Harbour Area Treatment Scheme Stage 2A

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

Consolidated Monthly Environmental Monitoring and Audit Report
August 2016

(Version 1.0)

Certified By _____

(Environmental Team Leader)

REMARKS:

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

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

CINOTECH CONSULTANTS LTD
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong
Tel: (852) 2151 2083 Fax: (852) 3107 1388
Email: info@cinotech.com.hk

MOTT MACDONALD

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

Attn: Mr. Danny Tang

Agreement No. CE 8/2009(EP) Harbour Area Treatment Scheme Stage 2A Independent Environmental Checker for Construction Phase – Investigation

Our Reference
GCB/AFK/DC/bw/
T261332/22.01/L-1094

Submission of Monthly EM&A Consolidated Report for Stonecutters Island Sewage Treatment Works for August 2016 (Issue No. 81)

19 September 2016

By Post

20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong
Kowloon
Hong Kong

T +852 2828 5757
F +852 2827 1823
mottmac.hk

Dear Sir,

We refer to the captioned report consolidating the individual ETL certified and IEC verified Monthly EM&A Reports for Contract Nos. DC/2009/10, DC/2009/17 and DC/2009/18 at Stonecutters Island STW works site for HATS Stage 2A. We hereby verify the consolidated report.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Dr. Anne Kerr
Independent Environmental Checker
T +852 2828 5757
anne.kerr@mottmac.com

c.c.

Ove Arup & Partners HK Ltd.	Mr. Ted Y F Tang	Fax: 2370 4377
Cinotech Consultants Ltd.	Dr Priscilla Choy	By email

TABLE OF CONTENTS

Page

EXECUTIVE SUMMARY 1

Introduction 1
Environmental Monitoring and Audit Works 2
Key Information in the Reporting Month 3
Key Information in the EIA Report 3

1. INTRODUCTION 4

Background 4
Current Contracts at SCISTW 4
Project Organizations 5
Construction Programme 6
Summary of EM&A Requirements 7

2. AIR QUALITY 8

Monitoring Requirements 8
Monitoring Locations 8
Monitoring Equipment 8
Monitoring Parameters, Frequency and Duration 8
Monitoring Methodology and QA/QC Procedure 9
Results and Observations 9

3. NOISE 10

Monitoring Requirements 10
Monitoring Locations 10
Monitoring Equipment 10
Monitoring Parameters, Frequency and Duration 10
Monitoring Methodology and QA/QC Procedures 11
Results and Observations 11

4. ENVIRONMENTAL AUDIT 12

Site Audits 12
Review of Environmental Monitoring Procedures 12
Status of Environmental Licensing and Permitting 12
Status of Waste Management 12
Implementation Status of Event Action Plans 13
Summary of Complaints and Prosecutions 13

5. LANDSCAPE AND VISUAL MONITORING 14

Implementation Status of the Landscape and Visual Mitigation Measures 14
Summary of Monthly Observation 14

6. FUTURE KEY ISSUES 15

Key Issues for the Coming Month 15
Monitoring Schedule for the Next Month 15
Construction Program for the Next Month 15

6. CONCLUSIONS AND RECOMMENDATIONS 16

Conclusions 16
Recommendations for the coming reporting month: 16

LIST OF TABLES

Table I Summary Table for Executive Summaries and Web Sites
Table II Summary Table for Non-compliance Recorded in the Reporting Month
Table III Monthly Consolidated Summary Table for Key Information

Table 1.1 Key Project Contacts
Table 1.2 Construction Works in the Reporting Month
Table 2.1 Locations for Air Quality Monitoring
Table 2.2 Air Quality Monitoring Equipment
Table 2.3 Impact Dust Monitoring Parameters, Frequency and Duration
Table 2.4 Summary of 1-hour and 24-hour TSP Monitoring Results in Reporting Month
Table 3.1 Noise Monitoring Stations
Table 3.2 Noise Monitoring Equipment
Table 3.3 Noise Monitoring Parameters, Frequency and Duration
Table 3.4 Summary of Noise Monitoring Results in Reporting Month
Table 4.1 Summary of Date of Site Inspection
Table 4.2 Summary of Amount of Waste Generated in Reporting Month
Table 4.3 Summary of Disposal Location of Waste Generated in Reporting Month

LIST OF FIGURES

Figures 1-3 General Location Plan of the Project and Location of Air Quality and Noise Monitoring Stations

LIST OF APPENDICES

A Action and Limit Levels for Air Quality and Noise
B Environmental Monitoring Schedules
C Calibration Certificates of the Environmental Monitoring Equipment
D 1-hour and 24-hour TSP Monitoring Results and Graphical Presentations
E Noise Monitoring Results and Graphical Presentations
F Environmental Permits and Licenses
G Summary of Exceedance
H Site Audit Summary
I Event Action Plans
J Environmental Mitigation Implementation Schedule (EMIS)
K Landscape and Visual Site Audit
L Complaint Log
M Construction Programme

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 2A	Harbour Area Treatment Scheme Stage 2A

EXECUTIVE SUMMARY

Introduction

1. This is the 81st Consolidated Environmental Monitoring and Audit (EM&A) Report summaries the key information of EM&A monthly 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.

    - 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 monthly summary of the EM&A works at SCISTW for ease of reference. 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. Contract DC/2007/23 in the SCISTW has completed all major construction works in the Stonecutters Island on 16 October 2015.

5. Contract DC/2009/19 in the SCISTW was commenced on 1 September 2013 and major construction works of this contract had been completed on 5 March 2015.

6. No amendment of the information in the EM&A reports for each individual contract was made in this consolidated monthly report.

7. This Report documents the findings of EM&A Works for the Project covering the period in August 2016.

8. The details of the EM&A for individual contracts can be found in the separate EM&A monthly 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 AM6a, AM7, AM8 and noise monitoring station NM5, 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 and Audit Works

9. The environmental monitoring works in the Project were covered by the ETs for the Contracts: DC/2009/10, DC/2009/17 and DC/2009/18. The site audits were conducted once per week for each contract by their ETs.

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

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

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	AM6a	1-hr TSP	0	0	0	0	N/A
		24-hr TSP	0	0	0	0	
	AM7	1-hr TSP	0	0	0	0	
		24-hr TSP	0	0	0	0	
	AM8	1-hr TSP	0	0	0	0	
		24-hr TSP	0	0	0	0	
DC/2009/18	AM9	1-hr TSP	0	0	0	0	
		24-hr TSP	0	0	0	0	
DC/2009/10	NM5	Noise	0	0	0	0	
	NM6		0	0	0	0	
DC/2009/18	NM7		0	0	0	0	

1-hour TSP Monitoring

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

24-hour TSP Monitoring

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

Construction Noise

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

Key Information in the Reporting Month

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

Table III Monthly Consolidated Summary Table for Key Information

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---
Status of submissions under EP	1	Monthly Consolidated EM&A Report for Stonecutters Island Sewage Treatment Works for August 2016	Submitted to EPD	No comment	---
Notifications of any summons & prosecutions received	0	--	N/A	N/A	---

Key Information in the EIA Report

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

1. INTRODUCTION

Background

1.1 Harbour Area Treatment Scheme (HATS) Stage 2A is a designated project (Register No. : AEIAR-121/2008). The Environmental Permit (Permit No. EP-322/2008/G) for the Project 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 **Figures 1 to Figure 3**.

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 contractually responsible for consolidating the key information from all monthly EM&A reports from the ETs of other Contracts at SCISTW into a single monthly summary for ease of reference.

1.4 The 1st to 11th consolidated monthly EM&A reports were prepared by Ove Arup & Partners Hong Kong Ltd (Arup) and submitted to EPD. From November 2010 onwards, the 12th and subsequent consolidated monthly EM&A report will be prepared and submitted by Cinotech Consultant Limited, the ET for the Contracts DC/2009/10, DC/2009/17 and DC/2009/18.

1.5 This is the 81st consolidated monthly EM&A report summarizing the EM&A works conducted for the Project at SCISTW in August 2016.

1.6 The monthly 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 monthly EM&A Reports are provided in the Project Website.

Current Contracts at SCISTW

1.7 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

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

Table 1.1 Key Project Contacts

Contract No./ Position	DC/2009/10	DC/2009/17
Contract Title:	Upgrading Works at SCISTW - Main Pumping Station, Sedimentation Tanks and Ancillary Facilities	Upgrading Works at Stonecutters Island Sewage Treatment Works – Sludge Dewatering 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	Ms Natalie Kwok (Tel: 2370 4356)	Ms Natalie Kwok (Tel: 2370 4356)
Independent Environmental Checker	Dr. Anne Kerr (Tel:2828 5757)	Dr. Anne Kerr (Tel:2828 5757)
Contractor	Sun Fook Kong – Biwater Joint Venture	China State- ATAL Joint Venture
Site Agent	Mr. Keith Ho (Tel: 2620 0070)	Mr. Charles Tse (Tel: 9270 3384)
Environmental Officer	Mr. Albus Cheung (Tel:2620 0070)	Mr. K.K Tam (Tel: 2370 3010)
Environmental Team	Cinotech Consultant Limited Dr. Priscilla Choy (Tel: 2151 2089)	Cinotech Consultant Limited Dr. Priscilla Choy (Tel: 2151 2089)

Table 1.1(cont'd) Key Project Contacts

Contract No.	DC/2009/18
Contract Title:	Upgrading Works at Stonecutters Island Sewage Treatment Works – Effluent Tunnel and Disinfection 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: 2370 4356)
Independent Environmental Checker	Dr. Anne Kerr (Tel:2828 5757)
Contractor	Chun Wo – CEC Joint Venture
Site Agent	Mr. W.C. Lee (Tel: 3975 6388)
Environmental Officer	Mr. Shelton Chan (Tel: 3975 6331)
Environmental Team	Cinotech Consultant Limited Dr. Priscilla Choy (Tel: 2151 2089)

Construction Programme

1.9 The construction program for the three contracts at SCISTW are provided in **Appendix M**. Major construction works undertaken during the reporting month include:

Table 1.2 Construction Works in the Reporting Month

Contract No.	Construction Works in the Reporting Month
DC/2009/17	<u>Portion 6:</u> • 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.
DC/2009/10	• At MPS2, FRP Working Platform of Access Floor 1 (-32mPD) was completed. • At Portion 3, replacement of multi-part covers at PST 39/41. • At Portion 8, For E&M works, End-to-end test and software simulation test in progress, Installation for Dosing pipe from storage area to FDC completed, and Overhead crane load tests completed. • At Portion 6, Construction of ground slab from +2.8mPD to +4.8mPD of Valve Chamber, and Construction of wall from -24.2mPD to -17.6mPD at Riser shaft. • At Potion 7, Rebar fixing and formwork erection from G/F to 1/F. • For External works, Painting works for external wall Existing MPS1, Timber cladding installation at ST2 administration building, Synthetic

	timber cladding at CEPT MCC Room, Labeling the Sludge holding tanks after paintings, Backfilling Trench of DN1200 next to CDB; Demolish the existing concrete pavement for construction of Porous Pavement, and Driving Sheet Pipe for trench of DN1200 adjacent to Storage Building.
DC/2009/18	Portion 3: • ABWF Works and Installation of FRP Cover & Walkway at Chamber 15A; • Remove Sheet Piles at Overflow Culvert; • Construction of surface channel and pavement at Portion 3, 5 & 12; • Installation of Sheet Piles by Pre-boring method for construction at Extension of Chamber 15; • Maintain operation of New DCP. Portion 7: • Construction of surface channel and pavement at Portion 7; • Installation of FRP Cover for FDC No.2; • Reinstatement of pavement and fence wall of Gate 6; and • Installation of E&M Equipment, electrical works, Bacterial Incubation and T&C at DOU 4.

Summary of EM&A Requirements

1.10 The EM&A programme requires construction phase monitoring for air quality and noise, as well as site audits covering environmental mitigation measures, including landscape and visual impact, waste/chemicals management, and general compliance with the EM&A Manual and relevant permits/licenses. 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.

1.11 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 4 of this report.

1.12 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 in August 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, AM6a, AM7, AM8 and AM9 were selected for impact dust monitoring. The original location of AM6 was inaccessible due to planned construction works and therefore an alternative monitoring station AM6a was proposed and adopted for subsequent impact monitoring starting on 4th January 2016. **Table 2.1** describes the air quality monitoring locations, which are also depicted in **Figure 1 and 3**.

Table 2.1 Locations for Air Quality Monitoring

Monitoring Station	Responsible Contracts	Location of Measurement
AM6a	DC/2009/10	Works site boundary
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 **Table 2.2** summarizes the equipment used in the impact air monitoring programme. Copies of calibration certificates were shown in **Appendix C**.

Table 2.2 Air Quality Monitoring Equipment

Contract No.	DC/2009/10	DC/2009/18
Laser Dust Monitor	Sibata: LD-3B (Serial no. 853944, 541146 and 095029); Hal-HPC300: (Serial no. 3020408, 3020410, 3020411	Sibata Model no. LD-3 and 3B/ Serial no. 853944 and 541146 Hal Technology Model no. Hal-HPC300/ Serial no. 3020411
HVS Sampler	TISCH: Model no. TE-5170 (Serial no. 2353, 2355 and 3219)	Tisch Model no. TE-5170/ Serial no. 2356
Calibrator	TISCH: Model TE-5025A (Serial no. 2896)	Tisch Model TE-5025A/ Serial no. 2896

Monitoring Parameters, Frequency and Duration

2.4 **Table 2.3** summarizes the monitoring parameters and frequencies of impact dust monitoring for the whole construction period. The air quality monitoring schedule for the reporting period is shown in **Appendix B**.

Table 2.3 Impact Dust Monitoring Parameters, Frequency and Duration

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

Monitoring Methodology and QA/QC Procedure

2.5 The monitoring methodology and QA/QC procedure for monitoring equipment are presented in the monthly reports for Contracts DC/2009/10 and DC/2009/18.

Results and Observations

2.6 **Table 2.4** summaries the air quality monitoring results at AM6a, AM7, AM8 and AM9 in reporting month.

