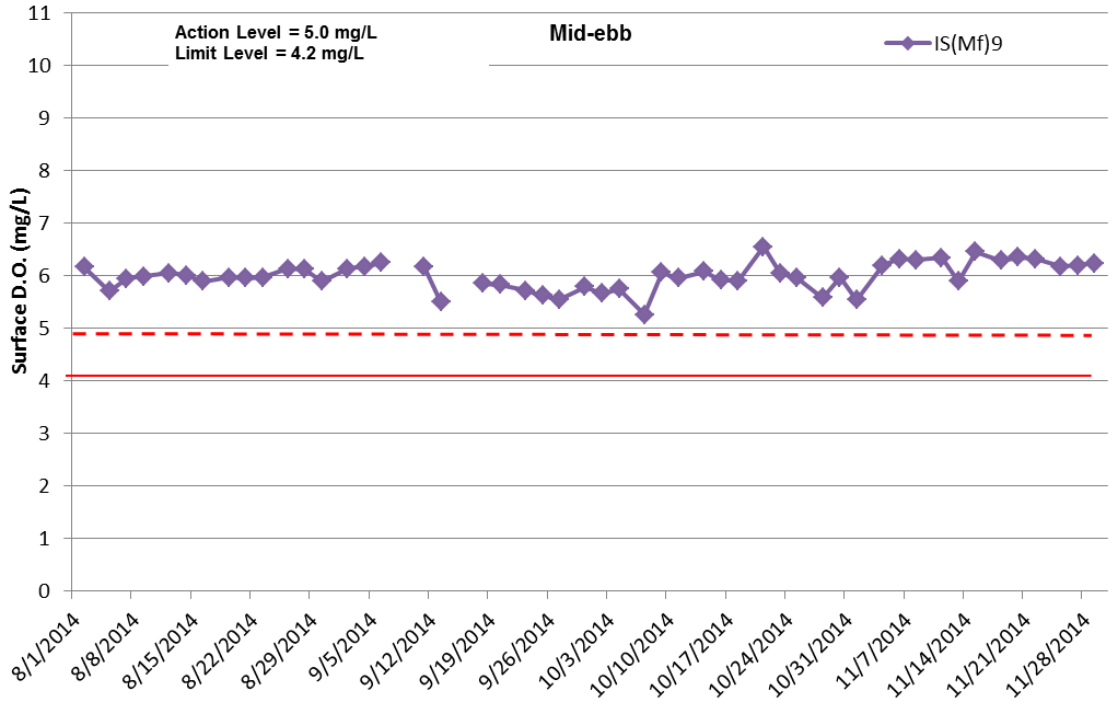
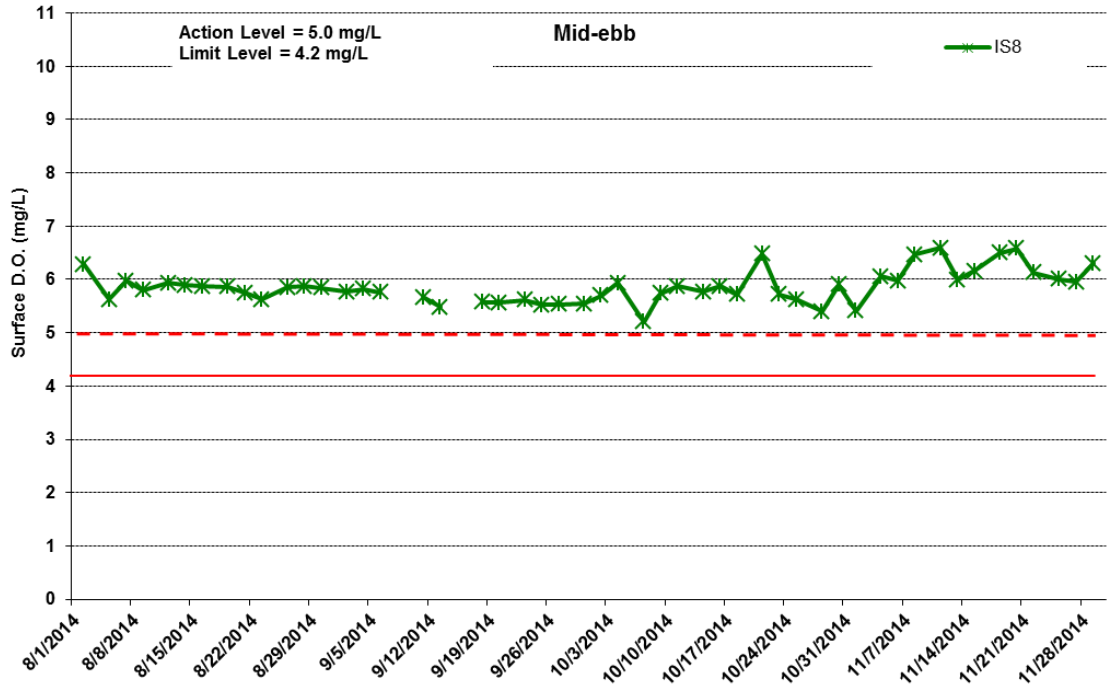


Figure H2 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in surface waters during mid-ebb tide between 1 August and 30 November 2014 at IS(Mf)16 and IS(Mf)9.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

Environmental Resources Management

ERM



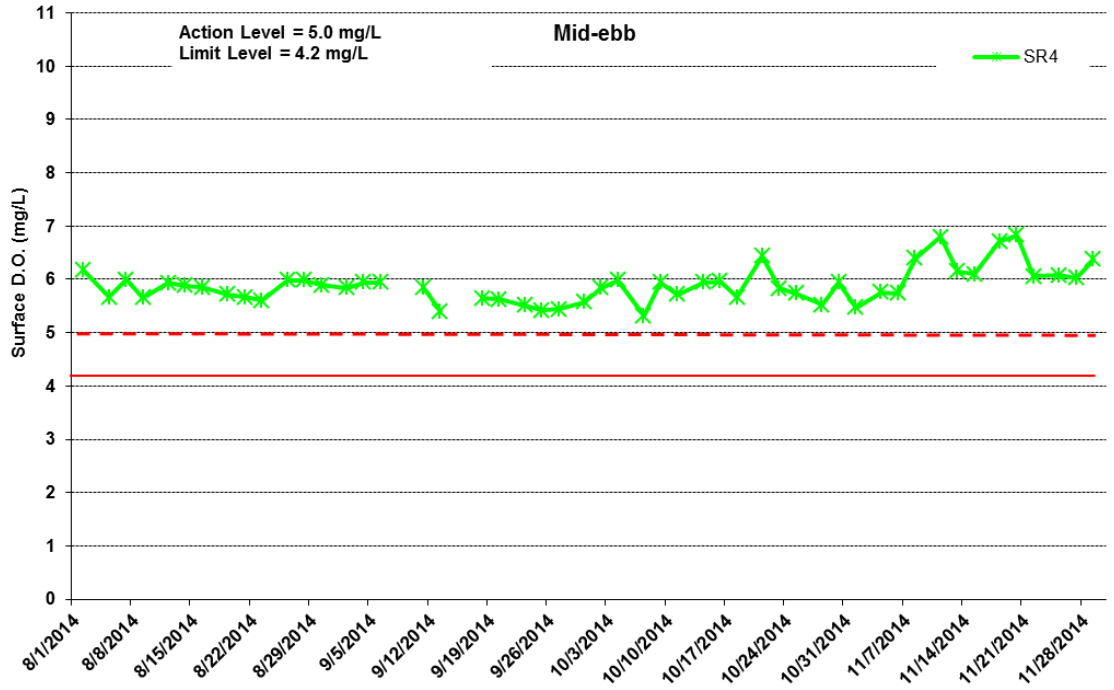


Figure H3 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in surface waters during mid-ebb tide between 1 August and 30 November 2014 at IS8 and SR4.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

Environmental Resources Management

ERM

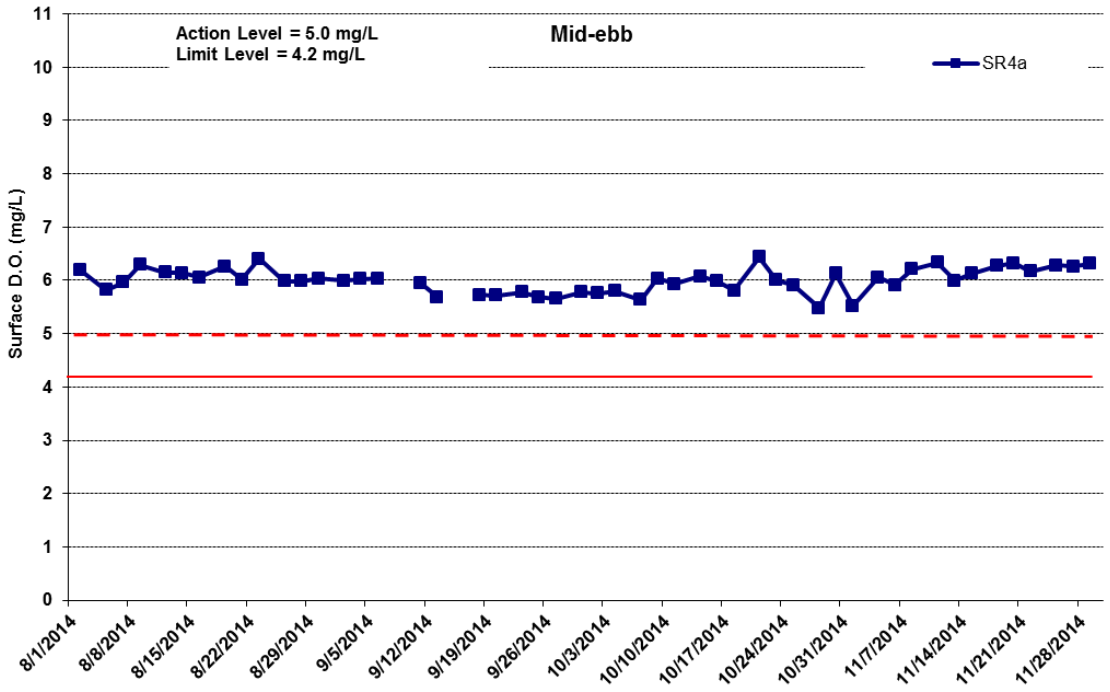


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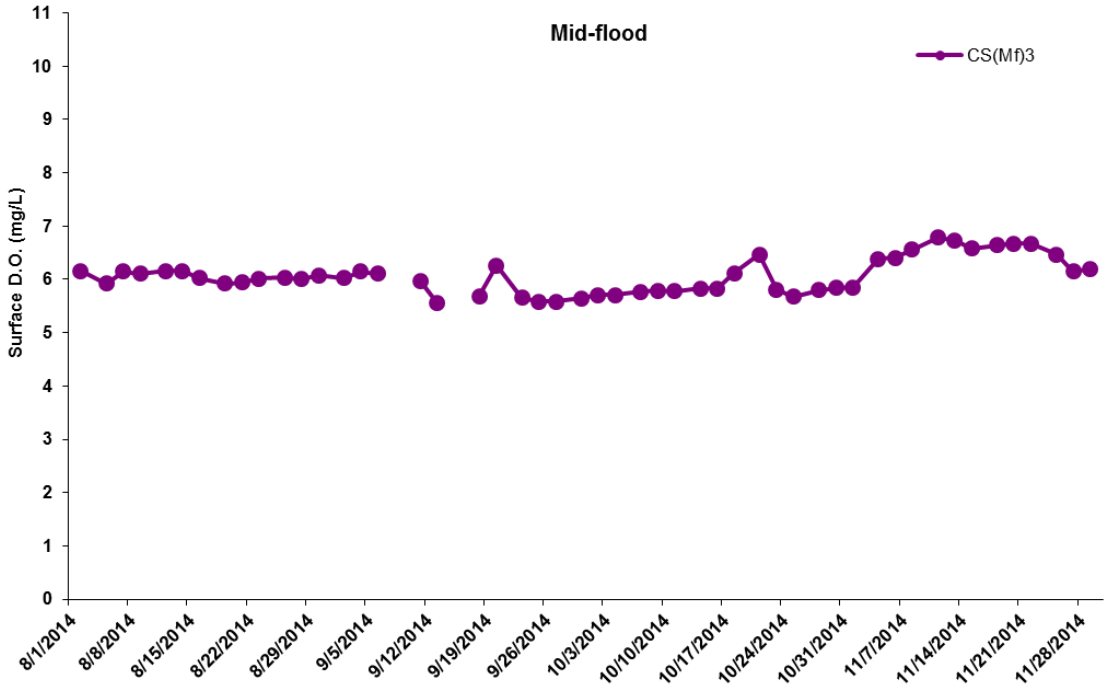
Figure H4 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in surface waters during mid-ebb tide between 1 August and 30 November 2014 at SR4a.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

Environmental Resources Management

ERM



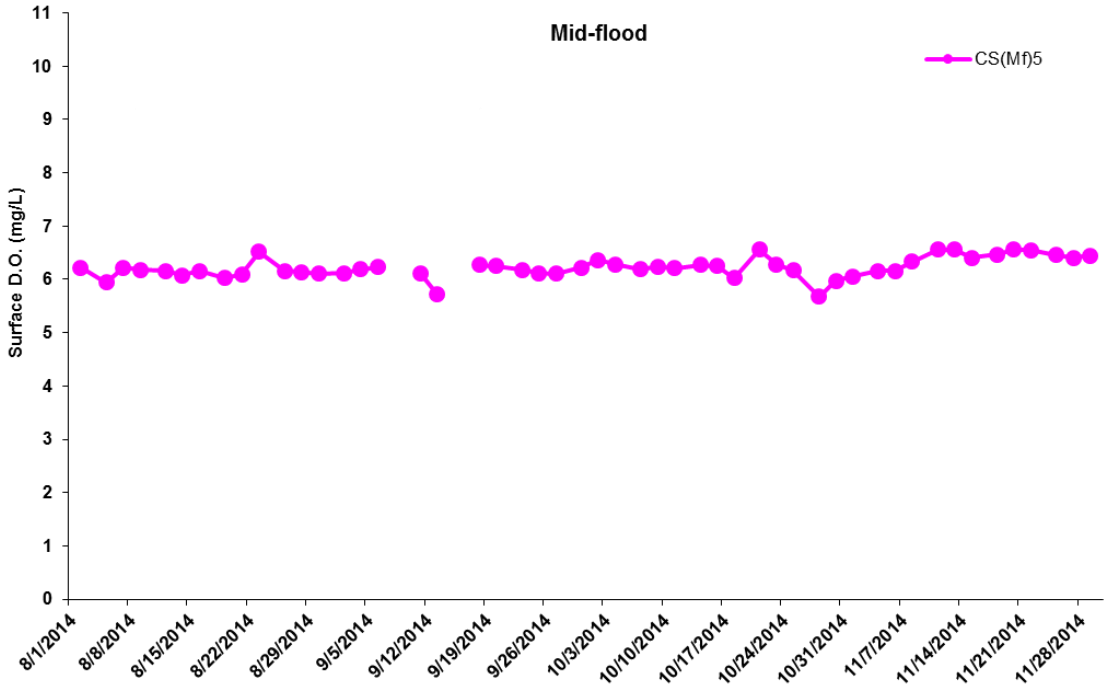
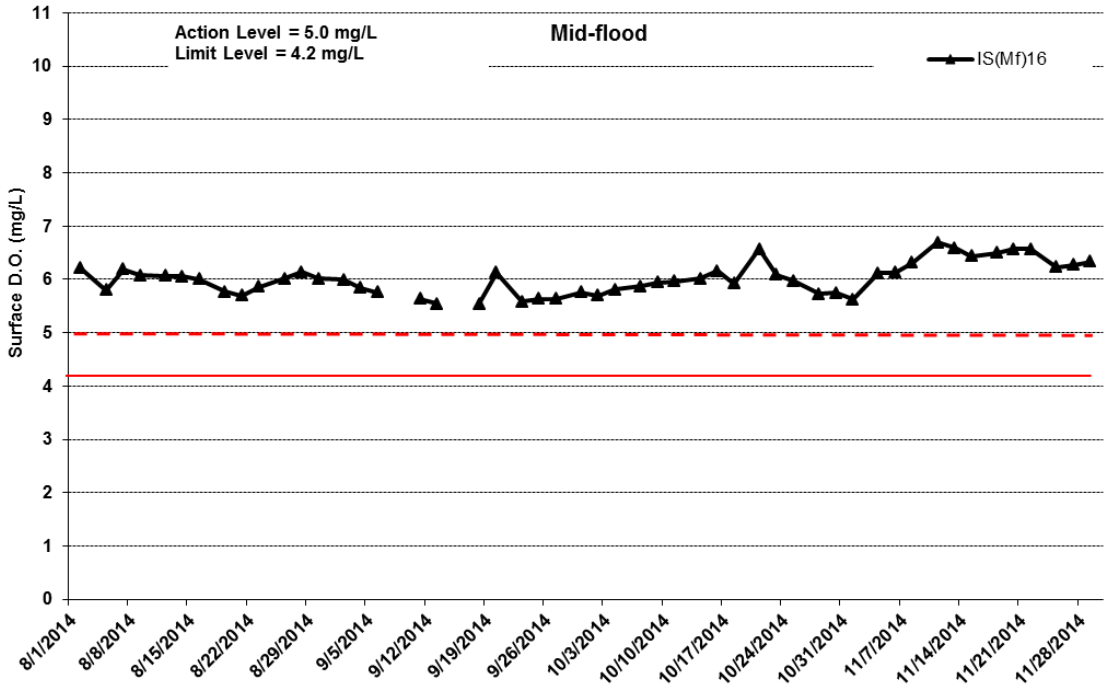


Figure H5 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in surface waters during mid-flood tide between 1 August and 30 November 2014 at CS(Mf)3 and CS(Mf)5.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

Environmental Resources Management

ERM



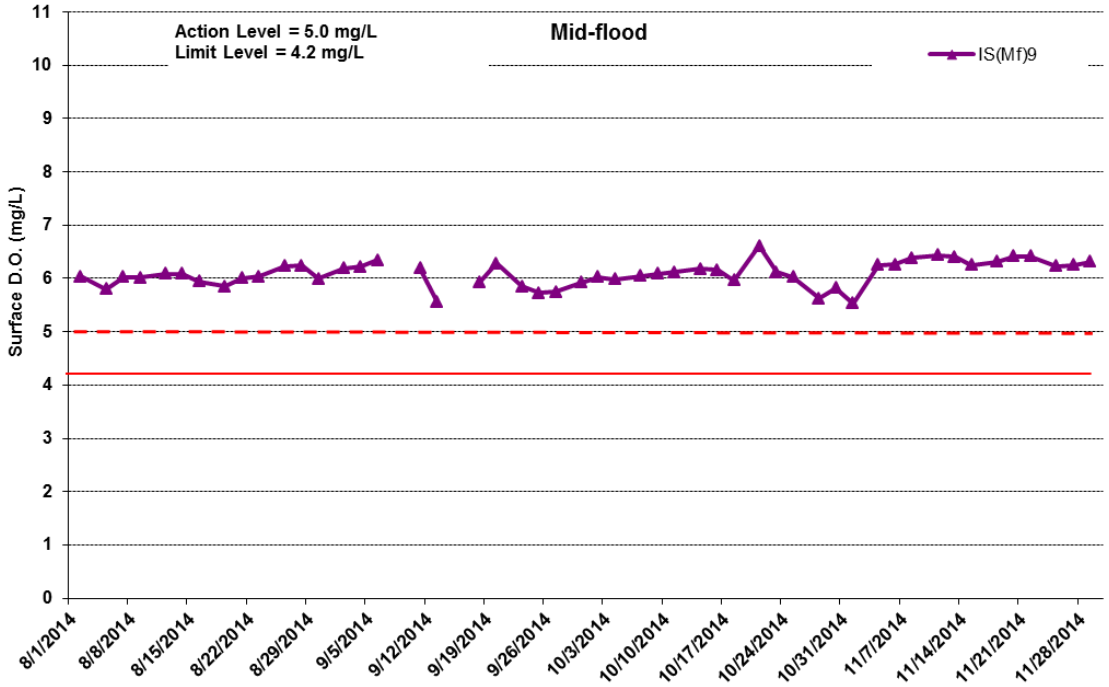
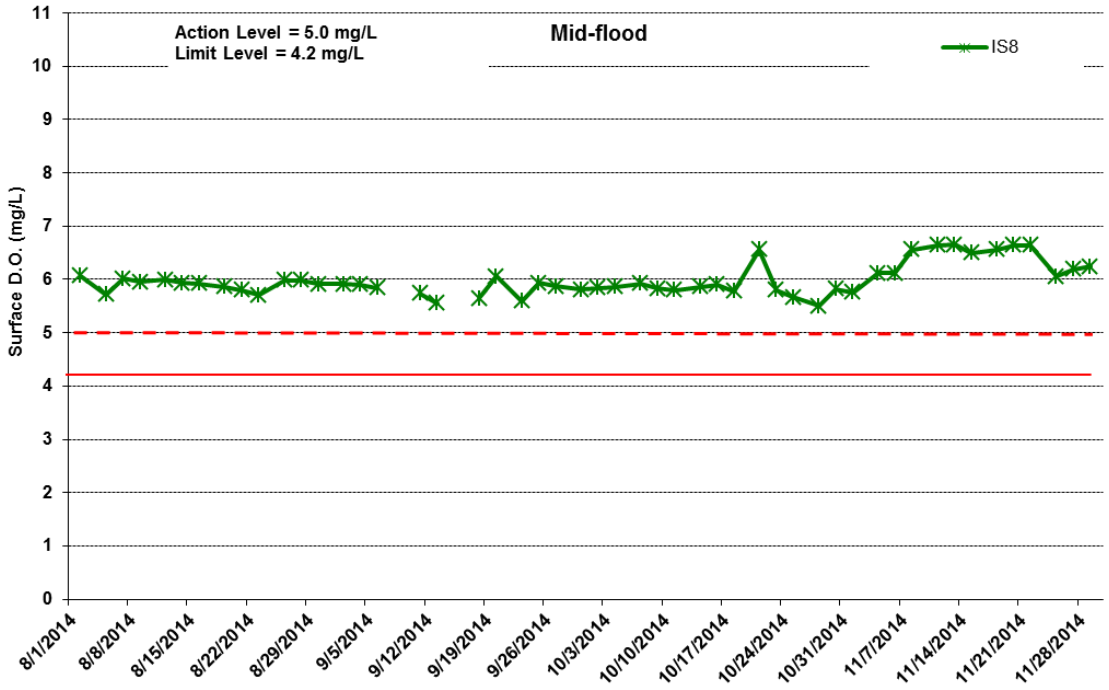


Figure H6 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in surface waters during mid-flood tide between 1 August and 30 November 2014 at IS(Mf)16 and IS(Mf)9.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

Environmental Resources Management

ERM



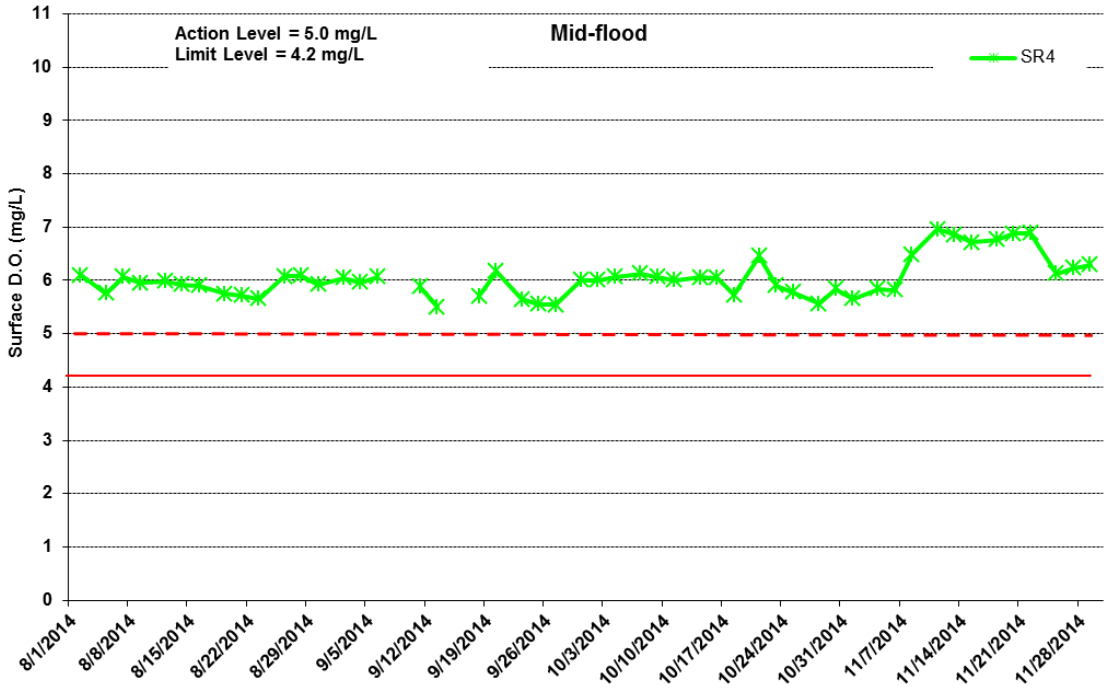


Figure H7 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in surface waters during mid-flood tide between 1 August and 30 November 2014 at IS8 and SR4.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

Environmental Resources Management

ERM

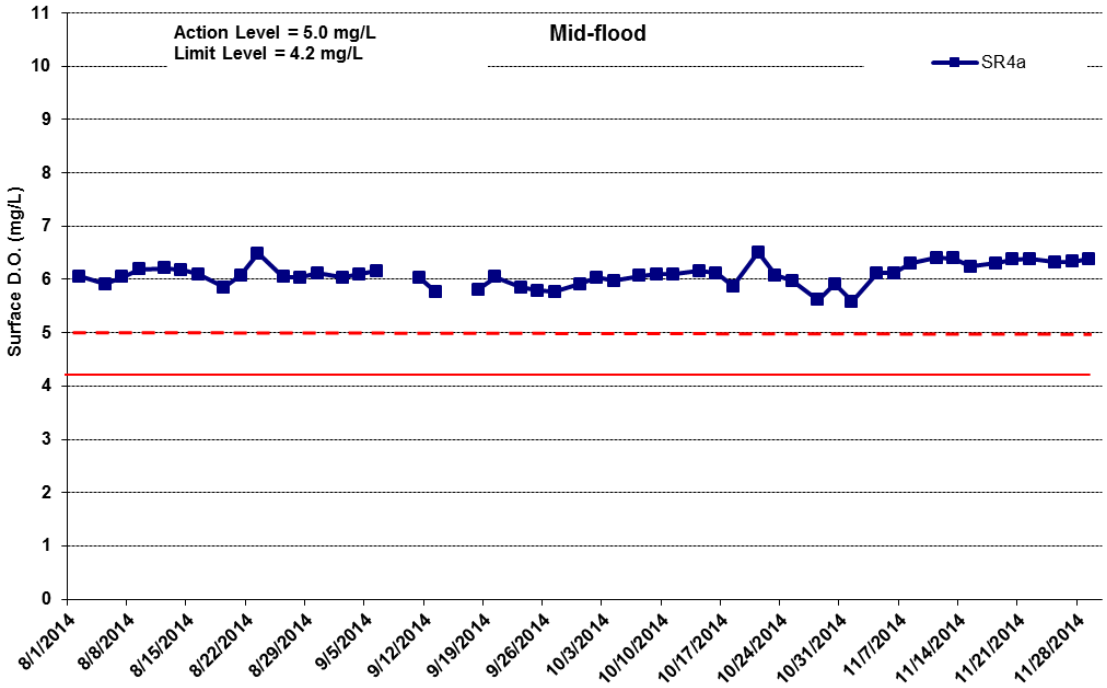
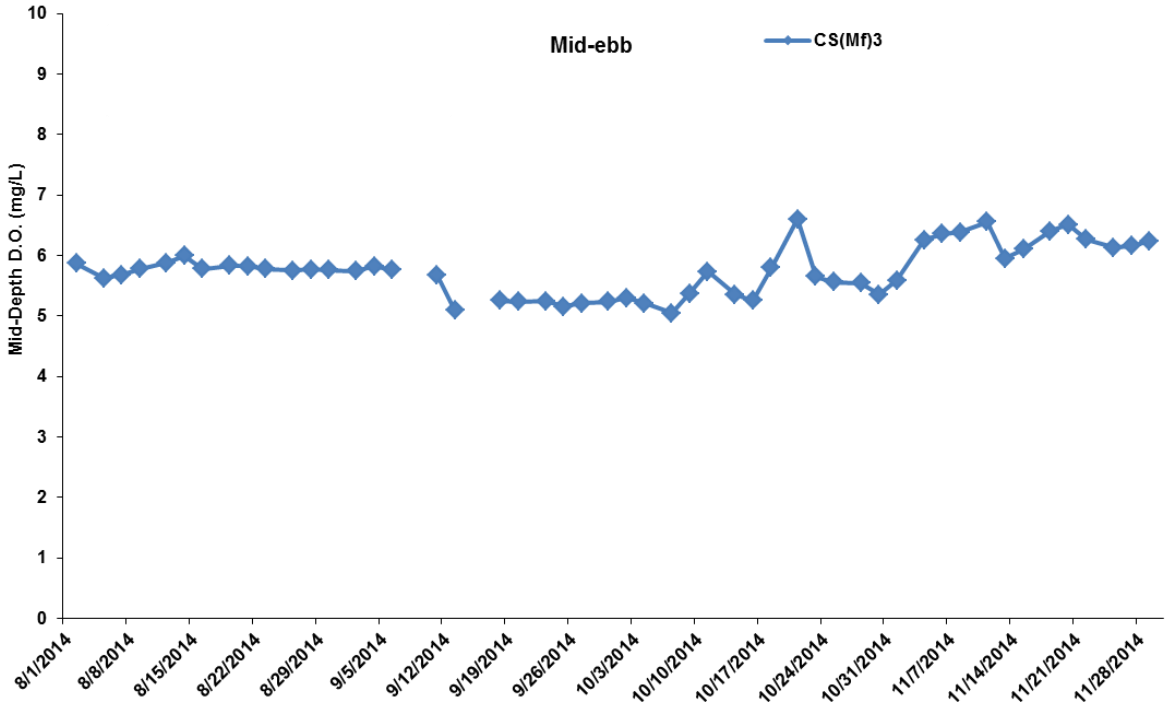


Figure H8 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in surface waters during mid-flood tide between 1 August and 30 November 2014 at SR4a.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

Environmental Resources Management

ERM



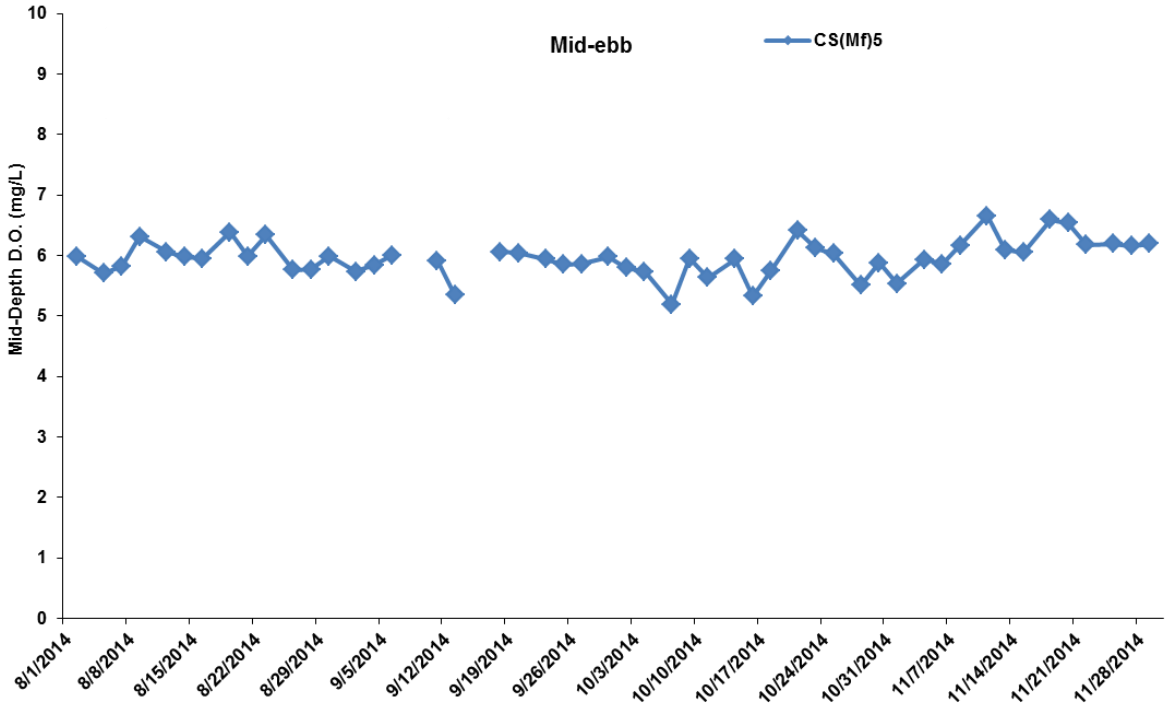


Figure H9 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in mid-depth waters during mid-ebb tide between 1 August and 30 November 2014 at CS(Mf)3 and CS(Mf)5.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

Environmental Resources Management

ERM

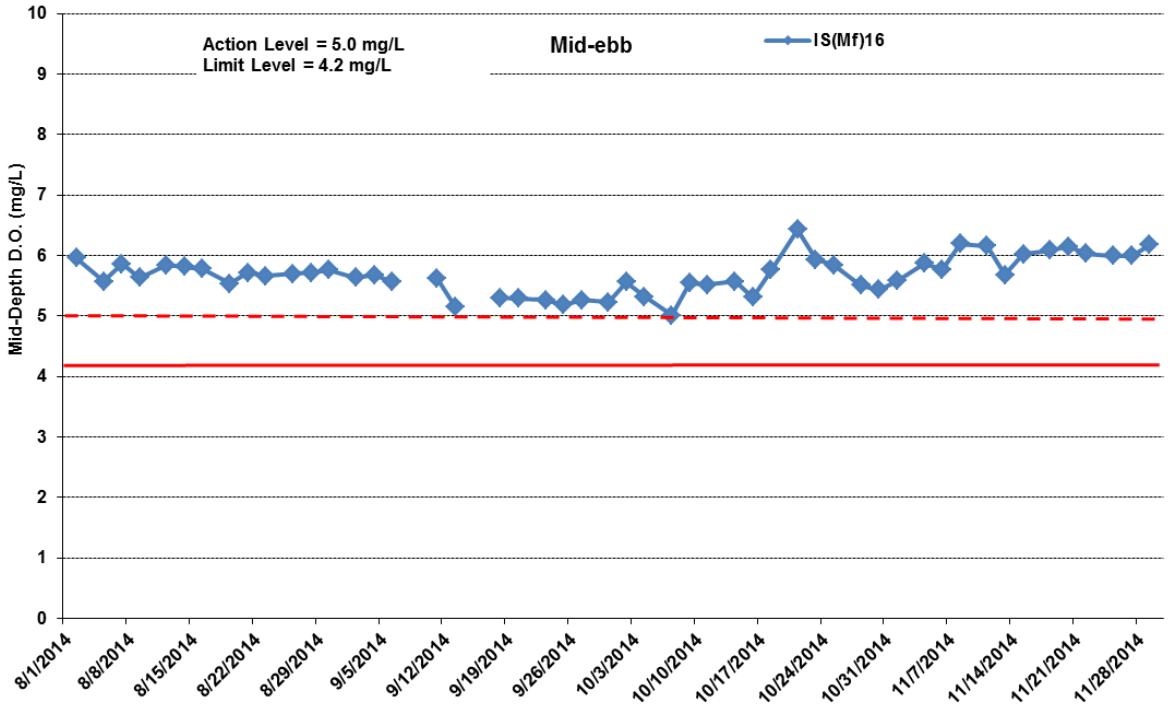
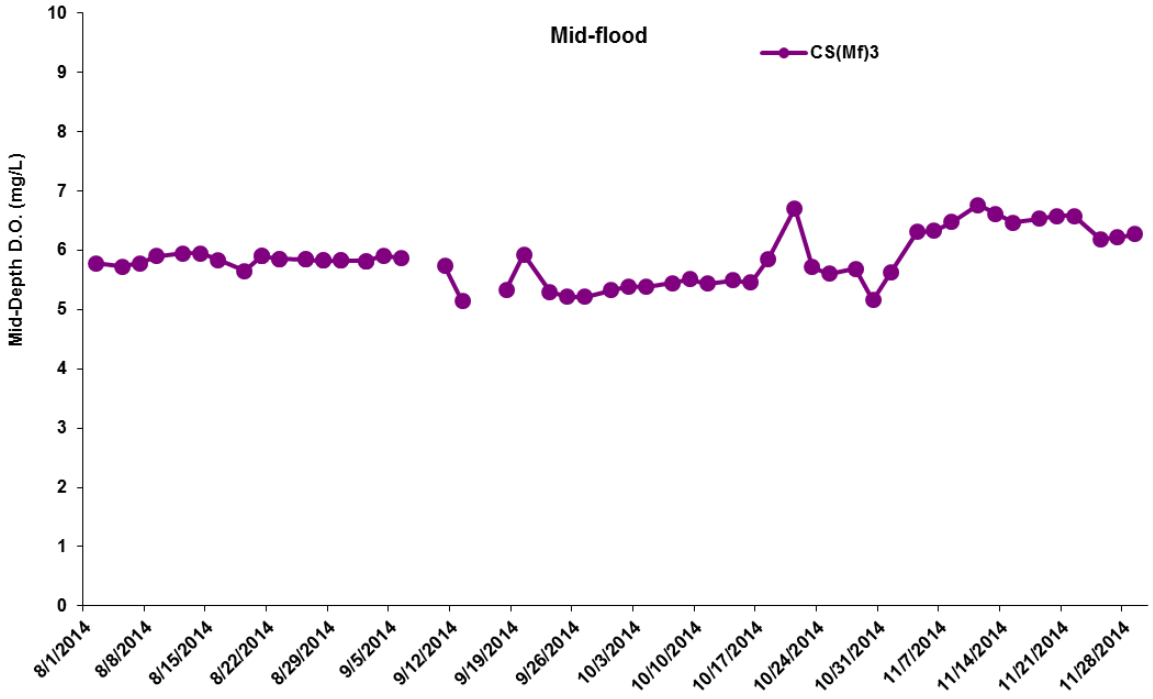


