CONTRACT NO: HK/2011/07

WANCHAI DEVELOPMENT PHASE II AND CENTRAL WANCHAI BYPASS SAMPLING, FIELD MEASUREMENT AND TESTING WORK (STAGE 2)

ENVIRONMENTAL PERMIT NO. EP- 416/2011 AND FEP-01/416/2011

SHATIN TO CENTRAL LINK (SCL) PROTECTION WORKS AT CAUSEWAY BAY TYPHOON SHELTER (CBTS)

QUARTERLY ENVIRONMENTAL MONITORING AND AUDIT REPORT

- DECEMBER 2014 TO FEBRUARY 2015 -

CLIENTS:

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and

Highways Department

PREPARED BY:

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CHECKED BY:

Raymond Dai
Environmental Team Leader

DATE:

18 March 2015

ENVIRON

Ref.: AACWBIECEM00_0_6369L.15

18 March 2015

By Post and Fax (2691 2649)

AECOM Asia Company Limited
11/F, Tower 2
Grand Central Plaza
138 Shatin Rural Committee Road
Shatin, New Territories
Hong Kong

Attention: Mr. Conrad NG

Dear Sir,

Re: Shatin to Central Link – Protection Works at Causeway Bay Typhoon Shelter
Quarterly EM&A Report (December 2014 to February 2015) for
EP-416/2011 & FEP-01/416/2011

Reference is made to the Environmental Team's submission of the captioned Quarterly Environmental Monitoring and Audit (EM&A) Report for December 2014 to February 2015 received by e-mail on 18 March 2015.

Please be informed that we have no adverse comment on the captioned submission and thereby write to verify the captioned submission.

Thank you very much for your kind attention and please do not hesitate to contact the undersigned should you have any queries.

Yours sincerely,

David Yeung
Independent Environmental Checker

c.c.	HyD	Mr. Cyrus Wong	by fax: 2761 1508
	HyD	Mr. Bond Chow	by fax: 2714 5289
	CEDD	Mr. Jason Cheung	by fax: 2577 5040
	AECOM	Mr. Peter Poon	by fax: 3912 3010
	AECOM	Mr. Frankie Fan	by fax: 2587 1877
	MTRCL	Mr. Richard Kwan	by fax: 2993 7577
	Lam	Mr. Raymond Dai	by fax: 2882 3331

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EXECUTIVE SUMMARY

i. This is the Quarterly Environmental Monitoring and Audit (EM&A) Report – December 2014 to February 2015 prepared for the Shatin to Central Link (SCL) Protection Works at Causeway Bay Typhoon Shelter (CBTS) under Environmental Permit no. EP-416/2011 and Further Environmental Permit no. FEP-01/416/2011. This report presents the environmental monitoring and audit findings and information during the period from December 2014 to February 2015. The cut-off date of reporting is at 27th of each reporting period.

Construction Activities for the Reported Period

ii. During this reporting period, the principle work activities are summarized as below:

Table I Principle Work Activities for this reporting period

December 2014	January 2015	February 2015
• Installation of seawall blocks and backfilling works for formation TZ4 • Reinstatement of existing bermstone and seawall • Post tunnel construction works at ME4	• Installation of seawall blocks and backfilling works for formation of TZ4 • Jetty berms construction for permanent RHKYC jetty • Reinstatement of existing bermstone and seawall • Post tunnel construction works at ME4	• Jetty berms construction for permanent RHKYC jetty

Noise Monitoring

iii. Noise monitoring during daytime was conducted at M2b - Noon-day gun area on a weekly basis.

iv. No exceedance was recorded in the reporting quarter.

Air Quality Monitoring

v. 1-hour and 24-hour Total Suspended Particulates (TSP) monitoring were conducted at CMA3a - CWB PRE Site Office Area.

vi. No exceedances were recorded in the reporting quarter.

Water Quality Monitoring

vii. Water quality monitoring at C7 was conducted three days per week during the reporting period.

December 2014

viii. No exceedance was recorded in the reporting period.

January 2015

ix. No exceedance was recorded in the reporting period.

February 2015

x. One limit level of turbidity was recorded on 7 February 2015 during flood tide in the reporting period. After the investigation, the exceedance was concluded as non-project related.

Complaints, Notifications of Summons and Successful Prosecutions

xi. There was no environmental complaint recorded in the reporting period.

1. INTRODUCTION

1.1 Scope of the Report

1.1.1. Lam Geotechnics Limited (LGL) has been appointed to work as the Environmental Team (ET) under Environmental Permit no. EP-416/2011 and Further Environmental permit nos. FEP-01/416/2011 to implement the Environmental Monitoring and Audit (EM&A) programme as stipulated in the EM&A Manual of the approved Environmental Impact Assessment (EIA) Report for Shatin to Central Link (SCL) Protection Works at Causeway Bay Typhoon Shelter (CBTS) (Register No.: AEIAR-159/2011) and in the EM&A Manual of the approved EIA Report for Shatin to Central Link Protection Works at Causeway Bay Typhoon Shelter (Register No. AEIAR-159/2011).

1.1.2. This report presents the environmental monitoring and auditing work carried out in accordance to the Section 7.5 of EM&A Manual and Environmental Monitoring and Audit Requirements of Environmental permit nos. EP-416/2011 and Further Environmental permit nos. FEP-01/416/2011.

1.1.3. This report documents the finding of EM&A works during the period from December 2014 to February 2015.

1.2 Structure of the Report

Section 1 ***Introduction*** – details the scope and structure of the report.

Section 2 ***Project Background*** – summarizes background and scope of the project, site description, project organization and contact details of key personnel during the reporting period.

Section 3 ***Monitoring Requirements*** – summarizes all monitoring parameters, monitoring locations, monitoring frequency, duration and action plan.

Section 4 ***Monitoring Results*** – summarizes the monitoring results obtained in the reporting period.

Section 5 ***Compliance Audit*** – summarizes the auditing of monitoring results, all exceedances environmental parameters.

Section 6 ***Complaints, Notification of summons and Prosecution*** – summarizes the cumulative statistics on complaints, notification of summons and prosecution

Section 7 ***Cumulative Construction Impact due to the Concurrent Projects*** – summarizes the relevant cumulative construction impact due to the concurrent activities of the concurrent Projects.

Section 8 ***Conclusion***

2. PROJECT BACKGROUND

2.1 Background

2.1.1. The "Shatin to Central Link Protection Works at Causeway Bay Typhoon Shelter" (hereafter called "the Project") is a Designed Project (DP) under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO). The Environmental Impact Assessment (EIA) Reports for Shatin to Central Link Protection Works at CBTS (Register No. AEIAR-159/2011) has been approved on 25 Feb 2011.

2.1.2. The key purpose of the SCL Protection Works and associated works at CBTS involves the construction of a 160m tunnel box by cut-and-cover method at the crossing above the Central – Wan Chai Bypass (CWB) tunnels. Temporary reclamation is required and has been authorized under the Foreshore and Sea-bed (reclamations) Ordinance. With the presence of the Protection Works, future construction of the SCL on both sides of the CWB tunnels is protected and ensured feasible without damaging or unduly affecting the CWB tunnels which could be operational by then. This arrangement will also minimize public nuisance and impact to the surrounding environment as it can reduce the reclamation area for subsequent construction of the SCL after CWB is completed. Nevertheless, the Protection Works cannot serve to function for any railway service or operation before the completion of SCL.

2.1.3. The SCL is strategically important for connecting the existing railway lines into an integrated rail network. The east-west connection will allow the set up of a 57km East-West Corridor across the city connecting Wu Kai Sha with Tuen Mun via Kowloon; whilst the north-south connection will operate over a 41km North-South Corridor with services originating in Lok Ma Chau or Lo Wu travelling via the existing East Rail Line (EAL) to Admiralty. This will enable a direct transportation linkage between Mainland China and Hong Kong Island.

2.2 Scope of the Project and Site Description

2.2.1. The study area encompasses existing developments in Causeway Bay Typhoon Shelter as shown in ***Figure 2.1***. The scope of the Project includes:

- Temporary reclamation, which occupies about 0.7ha of Government foreshore and sea-bed (of which 0.3ha is already authorized under CWB project, i.e. additional reclamation of 0.4ha is required).
- Dredging works at the southeast corner of the CBTS to provide space for temporary relocation of anchorage area due to the additional temporary reclamation for the Project.
- Construction of a section of the twin track railway tunnel structure (approximately 160m long) above the proposed CWB located entirely offshore within the CBTS.
- Relocation of the temporary Royal Hong Kong Yacht Club (RHKYC) jetty within the CWB temporary reclamation to a new location.
- Removal of the temporary reclamation, except the small area at the southwest corner of the reclamation (which will be removed by the SCL project upon completion of

the future SCL tunnels connecting to the proposed South Ventilation Building (SOV)).

2.2.2. The Project contains Schedule 2 DP that, under the EIAO, requires Environmental Permits (EPs) to be granted by the DEP before they may either be constructed or operated. ***Table 2.1*** summarises the DP under this Project. ***Figure 2.1*** shows the location of this Schedule 2 DPs.

Table 2.1 Schedule 2 Designated Projects under this Project

Item	Designated Project	EIAO Reference	Reason for inclusion
DP1	Temporary reclamation, which occupies about 0.7ha of Government foreshore and sea-bed	Schedule 2, Part I, C.12	A dredging operation which is less than 100m from a seawater intake point

2.3 Project Organization and Contact Personnel

2.3.1 Civil Engineering and Development Department and Highways Department are the overall project controllers for the construction phase of the Project, Project Engineer, Contractor(s), Environmental Team and Independent Environmental Checker are appointed to manage and control environmental issues.

2.3.2 The proposed project organization and lines of communication with respect to environmental protection works are shown in ***Figure 2.2***. Key personnel and contact particulars are summarized in ***Table 2.2***:

Table 2.2 Contact Details of Key Personnel

Party	Role	Post	Name	Contact No.	Contact Fax
AECOM	Engineer's Representative for WDII	Principal Resident Engineer	Mr. Frankie Fan	2587 1778	2587 1877
	Engineer's Representative for CWB	Principal Resident Engineer	Mr. Peter Poon	3912 3388	3912 3010
MTR Corporation Limited	Permit Holder	Environment Manager	Mr. Richard Kwan	2688 1179	2993 7577
		Environmental Engineer I	Miss. Viola Tong	3127 6296	
		Environmental Engineer II	Mr. Chris Mak	3127 6297	
China State Construction Engineering (HK) Ltd.	Contractor under Contract no. HY/2009/15	Project Director	Mr. K C Cheung	3557 6399	2566 2192
		Senior Site Manager	Y Huo	3557 6368	2566 2192
		Contractor's Representative	Mr. Gene Cheung	3557 6407	
		Project Manager	Mr. Andrew Wong	3557 6371	

Party	Role	Post	Name	Contact No.	Contact Fax
		Environmental Officer	Mr. Andy Mak	3557 6347	
ENVIRON Hong Kong Limited	Independent Environmental Checker (IEC)	Independent Environmental Checker (IEC)	Mr. David Yeung	3465 2888	3465 2899
Lam Geotechnics Limited	Environmental Team (ET)	Environmental Team Leader (ETL)	Mr. Raymond Dai	2882 3939	2882 3331

2.4 Principle Work and Activities

2.4.1 During this reporting period, the principle work activities for Contract no. HY/2009/15 are summarized in **Table 2.3**.

Table 2.3 Principle Work Activities for this reporting period

December 2014	January 2015	February 2015
• Installation of seawall blocks and backfilling works for formation of TZ4 • Reinstatement of existing bermstone and seawall • Post tunnel construction works at ME4	• Installation of seawall blocks and backfilling works for formation of TZ4 • Jetty berms construction for permanent RHKYC jetty • Reinstatement of existing bermstone and seawall • Post tunnel construction works at ME4	• Jetty berms construction for permanent RHKYC jetty

2.4.2 Implementation status of the recommended mitigation measures during this reporting period is presented in ***Appendix 2.1***.

3. MONITORING REQUIREMENTS

3.1. Noise Monitoring

NOISE MONITORING STATIONS

3.1.1. The noise monitoring stations for the Project are listed and shown in ***Table 3.1*** and ***Figure 3.1***. ***Appendix 3.1*** shows the established Action/Limit Levels for the monitoring works.

Table 3.1 Noise Monitoring Stations

Station	Description
M2b	Noon Gun Area

NOISE MONITORING PARAMETERS, FREQUENCY AND DURATION

3.1.2. The construction noise level shall be measured in terms of the A-weighted equivalent continuous sound pressure level (L_{eq}). $L_{eq\ (30\ minutes)}$ shall be used as the monitoring parameter for the time period between 0700 and 1900 hours on normal weekdays. For all other time periods, $L_{eq\ (5\ minutes)}$ shall be employed for comparison with the Noise Control Ordinance (NCO) criteria. Supplementary information for data auditing, statistical results such as L_{10} and L_{90} shall also be obtained for reference.

3.1.3. Noise monitoring shall be carried out at all the designated monitoring stations. The monitoring frequency shall depend on the scale of the construction activities. The following is an initial guide on the regular monitoring frequency for each station on a weekly basis when noise generating activities are underway:

- One set of measurements between 0700 and 1900 hours on normal weekdays.

MONITORING EQUIPMENT

3.1.4. As referred to in the Technical Memorandum (TM) issued under the NCO, sound level meters in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications shall be used for carrying out the noise monitoring. Immediately prior to and following each noise measurement the accuracy of the sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration level from before and after the noise measurement agree to within 1.0 dB.

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

3.2. Air Monitoring

AIR QUALITY MONITORING STATIONS

3.2.1. The air monitoring stations for the Project are listed and shown in ***Table 3.2*** and ***Figure 3.1***. ***Appendix 3.1*** shows the established Action/Limit Levels for the monitoring works.

Table 3.2 Air Monitoring Stations

Station ID	Monitoring Location	Description
CMA3a	CWB PRE Site Office	Causeway Bay

AIR MONITORING PARAMETERS, FREQUENCY AND DURATION

3.2.2. One-hour and 24-hour TSP levels should be measured to indicate the impacts of construction dust on air quality. The 24-hour TSP levels shall be measured by following the standard high volume sampling method as set out in the Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50), Appendix B.

3.2.3. All relevant data including temperature, pressure, weather conditions, elapsed-time meter reading for the start and stop of the sampler, identification and weight of the filter paper, and any other local atmospheric factors affecting or affected by site conditions, etc., shall be recorded down in detail.

SAMPLING PROCEDURE AND MONITORING EQUIPMENT

3.2.4. For regular impact monitoring, the sampling frequency of at least once in every six-days, shall be strictly observed at all the monitoring stations for 24-hour TSP monitoring. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six-days should be undertaken when the highest dust impact occurs

3.2.5. High volume samplers (HVSs) in compliance with the following specifications shall be used for carrying out the 1-hour and 24-hour TSP monitoring:

- 0.6 – 1.7 m3 per minute adjustable flow range;
- Equipped with a timing / control device with +/- 5 minutes accuracy for 24 hours operation;
- Installed with elapsed-time meter with +/- 2 minutes accuracy for 24 hours operation;
- Capable of providing a minimum exposed area of 406 cm2;
- Flow control accuracy: +/- 2.5% deviation over 24-hour sampling period;
- Equipped with a shelter to protect the filter and sampler;
- Incorporated with an electronic mass flow rate controller or other equivalent devices;
- Equipped with a flow recorder for continuous monitoring;
- Provided with a peaked roof inlet;
- Incorporated with a manometer;
- Able to hold and seal the filter paper to the sampler housing at horizontal position;
- Easily changeable filter; and
- Capable of operating continuously for a 24-hour period.

3.2.6. Initial calibration of dust monitoring equipment shall be conducted upon installation and thereafter at bi-monthly intervals. The transfer standard shall be traceable to the internationally recognized primary standard and be calibrated annually. The concern parties such as IEC shall properly document the calibration data for future reference. All the data should be converted into standard temperature and pressure condition.

LABORATORY MEASUREMENT / ANALYSIS

3.2.7. A clean laboratory with constant temperature and humidity control, and equipped with necessary measuring and conditioning instruments to handle the dust samples collected, shall be available for sample analysis, and equipment calibration and maintenance. The laboratory should be HOKLAS accredited.

3.2.8. Filter paper of size 8" x 10" shall be labelled before sampling. It shall be a clean filter paper with no pinholes, and shall be conditioned in a humidity-controlled chamber for over 24-hours and be pre-weighed before use for the sampling.

3.2.9. After sampling, the filter paper loaded with dust shall be kept in a clean and tightly sealed plastic bag. The filter paper shall then be returned to the laboratory for reconditioning in the humidity controlled chamber followed by accurate weighing by an electronic balance with readout down to 0.1 mg. The balance shall be regularly calibrated against a traceable standard.

3.2.10. All the collected samples shall be kept in a good condition for 6 months before disposal.

3.3. Water Quality Monitoring

3.3.1. The EIA Report has identified that the key water quality impact would be associated with the dredging works during the construction phase. Marine water quality monitoring for dissolved oxygen (DO), suspended solid (SS) and turbidity is therefore recommended to be carried out at selected WSD flushing water intakes. The impact monitoring should be carried out during the proposed dredging works to ensure the compliance with the water quality standards.

Water Quality Monitoring Stations

3.3.2. It is proposed to monitor the water quality at one cooling water intakes along the seafront of the Victoria Harbour. The proposed water quality monitoring stations of the Project are shown in ***Table 3.3*** and ***Figure 3.1***. ***Appendix 3.1*** shows the established Action/Limit Levels for the monitoring works.

Table 3.3 Marine Water Quality Stations for Water Quality Monitoring

Station Ref.	Location	Easting	Northing
Cooling Water Intake			
C7	Windsor House	837193.7	816150.0

WATER QUALITY PARAMETERS AND FREQUENCY

3.3.3. Monitoring of dissolved oxygen (DO), turbidity and suspended solids (SS) shall be carried out at WSD flushing water intakes and cooling water intakes. DO and Turbidity are measured in-situ while SS is determined in laboratory.

3.3.4. In association with the water quality parameters, other relevant data shall also be measured, such as monitoring location/position, time, sampling depth, water temperature, pH, salinity, dissolved oxygen (DO) saturation, weather conditions, sea conditions, tidal stage, and any special phenomena and work underway at the construction site etc.

SAMPLING PROCEDURES AND MONITORING EQUIPMENT

3.3.5. The interval between two sets of monitoring should not be less than 36 hours except where there are exceedances of Action and/or Limit Levels, in which case the monitoring frequency will be increased. ***Table 3.4*** shows the proposed monitoring frequency and water quality parameters. Duplicate in-situ measurements and water sampling should be carried out in each sampling event. For selection of tides for in-situ measurement and water sampling, tidal range of individual flood and ebb tides should be not less than 0.5m.

Table 3.4 Marine Water Quality Monitoring Frequency and Parameters

Activities	**Monitoring Frequency[1]**	**Parameters[2]**
During the 4-week baseline monitoring period	Three days per week, at mid-flood and mid-ebb tides	Turbidity, Suspended Solids (SS), Dissolved Oxygen (DO), pH, Temperature, Salinity
During marine construction works	Three days per week, at mid-flood and mid-ebb tides	Turbidity, Suspended Solids (SS), Dissolved Oxygen (DO), pH, Temperature, Salinity
After completion of marine construction works	Three days per week, at mid-flood and mid-ebb tides	Turbidity, Suspended Solids (SS), Dissolved Oxygen (DO), pH, Temperature, Salinity

Notes:
1. For selection of tides for in-situ measurement and water sampling, tidal range of individual flood and ebb tides should be not less than 0.5m.
2. Turbidity should be measured in situ whereas SS should be determined by laboratory.

DISSOLVED OXYGEN AND TEMPERATURE MEASURING EQUIPMENT

3.3.6. The instrument should be a portable, weatherproof dissolved oxygen measuring instrument complete with cable, sensor, comprehensive operation manuals, and use a DC power source. It should be capable of measuring:

- a dissolved oxygen level in the range of 0-20 mg/l and 0-200% saturation
- a temperature of 0-45 degree Celsius

3.3.7. It should have a membrane electrode with automatic temperature compensation complete with a cable. Sufficient stocks of spare electrodes and cables should be available for replacement where necessary. (e.g. YSI model 59 meter, YSI 5739 probe, YSI 5795A submersible stirrer with reel and cable or an approved similar instrument).