Table 2.4 Summary of 1-hour and 24-hour TSP Monitoring Results in Reporting Month

Air Quality Monitoring Station	Average μgm^{-3}	Range μgm^{-3}	Action Level μgm^{-3}	Limit Level μgm^{-3}
1 hour TSP				
AM6a	59	18 - 87	346	500
AM7	106	36 - 176	322	
AM8	80	31 - 126	307	
AM9	115.2	75.4 - 170.4	318	
24 hours TSP				
AM6a	44	16 - 59	196	260
AM7	123	43 -169	207	
AM8	25	14 - 60	158	
AM9	78.5	28.8 - 109.4	169	

2.7 All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. Summary of exceedance is presented in **Appendix G**.

2.8 All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. Summary of exceedance is presented in **Appendix G**.

2.9 The monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in **Appendix D**.

2.10 According to the 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 three designated monitoring stations as listed in Table 3.1. **Figures 1 and 3** 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 **Table 3.2** summarizes the noise monitoring equipment. Copies of calibration certificates were shown in **Appendix C**.

Table 3.2 Noise Monitoring Equipment

Contract No.	DC/2009/10	DC/2009/18
Sound Level Meter	SVANTEK Model no: SVAN 955 (Serial no. 12563); SVAN 957 (Serial no. 21460)	SVANTEK, Model no: SVAN 955 and 957/ Serial no. 12563 and 21460
Calibrator	SVANTEK Model no: SV 30A (Serial no. 24803 and 24780)	SVANTEK, Model no: SV 30A/ Serial no. 10965, 24803 and 24780

Monitoring Parameters, Frequency and Duration

3.4 **Table 3.3** summarizes the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedule is shown in **Appendix B**.

Table 3.3 Noise Monitoring Parameters, Frequency and Duration

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

Monitoring Methodology and QA/QC Procedures

3.5 The monitoring methodology and QA/QC procedure are presented in the monthly reports of the Contract DC/2009/10 and DC/2009/18.

Results and Observations

3.6 **Table 3.4** summaries the noise monitoring results at NM5, NM6 and NM7 in reporting month.

Table 3.4 Summary of Noise Monitoring Results in Reporting Month

For the time period 0700-1900 hrs. on weekdays		
Monitoring Station	Range, dB(A) L_{eq} (30 min.)	Limit Level ,dB(A) L_{eq} (30 min.)
NM5	62.5 - 65.3	75.0
NM6	61.9 – 71.8	
NM7	63.8 - 71.2	
For the time period 1900-2300 hrs. on Normal Weekdays, And 0700-2300 of Sundays and Public Holiday		
Monitoring Station	Range, dB(A) L_{eq} (5 min.)	Limit Level ,dB(A) L_{eq} (5 min.)
NM7	64.3 - 65.0	70.0
All days during 2300 to 0700 hrs. of the next day		
NM7	57.5 - 58.7 (1)	55.0

Remark:
(1) The recorded construction noise levels from 23:00 to 07:00 were lower than the baseline level of 59.7 dB(A), the limit level exceedance was considered to be non-project related.

3.7 All construction noise monitoring at three designated locations were conducted by their ETs as scheduled in the reporting month.

3.8 No Projects related exceedance was recorded in the reporting month. Summary of exceedance is presented in **Appendix G**.

3.9 Noise monitoring results and graphical presentations are shown in **Appendix E**.

3.10 The major noise sources identified at the designated noise monitoring stations were generated by on-site vehicle movement and construction equipment in the Stonecutters Island STW. The traffic noise from the nearby Container Port Road South and Stonecutters Bridge have also been identified as a contributing factor to the measured results.

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 the each Project site.

4.2 Environmental site audits were conducted in the reporting month for each Contract is the following. No non-compliance was observed during the site audits.

Table 4.1 Summary of Date of Site Inspection

Contract No.	Date of Site Inspection
DC/2009/10	4, 11, 17 and 25 August 2016
DC/2009/17	3, 9, 17, 23 and 30 August 2016
DC/2009/18	4, 11, 18 and 23 August 2016

4.3 Site inspections were undertaken to ensure the implementation and maintenance of landscape and visual mitigation measures are being properly carried out in the reporting month 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 three contracts are attached in **Appendix H**.

Review of Environmental Monitoring Procedures

4.5 The monitoring works conducted by the monitoring teams 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 F**.

Status of Waste Management

4.7 The amount of wastes generated by the activities of the three contracts in the reporting month is the following:

Table 4.2 Summary of Amount of Waste Generated in Reporting Month

Contract	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	293(m^3)	330(kg) and 23(m^3)	0	0	0	0
DC/2009/17	191(m^3)	18(ton)	0	0	0	0
DC/2009/18	105(m^3)	1,800(kg) and 7(m^3)	376(kg)	0	0	0

Remark:
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 (kg) and other General Refuse (m^3, ton).

4.8 The disposal location of wastes generated by the activities of the three contracts is the following:

Table 4.3 Summary of Disposal Location of Waste Generated in Reporting Month

Contract No.	Disposal Location of Wastes in the Report Month
DC/2009/10	Tuen Mun Area 38 Fill Bank and NENT Landfill; (330 kg of paper/cardboard was generated during the reporting period.)
DC/2009/17	Tuen Mun Area 38 Fill Bank and NENT Landfill; (Only general refuse was generated during the reporting period.)
DC/2009/18	Lam Tei Quarry, Tuen Mun Area 38 Fill Bank and NENT Landfill and Tseung Kwan O Area 137 Fill Bank; (1,800 kg of metals were generated during the reporting period.)

4.9 The summaries of amount of waste generated in the three contracts could be referred to respective monthly report.

Implementation Status of Environmental Mitigation Measures

4.10 Details of the implementation of mitigation measures for the three contracts are provided in the **Appendix J**.

4.11 During the weekly environmental site inspections in the reporting period, no non-conformance was identified. The observations and recommendations for the Projects are summarized in **Appendix H**.

Implementation Status of Event Action Plans

4.12 The Event Action Plans for air quality and noise are presented in **Appendix I.**

1-hr TSP

4.13 No Action/Limit Level exceedance was recorded.

24-hr TSP

4.14 No Action/Limit Level exceedance was recorded.

Construction Noise

4.15 No Action/Limit Level exceedance for normal working hours and restricted hours was recorded in the reporting month. Summary of exceedance is presented in **Appendix G**.

Summary of Complaints and Prosecutions

4.16 No environmental complaint and prosecution was received at SCISTW for the three contracts in the reporting month.

4.17 There were no environmental complaint and prosecution received since the commencement of the three contracts. The Complaint Log is presented in **Appendix L**.

5. LANDSCAPE AND VISUAL MONITORING

Implementation Status of the Landscape and Visual Mitigation Measures

5.1 Monthly Landscape and Visual Monitoring for Contract no. DC/2009/10, DC/2009/17 and DC/2009/18 was carried out to check the implementation status of the Landscape and Visual Mitigation Measures conducted by the three Contracts in the SCISTW. Details of the Mitigation Measures are provided in Section F of **Appendix J.**

Summary of Monthly Observation

5.2 2 observations were identified in the SCISTW during the Monthly Landscape and Visual Site Audit for each Contracts during the reporting month. The Audit Summary is presented in **Appendix K**.

6. FUTURE KEY ISSUES

Key Issues for the Coming Month

6.1 Key environmental issues in the coming month include:

- Generation of dust from stockpiles of excavated and dusty materials, unpaved site area and vehicle movement, road works, 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 zones should be provided when carrying out works near existing trees and shrubs.

Monitoring Schedule for the Next Month

6.2 The tentative environmental monitoring schedules for the next month are shown in **Appendix B**.

Construction Program for the Next Month

6.3 The tentative construction programs are provided in **Appendix M**.

6. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

6.1 Environmental monitoring and audit works were performed in the reporting month and all monitoring results were checked and reviewed.

1-hour TSP Monitoring

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

24-hour TSP Monitoring

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

Construction Noise Monitoring

6.4 No Action/Limit Level exceedance for normal working hours and restricted hours was recorded in the reporting month. Summary of exceedance is presented in **Appendix G**.

Environmental Audit

6.5 Environmental site audits were conducted on weekly basis in the reporting month. No non-compliance was recorded.

Complaint and Prosecution

6.6 No environmental complaint and prosecution was received in the reporting month.

Recommendations for the coming reporting month:

6.7 The following recommendations were made for the coming reporting month:

Air Quality

- 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

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

Water Quality

- 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.

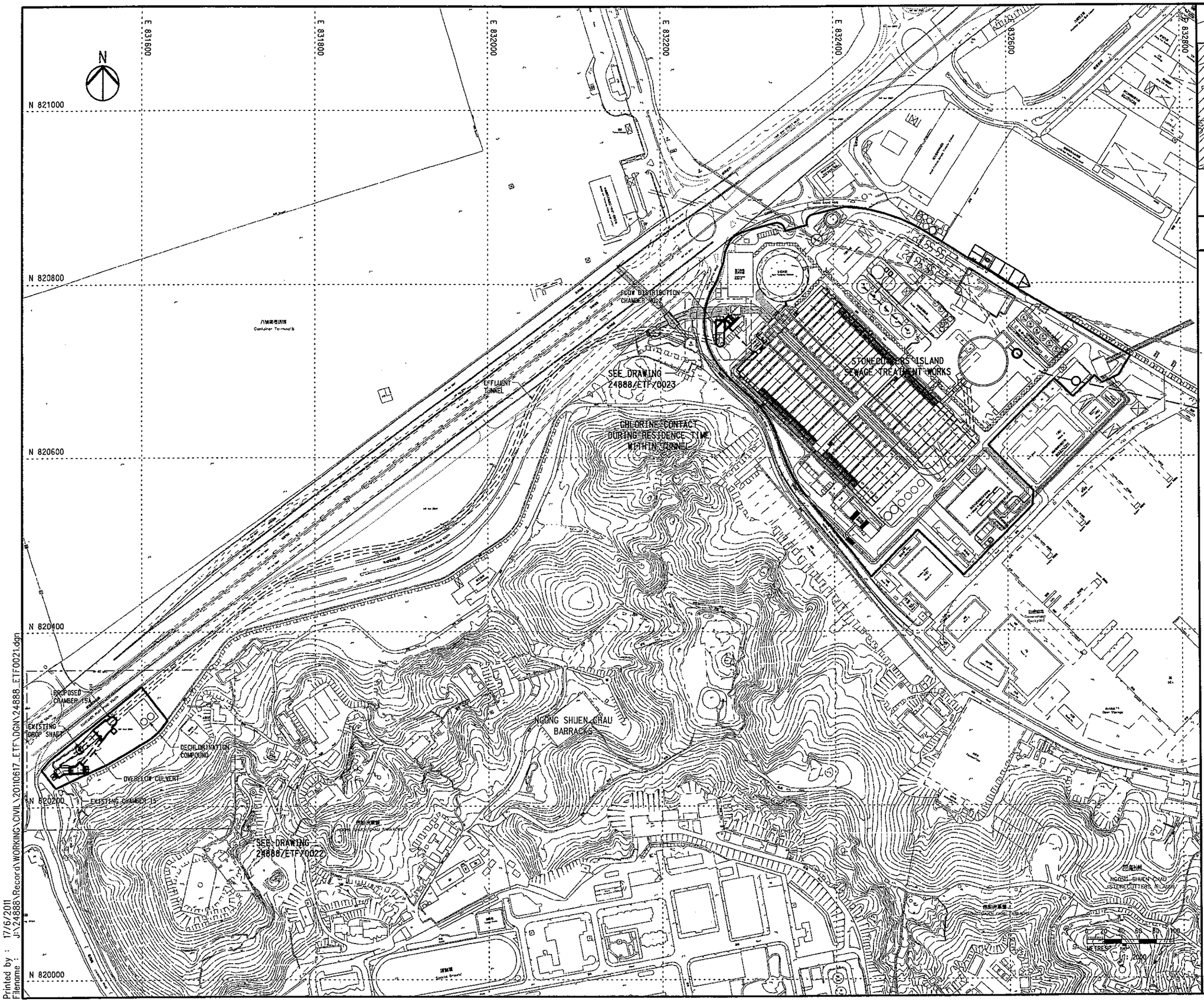
Waste/Chemical Management

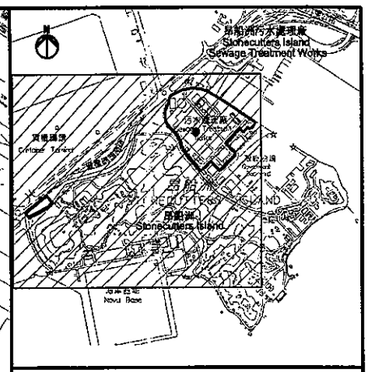
- To provide proper rubbish bins / skips for waste collection;
- To check for any accumulation of wasted materials or rubbish on site;
- To provide proper storage area or drip trays for oil containers/ equipment on site;
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the equipment;
- To well maintain the equipment 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 within the site area; and
- To avoid placing any construction materials in the tree protection zone.