Figure H10 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in mid-depth waters during mid-ebb tide between 1 August and 30 November 2014 at IS(Mf)16.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

Environmental Resources Management

ERM



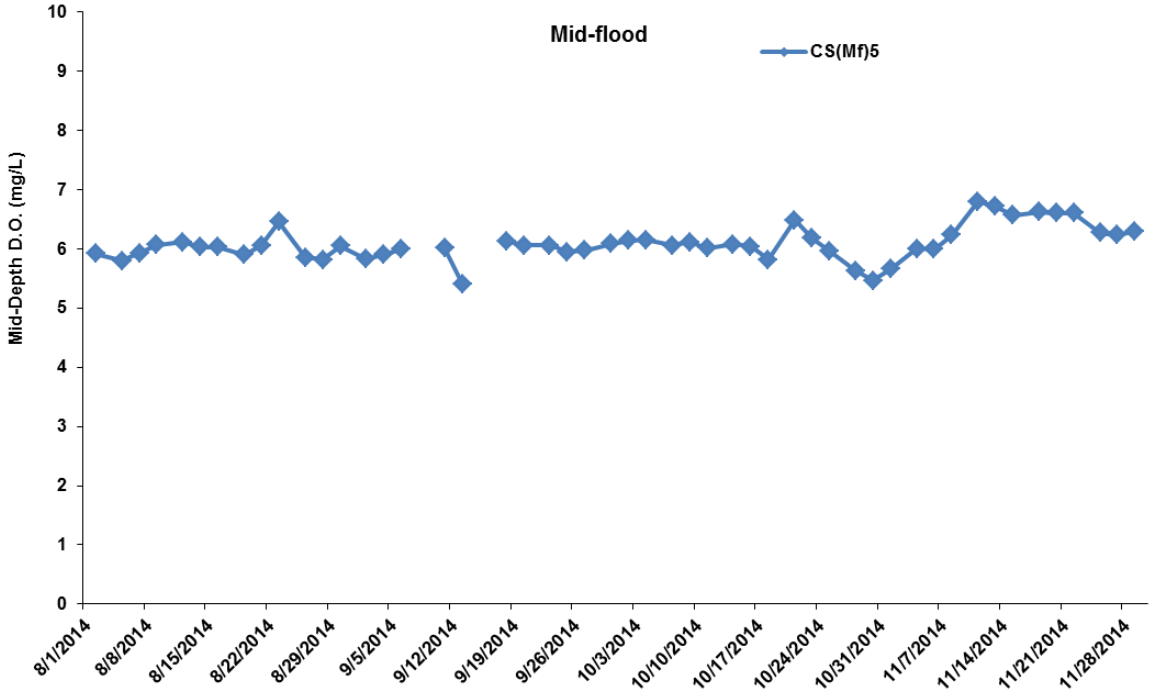


Figure H11 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in mid-depth waters during mid-flood tide between 1 August and 30 November 2014 at CS(Mf)3 and CS(Mf)5.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

Environmental Resources Management

ERM

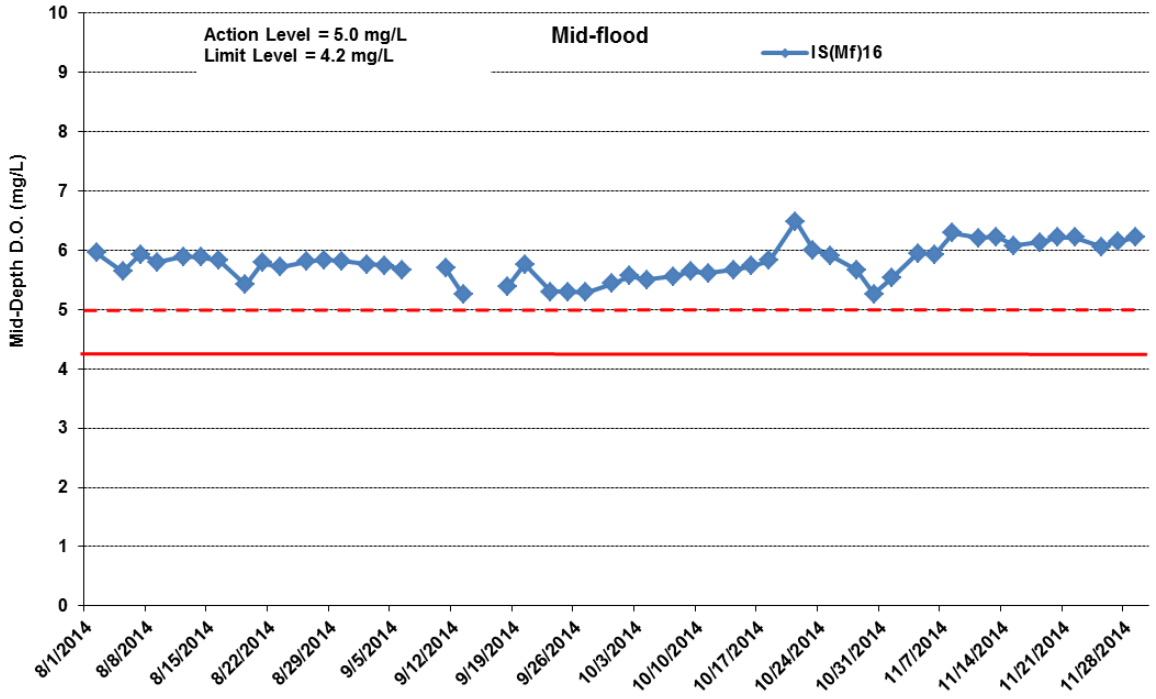
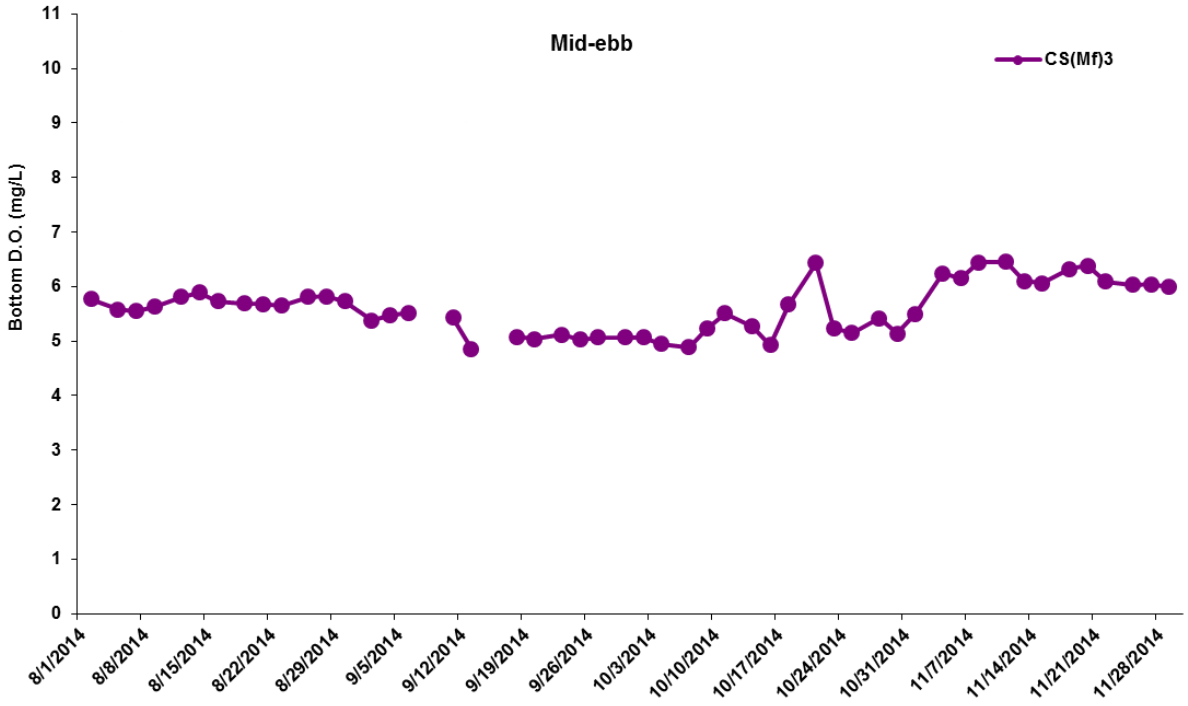


Figure H12 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in mid-depth waters during mid-flood tide between 1 August and 30 November 2014 at IS(Mf)16.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)



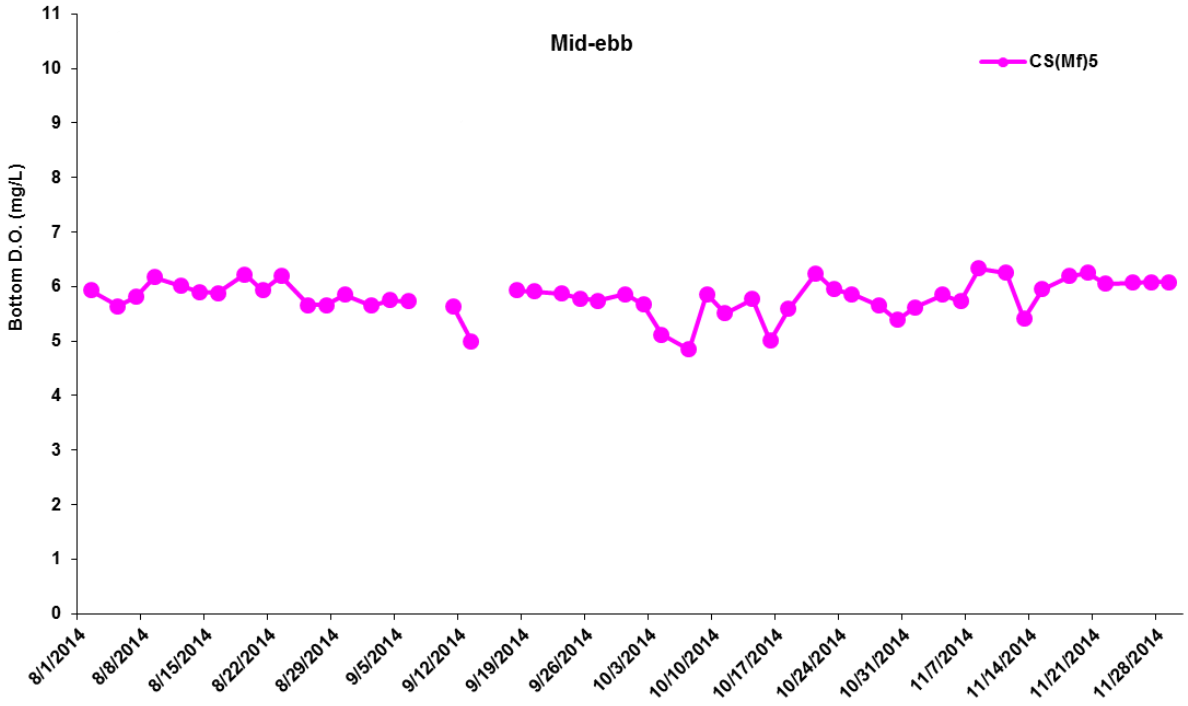


Figure H13 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in bottom waters during mid-ebb tide between 1 August and 30 November 2014 at CS(Mf)3 and CS(Mf)5.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

Environmental Resources Management

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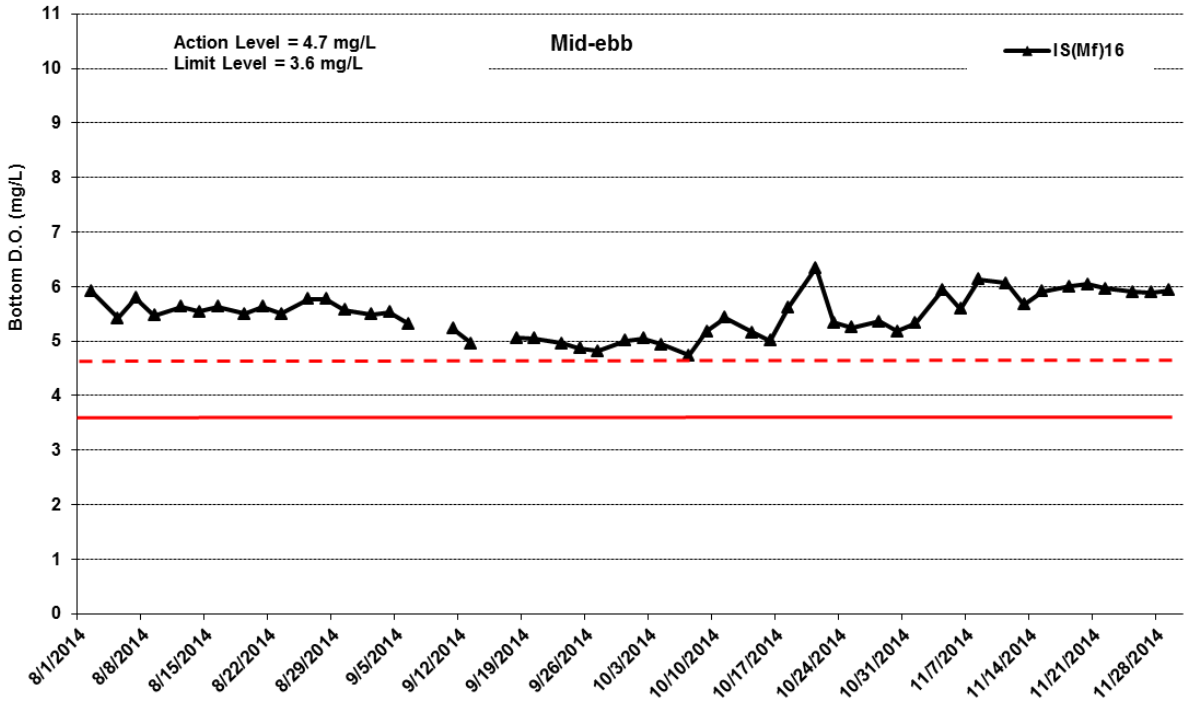


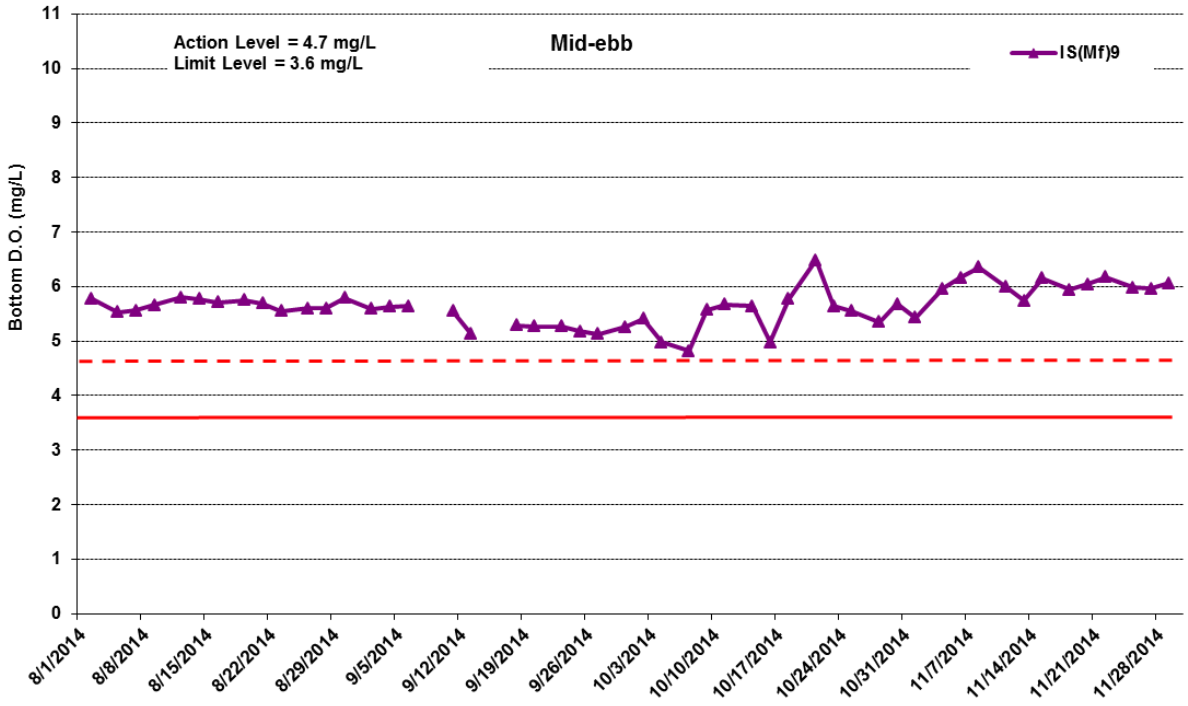
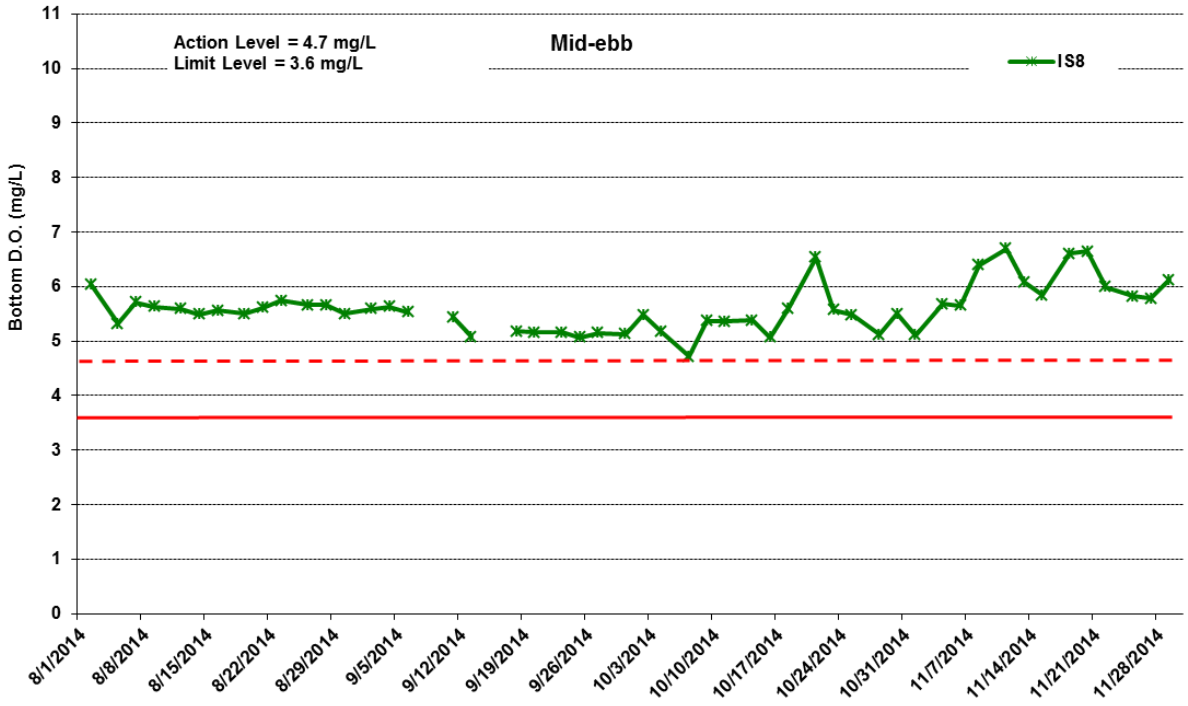


Figure H14 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in bottom waters during mid-ebb tide between 1 August and 30 November 2014 at IS(Mf)16 and IS(Mf)9.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)



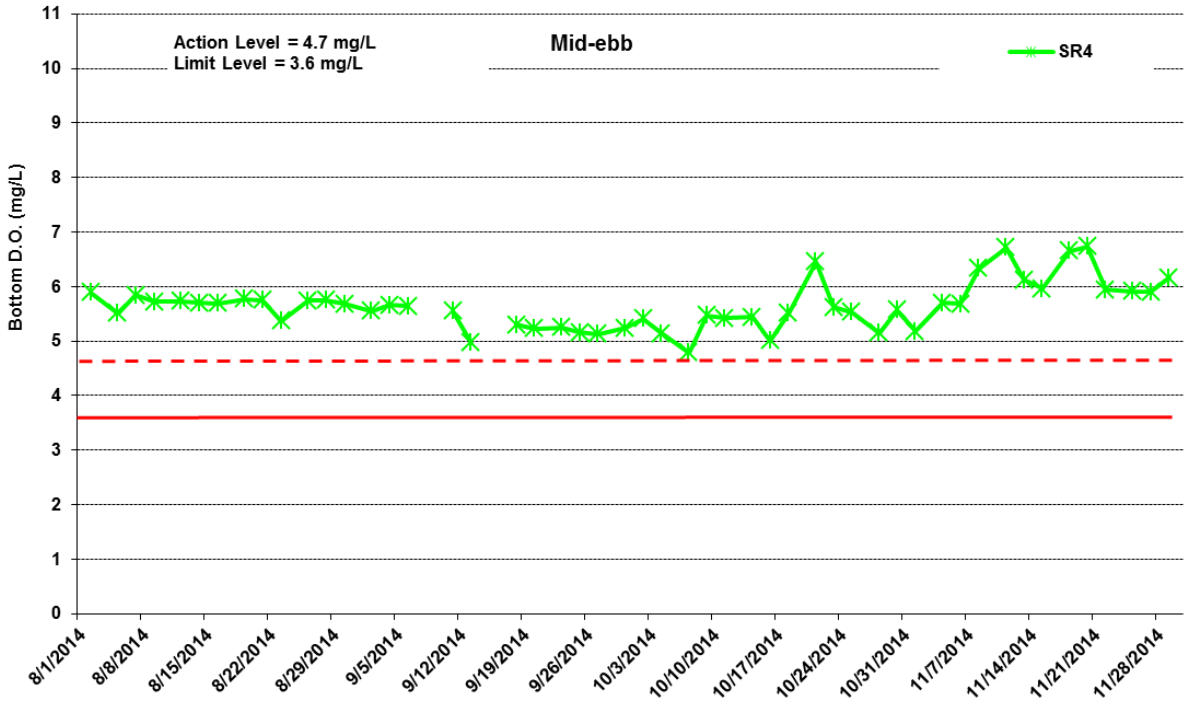


Figure H15 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in bottom waters during mid-ebb tide between 1 August and 30 November 2014 at IS8 and SR4.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

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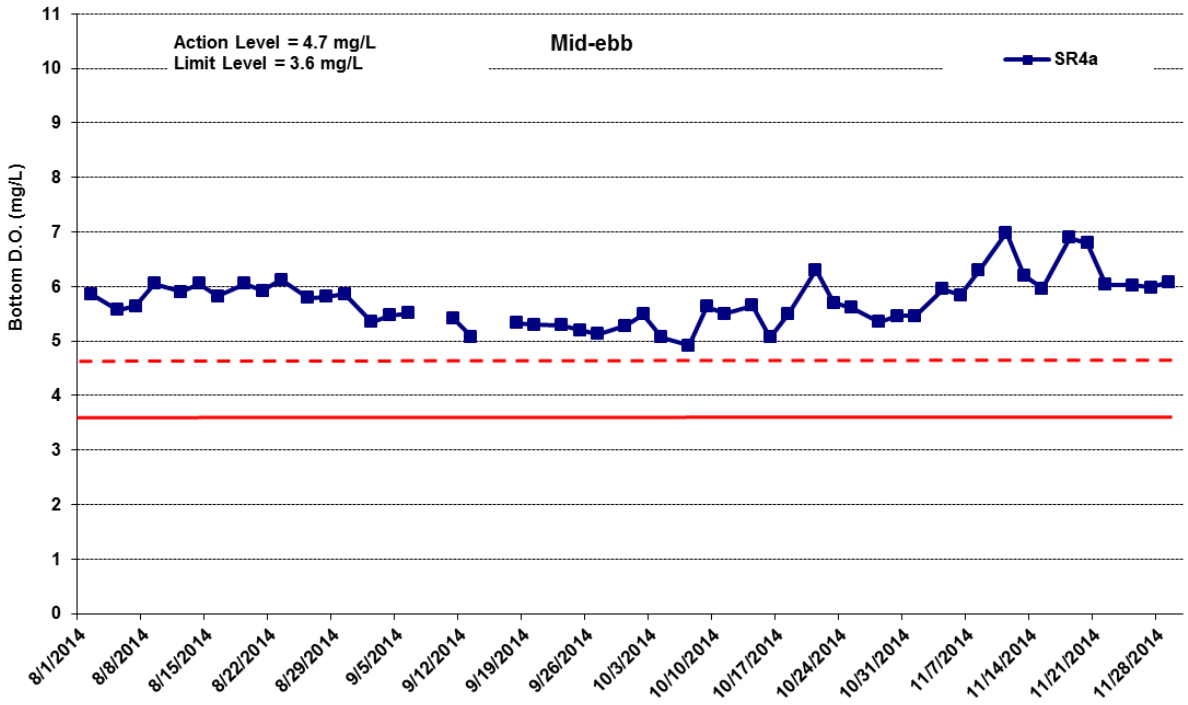

Figure H16 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in bottom waters during mid-ebb tide between 1 August and 30 November 2014 at SR4a.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

Environmental Resources Management

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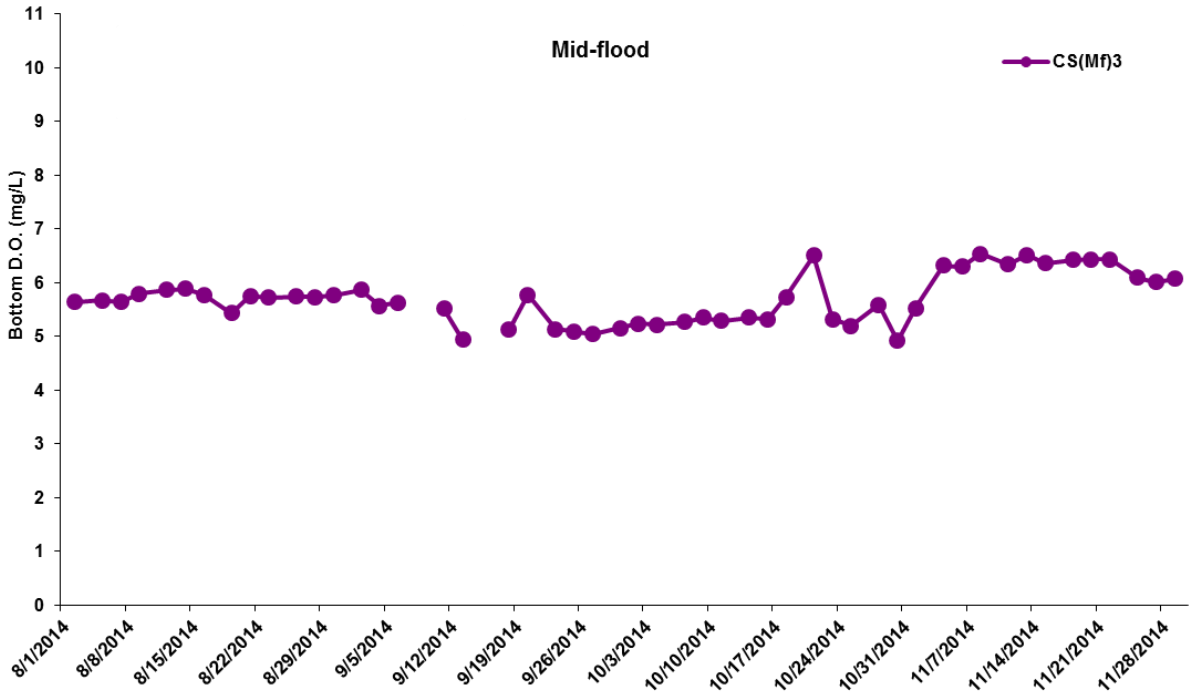

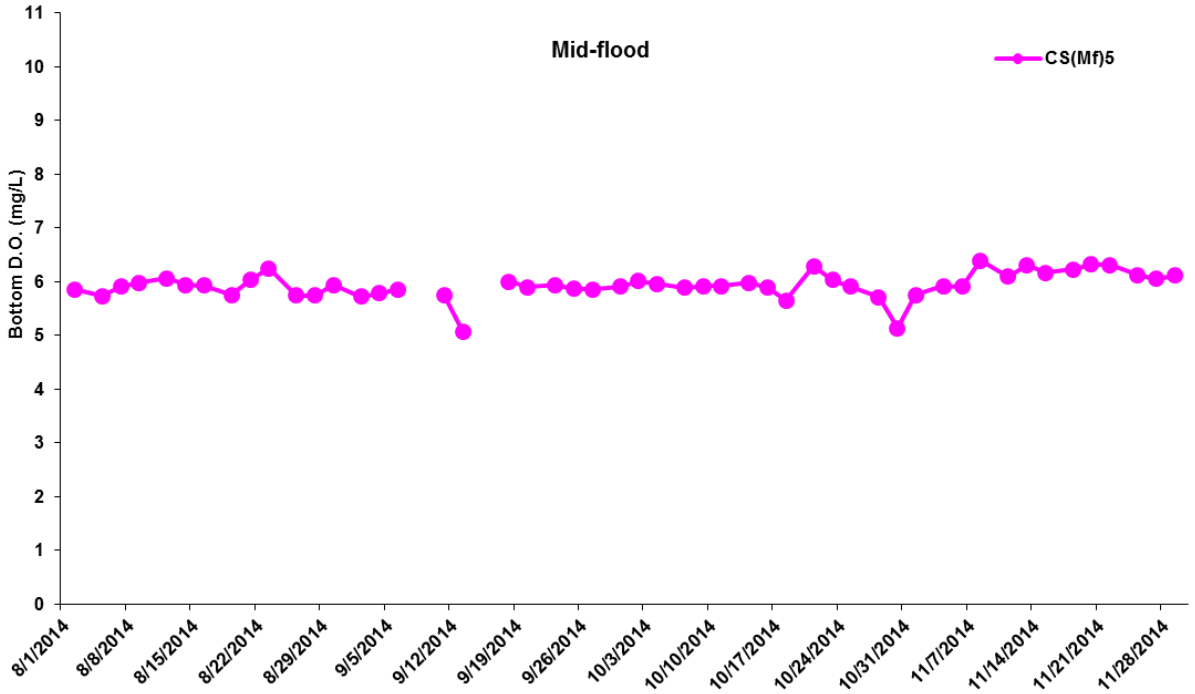

Figure H17 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in bottom waters during mid-flood tide between 1 August and 30 November 2014 at CS(Mf)3 and CS(Mf)5.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

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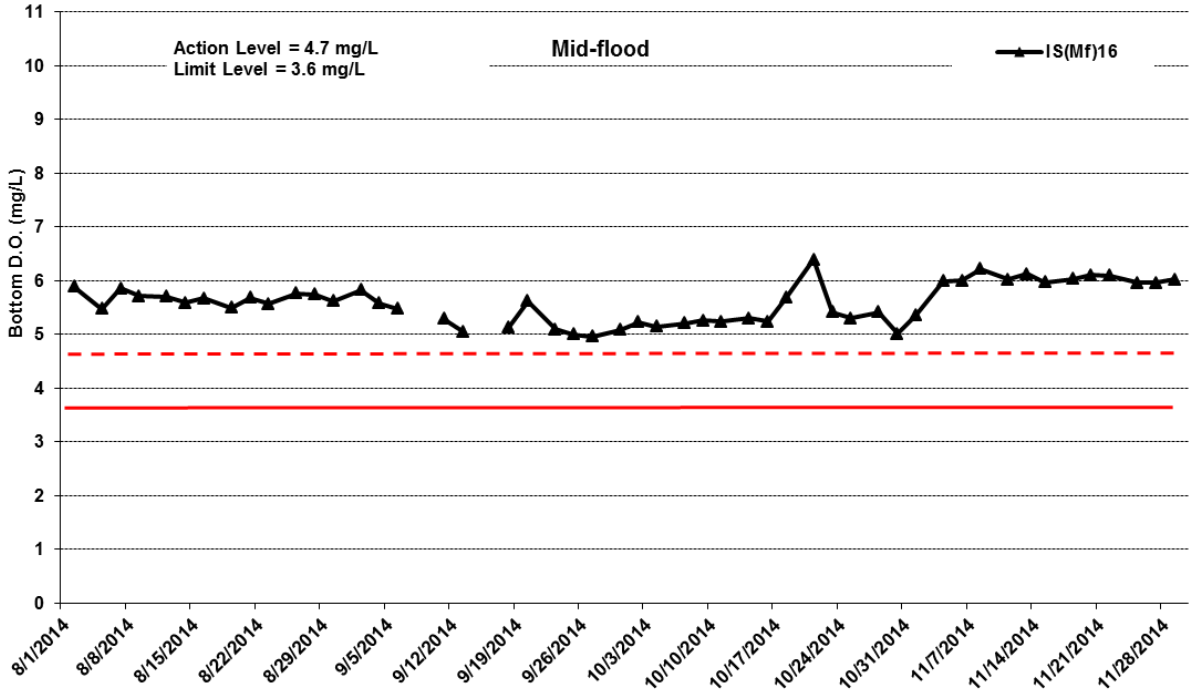

