


Harbour Area Treatment Scheme Stage 2A

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

**Consolidated Quarterly Environmental
Monitoring and Audit Report
December 2015 to February 2016**

(Version 1.0)

Certified By	 (Environmental Team Leader)
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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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17 May 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 December 2015 to February 2016 (Issue No. 25)**

We refer to the captioned report consolidating the individual ETL certified and IEC verified Quarterly EM&A Reports for Contract Nos. 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.
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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 25th 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/2009/17 - Upgrading Works at Stonecutters Island Sewage Treatment Works – Sludge Dewatering Facilities;
 - Contract no. DC/2009/10 - Upgrading Works at Stonecutters Island Sewage Treatment Works – Main Pumping Station, Sedimentation Tanks and Ancillary Facilities; and
 - Contract no. DC/2009/18 - Upgrading Works at Stonecutters Island Sewage Treatment Works – Effluent Tunnel and Disinfection Facilities.
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 and DC/2007/23 have completed all major construction works in the Stonecutters Island respectively on 5 March 2015 and 16 October 2015.
5. No amendment of the information in the EM&A reports for each individual contract was made in this consolidated quarterly report.
6. This Report documents the findings of EM&A Works for the Project covering the period from December 2015 to February 2016.
7. 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/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

8. The environmental monitoring works were conducted by the ETs for the Contract 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.
9. 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/2009/10	AM6/AM6a *	1-hr TSP	0	0	0	0	N/A
		24-hr TSP	0	0	0	0	N/A
	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/2009/10	NM5	Noise	0	0	0	0	N/A
	NM6		0	0	0	0	N/A
DC/2009/18	NM7		0	0	0	0	N/A

Note

* Alternative monitoring location for AM6 was adopted in January 2016 as location AM6a

1-hour TSP Monitoring

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

24-hour TSP Monitoring

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

Construction Noise

12. 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

13. 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 December 2015, January and February 2016	Submitted to EPD	No comment	---
Notifications of any summons & prosecutions received	0	--	N/A	N/A	---

Key Information in the EIA Report

14. 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/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 25th consolidated quarterly EM&A report summarizing the EM&A works conducted for the Project at SCISTW during December 2015 to February 2016.
- 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/2009/10 (AM6/AM6a, AM7, AM 8; NM5 and NM6) 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/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/2009/10
Contract Title:	Upgrading Works at SCISTW - Main Pumping Station, Sedimentation Tanks and Ancillary Facilities
Consultant	Ove Arup & Partners HK Ltd
The Engineer	S.Y.Chan (Tel: 2528 3031)
The Engineer Representative	Mr Ted Tang (Tel: 2370 4311)
ER's Coordinator	Ms Natalie Kwok (Tel: 6794 8844)
Independent Environmental Checker	Dr. Anne Kerr (Tel:2828 5757)
Contractor	Sun Fook Kong – Biwater Joint Venture
Site Agent	Mr. Keith Ho (Tel: 2620 0070)
Environmental Officer	Mr. Albus Cheung (Tel:2620 0070)
Environmental Team	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/2009/10	<p><u>December 2015:</u></p> <ul style="list-style-type: none"> • At MPS2, Planting works for Green Roof System was completed and FRP platform at basement was in progress. The installation of S.S Panel at basement (Hall A side) was in progress. • At Portion 3, ABWF works was in progress. • At Portion 8, Erection of roof cladding at Sodium Hypochlorite Storage Compound was in progress. • At Portion 5, ABWF works for Kiosk at Inlet Chamber was completed. Installation of sump pump pipeworks & flushing water system was completed. Installation of FRP staircase was in progress. • At Portion 6, 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 piling works for foundation was in progress. <p><u>January 2016:</u></p> <ul style="list-style-type: none"> • At MPS2, Installation of FRP Working Platform at Access Floor 1 (-32mPD).

	<ul style="list-style-type: none"> • For E&M works, Hall A & B sewage pumps under daily operation under SMC3A control mode and Installation of Monorail Cranes at Basement Floors. • At Portion 3, Installation of FRP covers at MDC, T&C of Air Blowers and Air Balancing Test were in progress. • At Portion 8, Roof construction of SHSC was in progress. • For E&M works, Dosing pump tests and Truck unloading pump test were in progress. • At Portion 6, Construction of wall of Valve Chamber. • At Portion 7, Polymer Storage Building, the piling works for foundation was in progress. • For External works, Construction of Overflow Pipe connection with Inlet Chamber and Construction of Chemical Pipe Trench were in progress. <p><u>February 2016:</u></p> <ul style="list-style-type: none"> • At MPS2, Installation of FRP Working Platform at Access Floor 1 (-32mPD). • For E&M works, Hall A & B sewage pumps under daily operation under SMC3A control mode and Installation of Monorail Cranes at Basement Floors. • At Portion 3, Installation of FRP covers at MDC, T&C of Air Blowers and Air Balancing Test were in progress. • At Portion 8, Roof construction of SHSC was in progress. • For E&M works, Dosing pump tests and Truck unloading pump test were in progress. • At Portion 6, Construction of wall of Valve Chamber. • At Portion 7, Polymer Storage Building, the piling works for foundation was in progress. • For External works, Construction of Overflow Pipe connection with Inlet Chamber and Construction of Chemical Pipe Trench were in progress.
DC/2009/17	<p><u>December 2015:</u></p> <p>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) and Workshop Building (WB) were completed. • Construction of sub structure of Southern Sludge Cake Silos (SSCS) was in progress. • Construction of sub structure of Workshop Building (WB) 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.
- Laying of centrate pipe (CP1 and CP2) at Portion 6 was complete
- Construction of Sludge Feed Pipe (SF2) and pile cap of Southern Sludge Cake Silo (SSCS) were in progress.

January 2016:

Portion 5:

- Fabrication of steel staircase at SST no. 7 was delivered on site and will be installed after piling works.

Portion 6:

- 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 completed.
- Construction of superstructure of Southern Sludge Cake Silos (SSCS) was in progress.
- Construction of sub structure of Workshop Building (WB) was in progress.
- Construction of superstructure of Workshop Building (WB) was in progress.

External Works:

- 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.
- Laying of centrate pipe (CP1 and CP2) at Portion 6 was complete
- Construction of Sludge Feed Pipe (SF2) and pile cap of Southern Sludge Cake Silo (SSCS) were in progress

February 2016:

Portion 5:

- Fabrication of steel staircase at SST no. 7 was delivered on site and will be installed after piling works.

Portion 6:

- 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 completed.
- Construction of superstructure of Southern Sludge Cake Silos (SSCS) was in progress.
- Construction of sub structure of Workshop Building (WB) was in progress.
- Construction of superstructure of Workshop Building (WB) was in progress.

External Works:

- 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.
- Laying of centrate pipe (CP1 and CP2) at Portion 6 was complete.
- Construction of Sludge Feed Pipe (SF2) and pile cap of Southern Sludge Cake Silo (SSCS) were in progress.

DC/2009/18	<p><u>December 2015:</u></p> <p><u>Portion 3:</u></p> <ul style="list-style-type: none"> • E&M Equipment Installation in Irrigation Pump House; • Equipment & system T&C; • ABWF Works at DCP; • Construction of surface channel around DCP; • Construction of pavement at Portion 12; • Installation of FRP Handrails at Chamber 15A; and • Pre-bored sheetpiling, TAM grouting & ELS Construction at Overflow Culvert. <p><u>Portion 7:</u></p> <ul style="list-style-type: none"> • Installation of E&M Equipment and electrical work at DOU 4; • BS works at FOU 4 MCC Room; • Equipment & system T&C; • Installation of E&M Equipment and electrical work at DOU 4; • BS works at DOU 4 MCC Room; Equipment & system T&C; • Installation of FRP Handrails at FDC No.2; and • Continue the 2nd contingency measure to remove the existing removable concrete panels by underwater cutting method. <p><u>January 2016:</u></p> <p><u>Portion 3:</u></p> <ul style="list-style-type: none"> • E&M Equipment Installation in Irrigation Pump House; • Equipment & system T&C; • ABWF Works at DCP; • Construction of surface channel around DCP; • Construction of pavement at Portion 12; • Installation of FRP Handrails at Chamber 15A; and • ELS Construction at Overflow Culvert. <p><u>Portion 7:</u></p> <ul style="list-style-type: none"> • Installation of E&M Equipment and electrical work at DOU 4; • BS works at DOU 4 MCC Room; • Equipment & system T&C; • Installation of FRP Handrails at FDC No.2; and • Continue the 2nd contingency measure to remove the existing removable concrete panels by underwater cutting method. <p><u>February 2016:</u></p> <p><u>Portion 3:</u></p> <ul style="list-style-type: none"> • E&M Equipment Installation in Irrigation Pump House; • Equipment & system T&C; • ABWF Works at DCP; • Construction of surface channel around DCP; • Construction of pavement at Portion 12; and • Construction of concrete structure at Overflow Culvert. <p><u>Portion 7:</u></p> <ul style="list-style-type: none"> • Installation of E&M Equipment and electrical work at DOU 4; • BS works at DOU 4 MCC Room; • Equipment & system T&C; • Reinstatement of FRP Cover at FDC No.1; and • ABWF Works at FDC No.2.
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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 December 2015 to February 2016, 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/AM6a, AM7, AM8 and AM9 were selected for impact dust monitoring. Alternative monitoring location for AM6 was adopted in January 2016 as location AM6a according to DC/2009/10's Jan 2016 monthly EM&A report. **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/AM6a	DC/2009/10	Works site boundary of DC/2009/10
AM7		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)

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 / AM6a, 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/ AM6a *	Dec 2015	139	69 - 311	346	500
	Jan 2016	84	26 - 174		
	Feb 2016	80	31 - 176		
AM7	Dec 2015	161	67 - 213	322	
	Jan 2016	132	93 - 193		
	Feb 2016	157	93 - 199		
AM8	Dec 2015	131	49 - 213	307	
	Jan 2016	109	74 - 162		
	Feb 2016	138	89 - 182		
AM9	Dec 2015	165.5	52.1 - 252.4	318	
	Jan 2016	128.9	84.9 - 187.6		
	Feb 2016	151.9	110.5-192.2		
24 hour TSP					
AM6/ AM6a *	Dec 2015	103	35 - 143	196	260
	Jan 2016	114	68 - 160		
	Feb 2016	95	40 - 152		
AM7	Dec 2015	125	87 - 156	207	
	Jan 2016	118	90 - 185		
	Feb 2016	126	55 - 188		
AM8	Dec 2015	74	48 - 95	158	
	Jan 2016	43	25 - 66		
	Feb 2016	60	32 - 123		
AM9	Dec 2015	103.7	81.0 - 128.2	169	
	Jan 2016	76.2	36.9 - 118		
	Feb 2016	77.8	41.8-130.0		

Note

* Alternative monitoring location for AM6 was adopted in January 2016 as location AM6a

- 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/2009/10	Near FSD Diving Rescue and Training Centre
NM6		Customs' Marine Base
NM7	DC/2009/18	Open Area near Naval Base Barrack

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/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	Dec 2015	66.7 - 71.8	75.0
	Jan 2016	67.2 - 70.6	
	Feb 2016	68 - 72.6	
NM6	Dec 2015	62.2 - 70.8	
	Jan 2016	65.0 - 69.4	
	Feb 2016	67.3 - 70.8	
NM7	Dec 2015	69.5 - 73.7	
	Jan 2016	68.2 - 72.4	
	Feb 2016	70.1-73.3	
For the time period 1900-2300 hrs on weekdays/ For the time period 0700-2300 hrs on Public Holiday			
NM5	Dec 2015	65.2 - 67.6	70.0
	Jan 2016	64.6 - 66.6	
	Feb 2016	60.2 - 61.8	
NM7	Dec 2015	64.2 - 64.7	
	Jan 2016	64.1-64.8	
	Feb 2016	63.8-64.0	
All days during 2300 to 0700 hours of the next day			
NM7	Dec 2015	58.5 - 59.5 *	55.0
	Jan 2016	58.2 - 58.6 *	
	Feb 2016	58.6 - 59.1 *	

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.

- 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/2009/10	Dec 2015	380(m ³)	1,482(kg) and 64(m ³)	0	0	0	0
	Jan 2016	861 (m ³)	1,110(kg) and 27(m ³)	0	0	0	0
	Feb 2016	606(m ³)	622(kg) and 13(m ³)	0	0	0	0
DC/2009/17	Dec 2015	864(m ³)	16(tons)	0	0	0	0
	Jan 2016	599(m ³)	16 (ton)	0	0	0	0
	Feb 2016	119(m ³)	8(ton)	0	0	0	0
DC/2009/18	Dec 2015	230(m ³)	16(m ³)	0	0	0	0
	Jan 2016	1,181(m ³)	22(m ³)	0	0	0	0
	Feb 2016	23(m ³)	24,500(m ³) and 10(m ³)	1,608(kg)	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/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/2009/10

5.4 Three landscape and visual audits were conducted within the environmental site inspection conducted in reporting period and 3 findings were observed during the reporting quarterly period:

- Construction material should be removed from the tree protective zone (Portion 6).
- Covers for the site fencing should be set up and maintained properly (Portion 7).

- Construction activities should avoid contact with tree branches (Portion 7).

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/2009/18

- 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

Implementation Status of Environmental Mitigation Measures

- 5.7 Details of the implementation of mitigation measures for the five contacts are provided in the **Appendix H**.
- 5.8 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.
- Non-Road Mobile Machinery (NRMM) labels must be demonstrated on the registered equipment for inspection.

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.

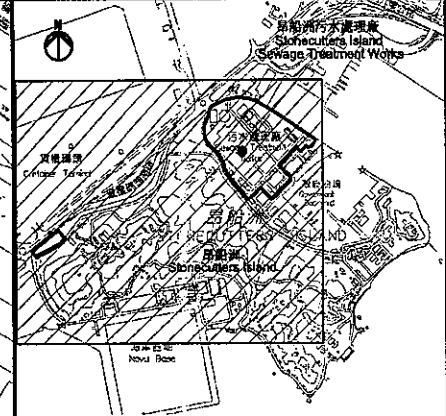
Waste/Chemical Management

- 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



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)**

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

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DRAINAGE SERVICES DEPARTMENT
 GOVERNMENT OF THE
 HONG KONG
 SPECIAL ADMINISTRATIVE REGION

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 Filename : J:\24888\Record\WORKING\CIVIL\2010617_ETF\DCN\24888_ETF0021.dgn



AM7
North West Kowloon
Sewage Pumping Station

NM5
FSD Diving Rescue and
Training Centre

AM6a
Works Site Boundary

AM6
Works Site Boundary

NM6
Customs' Marine Base

AM8
Block A of
Government Dockyard

Stonecutters Island
Sewage Treatment Plant

LEGEND:

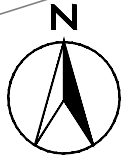
- DC/2009/10' SITE AREA
- DC/2009/17' SITE AREA
- DC/2009/18' SITE AREA
- AIR QUALITY MONITORING STATION
- NOISE MONITORING STATION



Contract No: DC/2009/10
HATS 2A - Upgrading Main Pumping Station, Sedimentation Tanks and Ancillary
Facilities at SCISTW

General Location Plan of the Project and Locations of Air
Quality and Noise Monitoring Stations

SCALE	N.T.S	DATE	11/2015	
CHECK	-	DRAWN	VW	
JOB No.	MA11007	FIGURE NO.	1	REV
			-	



Container Terminal 8
(Modern Terminals Limited)

Stonecutters Island
Sewage Treatment Plant

Off Park
(Container Trucks)

NM7
Open Area near Naval Base Barrack

AM9
Work Site Boundary

LEGEND:

DC/2009/18' SITE AREA



AIR QUALITY MONITORING
STATION



NOISE MONITORING STATION



Contract No: DC/2009/18
HATS 2A -Upgrading Works at Stonecutters Island Sewage Treatment
Works - Effluent Tunnel and Disinfection Facilities

General Location Plan of the Project and Locations of Air
Quality and Noise Monitoring Stations

SCALE

N.T.S

DATE

11/2015

CHECK

-

DRAWN

VW

JOB No.