FIGURES





KEY PLAN

LEGEND:

BOUNDARY OF SCISTW

ALIGNMENT OF EFFLUENT TUNNEL

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

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

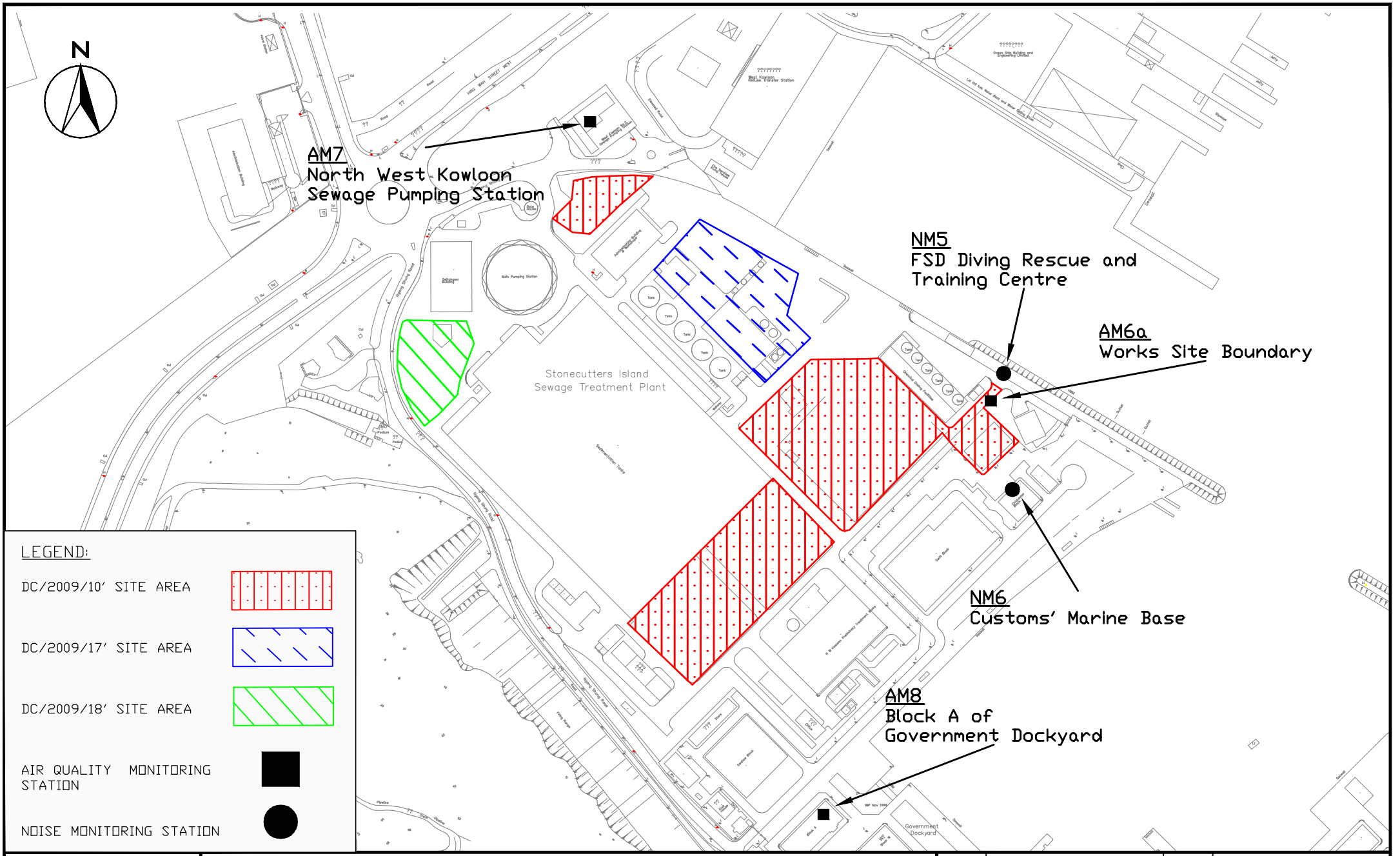
GENERAL LAYOUT
(SHEET 1)

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

COPYRIGHT RESERVED

香港特別行政區政府渠務署
DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION

Printed by : 17/6/2011
Filename : J:\24888\Record\WORKING\CIVIL\20110617_ETF\DGN\24888_ETF0021.dgn

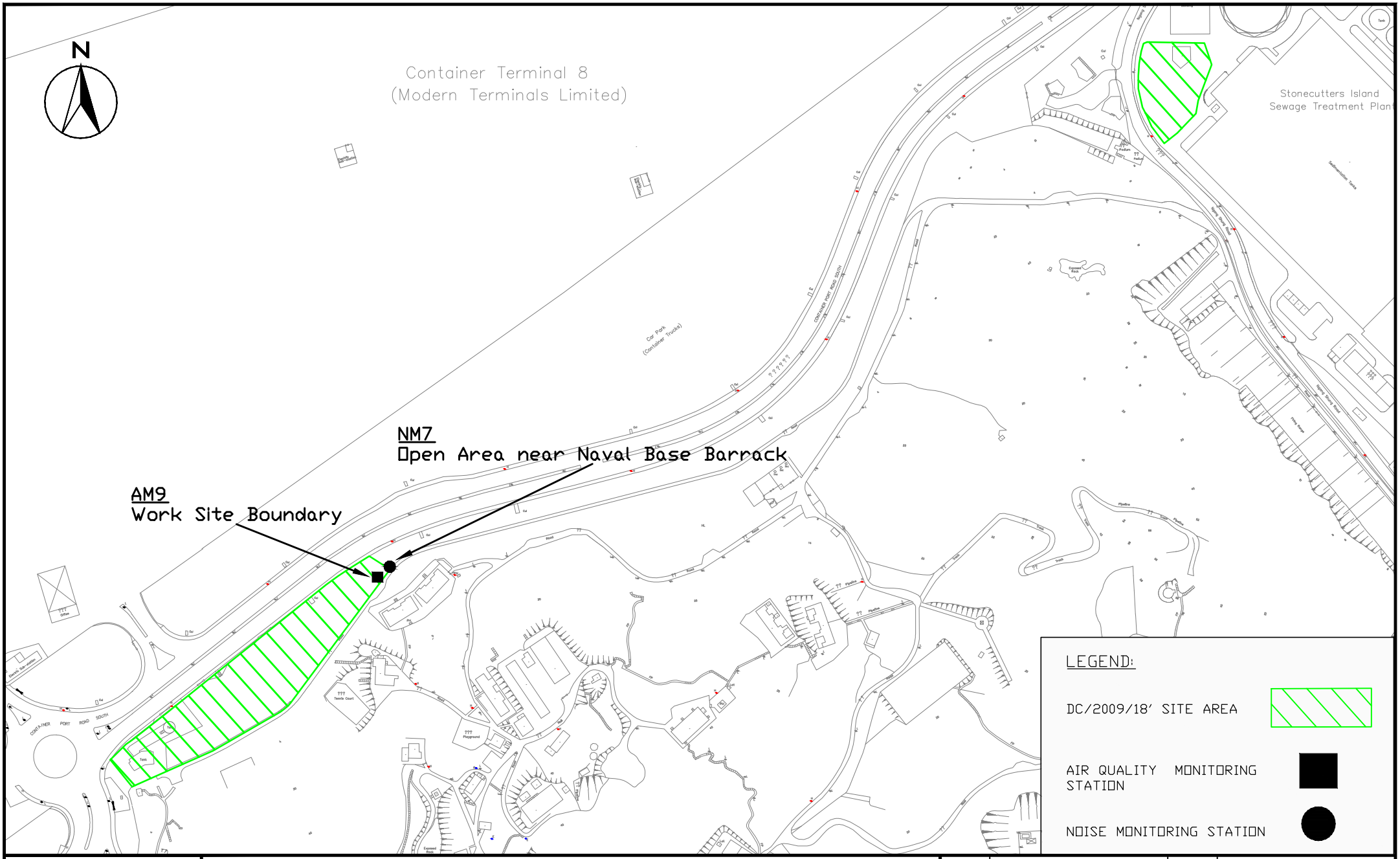


CINOTECH
Cinotech Consultants Limited

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.	2
		REV	–



CINOTECH
Cinotech Consultants Limited

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.	3
		REV	–

APPENDIX A
ACTION AND LIMIT LEVELS FOR AIR QUALITY AND NOISE

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 ($\mu g/m^3$)		Limit Level ($\mu g/m^3$)	
	1-hour	24-hour	1-hour	24-hour
AM6a	346	196	500	260
AM7	322	207	500	260
AM8	307	158	500	260
AM9	318	169	500	260

Table A-2 Action and Limit Level for Construction Noise

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

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

APPENDIX B
ENVIRONMENTAL MONITORING SCHEDULES

DC/2009/10 HATS 2A Upgrading Main Pumping Station, Sedimentation Tanks and Ancillary Facilities at SCISTW
Impact Air Quality and Noise Monitoring Schedule (August 2016)

.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Aug	2-Aug	3-Aug	4-Aug	5-Aug	6-Aug
	24 hr TSP	1hr TSP X 3 Noise			24 hr TSP	
7-Aug	8-Aug	9-Aug	10-Aug	11-Aug	12-Aug	13-Aug
	1hr TSP X 3 Noise			24 hr TSP	1hr TSP X 3	
14-Aug	15-Aug	16-Aug	17-Aug	18-Aug	19-Aug	20-Aug
			24 hr TSP	1hr TSP X 3 Noise		
21-Aug	22-Aug	23-Aug	24-Aug	25-Aug	26-Aug	27-Aug
		24 hr TSP	1hr TSP X 3 Noise			
28-Aug	29-Aug	30-Aug	31-Aug			
	24 hr TSP	1hr TSP X 3 Noise				

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Air Quality Monitoring Station
AM7 - West Kowloon No.2 Sewage Pumping Station
AM8 - Block A of Government Dockyard
AM6a - Works Site Boundary

Noise Monitoring Station
NM6 - Customs' Marine Base (Block H of Government Dockyard) Rooftop
NM5 - FSD Diving Training Centre

DC/2009/10 HATS 2A Upgrading Main Pumping Station, Sedimentation Tanks and Ancillary Facilities at SCISTW
Tentative Impact Air Quality and Noise Monitoring Schedule (September 2016)

.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-Sep	2-Sep	3-Sep
					24 hr TSP	
4-Sep	5-Sep	6-Sep	7-Sep	8-Sep	9-Sep	10-Sep
	1hr TSP X 3 Noise			24 hr TSP	1hr TSP X 3	
11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	**16-Sep**	17-Sep
			24 hr TSP	1hr TSP X 3 Noise		
18-Sep	19-Sep	20-Sep	21-Sep	22-Sep	23-Sep	24-Sep
		24 hr TSP	1hr TSP X 3 Noise			
25-Sep	26-Sep	27-Sep	28-Sep	29-Sep	30-Sep	
	24 hr TSP	1hr TSP X 3 Noise			24 hr TSP	

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Air Quality Monitoring Station
AM7 - West Kowloon No.2 Sewage Pumping Station
AM8 - Block A of Government Dockyard
AM6a - Works Site Boundary

Noise Monitoring Station
NM6 - Customs' Marine Base (Block H of Government Dockyard) Rooftop
NM5 - FSD Diving Training Centre

Contract No. DC/2009/18

HATS 2A -Upgrading Works at Stonecutters Island Sewage Treatment Works - Effluent Tunnel and Disinfection Facilities

Impact Air Quality and Noise Monitoring Schedule (August 2016)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Aug	2-Aug	3-Aug	4-Aug	5-Aug	6-Aug
	24 hr TSP	1hr TSP X 3 Noise (Daytime, Evening and Night Time)			24 hr TSP	
7-Aug	8-Aug	9-Aug	10-Aug	11-Aug	12-Aug	13-Aug
	1hr TSP X 3 Noise (Daytime, Evening and Night Time)			24 hr TSP	1hr TSP X 3	
14-Aug	15-Aug	16-Aug	17-Aug	18-Aug	19-Aug	20-Aug
			24 hr TSP	1hr TSP X 3 Noise (Daytime, Evening and Night Time)		
21-Aug	22-Aug	23-Aug	24-Aug	25-Aug	26-Aug	27-Aug
		24 hr TSP	1hr TSP X 3 Noise (Daytime, Evening and Night Time)			
28-Aug	29-Aug	30-Aug	31-Aug			
	24 hr TSP	1hr TSP X 3 Noise (Daytime, Evening and Night Time)				

Air Quality Monitoring Location:
AM9 - Work Site Boundary (Near Ngong Shuen Chau Barracks Group 2)

Noise Monitoring Location:
NM7 - Open Area near Naval Base Barrack

Contract No. DC/2009/18

HATS 2A -Upgrading Works at Stonecutters Island Sewage Treatment Works - Effluent Tunnel and Disinfection Facilities

Tentative Impact Air Quality and Noise Monitoring Schedule (September 2016)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-Sep	2-Sep	3-Sep
					24 hr TSP	
4-Sep	5-Sep	6-Sep	7-Sep	8-Sep	9-Sep	10-Sep
	1hr TSP X 3 Noise (Daytime, Evening and Night Time)			24 hr TSP	1hr TSP X 3	
11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	**16-Sep**	17-Sep
			24 hr TSP	1hr TSP X 3 Noise (Daytime, Evening and Night Time)		
18-Sep	19-Sep	20-Sep	21-Sep	22-Sep	23-Sep	24-Sep
		24 hr TSP	1hr TSP X 3 Noise (Daytime, Evening and Night Time)			
25-Sep	26-Sep	27-Sep	28-Sep	29-Sep	30-Sep	
	24 hr TSP	1hr TSP X 3 Noise (Daytime, Evening and Night Time)			24 hr TSP	

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Air Quality Monitoring Location:
AM9 - Work Site Boundary (Near Ngong Shuen Chau Barracks Group 2)

Noise Monitoring Location:
NM7 - Open Area near Naval Base Barrack

APPENDIX C
CALIBRATION CERTIFICATES OF THE ENVIRONMENTAL MONITORING EQUIPMENT

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11007/57/0005

Project No. AM6 - Works Site Boundary Operator: WK

Date: 21-Jul-16 Next Due Date: 20-Sep-16

Equipment No.: A-01-56 Serial No. 2353

Ambient Condition			
Temperature, Ta (K)	302.5	Pressure, Pa (mmHg)	761.3

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	12.5	3.51	59.59	7.9	2.79
2	10.8	3.26	55.45	6.9	2.61
3	7.5	2.72	46.35	4.8	2.18
4	5.3	2.29	39.10	3.3	1.80
5	3.4	1.83	31.49	2.3	1.51

By Linear Regression of Y on X

Slope , mw = 0.0465 **Intercept, bw =** 0.0184

Correlation coefficient* = 0.9992

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.13**

Remarks:

Conducted by: WK Tang Signature: Kwoi Date: 21/7/2016

Checked by: [illegible] Signature: Date: 21 July 2016

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11007/55/0026

Station: AM7 - North West Kowloon Sewage Pumping Station Operator: WK

Date: 23-Jun-16 Next Due Date: 22-Aug-16

Equipment No.: A-01-55 Serial No. 2355

Ambient Condition			
Temperature, Ta (K)	303.2	Pressure, Pa (mmHg)	759.2

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	12.0	3.43	58.26	6.8	2.58
2	10.4	3.20	54.29	5.9	2.41
3	7.8	2.77	47.13	4.7	2.15
4	5.4	2.30	39.36	3.2	1.77
5	3.2	1.77	30.50	2.0	1.40

By Linear Regression of Y on X

Slope , mw = 0.0426 **Intercept, bw :** 0.1053

Correlation coefficient* = 0.9992

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.83**

Remarks:

Conducted by: wk Tang Signature: Date: 23/6/16

Checked by: Signature: Date: 23 June 2016

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11007/55/0027

Station: AM7 - North West Kowloon Sewage Pumping Station Operator: WK

Date: 18-Aug-16 Next Due Date: 17-Oct-16

Equipment No.: A-01-55 Serial No. 2355

Ambient Condition			
Temperature, Ta (K)	299.7	Pressure, Pa (mmHg)	749.8

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	12.0	3.43	58.23	6.8	2.58
2	10.3	3.18	54.01	5.8	2.39
3	7.9	2.78	47.41	4.7	2.15
4	5.3	2.28	38.99	3.1	1.74
5	3.3	1.80	30.94	2.1	1.44

By Linear Regression of Y on X

Slope , mw = **0.0422** **Intercept, bw =** **0.1216**

Correlation coefficient* = **0.9992**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.82**

Remarks:

Conducted by: WK/Tang Signature: Kwai Date: 18/8/16

Checked by: AW Signature: Date: 18 August 2016

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11007/68/0025

Station: AM8 - Block A of Government Dockyard Operator: WK

Date: 23-Jun-16 Next Due Date: 22-Aug-16

Equipment No.: A-01-68 Serial No. 3219

Ambient Condition			
Temperature, Ta (K)	303.5	Pressure, Pa (mmHg)	758.7

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.6	3.37	57.25	6.8	2.58
2	9.4	3.04	51.62	5.4	2.30
3	7.8	2.77	47.10	4.6	2.12
4	5.2	2.26	38.61	3.2	1.77
5	3.4	1.83	31.38	2.0	1.40

By Linear Regression of Y on X

Slope , mw = 0.0447 **Intercept, bw =** 0.0148

Correlation coefficient* = 0.9990

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.83**

Remarks:

Conducted by: Wk Tang Signature: Kwan Date: 23/6/16

Checked by: HY Signature: Date: 23 June 2016

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11007/68/0026

Station: AM8 - Block A of Government Dockyard Operator: WK

Date: 18-Aug-16 Next Due Date: 17-Oct-16

Equipment No.: A-01-68 Serial No. 3219

Ambient Condition			
Temperature, Ta (K)	299.6	Pressure, Pa (mmHg)	749.2

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.7	3.39	57.50	6.8	2.58
2	9.8	3.10	52.70	5.6	2.34
3	7.9	2.78	47.40	4.7	2.15
4	5.4	2.30	39.34	3.3	1.80
5	3.4	1.83	31.39	2.0	1.40

By Linear Regression of Y on X

Slope , mw = 0.0444 **Intercept, bw =** 0.0251

Correlation coefficient* = 0.9989

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.82**

Remarks:

Conducted by: wk Tang Signature: Kwan Date: 18/8/16

Checked by: [illegible] Signature: [illegible] Date: 18 August 2016

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11043/63/0031

Project No. AM9 - Work Site Boundary (Near Ngong Shuen Chau Barracks Group 2)

Operator: WK

Date: 23-Jun-16 Next Due Date: 22-Aug-16

Equipment No.: A-01-63 Serial No. 2356

Ambient Condition			
Temperature, Ta (K)	303	Pressure, Pa (mmHg)	759.6

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.6	3.38	57.33	6.7	2.57
2	9.5	3.06	51.96	5.4	2.30
3	7.5	2.72	46.26	4.4	2.08
4	5.4	2.30	39.38	3.2	1.77
5	3.3	1.80	30.97	2.0	1.40

By Linear Regression of Y on X

Slope , mw = 0.0438 **Intercept, bw :** 0.0470

Correlation coefficient* = 0.9997

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.79

Remarks:

Conducted by: WK Tang Signature: Kwan Date: 23/6/16

Checked by: [illegible] Signature: [illegible] Date: 23 June 2016

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11043/63/0032

Project No. AM9 - Work Site Boundary (Near Ngong Shuen Chau Barracks Group 2)

Operator: WK

Date: 18-Aug-16 Next Due Date: 17-Oct-16

Equipment No.: A-01-63 Serial No. 2356

Ambient Condition			
Temperature, Ta (K)	299.8	Pressure, Pa (mmHg)	750.1

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	**mc x Qstd + bc = $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$**			
Next Calibration Date:	3-Mar-17	**Qstd = $\{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$**			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.5	3.36	57.03	6.8	2.58
2	9.4	3.04	51.64	5.7	2.36
3	7.3	2.68	45.61	4.4	2.08
4	5.2	2.26	38.63	3.1	1.74
5	3.4	1.83	31.40	2.1	1.44

By Linear Regression of Y on X

Slope , mw = 0.0454 **Intercept, bw :** 0.0050

Correlation coefficient* = 0.9996

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.90**

Remarks:

Conducted by: WK Tang Signature: Date: 18/8/16

Checked by: Signature: Date: 18 August 2016

TISCH ENVIRONMENTAL, INC.
145 SOUTH MIAMI AVE
VILLAGE OF CLEVES, OH
45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Mar 04, 2016 Rootsmeter S/N 0438320 Ta (K) - 295
Operator Tisch Orifice I.D. - 2896 Pa (mm) - 755.65

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4340	3.2	2.00
2	NA	NA	1.00	1.0250	6.4	4.00
3	NA	NA	1.00	0.9150	7.9	5.00
4	NA	NA	1.00	0.8770	8.7	5.50
5	NA	NA	1.00	0.7210	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)
1.0001	0.6974	1.4173
0.9959	0.9716	2.0044
0.9938	1.0861	2.2410
0.9928	1.1320	2.3503
0.9875	1.3696	2.8346

Qstd slope (m) = 2.11176
intercept (b) = -0.05079
coefficient (r) = 0.99982

y axis = SQRT[H2O(Pa/760)(298/Ta)]

Va	(x axis) Qa	(y axis)
0.9957	0.6944	0.8836
0.9915	0.9674	1.2496
0.9894	1.0814	1.3971
0.9885	1.1271	1.4653
0.9831	1.3636	1.7672

Qa slope (m) = 1.32235
intercept (b) = -0.03166
coefficient (r) = 0.99982

y axis = SQRT[H2O(Ta/Pa)]

CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]
Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m{[SQRT(H2O(Pa/760)(298/Ta))]- b}
Qa = 1/m{[SQRT H2O(Ta/Pa)]- b}

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 1516, 1701 & 1716, Technology Park,
18 On Lai Street, Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W. K. Tang**

Test Report No.:	C/160630/B
Date of Issue:	2016-07-04
Date Received:	2016-06-30
Date Tested:	2016-06-30
Date Completed:	2016-07-04
Next Due Date:	2016-09-03
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 853944
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 685 CPM
Equipment No.	: A-02-04

Test Conditions:

Room Temperature	: 24 degree Celsius
Relative Humidity	: 57 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0036

****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

This report may not be reproduced, except in full, without prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

WELLAB LIMITED
Rms 1516, 1701 & 1716, Technology Park,
18 On Lai Street, Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W. K. Tang**

Test Report No.:	C/160630/D
Date of Issue:	2016-07-04
Date Received:	2016-06-30
Date Tested:	2016-06-30
Date Completed:	2016-07-04
Next Due Date:	2016-09-03
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 541146
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 625 CPM
Equipment No.	: A-02-07

Test Conditions:

Room Temperature	: 24 degree Celsius
Relative Humidity	: 57 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0035

****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

This report may not be reproduced, except in full, without prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

WELLAB LIMITED
Rms 1516, 1701 & 1716, Technology Park,
18 On Lai Street, Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/160624/1
Date of Issue:	2016-06-27
Date Received:	2016-06-24
Date Tested:	2016-06-24
Date Completed:	2016-06-27
Next Due Date:	2016-08-26

ATTN: **Mr. W. K. Tang**

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 095029
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 551 CPM
Equipment No.	: A-02-10

Test Conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 58 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0036

****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

This report may not be reproduced, except in full, without prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

WELLAB 匯力
Testing & Research

WELLAB LIMITED
Rms 1516, 1701 & 1716, Technology Park,
18 On Lai Street, Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W. K. Tang**

Test Report No.:	C/160826D
Date of Issue:	2016-08-29
Date Received:	2016-08-26
Date Tested:	2016-08-26
Date Completed:	2016-08-29
Next Due Date:	2016-10-28
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 095029
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 551 CPM
Equipment No.	: A-02-10

Test Conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 62 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0038

****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

This report may not be reproduced, except in full, without prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 1516, 1701 & 1716, Technology Park,
18 On Lai Street, Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/160812/B
Date of Issue:	2016-08-15
Date Received:	2016-08-12
Date Tested:	2016-08-12
Date Completed:	2016-08-15
Next Due Date:	2016-10-14

ATTN: **Mr. W. K. Tang**

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Handheld Particle Counter
Manufacturer	: Hal Technology
Model No.	: Hal-HPC300
Serial No.	: 3020408
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 5 minutes
Equipment No.	: A-26-01

Test Conditions:

Room Temperature	: 25 degree Celsius
Relative Humidity	: 68 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1.086

****

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

This report may not be reproduced, except in full, without prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 1516, 1701 & 1716, Technology Park,
18 On Lai Street, Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W. K. Tang**

Test Report No.:	C/160610/4
Date of Issue:	2016-06-13
Date Received:	2016-06-10
Date Tested:	2016-06-10
Date Completed:	2016-06-13
Next Due Date:	2016-08-12
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Handheld Particle Counter
Manufacturer	: Hal Technology
Model No.	: Hal-HPC300
Serial No.	: 3020410
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 5 minutes
Equipment No.	: A-26-03

Test Conditions:

Room Temperature	: 24 degree Celsius
Relative Humidity	: 60 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1.062

****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

Patrick Tse

PATRICK TSE
Laboratory Manager

This report may not be reproduced, except in full, without prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 1516, 1701 & 1716, Technology Park,
18 On Lai Street, Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W. K. Tang**

Test Report No.:	C/160610/5
Date of Issue:	2016-06-13
Date Received:	2016-06-10
Date Tested:	2016-06-10
Date Completed:	2016-06-13
Next Due Date:	2016-08-12
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Handheld Particle Counter
Manufacturer	: Hal Technology
Model No.	: Hal-HPC300
Serial No.	: 3020411
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 5 minutes
Equipment No.	: A-26-04

Test Conditions:

Room Temperature	: 24 degree Celsius
Relative Humidity	: 60 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1.042

****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

This report may not be reproduced, except in full, without prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

WELLAB LIMITED
Rms 1516, 1701 & 1716, Technology Park,
18 On Lai Street, Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W. K. Tang**

Test Report No.:	C/160812/E
Date of Issue:	2016-08-15
Date Received:	2016-08-12
Date Tested:	2016-08-12
Date Completed:	2016-08-15
Next Due Date:	2016-10-14
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Handheld Particle Counter
Manufacturer	: Hal Technology
Model No.	: Hal-HPC300
Serial No.	: 3020411
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 5 minutes
Equipment No.	: A-26-04

Test Conditions:

Room Temperature	: 25 degree Celsius
Relative Humidity	: 68 %

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1.047

****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

This report may not be reproduced, except in full, without prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W.K. Tang**

Test Report No.:	C/N/150918/2
Date of Issue:	2015-09-21
Date Received:	2015-09-18
Date Tested:	2015-09-18
Date Completed:	2015-09-21
Next Due Date:	2016-09-20
Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 955
Serial No.	: 12563
Microphone No.	: 34377
Equipment No.	: N-08-03

Test conditions:

Room Temperatre	: 25 degree Celsius
Relative Humidity	: 58%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

This report may not be reproduced except with prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W.K. Tang**

Test Report No.:	C/N/150821/1
Date of Issue:	2015-08-24
Date Received:	2015-08-21
Date Tested:	2015-08-21
Date Completed:	2015-08-24
Next Due Date:	2016-08-23
Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21460
Microphone No.	: 43679
Equipment No.	: N-08-09

Test conditions:

Room Temperatre	: 22 degree Celsius
Relative Humidity	: 54%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

This report may not be reproduced except with prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

WELLAB LIMITED
Rms 1516, 1701 & 1716, Technology Park,
18 On Lai Street, Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W.K. Tang**

Test Report No.:	C/N/160819C
Date of Issue:	2016-08-22
Date Received:	2016-08-19
Date Tested:	2016-08-19
Date Completed:	2016-08-22
Next Due Date:	2017-08-21
Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21460
Microphone No.	: 43679
Equipment No.	: N-08-09

Test conditions:

Room Temperatre	: 24 degree Celsius
Relative Humidity	: 58%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

This report may not be reproduced, except in full, without prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

WELLAB LIMITED
Rms 1516, 1701 & 1716, Technology Park,
18 On Lai Street, Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/151031/1
Date of Issue:	2015-11-02
Date Received:	2015-10-31
Date Tested:	2015-10-31
Date Completed:	2015-11-02
Next Due Date:	2016-11-01
Page:	1 of 1

ATTN: **Mr. W.K. Tang**

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 10965
Equipment No.	: N-09-02

Test conditions:

Room Temperatre	: 24 degree Celsius
Relative Humidity	: 56%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

This report may not be reproduced, except in full, without prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/151003/1
Date of Issue:	2015-10-04
Date Received:	2015-10-03
Date Tested:	2015-10-03
Date Completed:	2015-10-04
Next Due Date:	2016-10-03

ATTN: **Mr. W.K. Tang**

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24803
Equipment No.	: N-09-03

Test conditions:

Room Temperatre	: 23 degree Celsius
Relative Humidity	: 57%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

This report may not be reproduced except with prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W.K. Tang**

Test Report No.:	C/N/151003/2
Date of Issue:	2015-10-04
Date Received:	2015-10-03
Date Tested:	2015-10-03
Date Completed:	2015-10-04
Next Due Date:	2016-10-03
Page:	1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24780
Equipment No.	: N-09-05

Test conditions:

Room Temperatre	: 23 degree Celsius
Relative Humidity	: 57%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