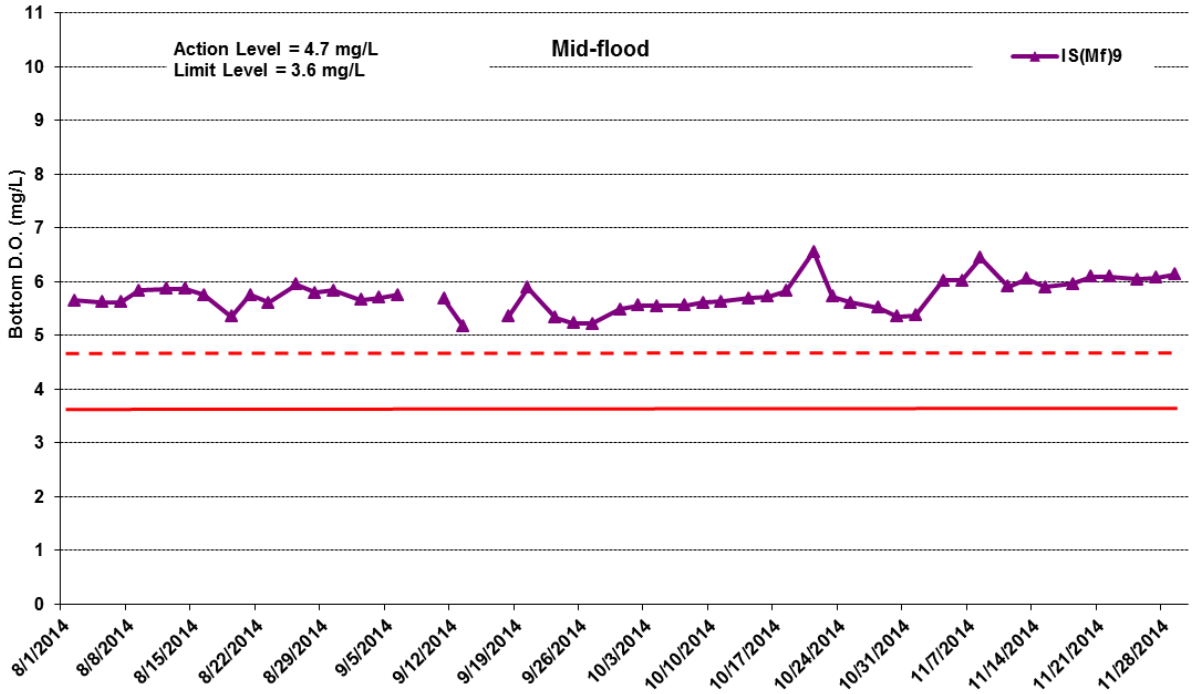

Figure H18 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in bottom waters during mid-flood tide between 1 August and 30 November 2014 at IS(Mf)16 and IS(Mf)9.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

Environmental Resources Management

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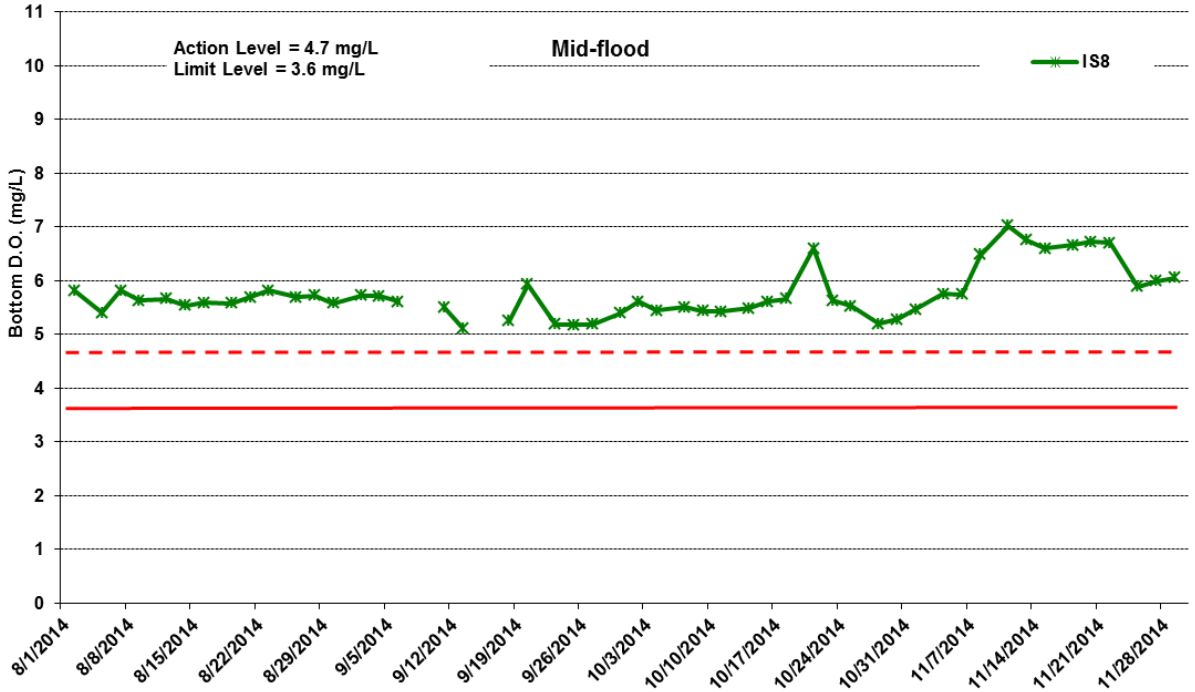

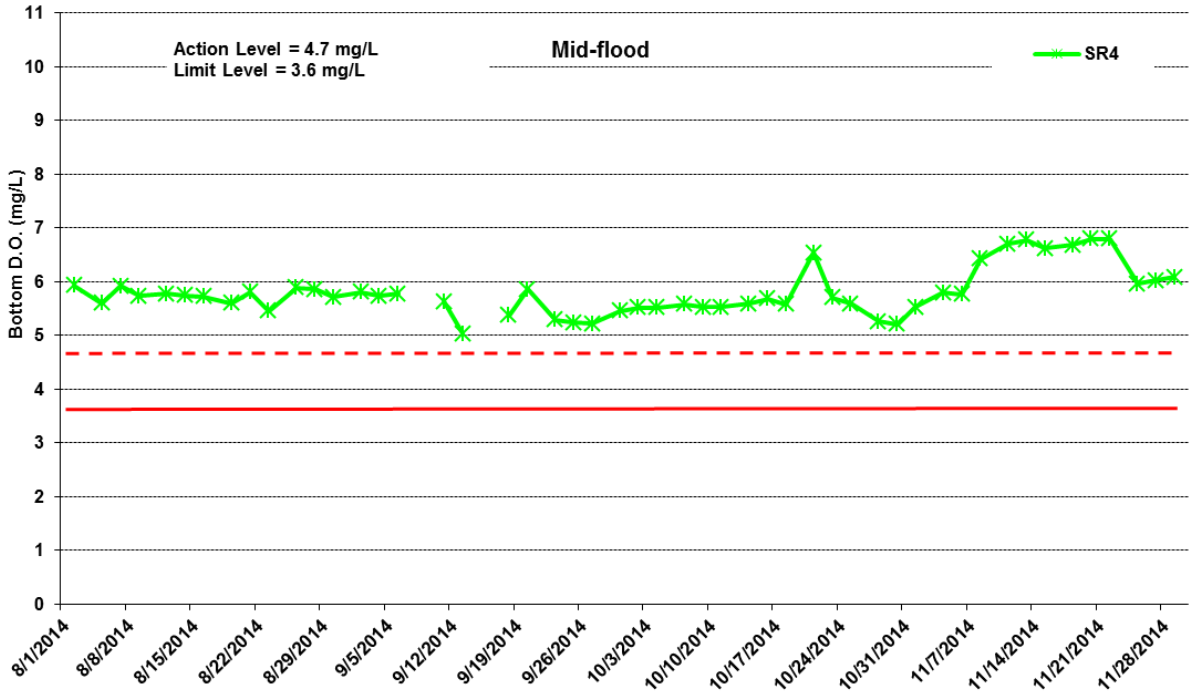

Figure H19 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in bottom waters during mid-flood tide between 1 August and 30 November 2014 at IS8 and SR4.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

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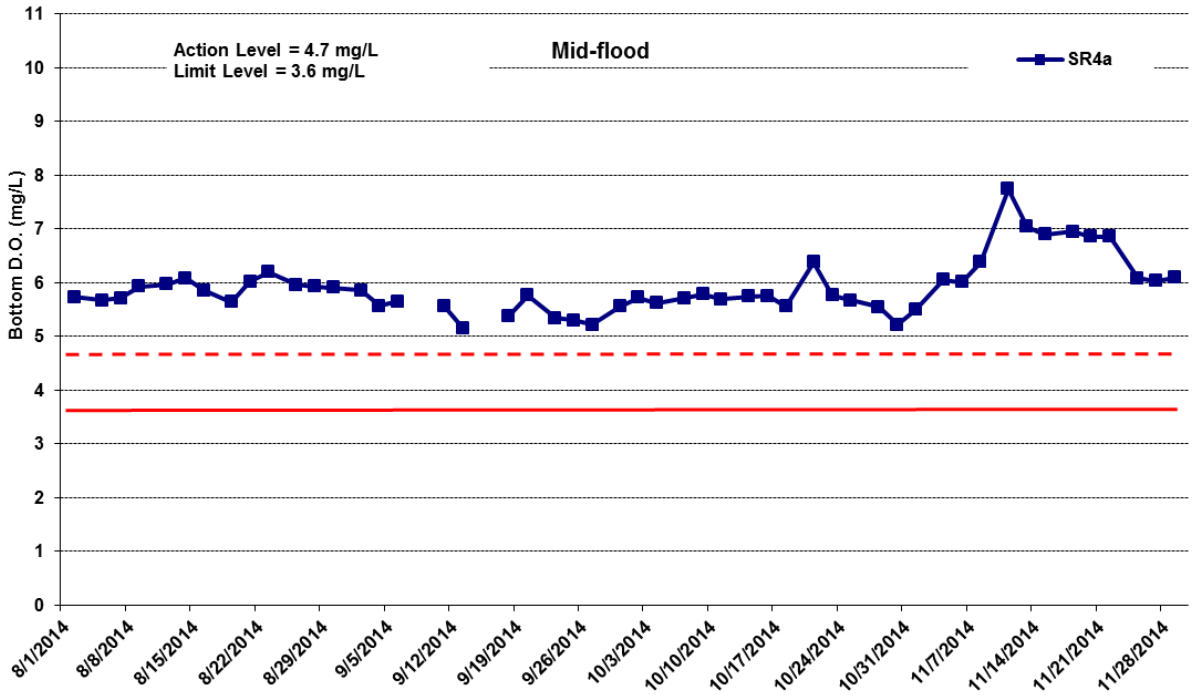

Figure H20 Impact Monitoring – Mean Level of Dissolved Oxygen (mg/L) in bottom waters during mid-flood tide between 1 August and 30 November 2014 at SR4a.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

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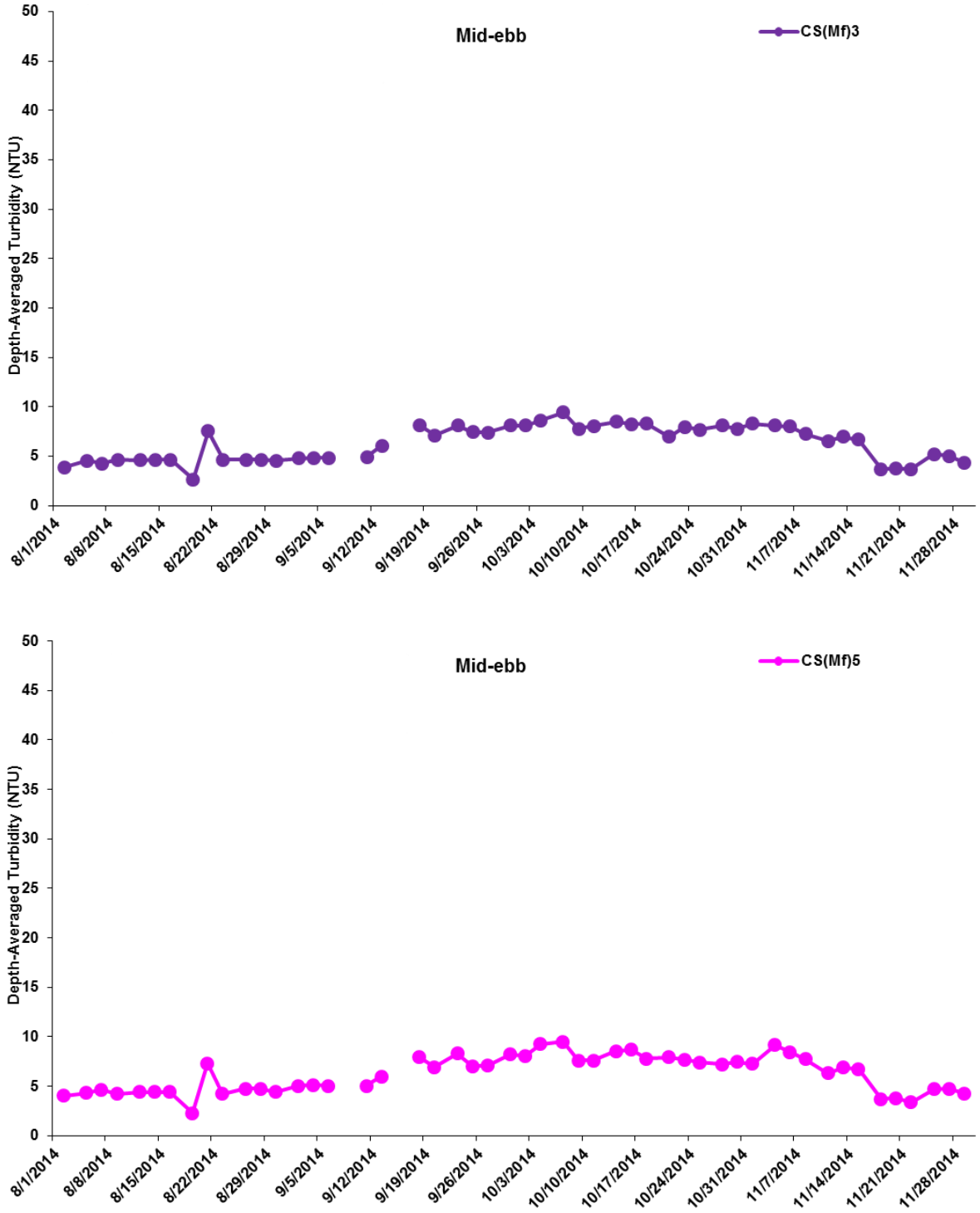

Figure H21 Impact Monitoring – Mean Level of depth-averaged Turbidity (NTU) during mid-ebb tide between 1 August and 30 November 2014 at CS(Mf)3 and CS(Mf)5.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

Environmental Resources Management

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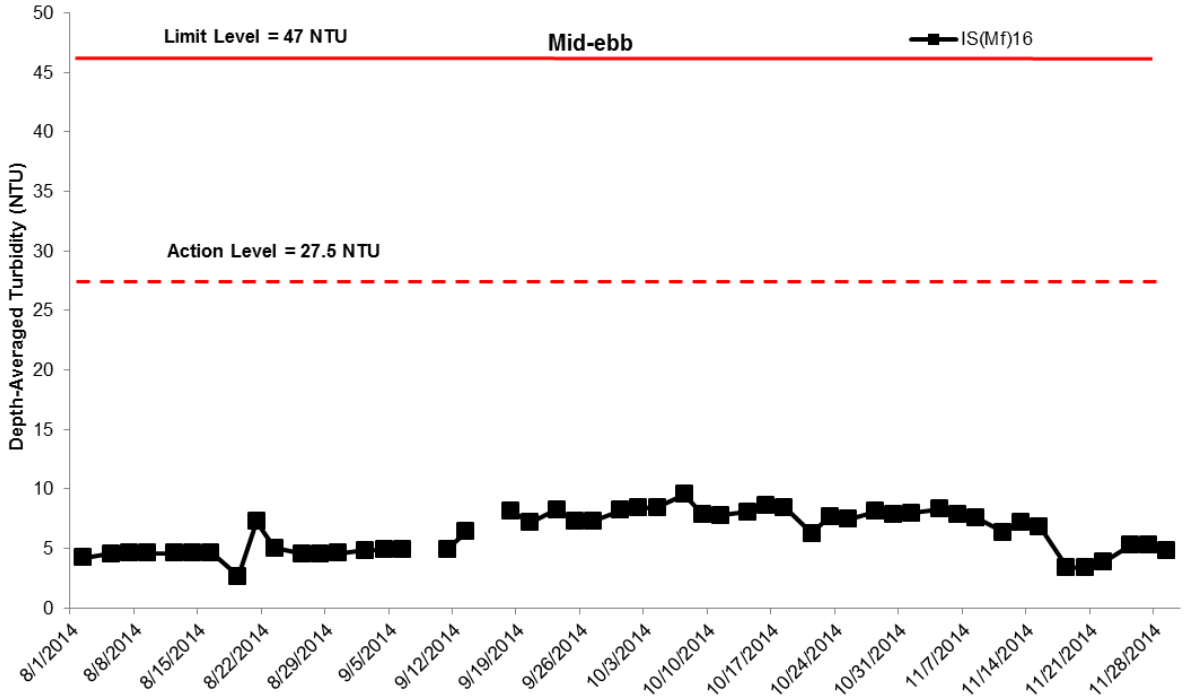

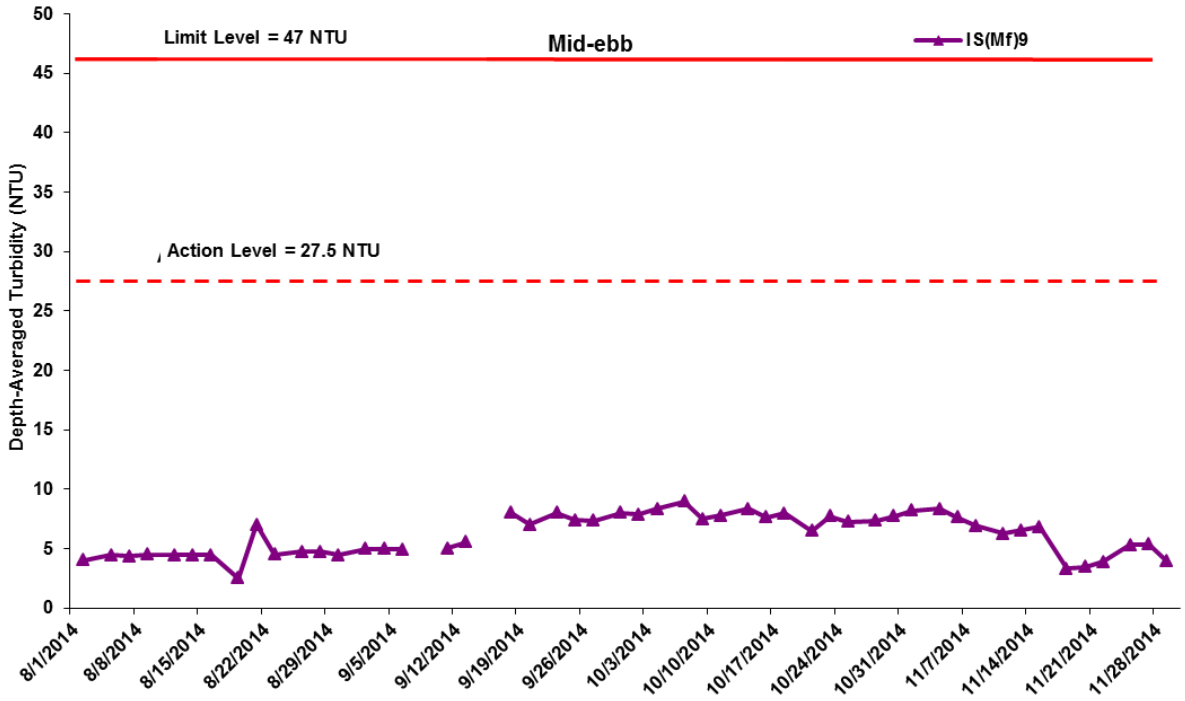

Figure H22 Impact Monitoring – Mean Level of depth-averaged Turbidity (NTU) during mid-ebb tide between 1 August and 30 November 2014 at IS(Mf)16 and IS(Mf)9.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

Environmental Resources Management

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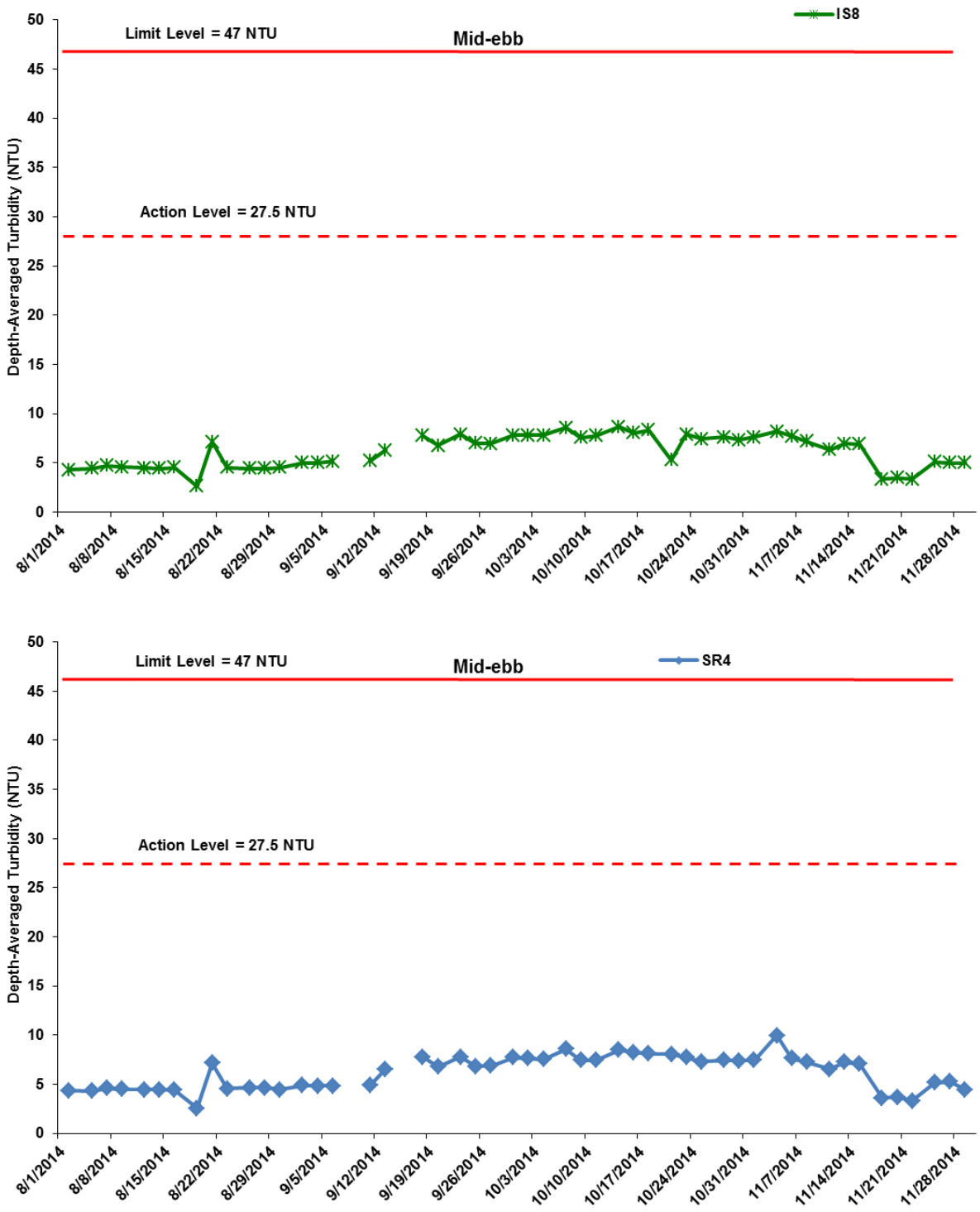

Figure H23 Impact Monitoring – Mean Level of depth-averaged Turbidity (NTU) during mid-ebb tide between 1 August and 30 November 2014 at IS8 and SR4.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

Environmental Resources Management

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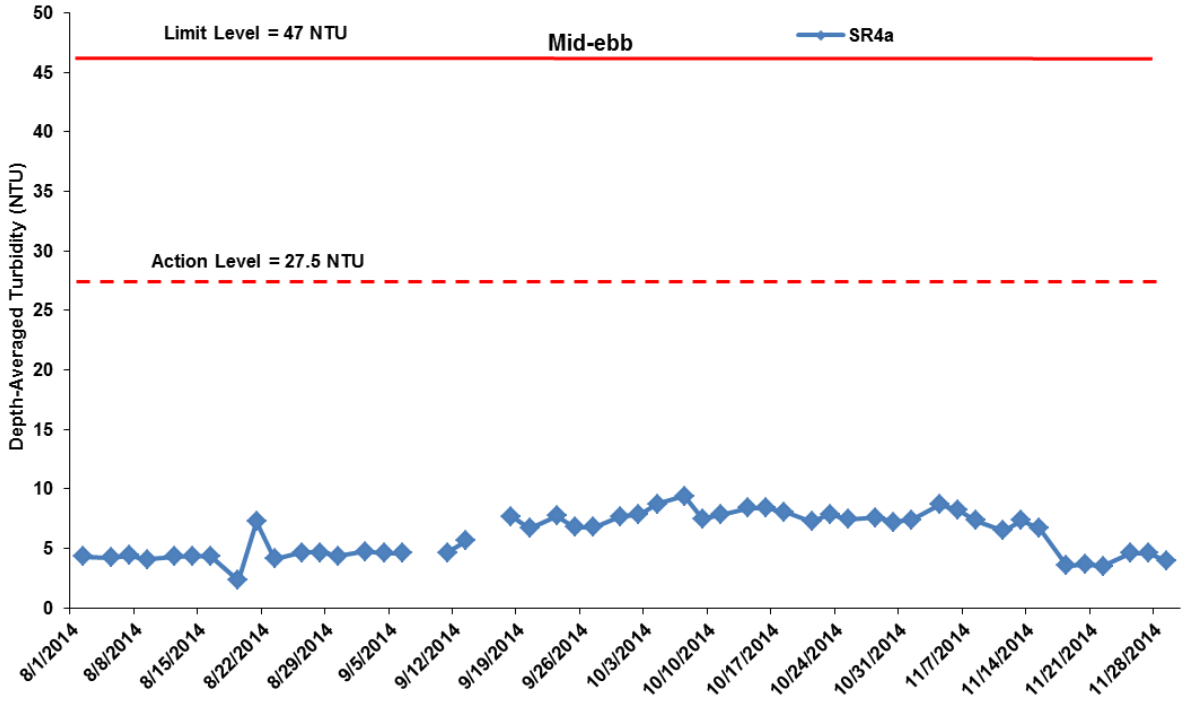

Figure H24 Impact Monitoring – Mean Level of depth-averaged Turbidity (NTU) during mid-ebb tide between 1 August and 30 November 2014 at SR4a.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

Environmental Resources Management

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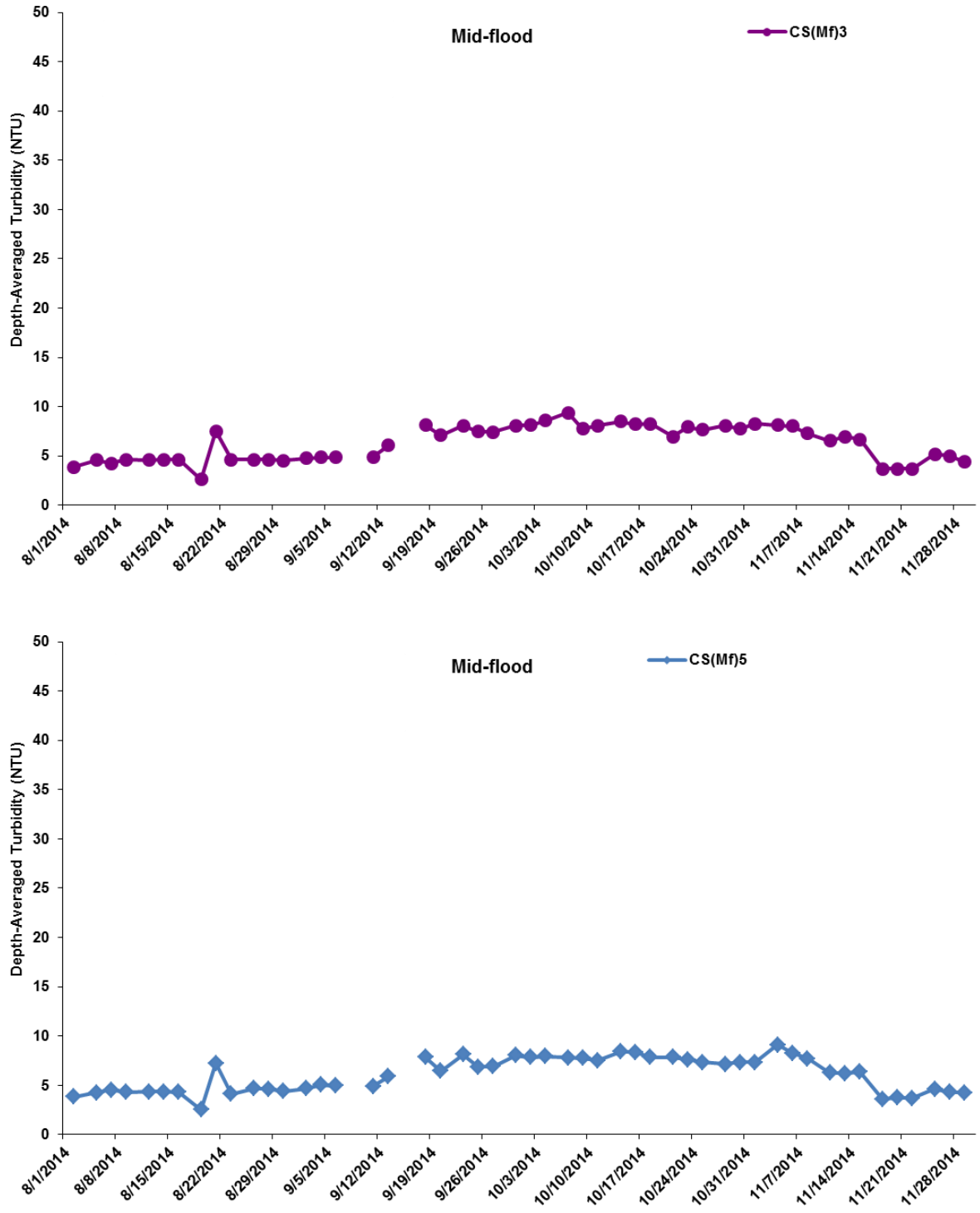

Figure H25 Impact Monitoring – Mean Level of depth-averaged Turbidity (NTU) during mid-flood tide between 1 August and 30 November 2014 at CS(Mf)3 and CS(MF)5.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

Environmental Resources Management

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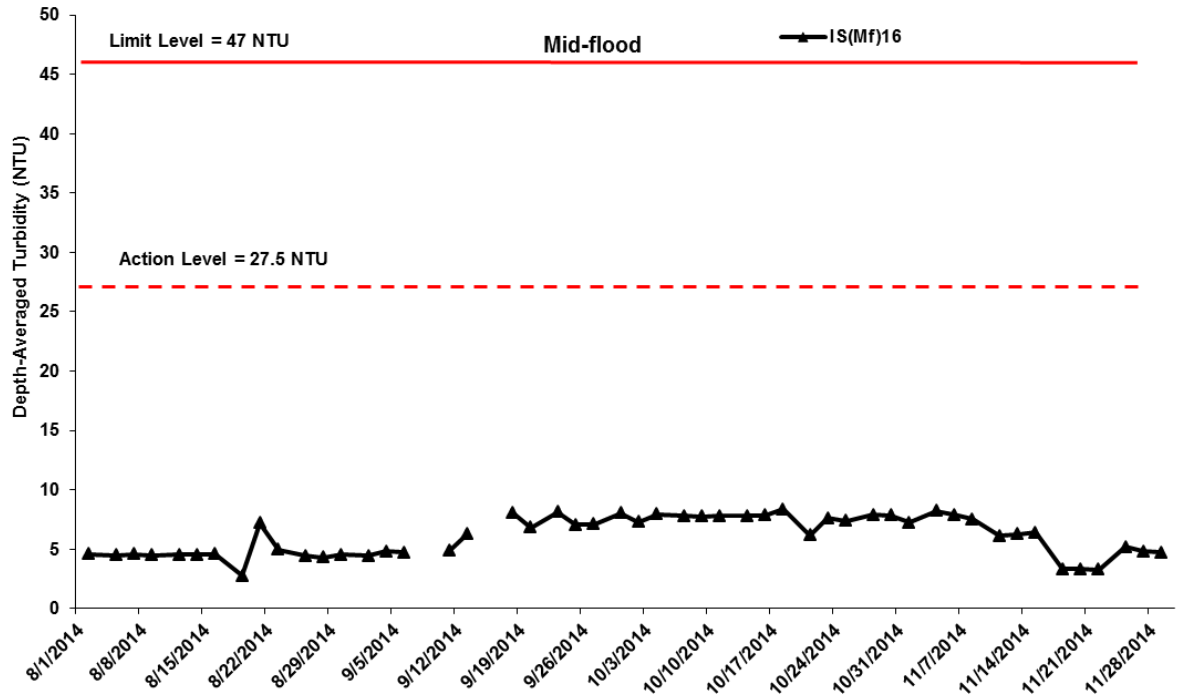

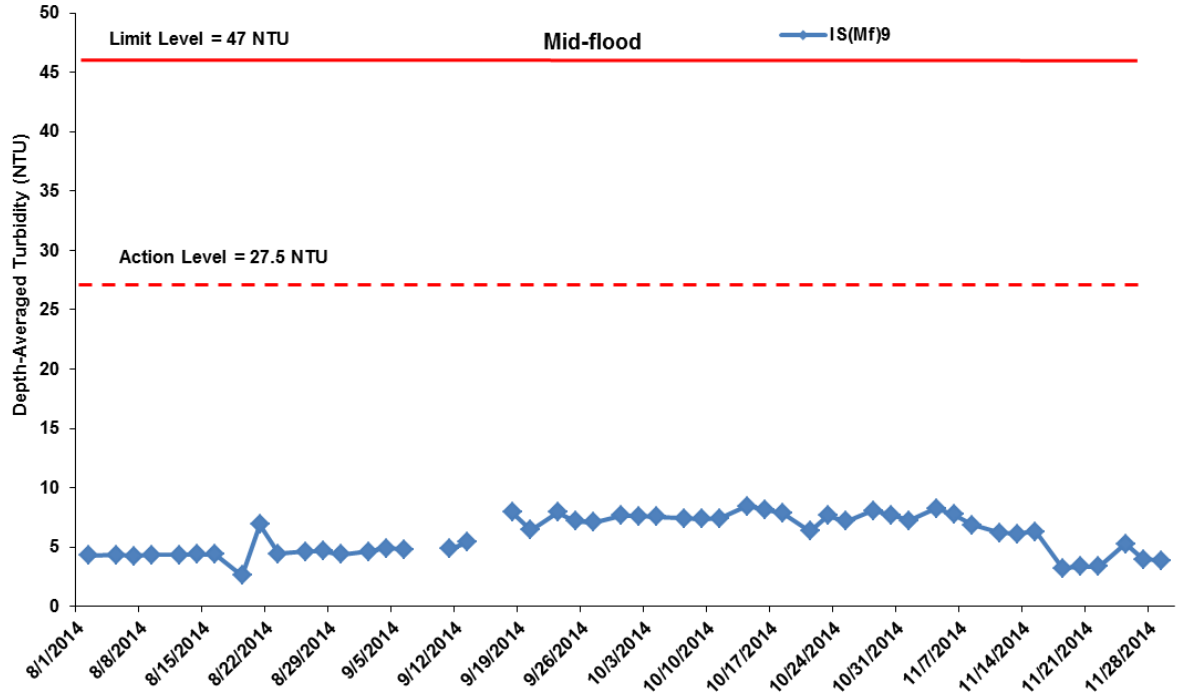

Figure H26 Impact Monitoring – Mean Level of depth-averaged Turbidity (NTU) during mid-flood tide between 1 August and 30 November 2014 at IS(Mf)16 and IS(Mf)9.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