MA11043

FIGURE NO.

2

REV

-

**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 / AM6a *	346	196	500	260
AM7	322	207	500	260
AM8	307	158	500	260
AM9	318	169	500	260

* Alternative monitoring location for AM6 was adopted in January 2016 as AM6a.

Table A-2 Action and Limit Level for Construction Noise

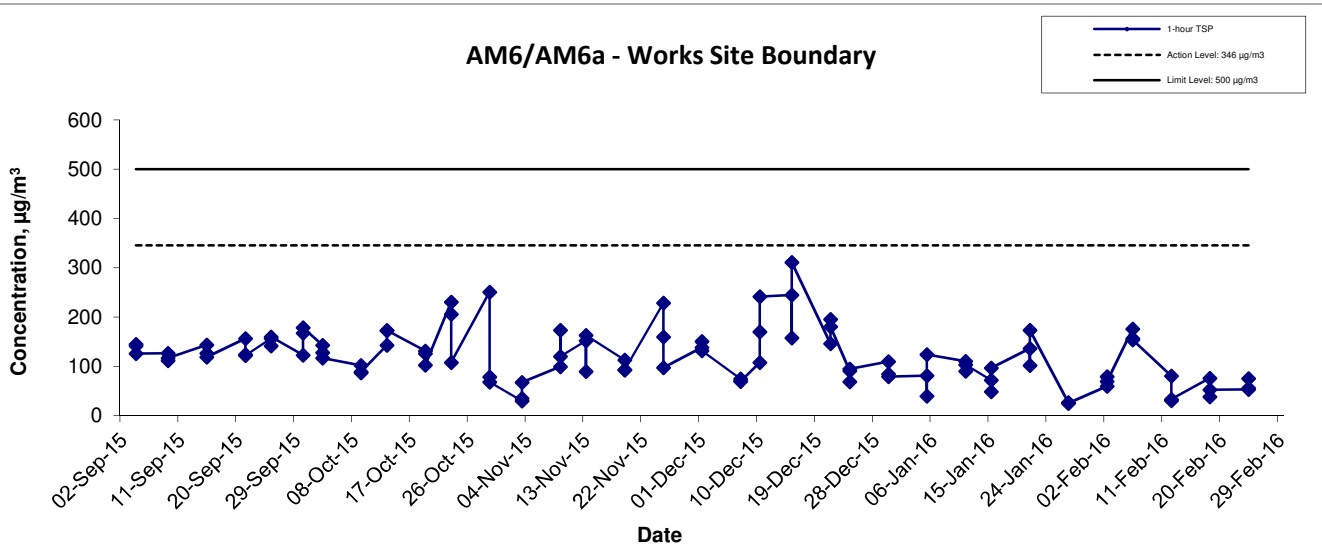
Monitoring Stations	Time Period	Action Level	Limit Level in dB(A)
NM5 NM6 NM7	0700-1900 hours on normal weekdays	When one documented complaint is received	75
	Restricted Hours (Evening Time) All days during the evening (1900 to 2300 hours), and general holidays (including Sundays) during the day-time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

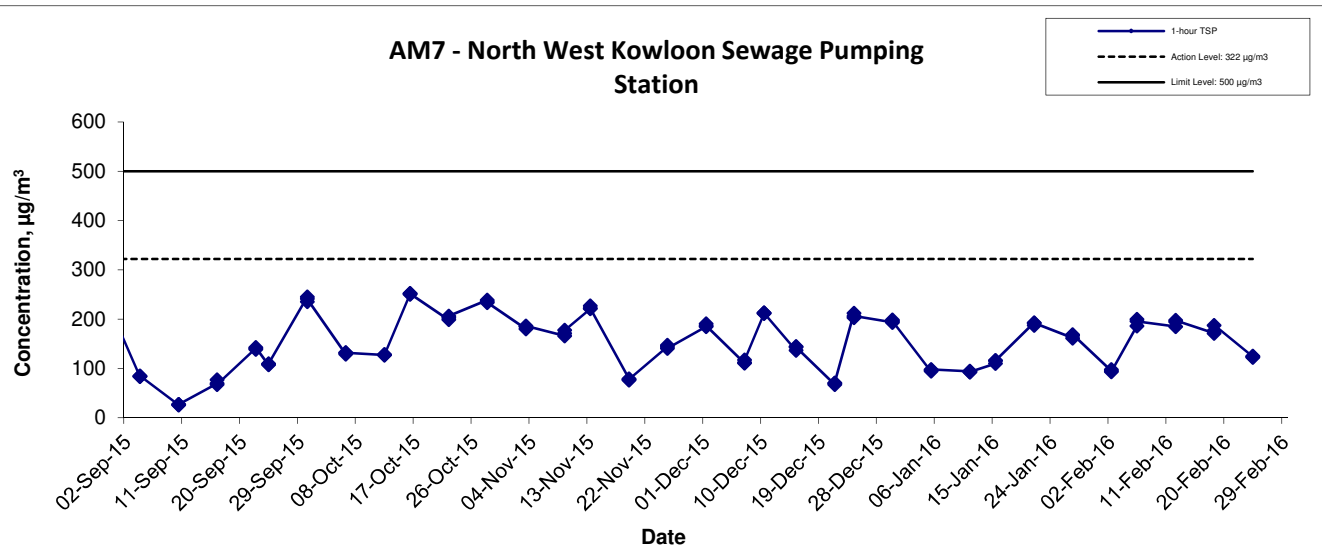
**APPENDIX B
GRAPHICAL PRESENTATIONS OF 1-
HOUR AND 24-HOUR TSP MONITORING
RESULTS**