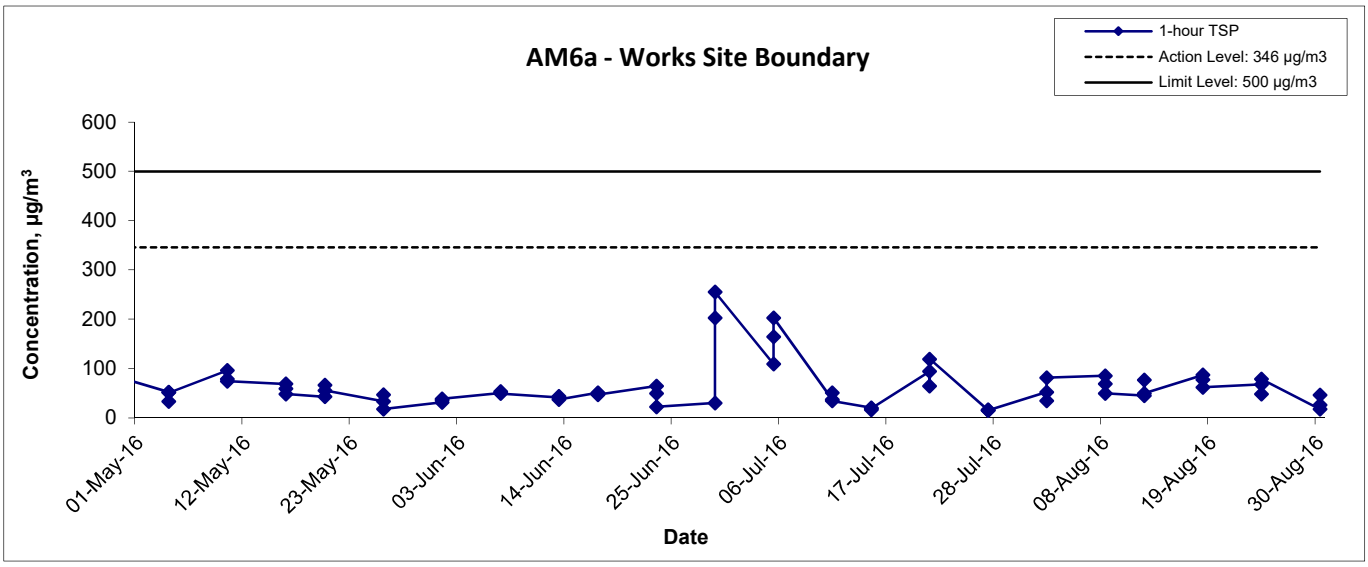
PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

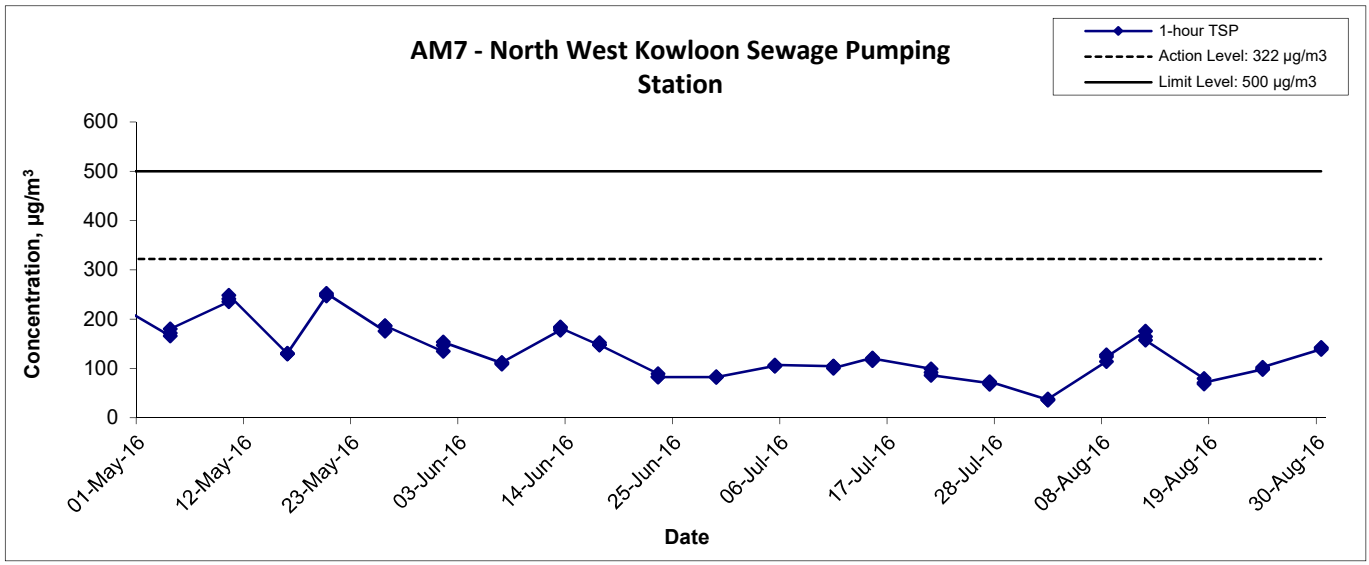
PATRICK TSE
Laboratory Manager

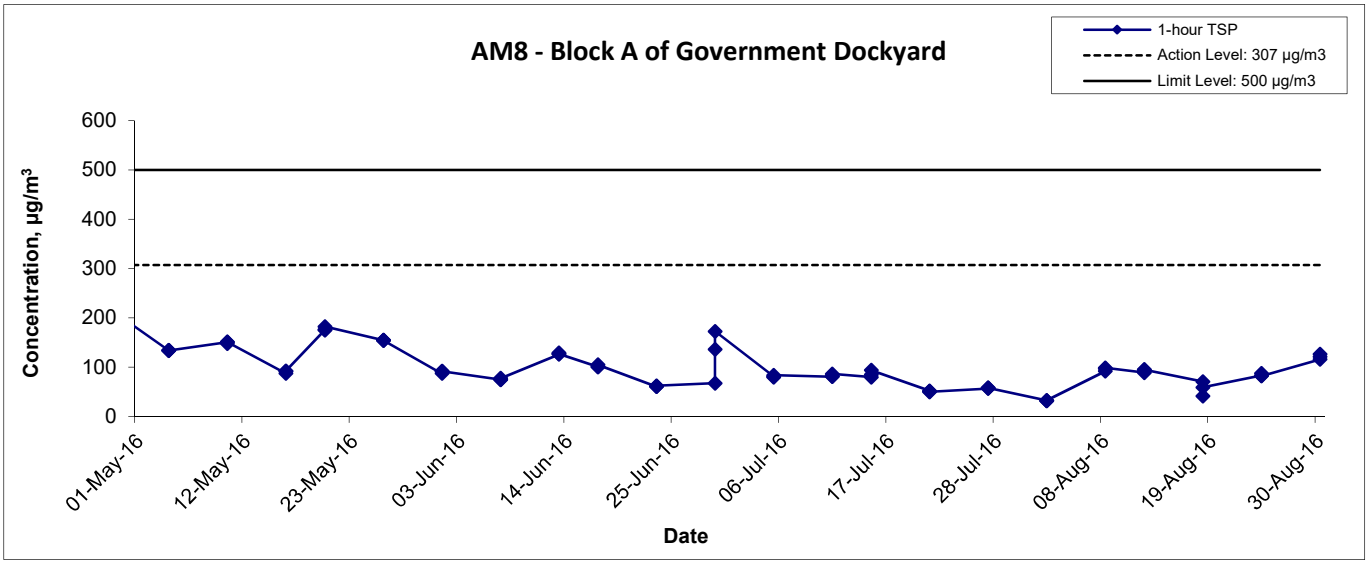
This report may not be reproduced except with prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

APPENDIX D
1-HOUR AND 24-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

1-hr TSP Concentration Levels

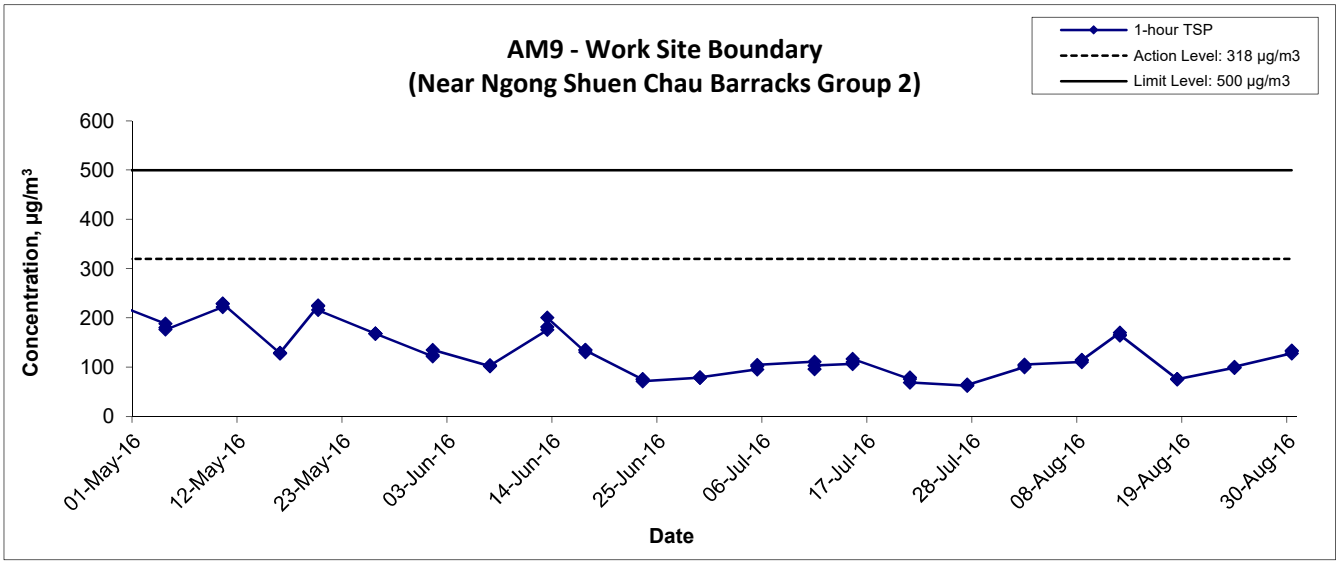






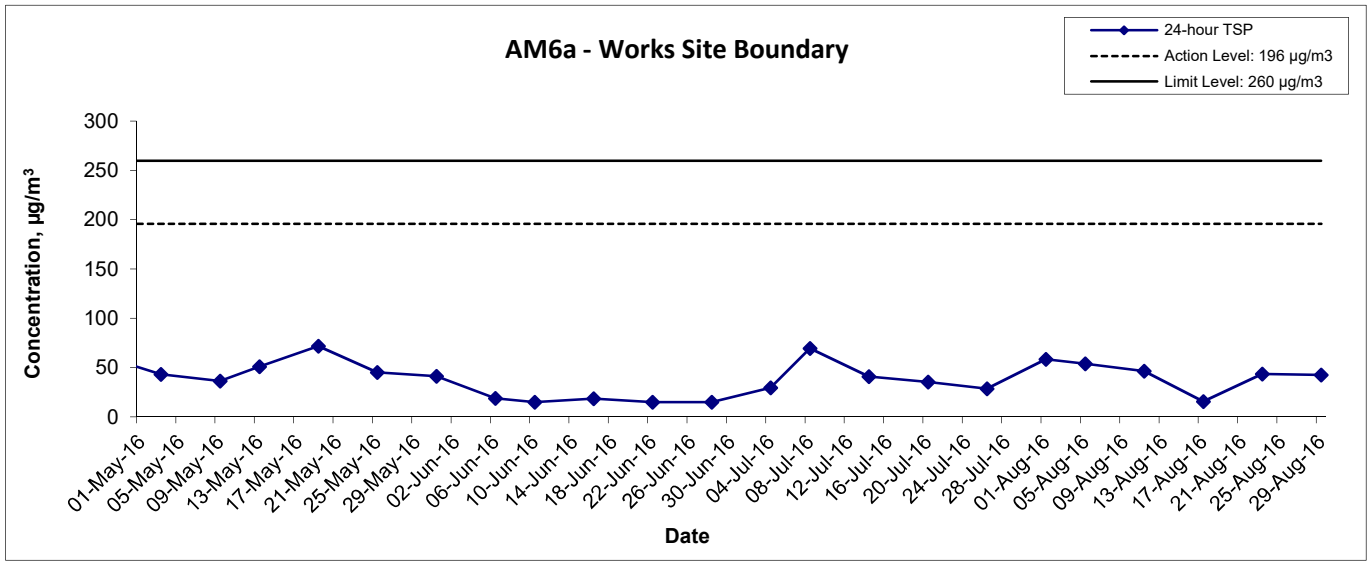
Title: Contract No. DC/2009/10 HATS 2A – Upgrading Works at SCISTW– Main Pumping Station, Sedimentation Tanks and Ancillary Graphical Presentation of 1-hour TSP Monitoring Results	Scale: N.T.S Date: Aug 16	Project No.: MA11007 Appendix: D	CINOTECH

