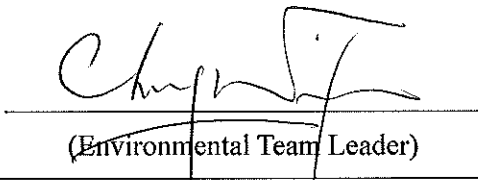


Harbour Area Treatment Scheme Stage 2A

**Contract No. DC/2007/23, DC/2009/10,
DC/2009/17 and DC/2009/18**

**Consolidated Quarterly Environmental
Monitoring and Audit Report
September 2015 to November 2015**

(Version 1.0)

Certified By 
(Environmental Team Leader)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties

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CE/Harbour Area Treatment Scheme
Drainage Services Department
Sewage Services Branch
Harbour Area Treatment Scheme Division
5/F, Western Magistracy
2A Pokfulam Road, Hong Kong

16 March 2016
By Post

Attn: Mr. Danny Tang

Dear Sir,

**Agreement No. CE 8/2009(EP)
Harbour Area Treatment Scheme (HATS) Stage 2A
Independent Environmental Checker for Construction Phase – Investigation
Submission of Quarterly EM&A Consolidated Report (Version 1.0) for Stonecutters
Island Sewage Treatment Works for September to November 2015 (Issue No. 24)**

We refer to the captioned report consolidating the individual ETL certified and IEC verified Quarterly EM&A Reports for Contract Nos. DC/2007/23, DC/2009/10, DC/2009/17 and DC/2009/18 at Stonecutters Island Sewage Treatment Works site for HATS Stage 2A. We confirm we have no comment.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Dr. Anne F Kerr
Independent Environmental Checker

c.c. Ove Arup & Partners HK Ltd.
Cinotech Consultants Ltd.

Mr. Ted Y F Tang
Dr. Priscilla Choy

Fax: 2370 4377
By email

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ABBREVIATION AND ACRONYM

AL Levels	Action and Limit Levels
DSD	Drainage Services Department
E / ER	Engineer/Engineer's Representative
EIA	Environmental Impact Assessment
EM&A	Environmental Monitoring and Audit
EMIS	Environmental Mitigation Implementation Schedule
EP	Environmental Permit
EPD	Environmental Protection Department
ET	Environmental Team
HVS	High Volume Sampler
IEC	Independent Environmental Checker
RE	Resident Engineer
RH	Relative Humidity
QA/QC	Quality Assurance / Quality Control
SLM	Sound Level Meter
WMP	Waste Management Plan
SCISTW	Stonecutters Island Sewage Treatment Works
HATS	Harbour Area Treatment Scheme

EXECUTIVE SUMMARY

Introduction

1. This is the 24th Consolidated Quarterly Environmental Monitoring and Audit (EM&A) Report summaries the key information of EM&A quarterly reports for the following construction contracts at the Stonecutters Island Sewage Treatment Works (SCISTW) under the Project of Harbour Area Treatment Scheme Stage 2A (the Project) and prepared by Cinotech Consultants Limited, the Environmental Team (ET) for Contract no. DC/2009/10, DC/2009/17 and DC/2009/18.
 - Contract no. DC/2007/23 – Construction of Sewage Conveyance System from North Point to Stonecutters Island;
 - Contract no. DC/2009/17 - Upgrading Works at Stonecutters Island Sewage Treatment Works – Sludge Dewatering Facilities; and
 - Contract no. DC/2009/10 - Upgrading Works at Stonecutters Island Sewage Treatment Works – Main Pumping Station, Sedimentation Tanks and Ancillary Facilities;
 - Contract no. DC/2009/18 - Upgrading Works at Stonecutters Island Sewage Treatment Works – Effluent Tunnel and Disinfection Facilities; and
2. The above-mentioned Contracts are under the same Environmental Permit (EP) No. EP-322/2008/G and separate ETs were appointed under each contract pursuant to Condition 2.1 of the EP.
3. This report is a contractual requirement under Contract No. DC/2009/10 to provide a consolidated quarterly summary of the EM&A works at SCISTW for the purpose of ease of references. Each Contract is administered under their respective contract by different project teams including the Engineer, the Engineer’s Representatives, the Contractor, and the ET.
4. The EM&A programme of Contract DC/2009/19 was commenced on 1 September 2013 and major construction works of this contract had been completed on 5 March 2015.
5. Contract DC/2007/23 in the SCISTW has completed all major construction works in the Stonecutters Island on 16 October 2015.
6. No amendment of the information in the EM&A reports for each individual contract was made in this consolidated quarterly report.
7. This Report documents the findings of EM&A Works for the Project covering the period from September 2015 to November 2015.
8. The details of the EM&A for individual contracts can be found in the separate EM&A quarterly reports. In case of ambiguity and discrepancy, the individual EM&A report shall prevail. The Executive Summaries and Web Sites for the individual contracts are shown below:

Table I Summary Table for Executive Summaries and Web Sites:

Contract no.	ES/Web Site	Details:
DC/2007/23	Executive Summary	At SCISTW, air quality monitoring station AM6 and noise monitoring station NM5 were monitored by ET for Contract no. DC/2007/23.
	Web Site	http://www.hats2a-ema.com/RP_EMA/DC200723/EMA%20Report-DC200723.html

DC/2009/17	Executive Summary	The air quality and noise monitoring stations under this contract were covered by other contracts at SCISTW. The monitoring data would be summarized in this monthly EM&A report.
	Web Site	http://www.hats2a-ema.com/RP_EMA/DC%202009%2017/EMA%20Report-DC200917.html
DC/2009/10	Executive Summary	At SCISTW, air quality monitoring station AM7, AM8 and noise monitoring station NM6 were monitored by ET for Contract no. DC/2009/10.
	Web Site	http://www.hats2a-ema.com/RP_EMA/DC200910/EMA%20Report-DC200910.html
DC/2009/18	Executive Summary	At SCISTW, air quality monitoring station AM9 and noise monitoring station NM7 were monitored by ET for Contract no. DC/2009/18.
	Web Site	http://www.hats2a-ema.com/RP_EMA/DC200918/EMA%20Report-DC200918.html

Environmental Monitoring Works

9. The environmental monitoring works were conducted by the ETs for the Contracts DC/2007/23, DC/2009/10 and DC/2009/18, while no monitoring work is requested for DC/2009/17 since the monitoring stations were duplicated. Site audits were conducted once per week for each contract by their ETs.

10. Summary of the non-compliance of the reporting quarter is tabulated in **Table II**.

Table II Summary Table for Non-compliance Recorded in the Reporting Quarter

Monitored By	Monitoring Station	Parameter	No. of Exceedance		No. of Exceedance Due to the Project		Action Taken
			Action Level	Limit Level	Action Level	Limit Level	
DC/2007/23 and DC/2009/10*	AM6	1-hr TSP	0	0	0	0	N/A
		24-hr TSP	0	0	0	0	N/A
DC/2009/10	AM7	1-hr TSP	0	0	0	0	N/A
		24-hr TSP	0	0	0	0	N/A
	AM8	1-hr TSP	0	0	0	0	N/A
		24-hr TSP	0	0	0	0	N/A
DC/2009/18	AM9	1-hr TSP	0	0	0	0	N/A
		24-hr TSP	0	0	0	0	N/A
DC/2007/23 and DC/2009/10*	NM5	Noise	0	0	0	0	N/A
	DC/2009/10 NM6		0	0	0	0	N/A
	DC/2009/18 NM7		0	0	0	0	N/A

Remark

* The monitoring works of NM5 and AM6 were taken over by DC/2009/10's ET on 16 October 2015 and 19 October 2015, respectively.

1-hour TSP Monitoring

11. All 1-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded.

24-hour TSP Monitoring

12. All 24-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded.

Construction Noise

13. All construction noise monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance for normal working hours and restricted hours was recorded.

Key Information in the Reporting Quarter

14. Summary of key information in the reporting quarter is tabulated in **Table III**.

Table III Summary Table for Key Information in the Reporting Quarter

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---
Status of submissions under EP	3	Monthly Consolidated EM&A Reports for SCISTW For September, October and November 2015	Submitted to EPD	No comment	---
Notifications of any summons & prosecutions received	0	--	N/A	N/A	---

Key Information in the EIA Report

15. According to the EIA Report, air quality, noise, water quality, ecology and landscape and visual would be the key environmental issues during the construction of the project. Details of the implementation of mitigation measures for the four contracts are provided in the **Appendix H**.

1. INTRODUCTION

Background

- 1.1 Harbour Area Treatment Scheme (HATS) Stage 2A is a designated project with Register No.: AEIAR-121/2008. The Environmental Permit (Permit No. EP-322/2008/G) was issued on 9th May 2014 by the Environmental Protection Department (hereinafter called EPD) to the Drainage Services Department (hereinafter called the DSD) as the Permit Holder.
- 1.2 The general location plan for the Contracts: DC/2007/23, DC/2009/10, DC/2009/17 and DC/2009/18 are shown in **Figure 1** and **2**.
- 1.3 The environmental permit (EP) was issued for the whole HATS Stage 2A construction works. The ET for the Contract DC/2009/10 is responsible to coordinate all submissions from the ETs of other contractors at SCISTW as required in the EP, EIA Report and EM&A Manual for the Project.
- 1.4 The 1st to 3rd consolidated quarterly EM&A reports were prepared by Ove Arup & Partners Hong Kong Ltd (Arup) and submitted to EPD. From November 2010 and onwards, the 4th and subsequent consolidated quarterly EM&A report will be prepared and submitted by Cinotech Consultant Limited, the ET for the Contract DC/2009/17, DC/2009/10 and DC/2009/18.
- 1.5 This is the 24th consolidated quarterly EM&A report summarizing the EM&A works conducted for the Project at SCISTW during September 2015 to November 2015.
- 1.6 The quarterly EM&A reports for each contract were prepared and certified by separate ETs and subsequently verified by the Independent Environmental Checker (IEC) for the Project. All individual quarterly EM&A Reports are provided in the Project Website.
- 1.7 The environmental monitoring works in the Project were covered by the ETs for the Contracts: DC/2007/23 (AM6 and NM5 until 15 October 2015), DC/2009/10 (AM6, AM7, AM 8; NM5 and NM6 from 15 October 2015 onward) and DC/2009/18 (AM9 and NM7).

Current Contracts at SCISTW

- 1.8 The major Contracts at SCISTW and their scope of works are provided below:

Contract no. DC/2007/23

- Construction of sewage conveyance system between Sai Ying Pun junction shaft and Stonecutters Island Sewage treatment Works;
- Construction of riser shaft at Stonecutters Island Sewage Treatment Works;
- Construction of Stage 2 Connecting Adit between the riser shaft and Stage 2 Main Pumping Station side chamber (by others) at Stonecutters Island Sewage Treatment works.

Contract no. DC/2009/10

- Construction of a main pumping station;
- The extension of chemically enhanced primary treatment tanks; and
- The construction of other ancillary facilities at Stonecutters Island Sewage Treatment Works.

Contract no. DC/2009/17

- Demolition of the existing structures including vehicle washing facilities, Sludge Silo Building, Sludge Dewatering Building, process water storage tanks, polyelectrolyte storage tanks, ADF barging facilities and all associated plant and equipment;

- Construction of Sludge Dewatering Building, Sludge Cake Silos, Sludge Conveyor Bridges, Sludge Storage Tank, Deodourisation Units, Workshop Building, Process Water Storage Tanks and Pumping System;
- Construction of roof landscaping including irrigation system for the Sludge Dewatering Building and Workshop Building;
- Construction of chemical unloading facilities and the chemical pipe trench for the Disinfection Facilities; and
- Construction of associated Electrical, Mechanical, Building Services, Fire Services and Process Installation, Odour Control System and Temporary Vehicle Wash Facilities.

Contract no. DC/2009/18

- The Construction of an 880m long effluent tunnel at Stonecutters Island; and
- The Construction of disinfection facilities at Stonecutters Island Sewage Treatment Works (SCISTW).

Project Organizations

1.9 The key contacts of current contracts are provided in **Table 1.1**.

Table 1.1 Key Project Contacts

Contract No./ Position	DC/2007/23	DC/2009/10
Contract Title:	Construction of Sewage Conveyance System from North Point to Stonecutters Island;	Upgrading Works at SCISTW - Main Pumping Station, Sedimentation Tanks and Ancillary Facilities
Consultant	Metcalf & Eddy – AECOM JV	Ove Arup & Partners HK Ltd
The Engineer	Keith Tsang (Tel:2605 6262)	S.Y.Chan (Tel: 2528 3031)
The Engineer Representative	Y.H. Fung (Tel: 3713 3110)	Mr Ted Tang (Tel: 2370 4311)
ER's Coordinator	Y.H. Fung (Tel: 3713 3110)	Ms Natalie Kwok (Tel: 6794 8844)
Independent Environmental Checker	Dr. Anne Kerr (Tel:28285757)	Dr. Anne Kerr (Tel:28285757)
Contractor	Gammon Construction Ltd	Sun Fook Kong – Biwater Joint Venture
Site Agent	Max Ko (Tel: 9033 1292)	Mr. Ivan Tse (Tel: 6200 2149)
Environmental Officer	Leo Chow (Tel:9300 2013)	Mr. Albus Cheung (Tel: 2620 0070)
Environmental Team	Environmental Resources Management Ms. Mandy To (Tel: 2271 3000)	Cinotech Consultant Limited Dr. Priscilla Choy (Tel: 2151 2089)

Table 1.1(cont'd) Key Project Contacts

Contract No.	DC/2009/17	DC/2009/18
Contract Title:	Upgrading Works at Stonecutters Island Sewage Treatment Works – Sludge Dewatering Facilities	Upgrading Works at Stonecutters Island Sewage Treatment Works – Effluent Tunnel and Disinfection Facilities
Consultant	Ove Arup & Partners HK Ltd	Ove Arup & Partners HK Ltd
The Engineer	S.Y.Chan (Tel: 2528 3031)	S.Y.Chan (Tel: 2528 3031)
The Engineer Representative	Mr Ted Tang (Tel: 2370 4311)	Mr Ted Tang (Tel: 2370 4311)
ER's Coordinator	Mr Jason Yu (Tel: 2371 9407)	Mr Jason Yu (Tel: 2371 9407)
Independent Environmental Checker	Dr. Anne Kerr (Tel:28285757)	Dr. Anne Kerr (Tel:28285757)
Contractor	China State- ATAL Joint Venture	Chun Wo – CEC Joint Venture
Site Agent	Charles Tse (Tel: 9270 3384)	Mr. W.C. Lee (Tel: 3975 6388)
Environmental Officer	K.K Tam (Tel: 2370 3010)	Mr. Shelton Chan (Tel: 3975 6331)
Environmental Team	Cinotech Consultant Limited Dr. Priscilla Choy (Tel: 2151 2089)	Cinotech Consultant Limited Dr. Priscilla Choy (Tel: 2151 2089)

Construction Programme

- 1.10 The construction program for the Contracts at SCISTW are provided in **Appendix L**. Major construction works undertaken during the reporting quarter include:

Table 1.2 Construction Works in the Reporting Quarter

Contract No.	Construction Works in the Reporting Quarter
DC/2007/23	<p><u>September 2015:</u> Production Shaft (Tunnel L):</p> <ul style="list-style-type: none"> • Backfilling works. <p><u>October 2015:</u> Production Shaft (Tunnel L):</p> <ul style="list-style-type: none"> • Breaking work of D wall and noise enclosure footing. <p><u>November 2015:</u> N/A</p>
DC/2009/17	<p><u>September 2015:</u> Portion 5:</p> <ul style="list-style-type: none"> • Fabrication of steel staircase at SST no. 7 was delivered on site and will be installed after piling works. <p>Portion 6:</p> <ul style="list-style-type: none"> • Section 5 piling works for Southern Sludge Cake Silos (SSCS) were completed and piling works for Workshop Building (WB) were in progress. <p>External Works:</p> <ul style="list-style-type: none"> • SWAC / PMAC submission and implementation of TTA for the commencement of external works were in progress.

	<ul style="list-style-type: none"> • Connection of sludge feed pipes between existing sludge storage tank nos. 3 & 4 at Zone C5 was completed. The installation of jet mixer was in progress. • The construction of underground utilities at Zone B7 was in progress. • Laying of watermains at Zone A1 was in progress. <p><u>October 2015:</u> Portion 5:</p> <ul style="list-style-type: none"> • Fabrication of steel staircase at SST no. 7 was delivered on site. <p>Portion 6:</p> <ul style="list-style-type: none"> • Section 5 piling works for Southern Sludge Cake Silos (SSCS) were completed and piling works for Workshop Building (WB) were in progress. <p>External Works:</p> <ul style="list-style-type: none"> • SWAC / PMAC submission and implementation of TTA for the commencement of external works were in progress. • Connection of sludge feed pipes between existing sludge storage tank nos. 3 & 4 at Zone C5 was completed. The installation of jet mixers for the said tanks was completed. • The construction of underground utilities at Zone B7 was completed. • Laying of watermains at Zone A1 was in progress. • Construction of Sludge Feed Pipe (SF2) and pile cap of Southern Sludge Cake Silo (SSCS) were in progress. <p><u>November 2015:</u> Portion 5:</p> <ul style="list-style-type: none"> • Fabrication of steel staircase at SST no. 7 was delivered on site and will be installed after piling works. <p>Portion 6:</p> <ul style="list-style-type: none"> • Section 5 piling works for Southern Sludge Cake Silos (SSCS) were completed and piling works for Workshop Building (WB) were in progress. • Section 5 piling works for Southern Sludge Cake Silos (SSCS) and Workshop Building (WB) were completed. • Construction of sub structure of Southern Sludge Cake Silos (SSCS) was in progress. <p>External Works:</p> <ul style="list-style-type: none"> • Connection of sludge feed pipes between existing sludge storage tank nos. 3 & 4 at Zone C5 was completed. The installation of jet mixers for the said tanks was completed. • The construction of underground utilities at Zone B7 was completed. • Laying of watermains at Zone A1 was in progress. • Construction of Sludge Feed Pipe (SF2) and pile cap of Southern Sludge Cake Silo (SSCS) were in progress.
DC/2009/10	<p><u>September 2015:</u></p> <ul style="list-style-type: none"> • At MPS2, installation of remaining sub-frame of curtain wall and glass panel was completed. • For E&M works, Installation of sparge & air mixing pipe inside wet well wall (Hall A Side) was completed. Installation of temporary bulkhead at wet well wall (Hall A) was completed and water tightness test is in progress. The preparation work for DCS system & cooling pipe system for pump performance test of pump No. 5,6,7 & 8 was in progress. • At Portion 3, Installation of FRP arch covers, sludge scraper at new PSTs and air diffusion system in main distribution channel and flocculation tank were

	<p>in progress. Sump pit modification works at existing PST#10, 12, 34~37 were in progress.</p> <ul style="list-style-type: none">• Electrical & DCS installation at CEPT was in progress.• At Main flow culvert, the water tightness test for B side was completed.• At Portion 8, Coorocoat lining application of steel tank at Sodium Hypochlorite Storage Compound was in progress. Erection of steel truss and connection of bund wall area between new & existing SHSC was in progress.• At Portion 5, the construction of beam and slab at ground floor was in progress.• At Portion 6, the installation of waterproofing membrane on existing diaphragm wall up to -3.35mPD was completed. Installation of DN3600 KGV was also completed.• At DOU3, construction of storm drain along the footpath was completed.• At Portion 4, the sewer drainage between FM1A and FM4 along Service Ducts Type 1 & 2 near MPS2 was completed. The construction of storm drain at the area between MPS 2 and Switchgear Building was in progress. <p><u>October 2015:</u></p> <ul style="list-style-type: none">• For E&M works, Installation of sparge & air mixing pipe inside wet well wall (Hall A Side) was completed. Installation of temporary bulkhead at wet well wall (Hall A) was completed and water tightness test is in progress. The preparation work for DCS system & cooling pipe system for pump performance test of pump No. 5,6,7 & 8 was in progress.• At Portion 3, Installation of FRP arch covers, sludge scraper at new PSTs and air diffusion system in main distribution channel and flocculation tank were in progress. Sump pit modification works at existing PST#10,12,34~37 were in progress.• Electrical & DCS installation at CEPT was in progress.• At Portion 4, construction of chemical pipe trench near DOU2 was in progress.• At the area between MPS2 and AGB, the construction of catchpits and U-channels was in progress.• At Portion 8, Coorocoat lining application of steel tank at Sodium Hypochlorite Storage Compound was in progress. Erection of steel truss and connection of bund wall area between new & existing SHSC was in progress.• At Portion 5, the construction of beam and slab at ground floor was in progress.• At Portion 6, the construction of wing wall was in progress. <p><u>November 2015:</u></p> <ul style="list-style-type: none">• At MPS2, Planting works for Green Roof System was in progress and FRP staircase between MPS2 and Odour Duct Bridge was completed. For E&M works, Installation of MVAC, F.S and E.L system and pump performance test for pump No.1-4 were in progress.
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	<ul style="list-style-type: none"> • At Portion 3, Construction of Scum pump room no.13 and scum pipe trench was completed. FRP cover .Electrical & DCS installation and Testing & Commissioning of Sludge pump, Sludge scrapers & Air blowers at CEPT were in progress. • At Portion 8, Erection of roof cladding at Sodium Hypochlorite Storage Compound was in progress. For E&M works, installation of permanent pipes and dosing pumps was completed and electrical cabling was in progress. • At Portion 5, ABWF works for Kiosk at Inlet Chamber was in progress. Installation of sump pump pipeworks & flushing water system was in progress. • At Portion 6, Installation of DN3600 KGV was completed and the leakage test was in progress. The water tightness test for RC manifold was completed and the installation of waterproof membrane was in progress. • At Portion 7, Polymer Storage Building, the set up for Wheel Wash Machine was completed.
DC/2009/18	<p><u>September 2015:</u></p> <p><u>Portion 3:</u></p> <ul style="list-style-type: none"> • Remedial Work of Tunnel Lining at Riser Shaft & its Tunnel Extension; • Concreting at Chamber 15A; • ABWF Works, Steel Works and E&M Equipment Installation at Dechlorination Compound. <p><u>Portion 7:</u></p> <ul style="list-style-type: none"> • Remedial Work of Tunnel Lining at Drop Shaft & its Tunnel Extension; • Excavation & Lateral Support and Concreting at FDC No. 2; • Concrete Wall Opening & Installation of Temporary Water Gate at FDC No. 1; and • E&M Equipment Installation of DOU4. <p><u>October 2015:</u></p> <p><u>Portion 3:</u></p> <ul style="list-style-type: none"> • Remedial Work of Tunnel Lining at Riser Shaft & its Tunnel Extension; and • ABWF Works, Steel Works and E&M Equipment Installation at Dechlorination Compound. <p><u>Portion 7:</u></p> <ul style="list-style-type: none"> • Remedial Work of Tunnel Lining at Drop Shaft & its Tunnel Extension; • Concrete Wall Opening & Installation of Temporary Water Gate at FDC No. 1; and • E&M Equipment Installation of DOU4. <p><u>November 2015:</u></p> <p><u>Portion 3:</u></p> <ul style="list-style-type: none"> • Installation of FRP Cover at Chamber 15A; • ABWF Works, Steel Works and E&M Equipment Installation at Dechlorination Compound; • Installation of E&M Equipment at DOU 8; • Installation of E&M Equipment at Entry Culvert, Permanent Flow Diversion and Pre-bored sheetpiling at Overflow Culvert <p><u>Portion 7:</u></p> <ul style="list-style-type: none"> • Installation of E&M Equipment and FRP Cover at FDC No. 2;

	<ul style="list-style-type: none">• Concrete Wall Opening (by coring) & Installation of Temporary Water Gate at FDC No. 1;• Construction of Switchroom and Installation of E&M Equipment at DOU 4 and Permanent Flow Diversion
--	---

Summary of EM&A Requirements

- 1.11 The EM&A programme requires construction phase monitoring for air quality and construction noise, landscape and visual and environmental site audit. The EM&A requirements for each parameter are described in the following sections, including:
- All monitoring parameters;
 - Action and Limit levels for all environmental parameters;
 - Event Action Plans;
 - Environmental mitigation measures, as recommended in the project EIA study final report; and
 - Environmental requirements in contract documents.
- 1.12 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 4 of this report.
- 1.13 This report summarized the monitoring results, observations, locations, equipment, period, for required monitoring parameter namely dust, noise levels, and audit works conducted for the Project from September 2015 to November 2015, and the methodology and QA/QC procedures of the monitoring parameters.

2. AIR QUALITY

Monitoring Requirements

- 2.1 1-hour and 24-hour TSP monitoring were conducted to monitor the air quality. **Appendix A** shows the established Action/Limit Levels for the environmental monitoring works.

Monitoring Locations

- 2.2 Four designated monitoring stations, AM6, AM7, AM8 and AM9 were selected for impact dust monitoring. **Table 2.1** describes the air quality monitoring locations, which are also depicted in **Figure 1**.