3.3.8. Should salinity compensation not be build-in in the DO equipment, in-situ salinity shall be measured to calibrate the DO equipment prior to each DO measurement.

TURBIDITY MEASUREMENT INSTRUMENT

3.3.9. The instrument should be a portable, weatherproof turbidity-measuring instrument complete with comprehensive operation manual. The equipment should use a DC power source. It should have a photoelectric sensor capable of measuring turbidity between 0-1000 NTU and be complete with a cable (e.g. Hach model 2100P or an approved similar instrument).

SAMPLER

3.3.10. A water sampler comprises a transparent PVC cylinder, with a capacity of not less than 2 litres, and can be effectively sealed with latex cups at both ends. The sampler should have a positive latching system to keep it open and prevent premature closure until released by a messenger when the sampler is at the selected water depth (e.g. Kahlsico Water Sampler or an approved similar instrument).

SAMPLE CONTAINER AND STORAGE

3.3.11. Water samples for suspended solids measurement should be collected in high-density polythene bottles, packed in ice (cooled to 4°C without being frozen), and delivered to ALS Technichem (HK) Pty Ltd. as soon as possible after collection for analysis.

WATER DEPTH DETECTOR

3.3.12. A portable, battery-operated echo sounder shall be used for the determination of water depth at each designated monitoring station. This unit can either be handheld or affixed to the bottom of the workboat, if the same vessel is to be used throughout the monitoring programme.

SALINITY

3.3.13. A portable salinometer capable of measuring salinity in the range of 0-40 ppt shall be provided for measuring salinity of the water at each of monitoring location.

MONITORING POSITION EQUIPMENT

3.3.14. A hand-held or boat-fixed type digital Global Positioning System (GPS) with waypoint bearing indication or other equivalent instrument of similar accuracy shall be provided and used during monitoring to ensure the monitoring vessel is at the correct location before taking measurements.

CALIBRATION OF IN-SITU INSTRUMENTS

3.3.15. All in-situ monitoring instrument shall be checked, calibrated and certified by a laboratory accredited under HOKLAS or equivalent before use, and subsequently re-calibrated at 3 monthly intervals throughout all stages of the water quality monitoring. Responses of sensors and electrodes should be checked with certified standard solutions before each use. Wet bulb calibration for a DO meter shall be carried out before measurement at each monitoring location.

3.3.16. For the on site calibration of field equipment by the ET, the BS 127:1993, "Guide to Field and on-site test methods for the analysis of waters" should be observed.

3.3.17. Sufficient stocks of spare parts should be maintained for replacements when necessary. Backup monitoring equipment shall also be made available so that monitoring can proceed uninterrupted even when some equipment is under maintenance, calibration, etc.

LABORATORY MEASUREMENT / ANALYSIS

3.3.18. Analysis of suspended solids has been carried out in a HOKLAS accredited laboratory, ALS Technichem (HK) Pty Ltd. Water samples of about 1L shall be collected at the monitoring stations for carrying out the laboratory SS determination. The SS determination work shall start within 24 hours after collection of the water samples. The SS determination shall follow APHA 19ed or equivalent methods subject to the approval of IEC and EPD.

4. MONITORING RESULTS

4.0.1. Overall layout showing work areas and monitoring stations are shown in ***Figure 2.1*** and ***Figure 3.1***.

4.1. Noise Monitoring Results

4.1.1. The commencement date of dredging work was 25 November 2011. Noise monitoring was commenced on 29 November 2011.

4.1.2. The noise monitoring station is shown in ***Table 4.1*** below:

Table 4.1 Noise Monitoring Stations

Station	Description
M2b	Noon Gun Area

4.1.3. No exceedance was recorded in the reporting quarter.

4.1.4. Noise monitoring results measured in this reporting quarter are review and summarized. Details of noise monitoring results and graphical presentation can be referred in ***Appendix 4.1***.

4.2. Air Monitoring Results

4.2.1 The commencement date of dredging work was 25 November 2011. Air quality monitoring was commenced on 25 November 2011.

4.2.2 The air monitoring stations is shown in ***Table 4.2*** below.

Table 4.2 Air Monitoring Stations

Station	Description
CMA3a	CWB PRE Site Office

4.2.3 No exceedance was recorded in the reporting quarter.

4.2.4 Air monitoring results measured in this reporting quarter are reviewed and summarized. . Details of air monitoring results and graphical presentation can be referred in ***Appendix 4.2***.

4.3. Water Monitoring Results

4.3.1 The commencement date of dredging work was 25 November 2011. Water quality monitoring was commenced on 25 November 2011. The water quality monitoring station is summarized in ***Table 4.3*** below:

Table 4.3 Water Monitoring Station

Station Ref.	Location	Easting	Northing
Cooling Water Intake			
C7	Windsor House	837193.7	816150.0

December 2014

4.3.2 No exceedance was recorded in the reporting month.

January 2015

4.3.3 No exceedance was recorded in the reporting month.

February 2015

4.3.4 One limit level exceedance of turbidity was recorded on 7 February 2015 during flood tide in the reporting month. After the investigation, the exceedance was recorded as non-project related.

4.3.5 After checking with contractor, no marine works were conducted in the vicinity of the water quality monitoring station under contract HY/2009/15 at CBTS on the monitoring date. The installed water storage tank at C7 water monitoring station was properly maintained. In view of the exceedance was not continuous and low SS level was measured during the same monitoring period, it is considered that the exceedance is not related to project

4.3.6 Water quality monitoring results measured in this reporting period are review and summarized. Details of water quality monitoring results and graphical presentation can be referred in ***Appendix 4.3***.

4.4 Waste Monitoring Results

4.4.1 Inert C&D waste was disposed & no Non-inert C&D wastes were disposed of in this reporting period. Details of the waste flow table are summarized in ***Table 4.4***

Table 4.4 Details of Waste Disposal

Waste Type*	Quantity this Quarter, m^3	Cumulative-to-Date, m^3	Location of Disposal
Inert C&D materials disposed, m^3	NIL NIL	32,670 6,267	TM38 TKO137
Inert C&D materials recycled, m^3	NIL NIL NIL NIL NIL	25,395.7 1,228 1416 352 1,049	TS2 WDII Lun Ku Tan WENT Landfill HY/2011/03 (HZM)
Non-inert C&D materials disposed, m^3	NIL	NIL	N/A
Non-inert C&D materials recycled, m^3	NIL	NIL	N/A
Chemical waste disposed, kg	NIL	NIL	N/A
Marine Sediment (Type 1 – Open Sea Disposal), m^3	NIL (Bulk Volume)	10,640 (Bulk Volume)	Cheung Chau South
Marine Sediment (Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal), m^3	NIL (Bulk Volume)	7,500 (Bulk Volume)	East of Sha Chau
Marine Sediment (Type 3 – Special Treatment / Disposal contained in geosynthetic Containers), m^3	NIL	NIL	N/A

4.4.2 There were no marine sediments Type 1 – Open Sea Disposal and Type 1 – Open Sea Disposal (Dedicate Sites) & Type 2 – Confined Marine Disposal in the reporting quarter.

5. COMPLIANCE AUDIT

5.0.1. The Event Action Plan for construction noise, air quality and water quality are presented in ***Appendix 5.1***.

5.1. Noise Monitoring

5.1.1. No exceedance was recorded in the reporting quarter.

5.2. Air Monitoring

5.2.1. No exceedance was recorded in the reporting quarter.

5.3. Water Quality Monitoring

December 2014

5.3.1. No exceedance was recorded in the reporting month.

January 2015

5.3.2. No exceedance was recorded in the reporting month.

February 2015

5.3.3. One limit level exceedance of turbidity was recorded on 7 February 2015 during flood tide in the reporting month. After the investigation, the exceedance was recorded as non-project related.

5.4. Site Audit

5.4.1. There was no non-compliance from the site audits in the reporting quarter.

6. COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTION

6.0.1. There was no environmental complaint received in this quarter.

6.0.2. The details of cumulative complaint log and summary of complaints are presented in ***Appendix 6.1***.

6.0.3. No notification of summons or prosecution was received in the reporting period. Cumulative statistic on complaints and successful prosecutions are summarized in ***Table 6.1*** and ***Table 6.2*** respectively.

Table 6.1 Cumulative Statistics on Complaints

Reporting Period	No. of Complaints
December 2014 – February 2015	0
November 2011 (Commencement of work) –November 2014	0
Total	**0**

Table 6.2 Cumulative Statistics on Successful Prosecutions

Environmental Parameters	Cumulative No. Brought Forward	No. of Successful Prosecutions this quarter (Offence Date)	Cumulative No. Project-to-Date
Air	-	0	0
Noise	-	0	0
Water	-	0	0
Waste	-	0	0
Total	**-**	**0**	**0**

7. CUMULATIVE CONSTRUCTION IMPACT DUE TO THE CONCURRENT PROJECTS

7.0.1. According to Condition 3.4 of the EP-416/2011, this section addresses the relevant cumulative construction impact due to the concurrent activities of the current projects including the Wan Chai Development Phase II (WDII) and Central-WanChai Bypass (CWB).

7.0.2. According to the construction programme of Wan Chai Development Phase II, Central-Wan Chai Bypass and Island Eastern Corridor Link projects, the major construction activities under Wan Chai Development Phase II were marine works at HKCEC areas, tunnel works and foundation works at Wan Chai East and dredging works at Wan Chai West. The major construction activities under Central-Wan Chai Bypass and Island Eastern Corridor Link Projects were bridge construction and road works at Central Interchange, land based bored pilling works and ELS works at Victoria Park, segment launching works and tunnel works at North Point area. Marine-based construction activities were seawall construction and filling works at EX-PCWA and seawall construction and filling works at TS3 at Causeway Bay Typhoon Shelter in the reporting month.

8. CONCLUSION

8.0.1. The EM&A programme was carried out in accordance with the EM&A Manual requirements, minor alternations to the programme proposed were made in response to changing circumstances.

8.0.2. No non-compliances were noted and no prosecutions were received during the reporting quarter.

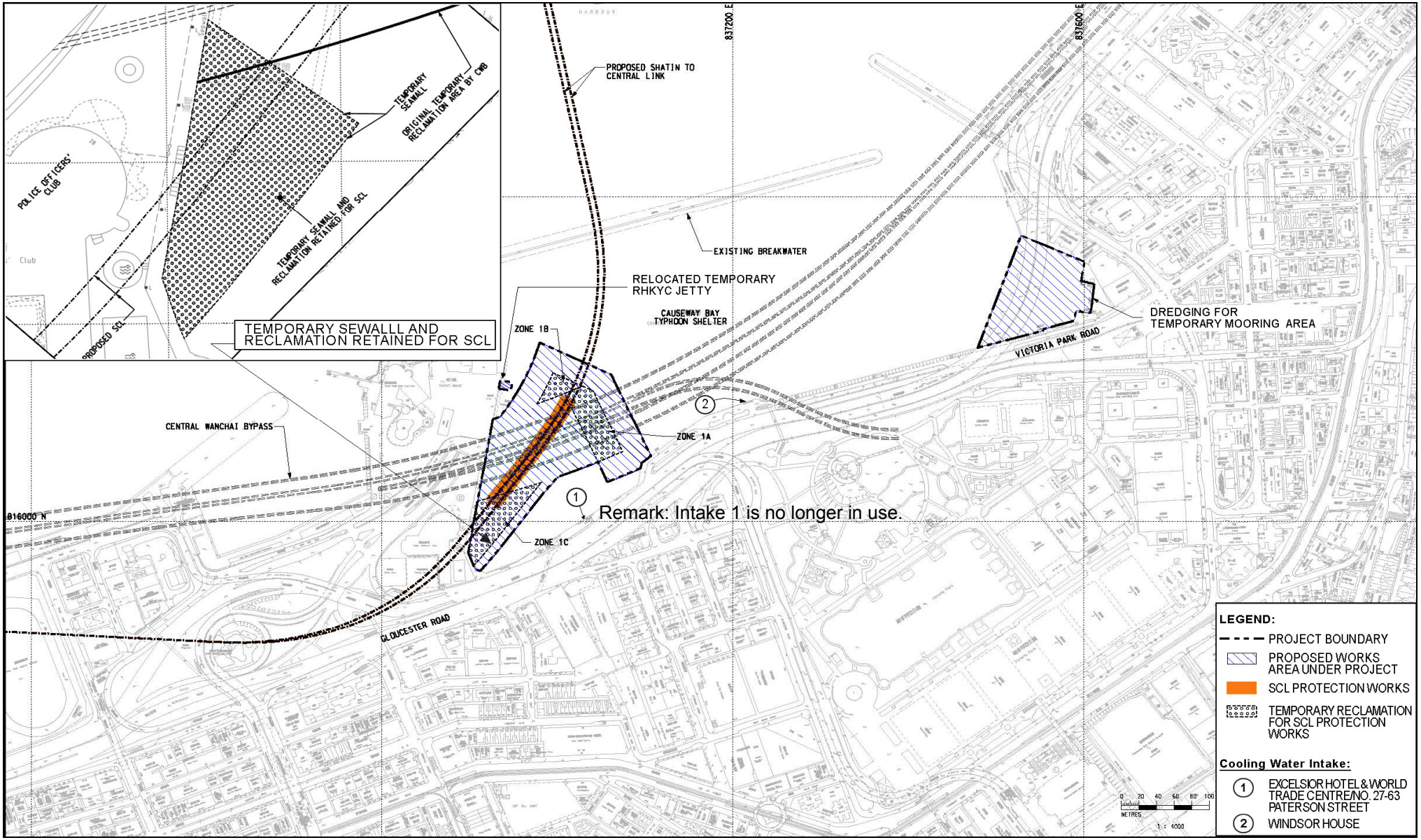
8.0.3. No project-related exceedances were recorded during the reporting quarter.

8.0.4. No environmental complaint and prosecution recorded in the reporting quarter.

8.0.5. The construction programme is provided in ***Appendix 7.1***.

Figure 2.1

Project Layout



Project Title : ShaTin to Central Link Protection Works at Causeway Bay Typhoon Shelter
工程項目名稱: 沙田至中環綫位於銅鑼灣避風塘內之保護工程

Environmental Permit No. : EP-416/2011
環境許可證編號 : EP-416/2011

Figure 1: Location of the Project
圖 1: 工程項目位置

(This figure was prepared based on Figure NEX2213/C/331/ENS/M50/501 of EIA report (Register No.: AEIAR-159/2011))
(本圖是根據環評報告 (登記冊編號 AEIAR-159/2011) 圖 NEX2213/C/331/ENS/M50/501 編制)

Figure 2.2

Project Organization Chart

Project Organization Chart

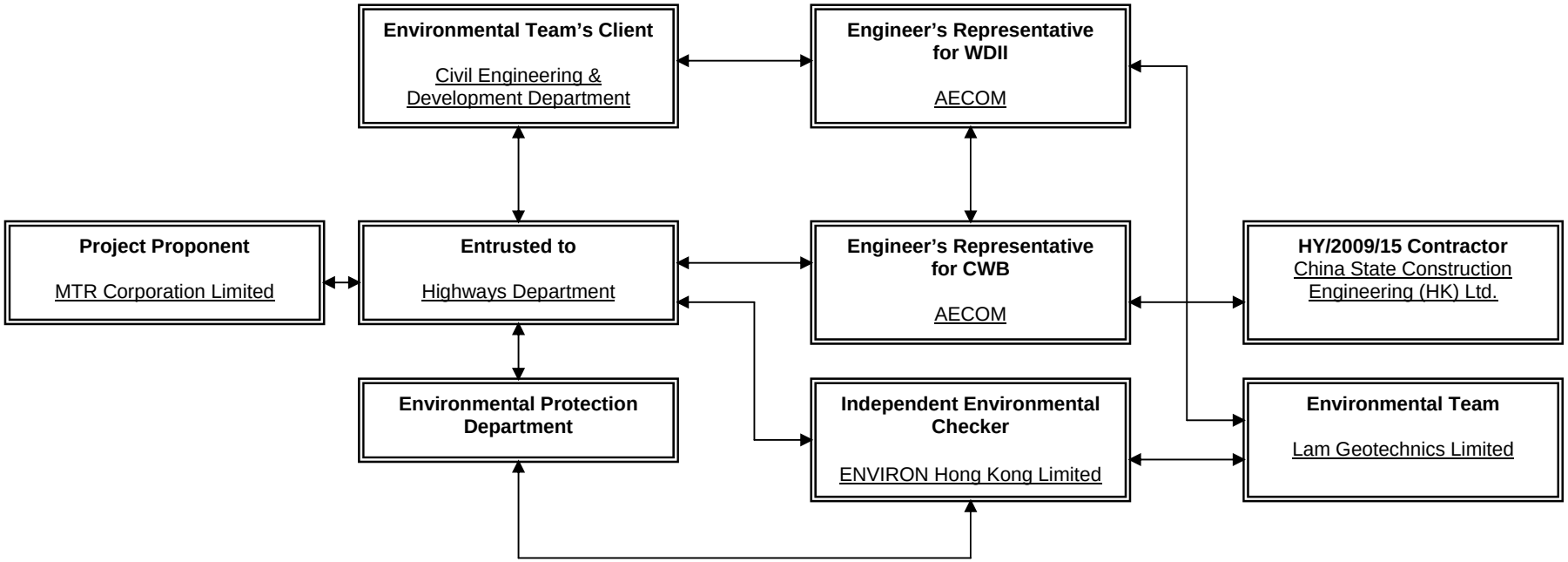
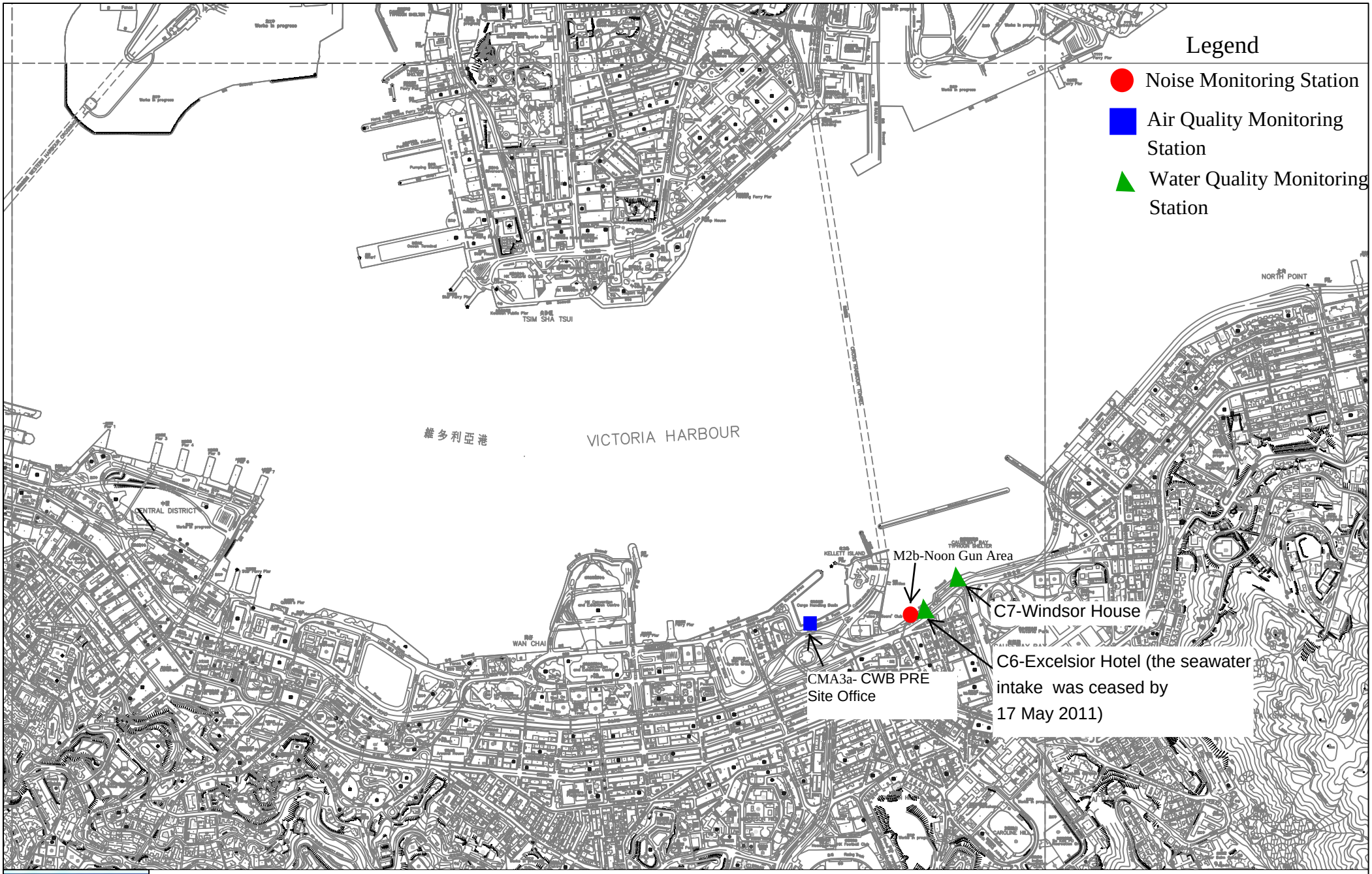