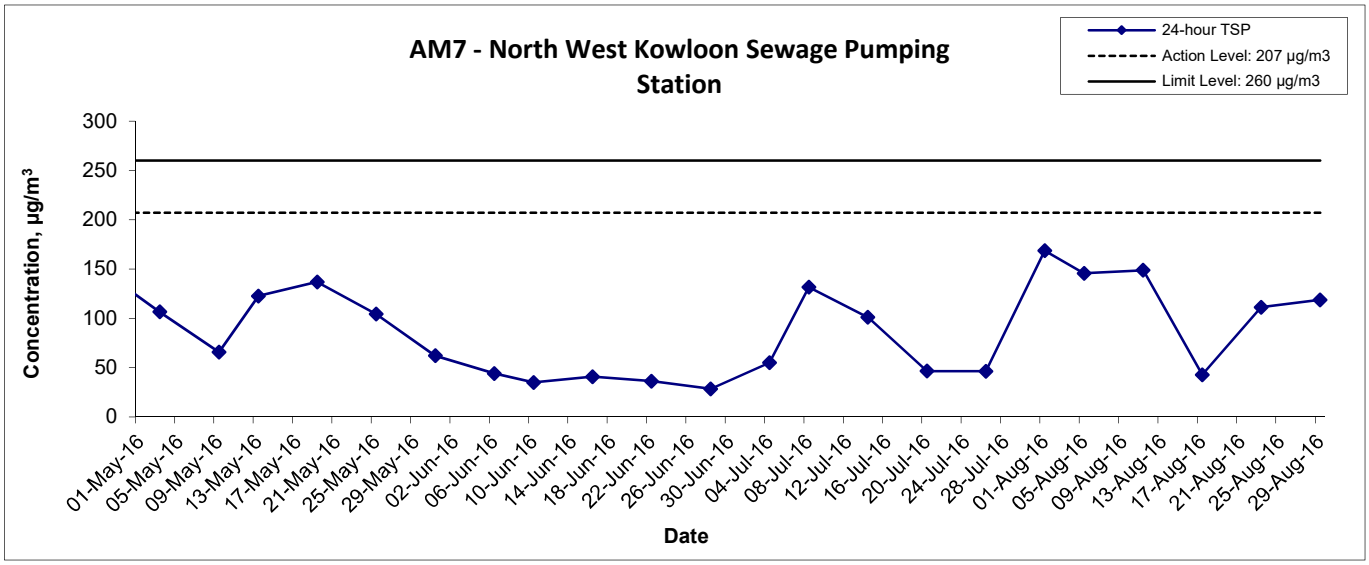
1-hr TSP Concentration Levels

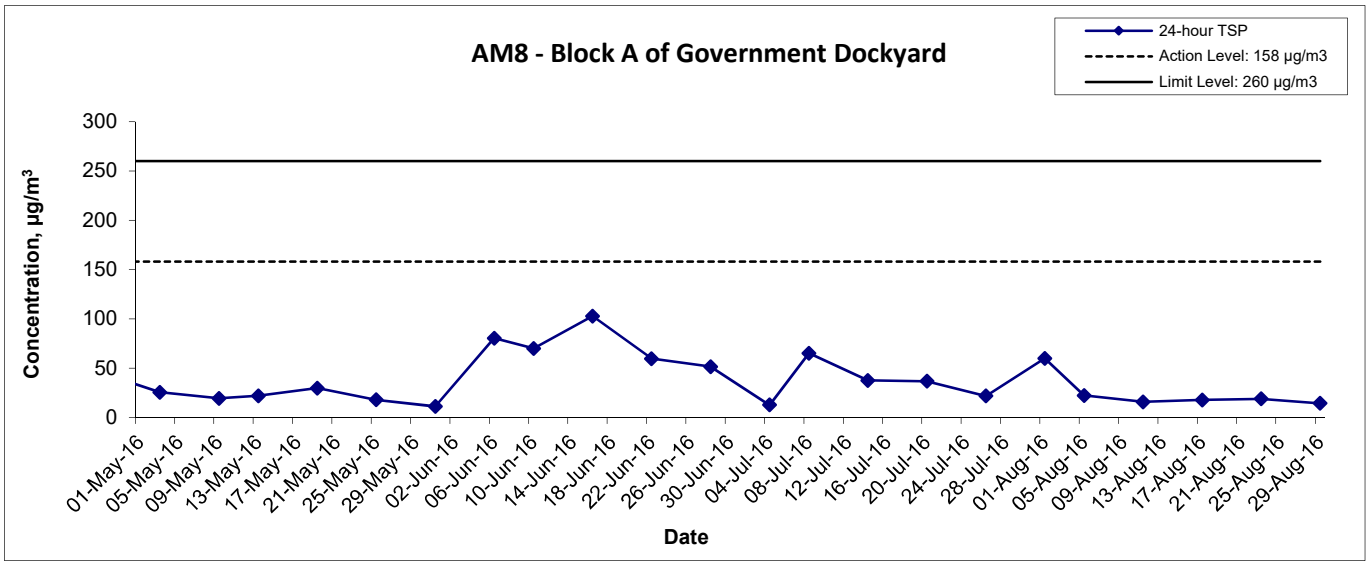


Title: Contract No. DC/2009/18 HATS 2A – Upgrading Works at SCISTW– Effluent Tunnel and Disinfection Facilities Graphical Presentation of 1-hour TSP Monitoring Results	Scale: N.T.S Date: Aug 16	Project No.: MA11043 Appendix: D	CINOTECH

24-hr TSP Concentration Levels

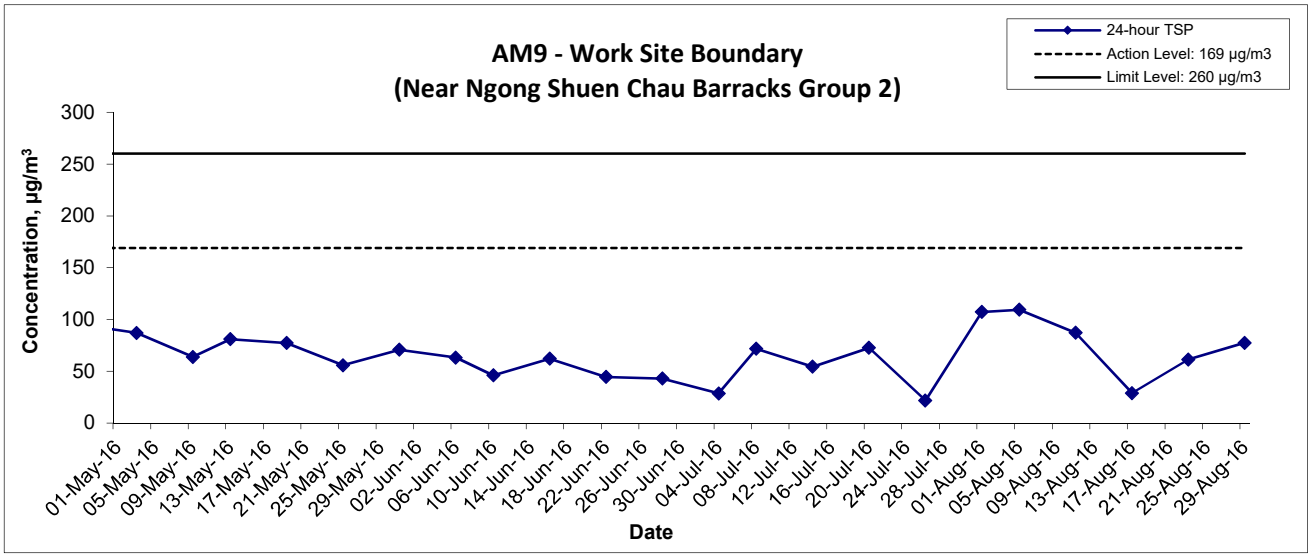






Title	Contract No. DC/2009/10 HATS 2A – Upgrading Works at SCISTW– Main Pumping Station, Sedimentation Tanks and Ancillary Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA11007	CINOTECH
		Date Aug 16	Appendix D	

24-hr TSP Concentration Levels

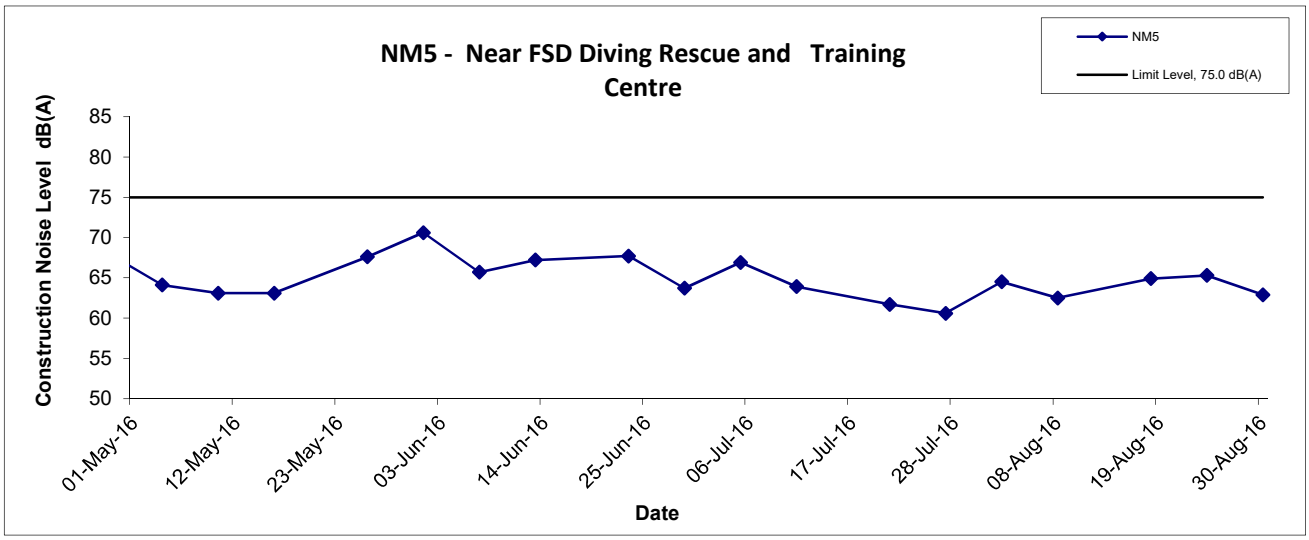


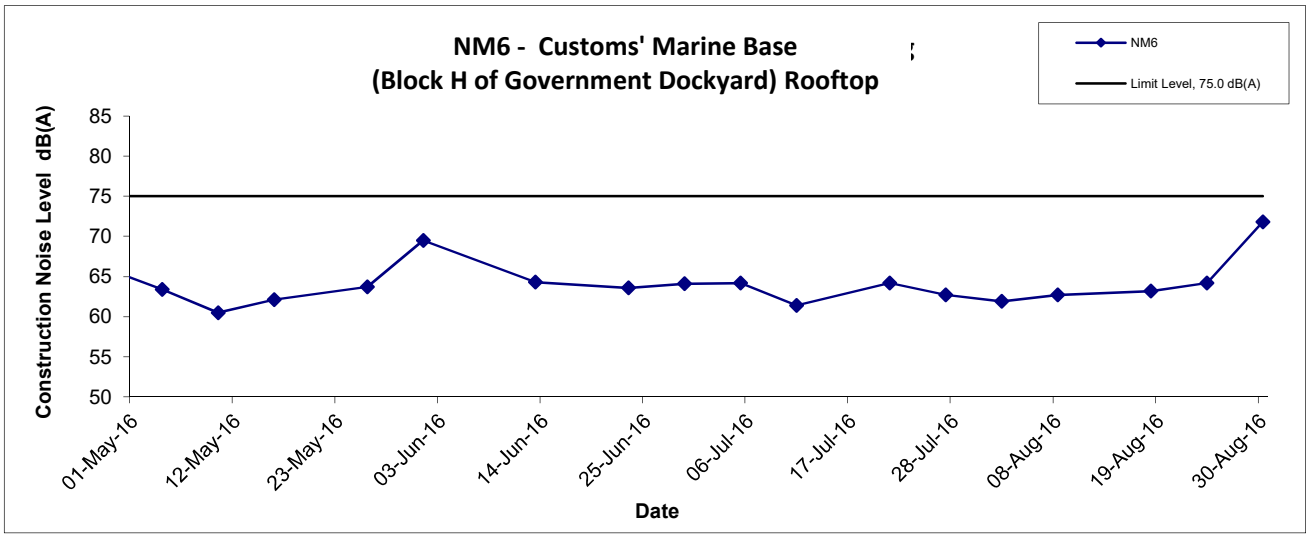
Title	Contract No. DC/2009/18 HATS 2A – Upgrading Works at SCISTW– Effluent Tunnel and Disinfection Facilities Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S Date Aug 16	Project No. MA11043 Appendix D	CINOTECH

APPENDIX E
NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Noise Levels

(0700-1900 hrs on Normal Weekdays)

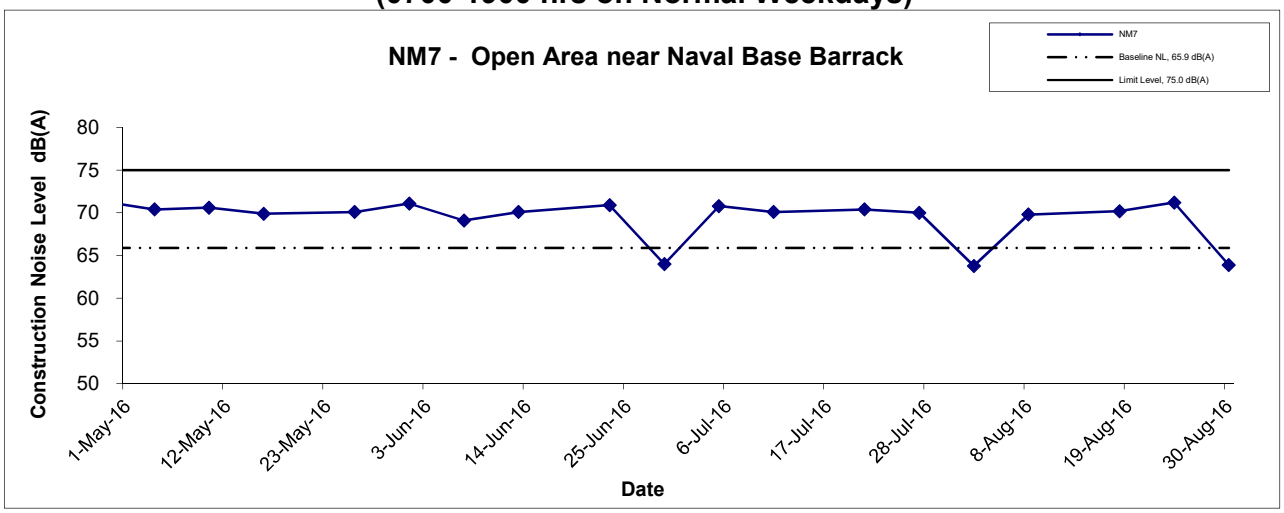




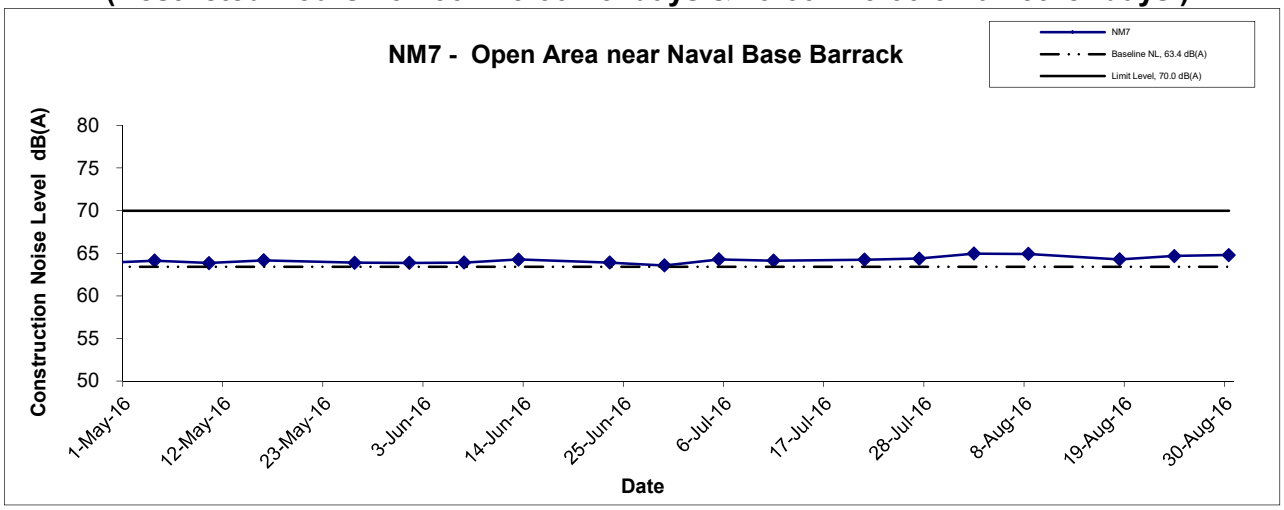
Title	Contract No. DC/2009/10 HATS 2A – Upgrading Works at SCISTW– Main Pumping Station, Sedimentation Tanks and Ancillary Graphical Presentation of Noise Monitoring Result	Scale N.T.S	Project No. MA11007	CINOTECH
		Date Aug 16	Appendix E	