Table 2.1 Locations for Air Quality Monitoring

Monitoring Station	Responsible Contracts	Location of Measurement
AM6	DC/2007/23 and DC/2009/10*	Works site boundary of DC/2007/23
AM7	DC/2009/10	North West Kowloon Sewage Pumping Station
AM8		Block A of Government Dockyard
AM9	DC/2009/18	Work Site Boundary (Near Ngong Shuen Chau Barracks Group 2)

Remark

* The monitoring works of AM6 was taken over by DC/2009/10's ET on 19 October 2015

Monitoring Equipment

- 2.3 The equipment used in the impact air monitoring programme and the copies of calibration certificates could be referred to the relevant monthly reports for the respective contracts.

Monitoring Parameters, Frequency and Duration

- 2.4 Table 2.2 summarizes the monitoring parameters and frequencies of impact dust monitoring for the whole construction period.

Table 2.2 Impact Dust Monitoring Parameters, Frequency and Duration

Monitoring Station	Parameter	Period	Frequency
All monitoring locations	1-hour TSP	0700-1900	3 times/ every 6 days
	24-hour TSP	0000-2400	once in every 6 days

Monitoring Methodology and QA/QC Procedure

- 2.5 The monitoring methodology, QA/QC procedure and copies of calibration certificates for monitoring equipment could be refer to the relevant monthly reports for respective Contract.

Results and Observations

- 2.6 **Table 2.3** summaries the air quality monitoring results at AM6, AM7, AM8 and AM9 in reporting quarter.

Table 2.3 Summary of 1-hour and 24-hour TSP Monitoring Results

Air Quality Monitoring Station	Reporting Month	Average μgm^{-3}	Range μgm^{-3}	Action Level μgm^{-3}	Limit Level μgm^{-3}
1 hour TSP					
AM6	Sep 2015	138	112 - 179	346	500
	Oct 2015	137	68 - 251		
	Nov 2015	115	30 - 229		
AM7	Sep 2015	112	26 - 245	322	
	Oct 2015	190	127 - 252		
	Nov 2015	160	76 - 227		
AM8	Sep 2015	98	20 - 192	307	
	Oct 2015	157	99 - 217		
	Nov 2015	131	57 - 198		
AM9	Sep 2015	107.4	26.8 - 200.3	318	
	Oct 2015	184.6	120.9 - 262.6		
	Nov 2015	136.0	75.6 - 173.6		
24 hour TSP					
AM6	Sep 2015	80	70 - 95	196	260
	Oct 2015	101	71 - 138		
	Nov 2015	83	60 - 100		
AM7	Sep 2015	93	59 - 128	207	
	Oct 2015	146	125 - 164		
	Nov 2015	136	93 - 148		
AM8	Sep 2015	36	23 - 49	158	
	Oct 2015	66	33 - 103		
	Nov 2015	49	35 - 71		
AM9	Sep 2015	62.7	45.3 - 92.6	169	
	Oct 2015	85.2	32.7 - 121.9		
	Nov 2015	76.4	58.7 - 87.2		

- 2.7 All 1-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded. Summary of exceedance is presented in **Appendix E**.
- 2.8 All 24-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded. Summary of exceedance is presented in **Appendix E**.
- 2.9 The graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in **Appendix B**.
- 2.10 According to field observations, the identified dust sources at the monitoring stations were mainly from loading of material, vehicles movement and construction works in site.

3. NOISE

Monitoring Requirements

- 3.1 Three noise monitoring stations, namely NM5, NM6 and NM7 were designated in the EM&A Manual for impact monitoring. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

Monitoring Locations

- 3.2 Noise monitoring was conducted at two designated monitoring stations as listed in **Table 3.1**. **Figure 1** shows the locations of these stations.

Table 3.1 Noise Monitoring Stations

Monitoring Station	Responsible Contracts	Location of Measurement
NM5	DC/2007/23 and DC/2009/10*	Near FSD Diving Rescue and Training Centre
NM6	DC/2009/10	Customs' Marine Base
NM7	DC/2009/18	Open Area near Naval Base Barrack

Remark

* The monitoring works of NM5 was taken over by DC/2009/10's ET on 16 October 2015.

Monitoring Equipment

- 3.3 The equipment used in the impact noise monitoring programme and the copies of calibration certificates could be referred to the relevant monthly report for respective contracts.

Monitoring Parameters, Frequency and Duration

- 3.4 **Table 3.2** summarizes the monitoring parameters, frequency and total duration of monitoring.

Table 3.2 Noise Monitoring Parameters, Frequency and Duration

Monitoring Stations	Parameter	Period	Frequency
NM5	$L_{eq}(30 \text{ min.})$ dB(A)	0700-1900 hrs on weekdays	Once per week
NM6 NM7	$L_{eq}(5 \text{ min.})$ dB(A)	During restricted hours	Weekly monitoring to be conducted during the construction works

Monitoring Methodology and QA/QC Procedures

- 3.5 The monitoring methodology, copies of calibration certificates for monitoring equipments and QA/QC procedure could be refer to the relevant monthly reports for Contract DC/2007/23, DC/2009/10 and DC/2009/18.

Results and Observations

- 3.6 **Table 3.3** summaries the noise monitoring results at NM5, NM6 and NM7 in reporting quarter.

Table 3.3 Summary of Noise Monitoring Results

For the time period 0700-1900 hrs. on weekdays			
Monitoring Station	Reporting Month	Range, dB(A) L _{eq} (30 min.)	Limit Level ,dB(A) L _{eq} (30 min.)
NM5	Sep 2015	62 – 66	75.0
	Oct 2015	64.0 – 74.1	
	Nov 2015	67.9 - 68.7	
NM6	Sep 2015	63.4 – 66.7	
	Oct 2015	64.7 - 70.4	
	Nov 2015	64.3 - 68.1	
NM7	Sep 2015	67.8 - 70.6	
	Oct 2015	68.4 - 70.4	
	Nov 2015	69.5 - 73.5	
For the time period 1900-2300 hrs on weekdays/ For the time period 0700-2300 hrs on Public Holiday			
NM5 ⁽¹⁾	Sep 2015	56 - 59	70.0
	Oct 2015	57.0 - 61.3	
NM7	Sep 2015	64.2 - 64.5	
	Oct 2015	63.8 - 64.8	
	Nov 2015	63.3 - 64.9	
All days during 2300 to 0700 hours of the next day			
NM7	Sep 2015	57.8 - 58.6*	55.0
	Oct 2015	58.2 - 58.6*	
	Nov 2015	58.5 - 58.7*	

Remarks:

- * Since the construction noise levels recorded in restricted hour from 23:00 to 07:00 of the next day were lower than the baseline level (i.e. 59.7 dB (A)), the recorded noise levels were considered non-valid exceedance of Limit Level.
- ⁽¹⁾ 1900-2300 hours noise monitoring was not conducted in November as no construction work was conducted during restricted hours.

- 3.7 All construction noise monitoring at two designated locations were conducted by their ETs as scheduled in the reporting quarter.
- 3.8 No Action/Limit Level exceedance of Noise in normal working hours and restricted hours was recorded in the reporting quarter. Summary of exceedance is presented in **Appendix G**.
- 3.9 The graphical presentations of Noise monitoring results are shown in **Appendix C**.
- 3.10 The major noise sources identified at the designated noise monitoring stations during day time were the noise generated from onsite trucks movement, concreting work and the traffic noise from the Container Port Road South close to the site boundary of the SCISTW; while the major noise sources identified during the evening and night time period was the construction works of Contract No: DC/2009/18 and traffic noise from the nearby Container Port Road South and Stonecutters Bridge.

4 ENVIRONMENTAL AUDIT

Site Audits

- 4.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in each Project site.
- 4.2 No non-compliance was observed during the site audits.
- 4.3 Site inspections were undertaken to ensure and check that the implementation and maintenance of landscape and visual mitigation measures are being properly carried out in the reporting quarter in accordance to section 11.10 of the EM&A Manual. No non-compliance was observed during the site inspections.
- 4.4 The summaries of site audits for the four contracts were extracted from their reports and presented in **Appendix F**.

Review of Environmental Monitoring Procedures

- 4.5 The monitoring works conducted by the monitoring team of respective Contracts and were inspected regularly by their ETs.

Status of Environmental Licensing and Permitting

- 4.6 All permits/licenses obtained for the each Contract are summarized in **Appendix D**.

5 STATUS OF WASTE MANAGEMENT

5.1 The amount of wastes generated by the activities of contracts in the reporting quarter is the following:

Table 5.1 Summary of Amount of Waste Generated in Reporting Quarter

Contract	Reporting Month	Inert C&D ¹ Materials	Other C&D ² Waste	Chemical Waste	Marine Deposit		
					Type 1 (m ³)	Type 2 (m ³)	Type 3 (Tonnes)
DC/2007/23	Sep 2015	1,892(m ³)	210(m ³)	0	0*	0*	0*
	Oct 2015	1,436(m ³)	118(m ³)	0	0*	0*	0*
	Nov 2015	-	-	-	-	-	-
DC/2009/10	Sep 2015	261(m ³)	65(kg) and 60(m ³)	0	0	0	0
	Oct 2015	569(m ³)	184,890(kg) and 73(m ³)	0	0	0	0
	Nov 2015	476(m ³)	120(kg) and 50(m ³)	0	0	0	0
DC/2009/17	Sep 2015	2,330(m ³)	3(ton)	0	0	0	0
	Oct 2015	2,303(m ³)	15(ton)	0	0	0	0
	Nov 2015	2920(m ³)	18(ton) and 8(ton)	0	0	0	0
DC/2009/18	Sep 2015	51(m ³)	45,210(kg) and 126(m ³)	528(kg)	0	0	0
	Oct 2015	144(m ³)	125(m ³)	0	0	0	0
	Nov 2015	349(m ³)	1,750(kg) and 23(m ³)	0	0	0	0

*: The amount of waste generated is from all sites in this Contract.

1: Inert C&D Materials includes Broken Concrete/Rock, Inert C&D waste reused in the Contract/other Project and those disposed to Public Fill.

2: Other C&D Waste includes Metals, Paper Cardboard packaging, plastic and other General Refuse.

5.2 The disposal location of wastes generated by the activities of the four contracts is the following:

Table 5.2 Summary of Disposal Location of Waste Generated in Reporting Quarter

Contract No.	Disposal Location of Wastes in Report Quarter
DC/2007/23	Chai Wan Barging Point, TKO Area 137 and Tuen Mun Area 38; No non-inert C&D waste was disposed during the reporting period.
DC/2009/10	Tuen Mun Area 38 Fill Bank and NENT Landfill
DC/2009/17	Tuen Mun Area 38 Fill Bank and NENT Landfill
DC/2009/18	Lam Tei Quarry, Tuen Mun Area 38 Fill Bank and NENT Landfill and Tseung Kwan O Area 137 Fill Bank

Landscape and Visual Monitoring

5.3 Landscape and visual monitoring as described in the EM&A Manual has been implemented in the individual Contracts.

The major findings and recommendations are summarized as below:

Contract No. DC/2007/23

- 5.4 Referring to the quarterly report of Contract No. DC/2007/23, implementation and maintenance of landscape and visual mitigation measures are fully achieved and no major findings were observed during the reporting quarterly period.

Contract No. DC/2009/17

- 5.5 Three landscape and visual audits were conducted within the environmental site inspection conducted in reporting period and the implementation and maintenance of landscape and visual mitigation measures are fully achieved and no major findings were observed during the reporting quarterly period.

Contract No. DC/2009/10

- 5.6 Three landscape and visual audits were conducted within the environmental site inspection conducted in reporting period and the implementation and maintenance of landscape and visual mitigation measures are fully achieved and no major findings were observed during the reporting quarterly period.

Contract No. DC/2009/18

- 5.7 Three landscape and visual audits were conducted within the environmental site inspection conducted in reporting period and 1 finding was observed during the reporting quarterly period:
- Construction works should be carried out outside tree protection zone and tree protection zone should be well-maintained (Portion 7).

Implementation Status of Environmental Mitigation Measures

- 5.8 Details of the implementation of mitigation measures for the five contacts are provided in the **Appendix H**.
- 5.9 In the weekly environmental site inspections during the reporting quarterly period, no non-conformance was identified. The observations and recommendations for the Projects are summarized in **Appendix F**.

Implementation Status of Event Action Plans

- 5.14 The Event Action Plans for air quality and noise are presented in **Appendix G**.

1-hr TSP

- 5.15 No Action/Limit Level exceedance was recorded.

24-hr TSP

- 5.16 No Action/Limit Level exceedance was recorded.

Construction Noise

5.17 No Action/Limit Level exceedance for normal working hours and restricted hours was recorded.

Landscape and Visual

5.18 No non-compliance was recorded.

Summary of Complaints and Prosecutions

5.19 No environmental complaint and prosecution was received at SCISTW for the four contracts during the reporting quarterly period.

5.20 There was a total of 1 project-related environmental complaint received since the commencement of the four contracts. The Complaint Log is presented in **Appendix I**.

6. FUTURE KEY ISSUES

Key Issues for the Coming Quarter

6.1 Key environmental issues in the coming quarter include:

- Generation of dust from stockpiles of excavated and dusty materials, unpaved site area and vehicle movement, roadworks, excavation works and loading and unloading dusty materials on-site;
- Noise from operation of equipment and machinery on-site;
- Storage of chemicals/fuel and chemical waste/waste oil on-site;
- Ponding water generated in pre-drillings;
- Drainage system should be well designed and maintained to prevent flooding and silty water getting into the public area;
- Oil leakage from equipment and spillage;
- Silty surface runoff generated from the site area during raining;
- Dust generation should be mitigated by adequate water spraying, especially in dry days;
- Stockpile should be covered by tarpaulin to reduce dust generation;
- Silt and dust getting into the public area by the leaving site vehicles at the site exits without adequate wheel washing facilities; and
- Proper tree and shrub protection works should be provided when carrying out works near existing trees and shrubs.

Construction Program for the Coming Quarter

6.2 The tentative construction programs for respective Contracts are provided in **Appendix J**.

7 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 7.1 Environmental monitoring and audit works were performed in the reporting quarter and all monitoring results were checked and reviewed.

1-hour TSP Monitoring

- 7.2 All 1-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded.

24-hour TSP Monitoring

- 7.3 All 24-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded.

Construction Noise Monitoring

- 7.4 All construction noise monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance for normal working hours and restricted hours was recorded.

Environmental Audit

- 7.5 Environmental site audits were conducted as weekly basis in the reporting quarter. No non-compliance was recorded.

Complaint and Prosecution

- 7.6 There are no environmental related summonses, prosecutions and complaints in the reporting quarter.

Recommendations

- 7.7 The following recommendations were made for the coming reporting quarter:

Dust Impact

- To regularly maintain the machinery and vehicles on site;
- To mitigate dust generation by adequate water spraying or covering by tarpaulin during dry days;
- To cover the stockpile with tarpaulin to reduce dust generation;
- To follow up any exceedance caused by the construction works; and
- To implement dust suppression measures on all haul roads, stockpiles, dried/unpaved surfaces and excavation/road breaking works.

Noise Impact

- To inspect the noise sources inside the site;
- To follow up any exceedance caused by the construction works;
- To space out noisy equipment and position the equipment as far away as possible from

- sensitive receivers; and
- To provide temporary noise barriers for operations of noisy equipment near the noise sensitive receivers in an appropriate location.

Water Impact

- To identify any potential discharge of surface run-off from the construction site;
- To avoid water accumulation on site and carry out larviciding against mosquito breeding for stagnant water when mosquito larvae are observed;
- To clear the sediment in the wastewater treatment tanks regularly;
- To provide adequate wastewater treatment facilities to treat the wastewater generated during construction works and heavy rain; and
- The discharged water quality must meet the requirements specified in the discharge licence.

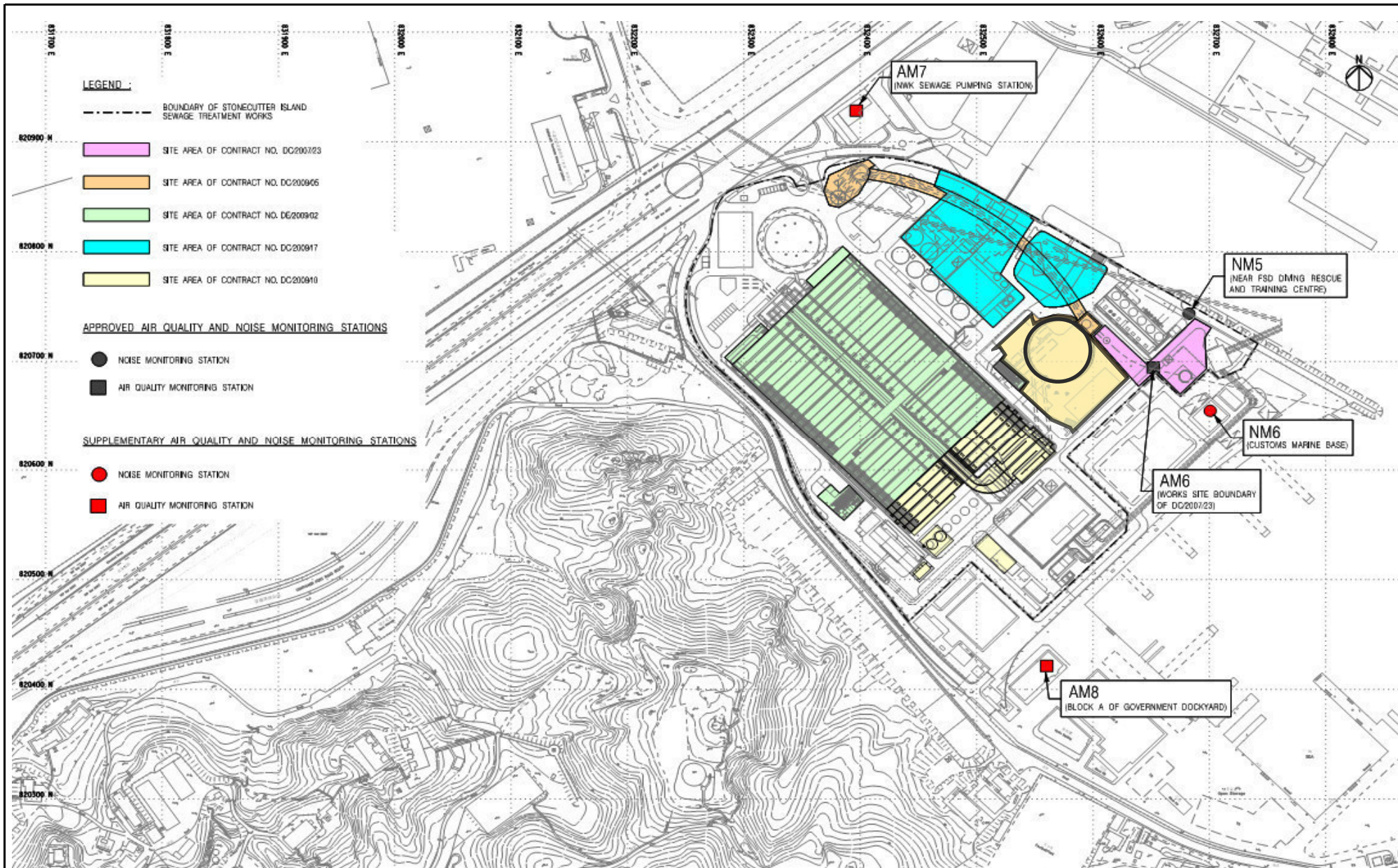
Waste/Chemical Management

- To provide proper rubbish bins / skips for waste collection;
- To check for any accumulation of wasted materials or rubbish on site;
- To provide proper storage area or drip trays for oil containers/ equipments on site;
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the equipment;
- To well maintain the equipments and drip trays to avoid oil leakage; and
- To avoid improper handling or storage of oil drum on site.

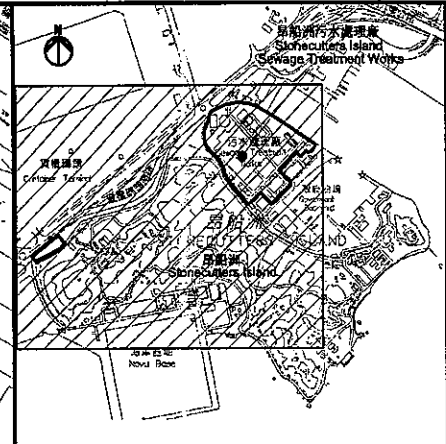
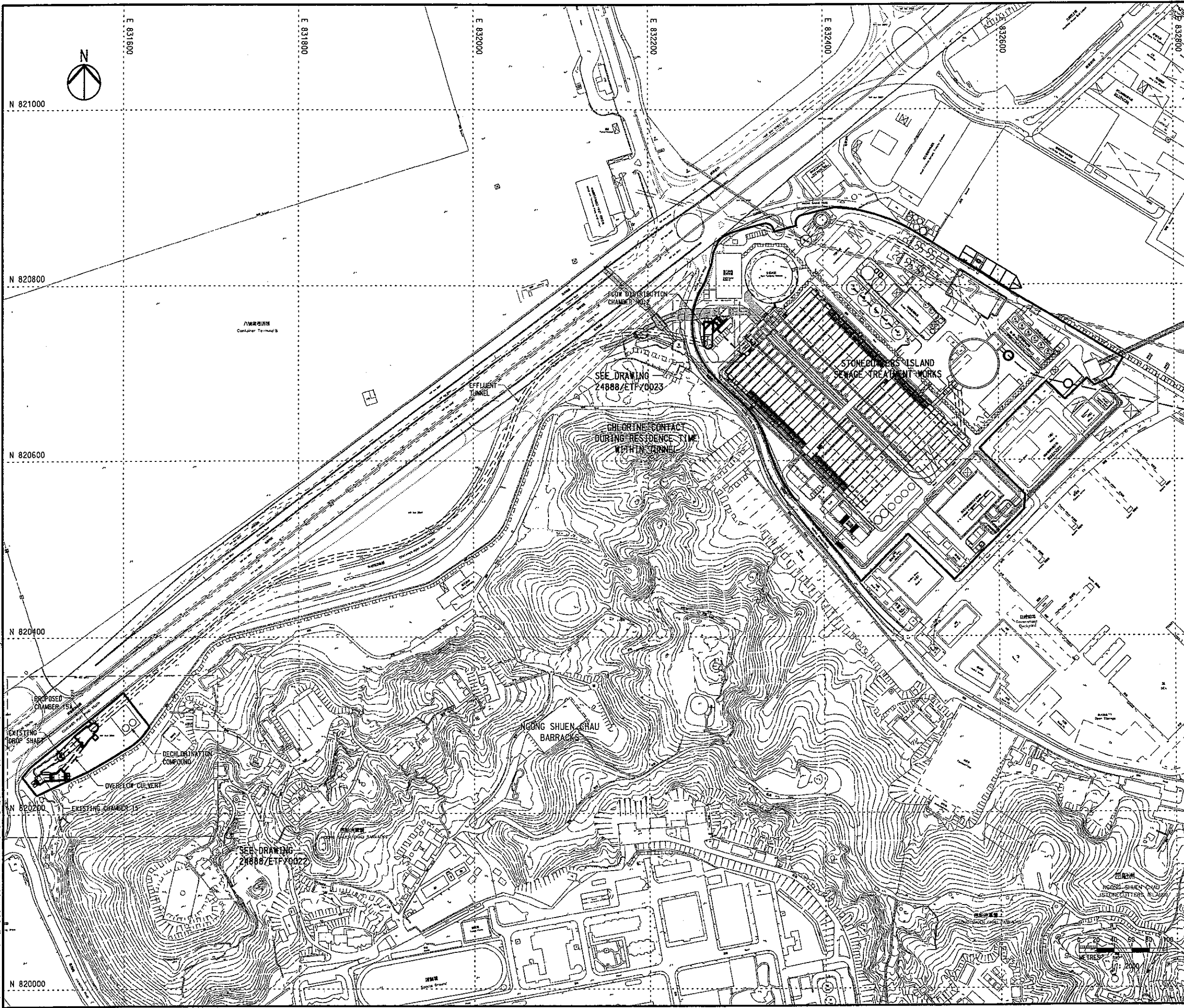
Landscape and Visual

- To erect and maintain the protection fence around the retained tree; and
- To avoid any construction materials being placed within tree protection zone.