Figure 3.1

Locations of Monitoring Stations



Location Plan of Monitoring Stations

Appendix 2.1

Environmental Mitigation Implementation Schedule

IMPLEMENTATION SCHEDULE OF THE PROPOSED MITIGATION MEASURES

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve?
Water Quality Impact (Construction Phase)						
3.142	Dredging should be carried out by closed grab dredger.	To minimize release of sediment and contaminants during dredging.	Contractor	Dredging works areas in Causeway Bay Typhoon Shelter (CBTS)	Construction Phase	EIAO-TM, WPCO
S3.142	All temporary reclamation works should adopt an approach where temporary seawalls will first be formed to enclose each phase of the temporary reclamation. Installation of diaphragm wall on temporary reclamation as well as any bulk filling will proceed behind the completed seawall. Any gaps that may need to be provided for marine access should be shielded by silt curtains to control sediment plume dispersion away from the site. Demolition of temporary reclamation including the demolition of the diaphragm wall and dredging to the existing seabed levels	To minimize loss of fines and contaminants during temporary reclamations	Contractor	Temporary reclamation works areas in CBTS	Construction Phase	EIAO-TM, WPCO

	should be carried out behind the temporary seawall. Temporary seawall should be removed after completion of all excavation and dredging works for demolition of the temporary reclamation.					
S3.142	During construction of the temporary reclamation, temporary seawall should be partially constructed to protect the nearby seawater intakes from further dredging activities. For example, the seawalls along the southeast and northeast boundaries of PW1.1 should be constructed first (above high water mark) so that the seawater intake at the inner water would be protected from the impacts from the remaining dredging activities along the northwest boundary.	To minimize water quality impact upon the cooling water intakes in CBTS from temporary reclamation works	Contractor	Temporary reclamation works areas in CBTS	onstruction Phase	EIAO-TM, WPCO
S3.142	Silt curtains should be deployed to fully enclose the closed grab dredger during any dredging operation within the CBTS.	To minimize loss of fines and contaminants during dredging in CBTS	Contractor	Dredging works areas in CBTS	Construction Phase	EIAO-TM, WPCO
S3.142	Silt screens will be installed at all the cooling water intakes within the CBTS during temporary reclamation and dredging within the typhoon shelter.	To minimize water quality impact upon the cooling water intakes in CBTS from marine construction activities	Contractor	Cooling water intakes inside CBTS	Construction Phase	EIAO-TM, WPCO
S3.143	No more than two closed grab dredgers should be operated for dredging within the CBTS at	To minimize loss of fines and contaminants	Contractor	Temporary reclamation and	Construction Phase	EIAO-TM, WPCO

	any time. Moreover, the combined production rate of all concurrent dredging works to be undertaken within the CBTS shall not exceed 6,000 m_3 per day at all times throughout the entire construction period.	during dredging in CBTS		dredging works areas in CBTS		
S3.145	The following good site practices should be undertaken during sand filling, public filling and dredging: • mechanical grabs, if used, should be designed and maintained to avoid spillage and sealed tightly while being lifted. For dredging of any contaminated mud, closed watertight grabs must be used; • all vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; • all hopper barges and dredgers should be fitted with tight fitting seals to their bottom openings to prevent leakage of material; • construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the	To minimize loss of fines and contaminants from dredging / filling	Contractor	Temporary reclamation and dredging works areas in CBTS	Construction Phase	EIAO-TM, WPCO

	site or dumping grounds; and • loading of barges and hoppers should be controlled to prevent splashing of dredged material into the surrounding water. Barges or hoppers should not be filled to a level that will cause the overflow of materials or polluted water during loading or transportation.					
S3.146	The following mitigation measures are proposed to minimize the potential water quality impacts from the construction works at or close to the seafront: • Temporary storage of construction materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction and demolition materials should be located well away from the seawater front and storm drainage during carrying out of the works. • Stockpiling of construction and demolition materials and dusty materials should be covered and located away from the seawater front and storm drainage. • Construction debris and spoil should be covered up and/or disposed of as soon as	To minimize release of construction wastes from construction works at or close to the seafront	Contractor	Construction works at or close to the seafront	Construction Phase	EIAO-TM, WPCO

	possible to avoid being washed into the nearby receiving waters.					
S3.147	Silt curtains should be installed around the working area for the marine piling works for construction of the temporary jetty as necessary to minimize the release of sediment and construction wastes. All wastewater generated from the piling activities should be collected by a derrick lighter or other collection system and be treated before controlled discharge. Spoil from the piling activities should be collected by sealed hopper barges for proper disposal.	To minimize water quality impacts from piling works for construction of the temporary jetty	Contractor	Piling area at the piling location	Construction Phase	EIAO-TM, WPCO
S3.148	Regular maintenance of and refuse collection should be performed at the silt screens deployed at the seawater intakes at regular intervals on a daily basis. The Contractor should be responsible for keeping the water behind the silt screen free from floating rubbish and debris during the impact monitoring period.	To avoid the pollutant and refuse entrapment problems at the silt screens to be installed at the water intakes	Contractor	Proposed silt screens at cooling water intakes inside CBTS	Construction Phase	EIAO-TM, WPCO
S3.149	It is recommended that collection and removal of floating refuse should be performed within the marine construction areas at regular intervals on a daily basis. The Contractor should be	To minimize water quality impacts from illegal dumping and littering from marine vessels and runoff from	Contractor	All marine works areas	Construction Phase	EIAO-TM, WPCO, WDO

	responsible for keeping the water within the site boundary and the neighbouring water free from rubbish during the dredging works.	the coastal areas				
S3.150 to 3.169	The site practices outlined in ProPECC PN 1/94 "Construction Site Drainage" should be followed where practicable.	To minimize water quality impacts from construction site runoff and general construction activities	Contractor	All construction works areas	Construction Phase	EIAO-TM, WPCO, TM-DSS, WDO, ProPECC PN 1/94
S3.170	There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. All the runoff and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. Minimum distances of 100 m should be maintained between the discharge points of construction site effluent and the existing seawater intakes. The beneficial uses of the treated effluent for other on-site activities such as dust suppression, wheel washing and general cleaning etc., can minimise water consumption	To minimize water quality impact from effluent discharges from construction sites	Contractor	All construction works areas	Construction Phase	EIAO-TM, WPCO, TM-DSS

	and reduce the effluent discharge volume. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the WPCO license which is under the ambit of Regional Office (RO) of EPD.					
S3.171 & 3.172	Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. If disposal of sewage to public sewerage system is not feasible, appropriate numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers over the construction site to prevent direct disposal of sewage into the water environment. The Contractor shall also be responsible for waste disposal and maintenance practices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment.	To minimize water quality impacts due to sewage generated from construction workforce	Contractor	All construction works areas	Construction Phase	EIAO-TM, WPCO, TM-DSS, WDO
S3.173	Contractor must register as a chemical waste producer if	To minimize water quality	Contractor	All construction	Construction Phase	EIAO-TM, WPCO, TM-

	chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	impact from accidental spillage of chemical		works areas		DSS, WDO
S3.174	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.	To minimize water quality impact from accidental spillage of chemical	Contractor	All construction works areas	Construction Phase	EIAO-TM, WPCO, TM-DSS, WDO
S3.175	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The “Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes” published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: • Suitable containers should	To minimize water quality impact from accidental spillage of chemical	Contractor	All construction works areas	Construction Phase	EIAO-TM, WPCO, TM-DSS, WDO

	be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. • Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. • Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.					
S4. 30	The following good site practices should be implemented: • Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program • Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program • Mobile plant, if any, should be sited as far from NSRs as possible • Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum	To reduce construction noise impact	Contractor	All works areas	Construction phase	EIAO-TM, NCO

	• Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs • Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.					
S4.31 – S4.32 & Table 4.7	The following quiet PME are recommended for the construction activities: Air Compressor Bulldozer Concrete Pump Concrete Lorry Mixer Crane Dump Truck Excavator Generator Hand-held Breaker Poker Vibrator Roller Trucks	To reduce construction noise impact	Contractor	All works areas	Construction phase	EIAO-TM, NCO
S4.33 – S4.35 & Table 4.8	Movable noise barrier should be used for the following PME: Air Compressor Bar Bender Bentonite Plants Concrete pump Diaphragm Wall Rigs Excavator	To reduce construction noise impact	Contractor	Affected works areas showing exceedance during un-mitigated scenario	Construction phase	EIAO-TM, NCO

	Poker Vibrator					
Construction Dust Impact						
S5.43	Watering once on construction areas for every working hour	To minimize dust impact	Contractor	Temporary reclamation area in CBTS	Construction phase	APCO
S5.43	Covering/paving the southwest retained area of temporary reclamation once filling is completed	To minimize dust impact	Contractor	southwest retained area of temporary reclamation	Construction phase	phase APCO
S5.44	Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices: Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather. Use of frequent watering for particularly dusty cons truction areas and areas close to ASRs. Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines.	To minimize dust impacts	Contractor	Temporary reclamation area in CBTS	Construction phase	APCO and Air Pollution Control (Construction Dust) Regulation

	Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs. Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations. Establishment and use of vehicle wheel and body washing facilities at the exit points of the site. Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading points, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods. Provision of not less than 2.4m high hoarding from ground level along site boundary where adjoins a road, streets or other accessible to the public except for a site entrance or exit. Imposition of speed controls for vehicles on site haul roads. Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs.					

	Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides. • Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.					
Waste Management implications (Construction Phase)						
6.62	***Good Site Practices and Waste Reduction Measures*** - Prepare a Waste Management Plan approved by the Engineer/Supervising Officer of the Project based on current practices on construction sites; - Training of site personnel in, site cleanliness, proper waste management and chemical handling procedures; - Provision of sufficient waste disposal points and regular collection of waste; - Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; - Regular cleaning and	To enhance water management practice and achieve waste reduction.	Contractor	All Work Sites	Construction Phase	Waste Disposal Ordinance (Cap. 354) Land (Miscellaneous Provisions) Ordinance (Cap. 28) ETWB TC(W) No.31/2004

	maintenance programme for drainage systems, sumps and oil interceptors; and - Separation of chemical wastes for special handling and appropriate treatment.					
6.63	***Good Site Practices and Waste Reduction Measures (con't)*** - Sorting of demolition debris and excavated materials from demolition works to recover reusable/ recyclable portions (i.e. soil, broken concrete, metal etc.); - Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; - Encourage collection of aluminum cans by providing separate labeled bins to enable this waste to be segregated from other general refuse generated by the workforce; - Proper storage and site practices to minimize the potential for damage or contamination of construction materials; - Plan and stock construction	To achieve waste reduction	Contractor	All Work Sites	Construction Phase	Waste Disposal Ordinance (Cap. 354) Land (Miscellaneous Provisions) Ordinance (Cap. 28)

	materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; and - Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycle.					
6.64	***Good Site Practices and Waste Reduction Measures (con't)*** - The Contractor shall prepare and implement an EMP in accordance with ETWB TCW No. 19/2005. Such management plan should incorporate site specific factors, such as the designation of areas for segregation and temporary storage of reusable and recyclable materials. The EMP should be submitted to the Engineer for approval. The Contractor should implement the waste management practices in the EMP throughout the construction stage of the Project. The EMP should be reviewed regularly and updated by the Contractor, preferably in a monthly basis.	To enhance water management practice and achieve waste reduction.	Contractor	All Work Sites	Construction Phase	ETWB TCW No. 19/2005

6.66	***Storage, Collection and Transportation of Waste*** - Waste, such as soil, should be handled and stored well to ensure secure containment, thus minimizing the potential of pollution; - Maintain and clean storage areas routinely; - Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and - Different locations should be designated to stockpile each material to enhance reuse.	To minimize potential adverse environmental impacts arising from waste storage	Contractor	Work Sites	Construction Phase	-
6.67	***Storage, Collection and Transportation of Waste (con't)*** - Waste haulier with appropriate permits should be employed by the Contractor for the collection and transportation of waste from works areas to respective disposal outlets.	To minimize potential adverse environmental impacts arising from waste collection and disposal	Contractor	Waste storage area.	Construction Phase	-
6.68	***Storage, Collection and Transportation of Waste (con't)*** - Implementation of trip ticket system with reference to ETWB TC(W) No.31/2004 to monitor disposal of waste and to control fly-tipping at PFRFs or landfills.	To minimize potential adverse environmental impacts arising from waste collection and disposal	Contractor	Work Sites	Construction Phase	ETWB TC(W) No.31/2004

	A recording system for the amount of waste generated, recycled and disposed (including disposal sites) should be proposed.					
6.70 – 6.73	***Sorting of C&D Materials*** - Sorting to be performed to recover the inert materials, reusable and recyclable materials before disposal off-site. - Specific areas should be provided by the Contractors for sorting and to provide temporary storage areas for the sorted materials. - The C&D materials should at least be segregated into inert and non-inert materials, in which the inert portion could be reused and recycled as far as practicable before delivery to PFRFs as mentioned for beneficial use in other projects. While opportunities for reusing the non-inert portion should be investigated before disposal of at designated landfills. - Possibility of reusing the spoil in the Project will be continuously investigated in the construction stage.	To minimize potential adverse environmental impacts during the handling, transportation and disposal of C&D materials	Contractor	All work Sites	Construction Phase	ETWB TCW No. 31/2004 ETWB TCW No. 33/2002 ETWB TCW No. 19/2005
6.75	***Sediments*** - The basic requirements and procedures for dredged	To ensure the sediment to be disposed of in an	Contractor	All works areas with sediments	Construction Phase	PNAP 252

	sediment disposal specified under PNAP 252 shall be followed. MFC manages disposal facilities in Hong Kong for the dredged sediment, while EPD is the authority issuing marine dumping permits under the *Dumping at Sea Ordinance*.	authorized and least impacted way		concern		
6.76	***Sediments (con't)*** - The Project Proponent should agree in advance with MFC of CEDD on the site allocation by submitting a Construction & Demolition Material Management Plan. The contractor for the dredging works shall then apply for the site allocations of marine sediment disposal based on the prior agreement with MFC/CEDD. A request for reservation of sediment disposal space has been submitted to MFC for onward discussions of disposal approaches and feasible disposal sites. The Project Proponent is also responsible for application of all necessary permits from the relevant authorities, including the dumping permit as required under DASO from EPD, for the disposal of dredged sediment prior to the commencement of the dredging works.	To determine the best handling and disposal option of the sediments	MTR / Contractor	All works areas with sediments concern	Prior to the start of dredging works	PNAP 252; Dumping at Sea Ordinance

6.77 – 6.81	***Sediments (con't)*** - Requirements of the Air Pollution Ordinance (Construction Dust) Regulation, where relevant, shall be adhered to during dredging, transportation and disposal of sediments. - Stockpiling of contaminated sediments should be avoided as far as possible. If temporary stockpiling of contaminated sediments is necessary, the dredged sediment should be covered by tarpaulin and the area should be placed within earth bunds or sand bags to prevent leachate from entering the ground, nearby drains and/or surrounding water bodies. The stockpiling areas should be completely paved or covered by linings in order to avoid contamination to underlying soil or groundwater. Separate and clearly defined areas should be provided for stockpiling of contaminated and uncontaminated materials. Leachate, if any, should be collected and discharged according to the Water Pollution Control Ordinance (WPCO). - In order to minimise the potential odour / dust emissions during dredging and	To ensure handling of sediments are in accordance to statutory requirements	Contractor	Work Sites, Sediment disposal sites	Construction Phase	PNAP 252 Dumping at Sea Ordinance

	transportation of the sediment, the dredged sediments should be properly covered when placed on barges. Loading of the dredged sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water. - The barge transporting the sediments to the designated disposal sites should be equipped with tight fitting seals to prevent leakage and should not be filled to a level that would cause overflow of materials or laden water during loading or transportation. In addition, monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the DEP. - In order to minimise the exposure to contaminated materials, workers should wear appropriate personal protective equipments (PPE) when handling contaminated sediments. Adequate washing and cleaning facilities should also be provided on site.					

6.82	***Sediments (con't)*** The dredging work and associate sediment handling under this Project will be undertaken together with the CWB project by Highways Department and geosynthetic containment will be adopted to handle Type 3 sediments.	To ensure handling of sediments are in accordance to statutory requirements	Contractor	Work Sites, Sediment disposal sites	Construction Phase	PNAP 252 Dumping at Sea Ordinance
6.86	***Containers for Storage of Chemical Waste*** The Contractor should register with EPD as a chemical waste producer and to follow the guidelines stated in the *Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes*. Containers used for storage of chemical waste should: - Be compatible with the chemical wastes being stored, maintained in good condition and securely sealed; - Have a capacity of less than 450 litters unless the specifications have been approved by EPD; and	To register with EPD as a Chemical waste producer and store chemical waste in appropriate containers	Contractor	Chemical waste storage area	Construction Phase	Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes

	- Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Waste Disposal (Chemical Waste) (General) Regulation.					
6.87	***Chemical Waste Storage Area*** - Be clearly labeled to indicate corresponding chemical characteristics of the chemical waste and used for storage of chemical waste only; - Be enclosed on at least 3 sides; - Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest; - Have adequate ventilation; - Be covered to prevent rainfall from entering; and - Be properly arranged so that incompatible materials are adequately separated.	To prepare appropriate storage areas for chemical waste at works areas	Contractor	Chemical waste storage area	Construction Phase	Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
6.88	***Labelling of Chemical Waste*** - Lubricants, waste oils and other chemical wastes would be generated during the maintenance of vehicles and mechanical equipments. Used	To clearly label the chemical waste at works areas	Contractor	Chemical waste storage area	Construction Phase	Code of Practice on the Packaging, Labelling and Storage of Chemical

	lubricants should be collected and stored in individual containers which are fully labeled in English and Chinese and stored in a designated secure place.					Wastes
6.89	***Collection and Disposal of Chemical Waste*** - A trip-ticket system should be operated in accordance with the *Waste Disposal (Chemical Waste) (General) Regulation* to monitor all movements of chemical waste. The Contractor shall employ a licensed collector to transport and dispose of the chemical wastes, to either the approved CWTC at Tsing Yi, or another licensed facility, in accordance with the *Waste Disposal (Chemical Waste) (General) Regulation*.	To monitor the generation, reuse and disposal of chemical waste	Contractor	Work Sites with chemical waste production	Construction Phase	Waste Disposal (Chemical Waste) (General) Regulation
6.90	***General Refuse*** - General refuse should be stored in enclosed bins or compaction units separate from C&D materials and chemical waste. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D materials and chemical wastes. Preferably, an enclosed and	To properly store and separate from other C&D materials for subsequent collection and disposal	Contractor	All Work Sites	Construction Phase	-

	covered area should be provided to reduce the occurrence of windblown light material.					
6.91	***General Refuse (con't)*** - The recyclable component of general refuse, such as aluminum cans, paper and cleansed plastic containers should be separated from other waste. Provision and collection of recycling bins for different types of recyclable waste should be set up by the Contractor. The Contractor should also be responsible for arranging recycling companies to collect these materials.	To facilitate recycling of recyclable portions of refuse	Contractor	All Work Sites	Construction Phase	-
6.92	***General Refuse (con't)*** - The Contractor should carry out an education programme for workers in avoiding, reducing, reusing and recycling of materials generation. Posters and leaflets advising on the use of the bins should also be provided in the sites as reminders.	To raise workers' awareness on recycling issue	Contractor	All Work Sites	Construction Phase	-

Appendix 3.1

Action and Limit Level

Action and Limit Level

Action and Limit Level for Air Quality Monitoring

1-hour TSP Level in μ g/m^3		24-hour TSP Level in μ g/m^3	
Action Level	Limit Level	Action Level	Limit Level
311.3	500	171.0	260

Action and Limit Level for Noise Monitoring

Time Period	**Action Level**	**Limit Level**
07:00 – 19:00 hours on normal weekdays	When one documented complaint is received.	75 dB(A)/ 70 dB(A)/ 65 db(A)[Note 1]

Note 1:

- *70dB(A) and 65 dB(A) for schools during normal teaching periods and school examination periods, respectively.*
- *If works are to be carried out during the restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.*

Action and Limit Level for Water Quality Monitoring

Parameters	**Dry Season**		**Wet Season**	
	Action Level	Limit Level	Action Level	Limit Level
Cooling Water Intake				
SS in mg/L	15.00	22.13	18.42	27.54
Turbidity in NTU	9.10	10.25	11.35	12.71
DO in mg/L	3.36	2.73	3.02	2.44

Remarks: - Contractor shall implement additional improvement measures in case of oxygen depletion (i.e. DO level <2 mg/L) detected within CBTS.