Noise Levels

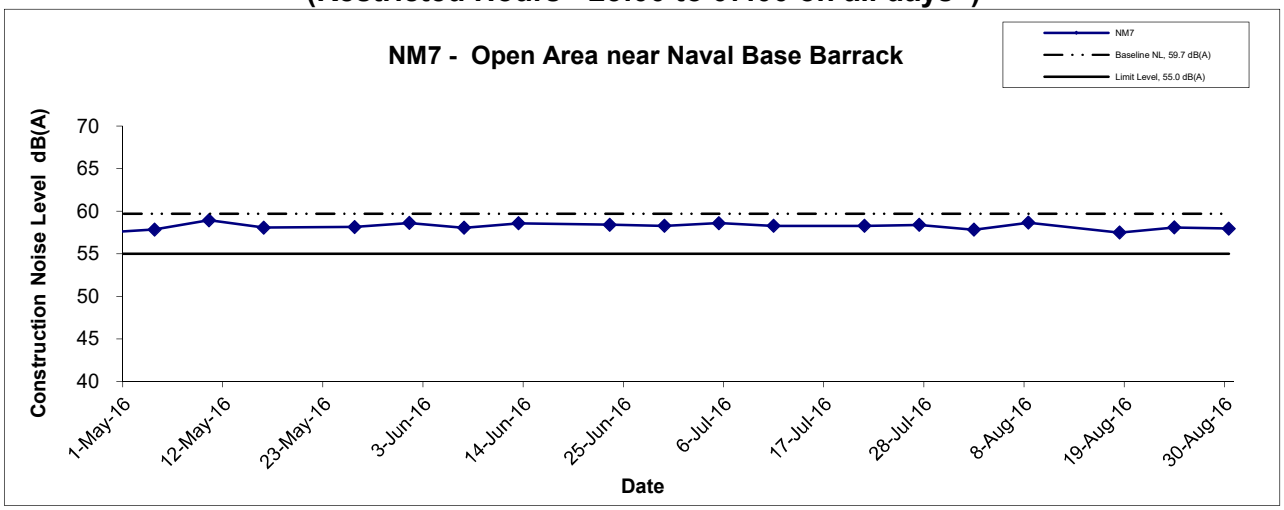
(0700-1900 hrs on Normal Weekdays)



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



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



Title: Contract No. DC/2009/18 HATS 2A – Upgrading Works at SCISTW– Effluent Tunnel and Disinfection Facilities Graphical Presentation of Noise Monitoring Result (NM7)	Scale: N.T.S Date: Aug 16	Project No.: MA11043 Appendix: E	CINOTECH

APPENDIX F
ENVIRONMENTAL PERMITS AND LICENSES

APPENIDX F – Environmental Permits and Licenses

Table F.1 Summary of Environmental Licensing and Permit Status for Contract DC/2009/10

Reference Number	Valid Period		Details	Status
	From	To		
Water Discharge License				
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
WT00023103-2015	19/1/2016	31/1/2021	The application was approved on 19-1-2016.	Valid
WT00024404-2016	19/5/2016	31/5/2021	The application was approved on 19-5-2016.	Valid
Registered Chemical Waste Producer				
WPN5213-269-3584-01	N/A	N/A	The application was approved on 4-5-2011.	Valid
Billing Account for Disposal of Construction Waste				
CSW01444	16/3/2011	N/A	The application was approved on 16-3-2011.	Valid
Notification of Works Under APCO				
327427	N/A	N/A	Notice form received by EPD on 2-3-2011.	N/A
Construction Noise Permit for use of mechanical equipment outside permitted working hours				
GW-RW0220-16	26/4/2016	25/10/2016	Location: Portion 3 and 7	Valid
GW-RW0346-16	25/6/2016	24/12/2016	Location: Portion B	Valid
GW-RW0351-16	21/6/2016	20/12/2016	Location: Portion 3 and 8	Valid
GW-RW0349-16	25/6/2016	24/12/2016	Location: Portion 4	Valid
GW-RW0410-16	1/8/2016	31/1/2017	Location: Portion 6	Valid

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

Permit No.	Valid Period		Details	Status
	From	To		
Water Discharge License				
WT00021164-2015	13/3/2015	31/3/2020	Location: Portion 6	Valid
WT00002277 6-2015	6/1/2016	31/10/2020	Location: Portion 5	Valid
Registered Chemical Waste Producer				
WPN5213-269-C3388-02	19/10/2010	N/A	Major chemical waste types are: Spent battery, waste mechanical oil and spent lubricant.	Valid
Billing Account for Disposal of Construction Waste				
A/C No.7011408	15/09/2010	N/A	N/A	Valid

Permit No.	Valid Period		Details	Status
	From	To		
Notification of Works Under APCO				
Ref:321235	7/09/2010	N/A	--	Valid
Construction Noise Permit				
GW-RW0201-16	21/4/2016	20/10/2016	Location: Site office storage area	Valid
GW-RW0203-16	21/4/2016	20/10/2016	Location: Portion 5 and 6	Valid

Table F.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-RW0065-16	18/2/2016	17/8/2016	Location: Construction site at Stonecutters Island Sewage treatment works (Portion 3)	Expired
GW-RW0421-16	18/8/2016	17/2/2017	Location: Construction site at Stonecutters Island Sewage treatment works (Portion 3)	Valid

APPENDIX G
SUMMARY OF EXCEEDANCE

APPENIDX G – SUMMARY OF EXCEEDANCE

Reporting Month: August 2016

a) Exceedance Report for 1-hr TSP (NIL)

b) Exceedance Report for 24-hr TSP (NIL)

c) Exceedance Report for Construction Noise (NIL)

No Exceedance of Action/Limit Level for normal working hours and restricted hours was recorded.

APPENDIX H
SITE AUDIT SUMMARY

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	160804
Date	4 August 2016 (Thursday)
Time	09:30-11:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality	
160804-O01	• Sediment near the haul road should be cleared (Portion 4 and 7).	A 2 & 3i
	Part B – Landscape and Visual	
	• No environmental deficiency was identified during the site inspection.	
	Part C - Air Quality	
160804-O01	• Sediment near the haul road should be cleared (Portion 4 and 7).	C 5
	Part D – Noise	
	• No environmental deficiency was identified during the site inspection.	
	Part E – Waste / Chemical Management	
	• No environmental deficiency was identified during the site inspection.	
	Part F - Permit / Licenses	
	• No environmental deficiency was identified during the site inspection.	
	Others	
	• -	
	Remark:	
	• Following up on previous audit sessions (ref: 160728), item 160728-O01 is remarked as 160804-O01 for further improvement.	

	Name	Signature	Date
Recorded by	Victor Wong		4 August 2016
Checked by	Dr. Priscilla Choy		4 August 2016

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

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	160811
Date	11 August 2016 (Thursday)
Time	09:30-11:15

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality	
160811-O02	• Standing water should be pumped to the proper discharge system (Portion 6).	A 1
	Part B – Landscape and Visual	
	• No environmental deficiency was identified during the site inspection.	
	Part C - Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	Part D – Noise	
	• No environmental deficiency was identified during the site inspection.	
	Part E – Waste / Chemical Management	
160811-O01	• General refuse should be cleared regularly (Portion 4).	E 1i
	Part F - Permit / Licenses	
	• No environmental deficiency was identified during the site inspection.	
	Others	
	• -	
	Remark:	
	• -	

	Name	Signature	Date
Recorded by	Victor Wong		11 August 2016
Checked by	Dr. Priscilla Choy		11 August 2016

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	160817
Date	17 August 2016 (Thursday)
Time	09:30-11:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
160817-O01	***Part A - Water Quality*** • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management*** • General refuse and construction waste should be sorted before disposal (Portion 4). ***Part F - Permit / Licenses*** • No environmental deficiency was identified during the site inspection. ***Others*** • - ***Remark:*** • -	E 1iii

	Name	Signature	Date
Recorded by	Victor Wong		17 August 2016
Checked by	Dr. Priscilla Choy		17 August 2016

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

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	160825
Date	25 August 2016 (Thursday)
Time	09:30-11:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
160825-O02	***Part A - Water Quality*** • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • Dusty road should be sprayed with water for dust suppression (Portion 7). ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part F - Permit / Licenses*** • CNP should be updated in Portion 6. ***Others*** • - ***Remark:*** • -	C 3 F 2

	Name	Signature	Date
Recorded by	Victor Wong		25 August 2016
Checked by	Dr. Priscilla Choy		25 August 2016

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	160803
Date	3 August 2016 (Wednesday)
Time	09:30 – 10:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
160803-O01	***Part A - Water Quality*** • The soil accumulated near the discharge in the Workshop should be cleared. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection.	A 1
160803-R02	***Part E – Waste / Chemical Management*** • The construction waste materials placed near the access road should be disposed properly. ***Part F - Permit / Licences*** • No environmental deficiency was identified during the site inspection. ***Remark:*** • Following up on previous audit sessions (ref: 160726), item 160726-O01 is remarked as 160803- O01 for further improvement.	E 4ii

	Name	Signature	Date
Recorded by	KC Chung		3 August 2016
Checked by	Dr. Priscilla Choy		3 August 2016

Contract No: DC/2009/17
HATS 2A Sludge Dewatering Facilities at Stonecutters Island STW

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	160809
Date	9 August 2016 (Tuesday)
Time	09:30 – 10:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
160809-R01	***Part A - Water Quality*** • The Contractor is reminded to avoid the discharge point during stockpiling works in the Workshop. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part F - Permit / Licences*** • No environmental deficiency was identified during the site inspection. ***Remark:*** • -	A 1

	Name	Signature	Date
Recorded by	Victor Wong		9 August 2016
Checked by	Dr. Priscilla Choy		9 August 2016

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	160817
Date	17 August 2016 (Wednesday)
Time	09:30 – 10:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
160817-O01 160817-O02	***Part A - Water Quality*** • Waste water should be prevented from entering the u-channel (Portion 6). • pH indicator should be switched on during water discharge (Gate A). ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part F - Permit / Licences*** • No environmental deficiency was identified during the site inspection. ***Remark:*** • -	A 1 & A 4ii A 1

	Name	Signature	Date
Recorded by	Victor Wong		17 August 2016
Checked by	Dr. Priscilla Choy		17 August 2016

Contract No: DC/2009/17
HATS 2A Sludge Dewatering Facilities at Stonecutters Island STW

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	160823
Date	23 August 2016 (Tuesday)
Time	09:30 – 10:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
160823-O01	***Part A - Water Quality*** • The Contractor is reminded to prevent muddy or cement water from entering the u-channel; Precaution should be taken when works were carried out near the on-site drainage system (Between Area A and SDB). ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part F - Permit / Licences*** • No environmental deficiency was identified during the site inspection. ***Remark:*** • -	A 1

	Name	Signature	Date
Recorded by	Victor Wong		23 August 2016
Checked by	Dr. Priscilla Choy		23 August 2016

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	160830
Date	30 August 2016 (Tuesday)
Time	09:30 – 10:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality	
160830-R01	• The dusty material accumulated near u-channel should be cleared (between Area A and SDB).	A 1
160830-O04	• The mud accumulated in the discharge point of the drainage channel should be cleared (near Workshop).	A 1
	Part B – Landscape and Visual	
	• No environmental deficiency was identified during the site inspection.	
	Part C - Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	Part D – Noise	
	• No environmental deficiency was identified during the site inspection.	
	Part E – Waste / Chemical Management	
160830-O02	• Construction materials should be properly removed to maintain good site housekeeping (Portion 6, workshop).	E 4ii
160830-O03	• Drip tray should be provided to chemical container to prevent chemical leakage (near Workshop).	E 7ii
	Part F - Permit / Licences	
	• No environmental deficiency was identified during the site inspection.	
	Remark:	
	• Following up on previous audit sessions (ref: 160823), item 160823-O01 is remarked as 160830-R01 for further improvement.	