FIGURES



Title	Contract No: DC/2009/10 HATS 2A - Upgrading Main Pumping Station, Sedimentation Tanks and Ancillary Facilities at SCISTW	Scale N.T.S	Project No. MA11007	CINOTECH
	General Location Plan of the Project and Locations of Air Quality and Noise Monitoring Stations	Date 8/2011	Figure 1A	



KEY PLAN

LEGEND:

- BOUNDARY OF SCISTW
- ALIGNMENT OF EFFLUENT TUNNEL

0	ISSUE FOR CONSTRUCTION	PW	06/11
Rev	Description	By	Date

Consultant
ARUP 奧雅納工程顧問
 Ove Arup & Partners Hong Kong Limited

Project title
 Contract No. DC/2009/18
 Harbour Area Treatment Scheme Stage 2A-
 Upgrading Works at
 Stonecutters Island Sewage Treatment Works-
 Effluent Tunnel and Disinfection Facilities

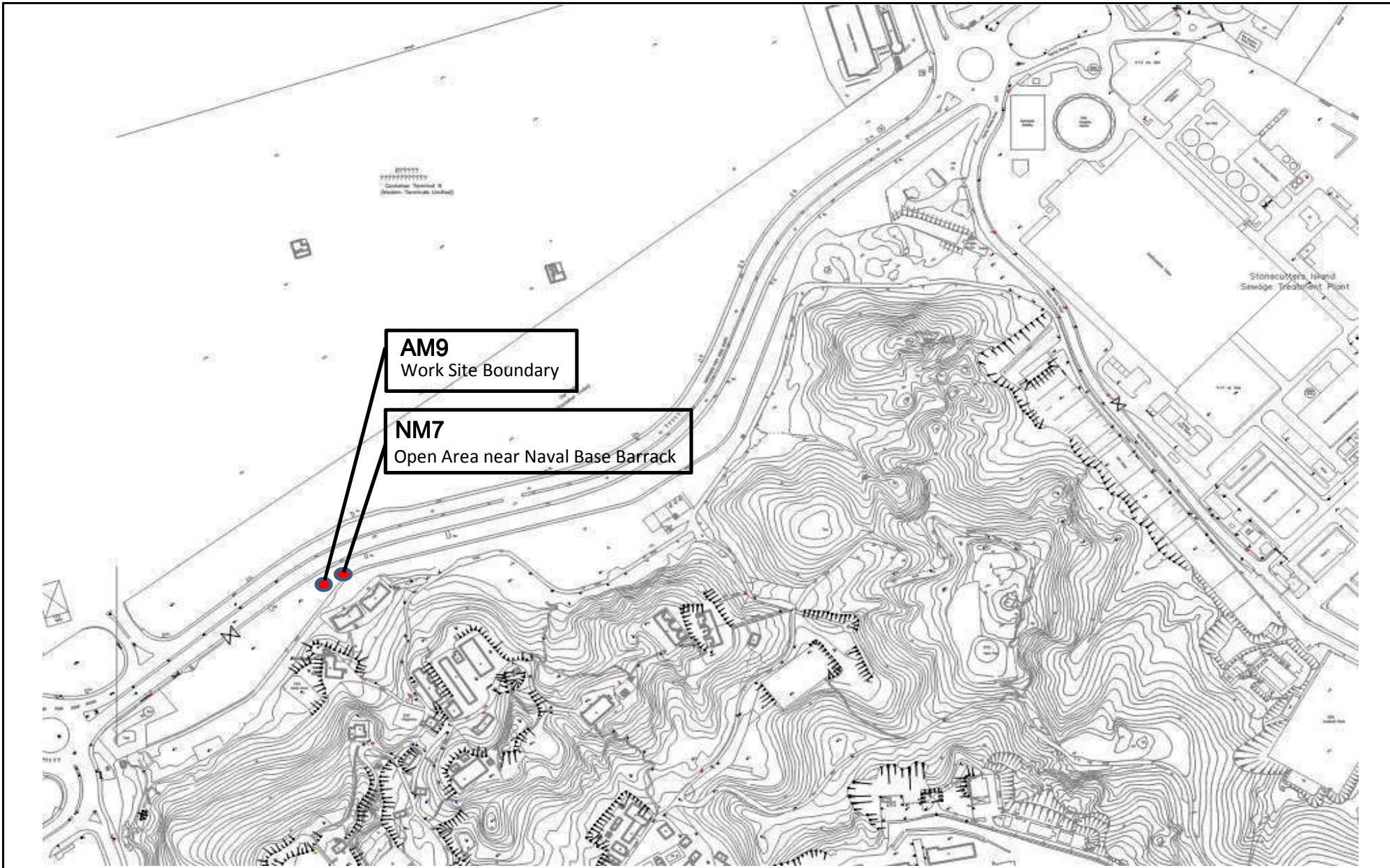
Drawing title
**GENERAL LAYOUT
 (SHEET 1)**
 Fig. 1B

Drawing no. 24888/ETF/0021		Rev. 0	
Drawn	Date	Checked	Approved
WM	08/10	PW	DP
Scale	1:2000 @A1	Status	WORKING

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Title	Contract No. DC/2009/18	Scale	Project	CINOTECH
	HATS 2A -Upgrading Works at Stonecutters Island Sewage Treatment Works - Effluent Tunnel and Disinfection Facilities	N.T.S	No. MA11043	
	Locations of Impact Air Quality and Noise Monitoring Stations	Date	Figure	
		2/2012	1C	

**APPENDIX A
ACTION AND LIMIT LEVELS FOR AIR
QUALITY AND NOISE QUALITY**

Appendix A Action and Limit Levels

Table A-1 Action and Limit Levels for 1-Hour TSP and 24-Hour TSP

Monitoring Stations	Action Level ($\mu\text{g}/\text{m}^3$)		Limit Level ($\mu\text{g}/\text{m}^3$)	
	1-hour	24-hour	1-hour	24-hour
AM6	346	196	500	260
AM7	322	207	500	260
AM8	307	158	500	260
AM9	318	169	500	260

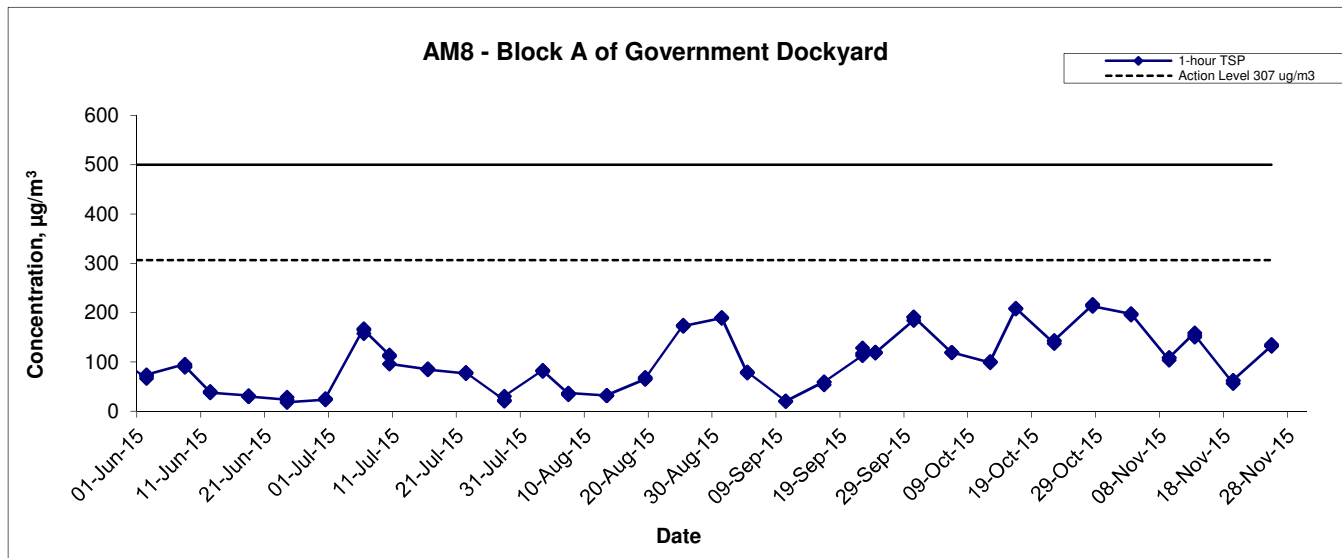
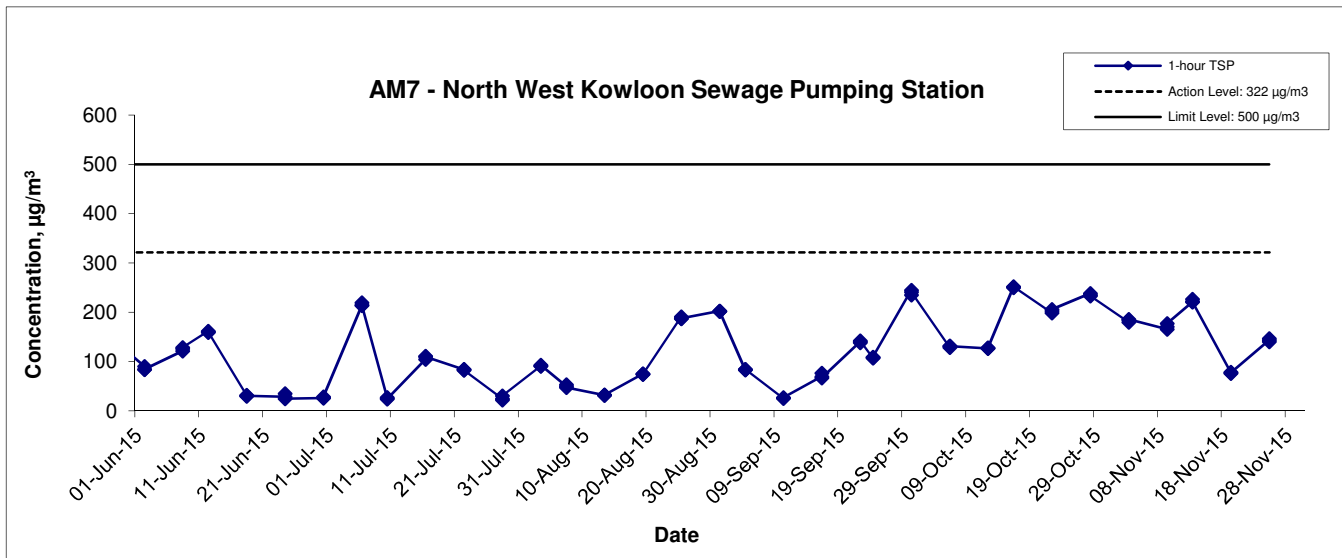
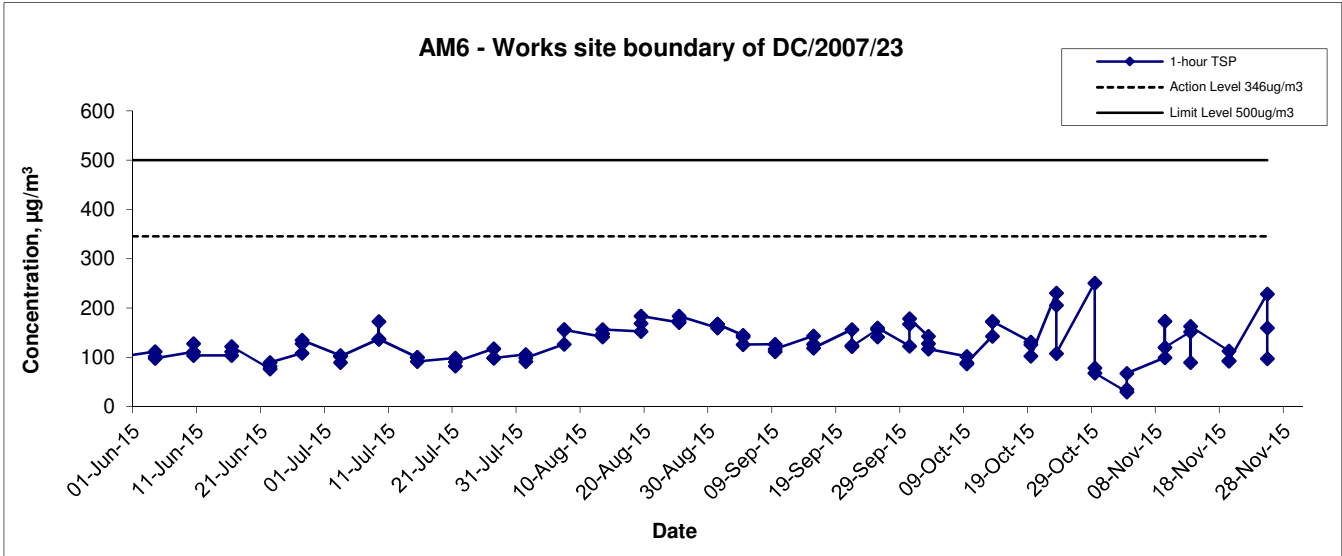
Table A-2 Action and Limit Level for Construction Noise

Monitoring Stations	Time Period	Action Level	Limit Level in dB(A)
NM5 NM6 NM7	0700-1900 hours on normal weekdays	When one documented complaint is received	75
	Restricted Hours (Evening Time) All days during the evening (1900 to 2300 hours), and general holidays (including Sundays) during the day-time and evening (0700 to 2300 hours)	N/A	70 ⁽¹⁾
	Restricted Hours (Night Time) All days during the night-time (2300 to 0700 hours)	N/A	55 ⁽¹⁾

Note (1): Construction Noise Criteria for activity other than Percussive Piling.

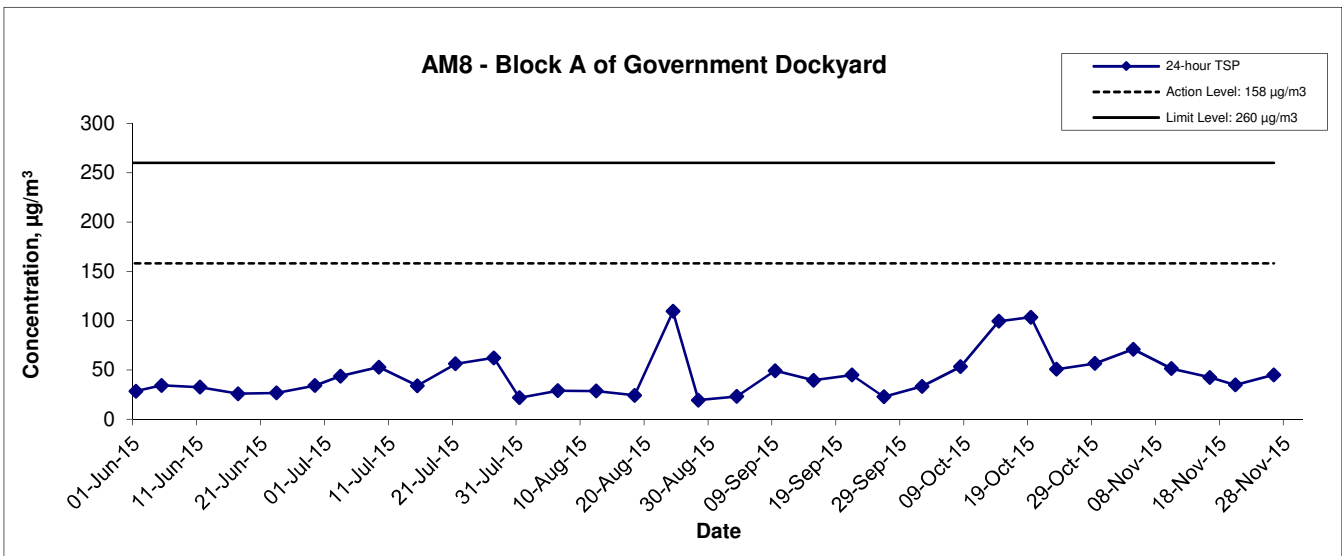
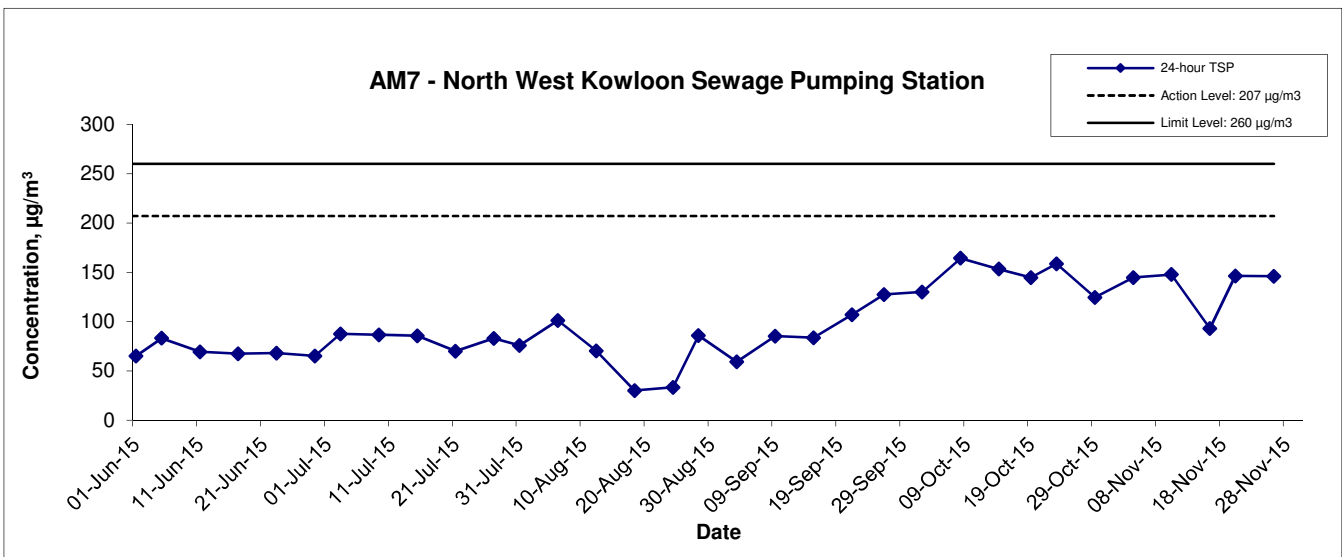
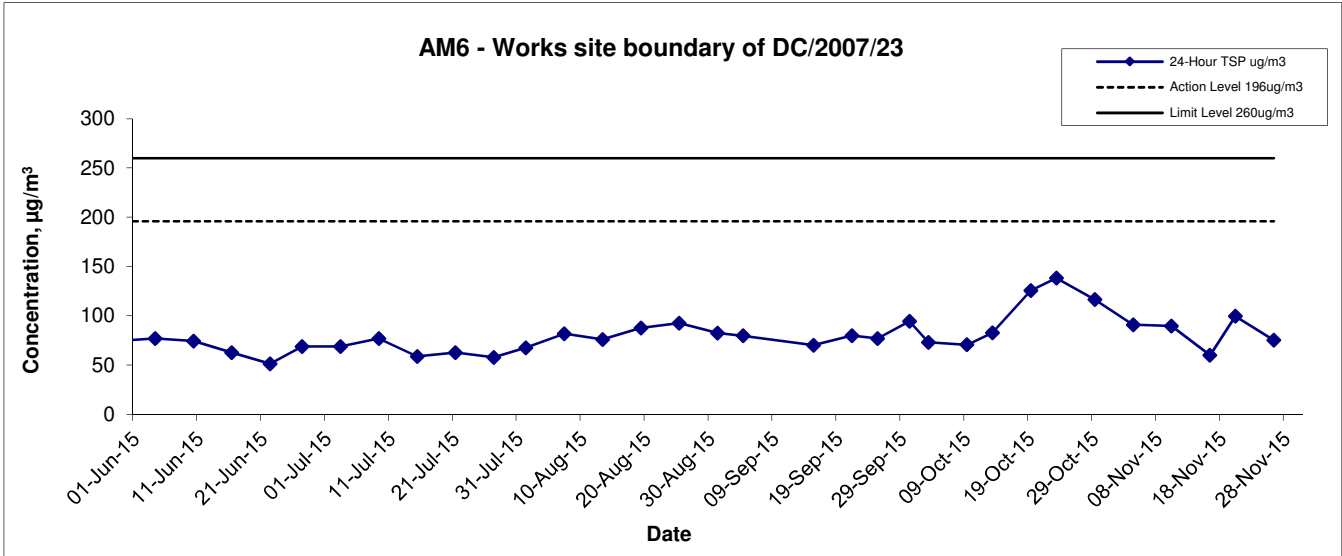
**APPENDIX B
GRAPHICAL PRESENTATIONS OF 1-
HOUR AND 24-HOUR TSP MONITORING
RESULTS**

1-hr TSP Concentration Levels



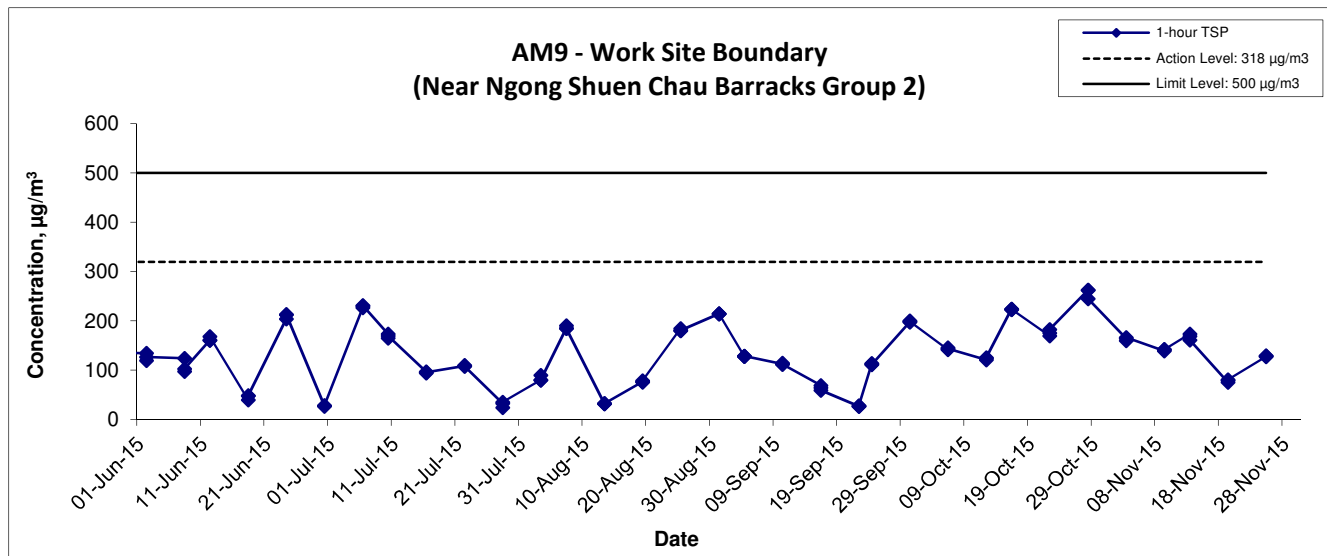
Title Contract No. DC/2009/10 HATS Stage 2A – Upgrading Works at Stonecutters Island Sewage Treatment Works - Main Pumping Station, Sedimentation Tanks and Ancillary Facilities Graphical Presentation of 1-hour TSP Monitoring Results	Scale	Project No.	CINOTECH
	Date	Appendix	
	N.T.S	MA11007	
	Nov-15	B	

24-hr TSP Concentration Levels



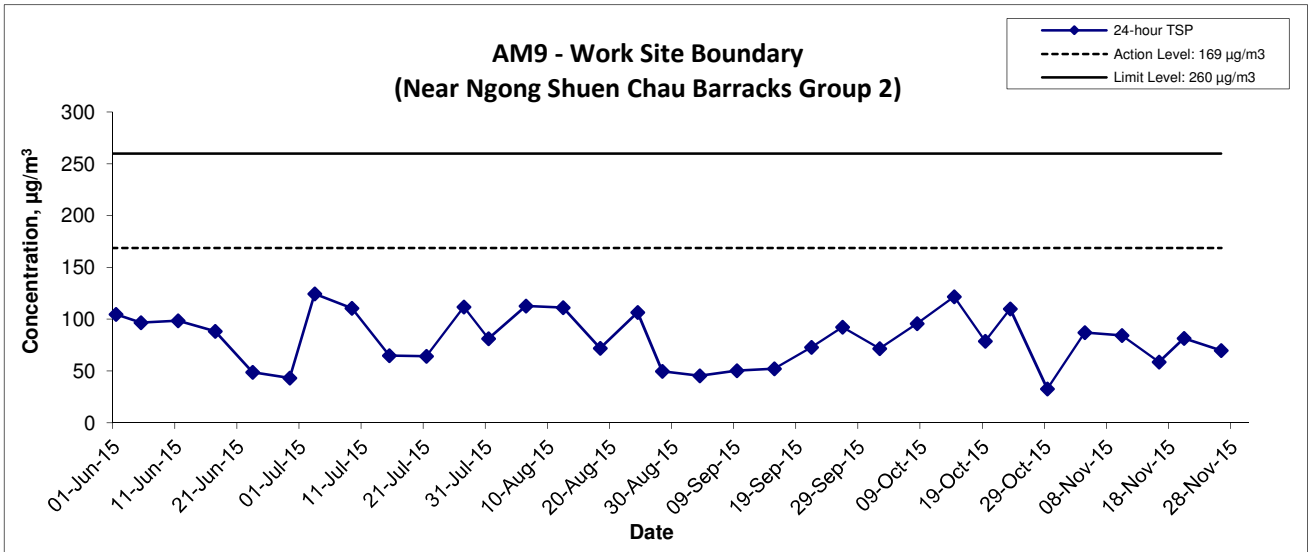
Title Contract No. DC/2009/10 HATS Stage 2A – Upgrading Works at Stonecutters Island Sewage Treatment Works - Main Pumping Station, Sedimentation Tanks and Ancillary Facilities Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA11007	
	Date Nov-15	Appendix B	