Appendix 4.1

Noise Monitoring Graphical Presentations

Noise Monitoring Result

Day Time (0700 - 1900hrs on normal weekdays)

Location: M2b - Noon-day gun area

Date	Time	Weather	Measurement Noise Level			Baseline Level	Construction Noise Level	Limit Level
			Leq	L10	L90	Leq	Leq	Leq
			Unit: dB(A), (30-min)					
02/12/14	16:50	Cloudy	69.0	70.5	67.2	68	63	75
08/12/14	14:48	Fine	69.4	70.5	67.0	68	65	75
16/12/14	11:18	Fine	70.0	74.2	66.5	68	66	75
22/12/14	10:20	Fine	68.4	69.5	66.0	68	61	75

Noise Monitoring Result

Day Time (0700 - 1900hrs on normal weekdays)

Location: M2b - Noon-day gun area

Date	Time	Weather	Measurement Noise Level			Baseline Level	Construction Noise Level	Limit Level
			Leq	L10	L90	Leq	Leq	Leq
			Unit: dB(A), (30-min)					
29/12/14	10:45	Fine	69.9	72.0	66.0	68	66	75
05/01/15	14:18	Fine	67.1	68.0	64.5	68	67	75
13/01/15	14:37	Cloudy	68.9	70.0	67.0	68	63	75
20/01/15	10:40	Fine	68.9	70.5	66.5	68	63	75
26/01/15	14:35	Fine	70.6	73.5	66.5	68	68	75

Noise Monitoring Result

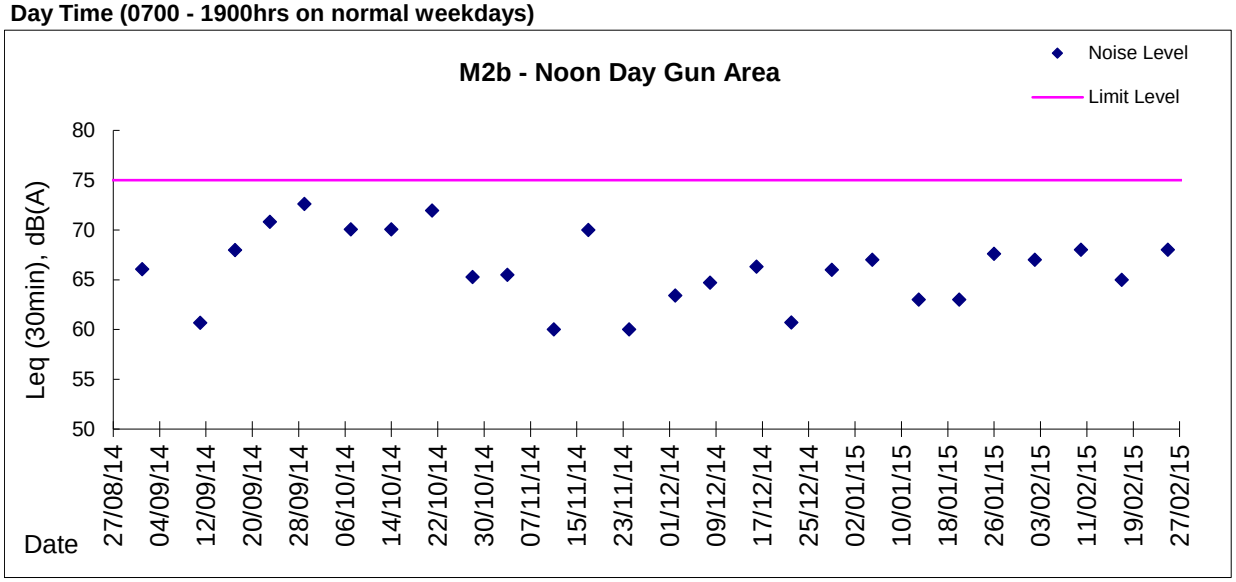
Day Time (0700 - 1900hrs on normal weekdays)

Location: M2b - Noon-day gun area

Date	Time	Weather	Measurement Noise Level			Baseline Level	Construction Noise Level	Limit Level
			Leq	L10	L90	Leq	Leq	Leq
			Unit: dB(A), (30-min)					
02/02/15	10:40	Fine	70.1	72.0	66.5	68	67	75
10/02/15	13:20	Fine	70.8	73.5	67.0	68	68	75
17/02/15	10:19	Cloudy	69.6	71.0	66.5	68	65	75
25/02/15	11:19	Cloudy	70.8	72.5	67.5	68	68	75

Graphic Presentation of Noise Monitoring Result

Day Time (0700 - 1900hrs on normal weekdays)



Appendix 4.2
Air Quality Monitoring Graphical Presentations

Location: CMA3a - CWB PRE Site Office Area

Report on 24-hour TSP monitoring
Action Level (μg/m3) - 171
Limit Level (μg/m3) - 260

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m^3/min			Total Volume, m^3	TSP Level, $\mu g/m^3$
				Initial	Final	Initial	Final		Initial, Q_{si}	Final, Q_{sf}	Average		
2-Dec-14	8:00	Cloudy	010207	2.7508	2.8062	2644.55	2668.55	24.00	1.19	1.18	1.19	1709	32
9-Dec-14	15:47	Fine	009885	2.7675	3.0046	2674.55	2698.55	24.00	1.19	1.23	1.21	1742	136
15-Dec-14	15:00	Fine	010725	2.7132	3.0062	2701.55	2725.55	24.00	1.29	1.29	1.29	1857	158
19-Dec-14	8:00	Rainy	010726	2.7169	2.8030	2725.55	2749.55	24.00	1.26	1.26	1.26	1813	47
23-Dec-14	8:00	Cloudy	010782	2.7131	2.8959	2752.55	2776.55	24.00	1.14	1.13	1.14	1638	112

Remarks: Due to interruption of electricity, the 24hr TSP was rescheduled from 8 and 13 December 2014 to 9 and 15 December 2014 repectively.

Report on 1-hour TSP monitoring
Action Level (μg/m3) - 311.3
Limit Level (μg/m3) - 500

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m^3/min			Total Volume, m^3	TSP Level, $\mu g/m^3$
				Initial	Final	Initial	Final		Initial, Q_{si}	Final, Q_{sf}	Average		
3-Dec-14	8:24	Cloudy	010598	2.7248	2.7339	2668.55	2669.55	1.00	1.16	1.16	1.16	70	131
3-Dec-14	9:30	Cloudy	010599	2.7278	2.7351	2669.55	2670.55	1.00	1.01	1.01	1.01	61	120
3-Dec-14	10:55	Cloudy	010527	2.7111	2.7180	2670.55	2671.55	1.00	1.16	1.16	1.16	70	99
9-Dec-14	10:30	Fine	010600	2.7268	2.7361	2671.55	2672.55	1.00	1.09	1.09	1.09	65	142
9-Dec-14	13:00	Fine	010192	2.7614	2.7706	2672.55	2673.55	1.00	1.02	1.02	1.02	61	151
9-Dec-14	14:25	Fine	010202	2.7701	2.7782	2673.55	2674.55	1.00	1.02	1.09	1.05	63	128
15-Dec-14	9:50	Fine	010720	2.7274	2.7374	2698.55	2699.55	1.00	1.16	1.16	1.16	70	143
15-Dec-14	10:52	Fine	010722	2.7201	2.7282	2699.55	2700.55	1.00	1.09	1.09	1.09	65	124
15-Dec-14	13:00	Fine	010723	2.7292	2.7375	2700.55	2701.55	1.00	1.16	1.16	1.16	70	119
20-Dec-14	8:36	Rainy	010777	2.7074	2.7122	2749.55	2750.55	1.00	1.27	1.27	1.27	76	63
20-Dec-14	9:43	Rainy	010779	2.7231	2.7296	2750.55	2751.55	1.00	1.27	1.27	1.27	76	86
20-Dec-14	10:51	Rainy	010781	2.7269	2.7295	2751.55	2752.55	1.00	1.12	1.12	1.12	67	39
24-Dec-14	8:30	Cloudy	010809	2.7382	2.7430	2776.55	2777.55	1.00	1.11	1.11	1.11	67	72
24-Dec-14	9:35	Cloudy	010810	2.7415	2.7478	2777.55	2778.55	1.00	1.11	1.11	1.11	67	94
24-Dec-14	10:50	Cloudy	010813	2.7233	2.7328	2778.55	2779.55	1.00	1.11	1.11	1.11	67	142

Location: CMA3a - CWB PRE Site Office Area

Report on 24-hour TSP monitoring
Action Level (μg/m3) - 171
Limit Level (μg/m3) - 260

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m^3/min			Total Volume, m^3	TSP Level, μg/m^3
				Initial	Final	Initial	Final		Initial, Q_{si}	Final, Q_{sf}	Average		
29-Dec-14	8:00	Fine	010815	2.7835	2.9282	2779.55	2803.55	24.00	1.23	1.23	1.23	1777	81.4
3-Jan-15	8:00	Fine	010979	2.7559	2.9059	2806.56	2830.56	24.00	1.23	1.23	1.23	1772	85.0
9-Jan-15	8:00	Fine	010615	2.8030	3.0266	2833.56	2857.56	24.00	1.14	1.14	1.14	1641	136.2
15-Jan-15	8:00	Fine	011035	2.7214	2.8550	2860.55	2884.55	24.00	1.23	1.23	1.23	1775	75.3
21-Jan-15	8:00	Fine	010893	2.7653	2.9373	2887.56	2911.56	24.00	1.18	1.18	1.18	1705	100.9
28-Jan-15	17:15	Cloudy	011058	2.7412	2.9264	2939.26	2963.26	24.00	1.18	1.18	1.18	1700	108.9

Remarks: Due to interruption of electricity, the 24hr TSP was rescheduled from 27 January 2015 to 28 January 2015.

Report on 1-hour TSP monitoring
Action Level (μg/m3) - 311.3
Limit Level (μg/m3) - 500

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m^3/min			Total Volume, m^3	TSP Level, μg/m^3
				Initial	Final	Initial	Final		Initial, Q_{si}	Final, Q_{sf}	Average		
30-Dec-14	9:19	Fine	010973	2.7528	2.7571	2803.55	2804.55	1.00	1.18	1.18	1.18	71	60.9
30-Dec-14	10:23	Fine	010975	2.7553	2.7599	2804.55	2805.55	1.00	1.18	1.18	1.18	71	65.1
30-Dec-14	13:00	Fine	010977	2.7613	2.7655	2805.55	2806.55	1.00	1.18	1.18	1.18	71	59.4
5-Jan-15	10:50	Cloudy	010612	2.7340	2.7427	2830.56	2831.56	1.00	1.23	1.23	1.23	74	118.0
5-Jan-15	14:40	Cloudy	010614	2.8047	2.8101	2831.56	2832.56	1.00	1.23	1.23	1.23	74	73.0
5-Jan-15	15:50	Cloudy	010622	2.7882	2.7957	2832.56	2833.56	1.00	1.23	1.23	1.23	74	102.0
10-Jan-15	13:00	Fine	011026	2.7134	2.7199	2857.56	2858.56	1.00	1.18	1.18	1.18	71	92.0
10-Jan-15	14:18	Fine	011028	2.7482	2.7541	2858.56	2859.56	1.00	1.18	1.18	1.18	71	83.5
10-Jan-15	15:30	Fine	011030	2.7344	2.7506	2859.56	2860.56	1.00	1.18	1.18	1.18	71	229.3
16-Jan-15	9:08	Fine	011037	2.7225	2.7245	2884.55	2885.55	1.00	1.18	1.18	1.18	71	28.4
16-Jan-15	10:13	Fine	011039	2.7404	2.7424	2885.55	2886.55	1.00	1.18	1.18	1.18	71	28.4
16-Jan-15	13:00	Fine	010837	2.7830	2.8037	2886.55	2887.55	1.00	1.18	1.18	1.18	71	293.6
22-Jan-15	9:08	Fine	010894	2.7666	2.7753	2911.56	2912.56	1.00	1.26	1.26	1.26	76	114.9
22-Jan-15	10:12	Fine	010896	2.7685	2.7704	2912.56	2913.56	1.00	1.12	1.12	1.12	67	28.3
22-Jan-15	13:00	Fine	010898	2.7627	2.7712	2913.56	2914.56	1.00	1.26	1.26	1.26	76	112.2
28-Jan-15	9:50	Cloudy	011054	2.7493	2.7559	2936.23	2937.26	1.03	1.17	1.17	1.17	73	91.0
28-Jan-15	14:55	Cloudy	011056	2.7585	2.7674	2637.26	2638.26	1.00	1.17	1.17	1.17	70	126.4
28-Jan-15	16:00	Cloudy	011057	2.7331	2.7400	2638.26	2639.26	1.00	1.17	1.17	1.17	70	98.0

Location: CMA3a - CWB PRE Site Office Area

Report on 24-hour TSP monitoring
Action Level (μg/m3) - 171
Limit Level (μg/m3) - 260

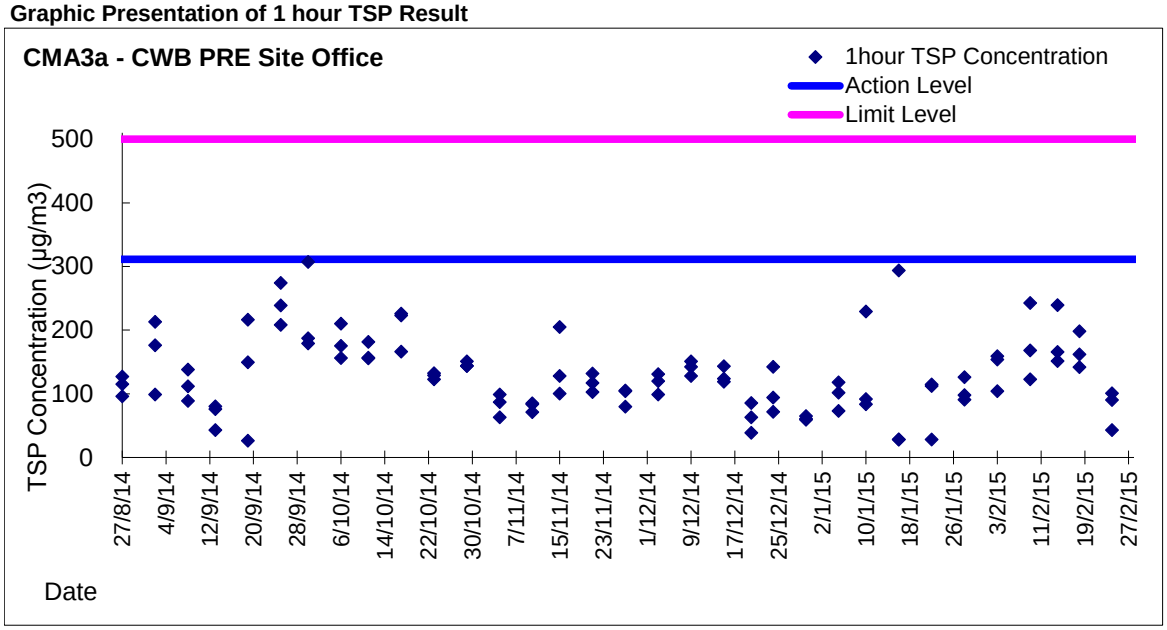
Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m^3/min			Total Volume, m^3	TSP Level, μg/m^3
				Initial	Final	Initial	Final		Initial, Q_{si}	Final, Q_{sf}	Average		
4-Feb-15	11:54	Fine	009605	2.8150	2.9573	2966.26	2990.26	24.00	1.14	1.14	1.14	1644	86.6
10-Feb-15	13:30	Fine	011078	2.7458	2.9987	2993.23	3017.23	24.00	1.19	1.19	1.19	1708	148.1
13-Feb-15	8:00	Fine	009639	2.8495	3.1098	3017.40	3041.40	24.00	1.32	1.32	1.32	1904	136.7
17-Feb-15	8:00	Cloudy	011068	2.7336	2.9366	3044.41	3068.41	24.00	1.37	1.38	1.37	1979	102.6
23-Feb-15	8:00	Cloudy	011217	2.8041	2.9881	3071.41	3095.41	24.00	1.32	1.32	1.32	1901	96.8

Remarks: Due to interruption of electricity, the 24hr TSP was rescheduled from 2 and 7 February 2015 to 4 and 10 February 2015 respectively.