Environmental Resources Management

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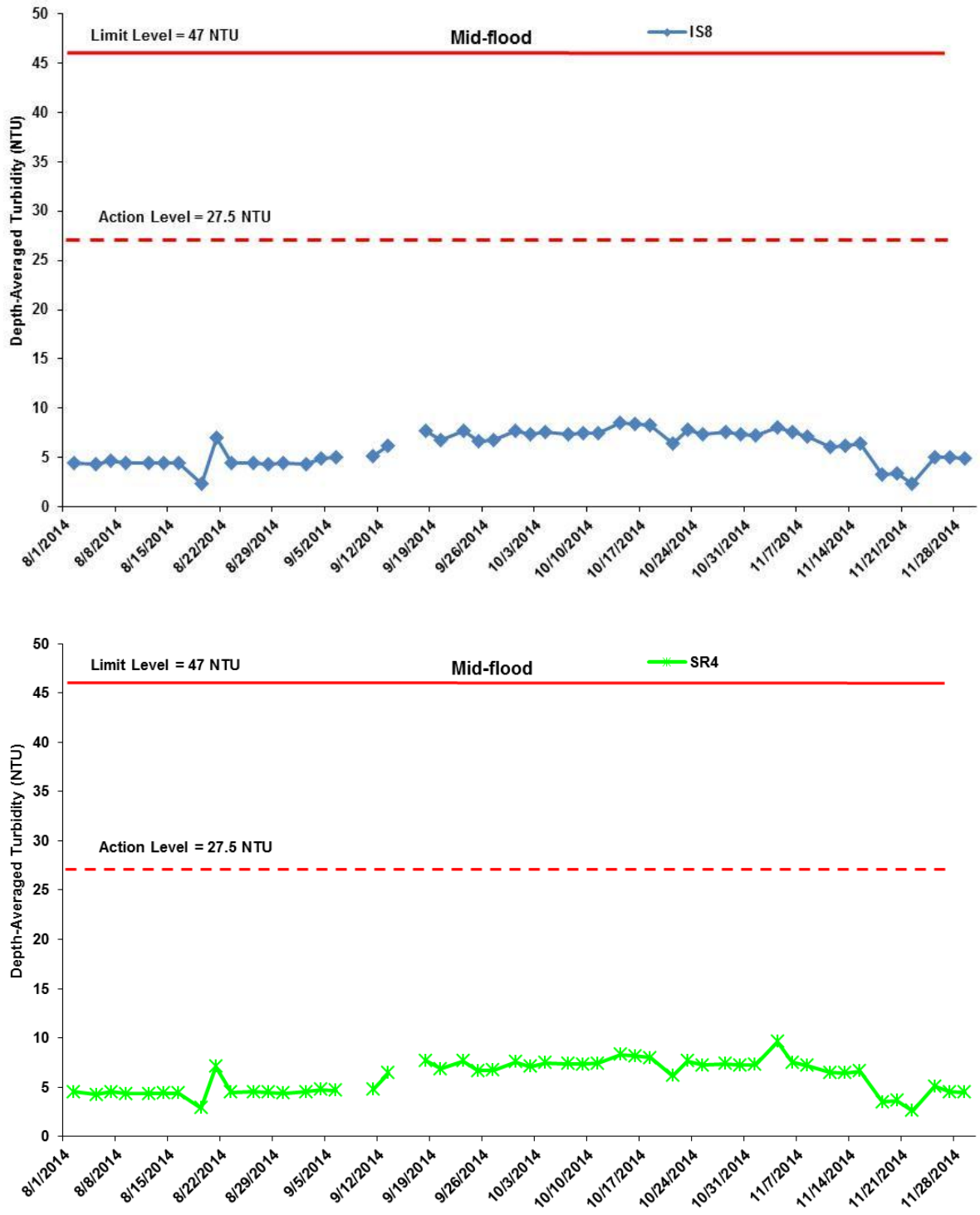

Figure H27 Impact Monitoring – Mean Level of depth-averaged Turbidity (NTU) during mid-flood tide between 1 August and 30 November 2014 at IS8 and SR4.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

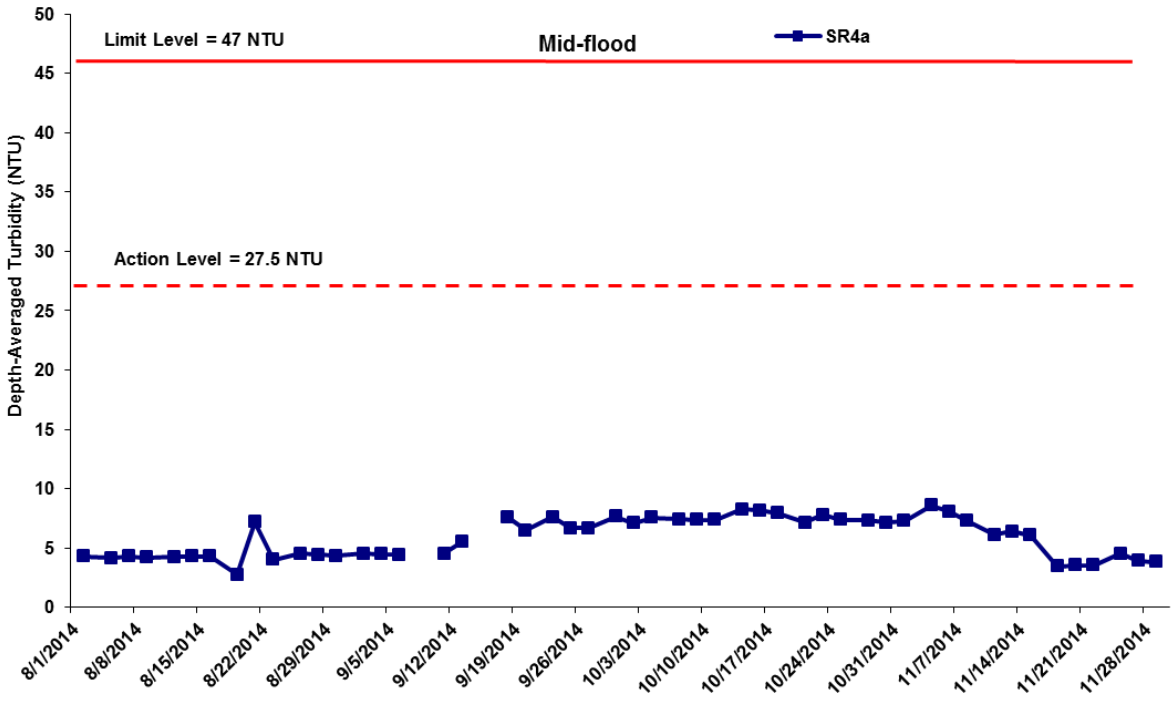

Figure H28 Impact Monitoring – Mean Level of depth-averaged Turbidity (NTU) during mid-flood tide between 1 August and 30 November 2014 at SR4a.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

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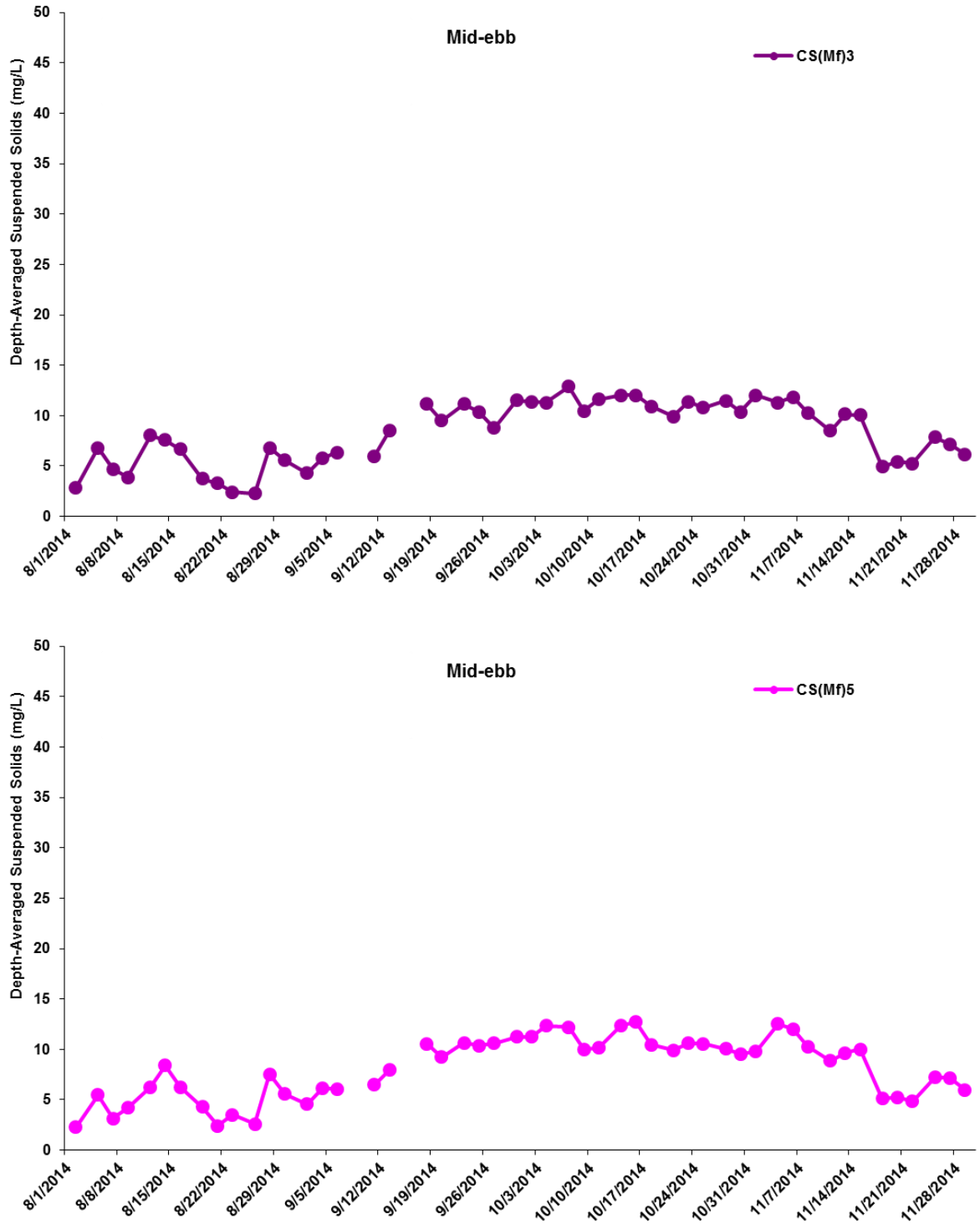

Figure H29 Impact Monitoring – Mean depth-averaged level of Suspended Solids (mg/L) during mid-ebb tide between 1 August and 30 November 2014 at CS(Mf)3 and CS(Mf)5.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

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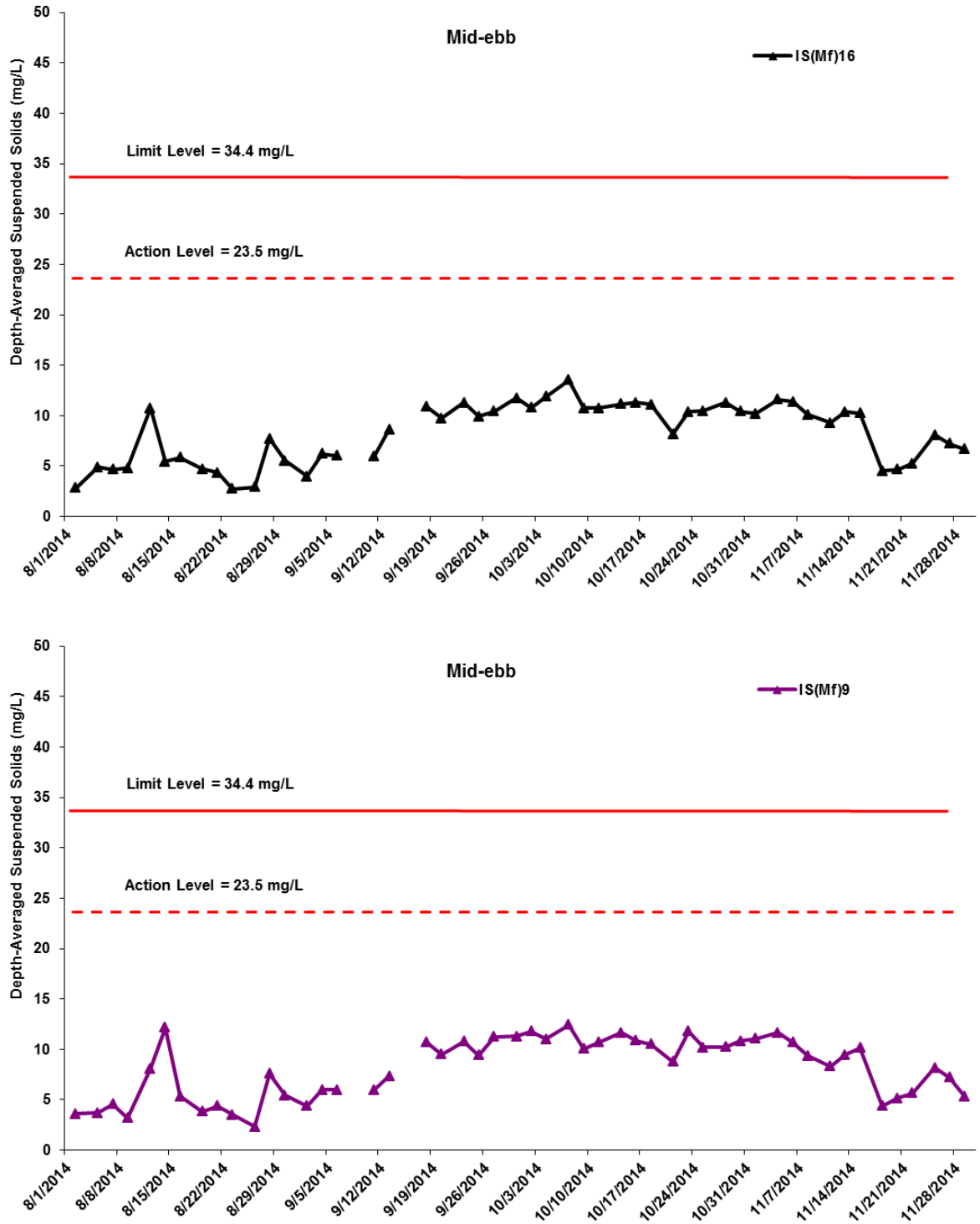

Figure H30 Impact Monitoring – Mean depth-averaged level of Suspended Solids (mg/L) during mid-ebb tide between 1 August and 30 November 2014 at IS(Mf)16 and IS(Mf)9.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

Environmental Resources Management

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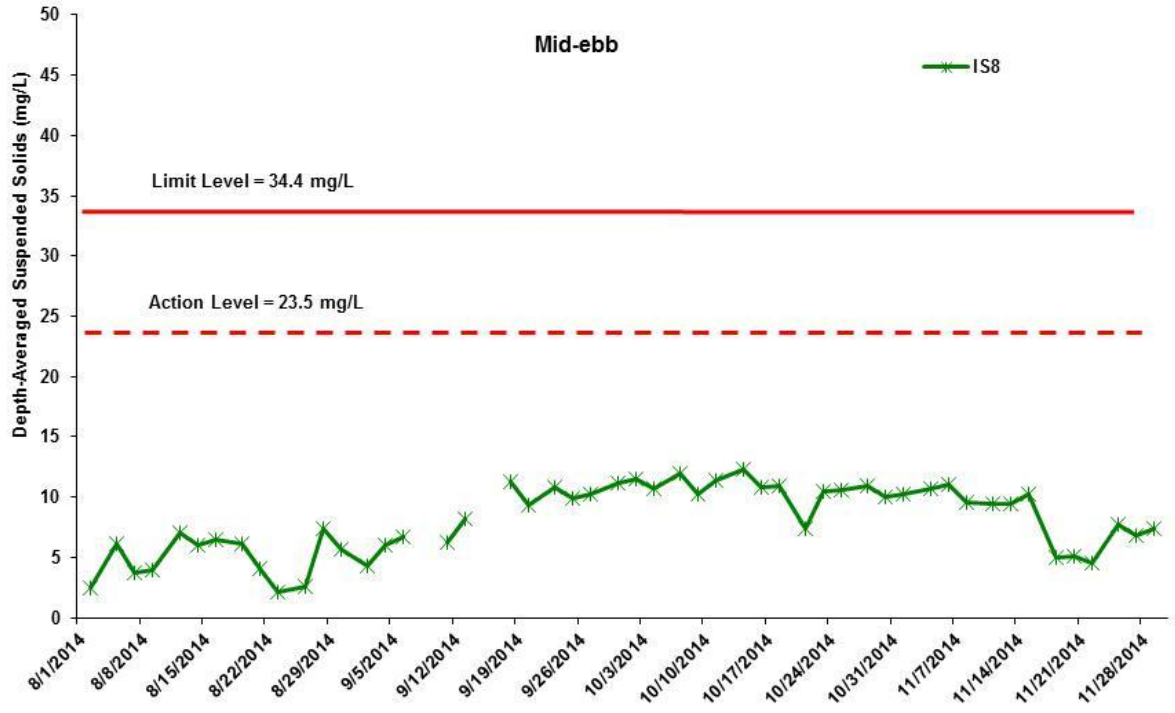

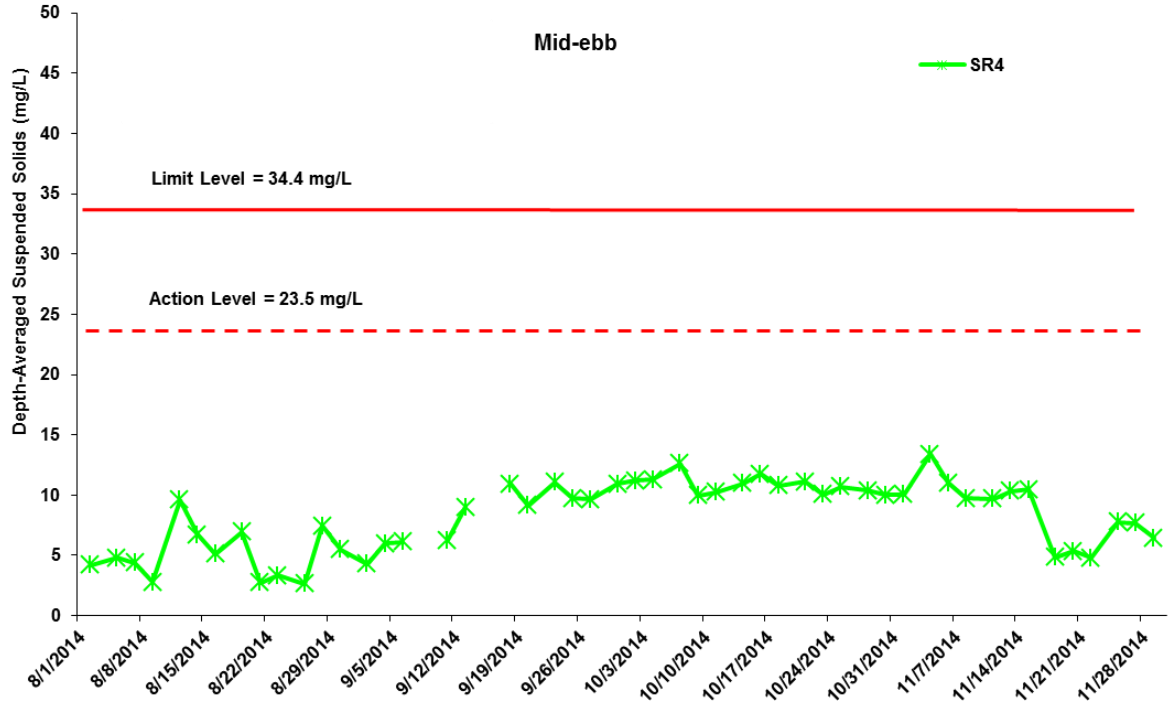

Figure H31 Impact Monitoring – Mean depth-averaged level of Suspended Solids (mg/L) during mid-ebb tide between 1 August and 30 November 2014 at IS8 and SR4.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

Environmental Resources Management

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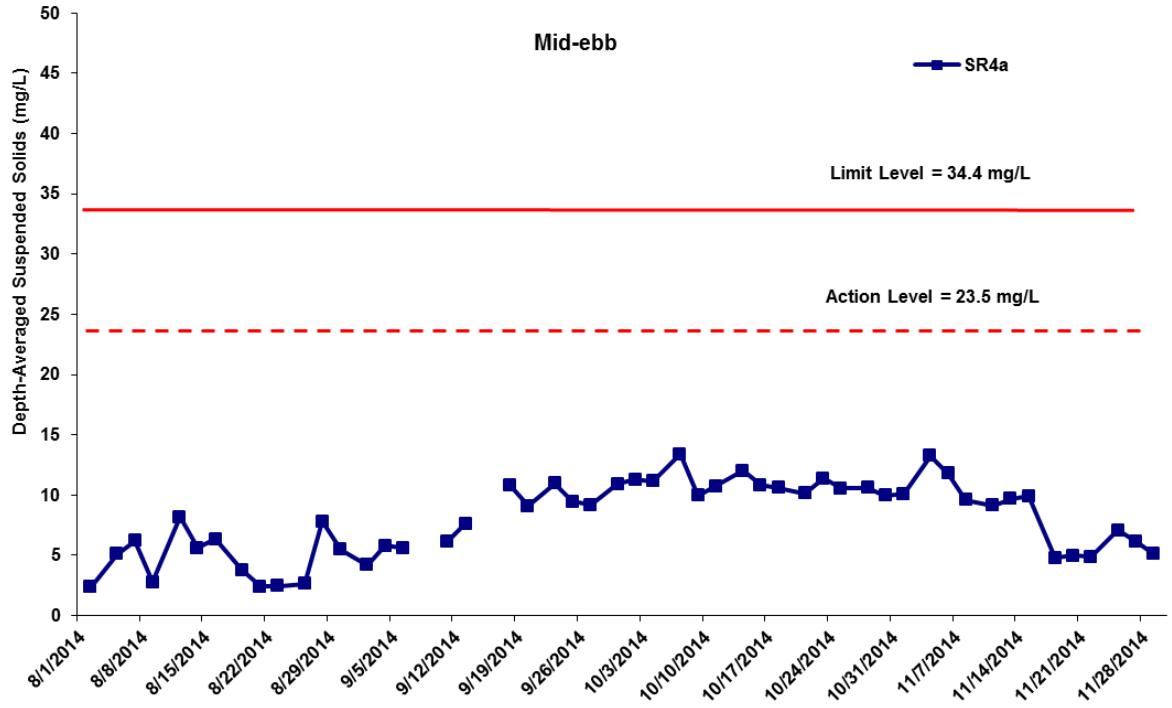

Figure H32 Impact Monitoring – Mean depth-averaged level of Suspended Solids (mg/L) during mid-ebb tide between 1 August and 30 November 2014 at SR4a.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

Environmental Resources Management

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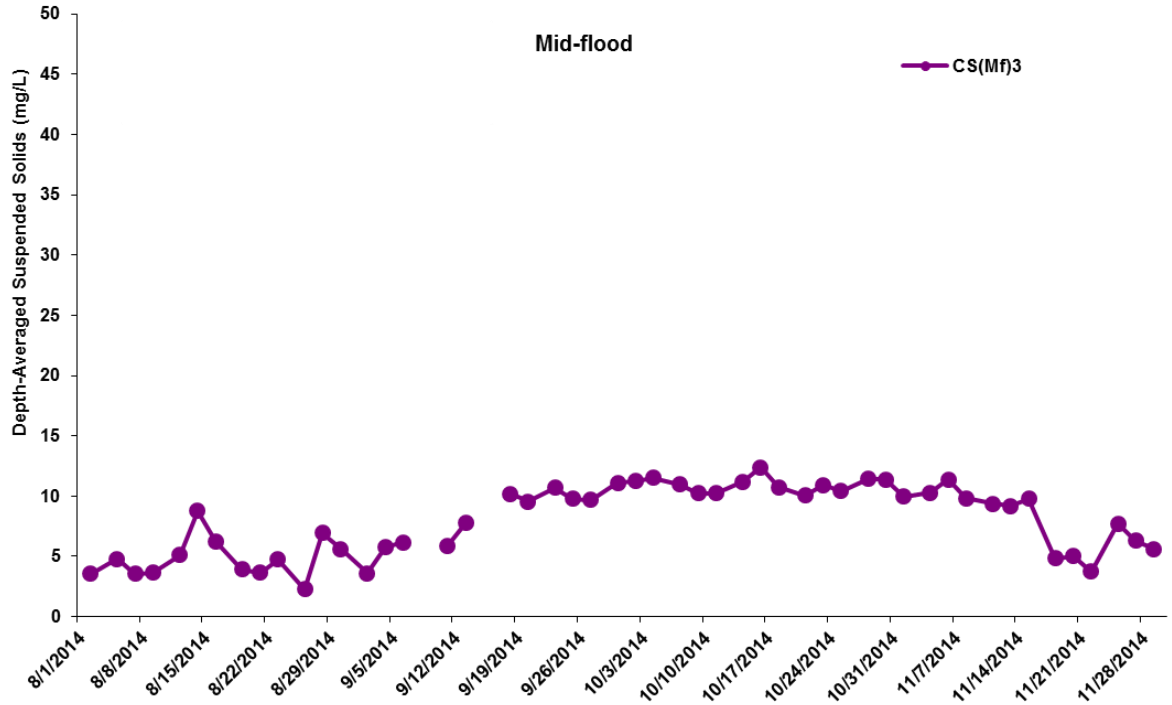

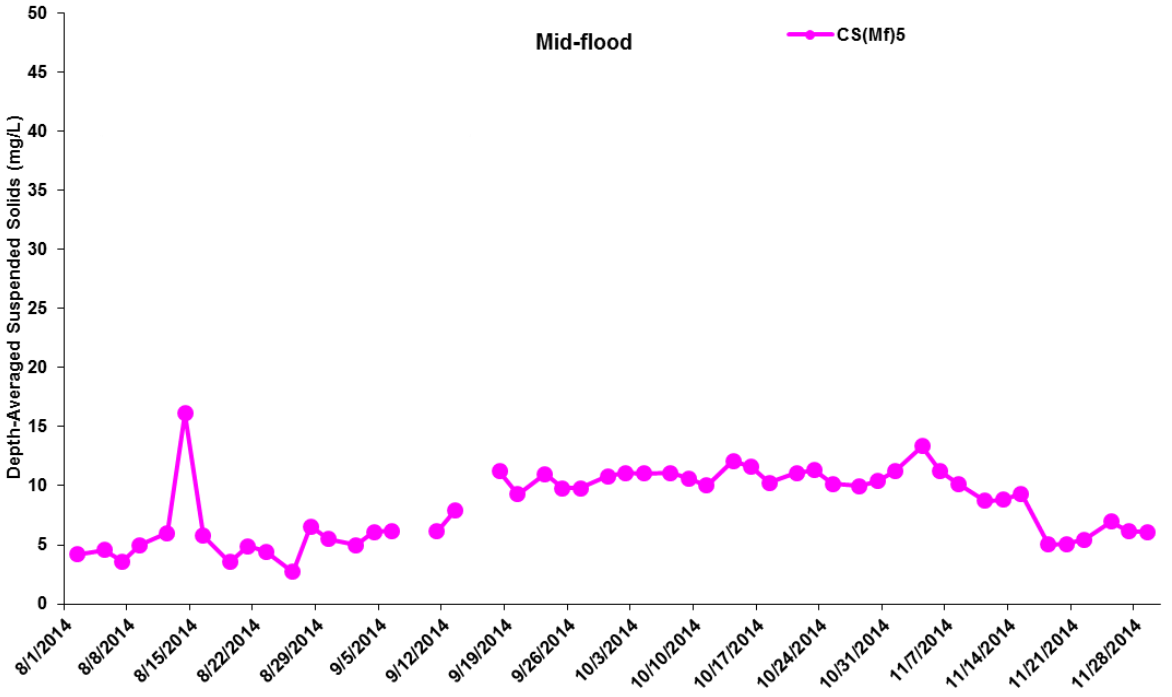

Figure H33 Impact Monitoring – Mean depth-averaged level of Suspended Solids (mg/L) during mid-flood tide between 1 August and 30 November 2014 at CS(Mf)3 and CS(Mf)5.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

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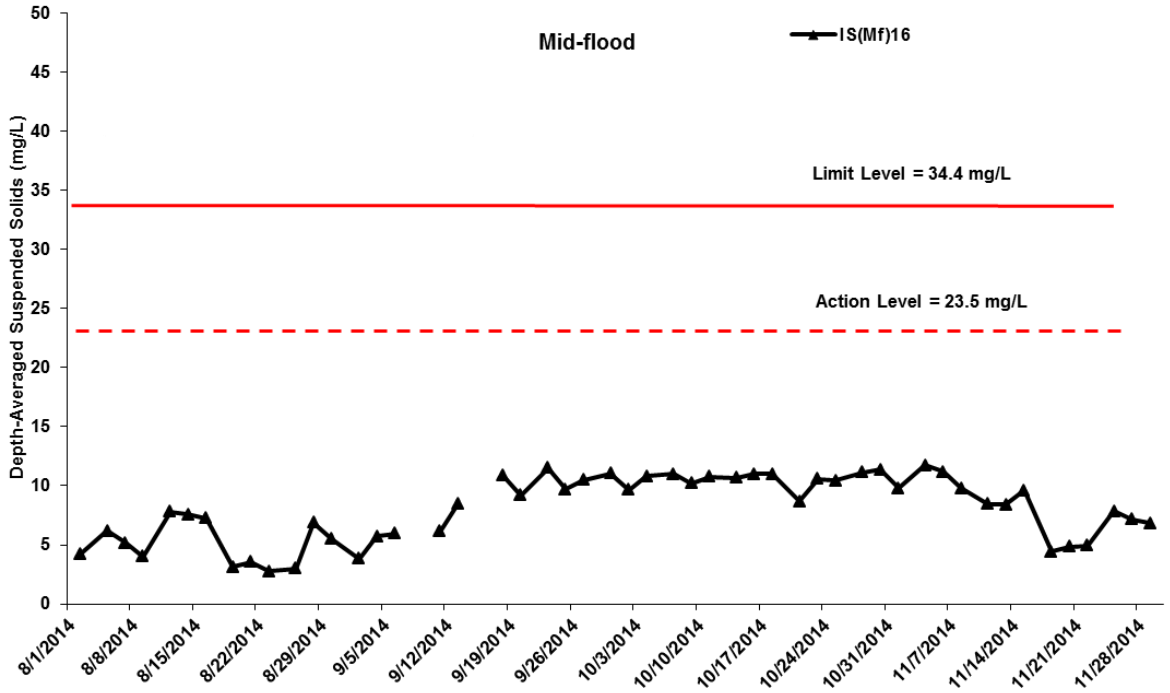

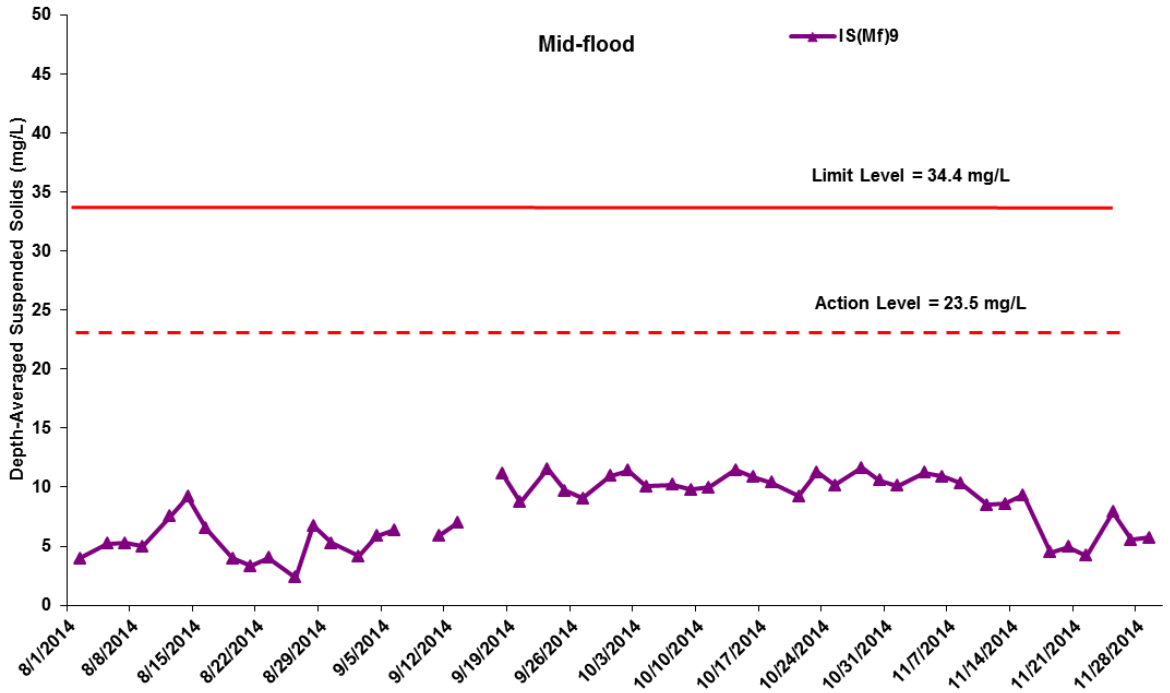

Figure H34 Impact Monitoring – Mean depth-averaged level of Suspended Solids (mg/L) during mid-flood tide between 1 August and 30 November 2014 at IS(Mf)16 and IS(Mf)9.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

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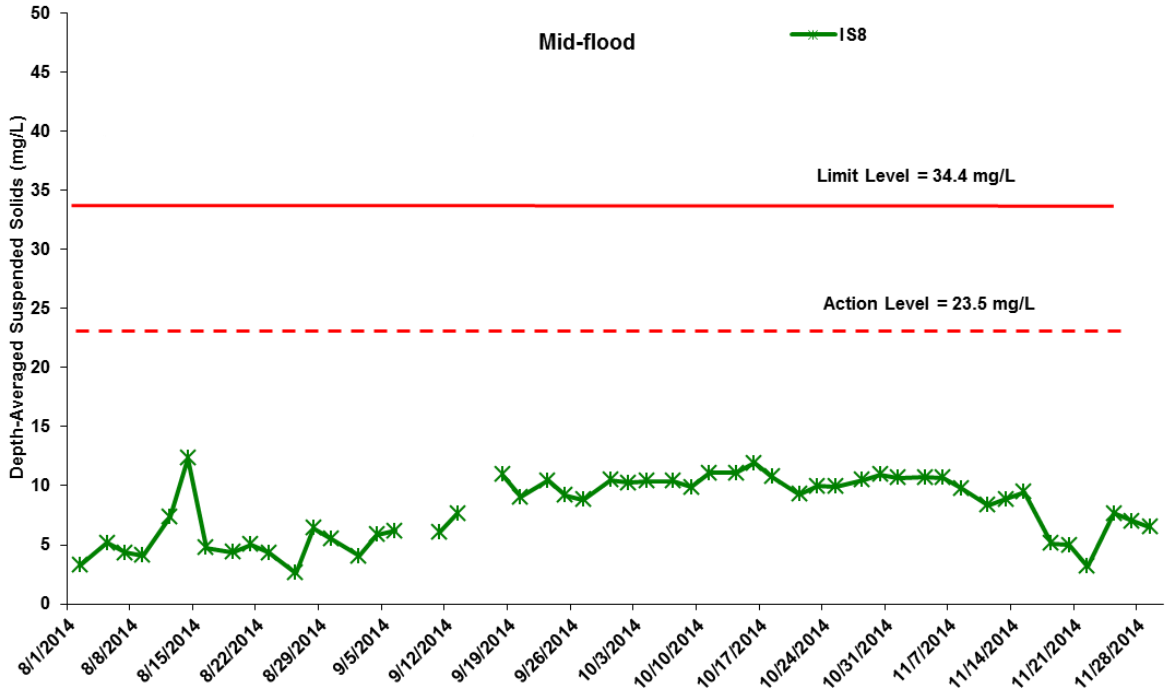

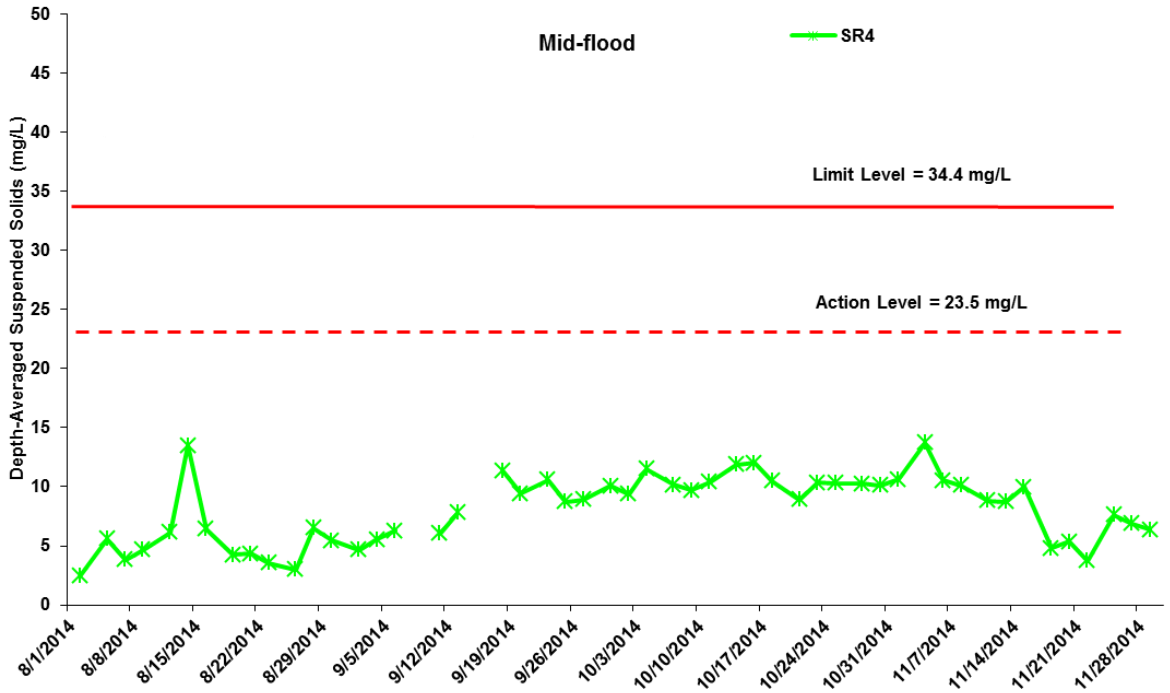

Figure H35 Impact Monitoring – Mean depth-averaged level of Suspended Solids (mg/L) during mid-flood tide between 1 August and 30 November 2014 at IS8 and SR4.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

Environmental Resources Management

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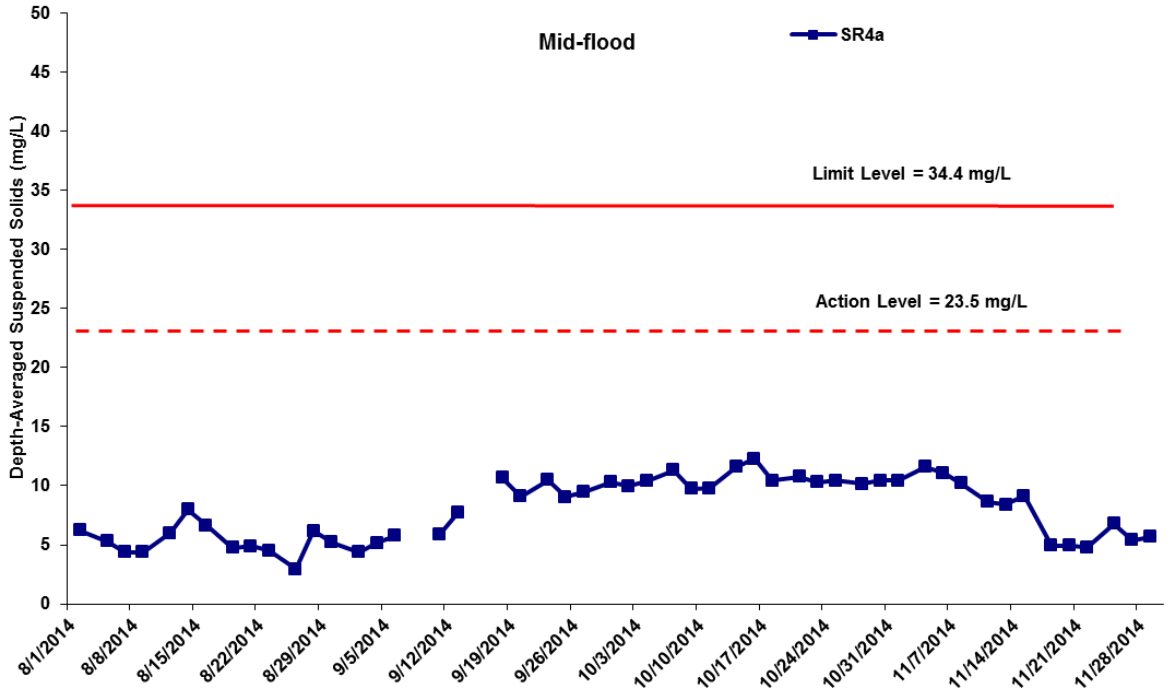

Figure H36 Impact Monitoring – Mean depth-averaged level of Suspended Solids (mg/L) during mid-flood tide between 1 August and 30 November 2014 at SR4a.