1-hr TSP Concentration Levels



Title Contract No. DC/2009/18 HATS 2A – Upgrading Works at SCISTW– Effluent Tunnel and Disinfection Facilities Graphical Presentation of 1-hour TSP Monitoring Results	Scale N.T.S	Project No. MA11043	CINOTECH
	Date Nov 15	Appendix B	

24-hr TSP Concentration Levels

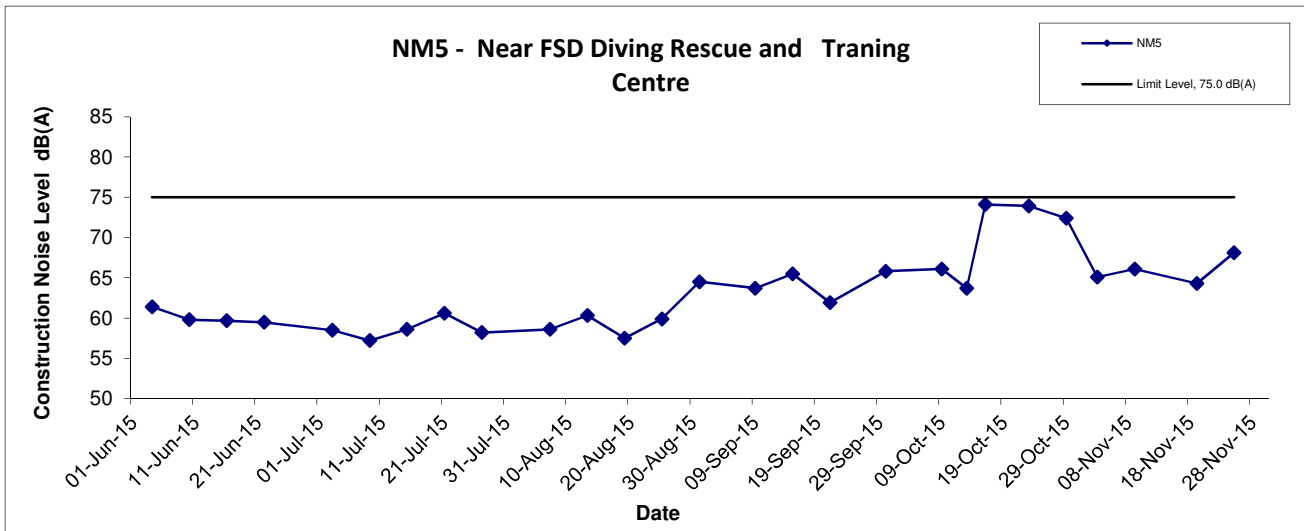
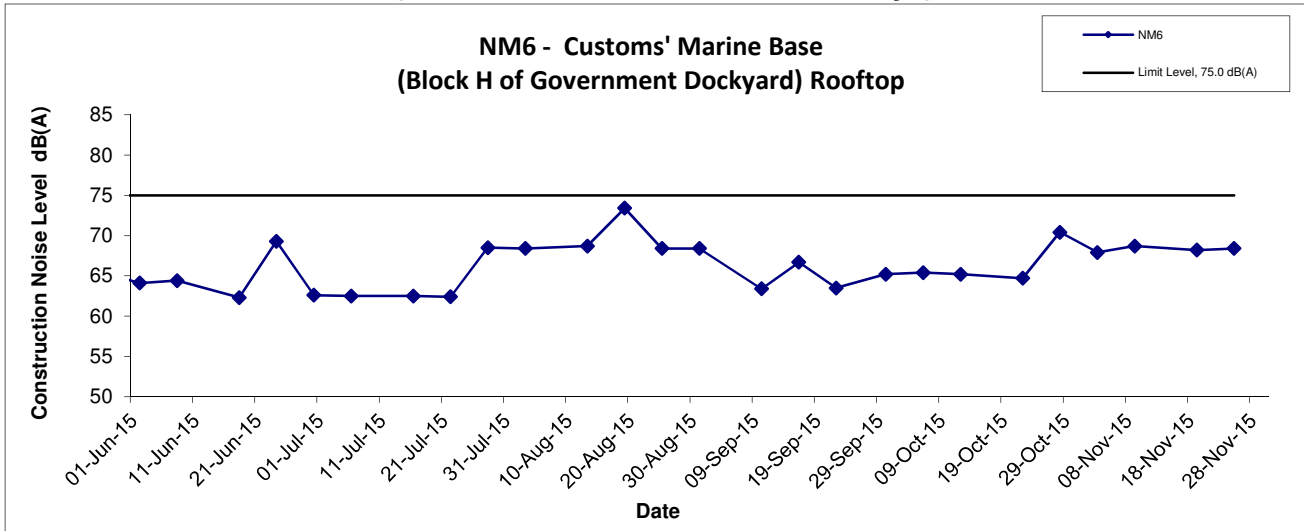


Title Contract No. DC/2009/18 HATS 2A – Upgrading Works at SCISTW– Effluent Tunnel and Disinfection Facilities Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA11043	CINOTECH
	Date Nov 15	Appendix B	

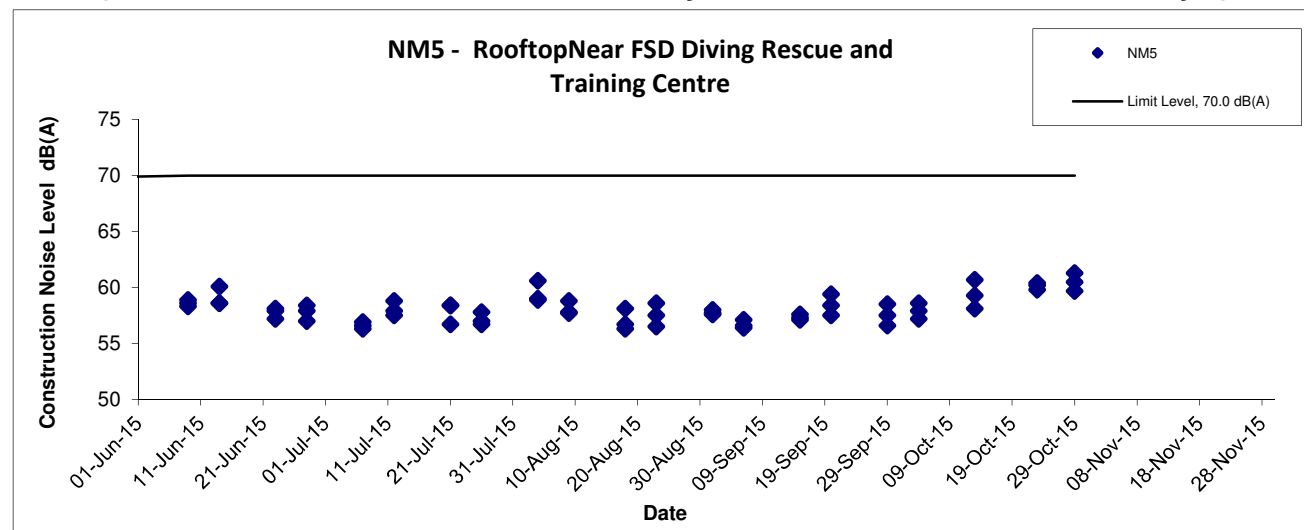
**APPENDIX C
GRAPHICAL PRESENTATIONS OF
NOISE MONITORING RESULTS**

Noise Levels

(0700-1900 hrs on Normal Weekdays)



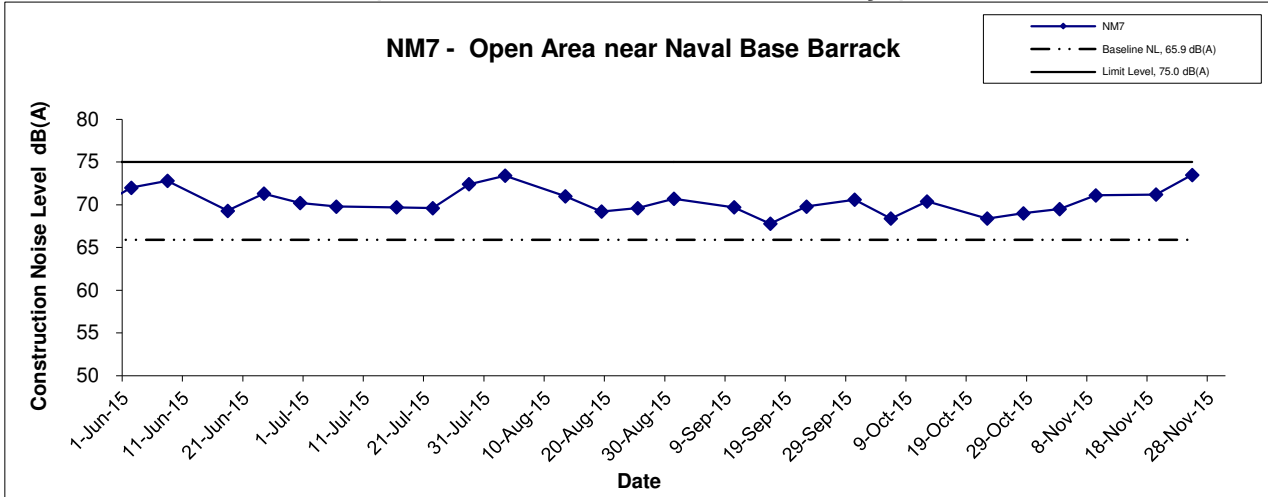
(Restricted Hours - 07:00 to 23:00 holidays & 19:00 to 23:00 on all other days)



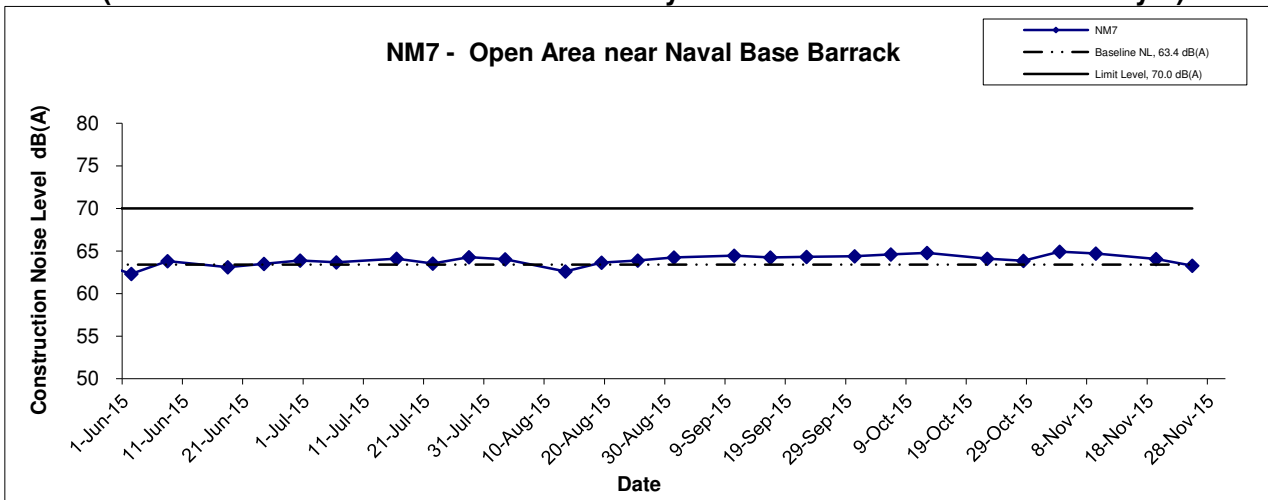
Title Contract No. DC/2009/10 HATS 2A – Upgrading Works at SCISTW– Main Pumping Station, Sedimentation Tanks and Ancillary Graphical Presentation of Noise Monitoring Result	Scale N.T.S	Project No. MA11007	
	Date Nov 15	Appendix C	

Noise Levels

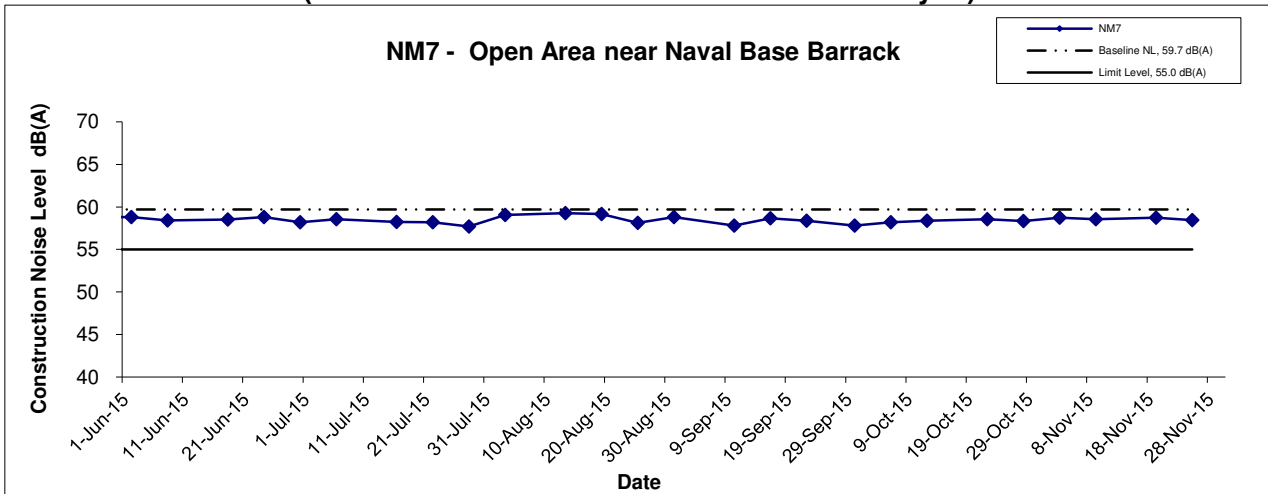
(0700-1900 hrs on Normal Weekdays)



(Restricted Hours - 07:00 - 23:00 holidays & 19:00 - 23:00 on all other days)



(Restricted Hours - 23:00 to 07:00 on all days)



Title

Contract No. DC/2009/18
HATS 2A – Upgrading Works at SCISTW–
Effluent Tunnel and Disinfection Facilities

Graphical Presentation of Noise Monitoring Result (NM7)

Scale

N.T.S

Date

Nov 15

Project

No. MA11043

Appendix

C

CINOTECH

**APPENDIX D
ENVIRONMENTAL PERMITS AND
LICENSES**

APPENIDX D – Environmental Permits and Licenses

Table D.1 Summary of Environmental Licensing and Permit Status for Contract DC/2007/23

Permit No.	Valid Period		Details	Status
	From	To		
Wastewater Discharge License				
WT0002021 9-2014	30/10/2014	31/10/2019	Location: Stonecutters Island Production Shaft and Riser Shaft	Valid
Chemical Waste Producer Registration				
5213-269- G2449-07	--	--	Location: Stonecutters Island Production Shaft and Riser Shaft	Valid
Construction Noise Permit				
GW- RW0160-15	23/4/2015	22/10/2015	Location: Stonecutters Island Production Shaft and Riser Shaft	Expired

Table D.2 Summary of Environmental Licensing and Permit Status for Contract DC/2009/10

Reference Number	Valid Period		Details	Status
	From	To		
Water Discharge License				
WT00009245- 2011	1/6/2011	30/6/2016	The application was approved on 1-6-2011.	Valid
WT00012151- 2012	23/7/2014	28/2/2017	The application was approved on 23-7-2014.	Valid
WT00015128- 2013	28/1/2013	31/1/2018	The application was approved on 28-1-2013.	Valid
Registered Chemical Waste Producer				
WPN5213-269- 3584-01	N/A	N/A	The application was approved on 4-5-2011.	Valid
Billing Account for Disposal of Construction Waste				
CSW01444	16/3/2011	N/A	The application was approved on 16-3-2011.	Valid
Notification of Works Under APCO				
327427	N/A	N/A	Notice form received by EPD on 2-3-2011.	N/A
Construction Noise Permit for use of mechanical equipment outside permitted working hours				
GW-RW0281- 15	25/6/2015	24/12/2015	Location: Portion 4 and 5	Valid
GW-RW0280- 15	25/6/2015	24/12/2015	No. 169 Container Port Road South	Valid
GW-RW0341- 15	1/8/2015	31/1/2016	Location: Portion 3 and 8	Valid
GW-RW0342- 15	1/8/2015	31/1/2016	Location: Portion 6	Valid
GW-RW0528- 15	26/10/2015	25/4/2016	Location: Portion 7	Valid
Renewal of Admission Ticket for Disposal of Special Waste (Grit) at Landfills				
No. 12117	1/4/2015	30/9/2015	Grits from cleaning the PST(CEPT)	Expired

Table D.3 Summary of Environmental Licensing and Permit Status for Contract DC/2009/17

Permit No.	Valid Period		Details	Status
	From	To		
Water Discharge License				
WT00007763-2010	22/10/2010	31/10/2015	Location: Portion 5	Expired
WT00007921-2010	23/11/2010	30/11/2015	Location: Portion C	Valid
WT00007982-2010	3/12/2010	31/12/2015	Location: Portion 3 and 4	Valid
WT00021164-2015	13/3/2015	31/3/2020	Location: Portion 6	Valid
Registered Chemical Waste Producer				
Ref. 321319	25/10/2010	N/A	Major chemical waste types are: Spent battery, waste mechanical oil and spent lubricant.	Valid
Billing Account for Disposal of Construction Waste				
A/C No.7011408	15/09/2010	N/A	N/A	Valid
Notification of Works Under APCO				
Ref:321235	7/09/2010	N/A	--	Valid
Construction Noise Permit				
GW-RW0182-15	21/4/2015	20/10/2015	Location: Portion 3, 4 and 5	Expired
GW-RW0187-15	21/4/2015	20/10/2015	Location: Portion 3, 4 and 5	Expired
GW-RW0524-15	21/10/2015	20/4/2016	Location: Portion 3, 4 and 5	Valid
GW-RW0526-15	21/10/2015	20/4/2016	Location: Portion 3, 4 and 5	Valid

Table D.4 Summary of Environmental Licensing and Permit Status for Contract DC/2009/18

Permit/ A/C Number	Valid Period		Details	Status
	From	To		
Water Discharge License				
WT00010571-2011	18/03/2015	31/10/2016	Location: Portion 7A and 15A	Valid
Registered Chemical Waste Producer				
5213-269-C3689-01	8/9/2011	N/A	Site Area under the Project	Valid
Billing Account for Disposal of Construction Waste				
7013233	18/7/2011	N/A	N/A	Valid
Notification of Works Under APCO				
Ref: 332427	15/7/2011	N/A	N/A	N/A
Construction Noise Permit				
GW-RW0144-15	13/4/2015	12/10/2015	Location: Construction site at Stonecutters Island Sewage treatment works (Portion 3)	Expired

Permit/ A/C Number	Valid Period		Details	Status
	From	To		
GW-RW0375- 15	18/8/2015	17/2/2016	Location: Construction site at Stonecutters Island Sewage treatment works (Portion 3)	Valid
GW-RW0388- 15	28/8/2015	27/2/2016	Location: Construction site at Stonecutters Island Sewage treatment works (Portion 7)	Valid

APPENDIX E
SUMMARY OF EXCEEDANCE

APPENDIX E – SUMMARY OF EXCEEDANCE

Reporting Quarter: September 2015 to November 2015

- a) Exceedance Report for 1-hr TSP (NIL)**
- b) Exceedance Report for 24-hr TSP (NIL)**
- c) I: Exceedance Report for Construction Noise during normal working hours(NIL)**
II:Exceedance Report for Construction Noise during restricted hours (NIL)

**APPENDIX F
SITE AUDIT SUMMARY IN REPORTING
QUARTER**

APPENDIX F - SITE AUDIT SUMMARY IN THE REPORTING QUARTER (DC/2007/23)

Inspection date: **2 September 2015**

Follow-up Actions Taken after Previous Site Audit

Stonecutters Island Production Shaft

- The Contractor had removed stagnant water on the drip tray of the wetsep.

Observations and Recommendations

Stonecutters Island Production Shaft

- The Contractor was reminded to set up the temporary sedimentation tank to treat the sewage before discharge.

Inspection date: **10 September 2015**

Follow-up Actions Taken after Previous Site Audit

Stonecutters Island Production Shaft

- The Contractor had set up the temporary sedimentation tank to treat the sewage before discharge.

Observations and Recommendations

- -

Inspection date: **17 September 2015**

Follow-up Actions Taken after Previous Site Audit

- -

Observations and Recommendations

Stonecutters Island Production Shaft

- The Contractor was reminded to remove stagnant water from the drip tray of the generator near the riser shaft.
- The Contractor was reminded to provide sufficient drip trays for the chemical containers.

Inspection date: 24 September 2015

Follow-up Actions Taken after Previous Site Audit

Stonecutters Island Production Shaft

- The Contractor had removed stagnant water from the drip tray of the generator near the riser shaft.
- The Contractor had provided sufficient drip trays for the chemical containers.

Observations and Recommendations

Stonecutters Island Production Shaft

- -

Inspection date: 30 September 2015

Follow-up Actions Taken after Previous Site Audit

- -

Observations and Recommendations

- -

Inspection date: 8 October 2015

Follow-up Actions Taken after Previous Site Audit

- -

Observations and Recommendations

Stonecutters Island Production Shaft

- There were no major observations during site inspection.

Inspection date: 15 October 2015

Follow-up Actions Taken after Previous Site Audit

Stonecutters Island Production Shaft

- The Contractor had set up the temporary sedimentation tank to treat the sewage before discharge.

Observations and Recommendations

Stonecutters Island Production Shaft

- There were no major observations.

Inspection date: 22 October 2015

Follow-up Actions Taken after Previous Site Audit

Stonecutters Island Production Shaft

- The Contractor had removed the stagnant water.

Observations and Recommendations

Stonecutters Island Production Shaft

- There were no major observations during site inspection.

SITE AUDIT SUMMARY IN THE REPORTING QUARTER (DC/2009/10, DC/2009/17 and DC/2009/18)

DC/2009/10:

September 2015

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	150917-001	Water hose should be placed in the sedimentation tank to improve the discharge quality (Portion 3).	The identified water hoses were observed to be cut off or disconnected.
Air Quality	150910-002	Water should be sprayed on dusty construction activities (Portion 4).	Water has been sprayed in the identified area.
	150910-003	Dust on the haul road should be cleared (Portion 4).	No significant dusty trails were observed on the identified haul roads.
	150924-001	Sand stockpile should be covered properly for dust suppression (Portion 4).	The stockpile has been covered by tarpaulin.
Waste/ Chemical Management	150902-R01	<u>Reminder:</u> General refuse should be sorted for recycling (Portion 4).	Remarked as ref. no 150910-004
	150910-001	Oil containers should be provided with drip tray or other form of bundings (Portion 3 and 4).	Bundings have been provided to the containers.
	150910-004	Adequate general refuse containers should be provided. (Portion 3 and 4)	Remarked as ref. no 150924-002
	150924-002	General refuse should be stored in adequate containers or removed frequently (Portion 4 and -32).	No general refuse was observed to be overflowed; Some identified waste has been cleared while other general refuse was observed in some site areas and was remarked as ref no. 150930-001
	150930-001	General refuse should be sorted and stored in adequate containers (Portion 3 and 4).	No major accumulation of general refuse was observed in the site area.
	150930-002	Oil stain and waste oil container should be treated as chemical waste and removed (Portion 3).	The oil stain has been cleared and the waste oil container has been removed.

October 2015

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	151008-003	Unused water pipe should be removed from the drainage outlet (Portion 4); The drainage system in Portion 3 should be revised to avoid contaminating surface runoff and rain water.	The unused water pipe in Portion 4 has been cut off and the drainage system in Portion 3 has been revised to redirect the rainwater to the drainage outlet.
	151029-R04	<u>Reminder:</u> Standing water should be avoided in Portion 6.	Larvicide has been sprayed to prevent mosquito breeding.