1-hr TSP Concentration Levels

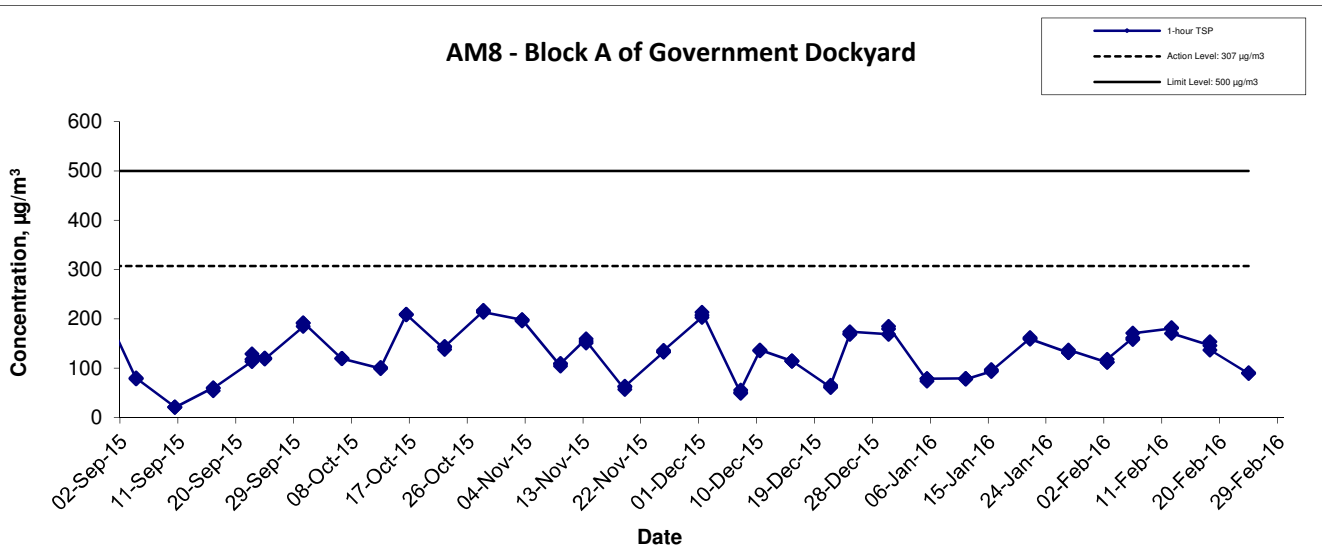
AM6/AM6a - Works Site Boundary



AM7 - North West Kowloon Sewage Pumping Station

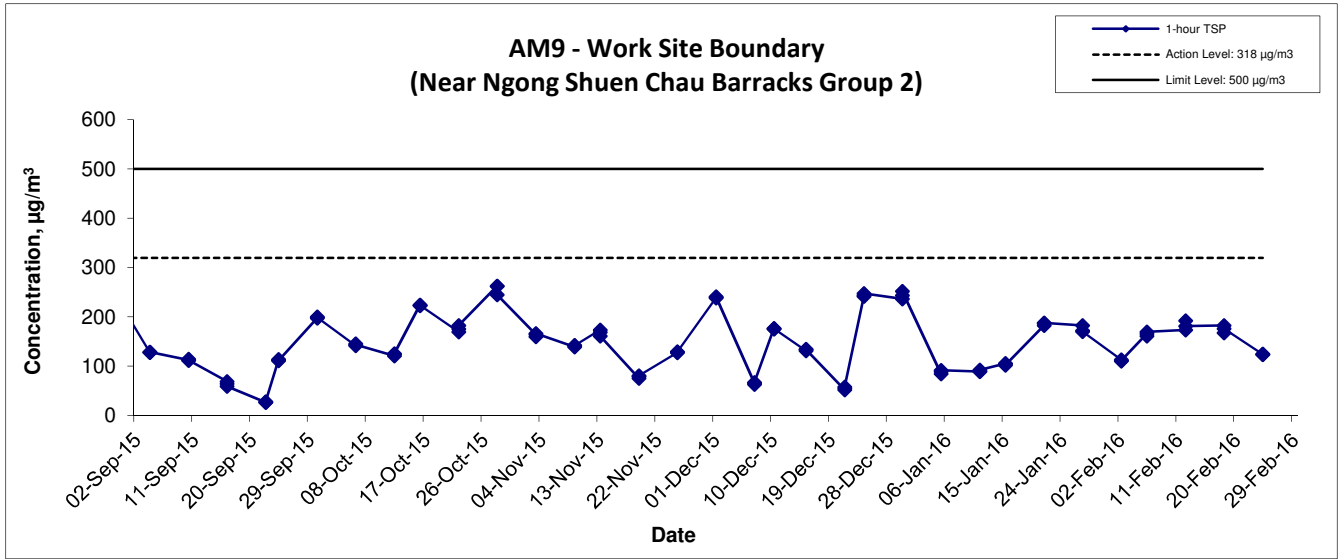


AM8 - Block A of Government Dockyard



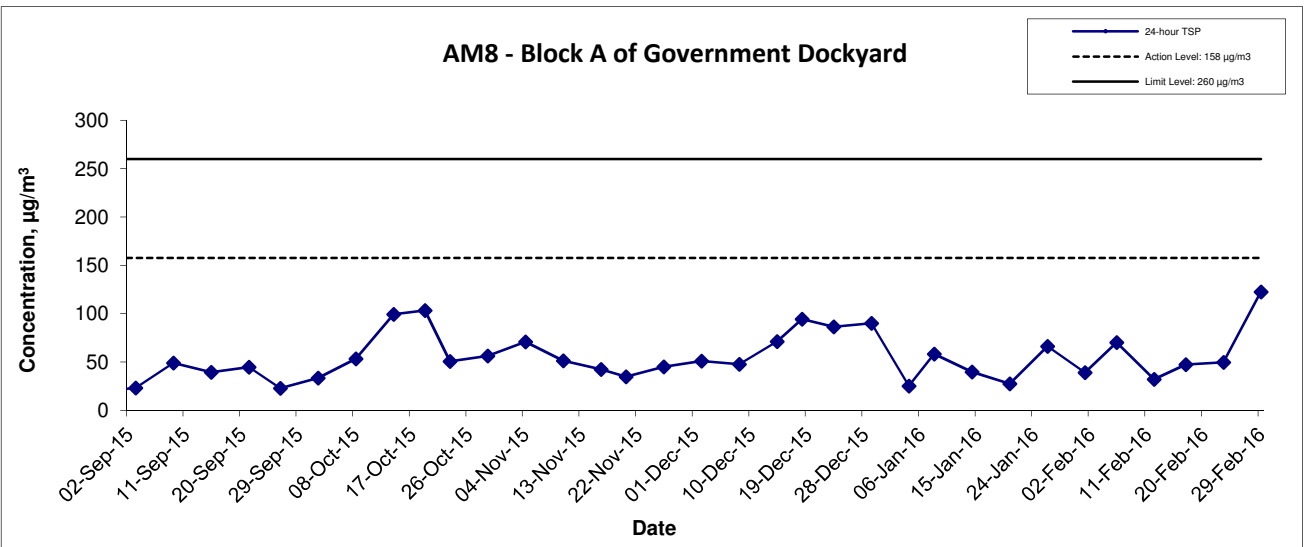
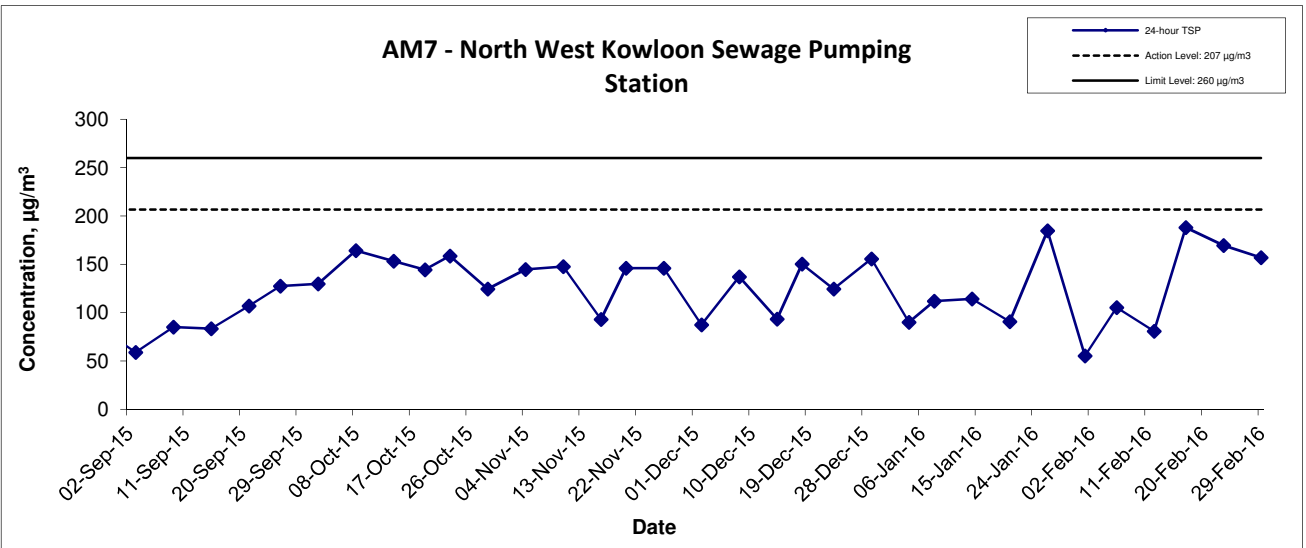
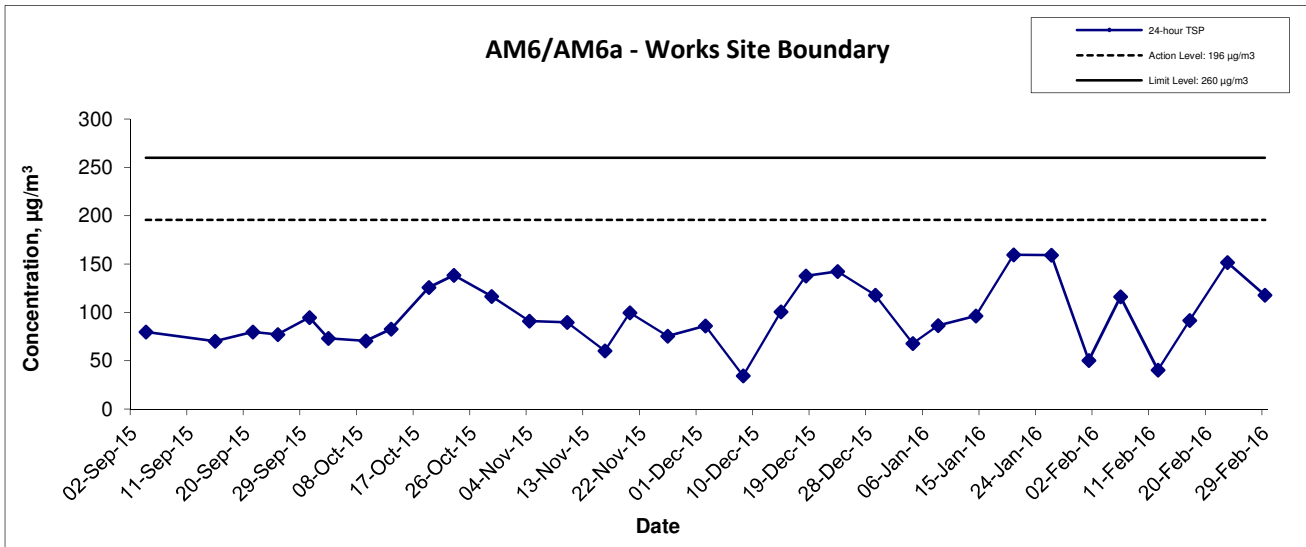
Title	Contract No. DC/2009/10	Scale	Project	CINOTECH
	HATS 2A – Upgrading Works at SCISTW– Main Pumping Station, Sedimentation Tanks and Ancillary	N.T.S	No. MA11007	
	Graphical Presentation of 1-hour TSP Monitoring Results	Date	Appendix	
		Feb 16	B	

1-hr TSP Concentration Levels



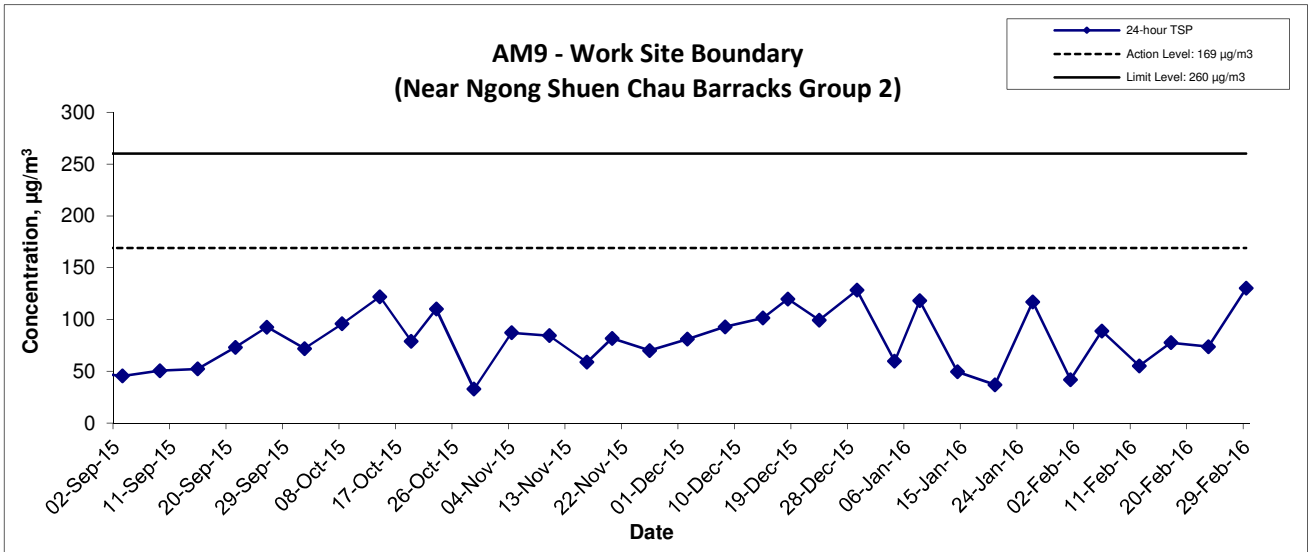
Title Contract No. DC/2009/18 HATS 2A – Upgrading Works at SCISTW– Effluent Tunnel and Disinfection Facilities Graphical Presentation of 1-hour TSP Monitoring Results	Scale N.T.S	Project No. MA11043	CINOTECH
	Date Feb 16	Appendix B	

24-hr TSP Concentration Levels



Title Contract No. DC/2009/10 HATS 2A – Upgrading Works at SCISTW– Main Pumping Station, Sedimentation Tanks and Ancillary Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA11007	
	Date Feb 16	Appendix B	

24-hr TSP Concentration Levels

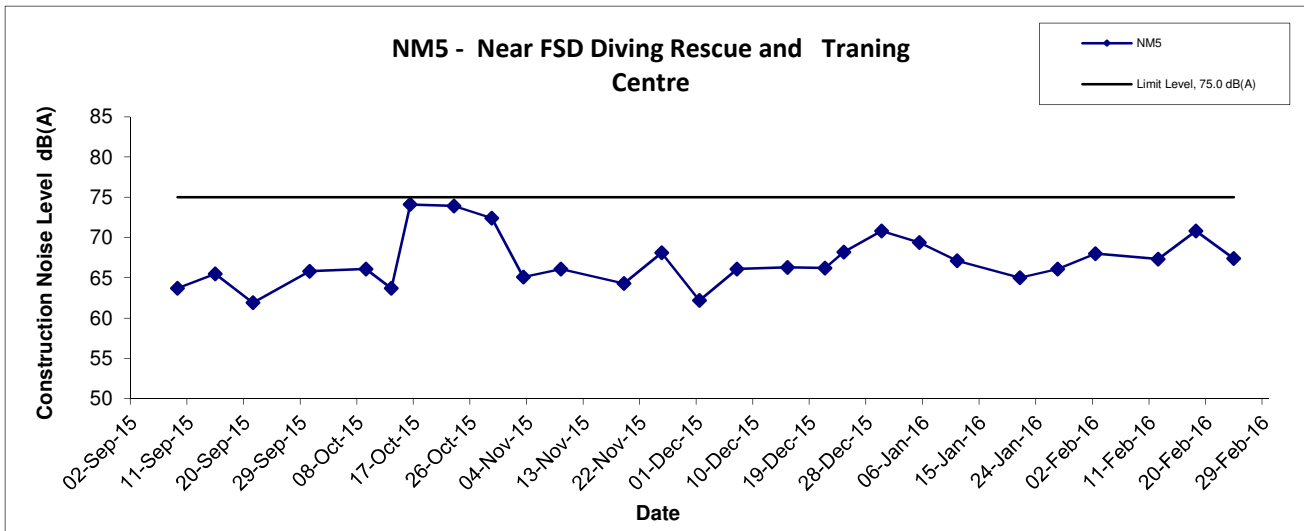
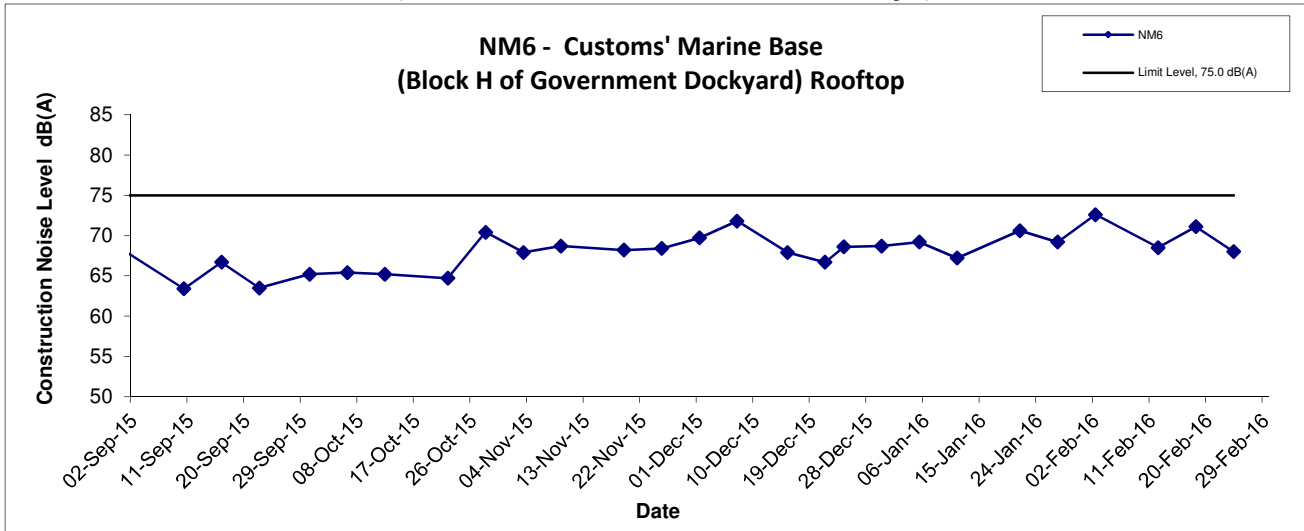


Title Contract No. DC/2009/18 HATS 2A – Upgrading Works at SCISTW– Effluent Tunnel and Disinfection Facilities Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA11043	CINOTECH
	Date Feb 16	Appendix B	

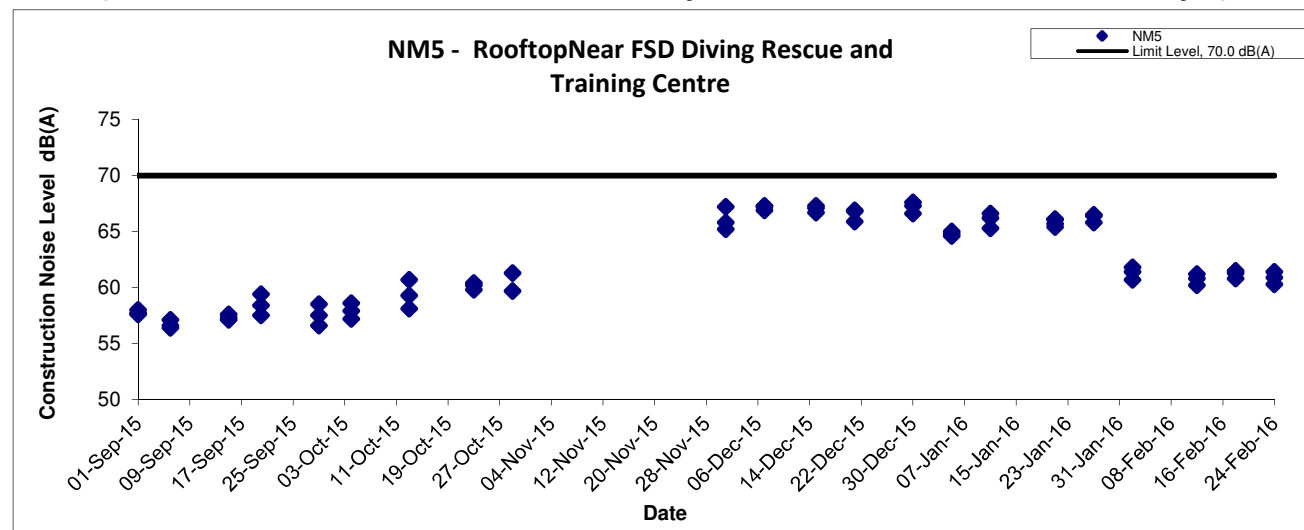
**APPENDIX C
GRAPHICAL PRESENTATIONS OF
NOISE MONITORING RESULTS**

Noise Levels

(0700-1900 hrs on Normal Weekdays)



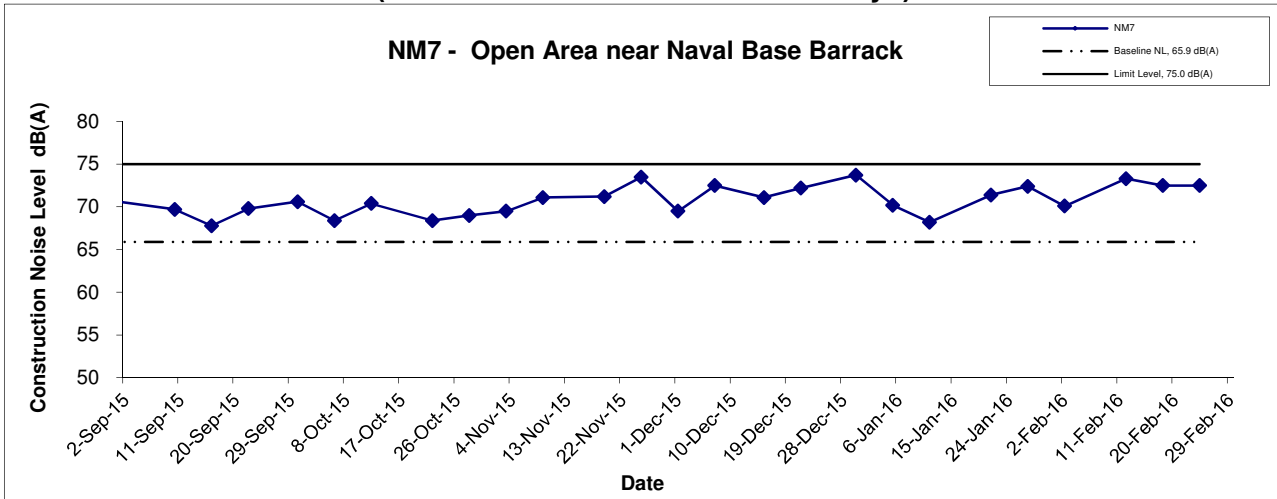
(Restricted Hours - 07:00 to 23:00 holidays & 19:00 to 23:00 on all other days)