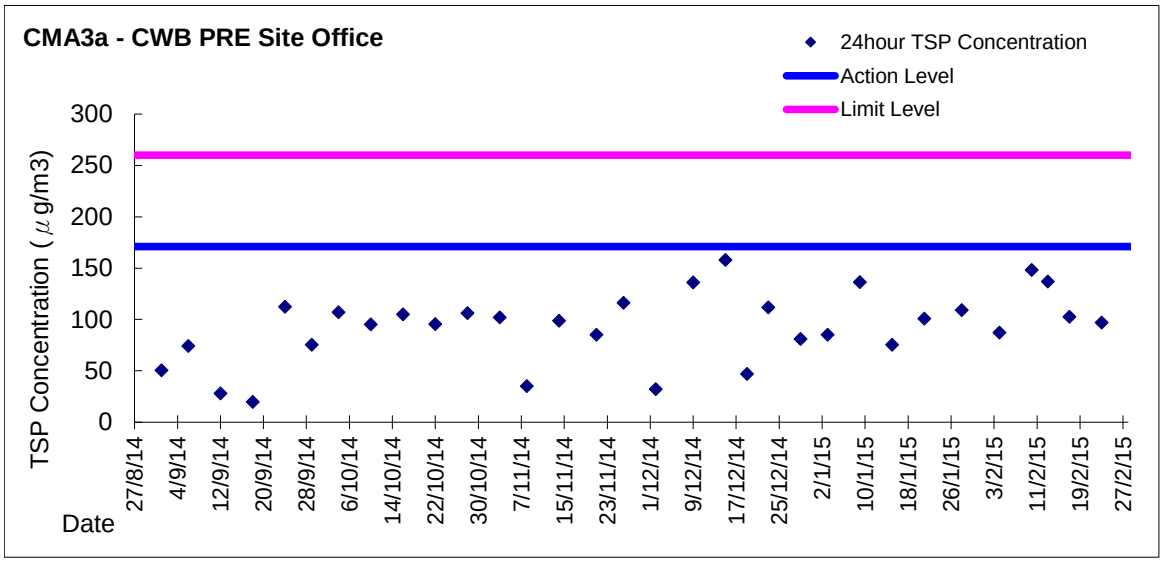
Report on 1-hour TSP monitoring
Action Level (μg/m3) - 311.3
Limit Level (μg/m3) - 500

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m^3/min			Total Volume, m^3	TSP Level, μg/m^3
				Initial	Final	Initial	Final		Initial, Q_{si}	Final, Q_{sf}	Average		
3-Feb-15	13:08	Fine	009598	2.8328	2.8398	2963.26	2964.26	1.00	1.12	1.12	1.12	67	104.3
3-Feb-15	14:34	Fine	009601	2.8384	2.8493	2964.26	2965.26	1.00	1.18	1.18	1.18	71	154.4
3-Feb-15	15:40	Fine	009603	2.8269	2.8376	2965.26	2966.26	1.00	1.12	1.12	1.12	67	159.4
9-Feb-15	9:18	Fine	011061	2.7593	2.7718	2990.26	2991.26	1.00	1.24	1.24	1.24	74	168.2
9-Feb-15	10:24	Fine	011111	2.7544	2.7716	2991.26	2992.26	1.00	1.18	1.18	1.18	71	242.8
9-Feb-15	13:00	Fine	011109	2.7452	2.7539	2992.26	2993.26	1.00	1.18	1.18	1.18	71	122.8
14-Feb-15	9:03	Fine	011101	2.7424	2.7550	3041.40	3042.40	1.00	1.39	1.39	1.39	83	151.5
14-Feb-15	10:07	Fine	011099	2.7389	2.7527	3042.40	3043.40	1.00	1.39	1.39	1.39	83	166.0
14-Feb-15	13:00	Fine	011097	2.7317	2.7516	3043.40	3044.40	1.00	1.39	1.39	1.39	83	239.3
18-Feb-15	8:50	Cloudy	011183	2.7501	2.7607	3068.41	3069.41	1.00	1.24	1.24	1.24	75	142.1
18-Feb-15	10:25	Cloudy	011219	2.8155	2.8303	3069.41	3070.41	1.00	1.24	1.24	1.24	75	198.4
18-Feb-15	13:00	Cloudy	011063	2.7502	2.7623	3070.41	3071.41	1.00	1.24	1.24	1.24	75	162.2
24-Feb-15	8:21	Cloudy	011064	2.7656	2.7731	3095.41	3096.41	1.00	1.24	1.24	1.24	74	101.0
24-Feb-15	9:25	Cloudy	011049	2.7371	2.7403	3096.41	3097.41	1.00	1.24	1.24	1.24	74	43.1
24-Feb-15	10:35	Cloudy	011065	2.7609	2.7676	3097.41	3098.41	1.00	1.24	1.24	1.24	74	90.2

Graphic Presentation of 1 hour TSP Result



Graphic Presentation of 24 hour TSP Result



Appendix 4.3

Water Quality Monitoring Graphical Presentations

Water Monitoring Result at C7 - Windsor House
Mid-Flood Tide

Date	Time	Weater Condition	Sampling Depth (m)		Water Temperature (°C)			pH (-)			Salinity (ppt)			DO Saturation (%)			DO (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)	
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
22/12/14	7:58	Fine	-	-	17.10	17.10	17.00	8.28	8.28	8.28	31.75	31.75	31.75	83.7	86.7	86.0	6.68	6.91	6.86	4.89	4.82	4.84	<2	<2
	8:00		-	-	16.90	16.90		8.27	8.27		31.76	31.75		86.7	87.0		6.91	6.95		4.84	4.80		<2	
24/12/14	7:32	Fine	-	-	18.00	18.00	18.00	8.24	8.24	8.24	31.49	31.49	31.50	88.1	88.0	87.9	6.91	6.90	6.89	2.84	2.85	2.85	5	4.50
	7:34		-	-	18.00	18.00		8.24	8.24		31.50	31.50		88.3	87.0		6.93	6.83		2.84	2.85		4	
26/12/14	10:35	Cloudy	-	-	17.80	17.80	17.80	8.11	8.11	8.11	31.69	31.69	31.69	84.5	84.9	84.8	6.76	6.80	6.79	1.98	2.08	2.10	3	3.00
	10:36		-	-	17.80	17.80		8.11	8.11		31.69	31.69		84.9	84.7		6.80	6.78		2.20	2.15		3	

Remarks:
Single underline denotes exceedance over Action Level.
Double underline denotes exceedance over Limit Level.

Water Monitoring Result at C7 - Windsor House
Mid-Ebb Tide

Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO			Turbidity			Suspended Solids	
			m		°C			-			ppt			%			mg/L			NTU			mg/L	
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
22/12/14	23:18	Cloudy	-	-	15.30	15.30	15.30	8.02	8.02	8.03	31.45	31.48	31.48	88.0	88.1	88.2	7.27	7.29	7.30	1.79	1.71	1.70	2	2.00
	23:19		-	-	15.30	15.30		8.03	8.03		31.49	31.49		88.3	88.4		7.30	7.32		1.67	1.64		2	
24/12/14	0:12	Cloudy	-	-	17.40	17.40	17.40	7.77	7.77	7.78	31.58	31.58	31.58	92.8	92.5	92.3	7..35	7.33	7.30	1.61	1.52	1.55	<2	<2
	0:13		-	-	17.40	17.40		7.79	7.79		31.57	31.57		92.2	91.8		7.30	7.27		1.50	1.56		<2	
26/12/14	2:50	Cloudy	-	-	17.30	17.30	17.30	8.06	8.06	8.07	31.69	31.69	31.68	93.2	93.0	92.5	7.39	7.38	7.33	3.25	3.27	3.22	2	2.00
	2:51		-	-	17.30	17.30		8.07	8.07		31.67	31.67		91.6	92.0		7.25	7.29		3.23	3.11		2	

Remarks:
Single underline denotes exceedance over Action Level.
Double underline denotes exceedance over Limit Level.

Water Monitoring Result at C7 - Windsor House
Mid-Flood Tide

Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO			Turbidity			Suspended Solids	
			m		°C			-			ppt			%			mg/L			NTU			mg/L	
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
29/12/14	9:58	Fine	Middle	-	17.40	17.40	17.40	8.19	8.19	8.19	31.14	31.14	31.15	79.7	79.0	79.3	6.34	6.28	6.27	4.57	4.56	4.55	3	3.00
	10:00		Middle	-	17.40	17.40		8.19	8.19		31.15	31.15		79.4	79.1		6.24	6.21		4.53	4.53		3	
31/12/14	14:58	Fine	Middle	-	18.60	18.60	18.70	8.12	8.12	8.12	31.35	31.35	31.35	88.1	88.3	88.5	6.82	6.84	6.85	3.50	3.52	3.52	4	4.00
	15:00		Middle	-	18.80	18.80		8.11	8.11		31.34	31.34		88.3	89.2		6.83	6.90		3.52	3.55		4	
3/1/15	17:29	Fine	Middle	-	17.50	17.50	17.55	8.31	8.31	8.29	31.37	31.37	31.37	77.2	76.5	75.9	6.11	6.06	6.01	2.43	2.42	2.42	3	3.50
	17:31		Middle	-	17.60	17.60		8.26	8.26		31.37	31.37		75.4	74.6		5.96	5.90		2.41	2.40		4	
6/1/15	9:30	Fine	Middle	-	18.90	18.90	18.95	8.17	8.17	8.17	31.41	31.41	31.41	87.0	87.3	87.2	6.70	6.73	6.72	3.40	3.41	3.41	2	2.00
	9:32		Middle	-	19.00	19.00		8.17	8.17		31.41	31.41		87.1	87.2		6.71	6.72		3.42	3.42		<2	
8/1/15	-	-	Middle	-	-	-	#DIV/0!	-	-	#DIV/0!	-	-	#DIV/0!	-	-	#DIV/0!	-	-	#DIV/0!	-	-	#DIV/0!	-	#DIV/0!
	-		Middle	-	-	-		-	-		-	-		-	-		-	-		-	-		-	
10/1/15	7:50	Fine	Middle	-	17.20	17.20	17.15	8.15	8.15	8.15	31.12	31.12	31.13	79.0	79.6	79.5	6.31	6.36	6.35	3.42	3.43	3.44	<2	<2
	7:52		Middle	-	17.10	17.10		8.15	8.15		31.13	31.13		79.6	79.7		6.36	6.37		3.44	3.45		<2	
12/1/15	10:25	Fine	Middle	-	17.60	17.60	17.60	8.13	8.13	8.12	31.04	31.04	31.05	75.0	77.1	76.5	5.97	6.11	6.07	5.76	5.77	5.65	4	5.00
	10:27		Middle	-	17.60	17.60		8.11	8.11		31.05	31.05		77.1	76.9		6.11	6.10		5.56	5.49		6	
14/1/15	14:50	Fine	Middle	-	17.90	17.90	17.95	7.96	7.96	7.96	31.26	31.26	31.29	74.7	75.0	74.6	5.86	5.89	5.85	6.94	6.54	6.60	3	4.00
	14:52		Middle	-	18.00	18.00		7.95	7.95		31.31	31.31		74.6	74.0		5.86	5.80		6.52	6.39		5	
16/1/15	14:56	Fine	Middle	-	18.30	18.30	18.45	8.14	8.14	8.13	31.00	31.00	31.00	89.3	90.8	90.6	6.96	7.07	7.05	2.47	2.47	2.51	4	4.00
	14:58		Middle	-	18.60	18.60		8.12	8.12		30.99	30.99		91.3	90.8		7.11	7.07		2.54	2.55		4	
19/1/15	17:10	Fine	Middle	-	17.90	17.90	18.00	8.05	8.05	8.05	30.81	30.81	30.82	85.6	84.6	83.7	6.74	6.67	6.60	4.08	4.10	4.11	4	3.50
	17:12		Middle	-	18.10	18.10		8.05	8.05		30.82	30.82		82.3	82.4		6.48	6.49		4.13	4.13		3	
21/1/15	18:50	Fine	Middle	-	17.50	17.50	17.50	8.04	8.04	8.04	30.93	30.93	30.94	81.4	79.9	79.0	6.47	6.34	6.27	2.59	2.59	2.61	4	3.50
	18:52		Middle	-	17.50	17.50		8.04	8.04		30.95	30.95		77.1	77.4		6.12	6.14		2.62	2.65		3	
23/1/15	10:10	Fine	Middle	-	17.00	17.00	17.00	8.04	8.04	8.04	31.07	31.07	31.07	82.0	83.2	82.3	6.57	6.67	6.59	3.38	3.34	3.35	6	5.50
	10:12		Middle	-	17.00	17.00		8.04	8.04		31.06	31.06		82.2	81.6		6.59	6.54		3.33	3.33		5	
26/1/15	10:45	Fine	Middle	-	17.90	17.90	18.00	8.00	8.00	8.00	31.03	31.03	31.03	79.1	80.1	79.6	6.22	6.29	6.25	3.35	3.35	3.36	7	7.50
	10:47		Middle	-	18.10	18.10		8.00	8.00		31.02	31.02		79.8	79.4		6.27	6.23		3.37	3.37		8	

Remarks:
Single underline denotes exceedance over Action Level.
Double underline denotes exceedance over Limit Level.
Due to malfunctioning of the intake transfer pump and resulting unavailability of seawater supply to Windsor House cooling intake pump house at the designated water tank, the water quality monitoring at the monitoring station C7 was cancelled on 8 Jan 2015 during flood tide and ebb tide.

Water Monitoring Result at C7 - Windsor House
Mid-Ebb Tide

Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO			Turbidity			Suspended Solids	
			m		°C			-			ppt			%			mg/L			NTU			mg/L	
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
29/12/14	3:10	Cloudy	Middle	-	15.30	15.30	15.25	7.80	7.80	7.81	31.32	31.32	31.36	89.8	89.6	89.7	7.43	7.43	7.43	2.10	2.08	2.11	2	2.00
	3:11		Middle	-	15.20	15.20		7.81	7.81		31.39	31.39		89.5	89.9		7.42	7.44		2.12	2.15		2	
31/12/14	20:02	Cloudy	Middle	-	18.00	18.00	18.00	8.11	8.11	8.12	31.25	31.25	31.27	76.0	76.4	76.4	5.97	6.00	6.00	2.76	2.71	2.69	3	3.00
	20:04		Middle	-	18.00	18.00		8.13	8.13		31.29	31.29		76.9	76.4		6.04	6.00		2.65	2.62		3	
3/1/15	22:52	Cloudy	Middle	-	17.20	17.20	17.20	7.83	7.83	7.83	31.30	31.30	31.30	90.3	90.4	90.7	7.19	7.21	7.22	2.07	2.04	2.02	2	2.00
	22:53		Middle	-	17.20	17.20		7.83	7.83		31.30	31.30		90.9	91.0		7.24	7.25		2.02	1.96		<2	
6/1/15	0:03	Cloudy	Middle	-	18.80	18.80	18.80	7.72	7.72	7.73	31.34	31.35	31.35	92.1	92.3	92.2	7.12	7.13	7.12	1.29	1.32	1.34	2	2.00
	0:04		Middle	-	18.80	18.80		7.73	7.73		31.35	31.35		92.5	91.8		7.15	7.09		1.38	1.36		2	
8/1/15	-	-	Middle	-	-	-	#DIV/0!	-	-	#DIV/0!	-	-	#DIV/0!	-	-	#DIV/0!	-	-	#DIV/0!	-	-	#DIV/0!	-	#DIV/0!
	-		Middle	-	-	-		-	-		-	-		-	-		-	-		-	-		-	
10/1/15	0:11	Cloudy	Middle	-	16.90	16.90	16.90	7.88	7.88	7.88	31.28	31.28	31.27	87.4	87.2	87.7	7.05	6.99	7.05	3.28	3.36	3.35	<2	<2
	0:12		Middle	-	16.90	16.90		7.88	7.88		31.22	31.28		88.3	88.0		7.08	7.06		3.37	3.40		<2	
12/1/15	2:02	Cloudy	Middle	-	17.30	17.30	17.30	7.83	7.83	7.84	31.16	31.16	31.17	87.8	89.3	89.5	6.99	7.11	7.13	3.06	2.83	2.79	<2	3.00
	2:03		Middle	-	17.30	17.30		7.84	7.84		31.17	31.17		89.9	90.9		7.16	7.24		2.59	2.66		3	
14/1/15	20:25	Fine	Middle	-	15.80	15.80	15.80	7.95	7.95	7.96	30.18	30.18	30.48	84.7	84.5	84.3	6.96	6.95	6.93	3.57	3.53	3.52	<2	<2
	20:26		Middle	-	15.80	15.80		7.96	7.96		30.77	30.77		84.4	83.7		6.94	6.88		3.50	3.48		<2	
16/1/15	20:32	Cloudy	Middle	-	17.60	17.60	17.55	7.79	7.79	7.79	30.34	30.34	30.67	89.4	91.4	90.8	7.14	7.25	7.22	3.75	3.55	3.64	<2	2.00
	20:33		Middle	-	17.50	17.50		7.79	7.79		30.99	30.99		91.0	91.3		7.22	7.26		3.64	3.60		2	
19/1/15	23:05	Cloudy	Middle	-	16.20	16.20	16.20	7.90	7.90	7.90	31.06	31.07	31.06	89.5	89.6	90.4	7.29	7.30	7.36	5.42	5.44	5.56	5	4.50
	23:06		Middle	-	16.20	16.20		7.90	7.90		31.07	31.04		91.5	91.0		7.44	7.40		5.77	5.60		4	
21/1/15	14:30	Fine	Middle	-	17.90	17.90	18.00	8.04	8.04	8.04	30.94	30.94	30.93	83.2	83.6	83.0	6.65	6.68	6.58	2.84	2.84	2.84	6	5.00
	14:32		Middle	-	18.10	18.10		8.04	8.04		30.92	30.92		82.6	82.4		6.50	6.49		2.83	2.83		4	
23/1/15	15:30	Fine	Middle	-	18.00	18.00	18.10	8.02	8.02	8.02	31.06	31.06	31.06	79.8	79.8	79.4	6.26	6.26	6.21	2.37	2.42	2.42	8	8.50
	15:32		Middle	-	18.20	18.20		8.02	8.02		31.06	31.06		79.0	79.1		6.19	6.12		2.44	2.43		9	
26/1/15	15:37	Fine	Middle	-	18.80	18.80	18.95	7.98	7.98	7.98	31.07	31.07	31.07	87.1	87.0	86.5	6.71	6.70	6.67	3.17	3.17	3.17	4	4.00
	15:39		Middle	-	19.10	19.10		7.98	7.98		31.07	31.07		86.7	85.3		6.68	6.57		3.18	3.14		4	

Remarks:
Single underline denotes exceedance over Action Level.
Double underline denotes exceedance over Limit Level.
Due to malfunctioning of the intake transfer pump and resulting unavailability of seawater supply to Windsor House cooling intake pump house at the designated water tank, the water quality monitoring at the monitoring station C7 was cancelled on 8 Jan 2015 during flood tide and ebb tide.

Water Monitoring Result at C7 - Windsor House
Mid-Flood Tide

Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO			Turbidity			Suspended Solids	
			m		°C			-			ppt			%			mg/L			NTU			mg/L	
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
28/1/15	10:05	Fine	Middle	-	17.70	17.70	17.75	7.93	7.93	7.93	30.94	30.94	30.94	79.0	79.4	79.3	6.24	6.28	6.27	3.17	3.10	3.11	4	4.00
	10:07		Middle	-	17.80	17.80		7.93	7.93		30.93	30.93		79.6	79.1		6.29	6.25		3.08	3.07		4	
30/1/15	15:40	Fine	Middle	-	17.70	17.70	17.80	8.10	8.10	8.10	31.32	31.32	31.32	84.4	84.3	84.3	6.65	6.65	6.65	4.45	4.42	4.44	3	2.50
	15:42		Middle	-	17.90	17.90		8.10	8.10		31.32	31.32		84.4	84.2		6.65	6.63		4.44	4.44		2	
2/2/15	15:50	Fine	Middle	-	17.60	17.60	17.85	8.11	8.11	8.11	31.35	31.35	31.34	86.9	86.9	87.0	6.82	6.82	6.83	3.15	3.37	3.28	4	3.50
	15:52		Middle	-	18.10	18.10		8.11	8.11		31.33	31.33		87.0	87.3		6.83	6.85		3.37	3.23		3	
5/2/15	19:54	Cloudy	Middle	-	16.30	16.30	16.25	7.62	7.62	7.62	31.74	31.74	31.74	85.0	86.1	85.3	6.97	6.96	6.96	4.77	4.72	4.70	4	4.50
	19:55		Middle	-	16.20	16.20		7.62	7.62		31.73	31.73		85.0	85.1		6.97	6.92		4.67	4.62		5	
7/2/15	21:56	Cloudy	Middle	-	16.90	16.90	16.90	7.71	7.71	7.71	28.81	28.81	28.76	83.3	83.1	82.1	6.77	6.71	6.66	12.77	12.56	**11.92**	9	8.00
	21:57		Middle	-	16.90	16.90		7.71	7.72		28.71	28.71		81.8	80.0		6.72	6.45		11.25	11.09		7	
9/2/15	18:45	Cloudy	Middle	-	16.90	16.90	16.90	7.72	7.72	7.73	31.69	31.69	31.69	74.2	77.4	77.6	5.93	6.19	6.19	7.36	7.39	7.44	6	6.00
	18:46		Middle	-	16.90	16.90		7.73	7.73		31.69	31.69		79.9	78.7		6.39	6.23		7.48	7.54		6	
11/2/15	10:15	Fine	Middle	-	16.90	16.90	16.90	8.06	8.06	8.06	31.17	31.17	31.17	78.5	78.6	78.5	6.30	6.31	6.30	3.53	3.50	3.48	13	13.50
	10:17		Middle	-	16.90	16.90		8.06	8.06		31.17	31.17		78.6	78.3		6.31	6.28		3.45	3.42		14	
13/2/15	10:15	Fine	Middle	-	17.30	17.30	17.30	8.01	8.01	8.01	31.12	31.12	31.12	75.0	75.5	75.4	5.97	6.02	6.00	3.09	3.07	3.05	12	11.50
	10:17		Middle	-	17.30	17.30		8.01	8.01		31.12	31.12		75.4	75.5		6.01	6.01		3.03	3.00		11	
16/2/15	16:00	Cloudy	Middle	-	18.20	18.20	18.25	8.04	8.04	8.04	31.11	31.11	31.11	78.3	79.4	79.1	6.14	6.22	6.20	3.53	3.67	3.95	9	9.50
	16:02		Middle	-	18.30	18.30		8.03	8.03		31.10	31.10		79.3	79.4		6.21	6.21		4.54	4.05		10	
18/2/15	16:25	Fine	Middle	-	18.00	18.00	18.05	8.05	8.05	8.05	31.20	31.20	31.20	74.4	74.7	74.0	5.84	5.86	5.81	9.06	9.04	9.00	4	3.50
	16:27		Middle	-	18.10	18.10		8.05	8.05		31.19	31.19		73.4	73.5		5.76	5.77		9.06	8.85		3	
24/2/15	11:30	Fine	Middle	-	18.10	18.10	18.10	8.07	8.07	8.07	30.90	30.91	30.90	78.1	77.4	77.0	6.13	6.07	6.04	3.88	3.99	3.96	4	3.50
	11:32		Middle	-	18.10	18.10		8.07	8.07		30.89	30.89		76.4	76.0		6.00	5.94		3.97	3.98		3	
26/2/15	10:37	Fine	Middle	-	18.70	18.70	18.80	8.04	8.04	8.04	31.16	31.16	31.15	77.2	76.6	76.4	5.98	5.93	5.92	8.77	8.71	8.65	10	10.50
	10:39		Middle	-	18.90	18.90		8.03	8.03		31.14	31.14		75.9	75.9		5.88	5.87		8.55	8.55		11	