Air Quality	151022-O02	Dusty site area and haul road should be covered or sprayed with water for dust suppression (Portion 7).	Water sprayers were observed to be installed along the haul road.
	151022-O03	The dust on the road should be cleared (Portion 7).	No major dust accumulation was observed on the road.
	151029-O02	Water should be sprayed on dusty site activities and areas (Portion 7).	Remarked as ref.no 151105-O03
	151029-R03	Reminder: Sand stockpile should be covered for dust suppression (Portion 4).	The stockpiles have been covered with tarpaulin.
Waste/ Chemical Management	151008-O01	Waste water should be removed as chemical waste or redirected to suitable treatment facilities (Portion 3)	The waste water has been cleared.
	151008-O02	Paint containers should be contained by drip tray or removed as chemical waste (Portion 8).	The paint containers have been concealed with tarpaulin and no leakage was observed.
	151014-O01	Cement sludge should be cleared from the u-channel; cement mixing works should take place away from any drainage system (Portion 4).	The cement in the u-channel has been cleared.
	151014-O02	Chemical containers should be stored within drip trays or designated area (Portion 3 and 8).	The containers were either removed or stored in drip trays.
	151022-O01	Oil breakers and oil containers should be provided with drip tray or other form of bunding to avoid oil leakage (Portion 4 and 7).	The identified breakers and the containers have been removed.
	151022-R04	Reminder: General refuse and construction waste should be sorted and cleared regularly (Portion 4).	Remarked as ref.no 151105-O02
	151029-O01	Cement sludge is observed in the u-channel (Portion 4).	Remarked as ref.no 151105-O01

November 2015

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	151105-O01	Sand bags should be placed next to the drainage channel to block off muddy run-off; Accumulated sediment in the channel should be cleared (Portion 4).	The drainage channel has been removed.
	151119-R02	Reminder: Wastewater should be pumped back to the sewage treatment facilities (Portion 4).	Remarked as ref.no 151126-O03
	151126-O03	Sewage water should be pumped back to the sewage facility (Portion 3).	The sewage water has been pumped back to the facility.
Air Quality	151105-O03	Water should be sprayed on Portion 7 site area to avoid dust generation.	The concerned area has been concreted.
	151126-R04	Reminder: Access road should be sprayed with water for dust suppression (Portion 4 and 7).	Remarked as ref.no 151203-R02
Waste/ Chemical Management	151105-O02	General refuse should be stored in designated containers (Portion 4 and level -10).	Remarked as ref.no 151111-O01

	151111-O01	General refuse should be stored properly before disposal (Portion 4).	The general refuse identified in the area was observed to be cleared.
	151111-O02	Oil containers should be stored within drip tray or designated areas (Portion 4).	Remarked as ref.no 151119-O01
	151119-O01	Oil container should be relocated from washing facility (Portion 4).	The identified container has been removed.
	151126-O01	General refuse and construction waste should be contained after sorting was carried out (Portion 4 and 7).	The waste was observed to be removed or contained for storage.
	151126-O02	Used oil containers should be removed as chemical waste (Portion 4).	The identified containers were removed.

DC/2009/17:

September 2015

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	150902-O01	The wheel washing facility should be maintained by removing the sediment to avoid muddy discharge.	The identified sediment has been cleared.
	150902-O02	Site hoarding should be reinforced with concrete to avoid muddy water leakage.	The site hoarding has been reinforced and no leakage was observed.
	150909-O01	Water hose should be connected to the sedimentation tank to avoid discharging untreated water.	Remarked as ref no. 150917-O01.
	150917-O01	Sand bag traps should be placed in the drainage channel once the sediment in the channel has been cleared; Water pump should be placed in between the traps and transfer to the AquaSed.	Remarked as ref no. 150922-O01.
	150922-O01	The drainage system should be reviewed by optimizing the AquaSed usage; Muddy water should be redirected to trapped u-channel and pumped to the AquaSed.	Remarked as ref no. 150929-O01 and 150929-O02.
	150929-O01	The drainage system should be reviewed by optimizing the AquaSed usage; Muddy water should be redirected to trapped u-channel and pumped to the AquaSed.	Remarked as ref no. 151006-O01.
	150929-O02	Water pump should be placed in between the traps and transfer to the AquaSed.	Remarked as ref no. 151006-O01.
Air Quality	N/A	There was no observation in the reporting period.	N/A
Waste/ Chemical Management	150909-O02	Oil containers should be provided with drip tray or other form of bunding.	The containers have been removed.
	150929-O03	Clear the oil stain under the generator as chemical waste.	The oil stain was not observed under the generator.
	150929-R04	<u>Reminder:</u> The mud accumulated at the site entrance should be cleared and replaced with sand bags.	The bundings were reinforced with concrete.

October 2015

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	151006-O01	The drainage system should be reviewed by optimizing the AquaSed usage; Muddy water should be redirected to trapped u-channel and pumped to the AquaSed.	Traps and water pump has been installed onto the drainage channel and site water is being pumped to the AquaSed. No muddy runoff was observed near the drainage channel and site entrance.
	151015-O01	The AquaSed should be maintained by removing accumulated sediment to improve the discharge quality.	Remarked as ref. no 151020-O01
	151015-R03	Reminder: Accumulated mud in the wheel washing facility should be cleared when in use.	Remarked as ref. no 151020-O01
	151020-O01	Sediment in the AquaSed and wheel washing facility should be cleared to maintain the water treatment system.	The wheel washing facility was not in use and the condition of AquaSed was improved.
	151020-O02	The sedimentation tanks and water pumps should be checked regularly to ensure they function efficiently.	The water pump was functioning properly and no overflow of muddy water was observed.
	151027-R01	Mitigation measures should be provided to control the site runoff generated from the car washing activity	The cement bags were covered properly.
Air Quality	151020-R03	Reminder: Cement bags should be covered properly.	Concrete bunding was emplaced on the entrance to redirect wash water.
Waste/ Chemical Management	151006-O02	Chemical and oil containers should be contained within drip tray; Existing drip trays should be maintained to avoid overflow.	Some of the oil containers were cleared; while other additional oil containers have been observed without proper storage area. Remarked as ref. no 151015-O02.
	151006-O03	Construction waste should be sorted before storage.	The used oil containers were observed to be cleaned and placed with other metal waste for removal.
	151015-O02	Oil container should be provided with drip tray.	The oil container was observed to have provided bunding and drip tray.
	151015-R04	Reminder: Drip tray should be sealed off to avoid leakage.	The drip tray has been sealed off.

November 2015

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	151103-O01	Muddy water is observed in the drainage channel; the contractor should check the drainage system of the site area to ensure all the waste water is transferred to the AquaSed for treatment before discharging.	The AquaSed was observed to be functioning and no muddy water was observed to be discharging into the drainage channel.
	151117-O01	The Contractor is reminded to utilise the AquaSed and sedimentation tanks to treat the muddy water on site whenever possible before discharging	Remarked as ref. no 151124-R04
	151124-O03	pH meter should be checked for malfunction.	The pH meter was observed to be functioning.

	151124-R04	Reminder: The Contractor is reminded to check and maintain the drainage system regularly to avoid untreated discharge.	Muddy discharge was not observed in the drainage system.
Air Quality	151124-O02	Digging activities should be sprayed with water for dust suppression.	Water has been sprayed on dusty activities.
Waste/ Chemical Management	151112-O01	Used oil containers should be treated as chemical waste and removed.	Major accumulation of used oil containers were not observed; Containers were reused as tool storage.
	151124-O01	Oily mixture in the drip tray of the chemical waste storage should be cleared.	The oily mixture was observed to be cleared.

DC/2009/18:

September 2015

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	150904-O01	Bundings should be provided at the entrance. Construction waste and general refuse should also be cleared. (Portion 3)	Item was remarked as 150910-O01.
	150910-O01	Bundings should be provided at the entrance and fencing should be well-maintained.(Portion 3)	Item was remarked as 150916-O01.
	150916-O01	Bundings should be provided at the entrance and fencing should be covered by tarpaulin.(Portion 3)	Item was remarked as 150924-O01.
	150916-O02	Construction waste, general refuse and stagnant water should be cleared at the entrance. (Portion 3)	Item was remarked as 150924-O02.
	150916-O04	Sedimentation tank should be well-maintained and check the pH level regularly. (Portion 7)	Sedimentation tank was well-maintained and pH level was in optimal level.
	150924-O01	Bundings should be provided at the entrance and fencing should be covered by tarpaulin.(Portion 3)	Fencing was provided along the boundary. Bundings should be provided at the entrance. Item was remarked as 151002-O01.
	150924-O02	Construction waste, general refuse and stagnant water should be cleared at the entrance. (Portion 3)	Stagnant water was cleared. Contractor was reminded to clear the waste outside the site boundary. Item was remarked as 151002-O02.
	150924-O04	General refuse should be sorted and cleared within the site. (Portion 3)	General refuse was cleared.
Air Quality	150910-O02	Unpaved haul road should be sprayed with water. (Portion 3)	Unpaved haul road was observed wet.

	150910-003	Construction waste and general refuse should be cleared at the entrance. (Portion 3)	Item was remarked as 150916-002.
	150916-002	Construction waste, general refuse and stagnant water should be cleared at the entrance. (Portion 3)	Item was remarked as 150924-002.
	150924-002	Construction waste, general refuse and stagnant water should be cleared at the entrance. (Portion 3)	Stagnant water was cleared. Contractor was reminded to clear the waste outside the site boundary. Item was remarked as 151002-002.
	150924-003	Stockpile of dusty material should be covered and haul road should be sprayed with water. (Portion 3)	Stockpile was removed and haul road was observed wet.
Waste/ Chemical Management	150904-002	Oil containers should be provided with drip trays. (Portion 3)	Oil containers were provided with drip trays.
	150910-003	Construction waste and general refuse should be cleared at the entrance. (Portion 3)	Item was remarked as 150916-002.
	150916-002	Construction waste, general refuse and stagnant water should be cleared at the entrance. (Portion 3)	Item was remarked as 150924-002.
	150924-002	Construction waste, general refuse and stagnant water should be cleared at the entrance. (Portion 3)	Stagnant water was cleared. Contractor was reminded to clear the waste outside the site boundary. Item was remarked as 151002-002.
	150924-004	General refuse should be sorted and cleared within the site. (Portion 3)	General refuse was cleared.
Landscape and Visual	150916-003	Construction works should be carried out outside tree protection zone and tree protection zone should be well-maintained. (Portion 7)	Construction works were cleared in tree protection zone.

October 2015

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	151002-001	Bundings should be provided at the entrance.(Portion 3)	Item was remarked as 151008-001.
	151002-003	General refuse should be sorted and cleared within the site. (Portion 3)	General refuse was cleared within the site.
	151002-004	Water should be cleared in u-channel. (Portion 7)	Water was cleared.
	151008-001	Bundings should be provided at the entrance. Fencing should be provided along site boundary. (Portion 3)	Item was remarked as 151013-001.

	151008-004	Sedimentation tank should be well-maintained and discharge should be free from silt. (Portion 7)	Discharge in the tank was observed clean.
	151013-001	Bundings should be provided at the entrance. Fencing should be provided along site boundary. (Portion 3)	Bundings was provided and boundary was covered by fencing.
	151029-001	Stockpile of dusty material should be covered. (Portion 3)	Stockpile of dusty material was covered.
Air Quality	151002-002	Construction waste and general refuse should be cleared at the entrance. (Portion 3)	Construction waste and general refuse were cleared at the entrance.
	151008-001	Bundings should be provided at the entrance. Fencing should be provided along site boundary. (Portion 3)	Item was remarked as 151013-001.
	151013-001	Bundings should be provided at the entrance. Fencing should be provided along site boundary. (Portion 3)	Bundings was provided and boundary was covered by fencing.
	151022-001	Unpaved haul road should be sprayed with water. (Portion 3)	Unpaved haul road was observed wet.
	151029-001	Stockpile of dusty material should be covered. (Portion 3)	Stockpile of dusty material was covered.
Waste/ Chemical Management	151002-002	Construction waste and general refuse should be cleared at the entrance. (Portion 3)	Construction waste and general refuse were cleared at the entrance.
	151002-003	General refuse should be sorted and cleared within the site. (Portion 3)	General refuse was cleared within the site.
	151008-002	General refuse and construction waste should be cleared. Oil stagnant water in u-channel should be cleared. (Portion 3)	Construction waste and general refuse were cleared. Oil absorbent sheets were placed to clear the oil in u-channel.
	151008-003	Oil container should be provided with drip tray. (Portion 3)	Drip tray was provided.
	151013-002	General refuse should be cleared in the site. (Portion 3)	General refuse was cleared.

November 2015

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	151105-001	Stockpile of dusty material should be covered. (Portion 3)	Stockpile of dusty material was covered.

	151112-002	Contractor should clear muddy sand and provide blockage in u-channel. (Portion 7)	Item was remarked as 151118-002.
	151118-002	Contractor should clear muddy sand and provide blockage in u-channel. (Portion 7)	Clear water was observed in the u-channel. Contractor was reminded to remove the clear stagnant water. Sandbag was placed at the u-channel.
	151126-002	Sandbags should be placed at the gully. (Portion 7)	Sandbags were placed at the gully.
Air Quality	151105-001	Stockpile of dusty material should be covered. (Portion 3)	Stockpile of dusty material was covered.
	151105-R01	Unpaved haul road should spray with water frequently. (Portion 3)	Unpaved haul road was observed wet.
	151118-R01	Unpaved haul road should be sprayed with water. (Portion 3)	Unpaved haul road was observed wet.
	151126-001	Stockpile of dusty material should be covered. (Portion 3)	Stockpile of dusty material was removed.
Waste/ Chemical Management	151105-002	Oil stain and general refuse should be cleared. (Portion 7)	Item was remarked as 151112-001.
	151112-001	Oil stain and general refuse should be cleared. (Portion 7)	Contractor used oil absorbent sheets to absorb the oil leakage. General refuse was cleared. Item was remarked as 151118-002.
	151118-001	Oil stain should be cleared. (Portion 7)	Oil stain was removed.

APPENDIX G
EVENT ACTION PLANS

APPENDIX G – Event / Action Plans

Table G-1 Event / Action Plan For Air Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IEC and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET; 2. Check Contractor’s working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
2. Exceedance for two or more consecutive samples	1. Identify 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	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.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented	1. Submit proposals for remedial to ER within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
LIMIT LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform 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.	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	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
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	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 5. Supervise the implementation of remedial measures.	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. 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.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated

Table G-2 Event / Action Plan For Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded	<ol style="list-style-type: none"> 1. Notify ER, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; 5. Increase monitoring frequency to check mitigation effectiveness 	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals
Limit Level being exceeded	<ol style="list-style-type: none"> 1. Inform IEC, ER, Contractor and EPD; 2. Repeat measurements 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; 6. Discuss with the IEC, Contractor and ER on remedial measures required; 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 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 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

**APPENDIX H
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)**

APPENDIX H IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES (EMIS)

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract			
			DC/2007/23	DC/2009/17	DC/2009/10	DC/2009/18
A	Air Quality					
3.74	Skip hoist for material transport should be totally enclosed by impervious sheeting.	All construction sites	^	^	^	^
	Vehicle washing facilities should be provided at every vehicle exit point.		^	^	^	
	The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcore.		^	^	^	
	Where a site boundary adjoins a road, streets or other areas accessible to the public, hoarding of not less than 2.4 m high from ground level should be provided along the entire length except for a site entrance or exit.		N/A	N/A	N/A	
	Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.		^	#	*	
	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.		^	*	*	
	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.		^	^	^	
	Imposition of speed controls for vehicles on unpaved site roads. Ten kilometers per hour is the recommended limit.		^	^	^	

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract			
			DC/2007/23	DC/2009/17	DC/2009/10	DC/2009/18
	Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the 3 sides.	All construction sites		*	^	^
	Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.			^	^	^
3.74	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.			*	^	^
B	Airborne Noise					
4.56–4.61	Use of quiet PME, movable barriers and acoustic mats.	All construction sites	^	^	^	^
4.67	Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction program.		^	^	^	^
	Silencers or mufflers on construction equipment shall be utilized and shall be properly maintained during the construction program.		^	^	^	^
	Mobile plant, if any, shall be sited as far away from NSRs as possible.		^	^	^	^
	Machines and plant (such as trucks) that may be in intermittent use shall be shut down between works periods or shall be throttled down to a minimum.		^	^	^	^
4.67	Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.		^	^	^	^
	Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from on-site construction activities.		^	^	^	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract			
			DC/2007/23	DC/2009/17	DC/2009/10	DC/2009/18
C	Water Quality					
6.349 to 6.375	Construction Site Runoff and General Construction Activities The mitigation measures as outlined in the ProPECC PN 1/94 Construction Site Drainage should be adopted where applicable.	All construction sites	^	*	*	*
6.376	Effluent Discharge 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. 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. Minimum distances of 100 m should be maintained between the discharge points of construction site effluent and the existing saltwater intakes.		^	*	*	*
6.377	Accidental Spillage of Chemicals Contractor must register as a chemical waste producer if 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.		^	*	*	^
6.378	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		<>	^	^	*

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract			
			DC/2007/23	DC/2009/17	DC/2009/10	DC/2009/18
	activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.					
6.379	<p>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:</p> <ul style="list-style-type: none"> • Suitable containers should 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. 		<>	*	*	*
6.380	<p>Construction Works in Close Proximity of Storm Drains or Seafront</p> <p>To minimize the potential water quality impacts from the construction works located at or near any watercourse, the practices outlined below should be adopted where applicable.</p> <ul style="list-style-type: none"> • The use of less or smaller construction plants may be specified to reduce the disturbance to the storm water courses or marine environment. • Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction 	All construction sites	^	*	*	*

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract			
			DC/2007/23	DC/2009/17	DC/2009/10	DC/2009/18
	<p>materials should be located well away from any water courses during carrying out of the construction works.</p> <ul style="list-style-type: none"> • Stockpiling of construction materials and dusty materials should be covered and located away from any water courses. • Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers. Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable. • Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert or sea. 					
D	Waste Management					
9.107	<p>Reusable steel or concrete panel shutters, fencing and hoarding and signboard should be used as a preferred alternative to items made of wood, to minimize wastage of wood. Attention should be paid to WBTC No. 19/2001 - Metallic Site Hoardings and Signboards to reduce the amount of timber used on construction sites. Metallic alternatives to timber are readily available and should be used rather than new timber. Precast concrete units should be adopted wherever feasible to minimize the use of timber formwork.</p>	All construction sites	^	^	^	^
9.109	<p>All waste materials should be segregated into categories covering:</p> <ul style="list-style-type: none"> • excavated materials suitable for reuse on-site; • excavated materials suitable for public filling 	All construction	^	^	^	*

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract			
			DC/2007/23	DC/2009/17	DC/2009/10	DC/2009/18
	facilities; <ul style="list-style-type: none"> • remaining C&D waste for landfill; • chemical waste; and • general refuse for landfill. 	sites				
9.113	Sort C&D waste from demolition of existing facilities to recover recyclable portions such as metals;		^	^	^	*
	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 aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force.			^	^	*
	Any unused chemicals or those with remaining functional capacity shall be recycled.			^	^	^
	Proper storage and site practices to minimise the potential for damage or contamination of construction materials.			*	*	*
9.115	Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.		^	^	^	^
	Training of site personnel in proper waste management and chemical waste handling procedures.			^	^	^
	Develop and provide toolbox talk for on-site sorting of C&D materials to enhance worker's awareness in handling, sorting, reuse and recycling of C&D materials.			^	^	^
	Provision of sufficient waste disposal points and regular collection of waste.			^	*	*

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract			
			DC/2007/23	DC/2009/17	DC/2009/10	DC/2009/18
	Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.			^	*	*
9.125	Bentonite slurries used in diaphragm wall construction should be reconditioned and reused wherever practicable. The disposal of residual used bentonite slurry should follow the good practice guidelines stated in ProPECC PN 1/94 "Construction Site Drainage"	All construction sites	N/A	N/A	^	^
9.131	Adequate number of portable toilets at temporary works areas or the PTWs to ensure that sewage from site staff would be properly collected.		^	^	^	^
9.133	General refuse should be stored in enclosed bins, skips or compaction units separating from C&D material and disposed of at designated landfill.		^	^	*	*
9.135	The recyclable component of the municipal waste generated by the workforce, such as aluminium 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.		^	^	^	^
9.137	If chemical wastes are produced at the construction site, the Contractor would be required to register with the 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. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical		^	*	*	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract			
			DC/2007/23	DC/2009/17	DC/2009/10	DC/2009/18
	characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.					
9.142	Prior to excavation of the marine deposit layer, the deposit should be tested in accordance with the ETWB TC(W) No. 34/2002 and the results should be presented in a Preliminary Sediment Quality Report. The marine deposit should be disposed of at the disposal site designated by the Marine Fill Committee (MFC) or Director of Environmental Protection (DEP) depending on the test results.		^	N/A	N/A	N/A
E	Terrestrial Ecology					
10.94	To implement effective noise mitigation measures as recommended in Section 4 of EIA.	All construction sites	^	N/A	N/A	N/A
10.95	Dust control practices such as regular watering, complete coverage of any aggregate or dusty material storage piles, and re-schedule of dusty activities during high-wind conditions as well as other measures recommended in Section 3 of EIA, should be implemented.		^	^	^	^
10.96	Fences/hoardings should be erected and installed along the boundary of the works areas.		^	^	^	^
10.97	Standard good site practices as suggested in Section 10 of EIA should be implemented.		^	N/A	N/A	N/A
10.98	Provision of proper drainage system and runoff control measures such as use of sand/silt traps, oil/grease separators, sedimentation tanks, etc.		^	^	^	^
F	Landscape and Visual					

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract			
			DC/2007/23	DC/2009/17	DC/2009/10	DC/2009/18
Table 13.7	Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical.	All construction sites	^	^	^	^
	Existing trees to be retained on site should be carefully protected during construction.		^	^	*	
	Trees unavoidably affected by the works should be transplanted where practical.		^	^	^	
	Compensatory tree planting should be provided to compensate for felled trees.		^	^	^	
	Control of night-time lighting.		^	^	^	
Table 13.7	Erection of decorative screen hoarding compatible with the surrounding setting.		N/A	N/A	N/A	
G	Marine Ecology					
11.137	To minimize the potential indirect impacts on water quality from construction site runoff and various construction activities, the practices outlined in ProPECC PN 1/94 Construction Site Drainage should be adopted.	All construction sites	^	^	^	^
H	Hazard to Life					
14A.201	Limiting use of cranes in terms of locations, lifting height, swing angle and setting up safety zone.	Exact location will be determined on construction site by the engineer	^	^	^	^
I	Cultural Heritage					
Tables 15.8 -	The construction vibration control limit (ppv of 25mm/s) shall be strictly followed.	Identified historical	NA. Vibration monitoring has not been launched during	N/A	N/A	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract			
			DC/2007/23	DC/2009/17	DC/2009/10	DC/2009/18
15.11		buildings/structures as mentioned in EM&A Manual Tables 15.8, 15.9, 15.10 and 15.11	the reporting period			

Remarks:	^ Compliance of mitigation measure;
	<> Compliance of mitigation measure but need improvement';
	N/A Not Applicable;
	* Recommendation was made during site audit but improved/rectified by the contractor.
	@ partially implemented
	X Non-compliance of mitigation measure;
	• Non-compliance but rectified by the contractor;
	# Recommendation was made during site audit and to be improved / rectified by the contractor.