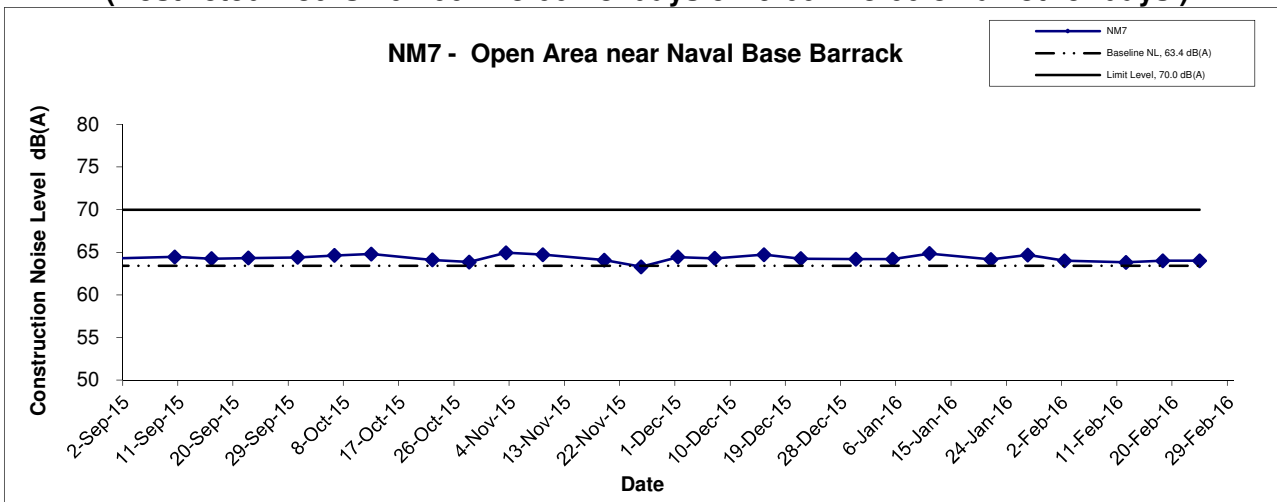
Title Contract No. DC/2009/10 HATS 2A – Upgrading Works at SCISTW– Main Pumping Station, Sedimentation Tanks and Ancillary Graphical Presentation of Noise Monitoring Result	Scale N.T.S	Project No. MA11007	
	Date Feb 16	Appendix C	

Noise Levels

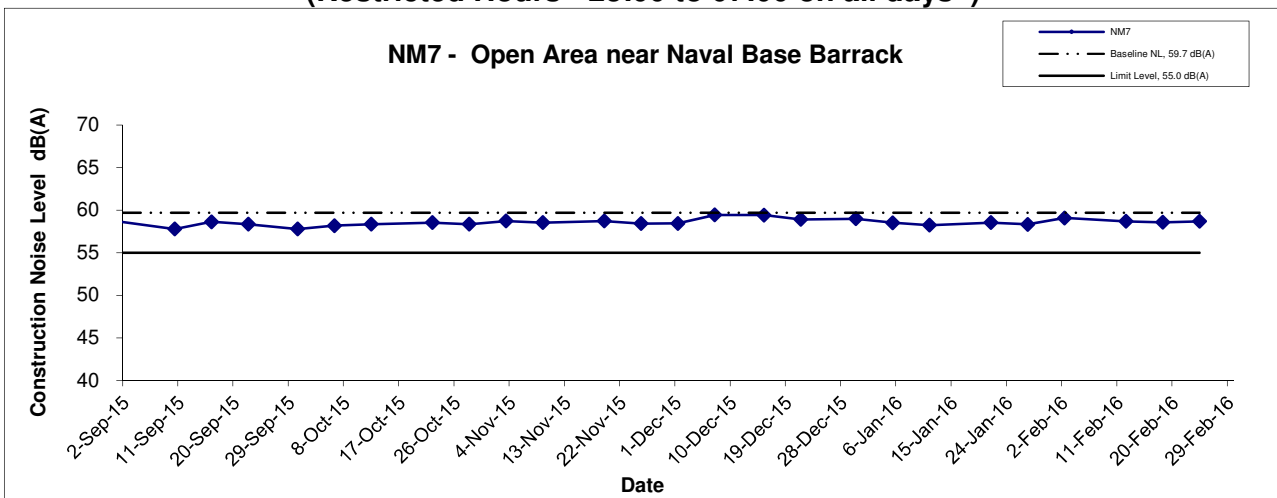
(0700-1900 hrs on Normal Weekdays)



(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	Project No. MA11043	
	Date Feb 16	Appendix C	

**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/2009/10

Reference Number	Valid Period		Details	Status
	From	To		
<i>Water Discharge License</i>				
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
<i>Registered Chemical Waste Producer</i>				
WPN5213-269-3584-01	N/A	N/A	The application was approved on 4-5-2011.	Valid
<i>Billing Account for Disposal of Construction Waste</i>				
CSW01444	16/3/2011	N/A	The application was approved on 16-3-2011.	Valid
<i>Notification of Works Under APCO</i>				
327427	N/A	N/A	Notice form received by EPD on 2-3-2011.	N/A
<i>Construction Noise Permit for use of mechanical equipment outside permitted working hours</i>				
GW-RW0341-15	1/8/2015	31/1/2016	Location: Portion 3 and 8	Expired
GW-RW0342-15	1/8/2015	31/1/2016	Location: Portion 6	Expired
GW-RW0528-15	26/10/2015	25/4/2016	Location: Portion 7	Valid
GW-RW0655-15	25/12/2015	24/6/2016	No. 169 Container Port Road South	Valid
GW-RW0656-15	25/12/2015	24/6/2016	Location: Portion 4	Valid
GW-RW0657-15	25/12/2015	20/6/2016	Location: Portion 3 and 8	Valid

Table D.2 Summary of Environmental Licensing and Permit Status for Contract DC/2009/17

Permit No.	Valid Period		Details	Status
	From	To		
<i>Water Discharge License</i>				
WT00007982-2010	3/12/2010	31/12/2015	Location: Portion 3 and 4	Expired
WT000022776-2015	6/1/2016	31/10/2020	Location: Portion 5	Valid
WT00021164-2015	13/3/2015	31/3/2020	Location: Portion 6	Valid
<i>Registered Chemical Waste Producer</i>				
WPN5213-269-C3388-02	19/10/2010	N/A	Major chemical waste types are: Spent battery,	Valid

Permit No.	Valid Period		Details	Status
	From	To		
			waste mechanical oil and spent lubricant.	
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-RW0524-15	21/10/2015	20/4/2016	Location: Portion 3, 4, 5 and 6	Valid
GW-RW0526-15	21/10/2015	20/4/2016	Location: Portion 3, 4, 5 and 6	Valid
GW-RW0013-16	15/1/2016	30/4/2016	Location: Portion 3, 4, 5 and 6	Valid

Table D.3 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-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
GW-RW0064-16	5/2/2016	31/7/2016	Location: Construction site at Stonecutters Island Sewage treatment works (Portion 7)	Valid
GW-RW0065-16	18/2/2016	17/8/2016	Location: Construction site at Stonecutters Island Sewage treatment works (Portion 3)	Valid

APPENDIX E
SUMMARY OF EXCEEDANCE

APPENDIX E – SUMMARY OF EXCEEDANCE

Reporting Quarter: December 2015 to February 2016

- 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/2009/10, DC/2009/17 and DC/2009/18)

DC/2009/10:

December 2015

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	151209-001	Muddy surface should be covered or bunded to avoid muddy runoff formation (Portion 4).	Muddy surface runoff was not observed in the area.
	151209-002	The Pump of the acid solution should be checked to ensure the pH level is acceptable (Portion 6).	The pH level and the AquaSed's condition were observed to be acceptable.
Air Quality	151203-001	Drilling and excavating activities should be sprayed with water or provide other form of dust measure (Portion 4).	Dusty construction activities have been completed or sprayed with water.
	151203-R02	Reminder: Temporary entrance and access should be free from dust accumulation once nearby construction materials were closed (Portion 4 and 7).	Access roads were observed to be washed and the surface dust was reduced.
	151217-R01	Reminder: Water should be sprayed on the surface before carrying out dusting activities (Portion 4).	Dust on the haul road has been reduced.
	151231-R03	Reminder: Sand stockpile should be covered or sprayed with water for dust suppression (Portion 4).	The stockpile has been provided with cover and sprayed with water.
Waste/ Chemical Management	151224-002	Chemical or oil containers should be provided with drip tray or other form of bundings; Storage area should be maintained to avoid leakage (Portion 6).	The identified containers were observed to have removed or provided with drip tray.
	151224-R03	Reminder: General refuse should be sorted and contained for storage in Portion 7.	Major general refuse accumulation in Portion 7 was not observed
	151231-001	Chemical from the sewage treatment facilities should be prevented from entering the drainage channel; Bunding should be provided to the drain (Portion 4).	The chemical pump has been repaired and leakage prevented.
Landscape and Visual	151224-001	Construction materials should be removed from the tree protective zone (Portion 6).	Remarked as ref no. 151231-002
	151231-002	Construction material should be removed from the tree protective zone (Portion 6).	The identified construction materials have been relocated away from the tree protective zone and fencing has been re-established.

January 2016

Parameters	Ref. Number	Observations	Follow Up Action
Air Quality	160107-003	Used Rockwool materials should be contained and disposed to avoid dust emission (Portion 4); Opened cement bag should be covered.	The identified dusty materials have been cleared.

Waste/ Chemical Management	160107-001	Oil leakage is observed at the drip tray; the drip tray should be repair or improved for chemical storage (Portion 7).	The oil has been cleared and no leakage was observed.
	160107-002	General refuse and other waste should be collected and disposed of regularly (Portion 3).	The identified general refuse has been cleared.
	160114-001	Oil containers should be provided with drip tray away from the site boundary (Portion 7).	The identified containers were removed.
	160114-003	General refuse should be sorted and contained for disposal (Portion 4).	The identified general refuse was removed.
	160120-001	Construction waste and general refuse should be sorted for recycle or disposal (Portion 4).	Remarked as ref no. 160128-001.
	160128-001	Waste sorting and removal should be provided to avoid accumulation (Portion 4).	The stored waste has been reduced.
Landscape and Visual	160114-002	Covers for the site fencing should be set up properly (Portion 7).	Remarked as ref no. 160120-002.
	160114-R04	Construction activities should avoid contact with tree branches (Portion 7).	Tree trimming has been conducted to avoid damage cause by construction activities.
	160120-002	Covers for the site fence should be the same height as the fence (Portion 7).	Remarked as ref. no 160217-R01

February 2016

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	160204-002	The pH meter should be checked to ensure the discharge quality is acceptable (Portion 7); Acid dosage should be adjusted before discharging (Portion 6).	The pH level of the discharge has been reduced.
	160225-001	Bunding should be provided to the drainage outlet to block off muddy run-off (Portion 1).	Bunding has been provided on the drainage outlet.
Air Quality	160204-R05	Reminder: Sand stockpile should be covered to avoid dust generation (Portion 4).	The top of the stockpile was observed to be covered.
Waste/ Chemical Management	160204-001	Oil stain near the excavator should be cleared (Portion 4).	The identified oil stain has been cleared.
	160204-R03	Reminder: General refuse should be collected and disposed (Portion 3).	General refuse has been cleared from the area.
	160204-R04	Reminder: Waste water should be pumped to AquaSed for treatment (Portion 4).	The identified waste water was not observed.
	160204-R06	Reminder: Stagnant water in the air compressor's drip tray should be cleared (Portion 7).	The stagnant water has been removed.
	160225-002	Oil spillage near the breaker should be removed as chemical waste (Portion 1).	Oil stain was not observed in the area.
Landscape and Visual	160217-R01	Reminder: The cover for the fence should be maintained in Portion 7.	The fence cover has been established properly.

DC/2009/17:

December 2015

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	151201-001	Sand bag should be placed around the drainage outlet.	Remarked as ref no. 151210-002
	151210-001	Sediment and general refuse in the AquaSed should be cleared to improve the discharge quality.	The AquaSed was observed to be functioning properly without sediment accumulation.
	151210-002	Sand bag should be placed around the drainage outlet.	Sand bags bunding have been provided to the drainage outlet.
	151210-005	Clear the mud on the ground near the site entrance.	The haul road leading to the site entrance was being washed and the wash water was being diverted back to the retention pond.
Air Quality	151222-002	Cement packages should be covered or disposed to avoid dust emission.	The packages have been cleared.
	151229- R01	Reminder: Haul road and stockpile should be sprayed with water or covered whenever possible to avoid dust emission.	The site area was observed to be sprayed with water.
Waste/ Chemical Management	151201-002	Oil spillage near the breaker should be cleared and be avoided as much as possible.	No oil spillage was observed in the identified area.
	151210-R03	Reminder: General refuse was found to be disposed in inappropriate recycling bin. Contractor was reminded to dispose the general refuse in proper receptacles.	Remarked as ref no. 151222-R03
	151210-004	General refuse should be cleared to maintain the site tidiness.	The identified general refuse has been removed.
	151222-001	Adequate drip tray should be provided in the storage area; Drainage plug should be provided to the drip tray to avoid leakage.	The identified drip tray was observed to be sealed and additional drip tray has been provided.
	151222-R03	Reminder: General refuse should be sorted and contained in designated containers.	Sorting of general refuse was observed to have been carried out.

January 2016

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	160112-001	Concrete water should be avoided near the drainage channel by redirecting it back to site area or to the AquaSed.	The identified concrete waste has been cleared.
	160120-001	The AquaSed should be desilted to improve discharge quality.	The discharge quality has been improved.
Air Quality	160126-001	Mud track near the site boundary should be cleared.	The mud track was not observed and the site boundary has been closed up to block any traffics.
Waste/ Chemical Management	160105- R01	Reminder: The Contractor is reminded to remove stored waste regularly.	The identified waste has been disposed
	160105- R02	Reminder: Metal should be separated from excavated soil before removal.	Metal waste was not observed amongst the excavated soil stockpile.
	160126-002	General refuse should be collected and stored regularly.	The general refuse has been cleared.