(Weather condition varied between sunny to rainy within the reporting period. Marine works within the reporting period include construction of pile cap, marine piling platform installation and marine piling. No monitoring was conducted on 16 September 2014 due to adverse weather condition. Note no marine works was undertaken on 9 September 2014.)

Environmental Resources Management

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Appendix I

Impact Dolphin Monitoring Survey Results

CONTRACT NO. HY/2012/07
Hong Kong-Zhuhai-Macao Bridge Tuen Mun – Chek Lap Kok Link (Southern Connection Viaduct Section)
Dolphin Quarterly Monitoring

4th Quarterly Progress Report (September-November 2014)
submitted to Gammon Construction Limited

Submitted by
Samuel K.Y. Hung, Ph.D., Hong Kong Cetacean Research Project

8 January 2015

1. Introduction

1.1. The Tuen Mun-Chek Lap Kok Link (TM-CLKL) comprises a 1.6 km long dual 2-lane viaduct section between the Hong Kong Boundary Crossing Facilities (HKBCF) and the North Lantau Highway and associated roads at Tai Ho. Gammon Construction Limited (hereinafter called the "Contractor") was awarded as the main contractor of "Contract No. HY/2012/07 – Hong Kong-Zhuhai-Macao Bridge Tuen Mun-Chek Lap Kok Link – Southern Connection Viaduct Section".

1.2. According to the updated Environmental Monitoring and Audit (EM&A) Manual (for TM-CLKL), monthly line-transect vessel surveys for Chinese White Dolphin should be conducted to cover the Northwest (NWL) and Northeast Lantau (NEL) survey areas as in AFCD annual marine mammal monitoring programme. However, as such surveys have been undertaken by the HKLR03 and HKBCF projects in the same areas (i.e. NWL and NEL), a combined monitoring approach is recommended by the Highways Department, that the TM-CLKL EM&A project can utilize the monitoring data collected by HKLR03 or HKBCF project to avoid any redundancy in monitoring effort. Such exemption for the dolphin monitoring will end upon the completion of the dolphin monitoring carried out by HKLR03 contract as well as the TM-CLKL Northern Connection Sub-Sea Tunnel Section (HY/2012/08)

1.3. In November 2013, the Director of Hong Kong Cetacean Research Project (HKCRP), Dr. Samuel Hung, has been appointed by Gammon Construction Limited as the dolphin specialist for the TM-CLKL Southern Viaduct Section EM&A project. He is responsible for the dolphin monitoring study, including the data collection on Chinese White Dolphins during the construction phase (i.e. impact period) of the TM-CLKL project in Northwest Lantau (NWL) and Northeast Lantau (NEL) survey areas.

1.4. During the construction period of HKLR, the dolphin specialist would be in charge of reviewing and collating information collected by HKLR03 dolphin monitoring programme to

examine any potential impacts of TM-CLKL construction works on the dolphins.

1.5. From the monitoring results, any changes in dolphin occurrence within the study area will be examined for possible causes, and appropriate actions and additional mitigation measures will be recommended as necessary.

1.6. This report is the fourth quarterly progress report under the TM-CLKL construction phase dolphin monitoring programme submitted to the Gammon Construction Limited, summarizing the results of the surveys findings during the period of September to November 2014 utilizing the survey data collected by HKLR03 project.

2. Monitoring Methodology

2.1. Vessel-based Line-transect Survey

2.1.1. According to the requirement of the updated EM&A manual, dolphin monitoring programme should cover all transect lines in NEL and NWL survey areas (see Figure 1) twice per month throughout the entire construction period. The co-ordinates of all transect lines conducted during the HKLR03 dolphin monitoring surveys are shown in Table 1.

Table 1 Co-ordinates of transect lines conducted by HKLR03 project

Line No.		Easting	Northing		Line No.		Easting	Northing
1	Start Point	804671	814577		13	Start Point	816506	819480
1	End Point	804671	831404		13	End Point	816506	824859
2	Start Point	805475	815457		14	Start Point	817537	820220
2	End Point	805477	826654		14	End Point	817537	824613
3	Start Point	806464	819435		15	Start Point	818568	820735
3	End Point	806464	822911		15	End Point	818568	824433
4	Start Point	807518	819771		16	Start Point	819532	821420
4	End Point	807518	829230		16	End Point	819532	824209
5	Start Point	808504	820220		17	Start Point	820451	822125
5	End Point	808504	828602		17	End Point	820451	823671
6	Start Point	809490	820466		18	Start Point	821504	822371
6	End Point	809490	825352		18	End Point	821504	823761
7	Start Point	810499	820690		19	Start Point	822513	823268
7	End Point	810499	824613		19	End Point	822513	824321
8	Start Point	811508	820847		20	Start Point	823477	823402
8	End Point	811508	824254		20	End Point	823477	824613
9	Start Point	812516	820892		21	Start Point	805476	827081
9	End Point	812516	824254		21	End Point	805476	830562

10	Start Point	813525	820872		22	Start Point	806464	824033
10	End Point	813525	824657		22	End Point	806464	829598
11	Start Point	814556	818449		23	Start Point	814559	821739
11	End Point	814556	820992		23	End Point	814559	824768
12	Start Point	815542	818807					
12	End Point	815542	824882					

2.1.2. The HKLR03 survey team used standard line-transect methods (Buckland et al. 2001) to conduct the systematic vessel surveys, and followed the same technique of data collection that has been adopted over the last 16 years of marine mammal monitoring surveys in Hong Kong developed by HKCRP (see Hung 2013, 2014). For each monitoring vessel survey, a 15-m inboard vessel with an open upper deck (about 4.5 m above water surface) was used to make observations from the flying bridge area.

2.1.3. Two experienced observers (a data recorder and a primary observer) made up the on-effort survey team, and the survey vessel transited different transect lines at a constant speed of 13-15 km per hour. The data recorder searched with unaided eyes and filled out the datasheets, while the primary observer searched for dolphins and porpoises continuously through 7 x 50 *Fujinon* marine binoculars. Both observers searched the sea ahead of the vessel, between 270^{o} and 90^{o} (in relation to the bow, which is defined as 0^{o}). One to two additional experienced observers were available on the boat to work in shift (i.e. rotate every 30 minutes) in order to minimize fatigue of the survey team members. All observers were experienced in small cetacean survey techniques and identifying local cetacean species.

2.1.4. During on-effort survey periods, the survey team recorded effort data including time, positions (latitude and longitude), weather conditions (Beaufort sea state and visibility), and distance traveled in each series (a continuous period of search effort) with the assistance of a handheld GPS (*Garmin eTrex Legend*).

2.1.5. Data including time, position and vessel speed were also automatically and continuously logged by handheld GPS throughout the entire survey for subsequent review.

2.1.6. When dolphins were sighted, the survey team would end the survey effort, and immediately record the initial sighting distance and angle of the dolphin group from the survey vessel, as well as the sighting time and position. Then the research vessel was diverted from its course to approach the animals for species identification, group size estimation, assessment of group composition, and behavioural observations. The perpendicular distance (PSD) of the dolphin group to the transect line was later calculated from the initial sighting distance and angle.

2.1.7. Survey effort being conducted along the parallel transect lines that were perpendicular to the coastlines (as indicated in Figure 1) was labeled as “primary” survey effort, while the survey effort conducted along the connecting lines between parallel lines was labeled as “secondary” survey effort. According to HKCRP long-term dolphin monitoring data, encounter rates of Chinese white dolphins deduced from effort and sighting data collected

along primary and secondary lines were similar in NEL and NWL survey areas. Therefore, both primary and secondary survey effort were presented as on-effort survey effort in this report.

2.2. Photo-identification Work

2.2.1. When a group of Chinese White Dolphins were sighted during the line-transect survey, the HKLR03 survey team would end effort and approach the group slowly from the side and behind to take photographs of them. Every attempt was made to photograph every dolphin in the group, and even photograph both sides of the dolphins, since the colouration and markings on both sides may not be symmetrical.

2.2.2. A professional digital camera (*Canon* EOS 7D or 60D model), equipped with long telephoto lenses (100-400 mm zoom), were available on board for researchers to take sharp, close-up photographs of dolphins as they surfaced. The images were shot at the highest available resolution and stored on Compact Flash memory cards for downloading onto a computer.

2.2.3. All digital images taken in the field were first examined, and those containing potentially identifiable individuals were sorted out. These photographs would then be examined in greater detail, and were carefully compared to the existing Chinese White Dolphin photo-identification catalogue maintained by HKCRP since 1995.

2.2.4. Chinese White Dolphins can be identified by their natural markings, such as nicks, cuts, scars and deformities on their dorsal fin and body, and their unique spotting patterns were also used as secondary identifying features (Jefferson 2000).

2.2.5. All photographs of each individual were then compiled and arranged in chronological order, with data including the date and location first identified (initial sighting), re-sightings, associated dolphins, distinctive features, and age classes entered into a computer database.

2.3. Data Analysis

2.3.1. Distribution Analysis – The line-transect survey data was integrated with the Geographic Information System (GIS) in order to visualize and interpret different spatial and temporal patterns of dolphin distribution using sighting positions. Location data of dolphin groups were plotted on map layers of Hong Kong using a desktop GIS (ArcView© 3.1) to examine their distribution patterns in details. The dataset was also stratified into different subsets to examine distribution patterns of dolphin groups with different categories of group sizes, young calves and activities.

2.3.2. Encounter rate analysis – Encounter rates of Chinese white dolphins (number of on-effort sightings per 100 km of survey effort, and total number of dolphins sighted on-effort per 100 km of survey effort) were calculated in NEL and NWL survey areas in relation to the amount of survey effort conducted during each month of monitoring survey. Only data

collect under Beaufort 3 or below condition would be used for the encounter rate analyses. Dolphin encounter rates were calculated in two ways for comparisons with the HZMB baseline monitoring results as well as to AFCD long-term marine mammal monitoring results.

Firstly, for the comparison with the HZMB baseline monitoring results, the encounter rates were calculated using primary survey effort alone. The average encounter rate of sightings (STG) and average encounter rate of dolphins (ANI) were deduced based on the encounter rates from six events during the present quarter (i.e. six sets of line-transect surveys in North Lantau), which was also compared with the one deduced from the six events during the baseline period (i.e. six sets of line-transect surveys in North Lantau).

Secondly, the encounter rates were calculated using both primary and secondary survey effort collected under Beaufort 3 or below condition as in AFCD long-term monitoring study. The encounter rate of sightings and dolphins were deduced by dividing the total number of on-effort sightings (STG) and total number of dolphins (ANI) by the amount of survey effort for the quarterly period of September to November 2014.

2.3.3. Quantitative grid analysis on habitat use – To conduct quantitative grid analysis of habitat use, positions of on-effort sightings of Chinese White Dolphins collected during the quarterly impact phase monitoring period were plotted onto 1-km^2 grids among NWL and NEL survey areas on GIS. Sighting densities (number of on-effort sightings per km^2) and dolphin densities (total number of dolphins from on-effort sightings per km^2) were then calculated for each 1 km by 1 km grid with the aid of GIS. Sighting density grids and dolphin density grids were then further normalized with the amount of survey effort conducted within each grid. The total amount of survey effort spent on each grid was calculated by examining the survey coverage on each line-transect survey to determine how many times the grid was surveyed during the study period. For example, when the survey boat traversed through a specific grid 50 times, 50 units of survey effort were counted for that grid. With the amount of survey effort calculated for each grid, the sighting density and dolphin density of each grid were then normalized (i.e. divided by the unit of survey effort).

The newly-derived unit for sighting density was termed SPSE, representing the number of on-effort **s**ightings **p**er 100 units of **s**urvey **e**ffort. In addition, the derived unit for actual dolphin density was termed DPSE, representing the number of **d**olphins **p**er 100 units of **s**urvey **e**ffort. Among the 1-km^2 grids that were partially covered by land, the percentage of sea area was calculated using GIS tools, and their SPSE and DPSE values were adjusted accordingly. The following formulae were used to estimate SPSE and DPSE in each 1-km^2 grid within the study area:

$$SPSE = ((S / E) \times 100) / SA\%$$
$$DPSE = ((D / E) \times 100) / SA\%$$

where S = total number of on-effort sightings
D = total number of dolphins from on-effort sightings
E = total number of units of survey effort
SA% = percentage of sea area

2.3.4. Behavioural analysis – When dolphins were sighted during vessel surveys, their behaviour was observed. Different activities were categorized (i.e. feeding, socializing, traveling, and milling/resting) and recorded on sighting datasheets. This data was then input into a separate database with sighting information, which can be used to determine the distribution of behavioural data with a desktop GIS. Distribution of sightings of dolphins engaged in different activities and behaviours would then be plotted on GIS and carefully examined to identify important areas for different activities of the dolphins.

2.3.5. Ranging pattern analysis – Location data of individual dolphins that occurred during the 3-month impact phase monitoring period were obtained from the dolphin sighting database and photo-identification catalogue. To deduce home ranges for individual dolphins using the fixed kernel methods, the program Animal Movement Analyst Extension, was loaded as an extension with ArcView© 3.1 along with another extension Spatial Analyst 2.0. Using the fixed kernel method, the program calculated kernel density estimates based on all sighting positions, and provided an active interface to display kernel density plots. The kernel estimator then calculated and displayed the overall ranging area at 95% UD level.

3. Monitoring Results

3.1. Summary of survey effort and dolphin sightings

3.1.1. During the period of September to November 2014, six sets of systematic line-transect vessel surveys were conducted under the HKLR03 monitoring works to cover all transect lines in NWL and NEL survey areas twice per month.

3.1.2. From these HKLR03 surveys, a total of 892.88 km of survey effort was collected, with 97.1% of the total survey effort being conducted under favourable weather conditions (i.e. Beaufort Sea State 3 or below with good visibility). Among the two areas, 343.71 km and 549.17 km of survey effort were conducted in NEL and NWL survey areas respectively.

3.1.3. The total survey effort conducted on primary lines was 644.60 km, while the effort on secondary lines was 248.28 km. Both survey effort conducted on primary and secondary lines were considered as on-effort survey data. Summary table of the survey effort is shown in Appendix I.

3.1.4. During the six sets of HKLR03 monitoring surveys from September to November 2014, a total of 24 groups of 93 Chinese White Dolphins were sighted. All except four dolphin sightings were made during on-effort search. Twenty on-effort sightings were made on primary lines, while another two on-effort sightings were made on secondary lines. In this quarterly period, all dolphin groups were sighted in NWL, while none of them were sighted in NEL. A summary table of the dolphin sightings is shown in Appendix II.

3.2. Distribution

3.2.1. Distribution of dolphin sightings made during the HKLR03 monitoring surveys in September to November 2014 is shown in Figure 1. The majority of dolphin sightings made in the present quarter were concentrated in the northwestern end of the North Lantau region, with higher concentration around Lung Kwu Chau (Figure 1). A few other sightings were scattered around Sha Chau and to the north of the airport platform. No dolphin sighting was made in NEL in the present quarter.

3.2.2. Notably, none of the dolphin groups were sighted in the vicinity of TMCLKL southern viaduct or northern landfall section, as well as the HKLR03/HKBCF reclamation sites (Figure 1).

3.2.3. Sighting distribution of the present impact phase monitoring period (September to November 2014) was compared to the one during the baseline monitoring period (September to November 2011). In the present quarter, dolphins have completely avoided the NEL region, which was in stark contrast to their frequent occurrence around the Brothers Islands and in the vicinity of HKBCF reclamation site during the baseline period (Figure 1). The nearly complete abandonment of NEL region by the dolphins has been consistently recorded in the past three quarters, which have resulted in extremely low dolphin encounter rates in this area.

3.2.4. In NWL survey area, dolphin occurrence was also very different between the baseline and impact phase quarters. During the present impact monitoring period, there appeared to be much fewer dolphins occurred in the middle portion of North Lantau region than during the baseline period, where dolphins supposedly moved between their core areas around Lung Kwu Chau and the Brothers Islands (Figure 1). Moreover, more dolphins were sighted near Sha Chau and Black Point during the baseline period than during the present impact monitoring period (Figure 1). Notably, a number of dolphin sightings were made to the west of Chek Lap Kok airport (especially near the HKLR09 alignment) during the baseline period, but the dolphins were not sighted there at all during the present impact phase period.

3.2.5. Another comparison in dolphin distribution was made between the two quarterly periods of autumn months in 2013 and 2014 was also made (Figure 2). Among the two autumn periods, no dolphin sighting was made in NEL in the autumn of 2014, while there were two sightings made there in the autumn of 2013. Moreover, a lot more dolphin sightings were made in the middle and western portions of North Lantau waters (especially between Black Point and Lung Kwu Chau, as well as around Sha Chau) in the autumn of 2013 than in the autumn of 2014. The comparison indicated that dolphin usage in North Lantau waters was further diminished in autumn of 2014 from the same period in the previous year.

3.3. Encounter rate

3.3.1. During the present quarterly period, the encounter rates of Chinese White Dolphins deduced from the survey effort and on-effort sighting data from the primary transect lines under favourable conditions (Beaufort 3 or below) for each set of the HKLR03 surveys in NEL and NWL are shown in Table 2. The average encounter rates deduced from the six

sets of HKLR03 surveys were also compared with the ones deduced from the baseline monitoring period (September – November 2011) (Table 3).

Table 2. Dolphin encounter rates (sightings per 100 km of survey effort) during September – November 2014 deduced from HKLR03 monitoring surveys

SURVEY AREA	HKLR03 DOLPHIN MONITORING DATES	Encounter rate (STG) (no. of on-effort dolphin sightings per 100 km of survey effort)	Encounter rate (ANI) (no. of dolphins from all on-effort sightings per 100 km of survey effort)
		Primary Lines Only	Primary Lines Only
Northeast Lantau	Set 1 (2 & 11 Sep 2014)	0.00	0.00
	Set 2 (19 & 22 Sep 2014)	0.00	0.00
	Set 3 (7 & 13 Oct 2014)	0.00	0.00
	Set 4 (16 & 23 Oct 2014)	0.00	0.00
	Set 5 (4 & 10 Nov 2014)	0.00	0.00
	Set 6 (12 & 18 Nov 2014)	0.00	0.00
Northwest Lantau	Set 1 (2 & 11 Sep 2014)	5.72	28.58
	Set 2 (19 & 22 Sep 2014)	4.34	18.80
	Set 3 (7 & 13 Oct 2014)	13.13	42.67
	Set 4 (16 & 23 Oct 2014)	0.00	0.00
	Set 5 (4 & 10 Nov 2014)	4.60	24.54
	Set 6 (12 & 18 Nov 2014)	2.84	8.53

Table 3. Comparison of average dolphin encounter rates from impact monitoring period (September – November 2014) and baseline monitoring period (September – November 2011) (Note: encounter rates deduced from the baseline monitoring period have been recalculated based only on survey effort and on-effort sighting data made along the primary transect lines under favourable conditions)

	Encounter rate (STG) (no. of on-effort dolphin sightings per 100 km of survey effort)		Encounter rate (ANI) (no. of dolphins from all on-effort sightings per 100 km of survey effort)	
	September - November 2014	September - November 2011	September - November 2014	September - November 2011
Northeast Lantau	0.00	6.00 ± 5.05	0.00	22.19 ± 26.81
Northwest Lantau	5.10 ± 4.40	9.85 ± 5.85	20.52 ± 15.10	44.66 ± 29.85

3.3.2. To facilitate the comparison with the AFCD long-term monitoring results, the encounter rates were also calculated for the present quarter using both primary and secondary survey effort. The encounter rates of sightings (STG) and dolphins (ANI) in NWL were 4.18 sightings and 16.17 dolphins per 100 km of survey effort respectively, while the encounter rates of sightings (STG) and dolphins (ANI) in NEL were both nil.

3.3.3. In NEL, the average dolphin encounter rates (both STG and ANI) in the present

three-month impact monitoring period were zero, and such low occurrence of dolphins in NEL have been consistently recorded in the past seven quarters of HKLR03 monitoring (Table 4).

Table 4. Comparison of average dolphin encounter rates in Northeast Lantau survey area from all quarters of HKLR03 impact monitoring period and baseline monitoring period (September-November 2011) (Note: encounter rates deduced from the baseline monitoring period have been recalculated based only on survey effort and on-effort sighting data made along the primary transect lines under favourable conditions)

	Encounter rate (STG) (no. of on-effort dolphin sightings per 100 km of survey effort)	**Encounter rate (ANI)** (no. of dolphins from all on-effort sightings per 100 km of survey effort)
September-November 2011 (Baseline)	6.00 ± 5.05	22.19 ± 26.81
December 2012-February 2013 (Impact)	3.14 ± 3.21	6.33 ± 8.64
March-May 2013 (Impact)	0.42 ± 1.03	0.42 ± 1.03
June-August 2013 (Impact)	0.88 ± 1.36	3.91 ± 8.36
September-November 2013 (Impact)	1.01 ± 1.59	3.77 ± 6.49
December 2013-February 2014 (Impact)	0.45 ± 1.10	1.34 ± 3.29
March-May 2014 (Impact)	0.00	0.00
June-August 2014 (Impact)	0.42 ± 1.04	1.69 ± 4.15
September-November 2014 (Impact)	0.00	0.00

Table 5. Comparison of average dolphin encounter rates in Northwest Lantau survey area from all quarters of HKLR03 impact monitoring period and baseline monitoring period (September-November 2011) (Note: encounter rates deduced from the baseline monitoring period have been recalculated based only on survey effort and on-effort sighting data made along the primary transect lines under favourable conditions)

	Encounter rate (STG) (no. of on-effort dolphin sightings per 100 km of survey effort)	**Encounter rate (ANI)** (no. of dolphins from all on-effort sightings per 100 km of survey effort)
September-November 2011 (Baseline)	9.85 ± 5.85	44.66 ± 29.85
December 2012-February 2013 (Impact)	8.36 ± 5.03	35.90 ± 23.10
March-May 2013 (Impact)	7.75 ± 3.96	24.23 ± 18.05
June-August 2013 (Impact)	6.56 ± 3.68	27.00 ± 18.71
September-November 2013 (Impact)	8.04 ± 1.10	32.48 ± 26.51
December 2013-February 2014 (Impact)	8.21 ± 2.21	32.58 ± 11.21
March-May 2014 (Impact)	6.51 ± 3.34	19.14 ± 7.19
June-August 2014 (Impact)	4.74 ± 3.84	17.52 ± 15.12
September-November 2014 (Impact)	5.10 ± 4.40	20.52 ± 15.10

3.3.4. It is a serious concern that dolphin occurrence in NEL in the seven quarters (0.0-1.0 for ER(STG) and 0.0-3.9 for ER(ANI)) of HKLR03 monitoring have been exceptionally low when compared to the baseline period (Table 4). As discussed recently in Hung (2014), the dramatic decline in dolphin usage of NEL waters in 2012 and 2013 (including the declines in abundance, encounter rate and habitat use in NEL, as well as shifts of individual core areas and ranges away from NEL waters) was possibly related to the HZMB construction works that were commenced in 2012.

3.3.5. Moreover, the average dolphin encounter rates (STG and ANI) in NWL during the present impact phase monitoring period were also much lower (reductions of 48.2% and 54.1% respectively) than the ones recorded in the 3-month baseline period, indicating a noticeable decline in dolphin usage of this survey area during the present construction period (Table 5).

3.3.6. A two-way ANOVA with repeated measures and unequal sample size was conducted to examine whether there were any significant differences in the average encounter rates between the baseline and impact monitoring periods. The two variables that were examined included the two periods (baseline and impact phases) and two locations (NEL and NWL).

3.3.7. For the comparison between the baseline period and the present quarter (eighth quarter of the HKLR03 impact phase being assessed), the p-value for the differences in average dolphin encounter rates of STG and ANI were 0.0222 and 0.0662 respectively. If the alpha value is set at 0.1, significant difference was detected between the baseline and present quarters in both dolphin encounter rates of STG and ANI.

3.3.8. For the comparison between the baseline period and the cumulative quarters in impact phase (i.e. first eight quarters of the HKLR03 impact phase being assessed), the p-value for the differences in average dolphin encounter rates of STG and ANI were 0.0019 and 0.0006 respectively. Even if the alpha value is set at 0.01, significant differences were detected in both the average dolphin encounter rates of STG and ANI (i.e. between the two periods and the locations).

3.3.9. As indicated in both dolphin distribution patterns and encounter rates, dolphin usage has been significantly reduced in NEL waters in the present quarterly period, and such low occurrence has been consistently documented in previous quarters. This raises serious concern, as the decline in dolphin usage could possibly link to the HZMB-related construction activities in NEL waters.

3.3.10. It should also be noted that dolphin usage in NWL have been diminished progressively in the past few quarters (Table 5), and such downward trend should be closely monitored, as the potential impacts of HZMB-related works on the dolphins may have been extended to the entire North Lantau region.

3.4. Group size

3.4.1. Group size of Chinese White Dolphins ranged from one to 13 individuals per group in

North Lantau region during September – November 2014. The average dolphin group sizes from these three months were compared with the ones deduced from the baseline period in September to November 2011, as shown in Table 6.

Table 6. Comparison of average dolphin group sizes from impact monitoring period (September – November 2014) and baseline monitoring period (September – November 2011)

	Average Dolphin Group Size	
	September – November 2014	**September – November 2011**
Overall	3.88 ± 2.69 (n = 24)	3.72 ± 3.13 (n = 66)
Northeast Lantau	0.00	3.18 ± 2.16 (n = 17)
Northwest Lantau	3.88 ± 2.69 (n = 24)	3.92 ± 3.40 (n = 49)

3.4.2. The average dolphin group sizes in the entire North Lantau region as well as in NWL waters during September – November 2014 were similar to the ones recorded during the three-month baseline period (Table 6). Sixteen of the 24 groups were composed of 1-4 individuals only, while there was only one dolphin group with more than 10 individuals.

3.4.3. Distribution of dolphins with larger group sizes (five individuals or more per group) during the present quarter is shown in Figure 3, with comparison to the one in baseline period. During the autumn of 2014, distribution of the majority of larger dolphin groups were concentrated near Lung Kwu Chau (Figure 3). This distribution pattern was quite different from the baseline period, when the larger dolphin groups were distributed more evenly in NWL waters with a few more sighted in NEL waters (Figure 3).

3.5. Habitat use

3.5.1. From September to November 2014, the most heavily utilized habitats by Chinese White Dolphins mainly concentrated around Lung Kwu Chau (Figures 4a and 4b). None of the grids in NEL recorded the presence of dolphins. Moreover, all grids near TMCLKL and HKLR09 alignments as well as the HKLR03/HKBCF reclamation sites did not record any presence of dolphins during on-effort search in the present quarterly period.

3.5.2. However, it should be emphasized that the amount of survey effort collected in each grid during the three-month period was fairly low (6-12 units of survey effort for most grids), and therefore the habitat use pattern derived from the three-month dataset should be treated with caution. A more complete picture of dolphin habitat use pattern will be presented when more survey effort for each grid will be collected throughout the impact phase monitoring programme.

3.5.3. When compared with the habitat use patterns during the baseline period, dolphin usage in NEL was dramatically different from the present impact monitoring period (Figure 5). During the baseline period, nine grids between Siu Mo To and Shum Shui Kok recorded

moderately high to high dolphin densities, which was in stark contrast to complete absence of dolphins during the present impact phase period (Figure 5).

3.5.4. The density patterns between the baseline and impact phase monitoring periods were also different in NWL, with higher dolphin usage around Sha Chau, near Black Point, to the west of the airport, as well as between Pillar Point and airport platform during the baseline period (Figure 5).

3.6. Mother-calf pairs

3.6.1. During the three-month study period, only four unspotted juveniles (UJ) were sighted in NWL survey areas. These young calves comprised of 4.3% of all animals sighted, which was lower than the percentage recorded during the baseline monitoring period (6.8%).

3.6.2. All four young calves were sighted around Lung Kwu Chau (Figure 6), which was very different from their distribution pattern during the baseline period when young calves were sighted throughout the NWL survey area as well as a few sighted in NEL waters. None of these young calves were sighted in the vicinity of the TMCLKL/HKLR09 alignments and HKBCF/HKLR03 reclamation sites during the present quarter (Figure 6).

3.7. Activities and associations with fishing boats

3.7.1. A total of three dolphin sightings were associated with feeding and socializing activities respectively during the three-month study period. The percentage of sightings associated with feeding activities during the present quarter (8.3%) was lower than the one recorded during the baseline period (11.6%). On the contrary, the percentage of socializing activities during the present impact phase monitoring period (4.2%) was slightly lower than the one recorded during the baseline period (5.4%). One group of five dolphins was also engaged in traveling activity during the present quarter.

3.7.2. Distribution of dolphins engaged in feeding, socializing and traveling activities during the present three-month period is shown in Figure 7. The three sightings associated with feeding and traveling activities all occurred to the north of Lung Kwu Chau, while the lone sighting associated with socializing activity was located to the north of the airport (Figure 7). Distribution of dolphin sightings associated with these activities during the impact phase was very different from the distribution pattern of these activities during the baseline period (Figure 7).

3.7.3. During the three-month period, none of the 24 dolphin groups was found to be associated with an operating fishing vessels in North Lantau waters. The extremely rare events of fishing boat association in the present and previous quarters were consistently found, and were likely related to the recent trawl ban being implemented in December 2012 in Hong Kong waters.

3.8. Summary of photo-identification works

3.8.1. From September to November 2014, over 2,000 digital photographs of Chinese White Dolphins were taken during the HKLR03 impact phase monitoring surveys for the photo-identification work.

3.8.2. In total, 26 individuals sighted 49 times altogether were identified (see summary table in Appendix III and photographs of identified individuals in Appendix IV). All of these 49 re-sightings were made in NWL.

3.8.3. The majority of identified individuals were sighted only once or twice during the three-month period, with the exception of five individuals (NL202, NL214, NL233, NL286 and WL05) being sighted thrice and two individuals (NL48 and NL182) being sighted four times.

3.8.4. Five of these 26 individuals were also sighted in West Lantau waters during the HKLR09 monitoring surveys for the same three-month period, showing their movement between North and West Lantau regions.

3.8.5. Five recognized females (NL104, NL182, NL202, NL233 and NL256) were accompanied with their calves during their re-sightings.

3.9. Individual range use

3.9.1. Ranging patterns of the 26 individuals identified during the three-month study period were determined by fixed kernel method, and are shown in Appendix V.

3.9.2. All identified dolphins sighted in this quarter were utilizing their range use in NWL (and some also in WL), but have avoided the NEL waters where many of them have utilized as their core areas in the past (Appendix V). This is in contrary to the extensive movements between NEL and NWL survey areas observed in the earlier HKLR03 impact monitoring quarters as well as during the baseline period.

3.9.3. For many individuals that have previously utilized the Brothers Islands as their major core area of activities, they have apparently shifted their range use away from this important habitat (e.g. NL136, NL182, NL259; Appendix V). Such shifts of range use and core area use were also documented by Hung (2014), as well as in the past monitoring quarters in 2013 and 2014 under the HKLR03 monitoring study.

3.9.4. On the other hand, there were a few individuals sighted in NWL and NEL waters consistently in the past, but have extended their range use to WL waters in the present quarter (e.g. NL259). It should be further monitored to examine whether there has been any consistent shifts of home ranges of individuals from North Lantau to West Lantau, which could also possibly be related to the HZMB-related construction works.