**APPENDIX I
COMPLAINT LOG**

APPENDIX I – COMPLAINT LOG

Reporting Quarter: September 2015 to November 2015

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
Com#1_22-07-13	Construction site at Portion 3 and 7 (DC/2009/18)	22 July 2013	The complaint was lodged by a complainant on 22 July 2013 concerning noise generated from the construction works at 03:00am on 19 July 2013.	<p>According to the information provided by the Contractor, mucking out excavated rocks was carried out 90m below ground within a noise enclosure area.</p> <p>Furthermore, the distance between the complainant's residence and the closest construction work is at least 1km away, which would have shapely minimized the chance of potential noise disturbance to the complainant's area.</p> <p>Based on the monitoring results and the other information collected, the complaint was considered not justifiable since no exceedance of the noise monitoring results was recorded in July</p> <p>The Contractor was reminded to make sure the noise enclosure door will be kept close during night time construction.</p>	Closed

APPENDIX J
CONSTRUCTION PROGRAMME

Activity ID	Activity Name	Original Duration	Start	Finish	Activity % Complete	Total Float	Remaining Float	Variance - BL1 Finish	2010												2011												2012												2013												2014												2015												2016																																																																							
									AS	D	F	M	A	M	J	J	A	S	D	F	M	A	M	J	J	A	S	D	F	M	A	M	J	J	A	S	D	F	M	A	M	J	J	A	S	D	F	M	A	M	J	J	A	S	D	F	M	A	M	J	J	A	S	D	F	M	A	M	J	J	A	S	D	F	M	A	M	J	J	A	S																																																																							
SCRS0330	SCRS: Prepare Sediment Test Plan&EPD Approved	12	14-Aug-09 A	27-Aug-09 A	100%			0	SCRS: Prepare Sediment Test Plan&EPD Approved																																																																																																																																															
SCRS0340	SCRS: Conduct sediment Test,Submit PSQR&Approval	24	28-Aug-09 A	24-Sep-09 A	100%			0	SCRS: Conduct sediment Test,Submit PSQR&Approval																																																																																																																																															
SCRS0350	SCRS: Conduct Bio screening, Submit SQR	60	25-Sep-09 A	23-Nov-09 A	100%			12	SCRS: Conduct Bio screening, Submit SQR																																																																																																																																															
SCRS0360	SCRS: EPD Approved of SQR	24	24-Nov-09 A	04-Jan-10 A	100%			-10	SCRS: EPD Approved of SQR																																																																																																																																															
SCRS0370	SCRS: Request for Disposal Site&Get Permit	24	05-Jan-10 A	19-Mar-10 A	100%			-37	SCRS: Request for Disposal Site&Get Permit																																																																																																																																															
Diaphragm Wall									No Significant Evt																																																																																																																																															
SCRS0200	SCRS: Mobilization for D'wall	6	18-Aug-09 A	24-Aug-09 A	100%			0	SCRS: Mobilization for D'wall																																																																																																																																															
SCRS0205	SCRS: Predrilling Works	28	25-Aug-09 A	20-Apr-13 A	100%			-1070	SCRS: Predrilling Works																																																																																																																																															
SCRS0206	SCRS: Guide Wall Construction	12	16-Nov-09 A	25-Nov-09 A	100%			3	SCRS: Guide Wall Construction																																																																																																																																															
SCRS0210	SCRS: Pre-Treatment of Ground	40	28-Oct-09 A	28-Oct-09 A	100%			39	SCRS: Pre-Treatment of Ground																																																																																																																																															
SCRS0230	SCRS: Set Up of Bentonite Yard	9	28-Oct-09 A	28-Oct-09 A	100%			8	SCRS: Set Up of Bentonite Yard																																																																																																																																															
SCRS0263	SCRS: Excavate 1st Panel to Formation Level	9	08-Dec-09 A	30-Dec-09 A	100%			-10	SCRS: Excavate 1st Panel to Formation Level																																																																																																																																															
SCRS0265	SCRS: 1st Panel Desanding & Preparation Works	3	31-Dec-09 A	31-Dec-09 A	100%			2	SCRS: 1st Panel Desanding & Preparation Works																																																																																																																																															
SCRS0267	SCRS: 1st Panel Rebar Cage Installation	2	02-Jan-10 A	02-Jan-10 A	100%			1	SCRS: 1st Panel Rebar Cage Installation																																																																																																																																															
SCRS0269	SCRS: 1st Panel Concreting Works	1	02-Jan-10 A	02-Jan-10 A	100%			0	SCRS: 1st Panel Concreting Works																																																																																																																																															
SCRS0271	SCRS: Excavate 2nd Panel to Formation Level	8	09-Jan-10 A	19-Feb-10 A	100%			-25	SCRS: Excavate 2nd Panel to Formation Level																																																																																																																																															
SCRS0273	SCRS: 2nd Panel Desanding & Preparation Works	3	20-Feb-10 A	21-Feb-10 A	100%			2	SCRS: 2nd Panel Desanding & Preparation Works																																																																																																																																															
SCRS0275	SCRS: 2nd Panel Rebar Cage Installation	1	22-Feb-10 A	22-Feb-10 A	100%			0	SCRS: 2nd Panel Rebar Cage Installation																																																																																																																																															
SCRS0277	SCRS: 2nd Panel Concreting Works	1	22-Feb-10 A	22-Feb-10 A	100%			0	SCRS: 2nd Panel Concreting Works																																																																																																																																															
SCRS0279	SCRS: Excavate 3rd Panel to Formation Level	7	24-Feb-10 A	24-Mar-10 A	100%			-18	SCRS: Excavate 3rd Panel to Formation Level																																																																																																																																															
SCRS0281	SCRS: 3rd Panel Desanding & Preparation Works	3	25-Mar-10 A	25-Mar-10 A	100%			2	SCRS: 3rd Panel Desanding & Preparation Works																																																																																																																																															
SCRS0283	SCRS: 3rd Panel Rebar Cage Installation	2	25-Mar-10 A	25-Mar-10 A	100%			1	SCRS: 3rd Panel Rebar Cage Installation																																																																																																																																															
SCRS0285	SCRS: 3rd Panel Concreting Works	1	26-Mar-10 A	26-Mar-10 A	100%			0	SCRS: 3rd Panel Concreting Works																																																																																																																																															
SCRS0287	SCRS: Excavate 4th Panel to Formation Level	7	29-Mar-10 A	07-May-10 A	100%			-26	SCRS: Excavate 4th Panel to Formation Level																																																																																																																																															
SCRS0289	SCRS: 4th Panel Desanding & Preparation Works	2	08-May-10 A	08-May-10 A	100%			1	SCRS: 4th Panel Desanding & Preparation Works																																																																																																																																															
SCRS0291	SCRS: 4th Panel Rebar Cage Installation	1	08-May-10 A	08-May-10 A	100%			0	SCRS: 4th Panel Rebar Cage Installation																																																																																																																																															
SCRS0293	SCRS: 4th Panel Concreting Works	1	10-May-10 A	10-May-10 A	100%			1	SCRS: 4th Panel Concreting Works																																																																																																																																															
SCRS0295	SCRS: Excavate 5th Panel to Formation Level	10	10-May-10 A	20-Jun-10 A	100%			-25	SCRS: Excavate 5th Panel to Formation Level																																																																																																																																															
SCRS0297	SCRS: 5th Panel Desanding & Preparation Works	1	21-Jun-10 A	21-Jun-10 A	100%			0	SCRS: 5th Panel Desanding & Preparation Works																																																																																																																																															
SCRS0299	SCRS: 5th Panel Rebar Cage Installation	1	22-Jun-10 A	22-Jun-10 A	100%			0	SCRS: 5th Panel Rebar Cage Installation																																																																																																																																															
SCRS0301	SCRS: 5th Panel Concreting Works	1	22-Jun-10 A	22-Jun-10 A	100%			0	SCRS: 5th Panel Concreting Works																																																																																																																																															
SCRS0303	SCRS: Excavate 6th Panel to Formation Level	10	24-May-10 A	03-Jul-10 A	100%			-24	SCRS: Excavate 6th Panel to Formation Level																																																																																																																																															
SCRS0305	SCRS: 6th Panel Desanding & Preparation Works	1	04-Jul-10 A	04-Jul-10 A	100%			1	SCRS: 6th Panel Desanding & Preparation Works																																																																																																																																															
SCRS0307	SCRS: 6th Panel Rebar Cage Installation	1	05-Jul-10 A	05-Jul-10 A	100%			0	SCRS: 6th Panel Rebar Cage Installation																																																																																																																																															
SCRS0309	SCRS: 6th Panel Concreting Works	1	05-Jul-10 A	05-Jul-10 A	100%			0	SCRS: 6th Panel Concreting Works																																																																																																																																															
SCRS0311	SCRS: Excavate 7th Panel to Formation Level	10	06-Jul-10 A	19-Jul-10 A	100%			-2	SCRS: Excavate 7th Panel to Formation Level																																																																																																																																															
SCRS0311A	SCRS: Remaining 31.7m Excav.for 7thPanel	15	20-Jul-10 A	07-Aug-10 A	100%			-2	SCRS: Remaining 31.7m Excav.for 7thPanel																																																																																																																																															
SCRS0313	SCRS: 7th Panel Desanding & Preparation Works	1	07-Aug-10 A	07-Aug-10 A	100%			0	SCRS: 7th Panel Desanding & Preparation Works																																																																																																																																															
SCRS0315	SCRS: 7th Panel Rebar Cage Installation	1	09-Aug-10 A	09-Aug-10 A	100%			0	SCRS: 7th Panel Rebar Cage Installation																																																																																																																																															
SCRS0317	SCRS: 7th Panel Concreting Works	1	09-Aug-10 A	09-Aug-10 A	100%			0	SCRS: 7th Panel Concreting Works																																																																																																																																															
SCRS0319	SCRS: Excavate 8th Panel to Formation Level	24	06-Jul-10 A	18-Aug-10 A	100%			-14	SCRS: Excavate 8th Panel to Formation Level																																																																																																																																															
SCRS0321	SCRS: 8th Panel Desanding & Preparation Works	1	18-Aug-10 A	18-Aug-10 A	100%			0	SCRS: 8th Panel Desanding & Preparation Works																																																																																																																																															
SCRS0323	SCRS: 8th Panel Rebar Cage Installation	1	19-Aug-10 A	19-Aug-10 A	100%			0	SCRS: 8th Panel Rebar Cage Installation																																																																																																																																															
SCRS0325	SCRS: 8th Panel Concreting Works	1	19-Aug-10 A	19-Aug-10 A	100%			0	SCRS: 8th Panel Concreting Works																																																																																																																																															
SCRS0327	SCRS: Demobilization for D'wall	6	20-Aug-10 A	26-Aug-10 A	100%			0	SCRS: Demobilization for D'wall																																																																																																																																															
SCRS0356	SCRS: Grouting Works	45	29-Aug-10 A	07-Oct-10 A	100%			13	SCRS: Grouting Works																																																																																																																																															
SCRS0373A	SCRS: Sonic Test for D-wall	4	24-Aug-10 A	25-Aug-10 A	100%			2	SCRS: Sonic Test for D-wall																																																																																																																																															
SCRS0373C	SCRS: Concrete Coring for DW Panels	24	20-Oct-10 A	22-Oct-10 A	100%			21	SCRS: Concrete Coring for DW Panels																																																																																																																																															
SCRS0380	SCRS: Install Dewatering Wells for Pump-test	21	08-Oct-10 A	03-Nov-10 A	100%			-1	SCRS: Install Dewatering Wells for Pump-test																																																																																																																																															

Start Date 15-Jul-09
 Finish Date 22-Sep-16
 Data Date 20-Dec-14
 Run Date 05-Jan-15
 @Primavera Systems, Inc.

Primary Baseline
 Actual Work
 Remaining Work
 Critical Remaining Work
 Baseline Milestone
 Milestone

MP66

Sheet 45 of 60

Harbour Area Treatment Scheme Stage 2A

Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

Monthly Progress Update as of 20Dec2014 © Oracle Corporation

Date	Revision	Checked	Approved

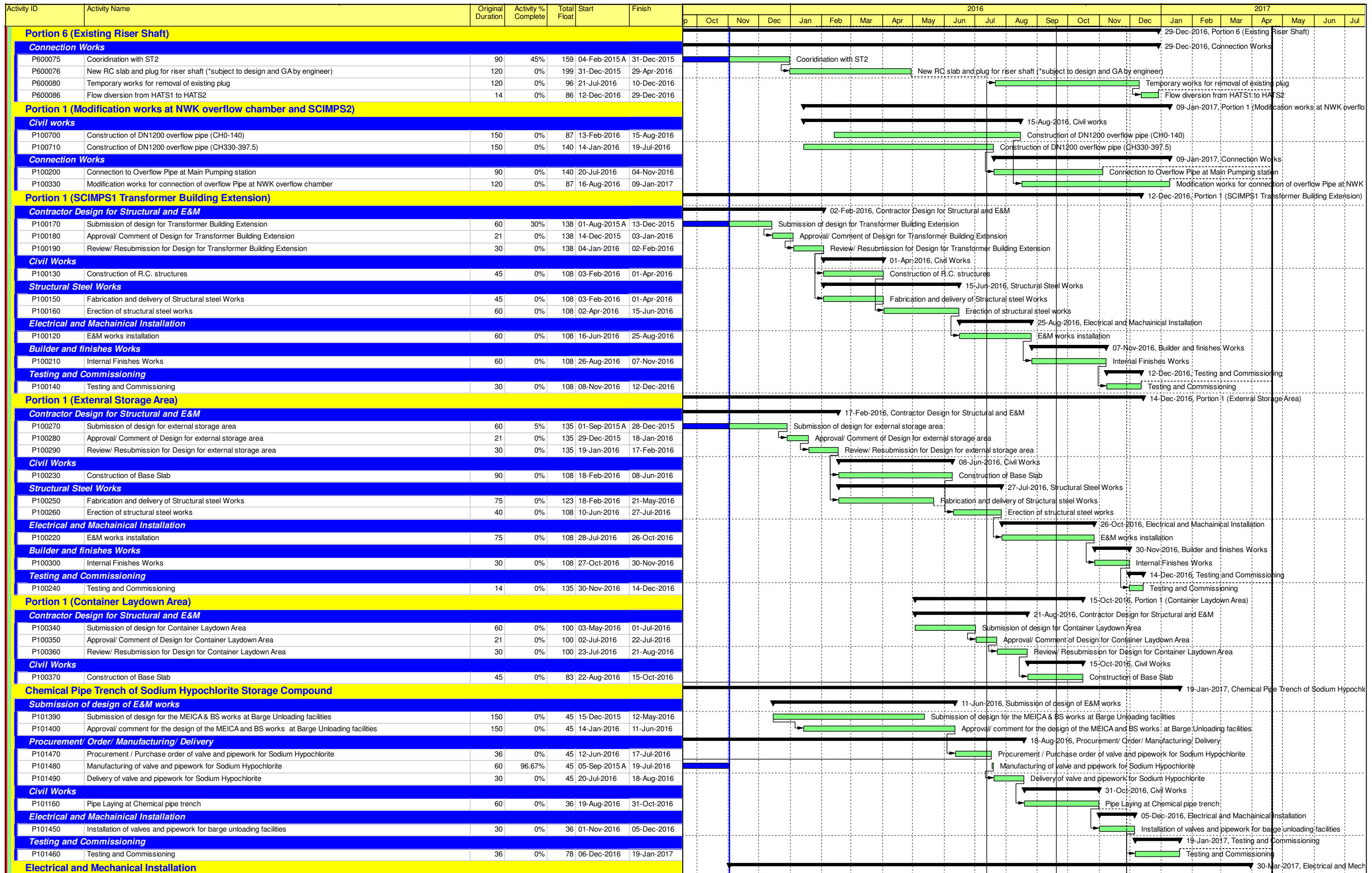
Activity ID	Activity Name	Original Duration	Activity % Complete	Total Float	Start	Finish	2016												2017										
							Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
TWP R9 (Completion for Section 3, 4 and 5)							29-Apr-2017, TWP R9																						
Section 3 (Phase A2)							23-Jan-2016, Section 3 (Phase A2)																						
KD00015	Turnflow Date (12 Dec 15)	0	0%	0		12-Dec-2015*	Turnflow Date (12 Dec 15)																						
MPS2							16-Jan-2016, MPS2																						
Wet Well A							18-Nov-2015, Wet Well A																						
A4170	Pump performance test #1-#4	12	45%	528	30-Oct-2015 A	08-Nov-2015	Pump performance test #1-#4																						
A4180	VSD, Surge and closed valve test	2	0%	528	08-Nov-2015	10-Nov-2015	VSD, Surge and closed valve test																						
A4181	24 Hours Endurance test	8	0%	528	10-Nov-2015	18-Nov-2015	24 Hours Endurance test																						
External and civil works							30-Nov-2015, External and civil works																						
A2780	Portable watermain laying for MPS, DOU3	45	75%	429	12-Aug-2015 A	14-Nov-2015	Portable watermain laying for MPS, DOU3																						
A2790	Storm drainage pipe laying	45	45%	416	30-Jul-2015 A	30-Nov-2015	Storm drainage pipe laying																						
Air Scouring System							19-Nov-2015, Air Scouring System																						
A3320	E&M installation for Air scouring system	10	0%	527	07-Nov-2015	16-Nov-2015	E&M installation for Air scouring system																						
A3330	Testing and commissioning	3	0%	527	17-Nov-2015	19-Nov-2015	Testing and commissioning																						
Smoke Extraction system (Basement floor)							18-Dec-2015, Smoke Extraction system (Basement floor)																						
A2470	Ordering and manufacturing of extraction Fans	75	75%	491	26-May-2015	20-Nov-2015	Ordering and manufacturing of extraction Fans																						
A2480	Smoke Extraction installation (Basement Floor)	40	65%	491	18-Aug-2015 A	04-Dec-2015	Smoke Extraction installation (Basement Floor)																						
A2640	Testing and commissioning	14	0%	491	04-Dec-2015	18-Dec-2015	Testing and commissioning																						
Staircase Pressurisation System (ST3)							16-Jan-2016, Staircase Pressurisation System (ST3)																						
A2500	Ordering and manufacturing of extraction Fans	75	75%	469	26-May-2015	20-Nov-2015	Ordering and manufacturing of extraction Fans																						
A2510	Staircase Pressurisation (ST3)	40	10%	469	18-Aug-2015 A	26-Dec-2015	Staircase Pressurisation (ST3)																						
A2650	Testing and commissioning	14	0%	469	26-Dec-2015	09-Jan-2016	Testing and commissioning																						
A2750	FSD inspection	7	0%	469	09-Jan-2016	16-Jan-2016	FSD inspection																						
New CEPT							19-Dec-2015, New CEPT																						
Connection works at Northern Effluent Culvert							23-Nov-2015, Connection works at Northern Effluent Culvert																						
S0796	Concrete slab inside effluent drop shaft	6	26.67%	374	29-Oct-2015 A	11-Nov-2015	Concrete slab inside effluent drop shaft																						
S0805	Water tightness test for the Northern effluent culvert	7	0%	422	12-Nov-2015	19-Nov-2015	Water tightness test for the Northern effluent culvert																						
S0815	Dismantling of bulkhead at Northern effluent culvert	3	0%	422	20-Nov-2015	23-Nov-2015	Dismantling of bulkhead at Northern effluent culvert																						
Hydro-Turbine							13-Nov-2015, Hydro-Turbine																						
A6235	E&M installation for Hydroturbine	14	75%	374	15-Oct-2015 A	05-Nov-2015	E&M installation for Hydroturbine																						
A6240	E&M installation for scum pump room 13	14	15%	530	29-Oct-2015 A	13-Nov-2015	E&M installation for scum pump room 13																						
Architectural Builders and finishes works							19-Dec-2015, Architectural Builders and finishes works																						
A5450	External wall painting (facing MPS2)	18	0%	399	30-Nov-2015*	19-Dec-2015	External wall painting (facing MPS2)																						
FRP Odour Containment cover							21-Nov-2015, FRP Odour Containment cover																						
A5950	Installation of FRP flat cover (PST (N), effluent launder and drop shaft)	5	0%	525	12-Nov-2015	16-Nov-2015	Installation of FRP flat cover (PST (N), effluent launder and drop shaft)																						
A5960	Installation of FRP Cover at PST (N) 47-53	4	0%	526	06-Nov-2015*	09-Nov-2015	Installation of FRP Cover at PST (N) 47-53																						
A5970	Installation of odour ductworks (branch, PSTs 47-53)	3	0%	526	10-Nov-2015	12-Nov-2015	Installation of odour ductworks (branch, PSTs 47-53)																						
A5980	Installation of odour ductworks (branch, FT and MDC)	3	0%	526	13-Nov-2015	15-Nov-2015	Installation of odour ductworks (branch, FT and MDC)																						
A6040	Installation of FRP cover at RMT and FT5	12	45%	429	16-Sep-2015 A	09-Nov-2015	Installation of FRP cover at RMT and FT5																						
A6050	Installation of FRP cover at MDC (N)	12	65%	535	02-Oct-2015 A	06-Nov-2015	Installation of FRP cover at MDC (N)																						
A6060	Testing and commissioning (smoke test)	5	0%	525	17-Nov-2015	21-Nov-2015	Testing and commissioning (smoke test)																						
Scum Collection system							19-Nov-2015, Scum Collection system																						
S2500	Process water and Protected water installation	25	30%	527	28-Sep-2015 A	19-Nov-2015	Process water and Protected water installation																						
S2550	T&C for Scum collection systems at PSTs	3	0%	542	02-Nov-2015	04-Nov-2015	T&C for Scum collection systems at PSTs																						
Sludge Scrapers							20-Nov-2015, Sludge Scrapers																						
A5600	Longitudinal Sludge scraper at FT5	5	45%	528	30-Oct-2015 A	04-Nov-2015	Longitudinal Sludge scraper at FT5																						
A5610	Cross sludge scrapers at FT5	5	45%	528	30-Oct-2015 A	04-Nov-2015	Cross sludge scrapers at FT5																						
A5640	Sludge scrapers at new Northern PSTs 47, 49, 51, 54	12	50%	525	30-Oct-2015 A	07-Nov-2015	Sludge scrapers at new Northern PSTs 47, 49, 51, 54																						
A5680	T&C for sludge scrapers at FT and PSTs	3	0%	525	08-Nov-2015	10-Nov-2015	T&C for sludge scrapers at FT and PSTs																						
A5690	Water filling for SAT Sludge pump	6	0%	423	11-Nov-2015	17-Nov-2015	Water filling for SAT Sludge pump																						
A5740	T&C for sludge piping system	3	0%	375	17-Nov-2015	20-Nov-2015	T&C for sludge piping system																						
Polymer Dosing System							22-Nov-2015, Polymer Dosing System																						
A5790	Installation of PVC dosing pipes at FT5 and RMT	12	0%	524	06-Nov-2015*	17-Nov-2015	Installation of PVC dosing pipes at FT5 and RMT																						
A5795	Replacement of Temporary pipeworks	10	0%	529	05-Nov-2015	15-Nov-2015	Replacement of Temporary pipeworks																						
A5800	Testing and commissioning	5	0%	524	18-Nov-2015	22-Nov-2015	Testing and commissioning																						
FeCl3 Dosing System							22-Nov-2015, FeCl3 Dosing System																						
A6320	Installation of PVC dosing pipes at FT5 and RMT	12	0%	524	06-Nov-2015*	17-Nov-2015	Installation of PVC dosing pipes at FT5 and RMT																						
A6330	Replacement of Temporary pipeworks	10	0%	529	05-Nov-2015	15-Nov-2015	Replacement of Temporary pipeworks																						
A6340	Testing and commissioning	5	0%	524	18-Nov-2015	22-Nov-2015	Testing and commissioning																						
Process Air System							16-Nov-2015, Process Air System																						
A5530	Water filling of MDC and FT5	5	0%	378	09-Nov-2015*	13-Nov-2015	Water filling of MDC and FT5																						
A5540	Testing and commissioning at MDC (N)	3	0%	530	14-Nov-2015	16-Nov-2015	Testing and commissioning at MDC (N)																						
A5550	Testing and commissioning at FT5	3	0%	530	14-Nov-2015	16-Nov-2015	Testing and commissioning at FT5																						
Static Mixer							13-Nov-2015, Static Mixer																						
A6130	Installation of Static mixer	2	0%	533	12-Nov-2015*	13-Nov-2015	Installation of Static mixer																						
DCS works							09-Dec-2015, DCS works																						
A6150	Point to point test (DCS panels to HMI)	60	80%	31	29-Jun-2015 A	13-Nov-2015	Point to point test (DCS panels to HMI)																						
A6160	End to end point test (Field to HMI)	30	60%	31	06-Jul-2015 A	25-Nov-2015	End to end point test (Field to HMI)																						

█ Actual Work
█ Remaining Work
█ Critical Remaining Work
◆ Milestone
▶ Summary

Contract No. DC/2009/10
HATS Stage 2A - Upgrading works at StoneCutters Island Sewage Treatment Works
Target Works Programme (Revision 9)

Sheet 1 of 5
 DD: 6 Nov 2015

Date	Revision	Checked	Approved
19-Jun-2015	Rev. 8A		
30-Jun-2015	Rev. 8B		
10-Jul-2015	Rev. 8C		
17-Jul-2015	Rev. 8D		
31-Jul-2015	Rev. 8E		
17-Aug-2015	Rev. 8F		



- Actual Work
- Remaining Work
- Critical Remaining Work
- ◆ Milestone
- Summary

Contract No. DC/2009/10

HATS Stage 2A - Upgrading works at StoneCutters Island Sewage Treatment Works

Target Works Programme (Revision 9)

Sheet 4 of 5

DD: 6 Nov 2015

Date	Revision	Checked	Approved
19-Jun-2015	Rev. 8A		
30-Jun-2015	Rev. 8B		
10-Jul-2015	Rev. 8C		
17-Jul-2015	Rev. 8D		
31-Jul-2015	Rev. 8E		
17-Aug-2015	Rev. 8F		