	160126- O03	Oil container should be provided with drip tray.	The identified container has been removed.
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February 2016

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	160202- R01	Reminder: The Contractor should check the AquaSed regularly to ensure the site water has been treated before discharging; Access to the sedimentation tank should be fixed.	The identified AquaSed was put on standby for replacement.
Air Quality	160211- R01	Reminder: Sand stockpile should be covered to avoid dust generation.	The stockpile has been reduced for backfilling.
Waste/ Chemical Management	160217- R01	Reminder: Used containers should be treated as chemical waste to avoid accumulation in the drip tray.	Stored containers were covered to avoid over-accumulation.

DC/2009/18:

December 2015

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	151203-001	Oil stain should be cleared and u-channel should be covered. (Portion 7 & 3)	Oil stain was not observed and u-channel was covered.
	151224-002	Muddy sand should be cleared at gully and drainage should be well maintained. (Portion 7)	Item was remarked as 151231-002.
	151231-002	Muddy sand inside the gully should be cleared and bundings should be provided. (Portion 7)	Muddy sand was cleared and new bundings were placed.
Air Quality	151203-002	Vehicles should be washed before leaving the site. (Portion 7)	Item was remarked as 151210-003.
	151203-003	Fencing should be covered with tarpaulin. (Portion 3)	Item was remarked as 151210-001.
	151210-001	Fencing should be covered with tarpaulin. (Portion 3)	Item was remarked as 151216-001.
	151210-003	Vehicles should be washed before leaving the site. (Portion 7)	Item was remarked as 151216-002.
	151216-001	Fencing should be covered with tarpaulin. (Portion 3)	Fencing was covered with tarpaulin.
	151216-002	Vehicles should be washed before leaving the site. (Portion 7)	Public road was observed clean.
Waste/ Chemical Management	151203-001	Oil stain should be cleared and u-channel should be covered. (Portion 7 & 3)	Oil stain was not observed and u-channel was covered.
	151203-R01	Label should be provided to oil container. (Portion 3)	Label was provided.
	151210-002	Oil containers should be provided with drip trays. (Portion 3)	Oil containers were removed.
	151224-001	Oil containers should be provided with drip trays. (Portion 3)	Item was remarked as 151231-001.
	151231-001	Oil containers/ chemical containers should be provided with drip trays. (Portion 3)	Item was remarked as 160107-001.
	151231-003	Oil stains should be cleared. (Portion 3)	Item was remarked as 160107-002.

January 2016

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	160107-002	Oil stains should be cleared. (Portion 3)	Contractor was reminded to clear remaining oil stains. Item was remarked as 150114-002.
	160114-002	Oil stains should be cleared and equipment should be well maintained to prevent any oil leakage. (Portion 3)	Item was remarked as 150119-001.
	160119-001	Oil stains should be cleared and equipment should be well maintained to prevent any oil leakage. (Portion 3)	Oil stain found under the equipment was cleared. Item was remarked as 160128-001.
	160128-001	Oil stains should be cleared and stand water inside the drip tray should be cleared. (Portion 3)	Oil stains were cleared and oil absorbent sheet were provided. Stand water was cleared.
	160128-002	Sandbags should be placed near gully and in u-channel near the discharge point to prevent any muddy runoff to the discharge. (Portion 3 and 7)	Sandbags were placed in u-channel near the discharge point at Portion 3. Contractor was reminded to place sandbags near gully at Portion 7. Item was remarked as 160204-001.
	160128-003	Contractor is reminded to divert the sewage to treatment facility before discharge. (Portion 3)	Water Pump was provided to divert the sewage to treatment facility.
	160128-R01	Stockpile of dusty material should be covered. (Portion 3)	Stockpile of dusty material was covered.
Air Quality	160107-R01	Contractor is reminded to cover the stockpile of dusty material after using. (Portion 3)	Stockpile of dusty material was covered.
	160128-R01	Stockpile of dusty material should be covered. (Portion 3)	Stockpile of dusty material was covered.
Waste/ Chemical Management	160107-001	Oil containers/ chemical containers should be provided with drip trays and oil in drip trays should also be cleared. (Portion 3)	Item was remarked as 150114-001.
	160107-002	Oil stains should be cleared. (Portion 3)	Contractor was reminded to clear remaining oil stains. Item was remarked as 150114-002.
	160114-001	Oil containers/ chemical containers should be provided with drip trays and oil in drip trays should also be cleared. (Portion 3)	Drip trays were provided and oil absorbent sheets were observed in the drip tray to absorb oil.
	160114-002	Oil stains should be cleared and equipments should be well maintained to prevent any oil leakage. (Portion 3)	Item was remarked as 150119-001.
	160119-001	Oil stains should be cleared and equipment should be well maintained to prevent any oil leakage. (Portion 3)	Oil stain found under the equipment was cleared. Item was remarked as 160128-001.
	160119-002	Oil/ chemical container should be provided with drip tray and label. (Portion 3 and 7)	Oil/ chemical containers were removed.

	160128-O01	Oil stains should be cleared and stand water inside the drip tray should be cleared. (Portion 3)	Oil stains were cleared and oil absorbent sheet were provided. Stand water was cleared.
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February 2016

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	160204-O01	Sandbags should be placed near gully to prevent any muddy runoff to the discharge. (Portion 7)	Item was remarked as 160218-O01.
	160218-O01	Sandbags should be placed near gully to prevent any muddy runoff to the discharge. (Portion 7)	Muddy sand was removed and sandbag was placed to prevent muddy runoff to the discharge.
	160223-O02	Vehicle washing facility should be provided and ensure that vehicle is washed before leaving the site. (Portion 3)	Water spray was observed and vehicle was cleaned before leaving the site.
Air Quality	160204-O02	Unpaved haul area should be sprayed with water. (Portion 3)	Unpaved haul area was observed wet.
	160223-O02	Vehicle washing facility should be provided and ensure that vehicle is washed before leaving the site. (Portion 3)	Water spray was observed and vehicle was cleaned before leaving the site.
	160223-O03	Bundings should be provided and muddy sand should be removed at the entrance. (Portion 3)	Hard surface was provided and no muddy sand or water was not observed during inspection
Waste/ Chemical Management	160204-R01	Contractor is reminded to clear all oil stains.	No oil stain was observed.
	160218-O02	Contractor should clear oil stains and prevent any oil leakage. (Portion 3)	Item was remarked as 160223-O01.
	160223-O01	Contractor should clear oil stains and prevent any oil leakage. (Portion 3)	Oil stains were cleared during inspection

**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 J IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES (EMIS)

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract		
			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/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.		^	^	^
	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.	All construction sites	^	^	^
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.	All construction sites	*	^	^
	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/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/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 materials 	All construction sites	*	^	*

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract		
			DC/2009/17	DC/2009/10	DC/2009/18
	<p>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/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/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	^	^
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 characteristics of the chemical waste, such as explosive, flammable,		^	^	*

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract		
			DC/2009/17	DC/2009/10	DC/2009/18
	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				
Table	Topsoil, where identified, should be stripped and	All	^	^	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract		
			DC/2009/17	DC/2009/10	DC/2009/18
13.7	stored for re-use in the construction of the soft landscape works, where practical. 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.	construction sites			
			^	*	^
			^	^	^
			^	^	^
			^	^	^
Table 13.7	Erection of decorative screen hoarding compatible with the surrounding setting.			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 - 15.11	The construction vibration control limit (ppv of 25mm/s) shall be strictly followed.	Identified historical buildings/struct	N/A	N/A	^

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

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: December 2015 to February 2016

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

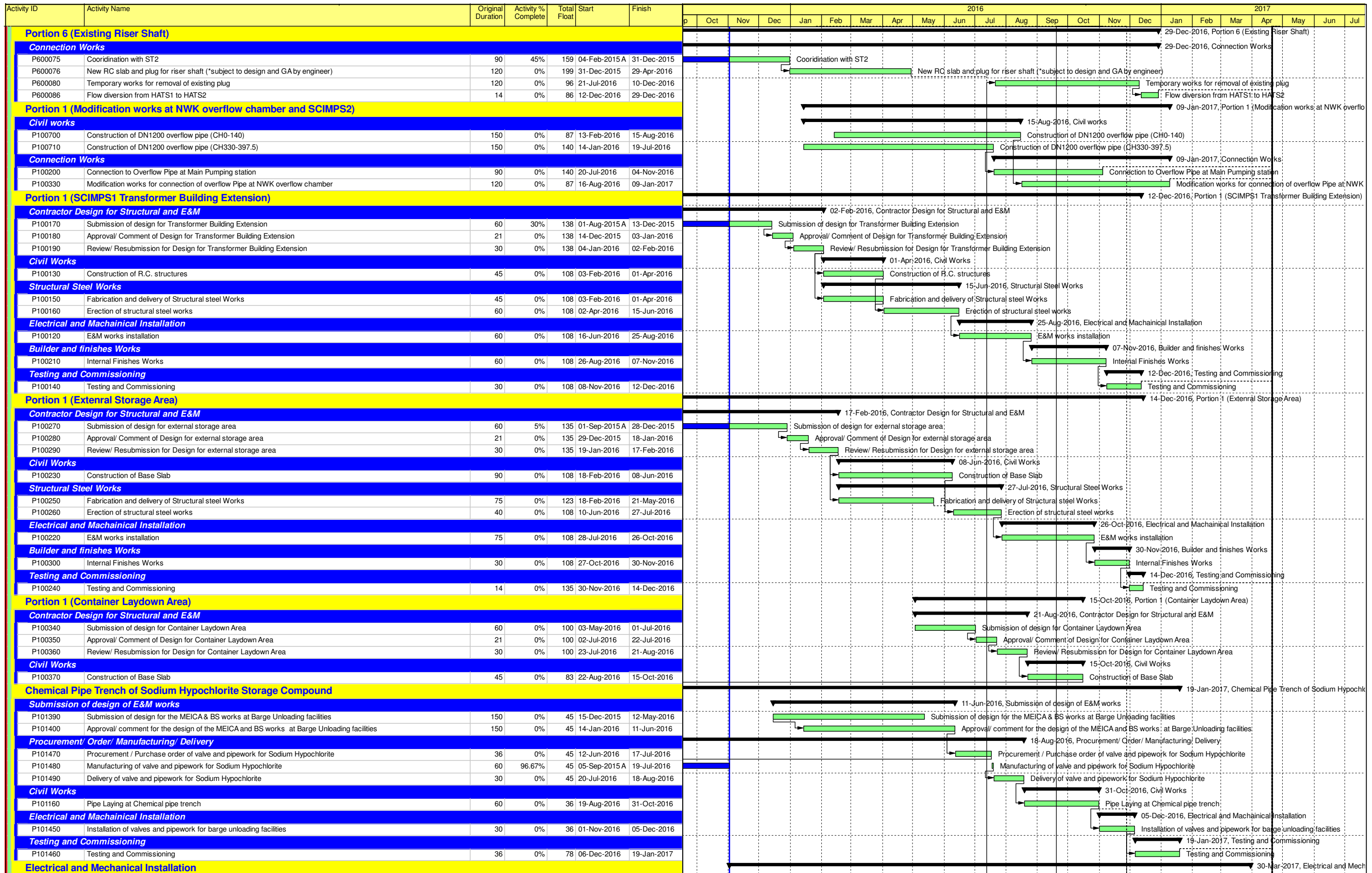
Activity ID	Activity Name	Original Duration	Activity % Complete	Total Float	Start	Finish	2016												2017										
							Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul				
TWP R9 (Completion for Section 3, 4 and 5)							29-Apr-2017, TWP R9																						
Section 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	2016					
							Jan	Feb	Mar	Apr	May	
DC/2009/17 Detailed Works Programme Revision 3B_Updated up to 31-Jan-16												
Design of Permanent Works												
DDA2 (Southern Sludge Cake Silo)												
Sub-Package - A1												
DP34440	DDA: SSCS - ICE Approve Sub-structure Design	124	02-Sep-15	15-Jan-16	14-Jan-15 A	06-Feb-16						
DP34442	DDA: SSCS - Engineer Comment Sub-structure Design	28	06-Feb-16	10-Mar-16	06-Feb-16	10-Mar-16						
DP34444	DDA: SSCS - Finalize Sub-structure Design	28	10-Mar-16	13-Apr-16	10-Mar-16	13-Apr-16						
DP34450	DDA: SSCS - Engineer Approve Sub-structure Design	24	13-Apr-16	09-May-16	13-Apr-16	09-May-16						
DDA7 (DOU5 and DGS)												
Sub-Package - A1												
DP034170	DDA: DOU5&DGS - Submit Sub-structure Design	160	29-Apr-15	19-Oct-15	17-Jul-14 A	20-Feb-16						
DP034180	DDA: DOU5&DGS - ICE Approve Sub-structure Design	81	18-Nov-15	17-Feb-16	30-Sep-15 A	12-Apr-16						
DP034182	DDA: DOU5&DGS - Engineer Comment Piling Design	21	12-Apr-16	05-May-16	12-Apr-16	05-May-16						
Sub-Package - B												
DP034210	DDA: DOU5&DGS - Submit Structural Design	190	28-Apr-15	19-Nov-15	08-Jul-14 A	02-Feb-16						
DP034220	DDA: DOU5&DGS - ICE Approve Structural Design	107	02-Sep-15	28-Dec-15	29-Jan-15 A	12-Apr-16						
DP034230	DDA: DOU5&DGS - Engineer Comment Structural Design	21	12-Apr-16	05-May-16	12-Apr-16	05-May-16						
DDA5 (PWST & Pumping System)												
Sub-Package - B												
DP030210	DDA: PWST&PS - Submit Structure Design	160	30-May-15	18-Nov-15	28-Jul-14 A	29-Feb-16						
DP030220	DDA: PWST&PS - ICE Approve Structure Design	108	01-Mar-16	29-Jun-16	01-Mar-16	29-Jun-16						
Detailed Design Approval (DDA) Submission												
DDA 35 - Workshop Equipment												
DP008810	DDA: Workshop (E&M) - Designer to Compile DDA	120	05-Apr-13	14-Aug-13	05-Apr-13 A	01-Feb-16						
DP008815	DDA: Workshop (E&M) - Comment, Review & Approval	63	01-Sep-15	07-Nov-15	08-Apr-15 A	15-Feb-16						
DP008830	DDA: Workshop (E&M) - Engineer Comment	14	31-Dec-15	16-Jan-16	21-Dec-15 A	03-Feb-16						
DP008840	DDA: Workshop (E&M) - Designer Response/Revision	21	01-Feb-16	25-Feb-16	01-Feb-16	25-Feb-16						
DP008850	DDA: Workshop (E&M) - 2nd Submission & ICE Cert	7	25-Feb-16	03-Mar-16	25-Feb-16	03-Mar-16						
DP008860	DDA: Workshop (E&M) - Engineer Approval	32	03-Mar-16	09-Apr-16	03-Mar-16	09-Apr-16						
Section 5 of the Works												
Workshop Building												
Structure												
Substructure												
S5002203	WB: Excavation for Pilecap & Beam	30	21-Dec-15	25-Jan-16	15-Dec-15 A	04-Mar-16						
S5002206	WB: Raft Foundation & other Pilecap	135	01-Feb-16	30-Jun-16	01-Feb-16	30-Jun-16						