4. Conclusion

4.1. During this quarter of dolphin monitoring, no adverse impact from the activities of the TMCLKL construction project on Chinese White Dolphins was noticeable from general observations.

4.2. Although the dolphins infrequently occurred along the alignment of TMCLKL southern connection viaduct in the past and during the baseline monitoring period, it is apparent that dolphin usage has been significantly reduced in NEL, and many individuals have shifted away from the important habitat around the Brothers Islands.

4.3. It is critical to monitor the dolphin usage in North Lantau region in the upcoming quarters, to determine whether the dolphins are continuously affected by the various construction activities in relation to the HZMB-related works, and whether suitable mitigation measure can be applied to revert the situation.

5. References

- Buckland, S. T., Anderson, D. R., Burnham, K. P., Laake, J. L., Borchers, D. L., and Thomas, L. 2001. Introduction to distance sampling: estimating abundance of biological populations. Oxford University Press, London.

- Hung, S. K. 2013. Monitoring of Marine Mammals in Hong Kong waters: final report (2012-13). An unpublished report submitted to the Agriculture, Fisheries and Conservation Department, 168 pp.

- Hung, S. K. 2014. Monitoring of marine mammals in Hong Kong waters – data collection: final report (2013-14). An unpublished report submitted to the Agriculture, Fisheries and Conservation Department of Hong Kong SAR Government, 231 pp.

- Jefferson, T. A. 2000. Population biology of the Indo-Pacific hump-backed dolphin in Hong Kong waters. Wildlife Monographs 144:1-65.

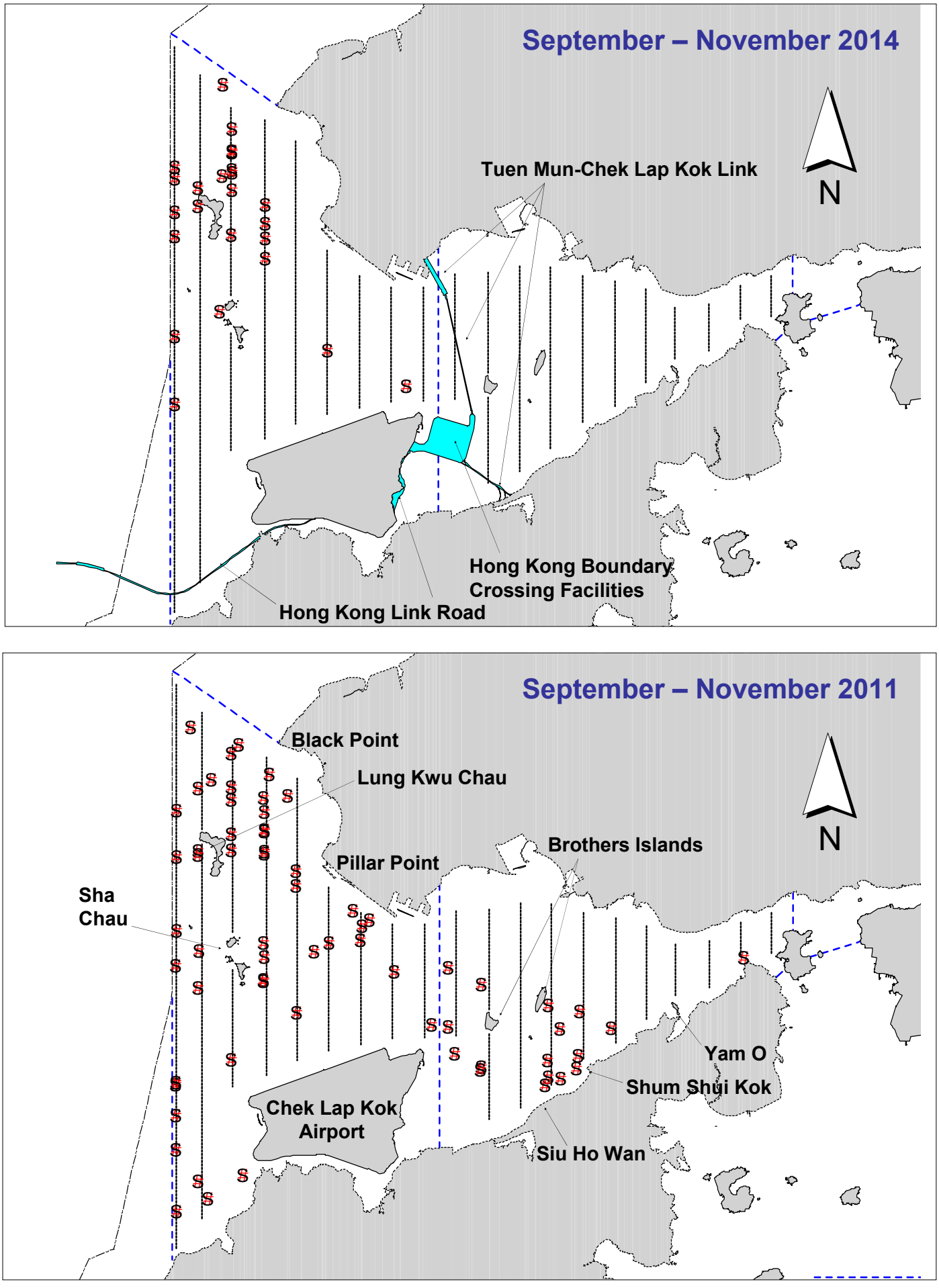
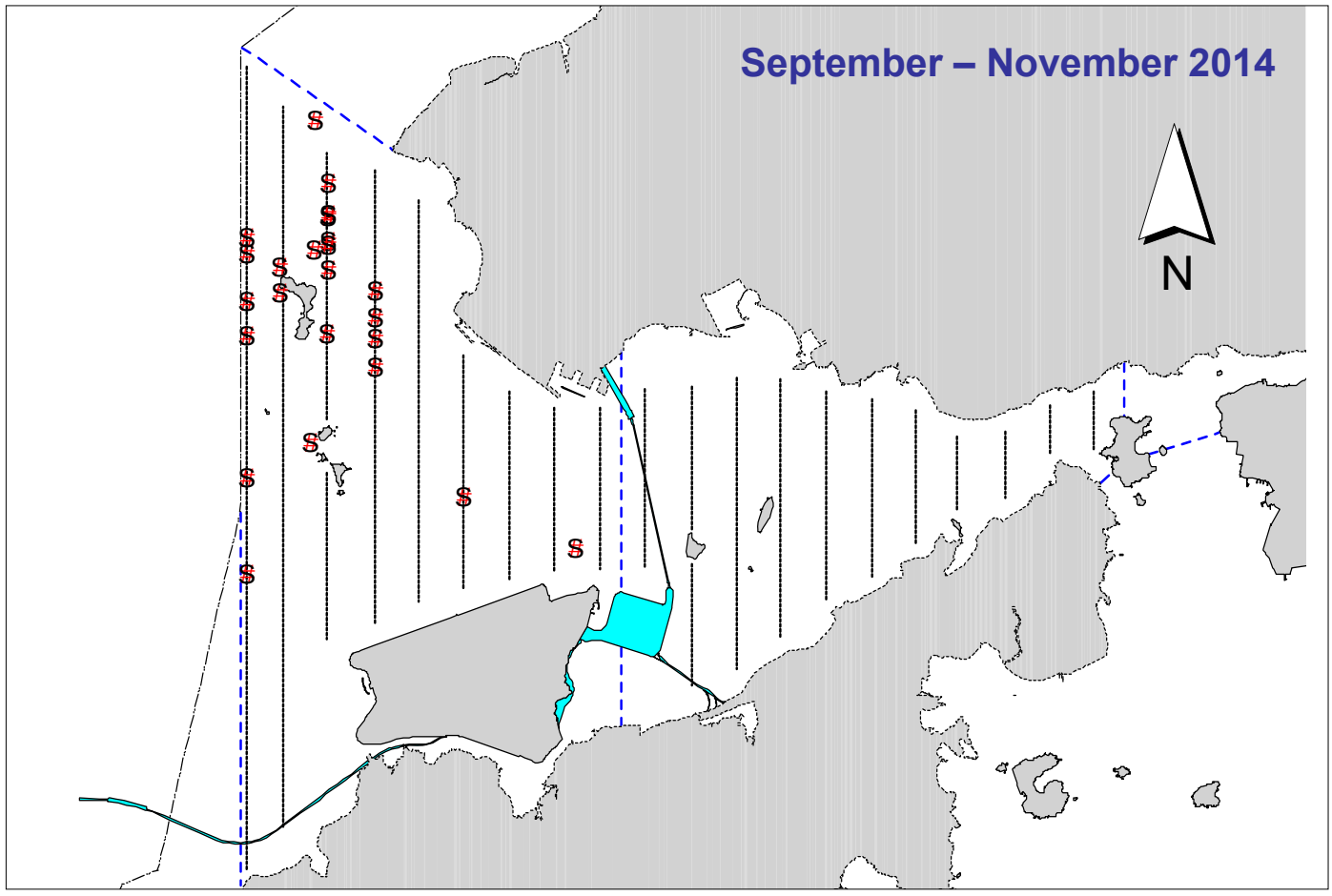


Figure 1. Distribution of Chinese white dolphin sighting in Northwest and Northeast Lantau during HKLR03 impact phase (top) and baseline monitoring surveys (bottom)



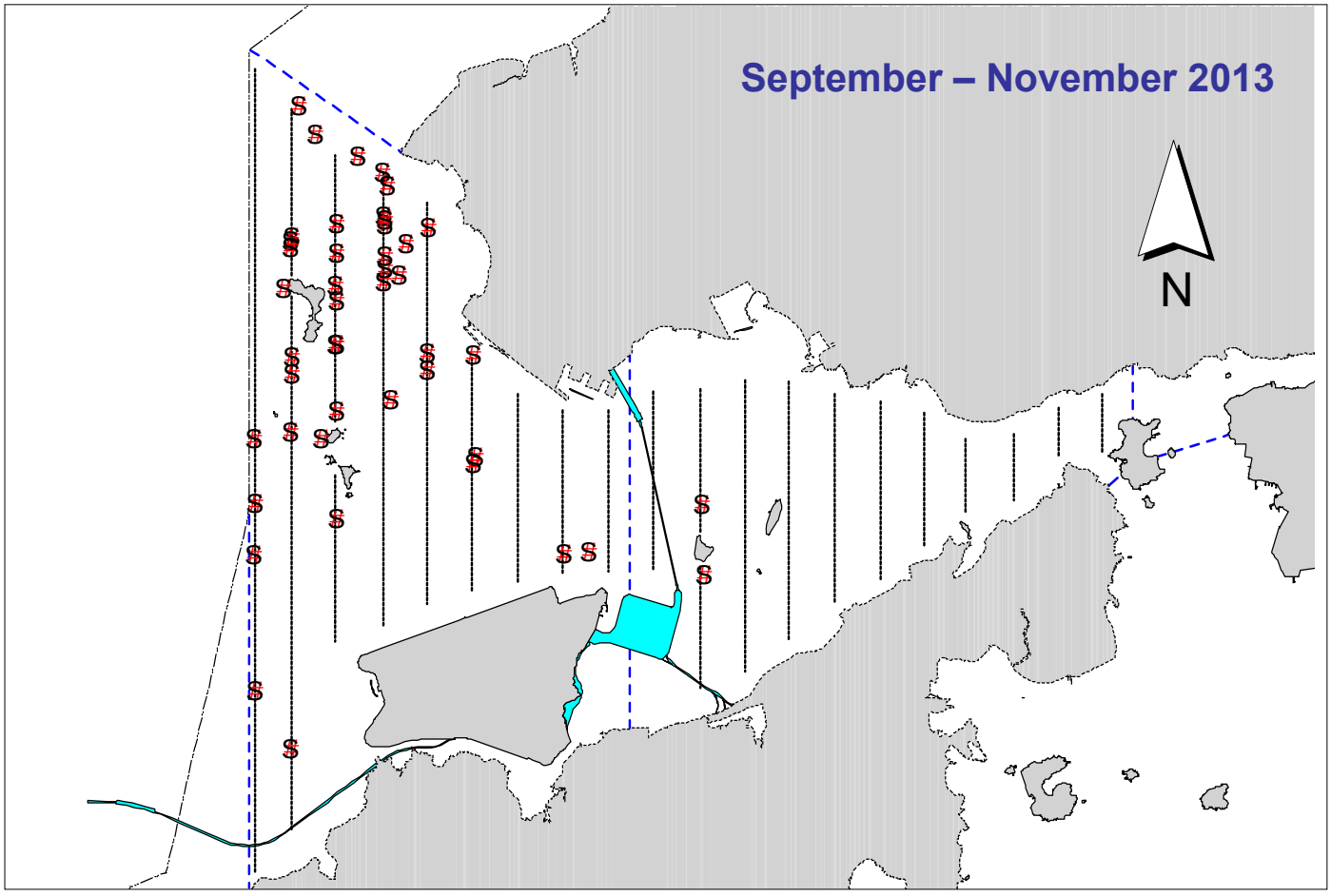


Figure 2. Distribution of Chinese white dolphin sighting in Northwest and Northeast Lantau during the same autumn quarters of HKLR03 impact phase in 2014 (top) and 2013 (bottom)

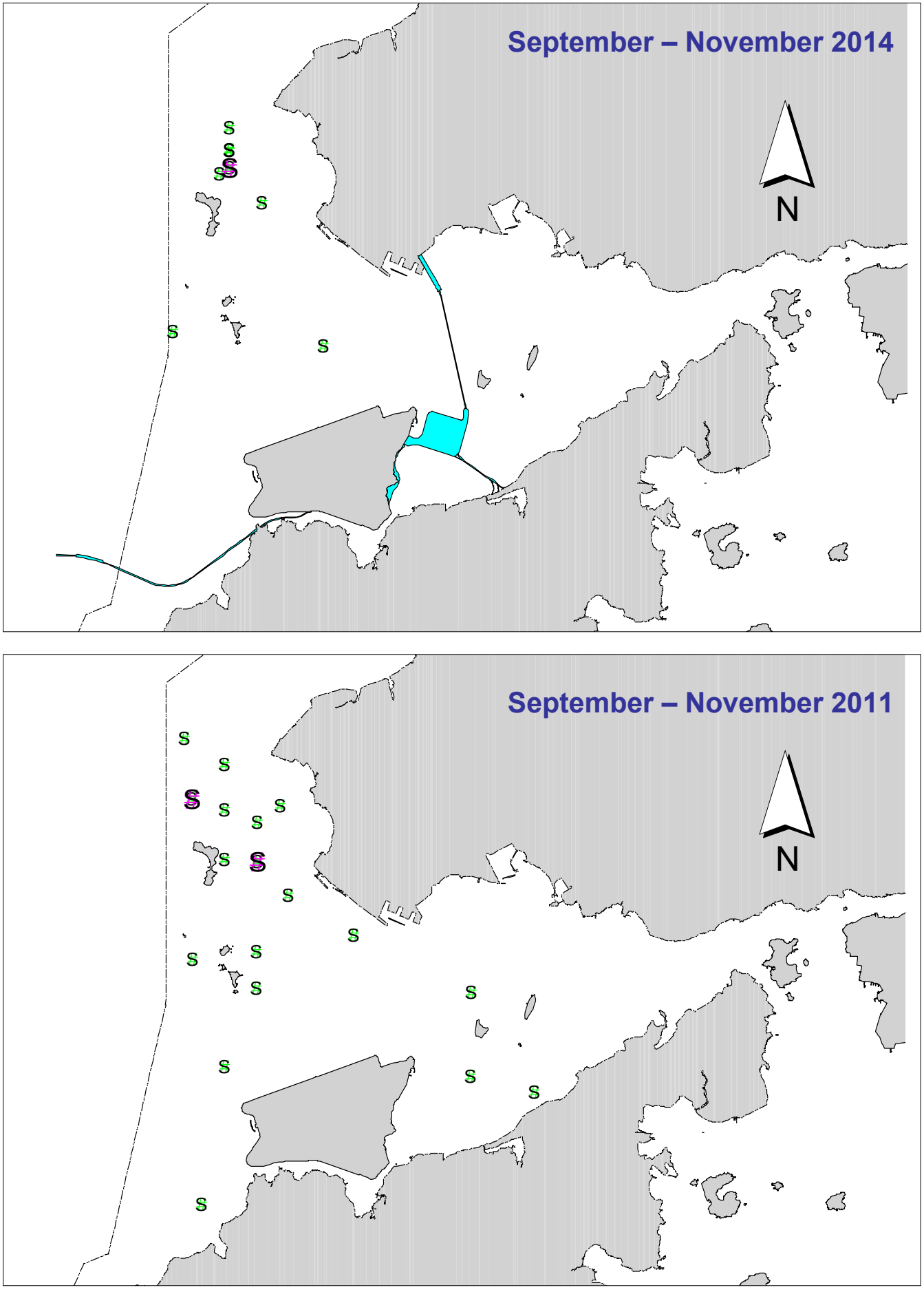


Figure 3. Distribution of Chinese white dolphins with larger group sizes during HKLR03 impact phase (top) and baseline monitoring surveys (bottom) (green dots: group sizes of 5 or more; purple dots: group sizes of 10 or more)

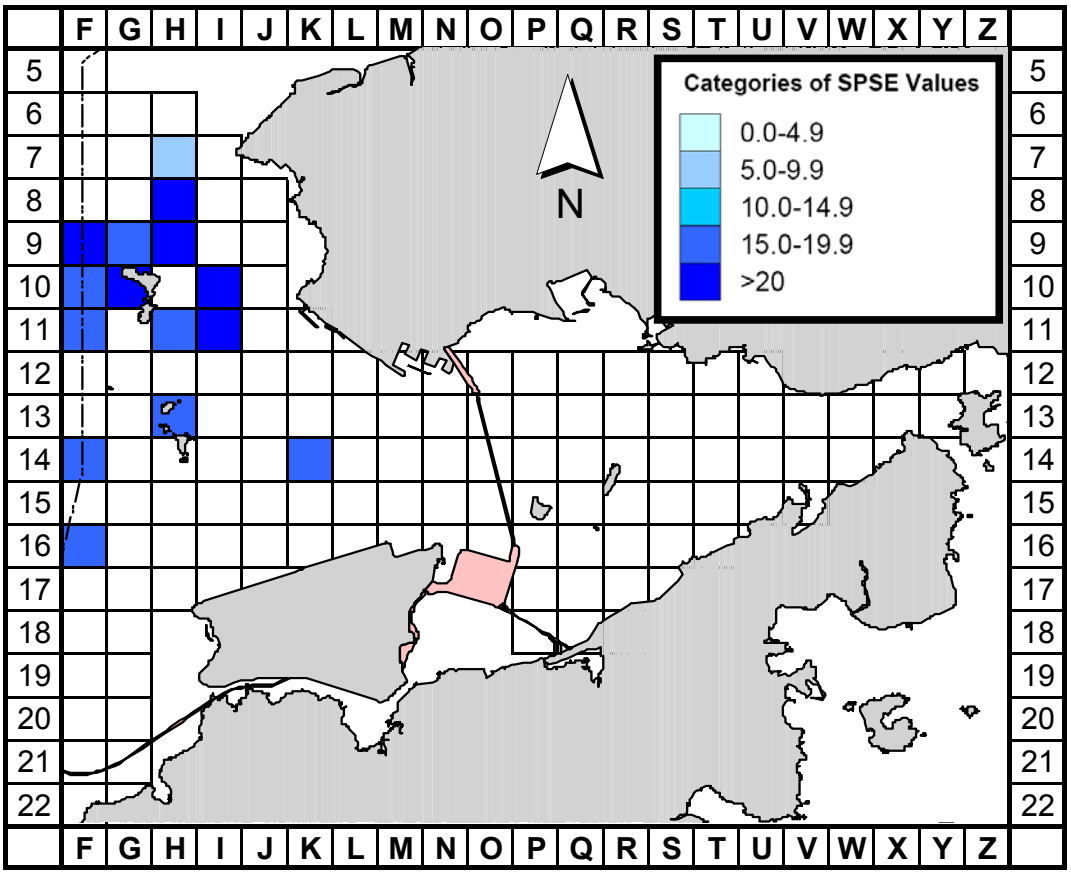


Figure 4a. Sighting density of Chinese white dolphins with corrected survey effort per km^2 in Northeast and Northwest Lantau survey areas, using data collected during HKLR03 impact monitoring period monitoring period (Sep-Nov 14) (SPSE = no. of on-effort sightings per 100 units of survey effort)

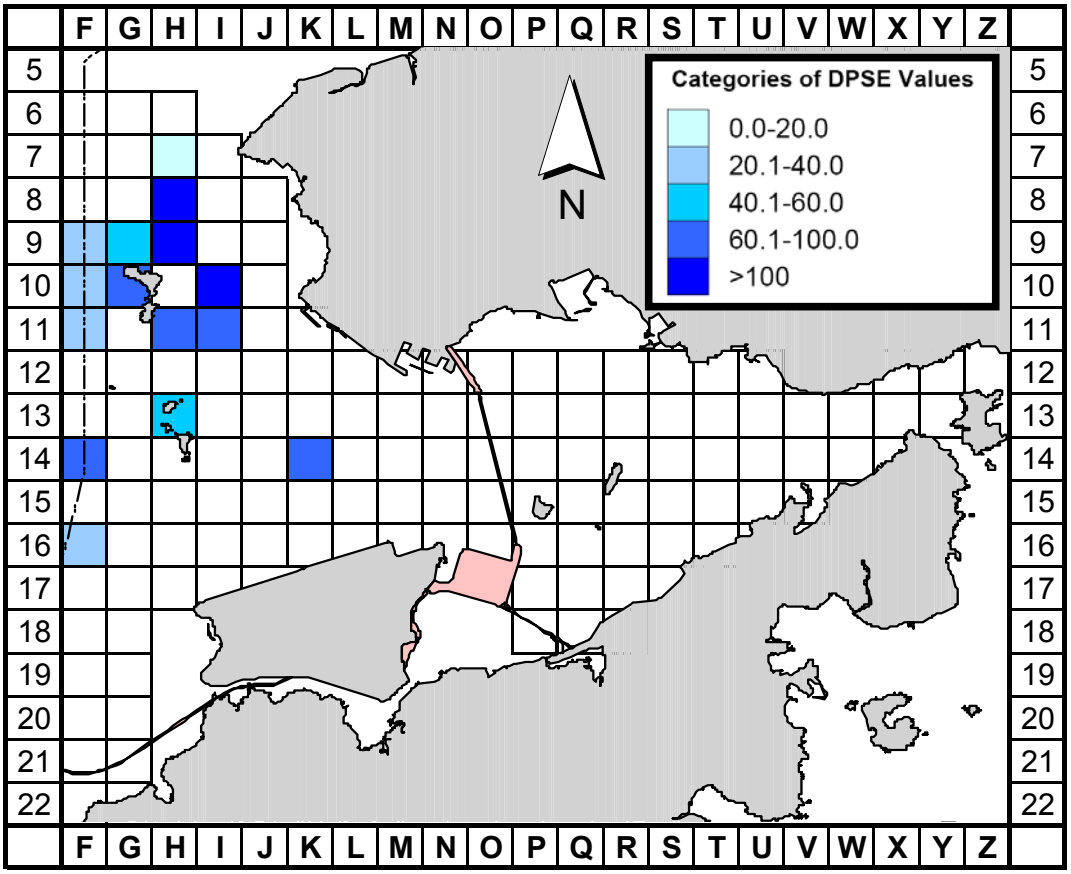


Figure 4b. Density of Chinese white dolphins with corrected survey effort per km^2 in Northeast and Northwest Lantau survey areas, using data collected during HKLR03 impact monitoring period (Sep-Nov 14) (DPSE = no. of dolphins per 100 units of survey effort)

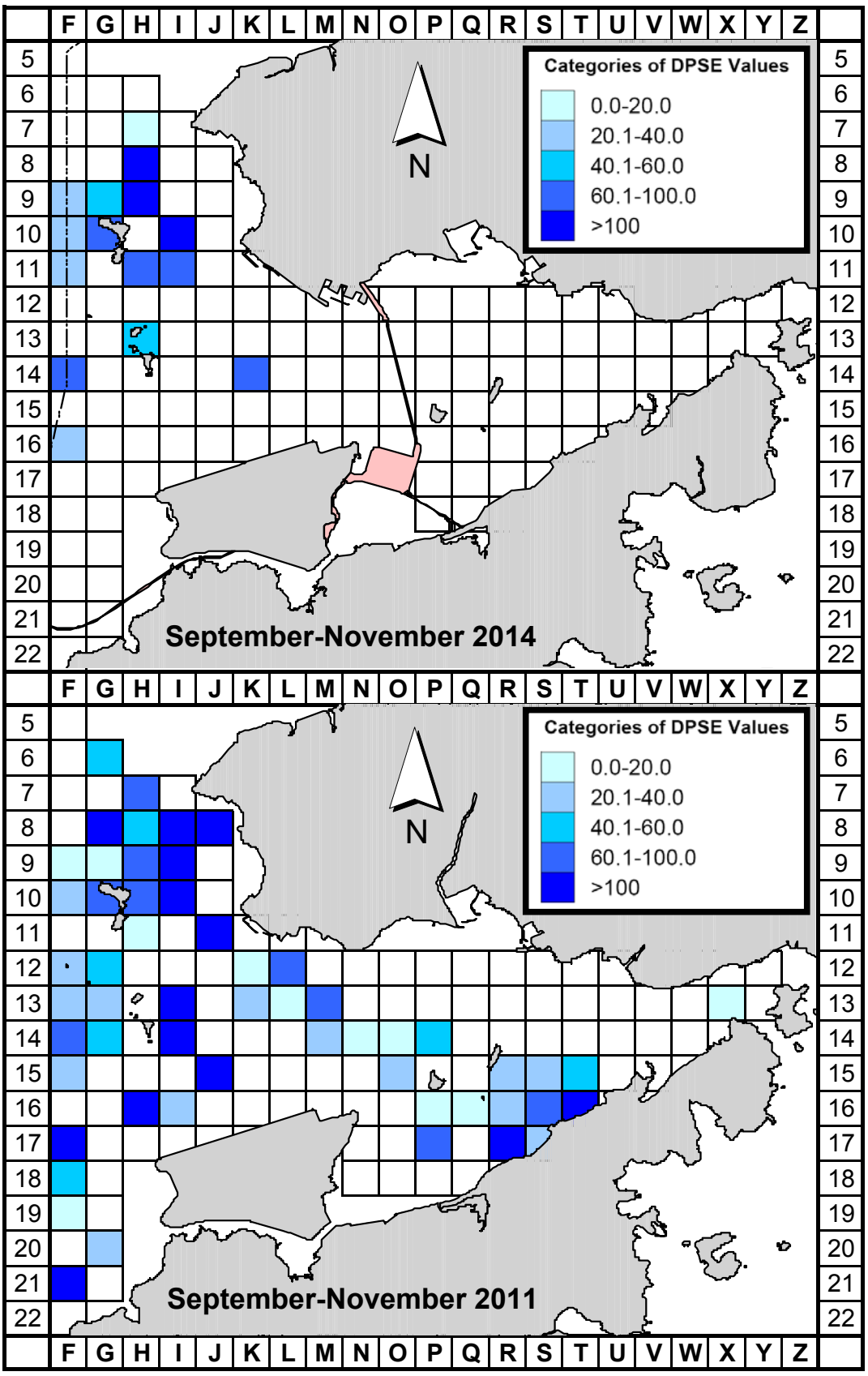
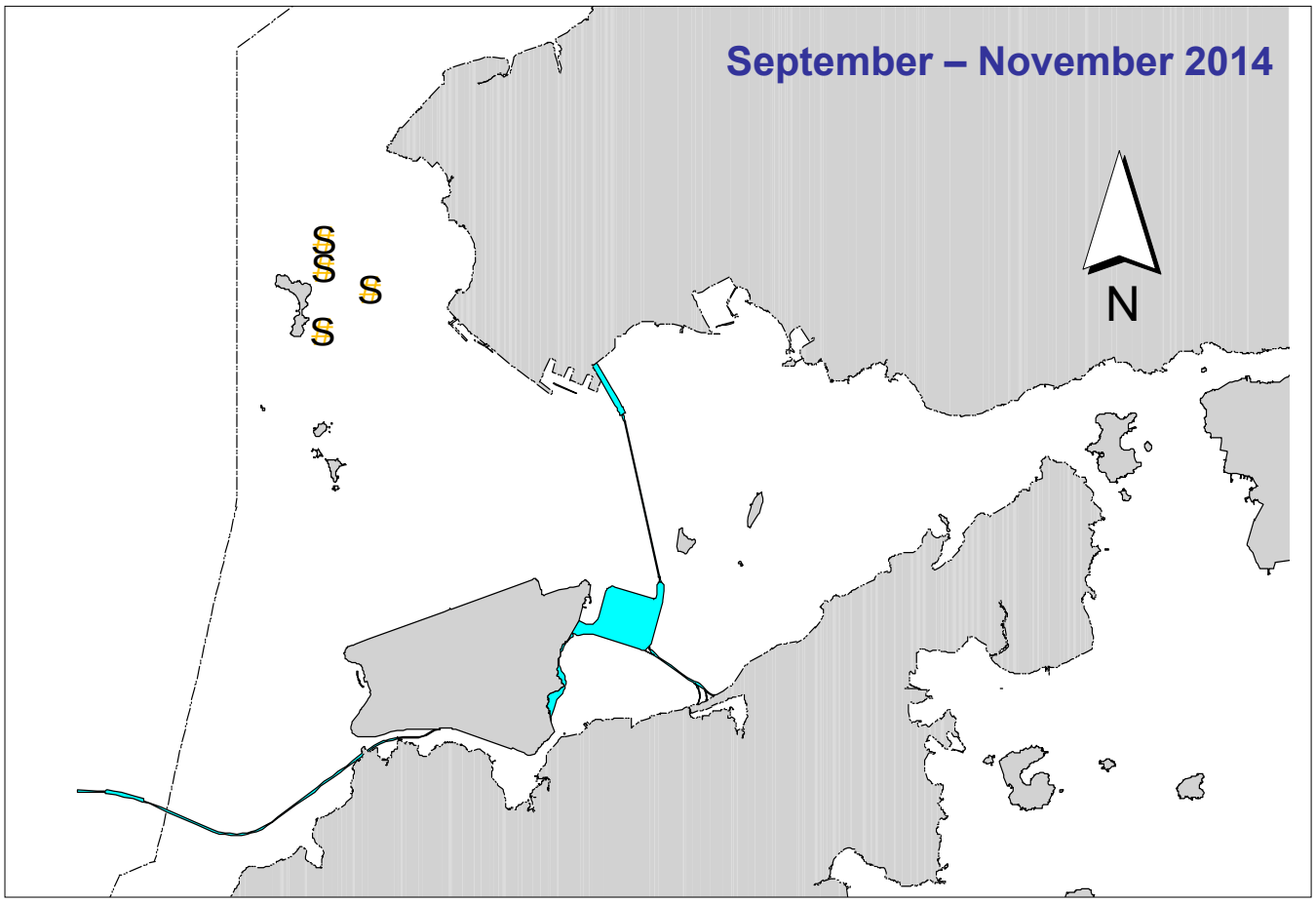


Figure 5. Comparison of density of Chinese white dolphins with corrected survey effort per km^2 in Northwest and Northeast Lantau survey area between the impact monitoring period (September-November 2014) and baseline monitoring period (September-November 2011)
(DPSE = no. of dolphins per 100 units of survey effort)



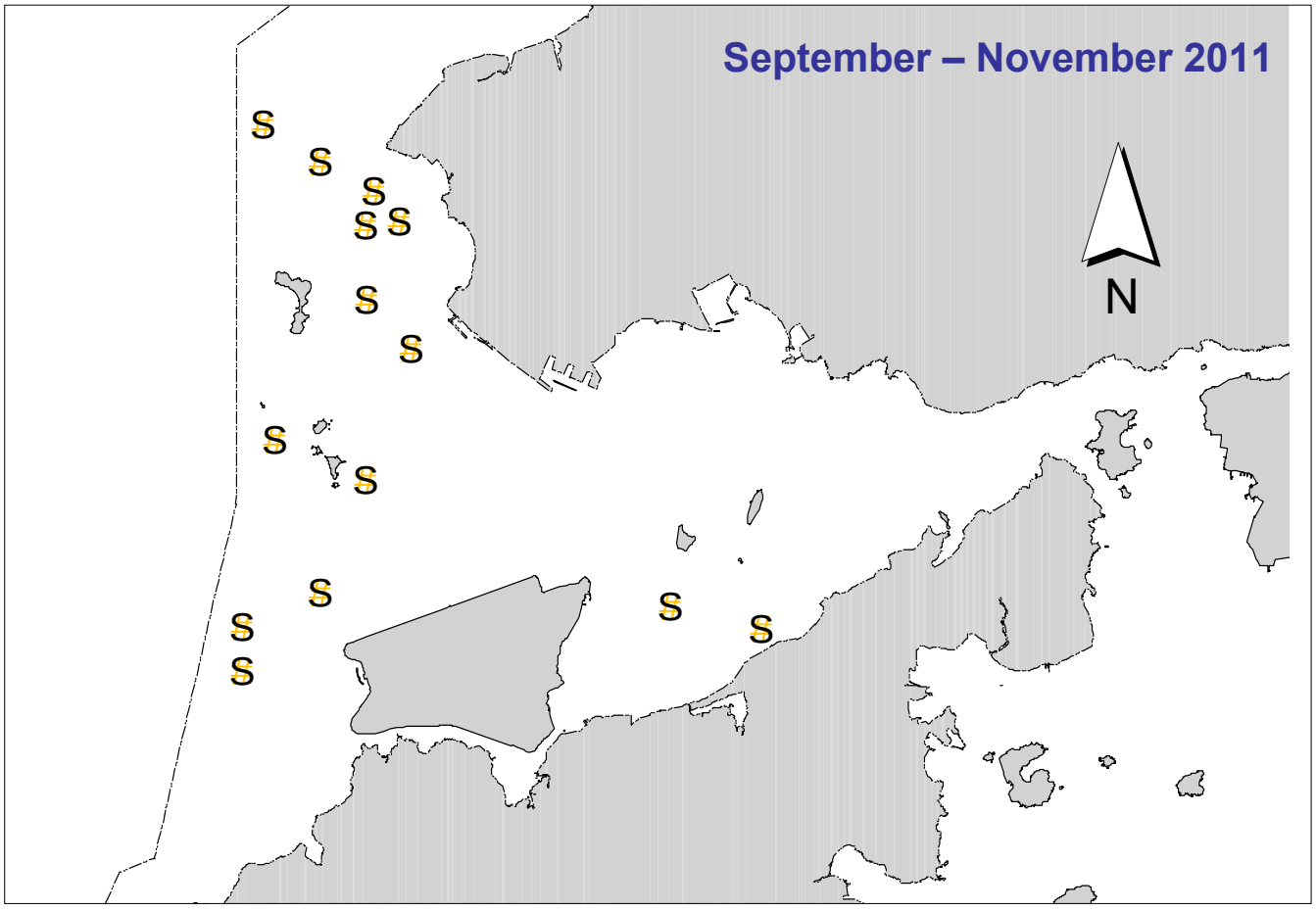


Figure 6. Distribution of young calves of Chinese white dolphins during HKLR03 impact phase (top) and baseline monitoring surveys (bottom)