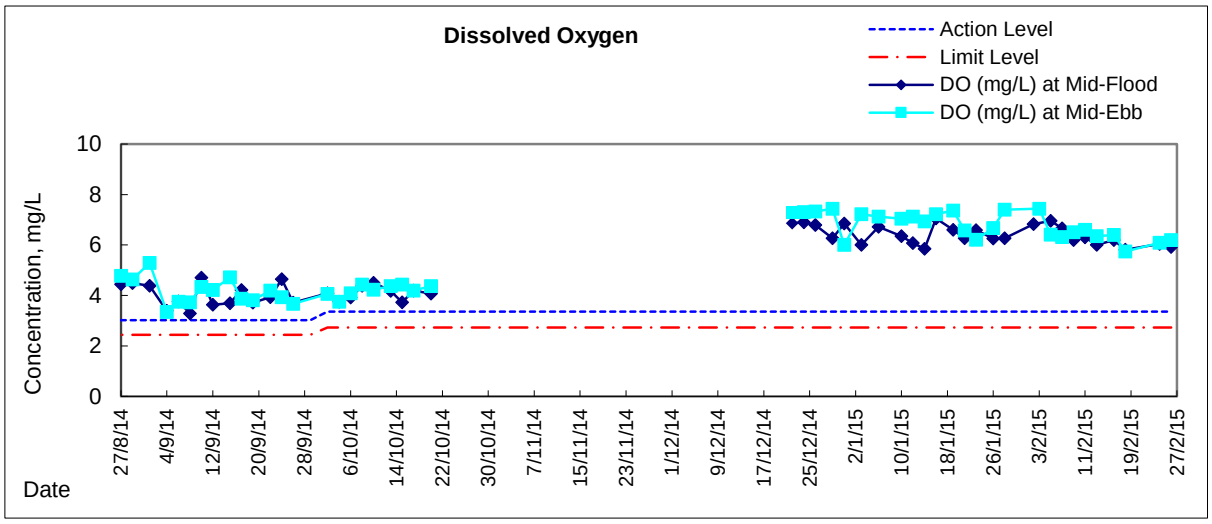
Remarks:
Single underline denotes exceedance over Action Level.
Double underline denotes exceedance over Limit Level.
With respect the suspension of marine construction activities under the contract during Chinese New Year Holiday, the water quality monitoring event on 20 February 2015 during both flood tide and ebb tide were temporarily suspended.

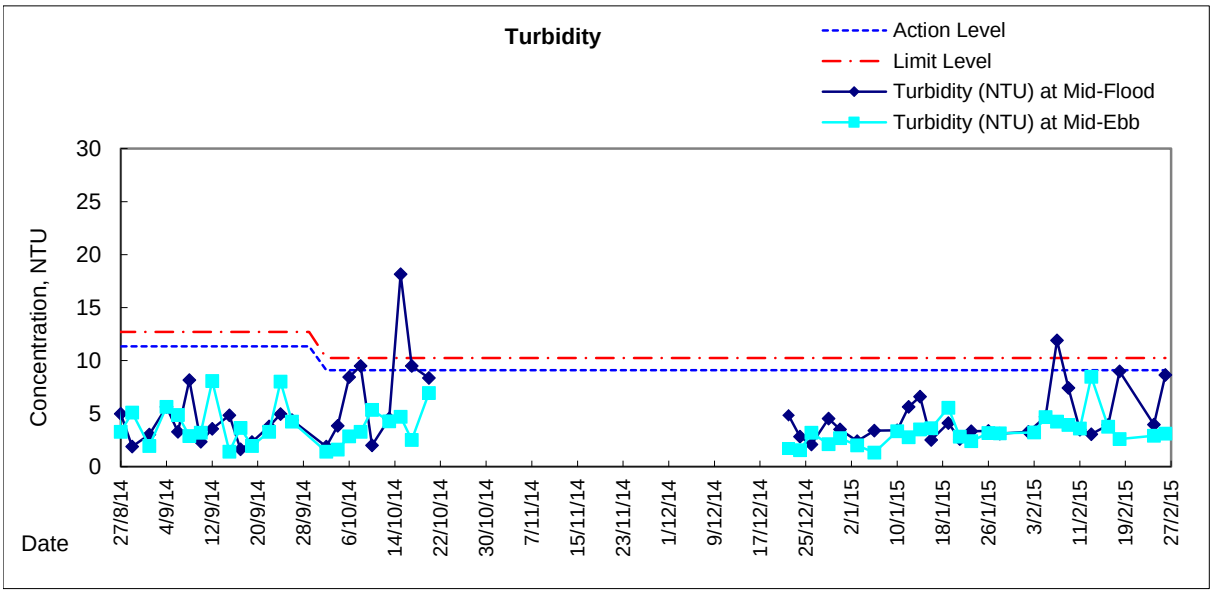
Water Monitoring Result at C7 - Windsor House
Mid-Ebb Tide

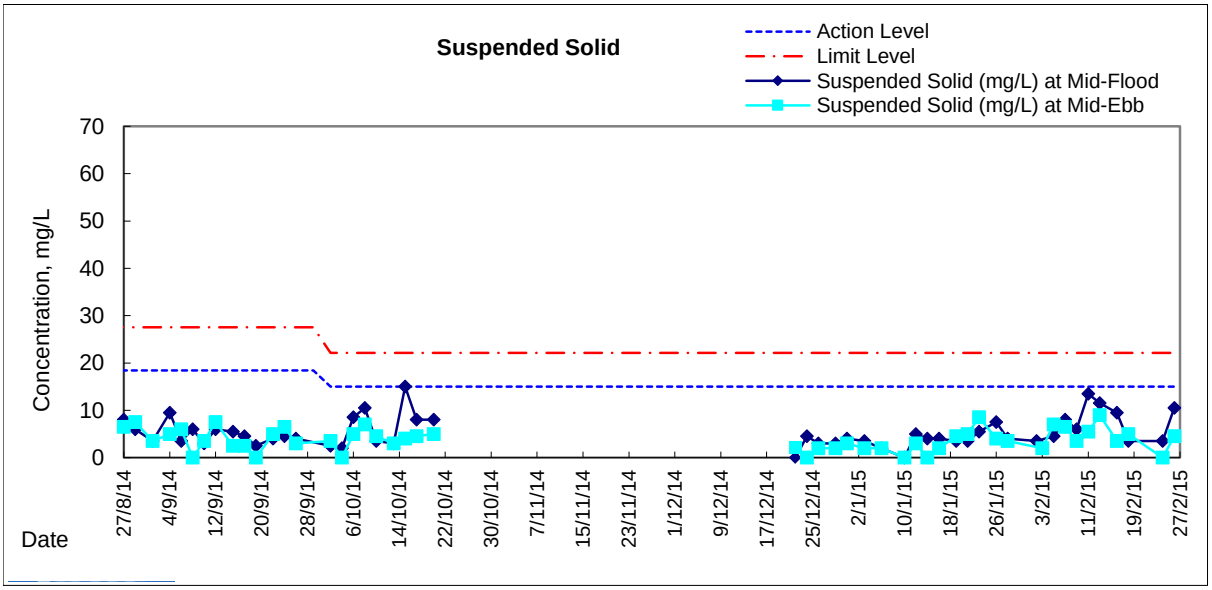
Date	Time	Weater Condition	Sampling Depth		Water Temperature			pH			Salinity			DO Saturation			DO			Turbidity			Suspended Solids	
			m		°C			-			ppt			%			mg/L			NTU			mg/L	
					Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value		Average	Value	Average
28/1/15	21:59	Cloudy	Middle	-	17.20	17.20	17.20	7.87	7.87	7.87	31.17	31.17	31.33	95.4	94.1	94.5	7.47	7.36	7.40	3.43	3.04	3.15	4	3.50
	22:00		Middle	-	17.20	17.20		7.87	7.87		31.48	31.48		93.6	94.9		7.33	7.43		3.11	3.03		3	
30/1/15	19:25	Cloudy	Middle	-	17.40	17.40	17.45	7.77	7.77	7.78	31.07	31.07	31.14	98.4	97.4	98.3	7.81	7.73	7.81	5.94	5.25	5.54	4	3.00
	19:26		Middle	-	17.50	17.50		7.78	7.78		31.22	31.21		98.5	98.9		7.81	7.87		5.46	5.50		2	
3/2/15	23:25	Cloudy	Middle	-	16.90	16.90	16.90	7.93	7.93	7.94	31.29	31.29	31.30	92.0	91.3	92.8	7.38	7.32	7.44	3.22	3.25	3.23	<2	2.00
	23:26		Middle	-	16.90	16.90		7.94	7.94		31.30	31.30		93.5	94.2		7.50	7.55		3.28	3.17		2	
5/2/15	14:40	Fine	Middle	-	17.50	17.50	17.50	8.14	8.14	8.14	31.05	31.05	31.05	81.1	80.3	80.9	6.43	6.36	6.41	4.72	4.70	4.69	6	7.00
	14:42		Middle	-	17.50	17.50		8.14	8.14		31.05	31.05		80.9	81.2		6.40	6.43		4.66	4.67		8	
7/2/15	14:30	Fine	Middle	-	17.60	17.60	17.75	8.08	8.08	8.08	31.33	31.33	31.33	81.6	80.8	80.0	6.44	6.37	6.31	4.27	4.25	4.25	6	6.50
	14:32		Middle	-	17.90	17.90		8.08	8.08		31.32	31.32		78.9	78.7		6.21	6.20		4.23	4.23		7	
9/2/15	15:45	Fine	Middle	-	17.40	17.40	17.50	8.05	8.05	8.06	31.34	31.34	31.34	81.4	82.4	82.0	6.45	6.55	6.51	3.99	4.00	3.93	3	3.50
	15:47		Middle	-	17.60	17.60		8.06	8.06		31.34	31.34		82.5	81.6		6.56	6.46		3.86	3.85		4	
11/2/15	17:35	Fine	Middle	-	17.00	17.00	17.05	8.10	8.10	8.10	31.33	31.33	31.33	83.2	83.0	82.6	6.65	6.63	6.60	3.40	3.61	3.59	6	5.50
	17:37		Middle	-	17.10	17.10		8.09	8.09		31.33	31.33		82.1	82.0		6.55	6.55		3.69	3.67		5	
13/2/15	21:32	Cloudy	Middle	-	17.20	17.20	17.20	8.08	8.08	8.08	31.62	31.62	31.63	80.0	80.1	79.8	6.36	6.37	6.35	8.52	8.50	8.47	8	9.00
	21:33		Middle	-	17.20	17.20		8.08	8.08		31.63	31.63		79.7	79.2		6.35	6.30		8.46	8.40		10	
16/2/15	22:25	Foggy	Middle	-	18.30	18.30	18.30	7.81	7.81	7.81	31.39	31.39	31.47	81.8	82.6	82.3	6.37	6.42	6.40	3.71	3.86	3.78	4	3.50
	22:26		Middle	-	18.30	18.30		7.81	7.81		31.55	31.55		82.6	82.2		6.42	6.39		3.79	3.77		3	
18/2/15	13:28	Fine	Middle	-	18.00	18.00	18.05	8.03	8.03	8.04	31.18	31.18	31.18	72.5	73.5	73.2	5.69	5.77	5.74	2.61	2.60	2.62	6	5.00
	13:30		Middle	-	18.10	18.10		8.04	8.04		31.17	31.17		73.5	73.1		5.77	5.74		2.61	2.66		4	
24/2/15	17:25	Fine	Middle	-	18.40	18.40	18.45	8.09	8.09	8.09	31.16	31.16	31.16	78.5	78.4	78.1	6.11	6.11	6.09	2.95	2.93	2.93	<2	<2
	17:27		Middle	-	18.50	18.50		8.09	8.09		31.15	31.15		78.2	77.4		6.09	6.05		2.92	2.91		<2	
26/2/15	20:15	Cloudy	Middle	-	19.90	19.90	19.93	7.64	7.64	7.64	31.64	31.64	31.64	82.2	82.9	82.1	6.20	6.24	6.19	3.18	3.16	3.11	4	4.50
	20:16		Middle	-	20.00	19.90		7.64	7.64		31.64	31.64		82.5	80.9		6.23	6.10		3.04	3.07		5	

Remarks:
Single underline denotes exceedance over Action Level.
Double underline denotes exceedance over Limit Level.
With respect the suspension of marine construction activities under the contract during Chinese New Year Holiday, the water quality monitoring event on 20 February 2015 during both flood tide and ebb tide were temporarily suspended.

Graphic Presentation of Water Quality Result of C7 - Windsor House







Appendix 5.1

Event Action Plans

Event/Action Plan for Construction Noise

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
Action Level	1. Notify IEC, ER and Contactor 2. Carry out investigation 3. Report the results of investigation to the IEC, ER and Contactor 4. Discuss with the IEC and Contractor on remedial measures required 5. Increase monitoring frequency to check mitigation effectiveness (The above actions should be taken within 2 working days after the exceedance is identified)	1. Review the investigation results submitted by the ET 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly 3. Advise the ER on the effectiveness of the proposed remedial measures (The above actions should be taken within 2 working days after theexceedance is identified)	1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented 4. Supervise the implementation of remedial measures (The above actions should be taken within 2 working days after theexceedance is identified)	1. Submit noise mitigation proposals to IEC and ER 2. Implement noise mitigation proposals (The above actions should be taken within 2 working days after theexceedance is identified)
Limit Level	1. Inform IEC, ER, EPD and Contractor 2. Repeat measurement to confirm findings 3. Increase monitoring frequency 4. Identify source and investigate the cause of exceedance 5. Carry out analysis of Contractor's working procedures. Discuss with the IEC, Contractor and ER on remedial measures require 6. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results 7. If exceedance stops, cease additional monitoring (The above actions should be taken within 2 working days after the exceedance is identified)	1. Discuss amongst ER, ET and Contractor on the potential remedial actions 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly (The above actions should be taken within 2 working days after theexceedance is identified)	1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented 4. Supervise the implementation of remedial measures 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated (The above actions should be taken within 2 working days after the exceedance is identified)	1. Take immediate action to avoid further exceedance 2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification 3. Implement the agreed proposals 4. Submit further proposal if problem still not under control 5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated (The above actions should be taken within 2 working days after the exceedance is identified)

Event / Action Plan for Construction Air Quality

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
ACTION LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of complaint and propose remedial measures; 2. Inform IEC and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily. (The above actions should be taken within 2 working days after the exceedance is identified.)	1. Check monitoring data submitted by ET; 2. Check Contractor's working method. (The above actions should be taken within 2 working days after the exceedance is identified.)	1. Notify Contractor. (The above actions should be taken within 2 working days after theexceedance is identified.)	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate. (The above actions should be taken within 2 working days after the exceedance is identified.)
2. Exceedance for two or more consecutive samples	1. Identify source; 2. Inform IEC and ER; 3. Advise the ER on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring. (The above actions should be taken within 2 working days after the exceedance is identified.)	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified.)	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented. (The above actions should be taken within 2 working days after theexceedance is identified.)	1. Submit proposals for remedial to ER within three working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate. (The above actions should be taken within 2 working days after the exceedance is identified.)
LIMIT LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes ofexceedance and propose remedial measures; 2. Inform IEC, ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results. (The above actions should be taken within 2 working days after the exceedance is identified.)	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified.)	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented. (The above actions should be taken within 2 working days after theexceedance is identified.)	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate. (The above actions should be taken within 2 working days after the exceedance is identified.)

2. Exceedance for two or more consecutive samples	1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring. (The above actions should be taken within 2 working days after the exceedance is identified.)	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified.)	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. (The above actions should be taken within 2 working days after theexceedance is identified.)	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within three working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified.)

Event and Action Plan for Marine Water Quality

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

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

Appendix 6.1

Complaints Log

Environmental Complaints Log

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
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Appendix 6.2

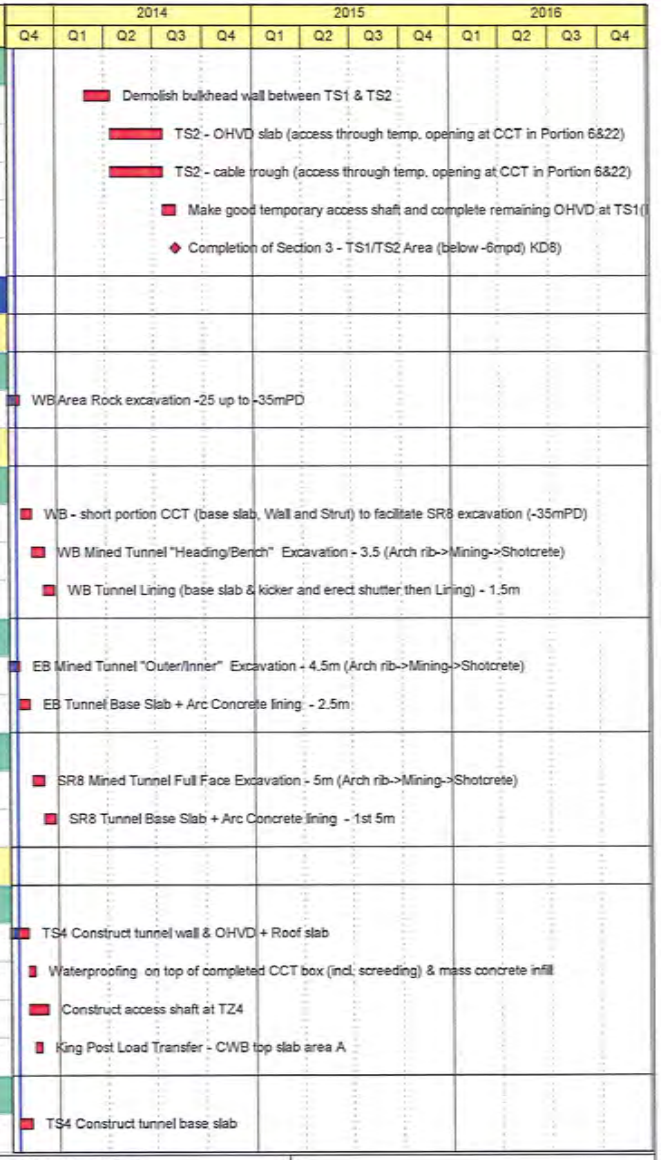
Notification of Exceedances

Ref no.	Date	Tidal	Location	Parameters (Unit)	Measured	Action Level	Limit Level	Follow-up action	
416_C001	7-Feb-15	Mid-flood	C7	DO(mg/l)	6.66	3.36	2.73	Possible reason:	Natural variation or changes of water quality in the vicinity of water abstraction location for the water quality monitoring station.
				Turbidity	11.92	9.10	10.25	Action taken/ to be taken:	Immediate repeated in-situ measurement had conducted to confirm the exceedances. Checking with Contractor works and review previous monitoring data.
				SS	8.00	15.00	22.13	Remarks/ Other Obs:	No marine works was conducted under Contract for HY/2009/15 within CBTS on the monitoring date. As such, it is concluded that the exceedance was not related to EP-416 designated projects works and relate to natural variation in water quality in the vincinity of the water abstraction location for the water quality monitoring station.