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

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

3-M Rolling Programme			
Date	Revision	Checked	Approved
31-Jan-16			

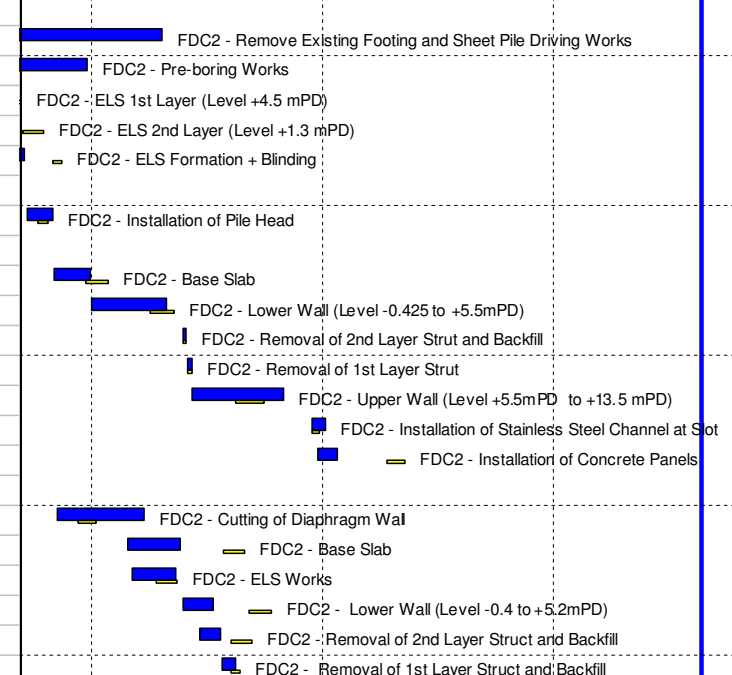
Activity ID	Activity Name	Original Duration	BL Project Start	BL Project Finish	Start	Finish	2016				
							Jan	Feb	Mar	Apr	May
Procurement, Manufacture and Delivery											
S5002910	WB: Procure Balancing Machine for Centrifuge	39	03-Mar-16	18-Apr-16	03-Mar-16	18-Apr-16					
S5002915	WB: Manufacture Balancing Machine for Centrifuge	113	18-Apr-16	17-Aug-16	18-Apr-16	17-Aug-16					
S5002930	WB: Procure various E&M Equipment / Material	39	03-Mar-16	18-Apr-16	03-Mar-16	18-Apr-16					
S5002935	WB: Manufacture various E&M Equipment / Material	135	18-Apr-16	09-Sep-16	18-Apr-16	09-Sep-16					
S5002950	WB: Procurement of Travelling Crane	40	18-Apr-16	01-Jun-16	18-Apr-16	01-Jun-16					
Southern Sludge Cake Silo											
Procurement, Manufacture and Delivery											
S5003520	SSCS: Procure Conveyor, Valve, Air Duct & Lifting Appliance	60	31-Oct-15	04-Jan-16	30-Sep-15	06-Feb-16					
S5003530	SSCS: Manufacture Conveyor, Valve, Air Duct & Lifting Appliance	177	16-Nov-15	31-May-16	15-Oct-15	14-Jul-16					
S5003550	SSCS: Procure Vehicle Washing Machine	68	06-Feb-16	25-Apr-16	06-Feb-16	25-Apr-16					
S5003555	SSCS: Manufacture Vehicle Washing Machine	130	25-Apr-16	10-Sep-16	25-Apr-16	10-Sep-16					
S5003585	SSCS: Procurement of Silo (Body)	68	01-Feb-16	18-Apr-16	01-Feb-16	18-Apr-16					
S5003590	SSCS: Manufacturing of Silo (Body)	101	01-Feb-16	25-May-16	01-Feb-16	25-May-16					
S5003595	SSCS: FAT Test for 1st lot Silos (4 nos)	15	19-Apr-16	05-May-16	19-Apr-16	05-May-16					
Deodourization Unit 5 and DG Store											
Procurement and Delivery											
S5008510	DOU5 & DGS: Procurement of DOU5 & other E&M Equipment	60	01-Feb-16	11-Apr-16	01-Feb-16*	11-Apr-16					
S5008520	DOU5 & DGS: Manufacturing of DOU5 & other E&M Equipment	210	01-Feb-16	19-Sep-16	01-Feb-16	19-Sep-16					
Process Water Storage Tank											
Procurement, Manufacture and Delivery											
S5009660	PWST: Procure Tanks & other E&M Equipment / Material	62	15-Feb-16	23-Apr-16	15-Feb-16	23-Apr-16					
S5009670	PWST: Manufacture Tanks & other E&M Equipment / Material	135	23-Apr-16	15-Sep-16	23-Apr-16	15-Sep-16					
External (Civil) Works											
SDB Area											
S5009812	Concrete pillar box	59	14-Nov-14	16-Jan-15	29-Sep-14	01-Feb-16					
S5009814	Permanent carrigeway	59	14-Nov-14	16-Jan-15	29-Sep-14	06-Feb-16					
S5009818	Cable duct and draw pit P29	14	06-Feb-16	24-Feb-16	06-Feb-16	24-Feb-16					
General Area											
S5009826	Foul sewer & manholes F6A & F6C at portion 3 & 4	56	25-Feb-16	28-Apr-16	25-Feb-16	28-Apr-16					
S5009832	Cable duct at portion 3 & 4	56	29-Mar-16	30-May-16	29-Mar-16	30-May-16					
S5009834	Chemical pipe & trench	56	28-Apr-16	29-Jun-16	28-Apr-16	29-Jun-16					
SSCS Area											
S5009852	Sludge feed pipe SF2 and access chamber 2	55	01-Feb-16	05-Apr-16	01-Feb-16	05-Apr-16					
S5009862	Cable duct and draw pits P8, P9 & P10	55	06-Apr-16	03-Jun-16	06-Apr-16	03-Jun-16					

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

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

3-M Rolling Programme			
Date	Revision	Checked	Approved
31-Jan-16			

Activity ID	Activity Name	Start	Finish	Physical % Complete	2015				2016				2017	
					Q3	Q4	Q1	Q2	Q3	Q4	Q1			
18-64282N	ET - Invert (I2) CH 757 - 749 Bay 16		27-Feb-15 A	100%										
18-64284N	ET - Invert (I2) CH 773 - 765 Bay 14		28-Feb-15 A	100%										
18-64285N	ET - Invert (I2) CH 781 - 773 Bay 13		28-Feb-15 A	100%										
18-64286N	ET - Invert (I2) CH 789 - 781 Bay 12		01-Mar-15 A	100%										
18-64185N	ET - Invert (I1) CH 39 - 31 Bay 104		02-Mar-15 A	100%										
18-64287N	ET - Invert (I2) CH 797 - 789 Bay 11		02-Mar-15 A	100%										
18-64288N	ET - Invert (I2) CH 805 - 797 Bay 10		02-Mar-15 A	100%										
18-64186N	ET - Invert (I1) CH 31 - 23 Bay 105		03-Mar-15 A	100%										
18-64289N	ET - Invert (I2) CH 813 - 805 Bay 9		03-Mar-15 A	100%										
18-64290N	ET - Invert (I2) CH 821 - 813 Bay 8		03-Mar-15 A	100%										
18-64291N	ET - Invert (I2) CH 829 - 821 Bay 7		04-Mar-15 A	100%										
18-64292N	ET - Invert (I2) CH 837 - 829 Bay 6		05-Mar-15 A	100%										
18-64293N	ET - Invert (I2) CH 845 - 837 Bay 5		09-Mar-15 A	100%										
18-64187N	ET - Invert (I1) CH 23 - 14 Bay 106		11-Mar-15 A	100%										
18-64188N	ET - Invert (I1) CH 14 - 10 Bay 107		13-Mar-15 A	100%										
18-64189N	ET - Invert (I1) CH 10 - 2 Bay 108		19-Mar-15 A	100%										
18-57727N	ET - DS Tunnel Lining (Invert) Formwork Dismantle	20-Mar-15 A	23-Mar-15 A	100%										
18-64294N	ET - Invert (I2) CH 853 - 845 Bay 4		23-Mar-15 A	100%										
18-64295N	ET - Invert (I2) CH 861 - 853 Bay 3		24-Mar-15 A	100%										
18-64297N	ET - Invert (I2) CH 865 - 861 Bay 2		25-Mar-15 A	100%										
18-64298N	ET - Invert (I2) CH 873 - 865 Bay 1		30-Mar-15 A	100%										
18-57728N	ET - RS Tunnel Lining (Invert) Formwork Dismantle	01-Apr-15 A	05-Apr-15 A	100%										
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%										
18-66150N	FDC2 - Installation of Stainless Steel Channel at Slot	26-Sep-15 A	02-Oct-15 A	100%										
18-66140N	FDC2 - 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%										



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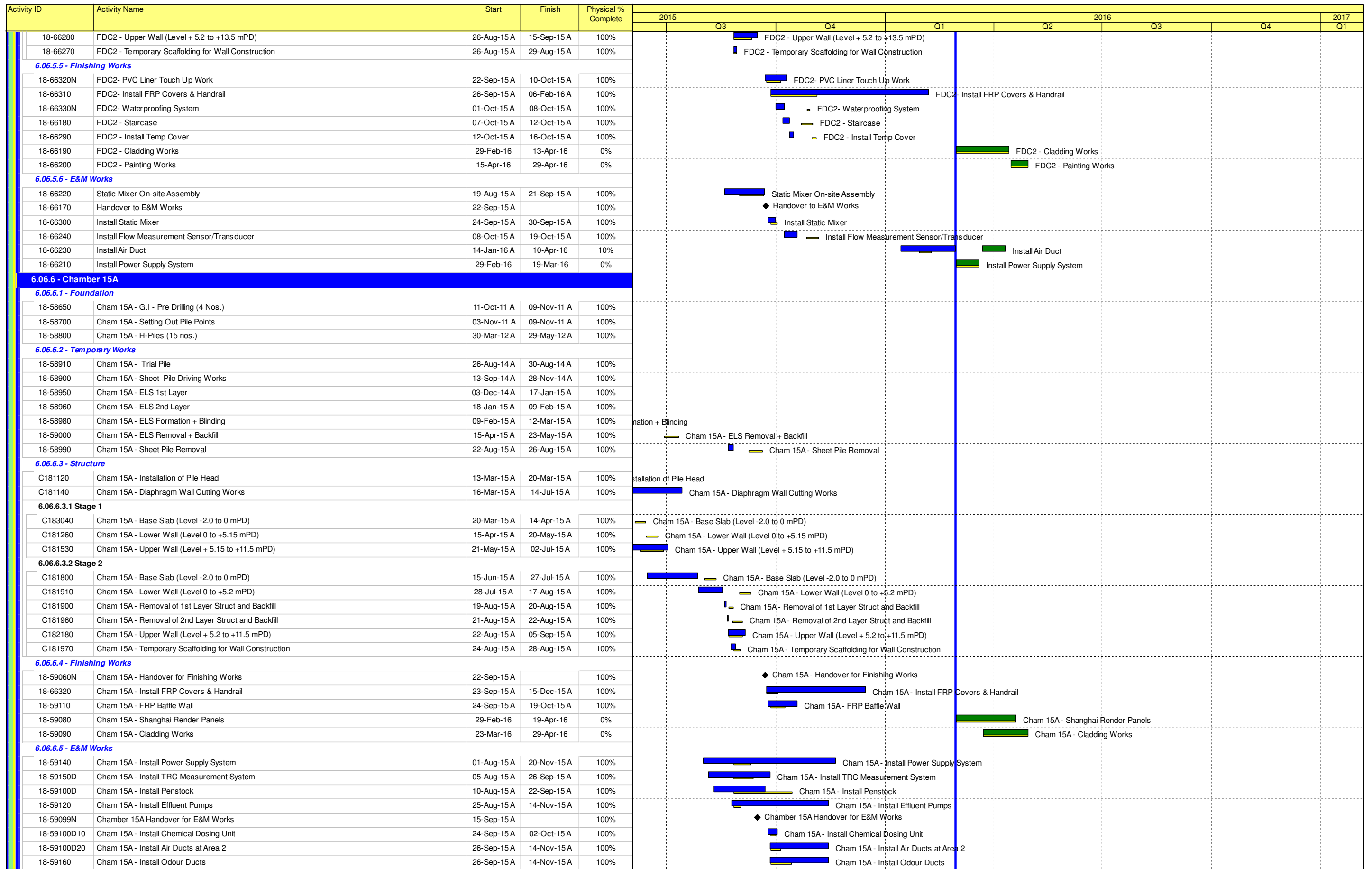
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Date	Revision	Checked	Approved
27-Jan-16	DWP Rev D Update		
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- █ Actual Level of Effort
- █ Remaining Work
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Date	Revision	Checked	Approved
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Activity ID	Activity Name	Start	Finish	Physical % Complete	2015				2016				2017	
					Q3	Q4	Q1	Q2	Q3	Q4	Q1			
18-59130	Cham 15A - Install Pipes & Valves	26-Sep-15 A	20-Nov-15 A	100%										
6.06.7 - Entry Culvert														
6.06.7.1 - Foundation														
18-59550	Entry Culvert - G.I - Pre-drilling (2 Nos.)	24-Nov-11 A	07-Dec-11 A	100%										
18-59600	Entry Culvert - Pre-Bored H-Pile (6 Nos.@2d/no.)	04-Sep-12 A	19-Sep-12 A	100%										
6.06.7.2 - Temporary Works														
18-59651N	Entry Culvert - Concrete Breaking	25-Feb-13 A	02-Mar-13 A	100%										
18-59650D	Entry Culvert - Sheet Piling (194 sheet piles)	05-Mar-13 A	17-Apr-13 A	100%										
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%										
18-64360	Entry Culvert - Install Odour Ducts [Remaining Works will be Carried Out During Section 5]	22-Aug-15 A	09-Mar-16	72%										
18-64305D	Entry Culvert - Install Effluent Pumps	25-Aug-15 A	29-Sep-15 A	100%										
18-64365	Entry Culvert - Functional Test for Equipments [Remaining Works will be Carried Out During Section 5]	29-Sep-15 A	24-Mar-16	60%										
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%										
18-59533	Existing Outfall Drop Shaft - Installation of FRP Cover	23-Nov-15 A	01-Dec-15 A	100%										