Activity ID	Activity Name	Original Duration	BL Project Start	BL Project Finish	Start	Finish	2015		2016		
							Nov	Dec	Jan	Feb	Mar
DC/2009/17 Detailed Works Programme Revision 3B_Updated up to 30-Nov-15											
Design of Permanent Works											
DDA2 (Southern Sludge Cake Silo)											
Sub-Package - A1											
DP34440	DDA: SSCS - ICE Approve Sub-structure Design	110	24-Mar-15	06-Aug-15	14-Jan-15 A	05-Dec-15					
DP34442	DDA: SSCS - Engineer Comment Sub-structure Design	25	07-Aug-15	04-Sep-15	05-Dec-15	07-Jan-16					
DP34444	DDA: SSCS - Finalize Sub-structure Design	25	04-Sep-15	06-Oct-15	07-Jan-16	05-Feb-16					
DP34450	DDA: SSCS - Engineer Approve Sub-structure Design	21	06-Oct-15	31-Oct-15	05-Feb-16	04-Mar-16					
DDA7 (DOU5 and DGS)											
Sub-Package - A1											
DP034170	DDA: DOU5&DGS - Submit Sub-structure Design	142	29-Apr-15	19-Oct-15	17-Jul-14 A	16-Dec-15					
DP034180	DDA: DOU5&DGS - ICE Approve Sub-structure Design	72	12-May-15	06-Aug-15	30-Sep-15 A	04-Feb-16					
DP034182	DDA: DOU5&DGS - Engineer Comment Piling Design	19	07-Aug-15	28-Aug-15	04-Feb-16	01-Mar-16					
Sub-Package - B											
DP034210	DDA: DOU5&DGS - Submit Structural Design	169	28-Apr-15	19-Nov-15	08-Jul-14 A	01-Dec-15					
DP034220	DDA: DOU5&DGS - ICE Approve Structural Design	95	08-May-15	31-Aug-15	29-Jan-15 A	01-Mar-16					
DDA5 (PWST & Pumping System)											
Sub-Package - B											
DP030210	DDA: PWST&PS - Submit Structure Design	142	30-May-15	18-Nov-15	28-Jul-14 A	24-Dec-15					
DP030220	DDA: PWST&PS - ICE Approve Structure Design	96	15-Apr-15	10-Aug-15	28-Dec-15	27-Apr-16					
Detailed Design Approval (DDA) Submission											
DDA 35 - Workshop Equipment											
DP008810	DDA: Workshop (E&M) - Designer to Compile DDA	107	05-Apr-13	14-Aug-13	05-Apr-13 A	30-Nov-15					
DP008815	DDA: Workshop (E&M) - Comment, Review & Approval	56	21-Mar-15	30-May-15	08-Apr-15 A	10-Dec-15					
DP008820	DDA: Workshop (E&M) - 1st Submission	6	03-Aug-13	10-Aug-13	01-Jun-13 A	01-Dec-15					
DP008830	DDA: Workshop (E&M) - Engineer Comment	12	16-Feb-15	05-Mar-15	01-Dec-15	15-Dec-15					
DP008840	DDA: Workshop (E&M) - Designer Response/Revision	19	05-Mar-15	27-Mar-15	05-Dec-15	29-Dec-15					

- ◆ Milestone
- Actual Work
- Remaining Work
- Critical Remaining Work

Three Months Rolling Programme - December to January 2016
(Based on Detail Works Programme Rev.3B)

3-M Rolling Programme			
Date	Revision	Checked	Approved
30-Nov-15			

Activity ID	Activity Name	Original Duration	BL Project Start	BL Project Finish	Start	Finish	2015		2016		
							Nov	Dec	Jan	Feb	Mar
DP008850	DDA: Workshop (E&M) - 2nd Submission & ICE Cert	6	27-Mar-15	07-Apr-15	29-Dec-15	07-Jan-16					
DP008860	DDA: Workshop (E&M) - Engineer Approval	28	27-Apr-15	30-May-15	07-Jan-16	12-Feb-16					
Section 5 of the Works											
Workshop Building											
Piling Works											
Prebored H-Pile											
S5002164	WB: Load Test and Proof Drill	20	12-Feb-16	14-Mar-16	25-Nov-15 A	21-Dec-15					
Structure											
Substructure											
S5002203	WB: Excavation for Pilecap & Beam	27	14-Mar-16	19-Apr-16	21-Dec-15	25-Jan-16					
S5002206	WB: Raft Foundation & other Pilecap	36	21-Mar-16	07-May-16	29-Dec-15	13-Feb-16					
S5002300	WB: Ground Floor Slab	36	08-Apr-16	23-May-16	13-Jan-16	27-Feb-16					
Superstructure											
Mezzanine Floor, +8.85mPD											
S5002410	WB Mezzanine Floor: Installation of scaffolding, west portion	14	15-Apr-16	03-May-16	20-Jan-16	05-Feb-16					
S5002415	WB Mezzanine Floor: Installation of formworks at west portion	18	29-Apr-16	23-May-16	03-Feb-16	27-Feb-16					
S5002420	WB Mezzanine Floor: Fixing of rebars at west portion	12	16-May-16	30-May-16	20-Feb-16	05-Mar-16					
S5002435	WB Mezzanine Floor: Installation of scaffolding, east portion	14	03-May-16	20-May-16	05-Feb-16	25-Feb-16					
S5002445	WB Mezzanine Floor: Installation of formworks at east porion	18	23-May-16	14-Jun-16	27-Feb-16	19-Mar-16					
Procurement, Manufacture and Delivery											
S5002910	WB: Procure Balancing Machine for Centrifuge	35	29-Sep-15	10-Nov-15	07-Jan-16	20-Feb-16					
S5002915	WB: Manufacture Balancing Machine for Centrifuge	100	11-Nov-15	12-Mar-16	20-Feb-16	24-Jun-16					
S5002930	WB: Procure various E&M Equipment / Material	35	29-Sep-15	10-Nov-15	07-Jan-16	20-Feb-16					
S5002935	WB: Manufacture various E&M Equipment / Material	120	11-Nov-15	09-Apr-16	20-Feb-16	19-Jul-16					
S5002950	WB: Procurement of Travelling Crane	36	11-Nov-15	22-Dec-15	20-Feb-16	06-Apr-16					
Southern Sludge Cake Silo											
Structure											

- ◆ Milestone
- Actual Work
- Remaining Work
- Critical Remaining Work

Three Months Rolling Programme - December to January 2016
 (Based on Detail Works Programme Rev.3B)

3-M Rolling Programme			
Date	Revision	Checked	Approved
30-Nov-15			

Activity ID	Activity Name	Original Duration	BL Project Start	BL Project Finish	Start	Finish	2015		2016			
							Nov	Dec	Jan	Feb	Mar	
Substructure												
S5003110	SSCS: Excavation and Casting of Pilecap	49	06-Feb-16	12-Apr-16	26-Oct-15 A	14-Dec-15						
S5003112	SSCS: Completion of Pilecap	0		12-Apr-16		14-Dec-15			◆ SSCS: Completion of Pilecap			
Procurement, Manufacture and Delivery												
S5003520	SSCS: Procure Conveyor, Valve, Air Duct & Lifting Appliance	53	09-Feb-15	18-Apr-15	30-Sep-15 A	05-Dec-15						
S5003530	SSCS: Manufacture Conveyor, Valve, Air Duct & Lifting Appliance	157	18-Apr-15	27-Oct-15	15-Oct-15 A	12-May-16						
S5003550	SSCS: Procure Vehicle Washing Machine	60	18-Apr-15	02-Jul-15	05-Dec-15	20-Feb-16						
S5003555	SSCS: Manufacture Vehicle Washing Machine	116	02-Jul-15	17-Nov-15	20-Feb-16	13-Jul-16						
S5003585	SSCS: Procurement of Silo (Body)	60	18-Apr-15	02-Jul-15	30-Nov-15	13-Feb-16						
S5003590	SSCS: Manufacturing of Silo (Body)	90	02-Jul-15	04-Feb-16	30-Nov-15	19-Mar-16						
S5003595	SSCS: FAT Test for 1st lot Silos (4 nos)	13	04-Feb-16	23-Feb-16	15-Feb-16	01-Mar-16						
Deodourization Unit 5 and DG Store												
Piling Works												
Prebored H-Pile												
S5008267	DOU5 & DGS: Load Test and Proof Drill	6	14-Mar-16	21-Mar-16	30-Nov-15 A	05-Dec-15						
S5008268	DOU5 & DGS: Demobilization of Plant	5	14-Mar-16	21-Mar-16	30-Nov-15	05-Dec-15						
Procurement and Delivery												
S5008510	DOU5 & DGS: Procurement of DOU5 & other E&M Equipment	53	01-Jun-15	04-Aug-15	30-Nov-15*	03-Feb-16						
S5008520	DOU5 & DGS: Manufacturing of DOU5 & other E&M Equipment	187	04-Aug-15	18-Mar-16	03-Feb-16	21-Sep-16						
Process Water Storage Tank												
Piling Works												
Prebored H-Pile												
S5009198	PWST: Load Test and Proof Drill	7	22-Apr-16	30-Apr-16	28-Nov-15 A	07-Dec-15						
Procurement, Manufacture and Delivery												
S5009660	PWST: Procure Tanks & other E&M Equipment / Material	55	29-Sep-15	03-Dec-15	07-Jan-16	15-Mar-16						
External (Civil) Works												
SDB Area												

- ◆ Milestone
- Actual Work
- Remaining Work
- Critical Remaining Work

Three Months Rolling Programme - December to January 2016
 (Based on Detail Works Programme Rev.3B)

3-M Rolling Programme			
Date	Revision	Checked	Approved
30-Nov-15			

Activity ID	Activity Name	Original Duration	BL Project Start	BL Project Finish	Start	Finish	2015		2016		
							Nov	Dec	Jan	Feb	Mar
							S5009812	Concrete pillar box	52	14-Nov-14	16-Jan-15
S5009814	Permanent carrigeway	52	14-Nov-14	16-Jan-15	29-Sep-14 A	05-Dec-15					
S5009818	Cable duct and draw pit P29	12	11-Mar-15	25-Mar-15	05-Dec-15	19-Dec-15					
General Area											
S5009826	Foul sewer & manholes F6A & F6C at portion 3 & 4	50	23-Jun-15	20-Aug-15	21-Dec-15	24-Feb-16					
S5009832	Cable duct at portion 3 & 4	50	22-Oct-15	18-Dec-15	22-Jan-16	24-Mar-16					
S5009834	Chemical pipe & trench	50	19-Dec-15	22-Feb-16	24-Feb-16	27-Apr-16					
SSCS Area											
S5009852	Sludge feed pipe SF2 and access chamber 2	49	23-Jun-15	19-Aug-15	30-Nov-15	28-Jan-16					
S5009862	Cable duct and draw pits P8, P9 & P10	49	19-Oct-15	15-Dec-15	29-Jan-16	01-Apr-16					

- ◆ Milestone
- Actual Work
- Remaining Work
- Critical Remaining Work

Three Months Rolling Programme - December to January 2016
(Based on Detail Works Programme Rev.3B)

3-M Rolling Programme			
Date	Revision	Checked	Approved
30-Nov-15			

Activity ID	Activity Name	Start	Finish	Physical % Complete	2015																	
					Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4								
18-64289N	ET - Invert (I2) CH 813 - 805 Bay 9		03-Mar-15 A	100%				◆	ET - Invert (I2) CH 813 - 805 Bay 9													
18-64290N	ET - Invert (I2) CH 821 - 813 Bay 8		03-Mar-15 A	100%				◆	ET - Invert (I2) CH 821 - 813 Bay 8													
18-64291N	ET - Invert (I2) CH 829 - 821 Bay 7		04-Mar-15 A	100%				◆	ET - Invert (I2) CH 829 - 821 Bay 7													
18-64292N	ET - Invert (I2) CH 837 - 829 Bay 6		05-Mar-15 A	100%				◆	ET - Invert (I2) CH 837 - 829 Bay 6													
18-64293N	ET - Invert (I2) CH 845 - 837 Bay 5		09-Mar-15 A	100%				◆	ET - Invert (I2) CH 845 - 837 Bay 5													
18-64187N	ET - Invert (I1) CH 23 - 14 Bay 106		11-Mar-15 A	100%				◆	ET - Invert (I1) CH 23 - 14 Bay 106													
18-64188N	ET - Invert (I1) CH 14 - 10 Bay 107		13-Mar-15 A	100%				◆	ET - Invert (I1) CH 14 - 10 Bay 107													
18-64189N	ET - Invert (I1) CH 10 - 2 Bay 108		19-Mar-15 A	100%				◆	ET - Invert (I1) CH 10 - 2 Bay 108													
18-57727N	ET - DS Tunnel Lining (Invert) Formwork Dismantle	20-Mar-15 A	23-Mar-15 A	100%				■	ET - DS Tunnel Lining (Invert) Formwork Dismantle													
18-64294N	ET - Invert (I2) CH 853 - 845 Bay 4		23-Mar-15 A	100%				◆	ET - Invert (I2) CH 853 - 845 Bay 4													
18-64295N	ET - Invert (I2) CH 861 - 853 Bay 3		24-Mar-15 A	100%				◆	ET - Invert (I2) CH 861 - 853 Bay 3													
18-64297N	ET - Invert (I2) CH 865 - 861 Bay 2		25-Mar-15 A	100%				◆	ET - Invert (I2) CH 865 - 861 Bay 2													
18-64298N	ET - Invert (I2) CH 873 - 865 Bay 1		30-Mar-15 A	100%				◆	ET - Invert (I2) CH 873 - 865 Bay 1													
18-57728N	ET - RS Tunnel Lining (Invert) Formwork Dismantle	01-Apr-15 A	05-Apr-15 A	100%				■	ET - RS Tunnel Lining (Invert) Formwork Dismantle													
6.06.5 - Flow Distribution Chamber No.2																						
6.06.5.1 - Demolition Works																						
18-65810	FDC2 - Prep & Sub of New Proposed Staircase to Engineer	15-Dec-11 A	28-Dec-11 A	100%																		
18-65820	FDC2 - Approve New Proposed Staircase from Engineer	29-Dec-11 A	20-Jan-12 A	100%																		
18-65830	FDC2 - Construction of New Staircase	20-Feb-12 A	10-Apr-12 A	100%																		
18-65800	FDC2 - Demolition of Staircase	19-Jun-12 A	06-Jul-12 A	100%																		
6.06.5.2 - Foundation																						
18-65780	FDC2 - G.I. Pre Drilling (5 Nos.)	14-Nov-11 A	30-Dec-11 A	100%																		
18-65790	FDC2 - Setting Out Pile Points	21-Jan-12 A	27-Jan-12 A	100%																		
18-65740	FDC2 - Pre-Bored H-Pile 1st Group (4 nos)	02-Feb-12 A	13-Mar-12 A	100%																		
18-65750	FDC2 - Pre-Bored H-Pile 2nd Group (4 nos)	06-Mar-12 A	17-Jul-12 A	100%																		
18-65760	FDC2 - Pre-Bored H-Pile 3rd Group (4 nos)	13-Jul-12 A	26-Jul-12 A	100%																		
18-65770	FDC2 - Pre-Bored H-Pile 4th Group (5 nos)	27-Jul-12 A	05-Aug-12 A	100%																		
18-58242	FDC2 - Pre-Bored H-Pile 4th Group (5 nos)	24-Aug-12 A	24-Aug-12 A	100%																		
6.06.5.3 - Temporary Works																						
18-66000	FDC2 - Remove Existing Footing and Sheet Pile Driving Works	31-Dec-14 A	28-Jul-15 A	100%																		
18-66010	FDC2 - Pre-boring Works	10-Mar-15 A	29-Jun-15 A	100%																		
18-66020	FDC2 - ELS 1st Layer (Level +4.5 mPD)	20-Apr-15 A	11-May-15 A	100%																		
18-66030	FDC2 - ELS 2nd Layer (Level +1.3 mPD)	11-May-15 A	23-May-15 A	100%																		
18-66040	FDC2 - ELS Formation + Blinding	24-May-15 A	04-Jun-15 A	100%																		
6.06.5.4 - Structure																						
18-66050	FDC2 - Installation of Pile Head	05-Jun-15 A	15-Jun-15 A	100%																		
6.06.5.4.1 - Stage 1																						
18-66060	FDC2 - Base Slab	16-Jun-15 A	30-Jun-15 A	100%																		
18-66090	FDC2 - Lower Wall (Level -0.425 to +5.5mPD)	01-Jul-15 A	31-Jul-15 A	100%																		
18-66120	FDC2 - Removal of 2nd Layer Strut and Backfill	06-Aug-15 A	07-Aug-15 A	100%																		
18-66080	FDC2 - Removal of 1st Layer Strut	08-Aug-15 A	09-Aug-15 A	100%																		
18-66130	FDC2 - Upper Wall (Level +5.5mPD to +13.5 mPD)	10-Aug-15 A	15-Sep-15 A	100%																		
18-66850	FDC2 - Installation of Stainless Steel Channel at Slot	26-Sep-15 A	02-Oct-15 A	100%																		
18-66840	FDC - Installation of Concrete Panels	29-Sep-15 A	07-Oct-15 A	100%																		
6.06.5.4.2 - Stage 2																						
18-66070	FDC2 - Cutting of Diaphragm Wall	17-Jun-15 A	22-Jul-15 A	100%																		
18-66140	FDC2 - Base Slab	15-Jul-15 A	05-Aug-15 A	100%																		
18-66100	FDC2 - ELS Works	17-Jul-15 A	03-Aug-15 A	100%																		
18-66160	FDC2 - Lower Wall (Level -0.4 to +5.2mPD)	06-Aug-15 A	18-Aug-15 A	100%																		
18-66250	FDC2 - Removal of 2nd Layer Struct and Backfill	13-Aug-15 A	21-Aug-15 A	100%																		
18-66150	FDC2 - Removal of 1st Layer Struct and Backfill	22-Aug-15 A	27-Aug-15 A	100%																		
18-66280	FDC2 - Upper Wall (Level + 5.2 to +13.5 mPD)	26-Aug-15 A	15-Sep-15 A	100%																		
18-66270	FDC2 - Temporary Scaffolding for Wall Construction	26-Aug-15 A	29-Aug-15 A	100%																		
6.06.5.5 - Finishing Works																						
18-66380	FDC2- PVC Liner Touch Up Work	22-Sep-15 A	10-Oct-15 A	100%																		
18-66310	FDC2- Install FRP Covers & Handrailing	26-Sep-15 A	05-Dec-15	50%																		
18-66390	FDC2- Waterproofing System	01-Oct-15 A	08-Oct-15 A	100%																		
18-66180	FDC2 - Staircase	07-Oct-15 A	12-Oct-15 A	100%																		
18-66290	FDC2 - Install Temp Cover	12-Oct-15 A	16-Oct-15 A	100%																		



	Actual Level of Effort		Remaining Work
	Primary Baseline		Critical Remaining Work
	Actual Work		Milestone

Updated Detail Works Programme

Data Date: 26-Nov-15 Run Date: 27-Nov-15

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Detail Works Programme			
Date	Revision	Checked	Approved
26-Oct-15	DWP Rev D Update		
26-Nov-15	DWP Rev D Update		

Activity ID	Activity Name	Start	Finish	Physical % Complete	2015								2016								
					Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4							
18-59679N	Entry Culvert - Excavation	18-Apr-13 A	06-Aug-13 A	100%																	
18-59680N	Existing Drop Shaft - Breaking of Existing D-wall	03-May-13 A	12-Sep-13 A	100%																	
18-59660D	Entry Culvert - ELS 1st Layer + Removal of Existing D-wall Panel	06-May-13 A	14-Jun-13 A	100%																	
18-59662N	Entry Culvert - Breaking of Underground RC Block	07-Jun-13 A	04-Jul-13 A	100%																	
18-59670D	Entry Culvert - ELS 2nd Layer + Removal of Existing D-wall Panel	12-Jul-13 A	25-Sep-13 A	100%																	
18-59680D	Entry Culvert - ELS Formation + Blinding	06-Aug-13 A	10-Aug-13 A	100%																	
18-59681N	Entry Culvert - ELS Formation + Blinding at C-Clamp Area	11-Sep-13 A	13-Sep-13 A	100%																	
18-59682N	Existing Drop Shaft - Coring of Holes for Installation of T25 Post Drill Links	13-Sep-13 A	29-Sep-13 A	100%																	
18-59683N	Existing Drop Shaft - Trimming of CJ	18-Sep-13 A	30-Sep-13 A	100%																	
6.06.7.3 - Structure																					
18-59711N	Entry Culvert - Installation of H-Pile Steel Top Plates	13-Aug-13 A	31-Aug-13 A	100%																	
18-59712N	Entry Culvert - Backfilling of Soft Spot Below the Foundation Layer	02-Sep-13 A	17-Sep-13 A	100%																	
18-59710D	Entry Culvert - Base Slab + Kicker	18-Sep-13 A	21-Oct-13 A	100%																	
18-64295D	Entry Culvert - Wall Construction	15-Oct-13 A	06-Dec-13 A	100%																	
18-64296N	Entry Culvert - Removal of Formworks	07-Dec-13 A	19-Dec-13 A	100%																	
18-64315	Entry Culvert - Backfill + ELS Removal	21-Dec-13 A	14-Jan-15 A	100%																	
18-64340N	Entry Culvert - Construct Remaining Top Slab of New Culvert	27-Jan-14 A	26-Feb-14 A	100%																	
18-64350N	Entry Culvert - Connection of Precast Top Slab and Entry Culvert	03-Jun-14 A	12-Jul-14 A	100%																	
6.06.7.4 - E&M Works																					
18-64304N	Entry Culvert Handover for E&M Works	23-Jun-15 A		100%																	
18-64355D	Entry Culvert - TRC Measurement System	03-Jul-15 A	26-Sep-15 A	100%																	
18-64335D	Entry Culvert - Install Pipes & Valves	03-Jul-15 A	26-Sep-15 A	100%																	
18-64345D	Entry Culvert - Install Power Supply System	05-Jul-15 A	29-Sep-15 A	100%																	
18-64360D	Entry Culvert - Install Odour Ducts	22-Aug-15 A	14-Jan-16	80%																	
18-64305D	Entry Culvert - Install Effluent Pumps	25-Aug-15 A	29-Sep-15 A	100%																	
18-64365D	Entry Culvert - Functional Test for Equipments	29-Sep-15 A	24-Jan-16	70%																	
6.06.7.5 - Connect to Existing Drop Shaft																					
18-59310N	Temp Steel Panel - Trial Installation at Existing Chamber 15	29-Aug-13 A	29-Aug-13 A	100%																	
18-59541N	Initial Environmental Water Monitoring	18-Oct-13 A	31-Oct-13 A	100%																	
18-59542N	Impact Environmental Water Monitoring	01-Nov-13 A	27-Feb-14 A	100%																	
18-59390	Dry Season Onset 2013-2014	01-Nov-13 A		100%																	
18-59312N	Temp Water Gate - Installation of Slot Material	04-Nov-13 A	07-Nov-13 A	100%																	
18-59311N	Temp Flow Diversion - Coring of Holes at Existing Drop Shaft as Advance Work for Pilot Wall Cutting	24-Nov-13 A	24-Nov-13 A	100%																	
18-64337N	Temp Flow Diversion - Stage 1 Pilot Wall Cutting L1-1 for Cantilever Beam Construction	26-Nov-13 A	26-Nov-13 A	100%																	
18-64338N	Temp Flow Diversion - Construction of Cantilever Beam	27-Nov-13 A	06-Dec-13 A	100%																	
18-64341N	Temp Flow Diversion - Construction of Strengthening Beam	27-Nov-13 A	06-Dec-13 A	100%																	
18-64342N	Temp Flow Diversion - Existing DS Top Slab Cutting and Modification Works	07-Dec-13 A	15-Dec-13 A	100%																	
18-64336N	Temp Flow Diversion - Installation of Protective Railing	15-Dec-13 A	15-Dec-13 A	100%																	
18-64339N	Temp Flow Diversion - Stage 2 Pilot Wall Cutting (L1 to L2 fr +7 to +3.625 mPD)	16-Dec-13 A	24-Dec-13 A	100%																	
18-59314N	Temp Water Barrier Platform - Trial Assembly	21-Dec-13 A	26-Dec-13 A	100%																	
18-59450D	Temp Flow Diversion - Stage 3 Wall Cutting and Removal (L3 to L5 fr +3.625 to -0.5 mPD)	26-Dec-13 A	16-Jan-14 A	100%																	
18-59420D	Temp Flow Diversion - Erection of Temp Water Barrier Platform at Existing Drop Shaft	26-Dec-13 A	26-Dec-13 A	100%																	
18-59421N	Temp Steel Panel - Installation at Existing Chamber 15	27-Dec-13 A	27-Dec-13 A	100%																	
18-59410	Divert Flow to Northwest Kowloon Outfall	27-Dec-13 A	27-Dec-13 A	100%																	
18-59530N	Temp Flow Diversion - Final Touch Up for New Entry Culvert and Existing DS Connection	17-Jan-14 A	26-Feb-14 A	100%																	
18-59313N	Temp Water Gate - Installation of Temp Water Gate	22-Feb-14 A	22-Feb-14 A	100%																	
18-59500	Divert Flow Back to Existing Drop Shaft	27-Feb-14 A	27-Feb-14 A	100%																	
18-59543N	Post Environmental Water Monitoring	28-Feb-14 A	13-Mar-14 A	100%																	
18-59530	Dry Season End 2013-2014		28-Feb-14 A	100%																	
18-59532N	Temp Flow Diversion - Dismantle Temporary Water Barrier Platform	18-Apr-14 A	18-Apr-14 A	100%																	
6.06.8 - Dechlorination Plant (DCP)																					
6.06.8.1 - DCP - Foundation																					
18-59800	DCP - G.I- Pre Drilling (7 Nos.)	08-Dec-11 A	31-Jan-12 A	100%																	
18-59810	DCP -Setting Out Pile Points	05-Mar-12 A	13-Mar-12 A	100%																	
18-59850	DCP - Pre-Bore H-Piles (20 nos.)	14-Mar-12 A	30-Jun-12 A	100%																	
18-59930	DCP - Test Piles	06-Oct-12 A	15-Oct-12 A	100%																	
6.06.8.2 - DCP - Structure																					
18-60040N	DCP - Mobilization and Breaking of Concrete Surface	10-Dec-12 A	13-Dec-12 A	100%																	
18-60010D	DCP - Excavate Foundation + Blinding	10-Dec-12 A	24-Dec-12 A	100%																	