Appendix 7.1

Construction Programme

Activity ID	Activity Name	Calendar	Original Duration	Start	Finish	Late Start	Late Finish	Total Float
OHVD Slab and Cable Trough Construction								
S3_5075	Demolish bulkhead wall between TS1 & TS2	7d/wk-1	47d	24-Feb-14	12-Apr-14	14-Jan-14	04-Mar-14	-38d
S3_5080	TS2 - OHVD slab (access through temp. opening at CCT in Portion 6&22)	7d/wk-1	90d	13-Apr-14	18-Jul-14	05-Mar-14	09-Jun-14	-38d
S3_6210	TS2 - cable trough (access through temp. opening at CCT in Portion 6&22)	7d/wk-1	90d	13-Apr-14	18-Jul-14	05-Mar-14	09-Jun-14	-38d
S1_5855	Make good temporary access shaft and complete remaining OHVD at TS1(Portion 1,2,6,22)	7d/wk-1	24d	19-Jul-14	11-Aug-14	10-Jun-14	04-Jul-14	-38d
S3_6212	Completion of Section 3 - TS1/TS2 Area (below -6mpd) KD8)	7d/wk-2	0d		11-Aug-14		04-Jul-14	-38d
Works in TS4/ME4 Area (Portion 14A, 14B, 15, 23)								
TS4/ME4 - ELS Works & Rock Excavation								
TS4/ME4- West Portion Rock Excavation + Pipe Roofing Installation								
S27155	WB Area Rock excavation -25 up to -35mPD	7d/wk-1	28d	17-Jul-13 A	25-Oct-13	17-Apr-13	24-Apr-13	-177d
TS4/ME4 - Mined Tunnel East Portal Works								
WB Tunnel								
S27115	WB - short portion CCT (base slab, Wall and Strut) to facilitate SR8 excavation (-35mPD)	7d/wk-1	20d	26-Oct-13	14-Nov-13	25-Apr-13	15-May-13	-177d
S27100	WB Mined Tunnel "Heading/Bench" Excavation - 3.5 (Arch rib->Mining->Shotcrete)	7d/wk-1	24d	15-Nov-13	08-Dec-13	16-May-13	09-Jun-13	-177d
S27105	WB Tunnel Lining (base slab & kicker and erect shutter then Lining) - 1.5m	7d/wk-1	21d	06-Dec-13	28-Dec-13	07-Jun-13	28-Jun-13	-177d
EB Tunnel								
S27085	EB Mined Tunnel "Outer/Inner" Excavation - 4.5m (Arch rib->Mining->Shotcrete)	7d/wk-1	31d	16-Aug-13 A	21-Oct-13	04-Jun-13	07-Jun-13	-131d
S27095	EB Tunnel Base Slab + Arc Concrete lining - 2.5m	7d/wk-1	21d	21-Oct-13	10-Nov-13	07-Jun-13	28-Jun-13	-131d
SR8 Tunnel								
S27070	SR8 Mined Tunnel Full Face Excavation - 5m (Arch rib->Mining->Shotcrete)	7d/wk-1	21d	15-Nov-13	05-Dec-13	16-May-13	06-Jun-13	-177d
S5_54712	SR8 Tunnel Base Slab + Arc Concrete lining - 1st 5m	7d/wk-1	21d	06-Dec-13	28-Dec-13	07-Jun-13	28-Jun-13	-177d
TS4/ME4 - CCT RC Structure								
CCT - Area A								
S26820	TS4 Construct tunnel wall & OHVD + Roof slab	7d/wk-1	36d	14-Jun-13 A	04-Nov-13*	20-May-13	06-Jun-13	-146d
S5_59785	Waterproofing on top of completed CCT box (incl. screeding) & mass concrete infill	7d/wk-1	12d	05-Nov-13	16-Nov-13	07-Jun-13	19-Jun-13	-146d
S5_59820	Construct access shaft at TZ4	7d/wk-1	36d	05-Nov-13	10-Dec-13	26-Jul-13	30-Aug-13	-99d
S5_59795	King Post Load Transfer - CWB top slab area A	7d/wk-1	12d	17-Nov-13	28-Nov-13	20-Jun-13	02-Jul-13	-146d
CCT - Area B								
S26765	TS4 Construct tunnel base slab	7d/wk-1	24d	18-Oct-13*	10-Nov-13	18-Apr-13	12-May-13	-176d



Remaining Work
Remaining Work
Critical Remaining Work
Milestone
Summary
Summay

Contract No. HY/2009/15 - Central Wan Chai By Pass - Tunnel (Causeway Bay Typhoon Shelter Section)

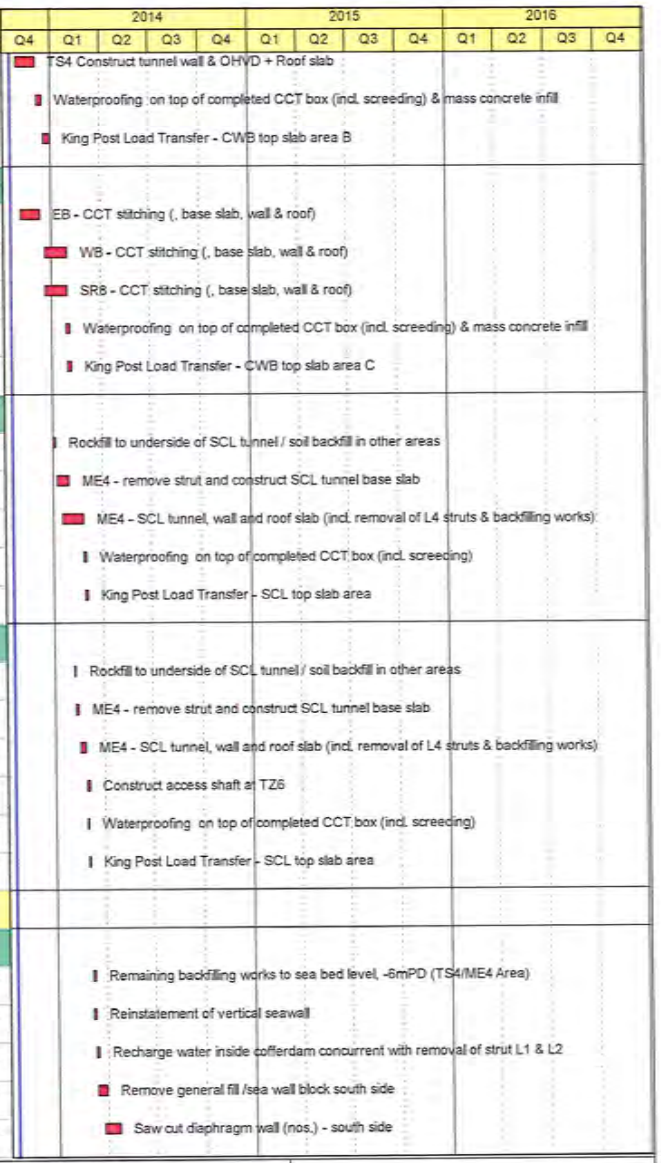
WORKS PROGRAMME REV. J

Prepared by William Caluza

Date	Revision	Checked	Approved
18-Oct-13	1ST Submission		KC

中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

Activity ID	Activity Name	Calendar	Original Duration	Start	Finish	Late Start	Late Finish	Total Float
S26770	TS4 Construct tunnel wall & OHVD + Roof slab	7d/wk-1	36d	30-Oct-13*	04-Dec-13*	30-Apr-13	06-Jun-13	-176d
S26785	Waterproofing on top of completed CCT box (incl. screeding) & mass concrete infill	7d/wk-1	12d	05-Dec-13	16-Dec-13	07-Jun-13	19-Jun-13	-176d
S5_59800	King Post Load Transfer - CWB top slab area B	7d/wk-1	12d	17-Dec-13	30-Dec-13	20-Jun-13	02-Jul-13	-176d
Stitching - CCT Area C								
S26830	EB - CCT stitching (, base slab, wall & roof)	7d/wk-1	36d	05-Nov-13	10-Dec-13	23-Jun-13	29-Jul-13	-131d
S26825	WB - CCT stitching (, base slab, wall & roof)	7d/wk-1	36d	21-Dec-13	28-Jan-14	23-Jun-13	29-Jul-13	-177d
S26835	SR8 - CCT stitching (, base slab, wall & roof)	7d/wk-1	36d	21-Dec-13	28-Jan-14	23-Jun-13	29-Jul-13	-177d
S5_59780	Waterproofing on top of completed CCT box (incl. screeding) & mass concrete infill	7d/wk-1	4d	28-Jan-14	02-Feb-14	29-Jul-13	01-Aug-13	-177d
S5_59805	King Post Load Transfer - CWB top slab area C	7d/wk-1	4d	30-Jan-14	05-Feb-14	31-Jul-13	03-Aug-13	-177d
SCL CCT RC Structure - Area A & B								
S26775	Rockfill to underside of SCL tunnel / soil backfill in other areas	7d/wk-1	6d	31-Dec-13	06-Jan-14	03-Jul-13	08-Jul-13	-176d
S26745	ME4 - remove strut and construct SCL tunnel base slab	7d/wk-1	24d	07-Jan-14	30-Jan-14	09-Jul-13	01-Aug-13	-176d
S26750	ME4 - SCL tunnel, wall and roof slab (incl. removal of L4 struts & backfilling works)	7d/wk-1	36d	17-Jan-14	24-Feb-14	19-Jul-13	23-Aug-13	-176d
S26760	Waterproofing on top of completed CCT box (incl. screeding)	7d/wk-1	6d	24-Feb-14	01-Mar-14	23-Aug-13	28-Aug-13	-176d
S5_59810	King Post Load Transfer - SCL top slab area	7d/wk-1	6d	26-Feb-14	03-Mar-14	25-Aug-13	30-Aug-13	-176d
SCL CCT RC Structure - Area C								
S5_59755	Rockfill to underside of SCL tunnel / soil backfill in other areas	7d/wk-1	2d	06-Feb-14	07-Feb-14	04-Aug-13	05-Aug-13	-177d
S5_59760	ME4 - remove strut and construct SCL tunnel base slab	7d/wk-1	6d	08-Feb-14	13-Feb-14	06-Aug-13	11-Aug-13	-177d
S5_59765	ME4 - SCL tunnel, wall and roof slab (incl. removal of L4 struts & backfilling works)	7d/wk-1	12d	14-Feb-14	25-Feb-14	12-Aug-13	23-Aug-13	-177d
S5_59825	Construct access shaft at TZ6	7d/wk-1	6d	26-Feb-14	03-Mar-14	25-Aug-13	30-Aug-13	-176d
S5_59775	Waterproofing on top of completed CCT box (incl. screeding)	7d/wk-1	3d	28-Feb-14	02-Mar-14	26-Aug-13	28-Aug-13	-177d
S5_59790	King Post Load Transfer - SCL top slab area	7d/wk-1	3d	02-Mar-14	04-Mar-14	28-Aug-13	30-Aug-13	-177d
TS4/ME4 - Removal of Temporary Reclamation								
TS4/ME4, Removal of Temporary Reclamation								
S62755	Remaining backfilling works to sea bed level, -6mPD (TS4/ME4 Area)	7d/wk-1	6d	05-Mar-14	10-Mar-14	31-Aug-13	05-Sep-13	-177d
S5_59815	Reinstatement of vertical seawall	7d/wk-1	6d	05-Mar-14	10-Mar-14	31-Aug-13	05-Sep-13	-177d
S26880	Recharge water inside cofferdam concurrent with removal of strut L1 & L2	7d/wk-1	6d	11-Mar-14	16-Mar-14	06-Sep-13	11-Sep-13	-177d
S26845	Remove general fill /sea wall block south side	7d/wk-1	17d	13-Mar-14	29-Mar-14	08-Sep-13	25-Sep-13	-177d
S26865	Saw cut diaphragm wall (nos.) - south side	7d/wk-1	25d	25-Mar-14	22-Apr-14	21-Sep-13	17-Oct-13	-177d



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Contract No. HY/2009/15 - Central Wan Chai By Pass - Tunnel (Causeway Bay Typhoon Shelter Section)

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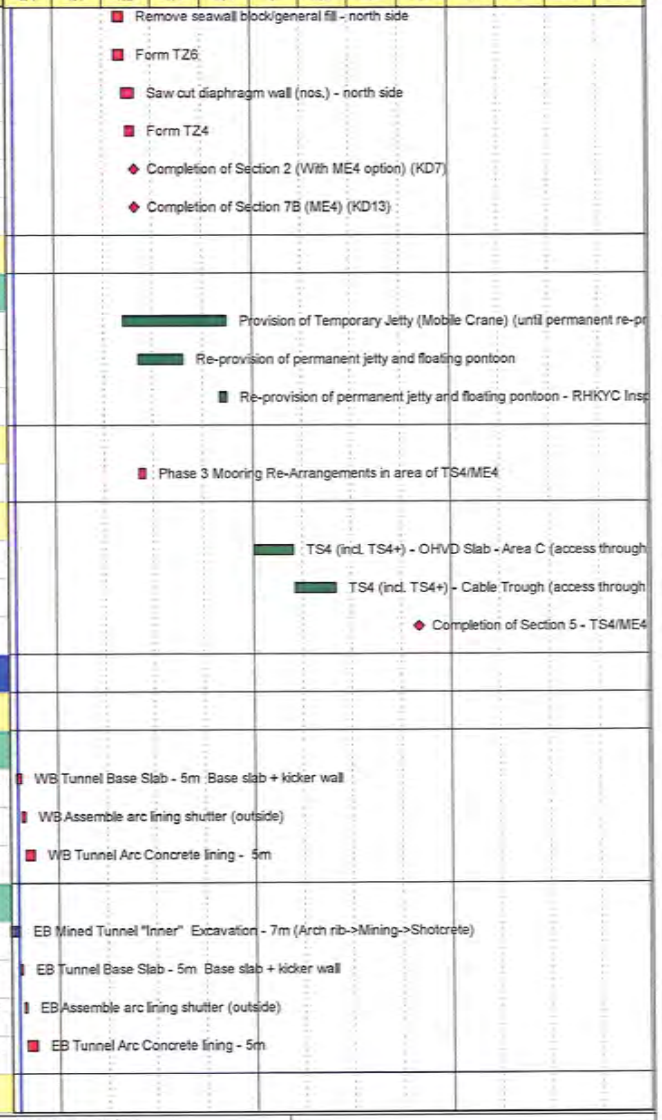
18-Oct-13	1ST Submission		KC

中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

Activity ID	Activity Name	Calendar	Original Duration	Start	Finish	Late Start	Late Finish	Total Float
S5_54717	Remove seawall block/general fill - north side	7d/wk-1	17d	23-Apr-14	11-May-14	18-Oct-13	03-Nov-13	-177d
S26855	Form TZ6	7d/wk-1	18d	23-Apr-14	12-May-14	06-Nov-13	23-Nov-13	-158d
S5_54722	Saw cut diaphragm wall (nos.) - north side	7d/wk-1	25d	07-May-14	31-May-14	30-Oct-13	23-Nov-13	-177d
S26860	Form TZ4	7d/wk-1	18d	14-May-14	31-May-14	06-Nov-13	23-Nov-13	-177d
S26875	Completion of Section 2 (With ME4 option) (KD7)	7d/wk-1	0d		31-May-14*		23-Nov-13	-177d
S26890	Completion of Section 7B (ME4) (KD13)	7d/wk-1	0d		31-May-14*		23-Nov-13	-177d
Re-Provision of Permanent Jetty & Floating Pontoon								
Re-Provision of Permanent Jetty & Floating Pontoon								
S6_5258	Provision of Temporary Jetty (Mobile Crane) (until permanent re-provision is completed)	6d/wk	160d	07-May-14	14-Nov-14	20-Jul-15	27-Jan-16	357d
S6_5260	Re-provision of permanent jetty and floating pontoon	6d/wk	72d	03-Jun-14	26-Aug-14	19-Oct-15	13-Jan-16	411d
S6_5265	Re-provision of permanent jetty and floating pontoon - RHKYC Inspection / Appvl	6d/wk	12d	01-Nov-14	14-Nov-14	14-Jan-16	27-Jan-16	357d
Phase 3 Mooring Re-Arrangement								
S5_55940	Phase 3 Mooring Re-Arrangements in area of TS4/ME4	6d/wk	12d	03-Jun-14	16-Jun-14	29-Jan-14	14-Feb-14	-97d
TS4 - OHVD / Cable Trough								
S5_6185	TS4 (incl. TS4+) - OHVD Slab - Area C (access through temp. opening at TZ4)	6d/wk	60d	02-Jan-15*	16-Mar-15	10-Jun-15	20-Aug-15	127d
S5_6190	TS4 (incl. TS4+) - Cable Trough (access through temp. opening at TZ4)	6d/wk	60d	17-Mar-15	01-Jun-15	21-Aug-15	02-Nov-15	127d
S5_59850	Completion of Section 5 - TS4/ME4 Area (KD10), below -20mPD	7d/wk-2	0d		02-Nov-15*		02-Nov-15	0d
Works in TPCWAE Area (Portion 20A, 20B)								
MT West Portal Works								
WB (West Bound) Tunnel								
S67820	WB Tunnel Base Slab - 5m Base slab + kicker wall	7d/wk-1	6d	15-Oct-13 A	24-Oct-13	19-Jun-13	25-Jun-13	-117d
S67800	WB Assemble arc lining shutter (outside)	7d/wk-1	6d	25-Oct-13	30-Oct-13	26-Jun-13	02-Jul-13	-117d
S67810	WB Tunnel Arc Concrete lining - 5m	7d/wk-1	18d	31-Oct-13	17-Nov-13	03-Jul-13	20-Jul-13	-117d
EB (East Bound) Tunnel								
S67785	EB Mined Tunnel "Inner" Excavation - 7m (Arch rib->Mining->Shotcrete)	7d/wk-1	27d	02-Sep-13 A	19-Oct-13	18-Jun-13	19-Jun-13	-118d
S67815	EB Tunnel Base Slab - 5m Base slab + kicker wall	7d/wk-1	6d	20-Oct-13	25-Oct-13	20-Jun-13	25-Jun-13	-118d
S67795	EB Assemble arc lining shutter (outside)	7d/wk-1	6d	26-Oct-13	31-Oct-13	26-Jun-13	02-Jul-13	-118d
S67805	EB Tunnel Arc Concrete lining - 5m	7d/wk-1	18d	01-Nov-13	18-Nov-13	03-Jul-13	20-Jul-13	-118d
CCT RC Structure								



Remaining Work
Remaining Work
Critical Remaining Work
Milestone
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Contract No. HY/2009/15 - Central Wan Chai By Pass - Tunnel (Causeway Bay Typhoon Shelter Section)