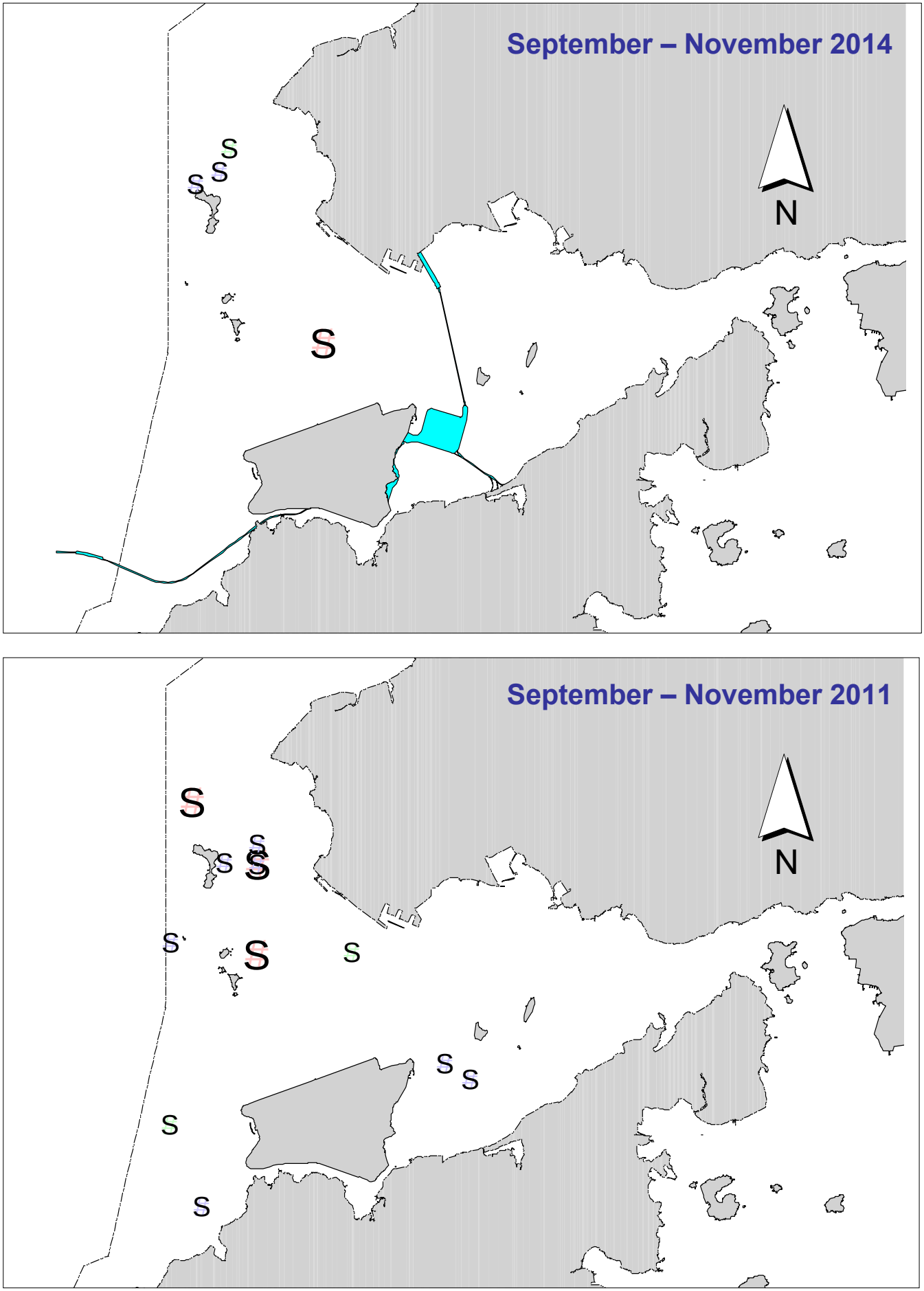


Figure 7. Distribution of Chinese white dolphins engaged in feeding (purple dots), socializing (pink dots) and traveling (green dots) activities during HKLR03 impact phase (top) and baseline monitoring surveys (bottom)

Appendix I. HKLR03 Survey Effort Database (September-November 2014)

(Abbreviations: BEAU = Beaufort Sea State; P = Primary Line Effort; S = Secondary Line Effort)

DATE	AREA	BEAU	EFFORT	SEASON	VESSEL	TYPE	P/S
2-Sep-14	NW LANTAU	1	7.96	AUTUMN	STANDARD31516	HKLR	P
2-Sep-14	NW LANTAU	2	14.28	AUTUMN	STANDARD31516	HKLR	P
2-Sep-14	NW LANTAU	3	16.44	AUTUMN	STANDARD31516	HKLR	P
2-Sep-14	NW LANTAU	2	7.13	AUTUMN	STANDARD31516	HKLR	S
2-Sep-14	NW LANTAU	3	5.72	AUTUMN	STANDARD31516	HKLR	S
2-Sep-14	NE LANTAU	2	15.63	AUTUMN	STANDARD31516	HKLR	P
2-Sep-14	NE LANTAU	3	2.18	AUTUMN	STANDARD31516	HKLR	P
2-Sep-14	NE LANTAU	2	8.31	AUTUMN	STANDARD31516	HKLR	S
2-Sep-14	NE LANTAU	3	1.28	AUTUMN	STANDARD31516	HKLR	S
11-Sep-14	NW LANTAU	1	4.75	AUTUMN	STANDARD31516	HKLR	P
11-Sep-14	NW LANTAU	2	23.23	AUTUMN	STANDARD31516	HKLR	P
11-Sep-14	NW LANTAU	3	3.33	AUTUMN	STANDARD31516	HKLR	P
11-Sep-14	NW LANTAU	1	0.70	AUTUMN	STANDARD31516	HKLR	S
11-Sep-14	NW LANTAU	2	5.11	AUTUMN	STANDARD31516	HKLR	S
11-Sep-14	NW LANTAU	3	1.50	AUTUMN	STANDARD31516	HKLR	S
11-Sep-14	NE LANTAU	1	1.64	AUTUMN	STANDARD31516	HKLR	P
11-Sep-14	NE LANTAU	2	18.53	AUTUMN	STANDARD31516	HKLR	P
11-Sep-14	NE LANTAU	2	10.73	AUTUMN	STANDARD31516	HKLR	S
19-Sep-14	NW LANTAU	2	30.50	AUTUMN	STANDARD31516	HKLR	P
19-Sep-14	NW LANTAU	3	0.60	AUTUMN	STANDARD31516	HKLR	P
19-Sep-14	NW LANTAU	2	8.90	AUTUMN	STANDARD31516	HKLR	S
19-Sep-14	NW LANTAU	3	0.80	AUTUMN	STANDARD31516	HKLR	S
19-Sep-14	NE LANTAU	2	18.62	AUTUMN	STANDARD31516	HKLR	P
19-Sep-14	NE LANTAU	3	1.43	AUTUMN	STANDARD31516	HKLR	P
19-Sep-14	NE LANTAU	2	10.55	AUTUMN	STANDARD31516	HKLR	S
22-Sep-14	NE LANTAU	2	14.44	AUTUMN	STANDARD31516	HKLR	P
22-Sep-14	NE LANTAU	3	2.95	AUTUMN	STANDARD31516	HKLR	P
22-Sep-14	NE LANTAU	2	10.11	AUTUMN	STANDARD31516	HKLR	S
22-Sep-14	NW LANTAU	1	1.20	AUTUMN	STANDARD31516	HKLR	P
22-Sep-14	NW LANTAU	2	36.86	AUTUMN	STANDARD31516	HKLR	P
22-Sep-14	NW LANTAU	2	12.01	AUTUMN	STANDARD31516	HKLR	S
22-Sep-14	NW LANTAU	3	1.10	AUTUMN	STANDARD31516	HKLR	S
7-Oct-14	NE LANTAU	2	11.15	AUTUMN	STANDARD 31516	HKLR	P
7-Oct-14	NE LANTAU	3	6.75	AUTUMN	STANDARD 31516	HKLR	P
7-Oct-14	NE LANTAU	2	8.44	AUTUMN	STANDARD 31516	HKLR	S
7-Oct-14	NE LANTAU	3	1.46	AUTUMN	STANDARD 31516	HKLR	S
7-Oct-14	NW LANTAU	1	1.90	AUTUMN	STANDARD 31516	HKLR	P
7-Oct-14	NW LANTAU	2	25.80	AUTUMN	STANDARD 31516	HKLR	P
7-Oct-14	NW LANTAU	3	11.94	AUTUMN	STANDARD 31516	HKLR	P
7-Oct-14	NW LANTAU	2	9.13	AUTUMN	STANDARD 31516	HKLR	S
7-Oct-14	NW LANTAU	3	3.26	AUTUMN	STANDARD 31516	HKLR	S
13-Oct-14	NE LANTAU	2	10.59	AUTUMN	STANDARD 31516	HKLR	P
13-Oct-14	NE LANTAU	3	8.72	AUTUMN	STANDARD 31516	HKLR	P
13-Oct-14	NE LANTAU	2	7.91	AUTUMN	STANDARD 31516	HKLR	S
13-Oct-14	NE LANTAU	3	2.38	AUTUMN	STANDARD 31516	HKLR	S
13-Oct-14	NW LANTAU	2	4.96	AUTUMN	STANDARD 31516	HKLR	P
13-Oct-14	NW LANTAU	3	16.34	AUTUMN	STANDARD 31516	HKLR	P
13-Oct-14	NW LANTAU	4	4.95	AUTUMN	STANDARD 31516	HKLR	P
13-Oct-14	NW LANTAU	2	3.81	AUTUMN	STANDARD 31516	HKLR	S
13-Oct-14	NW LANTAU	3	7.23	AUTUMN	STANDARD 31516	HKLR	S
13-Oct-14	NW LANTAU	4	1.20	AUTUMN	STANDARD 31516	HKLR	S
16-Oct-14	NE LANTAU	2	12.51	AUTUMN	STANDARD 31516	HKLR	P

Appendix I. (cont'd)

(Abbreviations: BEAU = Beaufort Sea State; P = Primary Line Effort; S = Secondary Line Effort)

DATE	AREA	BEAU	EFFORT	SEASON	VESSEL	TYPE	P/S
16-Oct-14	NE LANTAU	3	6.72	AUTUMN	STANDARD 31516	HKLR	P
16-Oct-14	NE LANTAU	2	8.04	AUTUMN	STANDARD 31516	HKLR	S
16-Oct-14	NE LANTAU	3	2.53	AUTUMN	STANDARD 31516	HKLR	S
16-Oct-14	NW LANTAU	2	3.81	AUTUMN	STANDARD 31516	HKLR	P
16-Oct-14	NW LANTAU	3	21.23	AUTUMN	STANDARD 31516	HKLR	P
16-Oct-14	NW LANTAU	4	6.50	AUTUMN	STANDARD 31516	HKLR	P
16-Oct-14	NW LANTAU	2	4.30	AUTUMN	STANDARD 31516	HKLR	S
16-Oct-14	NW LANTAU	3	3.56	AUTUMN	STANDARD 31516	HKLR	S
23-Oct-14	NE LANTAU	2	15.42	AUTUMN	STANDARD 31516	HKLR	P
23-Oct-14	NE LANTAU	3	1.90	AUTUMN	STANDARD 31516	HKLR	P
23-Oct-14	NE LANTAU	2	9.28	AUTUMN	STANDARD 31516	HKLR	S
23-Oct-14	NE LANTAU	3	0.70	AUTUMN	STANDARD 31516	HKLR	S
23-Oct-14	NW LANTAU	2	30.11	AUTUMN	STANDARD 31516	HKLR	P
23-Oct-14	NW LANTAU	3	10.91	AUTUMN	STANDARD 31516	HKLR	P
23-Oct-14	NW LANTAU	1	1.60	AUTUMN	STANDARD 31516	HKLR	S
23-Oct-14	NW LANTAU	2	9.19	AUTUMN	STANDARD 31516	HKLR	S
23-Oct-14	NW LANTAU	3	1.99	AUTUMN	STANDARD 31516	HKLR	S
4-Nov-14	NE LANTAU	2	7.47	AUTUMN	STANDARD31516	HKLR	P
4-Nov-14	NE LANTAU	3	9.93	AUTUMN	STANDARD31516	HKLR	P
4-Nov-14	NE LANTAU	2	7.41	AUTUMN	STANDARD31516	HKLR	S
4-Nov-14	NE LANTAU	3	1.59	AUTUMN	STANDARD31516	HKLR	S
4-Nov-14	NW LANTAU	1	1.50	AUTUMN	STANDARD31516	HKLR	P
4-Nov-14	NW LANTAU	2	25.21	AUTUMN	STANDARD31516	HKLR	P
4-Nov-14	NW LANTAU	3	12.20	AUTUMN	STANDARD31516	HKLR	P
4-Nov-14	NW LANTAU	2	12.82	AUTUMN	STANDARD31516	HKLR	S
4-Nov-14	NW LANTAU	3	0.60	AUTUMN	STANDARD31516	HKLR	S
10-Nov-14	NE LANTAU	2	8.28	AUTUMN	STANDARD31516	HKLR	P
10-Nov-14	NE LANTAU	3	9.93	AUTUMN	STANDARD31516	HKLR	P
10-Nov-14	NE LANTAU	2	9.49	AUTUMN	STANDARD31516	HKLR	S
10-Nov-14	NE LANTAU	3	1.00	AUTUMN	STANDARD31516	HKLR	S
10-Nov-14	NW LANTAU	3	26.28	AUTUMN	STANDARD31516	HKLR	P
10-Nov-14	NW LANTAU	4	6.12	AUTUMN	STANDARD31516	HKLR	P
10-Nov-14	NW LANTAU	3	4.40	AUTUMN	STANDARD31516	HKLR	S
10-Nov-14	NW LANTAU	4	1.20	AUTUMN	STANDARD31516	HKLR	S
10-Nov-14	NW LANTAU	5	1.10	AUTUMN	STANDARD31516	HKLR	S
12-Nov-14	NW LANTAU	2	1.30	AUTUMN	STANDARD31516	HKLR	P
12-Nov-14	NW LANTAU	3	30.29	AUTUMN	STANDARD31516	HKLR	P
12-Nov-14	NW LANTAU	2	0.60	AUTUMN	STANDARD31516	HKLR	S
12-Nov-14	NW LANTAU	3	5.98	AUTUMN	STANDARD31516	HKLR	S
12-Nov-14	NW LANTAU	4	0.63	AUTUMN	STANDARD31516	HKLR	S
12-Nov-14	NE LANTAU	2	8.30	AUTUMN	STANDARD31516	HKLR	P
12-Nov-14	NE LANTAU	3	9.41	AUTUMN	STANDARD31516	HKLR	P
12-Nov-14	NE LANTAU	4	2.40	AUTUMN	STANDARD31516	HKLR	P
12-Nov-14	NE LANTAU	2	7.11	AUTUMN	STANDARD31516	HKLR	S
12-Nov-14	NE LANTAU	3	3.48	AUTUMN	STANDARD31516	HKLR	S
18-Nov-14	NW LANTAU	2	13.70	AUTUMN	STANDARD31516	HKLR	P
18-Nov-14	NW LANTAU	3	25.02	AUTUMN	STANDARD31516	HKLR	P
18-Nov-14	NW LANTAU	4	1.76	AUTUMN	STANDARD31516	HKLR	P
18-Nov-14	NW LANTAU	2	2.19	AUTUMN	STANDARD31516	HKLR	S
18-Nov-14	NW LANTAU	3	10.43	AUTUMN	STANDARD31516	HKLR	S
18-Nov-14	NE LANTAU	1	1.78	AUTUMN	STANDARD31516	HKLR	P
18-Nov-14	NE LANTAU	2	14.94	AUTUMN	STANDARD31516	HKLR	P
18-Nov-14	NE LANTAU	3	2.00	AUTUMN	STANDARD31516	HKLR	P
18-Nov-14	NE LANTAU	1	1.20	AUTUMN	STANDARD31516	HKLR	S
18-Nov-14	NE LANTAU	2	7.09	AUTUMN	STANDARD31516	HKLR	S

Appendix II. HKLR03 Chinese White Dolphin Sighting Database (September-November 2014)

(Abberviations: STG# = Sighting Number; HRD SZ = Dolphin Herd Size; BEAU = Beaufort Sea State; PSD = Perpendicular Distance; BOAT ASSOC. = Fishing Boat Association; P/S: Sighting Made on Primary/Secondary Lines)

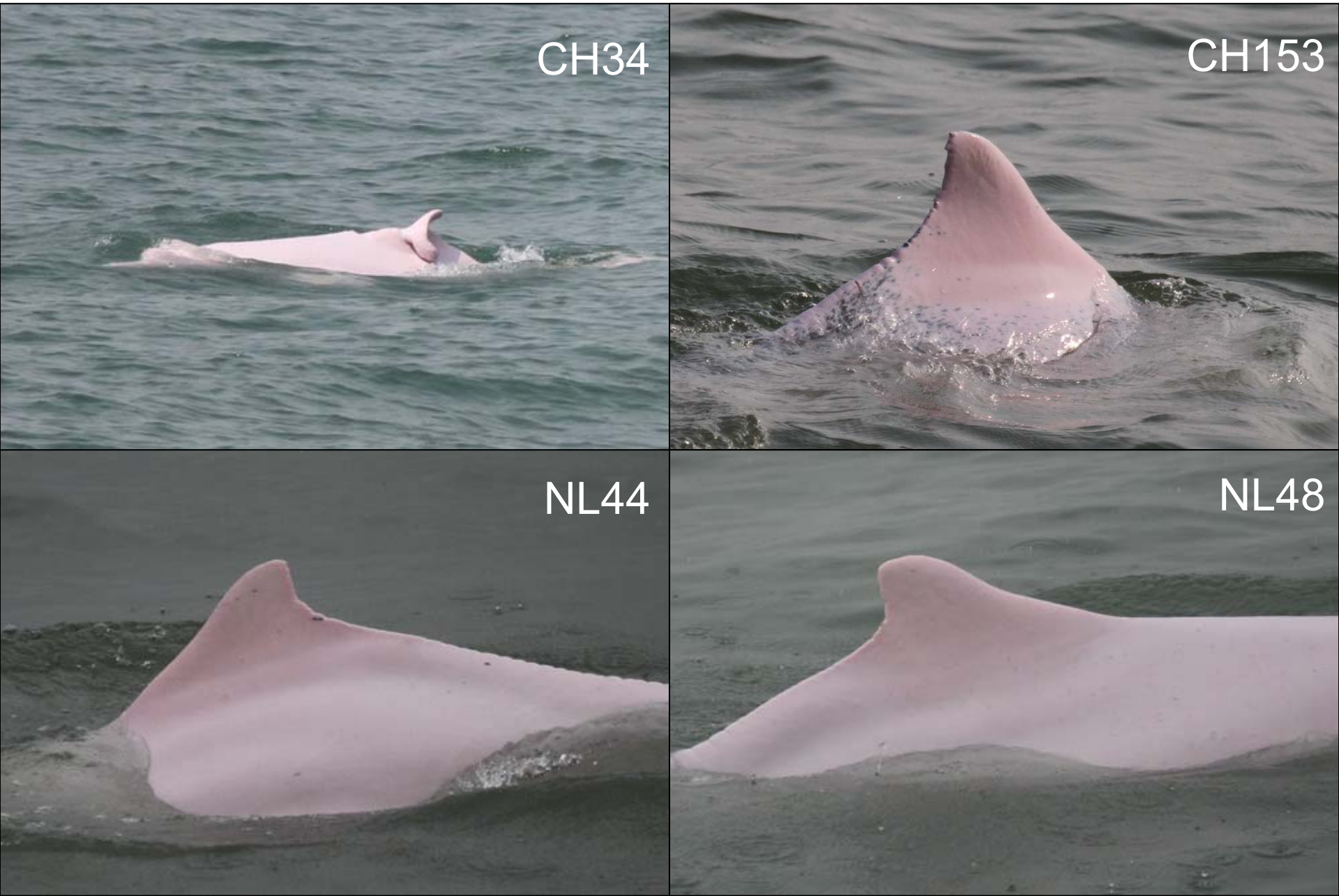
DATE	STG #	TIME	HRD SZ	AREA	BEAU	PSD	EFFORT	TYPE	NORTHING	EASTING	SEASON	BOAT ASSOC.	P/S
2-Sep-14	1	1106	3	NW LANTAU	1	201	ON	HKLR	827206	805396	AUTUMN	NONE	P
2-Sep-14	2	1215	5	NW LANTAU	2	562	ON	HKLR	828278	806459	AUTUMN	NONE	P
11-Sep-14	1	1132	6	NW LANTAU	2	374	ON	HKLR	826693	807517	AUTUMN	NONE	P
11-Sep-14	2	1215	6	NW LANTAU	2	1742	ON	HKLR	822381	809476	AUTUMN	NONE	P
19-Sep-14	1	1336	1	NW LANTAU	2	ND	OFF	HKLR	821325	811947	AUTUMN	NONE	N/A
22-Sep-14	1	1432	5	NW LANTAU	2	198	ON	HKLR	828289	806480	AUTUMN	NONE	P
22-Sep-14	2	1559	6	NW LANTAU	2	955	ON	HKLR	822811	804656	AUTUMN	NONE	P
22-Sep-14	3	1612	2	NW LANTAU	2	153	ON	HKLR	820785	804662	AUTUMN	NONE	P
7-Oct-14	1	1403	3	NW LANTAU	2	284	ON	HKLR	823528	806089	AUTUMN	NONE	S
7-Oct-14	2	1423	4	NW LANTAU	2	130	ON	HKLR	825820	806454	AUTUMN	NONE	P
7-Oct-14	3	1445	4	NW LANTAU	2	75	ON	HKLR	827149	806457	AUTUMN	NONE	P
7-Oct-14	4	1515	6	NW LANTAU	2	125	ON	HKLR	828943	806471	AUTUMN	NONE	P
7-Oct-14	5	1556	1	NW LANTAU	2	300	ON	HKLR	827474	804666	AUTUMN	NONE	P
7-Oct-14	6	1603	2	NW LANTAU	2	707	ON	HKLR	826499	804664	AUTUMN	NONE	P
13-Oct-14	1	1207	4	NW LANTAU	3	116	ON	HKLR	825098	807514	AUTUMN	NONE	P
13-Oct-14	2	1220	2	NW LANTAU	3	252	ON	HKLR	825707	807525	AUTUMN	NONE	P
13-Oct-14	3	1232	3	NW LANTAU	3	335	ON	HKLR	826161	807516	AUTUMN	NONE	P
13-Oct-14	4	1258	1	NW LANTAU	2	311	ON	HKLR	830272	806185	AUTUMN	NONE	S
4-Nov-14	1	1435	13	NW LANTAU	1	73	ON	HKLR	827747	806468	AUTUMN	NONE	P
4-Nov-14	2	1539	1	NW LANTAU	2	0	ON	HKLR	827839	804666	AUTUMN	NONE	P
4-Nov-14	3	1558	2	NW LANTAU	2	118	ON	HKLR	825757	804662	AUTUMN	NONE	P
12-Nov-14	1	1050	4	NW LANTAU	3	105	ON	HKLR	826686	805385	AUTUMN	NONE	P
18-Nov-14	1	1255	2	NW LANTAU	2	334	ON	HKLR	827669	806479	AUTUMN	NONE	P
18-Nov-14	2	1307	7	NW LANTAU	3	ND	OFF	HKLR	827559	806149	AUTUMN	NONE	N/A

Appendix III. Individual dolphins identified during HKLR03 monitoring surveys in September-November 2014

ID#	DATE	STG#	AREA
CH34	13/10/14	4	NW LANTAU
	18/11/14	2	NW LANTAU
CH153	22/09/14	3	NW LANTAU
NL46	11/09/14	1	NW LANTAU
	04/11/14	1	NW LANTAU
NL48	19/09/14	1	NW LANTAU
	13/10/14	1	NW LANTAU
	04/11/14	1	NW LANTAU
	18/11/14	2	NW LANTAU
NL80	11/09/14	2	NW LANTAU
NL104	02/09/14	1	NW LANTAU
	04/11/14	1	NW LANTAU
NL136	07/10/14	1	NW LANTAU
	13/10/14	1	NW LANTAU
NL150	22/09/14	3	NW LANTAU
NL182	11/09/14	1	NW LANTAU
	07/10/14	1	NW LANTAU
	13/10/14	2	NW LANTAU
	18/11/14	2	NW LANTAU
NL202	12/11/14	1	NW LANTAU
	18/11/14	1	NW LANTAU
	18/11/14	2	NW LANTAU
NL210	11/09/14	2	NW LANTAU
	12/11/14	1	NW LANTAU
NL213	13/10/14	1	NW LANTAU
NL214	02/09/14	1	NW LANTAU
	07/10/14	3	NW LANTAU
	13/10/14	2	NW LANTAU
NL233	11/09/14	1	NW LANTAU
	22/09/14	1	NW LANTAU
	07/10/14	2	NW LANTAU
NL236	22/09/14	3	NW LANTAU
NL256	07/10/14	3	NW LANTAU
	04/11/14	1	NW LANTAU
NL259	13/10/14	1	NW LANTAU
	04/11/14	1	NW LANTAU

ID#	DATE	STG#	AREA
NL272	12/11/14	1	NW LANTAU
NL278	07/10/14	2	NW LANTAU
NL286	04/11/14	1	NW LANTAU
	18/11/14	1	NW LANTAU
	18/11/14	2	NW LANTAU
NL295	07/10/14	1	NW LANTAU
NL300	07/10/14	5	NW LANTAU
NL301	11/09/14	2	NW LANTAU
NL302	11/09/14	2	NW LANTAU
WL05	04/11/14	1	NW LANTAU
	04/11/14	3	NW LANTAU
	12/11/14	1	NW LANTAU
WL97	12/11/14	1	NW LANTAU

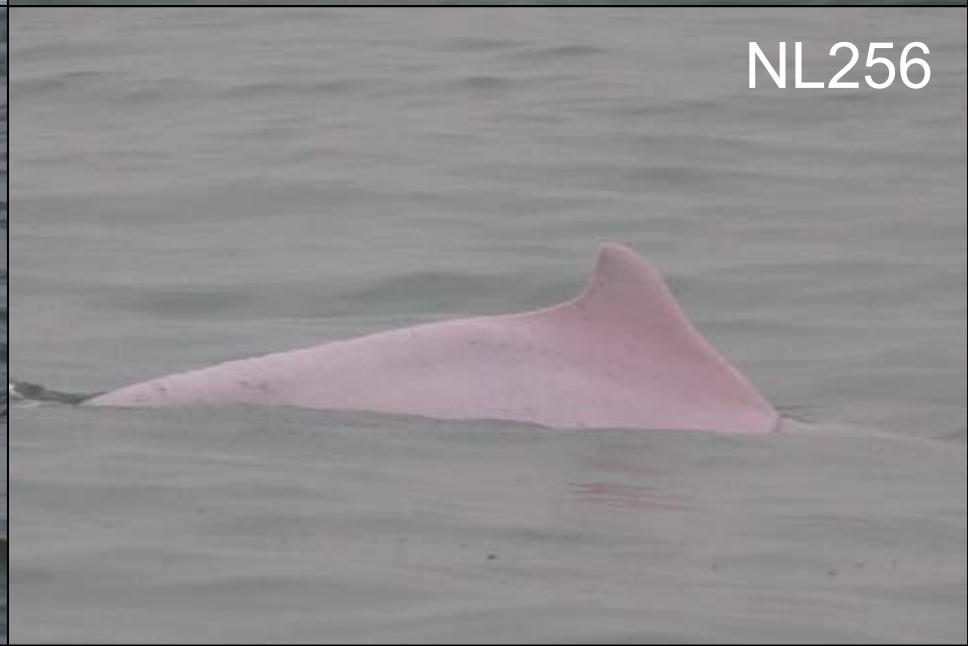
Appendix IV. Twenty-six individual dolphins that were identified during September – November 2014 under HKLR03 impact phase monitoring surveys



Appendix IV. (cont'd)

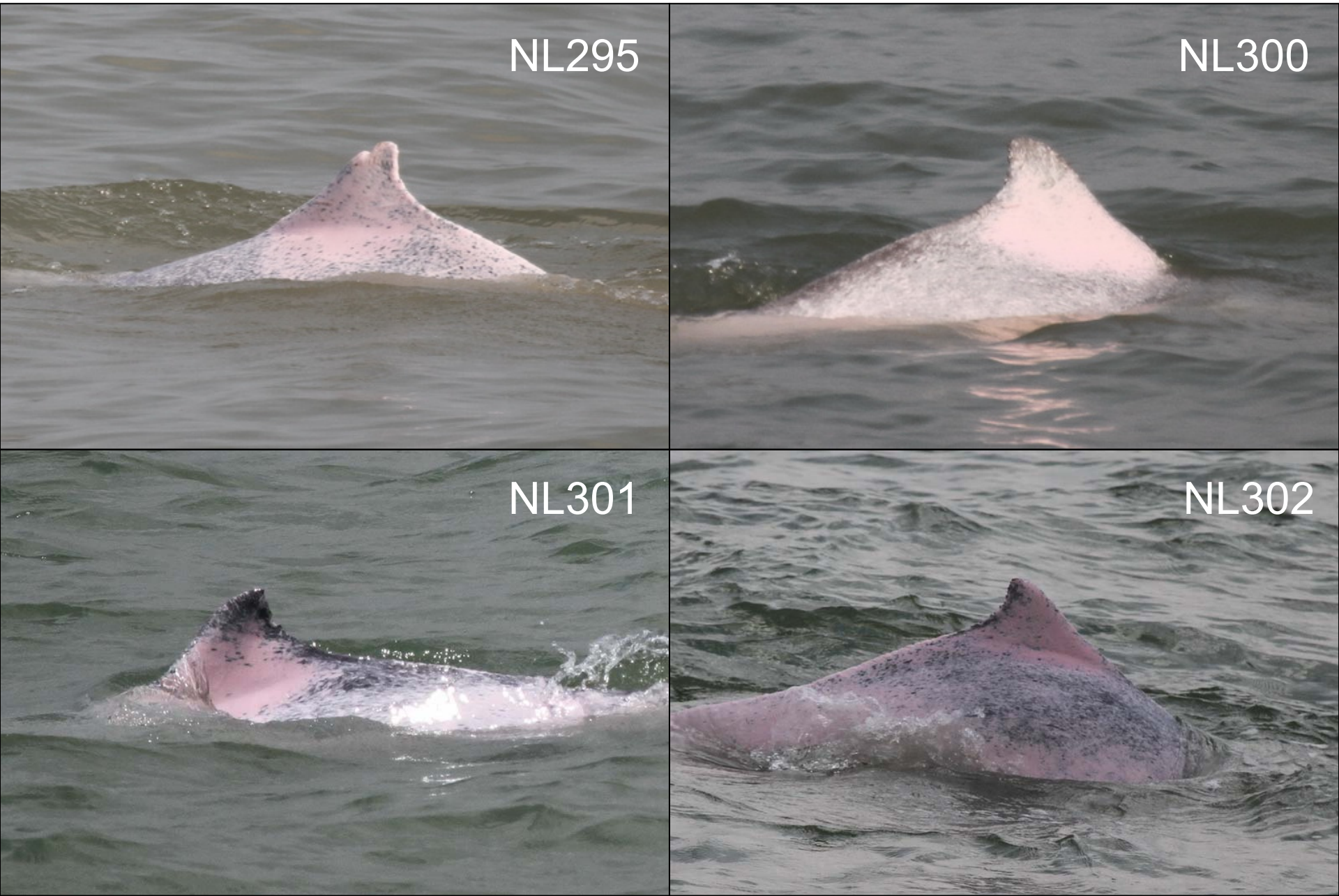
Appendix IV. (cont'd)

Appendix IV. (cont'd)



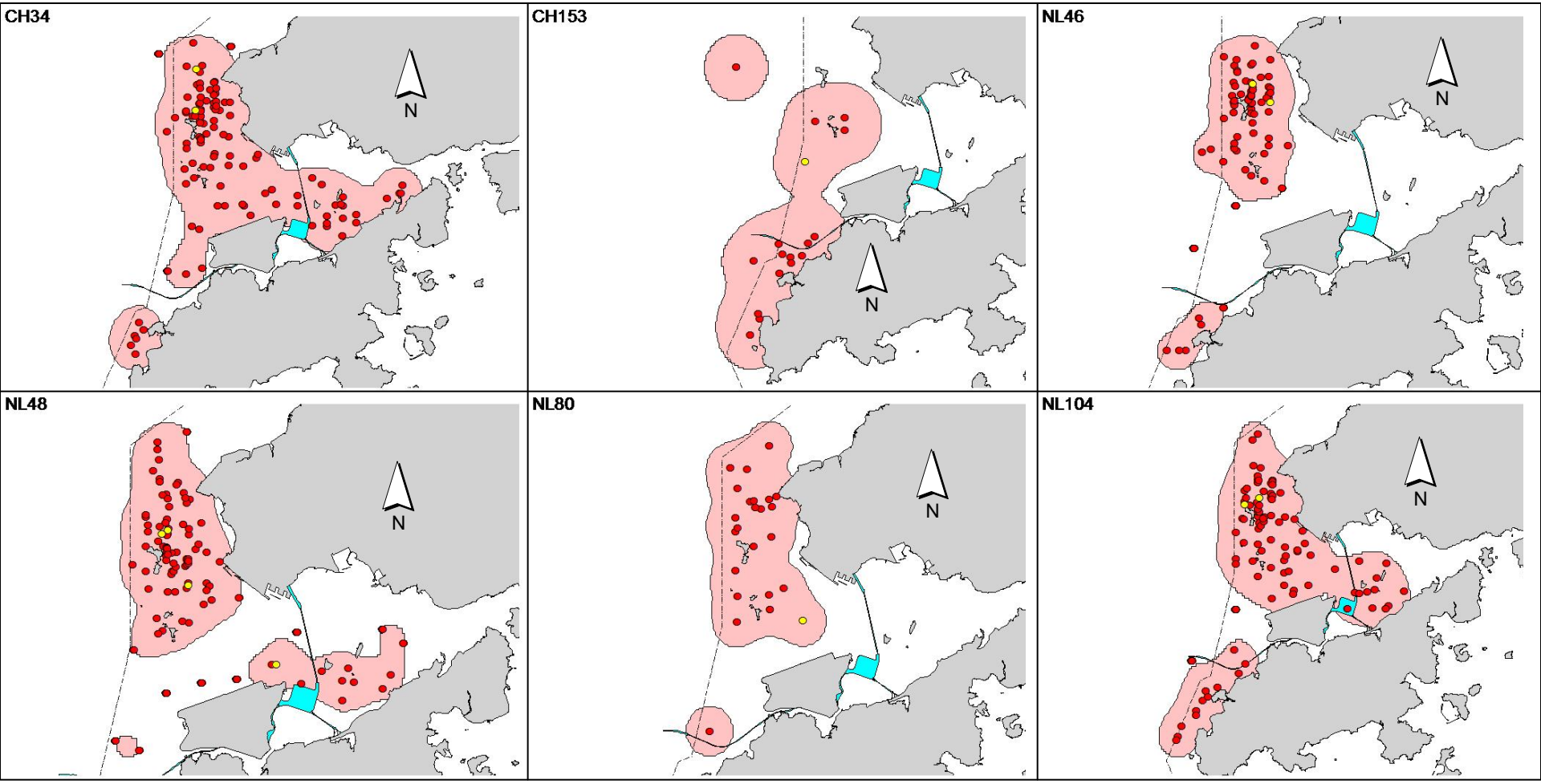
Appendix IV. (cont'd)

Appendix IV. (cont'd)