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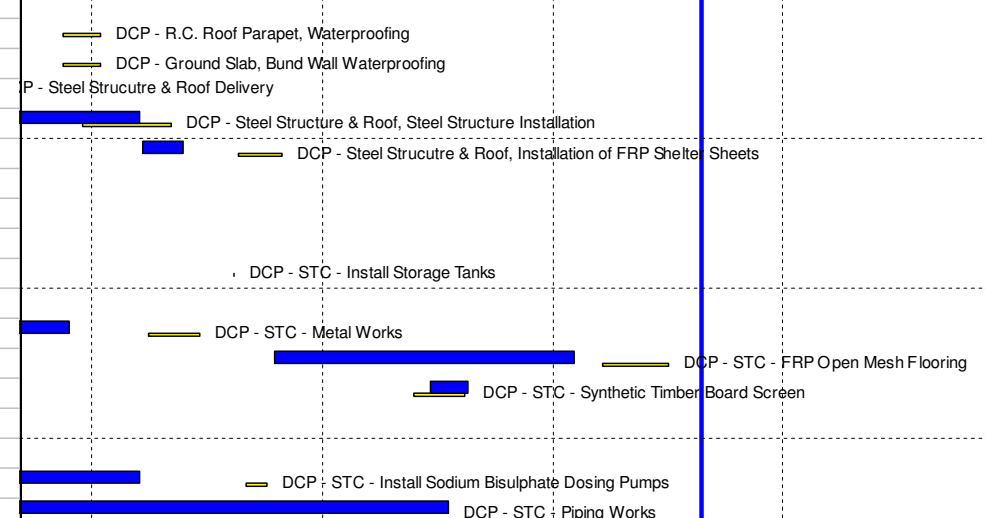
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Activity ID	Activity Name	Start	Finish	Physical % Complete	2015				2016				2017	
					Q3	Q4	Q1	Q2	Q3	Q4	Q1			
6.06.8 - Dechlorination Plant (DCP)														
6.06.8.1 - DCP - Foundation														
18-59800	DCP - G.I- Pre Drilling (7 Nos.)	08-Dec-11 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%										
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%										
18-60120N	DCP - Construction of Toe Wall	08-Jan-13 A	18-Jan-13 A	100%										
18-60020D	DCP - R.C. Intermediate Slab	08-Jan-13 A	02-May-13 A	100%										
18-60111N	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%										
18-60160N	DCP - Ground Slab Steel Fixing	28-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%										
18-60141N	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%										
18-60030N	DCP - R.C. Wall Scaffolding & Formworks Erection	04-Jul-13 A	17-Aug-13 A	100%										
18-60030D	DCP - R.C. Walls/Roof	04-Jul-13 A	04-Oct-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%										
18-60056	DCP - STC - FRP Open Mesh Flooring	12-Sep-15 A	09-Jan-16 A	100%										
18-60058	DCP - STC - Synthetic Timber Board Screen	13-Nov-15 A	28-Nov-15 A	100%										
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%										
18-60052D	DCP - STC - Piping Works	27-Jun-14 A	20-Nov-15 A	100%										



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Activity ID	Activity Name	Start	Finish	Physical % Complete	2015				2016				2017		
					Q3	Q4	Q1	Q2	Q3	Q4	Q1				
18-60066	DCP - STC - Cabling & Wiring	22-Dec-14 A	15-Jul-15 A	100%	DCP - STC - Cabling & Wiring										
18-60054D	DCP - STC - Cable Containment Works	22-Dec-14 A	02-Jul-15 A	100%	DCP - STC - Cable Containment Works										
18-60068D	DCP - STC - Electrical Fixtures	22-Dec-14 A	10-Jul-15 A	100%	DCP - STC - Electrical Fixtures										
18-60067	DCP - STC - Electrical Control & Instrumentation	22-Dec-14 A	10-Jul-15 A	100%	DCP - STC - Electrical Control & Instrumentation										
18-60070D	DCP - STC - Fire Services	03-Feb-15 A	15-Jul-15 A	100%	DCP - STC - Fire Services										
18-60074N	DCP - STC - Install Sodium Bisulphate Dosing Units	24-Sep-15 A	10-Oct-15 A	100%	DCP - STC - Install Sodium Bisulphate Dosing Units										
18-60080	DCP - STC - Functional Test	25-Sep-15 A	29-Sep-15 A	100%	DCP - STC - Functional Test										
6.06.8.4 - DCP - Pump Hall															
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	12-Sep-15 A	09-Jan-16 A	100%	DCP - PH - FRP Open Mesh Flooring										
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%	DCP - SSR Handover for Finishing Works										
18-63635D	DCP - SSR - Epoxy Coating & Painting	15-Apr-14 A	05-Jun-14 A	100%	DCP - SSR - Epoxy Coating & Painting										
18-63625	DCP - SSR - Door & Louvres	03-Nov-14 A	18-Nov-14 A	100%	DCP - SSR - Door & Louvres										
6.06.8.5.2 - E&M Works															
18-63574N	DCP Sensor Store Room Handover for E&M Works	15-May-14 A		100%	DCP 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%	DCP - CR/UPS Handover for Finishing Works										
18-63720N	DCP - CR/UPS Partition Wall	31-Mar-14 A	11-Apr-14 A	100%	DCP - CR/UPS Partition Wall										
18-63725D	DCP - CR/UPS - Epoxy Coating and Painting	15-Apr-14 A	05-Jun-14 A	100%	DCP - 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										
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%	DCP 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										
18-63736	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	26-Dec-15 A	100%	DCP - CR/UPS - Functional Test										
18-63735	DCP - CR/UPS - UPS Equipment	09-Nov-15 A	20-Nov-15 A	100%	DCP - CR/UPS - UPS Equipment										
6.06.8.6.2.3 - Completion of DCS Works															



- █ Actual Level of Effort
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Activity ID	Activity Name	Start	Finish	Physical % Complete	2015				2016				2017	
					Q3	Q4	Q1	Q2	Q3	Q4	Q1			
18-63760	DCS Pre-inspection Works Before Handover	04-Jan-16 A	16-Mar-16	0%										
18-63761	DCS Handover Completed Works		16-Mar-16	0%										
6.06.8.6.2.3 - DCS Training														
18-63828N	DCS Training - Submission of Training Programme and Material	01-Apr-15 A	15-Apr-15 A	100%										
18-63838N	DCS Training - Engineer's Review	02-Jul-15 A	10-Jul-15 A	100%										
18-63848	DCS Training - Re-submission	05-Jan-16 A	16-Mar-16	80%										
18-63858	DCS Training - Engineer's Approval	11-Jan-16 A	10-Mar-16	50%										
18-63868	Conduct Training to DSD	11-Mar-16	14-Mar-16	0%										
6.06.8.6.2.1 - DCS On-Site Installation														
18-63758	DCS Equipment On-Site Installation (Including Control Panels, Work Station, and Control Desk)	01-Aug-15 A	27-Jan-16 A	100%										
18-63768	DCS Equipment Cabling Works	02-Aug-15 A	30-Jan-16 A	100%										
18-63778	DCS Functional Testing	20-Jan-16 A	27-Jan-16 A	100%										
18-63759	DCS Commissioning Work	29-Feb-16	05-Mar-16	0%										
6.06.8.6.2.2 - DCS O&M Manual Submission														
18-63788	DCS O&M Manual Submission	22-Sep-15 A	09-Oct-15 A	100%										
18-63798	DCS O&M Manual Submission - Engineer's Review and Comment	23-Sep-15 A	29-Feb-16	50%										
18-63808	DCS O&M Manual Submission - Re-submission	08-Dec-15 A	15-Jan-16 A	100%										
18-63818	DCS O&M Manual Submission - Engineer's Approval	29-Feb-16	10-Mar-16	0%										
6.06.8.7 - DCP - Switch Room														
6.06.8.7.1 - Finishing Works														
18-63774N	DCP - CR/UPS Switch Room Handover for Finishing Works	15-Apr-14 A		100%										
18-63795D	DCP - CR/UPS - Epoxy Coating and Painting	15-Apr-14 A	05-Jun-14 A	100%										
18-63785	DCP - CR/UPS - Door and Louvre	03-Nov-14 A	18-Nov-14 A	100%										
18-63775	DCP - SR - Metal Works	01-Jun-15 A	19-Jun-15 A	100%										
6.06.8.7.2 - E&M Works														
18-63754N	DCP Switch Room Handover for E&M Works	15-May-14 A		100%										
18-63765D	DCP - SR - Airducts	14-Jul-14 A	29-Apr-15 A	100%										
18-63755D	DCP - SR - Cable Containment	22-Dec-14 A	10-Jul-15 A	100%										
18-63825D	DCP - SR - Electrical Fixture	22-Dec-14 A	10-Jul-15 A	100%										
18-63815D	DCP - SR - Cabling and Wiring	22-Dec-14 A	10-Jul-15 A	100%										
18-63491D20	DCP - SR - Fire Services	03-Feb-15 A	15-Jul-15 A	100%										
18-63805D	DCP - SR - LV Switchboard	29-Jun-15 A	20-Aug-15 A	100%										
18-63835	DCP - SR - Power on	20-Aug-15 A	20-Aug-15 A	100%										
6.06.8.8 - DCP - Potable Water Pump House														
6.06.8.8.1 - Finishing Works														
18-63944N	DCP - PWP Handover for Finishing Works	15-Apr-14 A		100%										
18-63955D	DCP - PWP - Epoxy Coating & Painting	15-Apr-14 A	05-Jun-14 A	100%										
18-63945	DCP - PWP - Door and Louvre	03-Nov-14 A	18-Nov-14 A	100%										
18-63965	DCP - PWP - ABWF Works	02-Mar-16*	01-Apr-16	0%										
6.06.8.8.2 - E&M Works														
18-63865D	DCP - PWP - Cable Containment	22-Dec-14 A	10-Jul-15 A	100%										
18-63885D	DCP - PWP - Cabling & Wiring	22-Dec-14 A	10-Jul-15 A	100%										
18-63905D	DCP - PWP - Electrical Fixture	22-Dec-14 A	10-Jul-15 A	100%										
18-63895D	DCP - PWP - Electrical Control & Instrumentation	22-Dec-14 A	10-Jul-15 A	100%										
18-63844N	DCP Potable Water Pump House Handover for E&M Works	05-Jan-15 A		100%										
18-63855D	DCP - PWP - Piping Works	05-Jan-15 A	05-Jul-15 A	100%										
18-63915D	DCP - PWP - Fire Services	03-Feb-15 A	15-Jul-15 A	100%										
18-63845D	DCP - PWP - Pump Instal	25-Jul-15 A	02-Aug-15 A	100%										
18-64415D	DCP - PWP - Functional Test	26-Sep-15 A	20-Nov-15 A	100%										
6.06.8.9 - DCP - Spare Storage Room/Toilet														
6.06.8.9.1 - Finishing Works														
18-63975D	DCP - SSR - Partition Wall & Plaster	31-Mar-14 A	11-Apr-14 A	100%										
18-64005D	DCP - SSR - Epoxy Coating and Painting	15-Apr-14 A	05-Jun-14 A	100%										
18-63974N	DCP - SSR Handover for Finishing Works	15-Apr-14 A		100%										
18-63985	DCP - SSR - Tile Works	28-Jun-14 A	12-Jul-14 A	100%										
18-63995	DCP - SSR - Doors and Lovres	03-Nov-14 A	17-Nov-14 A	100%										
6.06.8.9.2 - E&M Works														
18-64014N	DCP Spare Storage Room/Toilet Handover for E&M Works	15-May-14 A		100%										
18-63896D	DCP - SSR - MVAC System	22-Dec-14 A	29-Apr-15 A	100%										