WORKS PROGRAMME REV. J

Prepared by William Caluza

Date	Revision	Checked	Approved
18-Oct-13	1ST Submission		KC

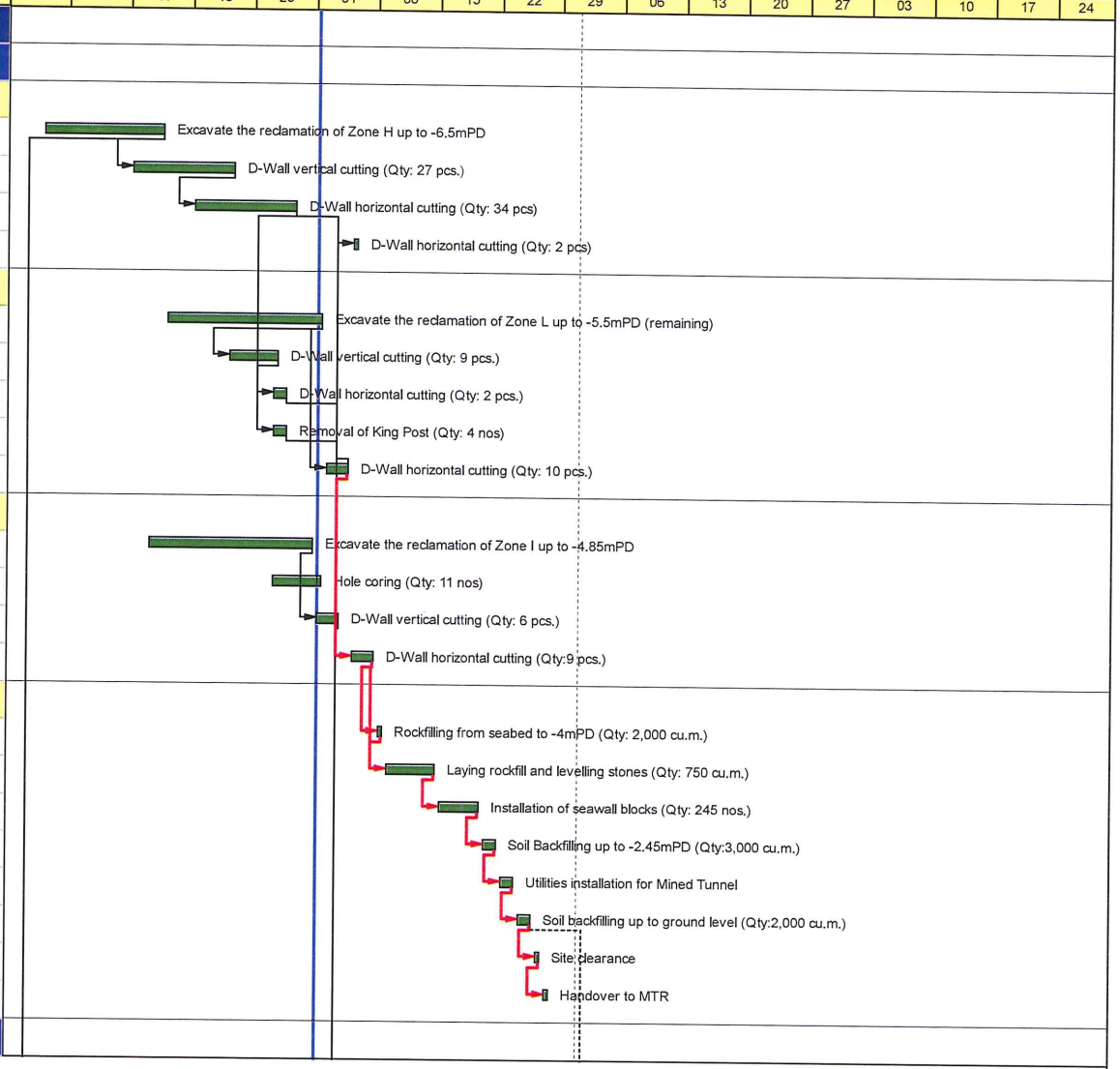
中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

TS4-1

TS4 Rolling Programme

06-Sep-14 13:30

Activity ID	Activity Name	Original Duration	Start	Finish
Programme for Remaining Works at TS4/ME4				
Remaining Works at TZ6				
Stage 1 (Zones H2 & H1 - ME4-D20 to ME4-D29)				
A-1000	Excavate the reclamation of Zone H up to -6.5mPD	14d	01-Aug-14 A	14-Aug-14 A
A-1010	D-Wall vertical cutting (Qty: 27 pcs.)	9d	11-Aug-14 A	22-Aug-14 A
A-1020	D-Wall horizontal cutting (Qty: 34 pcs)	9d	18-Aug-14 A	29-Aug-14 A
A-7050	D-Wall horizontal cutting (Qty: 2 pcs)	1d	05-Sep-14	05-Sep-14
Stage 2 (Zone L - P2 - ME4-D30 to ME4-D32 & P1)				
A-1030	Excavate the reclamation of Zone L up to -5.5mPD (remaining)	8d	15-Aug-14 A	01-Sep-14 A
A-1040	D-Wall vertical cutting (Qty: 9 pcs.)	3d	22-Aug-14 A	27-Aug-14 A
A-1060	D-Wall horizontal cutting (Qty: 2 pcs.)	3d	27-Aug-14 A	28-Aug-14 A
A-1050	Removal of King Post (Qty: 4 nos)	2d	27-Aug-14 A	28-Aug-14 A
A-1180	D-Wall horizontal cutting (Qty: 10 pcs.)	3d	02-Sep-14*	04-Sep-14
Stage 3 (Zone I - ME4-D33 to ME4-D35 & SCL3				
A-1070	Excavate the reclamation of Zone I up to -4.85mPD	14d	13-Aug-14 A	31-Aug-14 A
A-7070	Hole coring (Qty: 11 nos)	6d	27-Aug-14 A	01-Sep-14
A-1080	D-Wall vertical cutting (Qty: 6 pcs.)	3d	01-Sep-14 A	03-Sep-14
A-1090	D-Wall horizontal cutting (Qty:9 pcs.)	3d	05-Sep-14	07-Sep-14
Stage 4 - Seawall and Reclamation at TZ6				
A-1990	Rockfilling from seabed to -4mPD (Qty: 2,000 cu.m.)	1d	08-Sep-14	08-Sep-14
A-2000	Laying rockfill and levelling stones (Qty: 750 cu.m.)	6d	09-Sep-14	14-Sep-14
A-2010	Installation of seawall blocks (Qty: 245 nos.)	5d	15-Sep-14	19-Sep-14
A-2020	Soil Backfilling up to -2.45mPD (Qty:3,000 cu.m.)	2d	20-Sep-14	21-Sep-14
A-2030	Utilities installation for Mined Tunnel	2d	22-Sep-14	23-Sep-14
A-2040	Soil backfilling up to ground level (Qty:2,000 cu.m.)	2d	24-Sep-14	25-Sep-14
A-2050	Site clearance	1d	26-Sep-14	26-Sep-14
A-2060	Handover to MTR	1d	27-Sep-14	27-Sep-14*
Removal of Temporary Reclamation at TS4/ME4				



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China State Construction Engineering (Hong Kong) Ltd.

Contract No. HY/2009/15 - Central Wan Chai By Pass - Tunnel (Causeway Bay Typhoon Shelter Section)

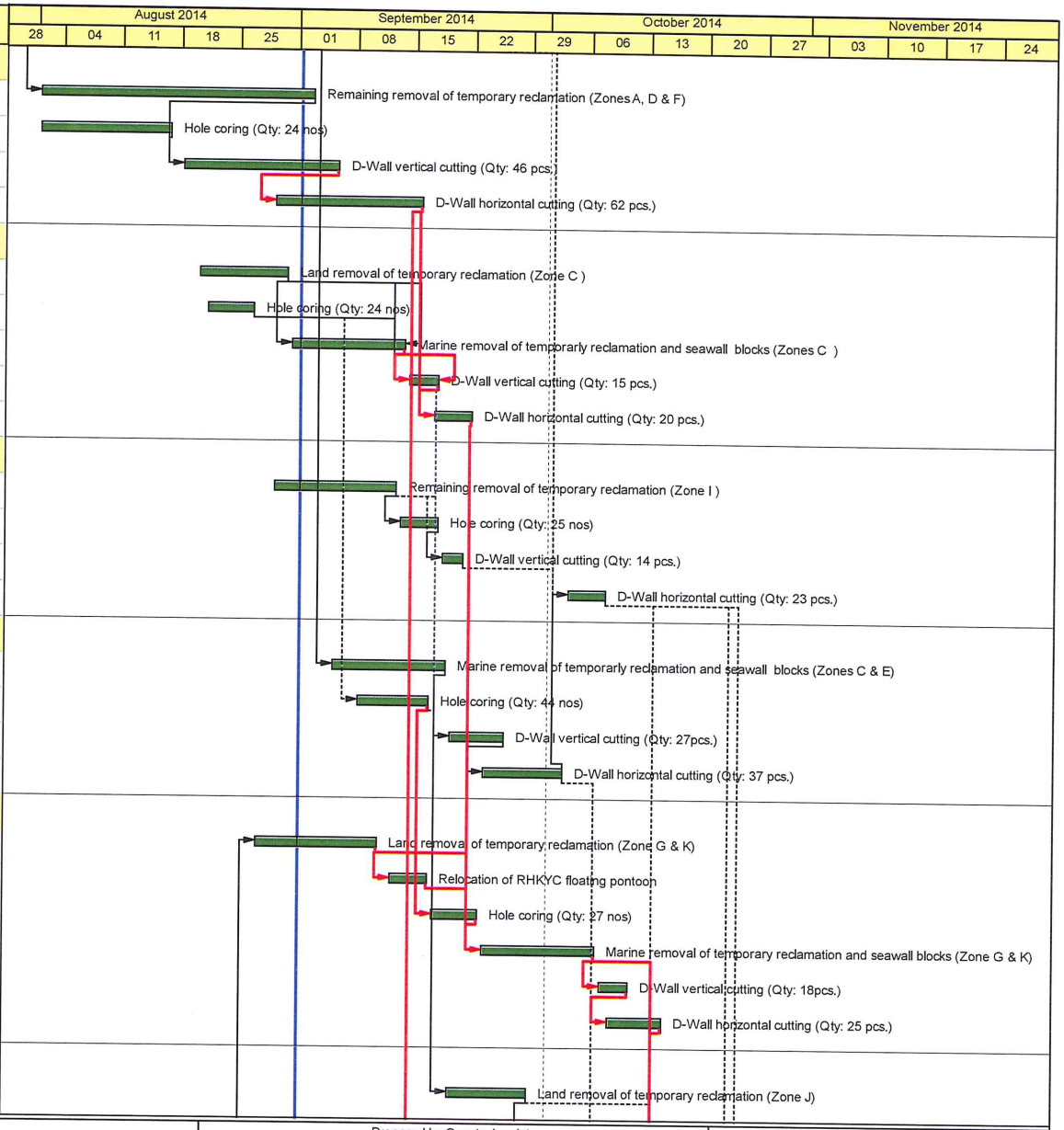
ROLLING PROGRAMME OF REMAINING WORKS AT TS4/ME4

Prepared by Quartz Jequinto

Date	Revision	Checked	Approved
05-Sep-14	Revision Date	ET	

中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGRG. (HONG KONG) LTD.

Activity ID	Activity Name	Original Duration	Start	Finish
Stage 5 (Zones A, D & F - TS4-D33 to D-26, SCL2 & ME4-D19 to D13)				
A-2080	Remaining removal of temporary reclamation (Zones A, D & F)	12d	01-Aug-14 A	02-Sep-14 A
A-2070	Hole coring (Qty: 24 nos)	16d	01-Aug-14 A	16-Aug-14 A
A-2090	D-Wall vertical cutting (Qty: 46 pcs.)	15d	18-Aug-14 A	05-Sep-14
A-3000	D-Wall horizontal cutting (Qty: 62 pcs.)	16d	29-Aug-14 A	15-Sep-14
Stage 6 (Zone C - P4, ME4-D12 to ME4-D10 & P3)				
A-3010	Land removal of temporary reclamation (Zone C)	12d	20-Aug-14 A	30-Aug-14 A
A-3020	Hole coring (Qty: 24 nos)	5d	21-Aug-14 A	26-Aug-14 A
A-3011	Marine removal of temporarly reclamation and seawall blocks (Zones C)	14d	31-Aug-14 A	13-Sep-14
A-3030	D-Wall vertical cutting (Qty: 15 pcs.)	4d	14-Sep-14	17-Sep-14
A-3040	D-Wall horizontal cutting (Qty: 20 pcs.)	5d	17-Sep-14	21-Sep-14
Stage 9 (Zone I - TS4-D01 to TS4-D08)				
A-3050	Remaining removal of temporary reclamation (Zone I)	14d	29-Aug-14 A	12-Sep-14
A-3060	Hole coring (Qty: 25 nos)	5d	13-Sep-14	17-Sep-14
A-3070	D-Wall vertical cutting (Qty: 14 pcs.)	3d	18-Sep-14	20-Sep-14
A-3080	D-Wall horizontal cutting (Qty: 23 pcs.)	5d	03-Oct-14	07-Oct-14
Stage 7 (Zones C & E - ME4-D06 to D01, SCL1 & TS4-D25)				
A-4000	Marine removal of temporarly reclamation and seawall blocks (Zones C & E)	14d	05-Sep-14*	18-Sep-14
A-3090	Hole coring (Qty: 44 nos)	9d	08-Sep-14*	16-Sep-14
A-4010	D-Wall vertical cutting (Qty: 27pcs.)	7d	19-Sep-14	25-Sep-14
A-4020	D-Wall horizontal cutting (Qty: 37 pcs.)	10d	23-Sep-14	02-Oct-14
Stage 8 (Zones G & K - TS4-D24 to TS4-D15)				
A-4030	Land removal of temporary reclamation (Zone G & K)	14d	27-Aug-14 A	10-Sep-14
A-4040	Relocation of RHKYC floating pontoon	5d	12-Sep-14*	16-Sep-14
A-4050	Hole coring (Qty: 27 nos)	6d	17-Sep-14	22-Sep-14
A-4060	Marine removal of temporary reclamation and seawall blocks (Zone G & K)	14d	23-Sep-14	06-Oct-14
A-4070	D-Wall vertical cutting (Qty: 18pcs.)	4d	07-Oct-14	10-Oct-14
A-4080	D-Wall horizontal cutting (Qty: 25 pcs.)	7d	08-Oct-14	14-Oct-14
Stage 10 (Zone J - TS4-D09 to TS4-D14)				
A-4090	Land removal of temporary reclamation (Zone J)	10d	19-Sep-14	28-Sep-14



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China State Construction Engineering (Hong Kong) Ltd.

Contract No. HY/2009/15 - Central Wan Chai By Pass - Tunnel (Causeway Bay Typhoon Shelter Section)

ROLLING PROGRAMME OF REMAINING WORKS AT TS4/ME4

Prepared by Quartz Jequinto

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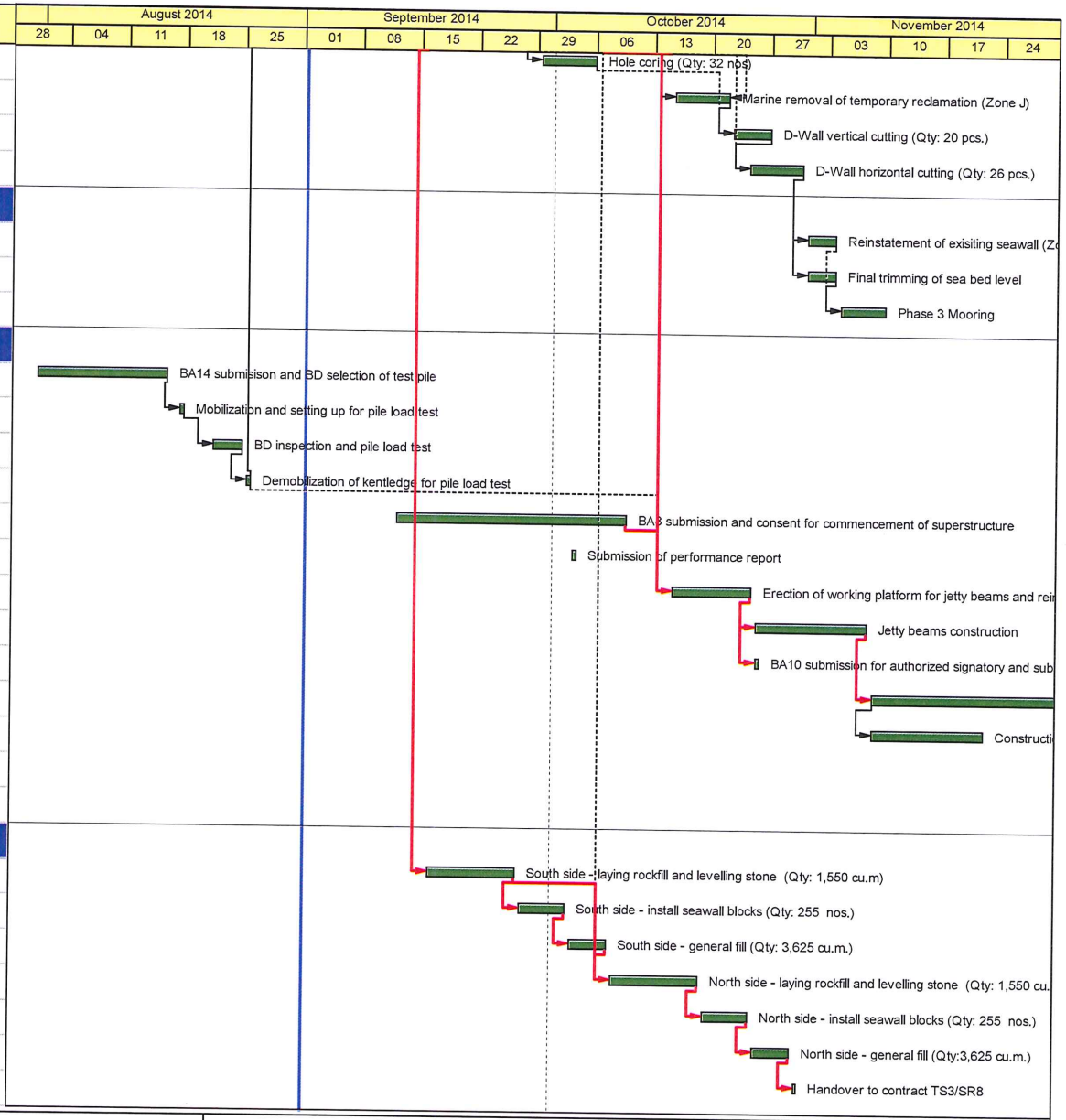
CHINA STATE CONSTRUCTION ENGRG. (HONG KONG) LTD.

Activity ID	Activity Name	Original Duration	Start	Finish
A-5000	Hole coring (Qty: 32 nos)	7d	29-Sep-14	05-Oct-14
A-5010	Marine removal of temporary reclamation (Zone J)	7d	15-Oct-14	21-Oct-14
A-5020	D-Wall vertical cutting (Qty: 20 pcs.)	5d	22-Oct-14	26-Oct-14
A-5030	D-Wall horizontal cutting (Qty: 26 pcs.)	7d	24-Oct-14	30-Oct-14
Stage 13 - Phase 3 Mooring				
A-5040	Reinstatement of exisiting seawall (Zones I & J)	4d	31-Oct-14	03-Nov-14
A-5050	Final trimming of sea bed level	4d	31-Oct-14	03-Nov-14
A-5060	Phase 3 Mooring	6d	04-Nov-14	09-Nov-14*
Stage 12 - Re-provisioning of Jetty				
A-5070	BA14 submisison and BD selection of test pile	16d	31-Jul-14 A	15-Aug-14 A
A-5080	Mobilization and setting up for pile load test	1d	17-Aug-14 A	17-Aug-14 A
A-5090	BD inspection and pile load test	4d	21-Aug-14 A	24-Aug-14 A
A-6000	Demobilization of kentledge for pile load test	1d	25-Aug-14 A	25-Aug-14 A
A-6010	BA8 submission and consent for commencement of superstructure	28d	12-Sep-14*	09-Oct-14
A-6012	Submission of performance report	1d	03-Oct-14*	03-Oct-14
A-6020	Erection of working platform for jetty beams and reinstate the floating portoon	10d	15-Oct-14	24-Oct-14
A-6030	Jetty beams construction	14d	25-Oct-14	07-Nov-14
A-6040	BA10 submission for authorized signatory and subcontractor	1d	25-Oct-14	25-Oct-14*
A-6050	BA13 submission + 14-day cube test results	28d	08-Nov-14	05-Dec-14
A-6052	Construction of floating pontoon	14d	08-Nov-14	21-Nov-14
A-6060	E&M and accessories installation	7d	06-Dec-14	12-Dec-14
A-6070	Handover to RHKYC	1d	13-Dec-14	13-Dec-14
Stage 11 - Construction of TZ4				
A-6080	South side - laying rockfill and levelling stone (Qty: 1,550 cu.m)	11d	16-Sep-14	26-Sep-14
A-6090	South side - install seawall blocks (Qty: 255 nos.)	6d	27-Sep-14	02-Oct-14
A-7000	South side - general fill (Qty: 3,625 cu.m.)	5d	03-Oct-14	07-Oct-14
A-7010	North side - laying rockfill and levelling stone (Qty: 1,550 cu.m)	11d	08-Oct-14	18-Oct-14
A-7020	North side - install seawall blocks (Qty: 255 nos.)	6d	19-Oct-14	24-Oct-14
A-7030	North side - general fill (Qty:3,625 cu.m.)	5d	25-Oct-14	29-Oct-14
A-7040	Handover to contract TS3/SR8	1d	30-Oct-14	30-Oct-14*



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China State Construction Engineering (Hong Kong) Ltd.

Contract No. HY/2009/15 - Central Wan Chai By Pass - Tunnel (Causeway Bay Typhoon Shelter Section)

ROLLING PROGRAMME OF REMAINING WORKS AT TS4/ME4

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CHINA STATE CONSTRUCTION ENGRG. (HONG KONG) LTD.