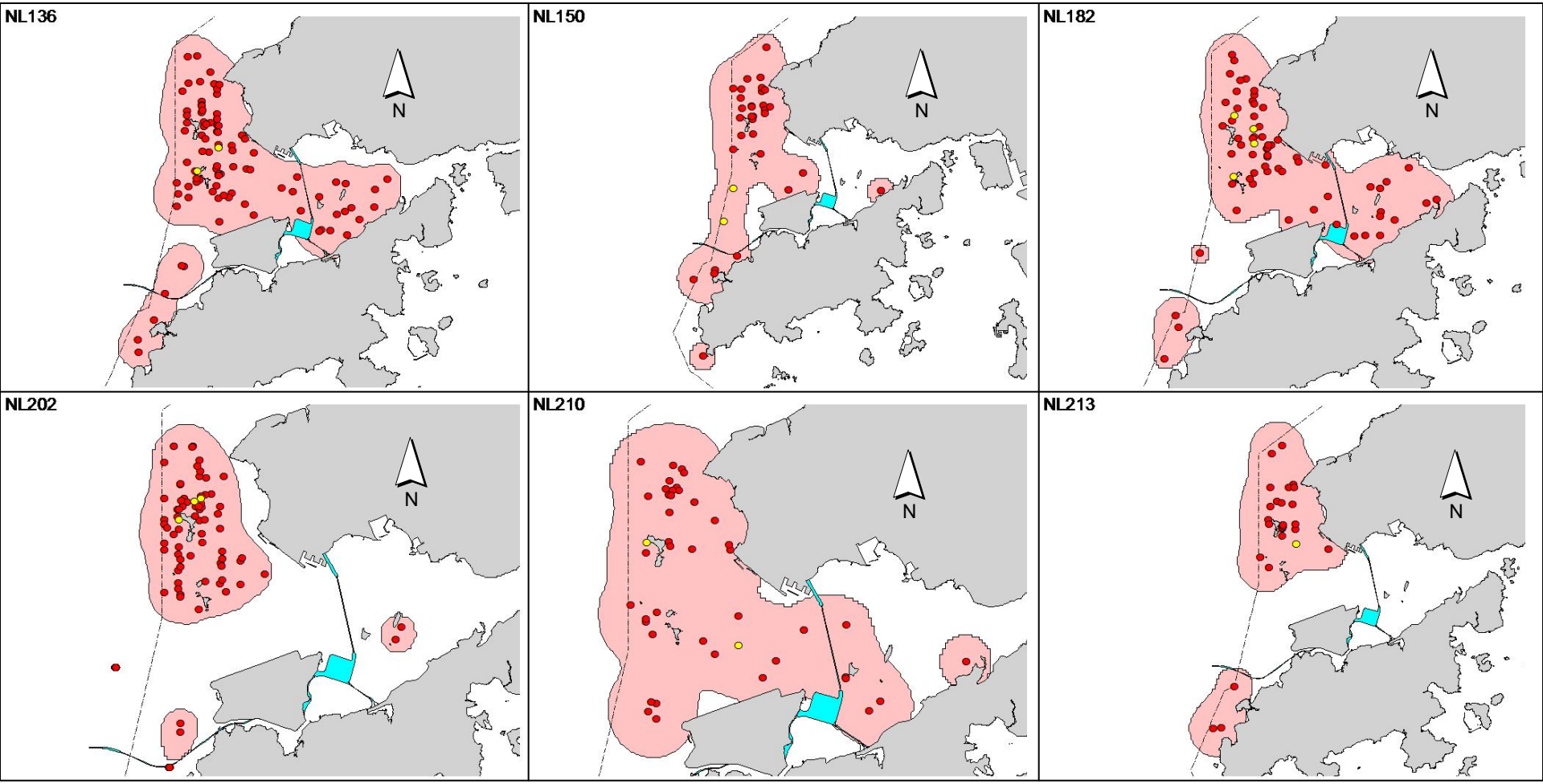


Appendix IV. (cont'd)

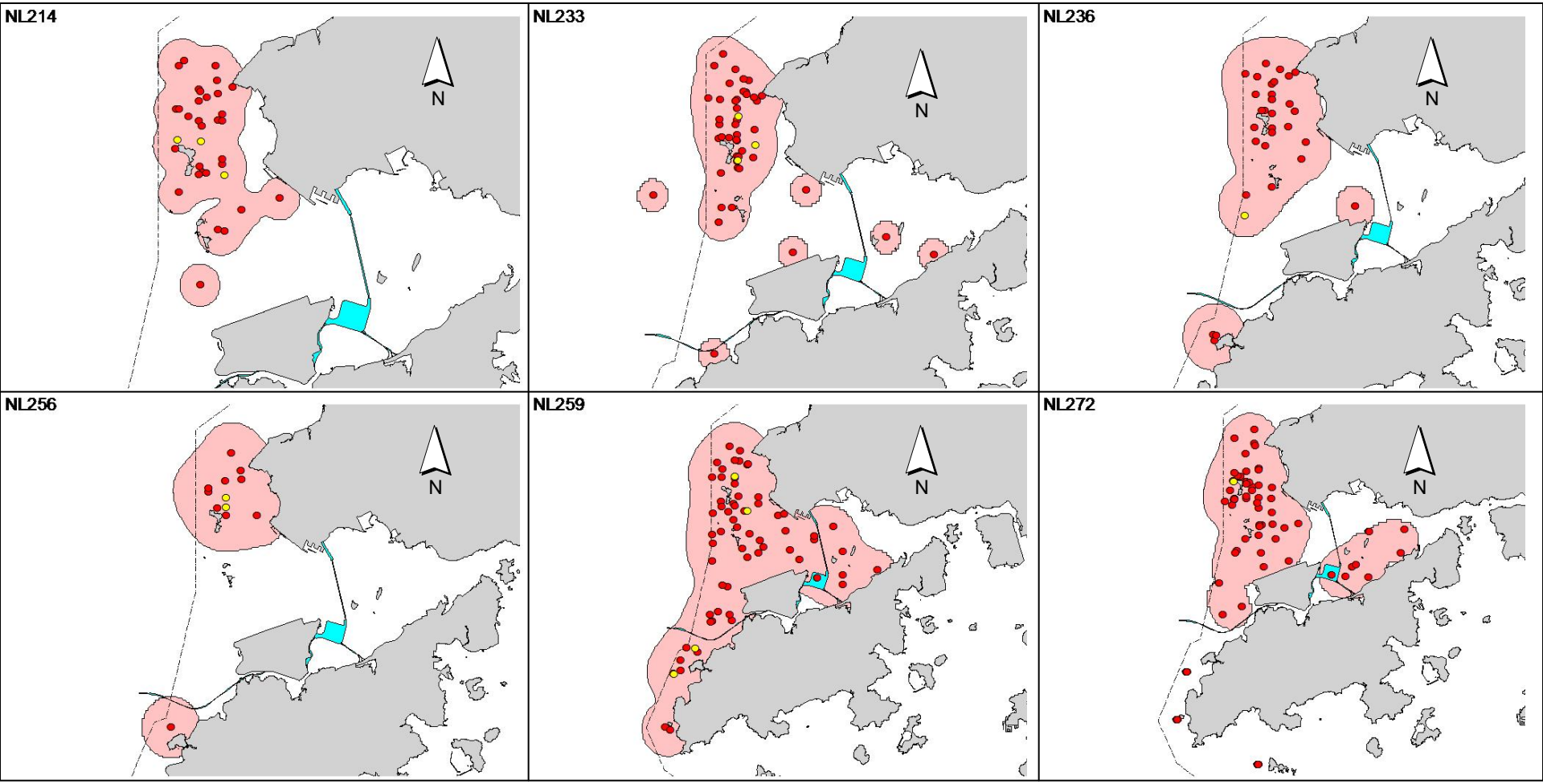
Appendix V. Ranging patterns (95% kernel ranges) of 26 individual dolphins that were sighted during HKLR03 impact phase monitoring period (note: yellow dots indicates sightings made in September – November 2014)



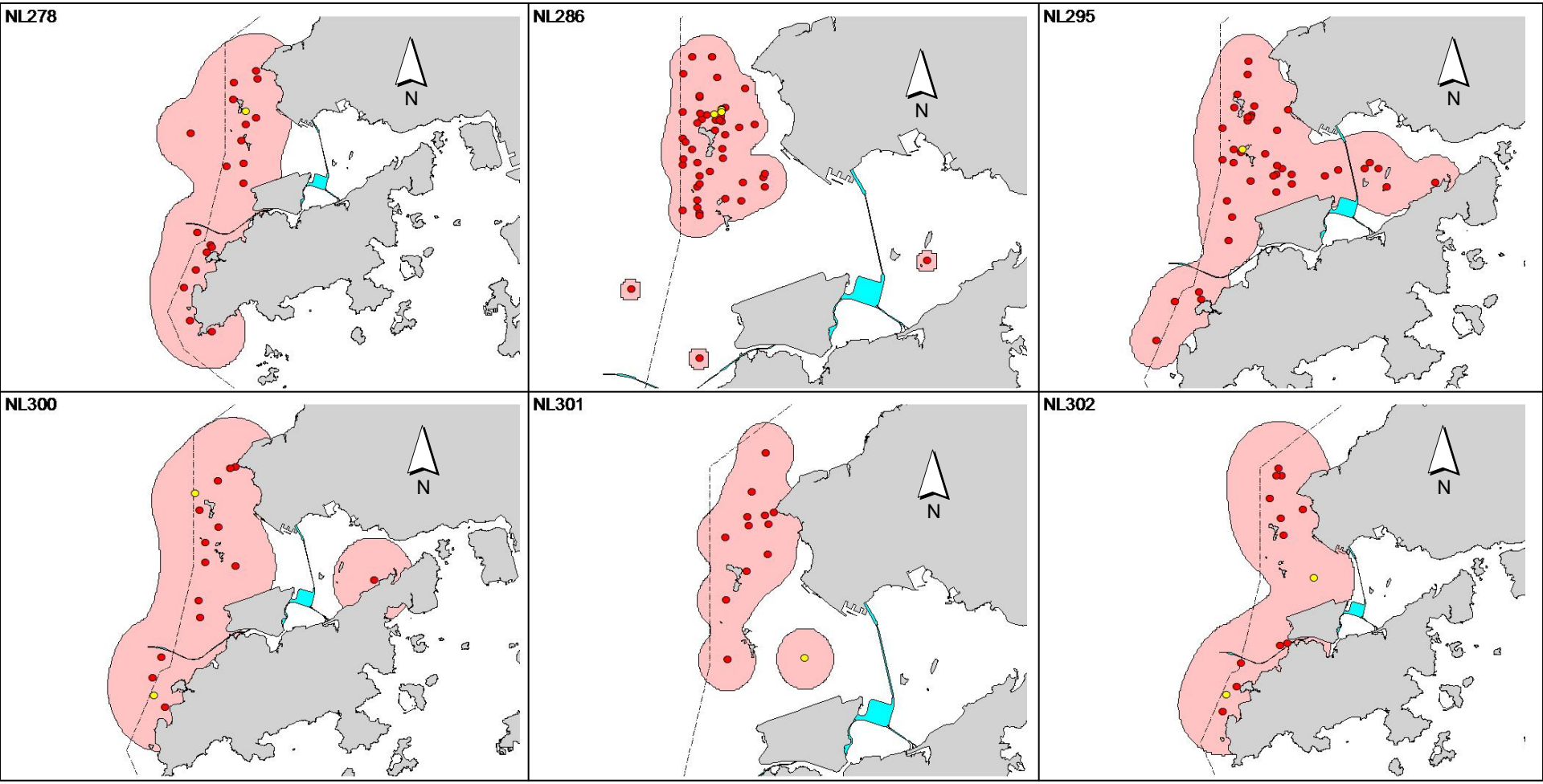
Appendix V. (cont'd)



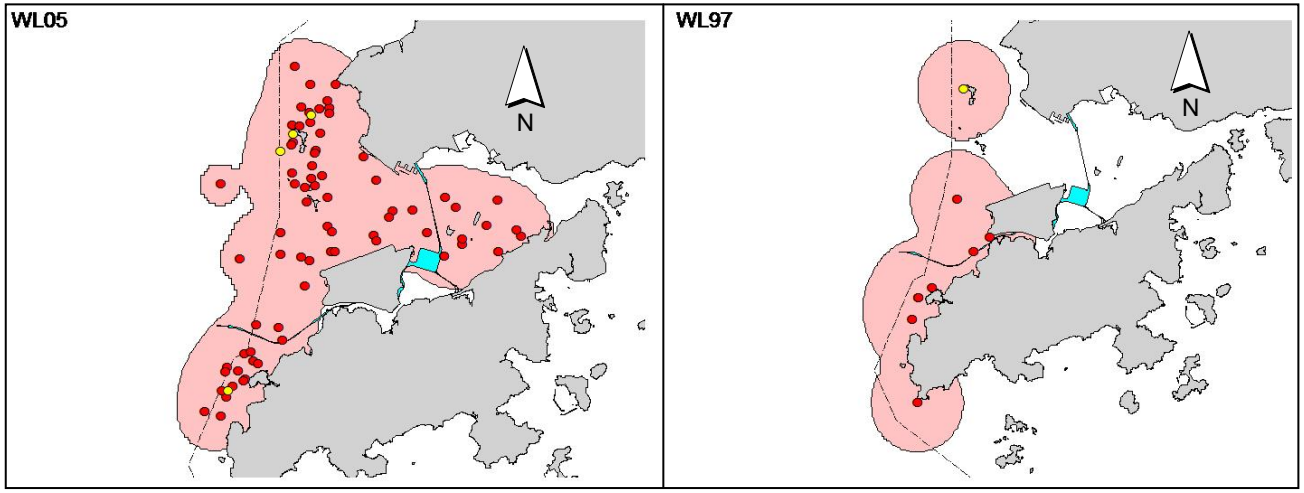
Appendix V. (cont'd)



Appendix V. (cont'd)



Appendix V. (cont'd)



Appendix J

Event Action Plan

Appendix J1 Event/ Action Plan for Air Quality

	ACTION			
EVENT	**ET** [(1)]	**IEC** [(1)]	**SOR** [(1)]	**Contractor**
Action Level				
1. Exceedance for one sample	1. Identify the source. 2. Inform the IEC and the SOR. 3. Repeat measurement to confirm finding. 4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by the ET. 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice 2. Amend working methods if appropriate
2. Exceedance for two or more consecutive samples	1. Identify the source. 2. Inform the IEC and the SOR. 3. Repeat measurements to confirm findings. 4. Increase monitoring frequency to daily. 5. Discuss with the IEC and the Contractor on remedial actions required. 6. If exceedance continues, arrange meeting with the IEC and the SOR. 7. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by the ET. 2. Check the Contractor's working method. 3. Discuss with the ET and the Contractor on possible remedial measures. 4. Advise the SOR on the effectiveness of the proposed remedial measures. 5. Supervisor implementation of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Ensure remedial measures properly implemented.	1. Submit proposals for remedial actions to IEC within 3 working days of notification 2. Implement the agreed proposals 3. Amend proposal if appropriate

	ACTION			
EVENT	**ET** [(1)]	**IEC** [(1)]	**SOR** [(1)]	**Contractor**
Limit Level				
1. Exceedance for one sample	1. Identify the source. 2. Inform the SOR and the DEP. 3. Repeat measurement to confirm finding. 4. Increase monitoring frequency to daily. 5. Assess effectiveness of Contractor's remedial actions and keep the IEC, the DEP and the SOR informed of the results.	1. Check monitoring data submitted by the ET. 2. Check Contractor's working method. 3. Discuss with the ET and the Contractor on possible remedial measures. 4. Advise the SOR on the effectiveness of the proposed remedial measures. 5. Supervisor implementation of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Ensure remedial measures are properly implemented.	1. Take immediate action to avoid further exceedance 2. Submit proposals for remedial actions to IEC within 3 working days of notification 3. Implement the agreed proposals 4. Amend proposal if appropriate
2. Exceedance for two or more consecutive samples	1. Notify the IEC, the SOR, the DEP and the Contractor. 2. Identify the source. 3. Repeat measurements to confirm findings. 4. Increase monitoring frequency to daily. 5. Carry out analysis of the Contractor's working procedures to determine possible mitigation to be implemented. 6. Arrange meeting with the IEC and the SOR to discuss the remedial actions to be taken. 7. Assess effectiveness of the Contractor's remedial actions and keep the IEC, the DEP and	1. Discuss amongst the SOR, ET and the Contractor on the potential remedial actions. 2. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise the SOR accordingly. 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented. 4. Ensure remedial measures are properly implemented. 5. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial actions to IEC within 3 working days of notification. 3. Implement the agreed proposals. 4. Resubmit proposals if problem still not under control. 5. Stop the relevant activity of works as determined by the SOR until the exceedance is abated.

	the SOR informed of the results.
	8. If exceedance stops cease additional monitoring.

Appendix J2 Event/ Action Plan for Construction Noise

	ACTION			
EVENT	**ET**	**IEC**	**SOR**	**Contractor**
Action Level	1. Notify the IEC and the Contractor. 2. Carry out investigation. 3. Report the results of investigation to the IEC and the Contractor. 4. Discuss with the Contractor and formulate remedial measures. 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review the analysed results submitted by the ET. 2. Review the proposed remedial measures by the Contractor and advise the SOR accordingly. 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented.	1. Submit noise mitigation proposals to IEC 2. Implement noise mitigation proposals
Limit Level	1. Notify the IEC, the SOR, the DEP and the Contractor. 2. Identify the source. 3. Repeat measurement to confirm findings. 4. Increase monitoring frequency. 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented. 6. Inform the IEC, the SOR and the DEP the causes & actions taken for the exceedances. 7. Assess effectiveness of the Contractor's remedial actions and keep the IEC, the DEP and the SOR informed of the results. 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst the SOR, the ET and the Contractor on the potential remedial actions. 2. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise the SOR accordingly. 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. 5. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance 2. Submit proposals for remedial actions to IEC within 3 working days of notification 3. Implement the agreed proposals 4. Resubmit proposals if problem still not under control 5. Stop the relevant activity of works as determined by the SOR until the exceedance is abated.

Appendix J3 Event/ Action Plan for Water Quality

Event	ET Leader	IEC	SOR	Contractor
Action level being exceeded by one sampling day	1. Repeat in situ measurement on next day of exceedance to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, contractor and SOR; 4. Check monitoring data, all plant, equipment and Contractor's working methods.	1. Check monitoring data submitted by ET and Contractor's working methods.	1. Confirm receipt of notification of non-compliance in writing; 2. Notify Contractor.	1. Inform the SOR and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Amend working methods if appropriate.
Action level being exceeded by two or more consecutive sampling days	1. Repeat measurement on next day of exceedance to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, contractor, SOR and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, SOR and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Action level;	1. Check monitoring data submitted by ET and Contractor's working method; 2. Discuss with ET and Contractor on possible remedial actions; 3. Review the proposed mitigation measures submitted by Contractor and advise the SOR accordingly; 4. Supervise the implementation of mitigation measures.	1. Discuss with IEC on the proposed mitigation measures; 2. Ensure mitigation measures are properly implemented; 3. Assess the effectiveness of the implemented mitigation measures.	1. Inform the Supervising Officer and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment and consider changes of working methods; 4. Submit proposal of additional mitigation measures to SOR within 3 working days of notification and discuss with ET, IEC and SOR; 5. Implement the agreed mitigation measures.
Limit level being exceeded by one sampling day	1. Repeat measurement on next day of exceedance to confirm findings; 2. Identify source(s) of impact;	1. Check monitoring data submitted by ET and Contractor's working method; 2. Discuss with ET and Contractor	1. Confirm receipt of notification of failure in writing; 2. Discuss with IEC, ET and Contractor on the proposed	1. Inform the SOR and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice;

Event	ET Leader	IEC	SOR	Contractor
	3. Inform IEC, contractor, SOR and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, SOR and Contractor;	on possible remedial actions; 3. Review the proposed mitigation measures submitted by Contractor and advise the SOR accordingly.	mitigation measures; 3. Request Contractor to review the working methods.	3. Check all plant and equipment and consider changes of working methods; 4. Submit proposal of mitigation measures to SOR within 3 working days of notification and discuss with ET, IEC and SOR.
Limit level being exceeded by two or more consecutive sampling days	1. Repeat measurement on next day of exceedance to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, contractor, SOR and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, SOR and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days;	1. Check monitoring data submitted by ET and Contractor's working method; 2. Discuss with ET and Contractor on possible remedial actions; 3. Review the Contractor's mitigation measures whenever necessary to assure their effectiveness and advise the SOR accordingly; 4. Supervise the implementation of mitigation measures.	1. Discuss with IEC, ET and Contractor on the proposed mitigation measures; 2. Request Contractor to critically review the working methods; 3. Make agreement on the mitigation measures to be implemented; 4. 5. Ensure mitigation measures are properly implemented; 6. 7. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the construction activities until no exceedance of Limit level.	1. Take immediate action to avoid further exceedance; 2. Submit proposal of mitigation measures to SOR within 3 working days of notification and discuss with ET, IEC and SOR; 3. Implement the agreed mitigation measures; 4. Resubmit proposals of mitigation measures if problem still not under control; 5. As directed by the Supervising Officer, to slow down or to stop all or part of the construction activities until no exceedance of Limit level.

Appendix J4 Implementation of Event-Action Plan for Dolphin Monitoring

Event	ET Leader	IEC	SOR	Contractor
Action Level	1. Repeat statistical data analysis to confirm findings; 2. Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences; 3. Identify source(s) of impact; 4. Inform the IEC, SOR and Contractor; 5. Check monitoring data. 6. Review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary.	1. Check monitoring data submitted by ET and Contractor; 2. Discuss monitoring results and findings with the ET and the Contractor.	1. Discuss monitoring with the IEC and any other measures proposed by the ET; 2. If SOR is satisfied with the proposal of any other measures, SOR to signify the agreement in writing on the measures to be implemented.	1. Inform the SOR and confirm notification of the non-compliance in writing; 2. Discuss with the ET and the IEC and propose measures to the IEC and the SOR; 3. Implement the agreed measures.

Event	ET Leader	IEC	SOR	Contractor
Limit Level	1. Repeat statistical data analysis to confirm findings; 2. Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences; 3. Identify source(s) of impact; 4. Inform the IEC, ER/SOR and Contractor of findings; 5. Check monitoring data; 6. Repeat review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary; 7. If ET proves that the source of impact is caused by any of the construction activity by the works contract, ET to arrange a meeting to discuss with IEC, ER/SOR and Contractor the necessity of additional dolphin monitoring and/or any other potential mitigation measures (e.g., consider to modify the perimeter silt curtain or consider to control/temporarily stop relevant construction activity etc.) and submit to IEC a proposal of additional dolphin monitoring and/or mitigation measures where necessary.	1. Check monitoring data submitted by ET and Contractor; 2. Discuss monitoring results and findings with the ET and the Contractor; 3. Attend the meeting to discuss with ET, ER/SOR and Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures; 4. Review proposals for additional monitoring and any other mitigation measures submitted by ET and Contractor and advise ER/SOR of the results and findings accordingly; 5. Supervise / Audit the implementation of additional monitoring and/or any other mitigation measures and advise ER/SOR the results and findings accordingly.	1. Attend the meeting to discuss with ET, IEC and Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures; 2. If ER/SOR is satisfied with the proposals for additional dolphin monitoring and/or any other mitigation measures submitted by ET and Contractor and verified by IEC, ER/SOR to signify the agreement in writing on such proposals and any other mitigation measures; 3. Supervise the implementation of additional monitoring and/or any other mitigation measures.	1. Inform the ER/SOR and confirm notification of the non- compliance in writing; 2. Attend the meeting to discuss with ET, IEC and ER/SOR the necessity of additional dolphin monitoring and any other potential mitigation measures; 3. Jointly submit with ET to IEC a proposal of additional dolphin monitoring and/or any other mitigation measures when necessary; 4. Implement the agreed additional dolphin monitoring and/or any other mitigation measures.

Appendix J5 Event and Action Plan on Dolphin Acoustic Behaviour

EVENT	ACTION			
	ET Leader	**IEC**	**SO**	**Contractor**
Action Level With the numerical values presented in *Table 5.7* of *Baseline Monitoring Report*, when any of the response variable for dolphin acoustic behaviour recorded in the construction phase monitoring is 20% lower or higher than that recorded in the baseline monitoring (see *Table5.8* of *Baseline Monitoring Report*), or when there is a difference of 20% in dolphin acoustic signal detection at nighttime period at Site C1 only, the action level should be triggered	1. Repeat statistical data analysis to confirm findings; 2. Review all available and relevant data to ascertain if differences are as a result of natural variation or seasonal differences; 3. Identify source(s) of impact; 4. Inform the IEC, SO and Contractor; 5. Check monitoring data; 6. Carry out audit to ensure all dolphin protective measures are implemented fully and additional measures be proposed if necessary	1. Check monitoring data submitted by ET and Contractor; 2. Discuss monitoring with the ET and the Contractor;	1. Discuss with the IEC the repeat monitoring and any other measures proposed by the ET; 2. Make agreement on measures to be implemented.	1. Inform the SO and confirm notification of the non- compliance in writing; 2. Discuss with the ET and the IEC and propose measures to the IEC and the SO; 3. Implement the agreed measures.

EVENT	ACTION			
	ET Leader	**IEC**	**SO**	**Contractor**
Limit Level With the numerical values presented in *Table 5.7* of *Baseline Monitoring Report*, when any of the response variable for dolphin acoustic behaviour recorded in the construction phase monitoring is 40% lower or higher than that recorded in the baseline monitoring (see *Table 5.8* of *Baseline Monitoring Report*), or when there is a difference of 40% in dolphin acoustic signal detection at nighttime at Site C1 only, the limit level should be triggered	1. Repeat statistical data analysis to confirm findings; 2. Review all available and relevant data to ascertain if differences are as a result of natural variation or seasonal differences; 3. Identify source(s) of impact; 4. Inform the IEC, SO and Contractor; 5. Check monitoring data; 6. Carry out audit to ensure all dolphin protective measures are implemented fully and additional measures be proposed if necessary 7. Discuss additional dolphin monitoring and any other potential mitigation measures (eg consider to temporarily stop relevant portion of construction activity) with the IEC and Contractor.	1. Check monitoring data submitted by ET and Contractor; 2. Discuss monitoring with the ET and the Contractor; 3. Review proposals for additional monitoring and any other measures submitted by the Contractor and advise ER accordingly.	1. Discuss with the IEC the repeat monitoring and any other measures proposed by the ET; 2. Make agreement on measures to be implemented.	1. Inform the SO and confirm notification of the non- compliance in writing; 2. Discuss with the ET and the IEC and propose measures to the IEC and the SO; 3. Implement the agreed measures.

Abbreviations: ET – Environmental Team, IEC – Independent Environmental Checker, SO – Supervising Office, DEP – Director of Environmental Protection

Appendix K

Quarterly Summary of Waste Flow Table

Contract No. : HY/2012/07

Tuen Mun Chek Lap Kok Link – Southern Connection Viaduct Section

Monthly Summary Waste Flow Table for 2014 (Year)

Month\Material	Actual Quantities of Inert C&D Materials Generation						Actual Quantities of C&D wastes Generation					Actual Quantities of Recyclables Generation			
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fills	Imported Fill	Marine Sediment, Cat. L	Marine Sediment, Cat. Mp	Marine Sediment, Cat. Mf	Chemical Waste	General Refuse	Metals	Felled trees	Paper/ cardboard packaging	Plastics
Unit	('000m^3)	('000m^3)	('000m^3)	('000m^3)	('000m^3)	('000m^3)	('000m^3)	('000m^3)	('000m^3)	('000Kg)	('000Kg)	('000Kg)	('000Kg)	('000Kg)	('000Kg)
Jan	0.033	0.011	0.003	-	0.030	-	-	-	-	-	22.380	-	10.240	-	-
Feb	4.716	0.010	0.031	-	0.010	4.674	-	-	-	-	10.670	-	0.780	-	-
Mar	2.559	0.009	0.240	-	0.221	2.098	-	-	-	0.275	12.390	-	46.050	-	-
Apr	1.051	0.000	0.020	-	0.118	0.914	-	-	-	-	87.650	-	15.760	-	-
May	2.008	-	0.010	-	1.546	0.451	0.386	0.267	0.055	-	98.030	-	8.460	0.126	-
Jun	5.318	0.021	0.030	2.473	0.357	2.457	0.338	-	-	-	77.290	-	25.340	0.140	-
SUB-TOTAL	**15.685**	**0.051**	**0.334**	**2.473**	**2.283**	**10.595**	**0.724**	**0.267**	**0.055**	**0.275**	**308.410**	**-**	**106.630**	**0.266**	**-**
Jul	6.303	0.129	0.020	-	4.654	1.629	0.847	0.252	0.051	-	87.810	-	27.370	0.126	-
Aug	4.824	0.018	0.265	1.829	2.441	0.288	0.391	0.131	0.033	-	98.220	-	21.680	0.126	0.475
Sep	8.037	0.142	0.175	-	7.722	0.140	0.400	0.073	0.060	-	238.01	-	34.190	0.161	-
Oct	14.912	0.083	0.943	-	13.860	0.109	0.441	0.118	0.104	-	268.18	-	-	0.105	-
Nov	15.614	0.268	3.141	-	12.474	-	-	0.150	0.084	-	114.37	-	-	0.133	-
Dec	-	-	-	-	-	-	-	-	-	-					
TOTAL	**65.375**	**0.691**	**4.877**	**4.303**	**43.435**	**12.761**	**2.803**	**0.991**	**0.387**	**0.275**	**1,115.000**	**-**	**189.870**	**0.917**	**0.475**

Notes :

1 - The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.

2 - Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.

3 - Broken concrete for recycling into aggregates.

4 - Assumed 5 kg per damaged water-filled barrier.

5 - Disposed as Public Fills includes Hard Rock and Large Broken Concrete.

Appendix L

Cumulative Statistics on Exceedances, Complaints, Notifications of Summons and Successful Prosecutions

Appendix L1 Cumulative Statistics on Exceedances

		Total No. recorded in this quarter	**Total No. recorded since project commencement**
1-Hr TSP	Action	0	0
	Limit	0	0
24-Hr TSP	Action	0	2
	Limit	0	0
Noise	Action	0	0
	Limit	0	0
Water Quality	Action	0	1
	Limit	0	0
Impact Dolphin Monitoring	Action	2	7
	Limit	0	0

Appendix L2 Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

Reporting Period	**Cumulative Statistics**		
	Complaints	Notifications of Summons	Successful Prosecutions
This quarter	0	0	0
Total No. received since project commencement	2	0	0

Email message

Environmental Resources Management

16/F Berkshire House,
25 Westlands Road
Quarry Bay, Hong Kong
Telephone: (852) 2271 3113
Facsimile: (852) 2723 5660
E-mail: jovy.tam@erm.com

To	ENVIRON - Hong Kong, Limited (ENPO)
From	ERM- Hong Kong, Limited
Ref/Project number	Contract No. HY/2012/07 Tuen Mun–Chek Lap Kok Link–Southern Connection Viaduct Section
Subject	Notification of Exceedance for Impact Dolphin Monitoring
Date	30 June 2015

Dear Sir or Madam,

Please find attached the Notification of Exceedance (NOE) of the following Log no.:

0215660_Sep2014/Nov2014_dolphin_STG&ANI_NEL
0215660_Sep2014/Nov2014_dolphin_STG&ANI_NWL

A total of two action level exceedances were recorded in the quarterly impact dolphin monitoring data between September 2014 and November 2014.

Regards,

Mr Jovy Tam
Environmental Team Leader

ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/07
TUEN MUN – CHEK LAP KOK LINK – SOUTHERN CONNECTION VIADUCT SECTION

Impact Dolphin Monitoring
Notification of Exceedance

Log No.	**0215660_Sep2014/Nov2014_dolphin_STG&ANI_NEL** **0215660_Sep2014/Nov2014_dolphin_STG&ANI_NWL** **[Total No. of Exceedances = 2]**	
Date	September 2014 to November 2014 (monitored) 8 January 2015 (results received by ERM)	
Monitoring Area	Northeast Lantau (NEL) and Northwest Lantau (NWL)	
Parameter(s) with Exceedance(s)	Quarterly encounter rate of dolphin sightings (STG) Quarterly encounter rate of total number of dolphins (ANI)	
Action Levels	North Lantau Social cluster	NEL: STG < 4.2 & ANI < 15.5 or NWL: STG < 6.9 & ANI < 31.3
Limit Levels		NEL: STG < 2.4 & ANI < 8.9 and NWL: STG< 3.9 & ANI < 17.9
Recorded Levels	NEL	STG = 0.0 & ANI = 0.0
	NWL	STG = 5.1 & ANI = 20.5
	Two Action Level Exceedances are recorded in the quarterly impact dolphin monitoring at NEL and NWL between September 2014 and November 2014. The exceedances were reported in the approved *Thirteenth Monthly EM&A Report* dated 10 December 2014.	
Statistical Analyses	Further to the review of the available and relevant dolphin monitoring data in the EM&A under this Contract, statistical analyses were conducted as follows: • A two-way ANOVA with repeated measures and unequal sample size was conducted using Period (2 levels: baseline vs impact – present quarter, September to November 2014) and Location (2 levels: NEL and NWL) as fixed factors to examine whether there were any significant differences in the averages encounter rates between the baseline and present impact monitoring quarter. By setting $\alpha = 0.1$ as the significance level in the statistical tests, significant difference in STG ($p = 0.0222$) and in ANI ($p = 0.0662$) between Period were detected. • A two-way ANOVA with repeated measures and unequal sample size was conducted using Cumulative Period (2 levels: baseline vs impact – cumulative quarters*, December 2012 to November 2014) and Location (2 levels: NEL and NWL) as fixed factors to examine whether there were any significant differences in the averages encounter rates between the baseline and cumulative impact monitoring quarter. By setting $\alpha = 0.1$ as the significance level in the statistical tests, significant difference in STG ($p = 0.0019$) and in ANI ($p = 0.0006$) between Cumulative Period and Location were detected. * Note: The commencement date under *Contract No. HY/2012/07* is 31 October 2013.	
Works Undertaken (in the monitoring quarter)	In the quarter between September 2014 and November 2014, the major marine works under *Contract No. HY/2012/07* included: • Construction of Pile caps at Viaduct B & E; • Marine piling platform installation; • Marine Piling at Viaducts B, C, D & E; and • Additional marine ground investigation (GI) and laboratory testing.	

Possible Reason for Action or Limit Level Exceedance(s)	The exceedance is considered unlikely to be due to the Project, in view of the following: • The *Monitoring of Marine Mammals in Hong Kong Waters (2013 – 14)* (1) reported that dolphin usage and traveling activities to the northern side of the airport (dolphin traveling corridor) are affected by frequent high-speed ferry traffic from Sky Pier (not related to this project), which is likely a contributing factor for the decrease in dolphin abundances in NEL. • As per the findings from the EIA report (Section 8.11.9), the major influences on the Chinese white dolphin (CWD) *Sousa chinensis* under this Contract are marine traffics and bored piling works. The Contractor has implemented the marine traffic control as per the requirements in the *EP-354/2009/B* and the updated *EM&A Manual*. Likewise, the bored piling works were undertaken within a metal casing as described in the EP and the approved EIA Report. After reviewing of the bored piling records, the bored piling working rates in this quarter are within the allowable working rate described in the EP (*Clause 3.11*), in which construction works were not undertaken at more than 15 piers sites from September to November 2014. During this quarter of dolphin monitoring, no adverse impact on CWD due to the activities under this Contract was observed. • According to the findings in the quarterly water monitoring results between September and November 2014, the impact mean level of SS (Mid-ebb: 9.3 mg/L; Mid-flood: 9.0 mg/L) in this quarter is below the baseline mean level of SS (Mid-ebb: 10.2 mg/L; Mid-flood: 12.1 mg/L). This would imply that no unacceptable impact on SS levels was associated with the marine works under this Contract, and thus no indirect impacts on marine habitat quality due to change in water quality is observed in this Contract.
Actions Taken / To Be Taken	With reference to the site inspection records in this quarter, the respective marine ecological mitigation measures (including 250 m dolphin exclusion zone, Passive Acoustic Monitoring (PAM) for night time works, acoustic decoupling plan, training to workers, marine vessels speed control and offsite travel route control) have been implemented properly by the Contractor throughout the marine works period. No immediate additional action is considered necessary. The ET will monitor for future trends in exceedance(s). A meeting was held on 9 December 2014 with attendance of ENPO, Resident Site Staff (RSS), Environmental Team (ET) and dolphin specialist for Contract No. HY/2010/02, RSS, ET, dolphin specialist and main Contractor for Contract No. HY/2011/03. The discussion/recommendation as recorded in the minutes of the meeting, which might be relevant to this Contract are summarized below. It was concluded that the HZMB works is one of the contributing factors affecting the dolphins. It was also concluded the contribution of impacts due to the HZMB works as a whole (or individual marine contracts) cannot be quantified nor separate from the other stress factors. It was reminded that the ETs shall keep reviewing the implementation status of the dolphin related mitigation measures and remind the contractor to ensure the relevant measures were fully implemented. It was recommended that the marine works of HZMB projects should be completed as soon as possible so as to reduce the overall duration of impacts and allow the dolphins population to recover as early as possible.
Remarks	The results of impact water quality and impact dolphin monitoring, the status of implemented marine ecological mitigation measures are documented in the approved *Eleventh* to *Thirteenth EM&A Monthly Reports*.

(1) Hung SKY (2014). Prepared for AFCD. Available from: http://www.afcd.gov.hk/english/conservation/con_mar/con_mar_chi/con_mar_chi_chi/con_mar_chi_chi.html