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Activity ID	Activity Name	Start	Finish	Physical % Complete	2015				2016				2017		
					Q3	Q4	Q1	Q2	Q3	Q4	Q1				
18-64015D	DCP - SSR - Electrical Works	22-Dec-14 A	10-Jul-15 A	100%	DCP - SSR - Electrical Works										
18-64025D	DCP - SSR - Fire Services	03-Feb-15 A	15-Jul-15 A	100%	DCP - SSR - Fire Services										
6.06.8.10 - DCP Statutory Inspection															
18-60600	WSD Connection	28-Oct-15 A	12-Nov-15 A	100%	WSD Connection										
18-60650	Prep & Sub Form 314 to FSD	13-Nov-15 A	19-Nov-15 A	100%	Prep & Sub Form 314 to FSD										
18-60700	Prep & Sub Form 501 to FSD	13-Nov-15 A	19-Nov-15 A	100%	Prep & Sub Form 501 to FSD										
18-60750	FSD Inspection	07-Mar-16*	07-Mar-16	0%	FSD Inspection										
6.06.8.11 - DCP External Works															
18-64649N	Ext Works - RS Stage 1, DN 600 Manhole & Drain Pipe	25-Mar-14 A	13-May-14 A	100%	Ext Works - RS Stage 1, DN 600 Manhole & Drain Pipe										
18-64650N	Ext Works - Riser Shaft - Stage 1 Before NE Demolition (Main Drainage, Ducting, Pipe Trench)	25-Mar-14 A	02-Jun-14 A	100%	Ext Works - Riser Shaft - Stage 1 Before NE Demolition (Main Drainage, Ducting, Pipe Trench)										
18-64647N	Ext Works - RS Stage 1, Draw Pit & Cable Duct	25-Apr-14 A	15-Jul-14 A	100%	Ext Works - RS Stage 1, Draw Pit & Cable Duct										
18-64670N	Ext Works - MH (SW) 01		25-Apr-14 A	100%	Ext Works - MH (SW) 01										
18-64648N	Ext Works - RS Stage 1, Pipe Trench & DN300 Pipe & DN150 Pipe	14-May-14 A	06-Aug-14 A	100%	Ext Works - RS Stage 1, Pipe Trench & DN300 Pipe & DN150 Pipe										
18-64668N	Ext Works - E3 Cable Draw Pit		07-Jun-14 A	100%	Ext Works - E3 Cable Draw Pit										
18-64667N	Ext Works - MH (FS) 10		12-Jun-14 A	100%	Ext Works - MH (FS) 10										
18-64666N	Ext Works - E14 Cable Draw Pit		25-Jun-14 A	100%	Ext Works - E14 Cable Draw Pit										
18-64687N	Ext Works - E15 Cable Draw Pit		25-Jun-14 A	100%	Ext Works - E15 Cable Draw Pit										
18-64660N	Ext Works - Riser Shaft - Stage 2 After NE Demolition (Main Drainage, Ducting, Water Supply, Pipe Trench)	27-Jun-14 A	17-Jul-15 A	100%	Ext Works - Riser Shaft - Stage 2 After NE Demolition (Main Drainage, Ducting, Water Supply, Pipe Trench)										
18-64680N	Ext Works - E13 Cable Draw Pit		27-Jun-14 A	100%	Ext Works - E13 Cable Draw Pit										
18-64644	Ext Works - RS Stage 2, Draw Pit and Ducting and Water Mains	10-Jul-14 A	14-Mar-16	80%	Ext Works - RS Stage 2, Draw Pit and Ducting and Water Mains										
18-64690N	Ext Works - MH (FS) 06		11-Jul-14 A	100%	Ext Works - MH (FS) 06										
18-64665N	Ext Works - MH (FS) 05		11-Jul-14 A	100%	Ext Works - MH (FS) 05										
18-64688N	Ext Works - E16 Cable Draw Pit		15-Jul-14 A	100%	Ext Works - E16 Cable Draw Pit										
18-64662N	Ext Works - MH (FS) 03		19-Jul-14 A	100%	Ext Works - MH (FS) 03										
18-64663N	Ext Works - Last Manhole		04-Oct-14 A	100%	Ext Works - Last Manhole										
18-64646N	Ext Works - RS Stage 2, Last Manhole and 1050mm Pipe	04-Oct-14 A	06-Nov-14 A	100%	Ext Works - RS Stage 2, Last Manhole and 1050mm Pipe										
18-64645N	Ext Works - RS Stage 2, Remaining Pipe Trench	12-Jul-15 A	17-Jul-15 A	100%	Ext Works - RS Stage 2, Remaining Pipe Trench										
18-64661	Ext Works - Riser Shaft - Stage 3 Remaining Works	22-Jul-15 A	16-Mar-16	85%	Ext Works - Riser Shaft - Stage 3 Remaining Works										
18-64671	Ext Works - Installation of Access Control System and CCTV System	15-Sep-15 A	22-Mar-16	80%	Ext Works - Installation of Access Control System and CCTV System										
6.06.8.12 - Interim Dechlorination Facilities															
18-64652	Propose & Approve Method for Interim Operation	29-Feb-16	07-Apr-16	0%	Propose & Approve Method for Interim Operation										
18-64653	Interim Dechlorination Facilities Trial Run	08-Apr-16	21-Apr-16	0%	Interim Dechlorination Facilities Trial Run										
18-64654	Operation of Interim Dechlorination Facilities	22-Apr-16	06-May-16	0%	Operation of Interim Dechlorination Facilities										
6.06.9 - DOU4 (Variation Order No. 0092)															
18-60800	DOU4 - Plinth [Part 1]	10-Jul-15 A	03-Aug-15 A	100%	DOU4 - Plinth [Part 1]										
18-60100	DOU4 Handover for E&M Works	05-Aug-15 A		100%	DOU4 Handover for E&M Works										
18-61050	DOU4 - Install Air Extraction Fan	22-Sep-15 A	07-Nov-15 A	100%	DOU4 - Install Air Extraction Fan										
18-61000	DOU4 - Install Bio Tricking Filters	22-Sep-15 A	14-Dec-15 A	100%	DOU4 - Install Bio Tricking Filters										
18-61100	DOU4 - Install Pumps	05-Oct-15 A	04-Jan-16 A	100%	DOU4 - Install Pumps										
18-66340	DOU4 - MCC Room	15-Oct-15 A	20-Nov-15 A	100%	DOU4 - MCC Room										
18-61120	DOU4 - Install Pipes & Valves	01-Nov-15 A	25-Feb-16 A	100%	DOU4 - Install Pipes & Valves										
18-66360	DOU4 - Pipe Trench	04-Nov-15 A	07-Dec-15 A	100%	DOU4 - Pipe Trench										
18-61140	DOU4 - Install Tanks	21-Nov-15 A	08-Jan-16 A	100%	DOU4 - Install Tanks										
18-61220	DOU4 - External Works - Laying Cable Duct	01-Dec-15 A	30-Dec-15 A	100%	DOU4 - External Works - Laying Cable Duct										
18-61170	DOU4 - MCC Room - Install BS Electrical	15-Dec-15 A	29-Jan-16 A	100%	DOU4 - MCC Room - Install BS Electrical										
18-60110	DOU4 - Plinth [Part 2]	19-Dec-15 A	11-Jan-16 A	100%	DOU4 - Plinth [Part 2]										
18-61070	DOU4 - Install FRP Air Duct & Accessories	05-Jan-16 A	29-Feb-16 A	100%	DOU4 - Install FRP Air Duct & Accessories										
18-61110	DOU4 - MCC Room - Install MVAC	11-Jan-16 A	20-Feb-16 A	100%	DOU4 - MCC Room - Install MVAC										
18-61310	DOU4 - MCC Room - Install FS System	15-Jan-16 A	29-Feb-16 A	100%	DOU4 - MCC Room - Install FS System										
18-61160	DOU4 - Install Power Supply System	27-Jan-16 A	17-Feb-16 A	100%	DOU4 - Install Power Supply System										
18-61275	DOU4 - Drain Pipe and Odour Duct Connection to PWPS	15-Feb-16 A	24-Mar-16	20%	DOU4 - Drain Pipe and Odour Duct Connection to PWPS										
18-61210	DOU4 - External Works - Laying Water Pipe	15-Feb-16 A	21-Mar-16	20%	DOU4 - External Works - Laying Water Pipe										
18-61250	DOU4 - Install CCTV Remote Monitoring & FS Common Alarm to MPS1	15-Feb-16 A	26-Mar-16	10%	DOU4 - Install CCTV Remote Monitoring & FS Common Alarm to MPS1										
18-61260	DOU4 - MCC Room - Install Electrical Field Equipment	15-Feb-16 A	31-Mar-16	20%	DOU4 - MCC Room - Install Electrical Field Equipment										
18-61270	DOU4 - Switch Room in Sed. Tank - Install ATS Panel for Dual Source	15-Feb-16 A	30-Mar-16	15%	DOU4 - Switch Room in Sed. Tank - Install ATS Panel for Dual Source										
18-61290	DOU4 - MCC Room - DCS System	20-Feb-16 A	31-Mar-16	10%	DOU4 - MCC Room - DCS System										
18-61180	DOU4 - Install Control Panel	29-Feb-16	19-Mar-16	0%	DOU4 - Install Control Panel										
18-61230	DOU4 - External Works - Odour Duct to MPS1	29-Feb-16	31-Mar-16	0%	DOU4 - External Works - Odour Duct to MPS1										
18-61190	DOU4 - Bacterial Incubation	29-Feb-16	29-Mar-16	0%	DOU4 - Bacterial Incubation										



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Activity ID	Activity Name	Start	Finish	Physical % Complete	2015				2016				2017		
					Q3	Q4	Q1	Q2	Q3	Q4	Q1				
18-61280	DOU4 - MCC Room - UPS System	01-Mar-16*	15-Mar-16	0%											
18-61300	DOU4 - MCC Room - Install CCTV	21-Mar-16*	22-Apr-16	0%											
18-61240	DOU4 - Sampling Test	30-Mar-16	12-Apr-16	0%											
18-61200	DOU4 - Functional Test for Equipments	01-Apr-16	30-Apr-16	0%											
6.06.10 - DOU8															
18-61450	DOU8 - Slab & Plinth	17-Jul-15 A	24-Jul-15 A	100%											
18-61500D	DOU8 - Install Air Extraction Pumps	25-Jul-15 A	20-Sep-15 A	100%											
18-61550D	DOU8 - Install Dehumidifiers	25-Jul-15 A	20-Sep-15 A	100%											
18-61600D	DOU8 - Install Activated Carbon Filters	25-Jul-15 A	05-Aug-15 A	100%											
18-61710	DOU8 - Control Panel	27-Jul-15 A	25-Dec-15 A	100%											
18-61499N	DOU8 Handover for E&M Works	27-Jul-15 A		100%											
18-61650D	DOU8 - Install Air Ducts & Accessories	10-Aug-15 A	20-Nov-15 A	100%											
18-61700	DOU8 - Install Power Supply	10-Aug-15 A	30-Dec-15 A	100%											
6.06.11 - Existing Chamber 15															
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															
18-62400	Divert Flow to Effluent Tunnel from Exist. Culvert		20-Jan-16 A	100%											
18-62350	T&C of Effluent Tunnel	25-Jan-16 A	22-Feb-16 A	100%											
18-11001	Section 4 - Substantial Completion		22-Feb-16 A	100%											
18-62375	Liaison Works with Operators and Other Parties	29-Feb-16	02-Mar-16	0%											
18-62351	Section 4 - Complete Remaining Works		30-Apr-16	0%											
6.06.13 - Operation Manual															
18-64425	Prepare and Submit 1st Draft of Operation Manual	22-Sep-15 A	09-Oct-15 A	100%											
18-64445	Engineer Review and Comment 1st Draft Operation Manual	23-Sep-15 A	17-Oct-15 A	100%											
18-64455	Prepare and Submit 2nd Draft of Operation Manual	08-Dec-15 A	15-Jan-16 A	100%											
18-64465	Engineer Review and Comment 2nd Draft Operation Manual	29-Feb-16	15-Mar-16	0%											
18-64485	Training DSD Operation Staff	16-Mar-16	05-Apr-16	0%											
18-64475	Submit Final Operation Manual	16-Mar-16	06-Apr-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 Firemeans 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 - Condition Survey at Existing Box Culvert [Variation Order]															
18-66780	Fabrication of Temporary Steel Panels for Chamber 9	15-Feb-16 A	24-Mar-16 A	100%											
18-66800	Fabrication of Temporary Steel Panels for Chamber 15	15-Feb-16 A	27-Feb-16 A	100%											
18-62610	Effluent Blocking Works of Existing Box Culvert at Chamber 14	16-Feb-16 A	07-Mar-16	30%											
18-62590	Condition Survey at Existing Box Culvert	03-Mar-16*	08-Mar-16	0%											
18-62560	Installation of Temporary Steel Panels at Chamber 15	09-Mar-16	10-Mar-16	0%											
18-66770	Installation of Temporary Steel Panels at Chamber 9	09-Mar-16	10-Mar-16	0%											
18-66790	Dewatering of Existing Box Culvert	11-Mar-16	16-Mar-16	0%											
6.07.1.2 - Foundation															
18-66760	Mobilization of Piling Rig and Accessories	05-Mar-16	11-Mar-16	0%											
18-62580	De-commissioning of Existing Box Culvert, Pipe Trench and TRC System		16-Mar-16	0%											
18-66720	Pre-bore H-Piles (10 Nos@2 day/no.)	17-Mar-16	13-Apr-16	0%											
18-66740	Pile Loading Test	14-Apr-16	19-Apr-16	0%											



- █ Actual Level of Effort
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Detail Works Programme

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27-Jan-16	DWP Rev D Update		
29-Feb-16	DWP Rev E Update		

Activity ID	Activity Name	Start	Finish	Physical % Complete	2015				2016				2017	
					Q3	Q4	Q1	Q2	Q3	Q4	Q1			
6.07.1.3 - Temporary Works														
18-62550	Sheet Piles Driving Works	20-Apr-16	26-Apr-16	0%					■					
18-62600	ELS Excavation & Strutting	27-Apr-16	11-May-16	0%					■					
18-66400	Demolition of the Existing Culvert	29-Apr-16	11-May-16	0%					■					
6.07.1.4 - Structure														
18-66640	Installation of H-Pile Head Plate	12-May-16	16-May-16	0%					■					
18-62650	Extension of Chamber 15 - Base Slab	17-May-16	30-May-16	0%					■					
18-66650	Extension of Chamber 15 - Lower Wall Construction	31-May-16	23-Jun-16	0%					■					
18-66680	Extension of Chamber 15 - ELS Removal + Backfilling	24-Jun-16	27-Jun-16	0%					■					
18-66660	Extension of Chamber 15 - Upper Wall Construction	28-Jun-16	23-Jul-16	0%					■					
18-66670	Extension of Chamber 15 - Falsework Dismantle	25-Jul-16	04-Aug-16	0%					■					
6.07.1.5 - Architectural incld. Exist. C15														
18-62700	Extension of Chamber 15 - Install FRP Cover and Handrail	26-Jul-16	11-Aug-16	0%					■					
18-62699	Extension to Chamber 15 - Handover for Finishing Works	26-Jul-16		0%					◆					
18-62709	Extension of Chamber 15 - Shanghai Render Panels	28-Jul-16	19-Aug-16	0%					■					
18-62719	Extension of Chamber 15 - Cladding Works	28-Jul-16	19-Aug-16	0%					■					
6.07.1.6 - E&M														
18-62749	Extension of Chamber 15 - Handover for E&M Works	25-Jul-16		0%					◆					
18-62750	Extension of Chamber 15 - Install Penstocks (2 nos.)	25-Jul-16	04-Aug-16	0%					■					
18-62760	Extension of Chamber 15 - Install Odour Duct	25-Jul-16	04-Aug-16	0%					■					
18-62800	T&C for Equipments in Section 5	26-Jul-16	22-Aug-16	0%					■					
6.07.2 - Overflow Culvert														
6.07.2.1 - Temporary Works														
18-62950	Overflow Culvert - Installation of Sheet Piles with Pre-boring Works	05-Nov-15 A	11-Dec-15 A	100%		■								
18-63000	Overflow Culvert - ELS Excavation & Strutting	21-Dec-15 A	23-Jan-16 A	100%		■								
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	15-Feb-16 A	29-Feb-16	90%			■							
18-63060	Overflow Culvert - Wall & Roof Slab Construction	01-Mar-16	17-Mar-16	0%				■						
18-63070	Overflow Culvert - ELS Removal + Backfilling	09-Apr-16	15-Apr-16	0%					■					
6.07.2.4 - E&M														
18-66810	Overflow Culvert - Handover for E&M Works	18-Mar-16		0%					◆					
18-66820	Overflow Culvert - Install Penstock	18-Mar-16	08-Apr-16	0%					■					
6.07.3 - Demolition of Existing Dechlorination Plant														
18-63130	Liaison with ST2	03-Feb-16 A	23-Feb-16 A	100%			■							
18-63140	Relocation of Existing ADF PLC from Existing DCP to New DCP	25-Feb-16 A	29-Feb-16	5%					■					
18-63110	De-commissioning of E&M System	01-Mar-16	14-Mar-16	0%					■					
18-63120	Inspection with ST2	15-Mar-16	17-Mar-16	0%					■					
18-63100	Demolition of Existing Dechlorination Plant	18-Mar-16	03-May-16	0%					■					
6.07.4 - External Works														
18-63150	Installation of Utilities	04-May-16	02-Jun-16	0%					■					
18-63210	Pavement	03-Jun-16	28-Jun-16	0%					■					
6.07.5 - DOU4 - Chemical Scrubber (Variation Order No. 0092)														
18-63310	Construction of Plinth	29-Feb-16	08-Mar-16	0%					■					
18-63320	Relocation and Installation of Existing Chemical Scrubber	09-Mar-16	24-Mar-16	0%					■					
18-63330	Ducting and Fixing Works	29-Mar-16	14-Apr-16	0%					■					
18-63340	T&C of Chemical Scrubber	15-Apr-16	12-May-16	0%					■					
6.07.6 - Landscape Works														
18-63300	Irrigation System	04-May-16	02-Jun-16	0%					■					
18-63200	Landscaping Softwork	03-Jun-16	27-Jul-16	0%					■					



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