- █ Actual Level of Effort
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Updated Detail Works Programme

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Detail Works Programme			
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26-Oct-15	DWP Rev D Update		
26-Nov-15	DWP Rev D Update		

Activity ID	Activity Name	Start	Finish	Physical % Complete	2015								2016							
					Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4						
18-60050N	DCP - Pile Cap Excavation	14-Dec-12 A	29-Dec-12 A	100%																
18-60070N	DCP - Pile Cap Blinding	24-Dec-12 A	24-Dec-12 A	100%																
18-60051N	DCP - Steel Top Plates for H-Piles	27-Dec-12 A	02-Jan-13 A	100%																
18-60015D	DCP - R.C. Pile Cap (Base Slab)	28-Dec-12 A	19-Jan-13 A	100%																
18-60090N	DCP - Pile Cap Formworks	28-Dec-12 A	02-Jan-13 A	100%																
18-60101N	DCP - Pile Cap Steel Fixing	03-Jan-13 A	18-Jan-13 A	100%																
18-60020D	DCP - R.C. Intermediate Slab	08-Jan-13 A	02-May-13 A	100%																
18-60120N	DCP - Construction of Toe Wall	08-Jan-13 A	18-Jan-13 A	100%																
18-60111N	DCP - Pile Cap Concreting	19-Jan-13 A	19-Jan-13 A	100%																
18-60140N	DCP - Ground Slab, Waterproofing	22-Jan-13 A	22-Jan-13 A	100%																
18-60130N	DCP - Ground Slab, Erection of Permanent Formworks	23-Jan-13 A	02-May-13 A	100%																
18-60025	DCP - R.C. Plinths and Boundary Wall	28-Jan-13 A	04-Mar-13 A	100%																
18-60160N	DCP - Ground Slab Steel Fixing	28-Jan-13 A	02-May-13 A	100%																
18-60141N	DCP - Ground Slab, Installation of UPVC Cable Ducting	26-Feb-13 A	13-Apr-13 A	100%																
18-60142N	DCP - Ground Slab, Installation of UPVC Cast-Iron Pipe	11-Apr-13 A	18-Apr-13 A	100%																
18-60143N	DCP - Ground Slab Cast-Iron Pipe Water Test	19-Apr-13 A	22-Apr-13 A	100%																
18-60170N	DCP - Ground Slab, Concreting	02-May-13 A	02-May-13 A	100%																
18-60171N	DCP - Ground Slab, Removal of Formworks	03-May-13 A	08-May-13 A	100%																
18-60030D	DCP - R.C. Walls/Roof	04-Jul-13 A	04-Oct-13 A	100%																
18-60030N	DCP - R.C. Wall Scaffolding & Formworks Erection	04-Jul-13 A	17-Aug-13 A	100%																
18-60053N	DCP - R.C. Walls Steel Fixing	29-Jul-13 A	10-Aug-13 A	100%																
18-60052N	DCP - R.C. Roof Formworks Erection	12-Aug-13 A	20-Aug-13 A	100%																
18-60055N	DCP - R.C. Roof Steel Fixing	21-Aug-13 A	26-Aug-13 A	100%																
18-60054N	DCP - R.C. Walls/Roof, Cast Concrete	27-Aug-13 A	27-Aug-13 A	100%																
18-60056N	DCP - R.C. Walls/Roof, Concrete Wall and Roof Curing	28-Aug-13 A	12-Sep-13 A	100%																
18-60046N	DCP - R.C. Roof Parapet, Fix Roof Parapet Wall Reinforcement	05-Sep-13 A	13-Sep-13 A	100%																
18-60035D	DCP - R.C. Roof Parapet	05-Sep-13 A	04-Oct-13 A	100%																
18-60045N	DCP - R.C. Roof Parapet, Erection of Formwork	09-Sep-13 A	18-Sep-13 A	100%																
18-60058N	DCP - R.C. Walls/Roof, Removal of Formworks and Falseworks	13-Sep-13 A	04-Oct-13 A	100%																
18-60048N	DCP - R.C. Roof Parapet, Cast Roof Concrete Parapet	19-Sep-13 A	19-Sep-13 A	100%																
18-60049N	DCP - R.C. Roof Parapet, Curing and Removal of Formworks	20-Sep-13 A	04-Oct-13 A	100%																
18-60065N	DCP - Cleaning and Preparation for Finishing and E&M	05-Oct-13 A	02-Nov-13 A	100%																
18-64651N	DCP - 3600x1200 Sump Pit Near Bund Wall	17-Oct-13 A	02-Nov-13 A	100%																
18-60059N	DCP - R.C. Roof Parapet, Waterproofing	01-May-14 A	31-May-14 A	100%																
18-60173N	DCP - Ground Slab, Bund Wall Waterproofing	01-Feb-15 A	20-Apr-15 A	100%																
18-60040D	DCP - Steel Structure & Roof Delivery		19-May-15 A	100%																
18-60042N	DCP - Steel Structure & Roof, Steel Structure Installation	19-May-15 A	20-Jul-15 A	100%																
18-60043N	DCP - Steel Structure & Roof, Installation of FRP Shelter Sheets	21-Jul-15 A	06-Aug-15 A	100%																
6.06.8.3 - DCP - Storage Tank Compound																				
6.06.8.3.1 - Finishing Works																				
18-60047N	DCP - STC Handover for Finishing Works	19-Jun-14 A		100%																
18-60048D	DCP - STC - Install Storage Tanks	19-Jun-14 A	02-Sep-14 A	100%																
18-60060	DCP - STC - Epoxy Coating & Painting	04-Jul-14 A	14-Jul-14 A	100%																
18-60051	DCP - STC - Metal Works	23-May-15 A	22-Jun-15 A	100%																
18-60058	DCP - STC - Synthetic Timber Board Screen	13-Nov-15 A	28-Nov-15	90%																
18-60056	DCP - STC - FRP Open Mesh Flooring	30-Nov-15	10-Dec-15	0%																
18-60064	DCP - STC - Misc. Finishing Works	08-Dec-15	15-Dec-15	0%																
6.06.8.3.2 - E&M Works																				
18-60066N	DCP Storage Tank Compound Handover for E&M Work	15-May-14 A		100%																
18-60075N	DCP - STC - Install Sodium Bisulphate Dosing Pumps	20-May-14 A	20-Jul-15 A	100%																
18-60052	DCP - STC - Piping Works	27-Jun-14 A	01-Dec-15	90%																
18-60066	DCP - STC - Cabling & Wiring	22-Dec-14 A	15-Jul-15 A	100%																
18-60054D	DCP - STC - Cable Containment Works	22-Dec-14 A	02-Jul-15 A	100%																
18-60068D	DCP - STC - Electrical Fixtures	22-Dec-14 A	10-Jul-15 A	100%																
18-60067	DCP - STC - Electrical Control & Instrumentation	22-Dec-14 A	10-Jul-15 A	100%																
18-60070D	DCP - STC - Fire Services	03-Feb-15 A	15-Jul-15 A	100%																
18-60074	DCP - STC - Install Sodium Bisulphate Dosing Units	24-Sep-15 A	10-Oct-15 A	100%																
18-60080	DCP - STC - Functional Test	25-Sep-15 A	29-Sep-15 A	100%																



- █ Actual Level of Effort
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Date	Revision	Checked	Approved
26-Oct-15	DWP Rev D Update		
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Activity ID	Activity Name	Start	Finish	Physical % Complete	2015				2016						
					Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
6.06.8.4.1 - Finishing Works															
18-63555	DCP - PH - Epoxy Coating & Painting	16-Jun-14 A	12-Jul-14 A	100%	DCP - PH - Epoxy Coating & Painting										
18-63493N	DCP - PH Handover for Finishing Works	15-Jul-14 A		100%	DCP - PH Handover for Finishing Works										
18-63515	DCP - PH - Door, Shutter and Louvre	03-Nov-14 A	17-Nov-14 A	100%	DCP - PH - Door, Shutter and Louvre										
18-63495	DCP - PH - FRP Open Mesh Flooring	30-Nov-15	07-Dec-15	0%	DCP - PH - FRP Open Mesh Flooring										
18-63565	DCP - PH - Misc. Finishing	08-Dec-15	15-Dec-15	0%	DCP - PH - Misc. Finishing										
6.06.8.4.2 - E&M Works															
18-63485D	DCP - PH - Airducts	14-Jul-14 A	29-Apr-15 A	100%	DCP - PH - Airducts										
18-63492D	DCP - PH - Air Grilles	14-Jul-14 A	29-Apr-15 A	100%	DCP - PH - Air Grilles										
18-63474N	DCP Pump Hall Handover for E&M Works	15-Jul-14 A		100%	DCP Pump Hall Handover for E&M Works										
18-63489	DCP - PH - Electrical Fixture	22-Dec-14 A	10-Jul-15 A	100%	DCP - PH - Electrical Fixture										
18-63488D	DCP - PH - Electrical Control & Instrumentation	22-Dec-14 A	10-Jul-15 A	100%	DCP - PH - Electrical Control & Instrumentation										
18-63480D	DCP - PH - Cable Containment	22-Dec-14 A	29-Apr-15 A	100%	DCP - PH - Cable Containment										
18-63487D	DCP - PH - Cabling & Wiring	22-Dec-14 A	29-Apr-15 A	100%	DCP - PH - Cabling & Wiring										
18-63478D	DCP - PH - Piping Works	05-Jan-15 A	20-Sep-15 A	100%	DCP - PH - Piping Works										
18-63476D	DCP - PH - Fume Recovery System	15-Jan-15 A	15-Jul-15 A	100%	DCP - PH - Fume Recovery System										
18-63490D	DCP - PH - Fire Services	03-Feb-15 A	10-Aug-15 A	100%	DCP - PH - Fire Services										
18-63475D	DCP - PH - Pump & Dehumidifier Install	01-Jun-15 A	15-Jun-15 A	100%	DCP - PH - Pump & Dehumidifier Install										
18-63494D	DCP - PH - Functional Test	21-Sep-15 A	29-Sep-15 A	100%	DCP - PH - Functional Test										
6.06.8.5 - DCP - Sensor Store Room															
6.06.8.5.1 - Finishing Works															
18-63624N	DCP - SSR Handover for Finishing Works	15-Apr-14 A		100%	Finishing Works										
18-63635D	DCP - SSR - Epoxy Coating & Painting	15-Apr-14 A	05-Jun-14 A	100%	Epoxy Coating & Painting										
18-63625	DCP - SSR - Door & Louvres	03-Nov-14 A	18-Nov-14 A	100%	DCP - SSR - Door & Louvres										
18-63665	DCP - SSR - Misc Finishing Works	08-Dec-15	21-Dec-15	0%	DCP - SSR - Misc Finishing Works										
6.06.8.5.2 - E&M Works															
18-63574N	DCP Sensor Store Room Handover for E&M Works	15-May-14 A		100%	Sensor Store Room Handover for E&M Works										
18-63585D	DCP - SSR - Airducts	14-Jul-14 A	29-Apr-15 A	100%	DCP - SSR - Airducts										
18-63655D	DCP - SSR - Air Grilles	14-Jul-14 A	29-Apr-15 A	100%	DCP - SSR - Air Grilles										
18-63595D	DCP - SSR - Cabling & wiring	22-Dec-14 A	10-Aug-15 A	100%	DCP - SSR - Cabling & wiring										
18-63575D	DCP - SSR - Cable Containment	22-Dec-14 A	01-Aug-15 A	100%	DCP - SSR - Cable Containment										
18-63645D	DCP - SSR - Electrical Fixtures	22-Dec-14 A	10-Jul-15 A	100%	DCP - SSR - Electrical Fixtures										
18-63491D	DCP - SSR - Fire Services	03-Feb-15 A	15-Jul-15 A	100%	DCP - SSR - Fire Services										
18-63658D	DCP - SSR - Functional Test	21-Sep-15 A	22-Sep-15 A	100%	DCP - SSR - Functional Test										
6.06.8.6 - DCP - Control Room & UPS Room															
6.06.8.6.1 - Finishing Works															
18-63709N	DCP - CR/UPS Handover for Finishing Works	31-Mar-14 A		100%	Finishing Works										
18-63720N	DCP - CR/UPS Partition Wall	31-Mar-14 A	11-Apr-14 A	100%	Wall										
18-63725D	DCP - CR/UPS - Epoxy Coating and Painting	15-Apr-14 A	05-Jun-14 A	100%	CR/UPS - Epoxy Coating and Painting										
18-63715	DCP - CR/UPS - Door & Louvre	03-Nov-14 A	18-Nov-14 A	100%	DCP - CR/UPS - Door & Louvre										
18-63710	DCP - CR/UPS - Metal Works	01-Jun-15 A	19-Jun-15 A	100%	DCP - CR/UPS - Metal Works										
18-64055	DCP - CR/UPS - Misc. Finishing	08-Dec-15	23-Dec-15	0%	DCP - CR/UPS - Misc. Finishing										
6.06.8.6.2 - E&M Works															
18-63604N	DCP Handover for E&M Works at Control Room & UPS Room	15-May-14 A		100%	Handover for E&M Works at Control Room & UPS Room										
18-63615D	DCP - CR/UPS - Airducts	14-Jul-14 A	29-Apr-15 A	100%	DCP - CR/UPS - Airducts										
18-63705D	DCP - CR/UPS - Air grilles	14-Jul-14 A	29-Apr-15 A	100%	DCP - CR/UPS - Air grilles										
18-63605D	DCP - CR/UPS - Cable Containment	22-Dec-14 A	10-Jul-15 A	100%	DCP - CR/UPS - Cable Containment										
18-63685D	DCP - CR/UPS - Cabling & Wiring	22-Dec-14 A	10-Jul-15 A	100%	DCP - CR/UPS - Cabling & Wiring										
18-63695D	DCP - CR/UPS - Electrical Fixtures	22-Dec-14 A	10-Jul-15 A	100%	DCP - CR/UPS - Electrical Fixtures										
18-63495D	DCP - CR/UPS - Fire Services	03-Feb-15 A	15-Jul-15 A	100%	DCP - CR/UPS - Fire Services										
18-63735	DCP - CR/UPS - UPS Equipment	21-Sep-15 A	20-Nov-15 A	100%	DCP - CR/UPS - UPS Equipment										
18-63736	DCP - CR/UPS - Control System Equipment	21-Sep-15 A	20-Nov-15 A	100%	DCP - CR/UPS - Control System Equipment										
18-63748	DCP - CR/UPS - Functional Test	23-Sep-15 A	04-Dec-15	50%	DCP - CR/UPS - Functional Test										
6.06.8.6.2.3 - Completion of DCS Works															
18-63760	DCS Pre-inspection Works Before Handover	09-Dec-15	28-Dec-15	0%	DCS Pre-inspection Works Before Handover										
18-63761	DCS Handover Completed Works		28-Dec-15	0%	DCS Handover Completed Works										
6.06.8.6.2.3 - DCS Training															
18-63828	DCS Training - Submission of Training Programme and Material	01-Apr-15 A	15-Apr-15 A	100%	DCS Training - Submission of Training Programme and Material										
18-63838	DCS Training - Engineer's Review	02-Jul-15 A	10-Jul-15 A	100%	DCS Training - Engineer's Review										



- █ Actual Level of Effort
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Activity ID	Activity Name	Start	Finish	Physical % Complete	2015								2016							
					Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4						
6.06.11.1 - E&M Works																				
18-62149N	Existing Chamber 15 Handover for E&M Works	15-Aug-12 A		100%																
18-62150D	Installation of Pilot TRC Sensing Facilities	15-Aug-12 A	19-Sep-12 A	100%																
18-62200D	Functional Test for Pilot TRC Sensing Facilities	19-Sep-12 A	25-Sep-12 A	100%																
18-62250D	T&C of Pilot TRC Sensing Facilities	22-Jan-13 A	26-Sep-13 A	100%																
6.06.12 - Testing & Commissioning of Section 4																				
18-11001N	Section 4 - Substantial Completion		12-Oct-15 A	100%																
18-62350D	T&C of Effluent Tunnel	11-Dec-15	15-Jan-16	0%																
18-62400	Divert Flow to Effluent Tunnel from Exist. Culvert		11-Dec-15*	0%																
18-62375D	Liaison Works with Operators and Other Parties	11-Dec-15	14-Dec-15	0%																
18-62351N	Section 4 - Complete Remaining Works		09-Apr-16	0%																
6.06.13 - Operation Manual																				
18-64425	Prepare and Submit 1st Draft of Operation Manual	25-Feb-13 A	01-Mar-13 A	100%																
18-64445	Engineer Review and Comment 1st Draft Operation Manual	01-Mar-13 A	20-Mar-13 A	100%																
18-64455	Prepare and Submit 2nd Draft of Operation Manual	26-Nov-15	21-Dec-15	0%																
18-64465	Engineer Review and Comment 2nd Draft Operation Manual	22-Dec-15	09-Jan-16	0%																
18-64485	Training DSD Operation Staff	11-Jan-16	26-Jan-16	0%																
18-64475	Submit Final Operation Manual	11-Jan-16	27-Jan-16	0%																
6.06.14 - Portion 14																				
18-55763N	Cable Detection	24-Sep-12 A	24-Sep-12 A	100%																
18-55760N	Erection of Chain Link Fence	28-Sep-12 A	29-Sep-12 A	100%																
18-55759N	Confirmation of Sub-Contractor		20-Mar-13 A	100%																
18-55764N	Trial Pit	03-May-13 A	03-May-13 A	100%																
18-55775N	Discussion with WSD on Existing Firemain Protection		30-Jul-13 A	100%																
18-55765N	Trench Excavation	04-Oct-13 A	02-Nov-13 A	100%																
18-55761N	Laying of 300mm Pipe	04-Nov-13 A	06-Nov-13 A	100%																
18-55762N	Connection to Existing Manhole with Sewer Diversion	07-Nov-13 A	07-Nov-13 A	100%																
18-55771N	Laying of DN40 Water Pipe	13-Nov-13 A	19-Nov-13 A	100%																
18-55772N	Laying of 150dia. Cable Duct	13-Nov-13 A	19-Nov-13 A	100%																
18-55767N	Backfilling to Formation	20-Nov-13 A	06-Dec-13 A	100%																
6.07 - Section 5																				
6.07.1 - Extension of Chamber 15																				
6.07.1.1 - Foundation																				
18-62580N	De-commissioning of Existing Box Culvert, Pipe Trench and TRC System		15-Jan-16	0%																
18-62520N	Cleansing of the Existing Culvert [Scope to be Confirmed]	16-Jan-16	16-Feb-16	0%																
18-62510N	Mobilization of Piling Rig and Accessories	28-Jan-16	01-Feb-16	0%																
18-62500	Pre-bore H-Piles (10 Nos@2 day/no.)	02-Feb-16	27-Feb-16	0%																
18-62530	Proof Test	28-Feb-16	03-Mar-16	0%																
18-62510	Pile Loading Test	04-Mar-16	21-Mar-16	0%																
6.07.1.2 - Temporary Works																				
18-62550	Sheet Piles Driving Works	29-Mar-16	04-May-16	0%																
18-62600	ELS Excavation & Strutting	05-May-16	04-Jun-16	0%																
18-66400	Demolition of the Existing Culvert	07-May-16	04-Jun-16	0%																
6.07.1.3 - Structure																				
18-66640N	Installation of H-Pile Head Plate	06-Jun-16	15-Jun-16	0%																
18-62650	Extension of Chamber 15 - Base Slab	16-Jun-16	04-Jul-16	0%																
18-66650N	Extension of Chamber 15 - Lower Wall Construction	05-Jul-16	02-Aug-16	0%																
18-66660N	Extension of Chamber 15 - Upper Wall Construction	03-Aug-16	06-Sep-16	0%																
18-66670N	Extension of Chamber 15 - Falsework Dismantle	07-Sep-16	12-Sep-16	0%																
6.07.1.4 - Architectural incld. Exist. C15																				
18-62700	Extension of Chamber 15 - Install FRP Cover and Handrail	13-Sep-16	07-Oct-16	0%																
18-62699	Extension to Chamber 15 - Handover for Finishing Works	13-Sep-16		0%																
6.07.1.5 - E&M																				
18-62749	Extension of Chamber 15 - Handover for E&M Works	07-Sep-16		0%																
18-62750	Extension of Chamber 15 - Install Penstocks	07-Sep-16	30-Sep-16	0%																
18-62760N	Extension of Chamber 15 - Install Odour Duct	07-Sep-16	19-Sep-16	0%																
18-62770N	Extension of Chamber 15 - Install Air Duct	07-Sep-16	19-Sep-16	0%																
18-62800	T&C for Equipments in Section 5	03-Oct-16	13-Oct-16	0%																
6.07.2 - Overflow Culvert																				

 <p>俊和-大陸工程聯營 CHUN WO - CEC JOINT VENTURE</p>	<p>Actual Level of Effort</p> <p>Primary Baseline</p> <p>Actual Work</p>	<p>Remaining Work</p> <p>Critical Remaining Work</p> <p>Milestone</p>	<h2 style="text-align: center;">Updated Detail Works Programme</h2> <p style="text-align: center;">Data Date: 26-Nov-15 Run Date: 27-Nov-15</p>	<p>Project ID : C18DWPDI51126</p> <p>Layout : C18151126UDWP</p> <p>Page 39 of 40</p>	<table border="1"> <thead> <tr> <th colspan="4">Detail Works Programme</th> </tr> <tr> <th>Date</th> <th>Revision</th> <th>Checked</th> <th>Approved</th> </tr> </thead> <tbody> <tr> <td>26-Oct-15</td> <td>DWP Rev D Update</td> <td></td> <td></td> </tr> <tr> <td>26-Nov-15</td> <td>DWP Rev D Update</td> <td></td> <td></td> </tr> </tbody> </table>	Detail Works Programme				Date	Revision	Checked	Approved	26-Oct-15	DWP Rev D Update			26-Nov-15	DWP Rev D Update		
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					Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
6.07.2.1 - Temporary Works																	
18-62950	Overflow Culvert - Sheet Piles Driving Works (with Pre-bored)	07-Nov-15 A	12-Dec-15	40%													
18-63000	Overflow Culvert - ELS Excavation & Strutting	14-Dec-15	20-Jan-16	0%													
6.07.2.2 - Foundation																	
18-62850	G.I-Pre-Drilling (3 Nos.)	12-Sep-12 A	18-Sep-12 A	100%													
18-62900	Pre-bore H-Piles (6 Nos.@2day/no.)	19-Sep-12 A	29-Sep-12 A	100%													
6.07.2.3 - Structure																	
18-63050	Overflow Culvert - Base Slab Construction	21-Jan-16	06-Feb-16	0%													
18-63060	Overflow Culvert - Wall & Roof Slab Construction	11-Feb-16	10-Mar-16	0%													
18-63070N	Overflow Culvert - ELS Removal and Backfilling	11-Mar-16	16-Mar-16	0%													
6.07.3 - Demolition of Existing Dechlorination Plant																	
18-63100	Demolition of Existing Dechlorination Plant	11-Dec-15	23-Jan-16	0%													
18-63150	External Work - Part 2 (Utilities)	25-Jan-16	13-Feb-16	0%													
6.07.4 - Dechlorination Compound																	
18-63210N	Concreting for Pavement	25-Jan-16	04-Feb-16	0%													
6.07.5 - Landscape Works																	
18-63200	Landscaping Softwork	25-Jan-16	23-Mar-16	0%													
18-63300	Irrigation System	24-Mar-16	25-Apr-16	0%													



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