	Name	Signature	Date
Recorded by	K C Chung		30 August 2016
Checked by	Dr. Priscilla Choy		30 August 2016

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	160804
Date	4 August 2016 (Tuesday)
Time	14:00-16:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
160804-R01	***Part A - Water Quality*** • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual*** • Contractor was reminded to provide tree protection zone and place the construction material away from the zone. (Portion 7) ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part F - Permit / Licenses*** • No environmental deficiency was identified during the site inspection. ***Others / Remarks*** • Follow-up on previous audit section (Ref. No.: 160728): all environmental deficiencies were observed rectified/improved by the Contractor.	B 2 & 3

	Name	Signature	Date
Recorded by	Carrie Leung		8 August 2016
Checked by	Dr. Priscilla Choy		8 August 2016

Record Summary of Environmental Site Inspection

-

Inspection Information

Checklist Reference Number	160811
Date	11 August 2016 (Thursday)
Time	14:00-16:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality	
	• No environmental deficiency was identified during the site inspection.	
	Part B – Landscape and Visual	
160811-O01	• Contractor should provide tree protection zone and remove all construction waste within the zone. (Portion 7)	B 3
	Part C - Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	Part D – Noise	
	• No environmental deficiency was identified during the site inspection.	
	Part E – Waste / Chemical Management	
160811-O01	• Contractor should provide tree protection zone and remove all construction waste within the zone. (Portion 7)	E 1iii
160811-O02	• General refuse and stand water in the container should be removed. (Portion 3)	E 1iii
160811-R01	• Chemical containers should be placed properly to avoid any leakage. (Portion 7)	E 7ii
	Part F - Permit / Licenses	
	• No environmental deficiency was identified during the site inspection.	
	Others / Remarks	
	• Follow-up on previous audit section (Ref. No.: 160804): all environmental deficiencies were observed rectified/improved by the Contractor.	

	Name	Signature	Date
Recorded by	Carrie Leung		16 August 2016
Checked by	Dr. Priscilla Choy		16 August 2016

Record Summary of Environmental Site Inspection

-

Inspection Information

Checklist Reference Number	160818
Date	18 August 2016 (Thursday)
Time	14:00-16:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality	
	• No environmental deficiency was identified during the site inspection.	
	Part B – Landscape and Visual	
	• No environmental deficiency was identified during the site inspection.	
	Part C - Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	Part D – Noise	
	• No environmental deficiency was identified during the site inspection.	
	Part E – Waste / Chemical Management	
160818-O01	• Chemical containers should be placed properly to avoid any leakage. (Portion 7)	E 7ii
160818-O02	• General refuse in the container should be removed. (Portion 3)	E 1iii
	Part F - Permit / Licenses	
	• No environmental deficiency was identified during the site inspection.	
	Others / Remarks	
	• Follow-up on previous audit section (Ref. No.: 160811): item 160811-O02 was remarked as 160818-O02 and item 160811-R01 was remarked as 160818-O01.	

	Name	Signature	Date
Recorded by	Carrie Leung		22 August 2016
Checked by	Dr. Priscilla Choy		22 August 2016

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	160823
Date	23 August 2016 (Tuesday)
Time	09:30-11:15

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality	
	• No environmental deficiency was identified during the site inspection.	
	Part B – Landscape and Visual	
	• No environmental deficiency was identified during the site inspection.	
	Part C - Air Quality	
160823-R01	• Contractor should provide sufficient water-spraying in the site area. (Portion 3).	C 18
	Part D – Noise	
	• No environmental deficiency was identified during the site inspection.	
	Part E – Waste / Chemical Management	
160823-O01	• Chemical containers should be placed properly to avoid any leakage and stand water in drip tray should be cleared. (Portion 3 & 7)	E 7ii
160823-O02	• General refuse and stand water in the container should be removed. (Portion 3)	E 1iii
	Part F - Permit / Licenses	
	• No environmental deficiency was identified during the site inspection.	
	Others / Remarks	
	• Follow-up on previous audit section (Ref. No.: 160818): item 160818-O01 was remarked as 160823-O01 and item 160818-O02 was remarked as 160823-O02.	

	Name	Signature	Date
Recorded by	Carrie Leung		23 August 2016
Checked by	Dr. Priscilla Choy		23 August 2016

APPENDIX I
EVENT ACTION PLANS

APPENDIX I – Event / Action Plans

Table I-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	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 failurein 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**
	actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring			
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 I-2 Event / Action Plan For Construction Noise

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
Action Level being exceeded	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	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	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	1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals
Limit Level being exceeded	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	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.	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	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

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
	Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring		until the exceedance is abated	the ER until the exceedance is abated

APPENDIX J
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.		^	^	^
	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	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: • Suitable containers should 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	Construction Works in Close Proximity of Storm Drains or Seafront 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. • 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
	should be located well away from any water courses during carrying out of the construction works. • 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	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.	All construction sites	^	^	^
9.109	All waste materials should be segregated into categories covering: • 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; • 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.	construction sites			
	Existing trees to be retained on site should be carefully protected during construction.		^	^	*
	Trees unavoidably affected by the works should be transplanted where practical.		^	^	^
	Compensatory tree planting should be provided to compensate for felled trees.		^	^	^
	Control of night-time lighting.		^	^	^
Table 13.7	Erection of decorative screen hoarding compatible with the surrounding setting.		N/A	N/A	N/A
G	**Marine Ecology**				
11.137	To minimize the potential indirect impacts on water quality from construction site runoff and various construction activities, the practices outlined in ProPECC PN 1/94 Construction Site Drainage should be adopted.	All construction sites	^	^	^
H	**Hazard to Life**				
14A.201	Limiting use of cranes in terms of locations, lifting height, swing angle and setting up safety zone.	Exact location will be determined on construction site by the engineer	^	^	^
I	**Cultural Heritage**				
Tables 15.8 - 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 K
SUMMARY OF THE MONTHLY LANDSCAPE AND VISUAL SITE AUDIT

APPENDIX K – SUMMARY OF THE MONTHLY LANDSCAPE AND VISUAL SITE AUDIT

Reporting Month: August 2016

Reference no.	Contract no. / Location	Observation	Recommendation	Follow Up Action	Status
160804-R01	DC/2009/18 - Portion 7	Construction waste and materials were observed near unfenced tree in the site area	Contractor was reminded to set up tree protection zone and place the construction material away from the zone.	Tree protection zone was provided and the identified construction materials were removed.	Remarked as ref no. 160811-O01
160811-O01	DC/2009/18 - Portion 7	Construction waste and materials were observed near unfenced tree in the site area	Contractor should provide and maintain the tree protection zone and remove all construction waste within in the zone.	Tree protection zone was provided and the identified construction waste was removed.	Closed

APPENDIX L
COMPLAINT LOG

APPENDIX L – COMPLAINT LOG

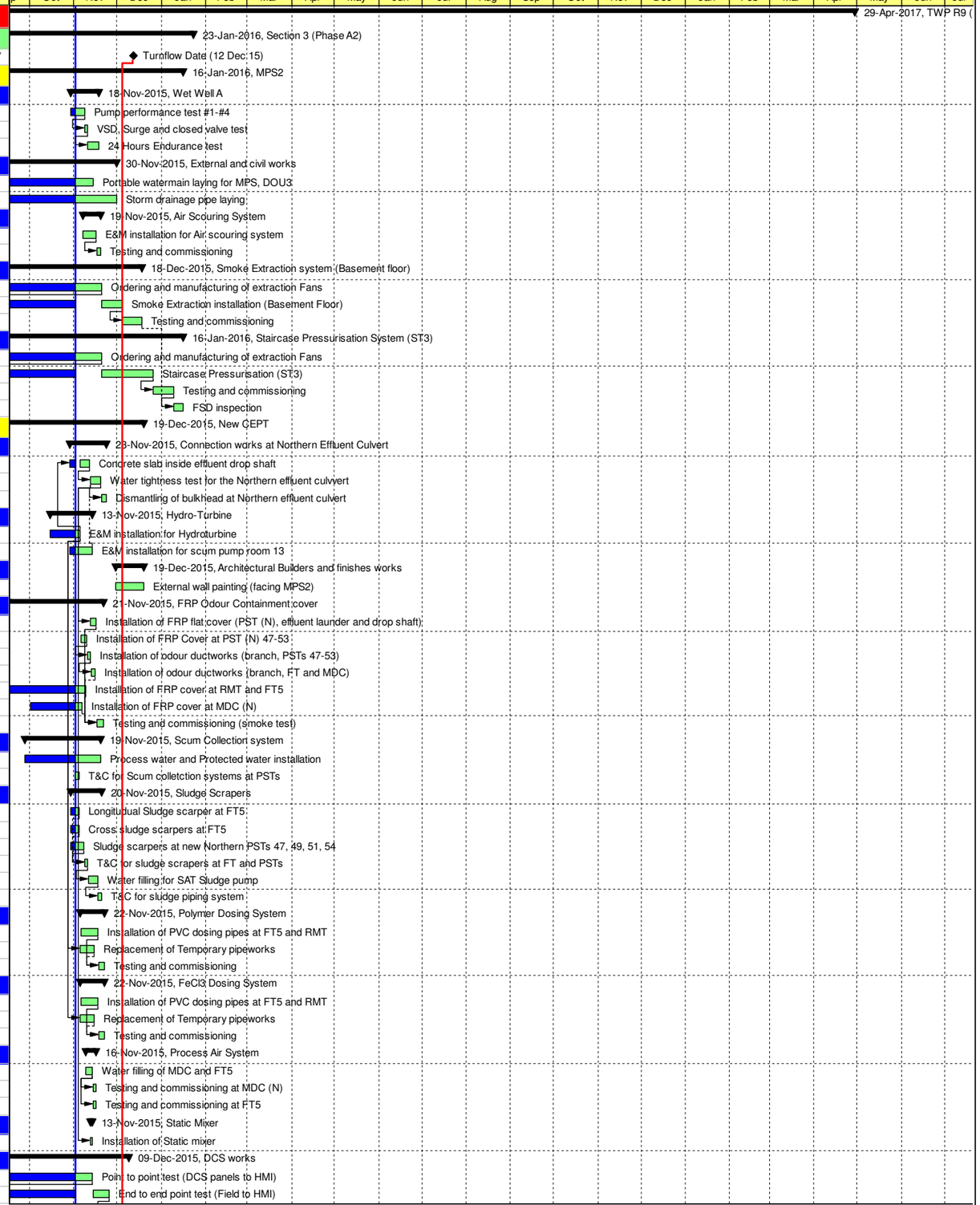
Reporting Month: August 2016

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.	According to the information provided by the Contractor, mucking out excavated rocks was carried out 90m below ground within a noise enclosure area. 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. 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 The Contractor was reminded to make sure the noise enclosure door will be kept close during night time construction.	Closed

Remarks: No environmental complaint was received in the reporting period.

APPENDIX M
CONSTRUCTION PROGRAMME

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



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

Contract No. DC/2009/10

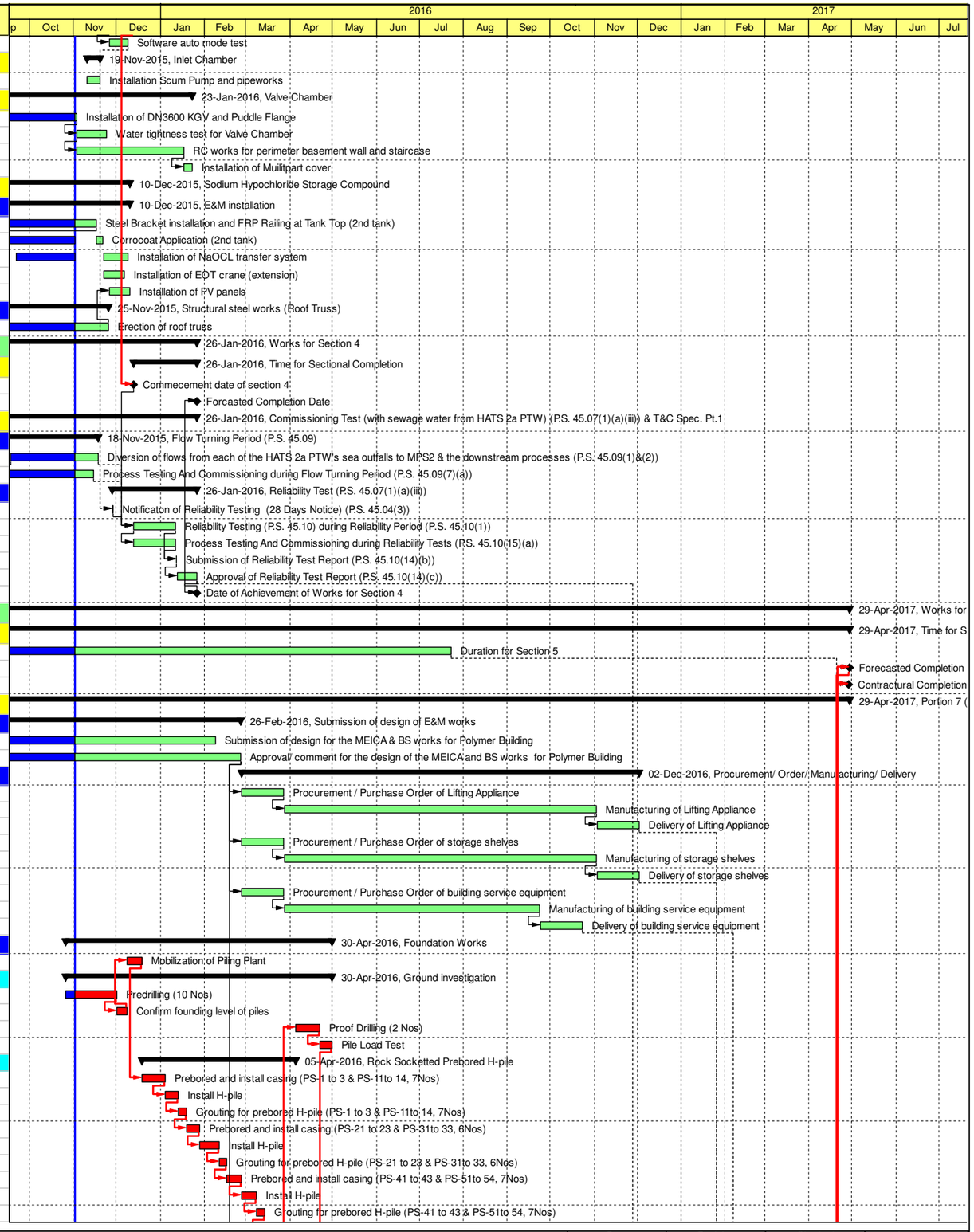
HATS Stage 2A - Upgrading works at StoneCutters Island Sewage Treatement Works

Target Works Programme (Revision 9)

DD: 6 ov 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	Activity % Complete	Total Float	Start	Finish
A6170	Software auto mode test	14	0%	31	26-Nov-2015	09-Dec-2015
Inlet Chamber						
A3530	Installation Scum Pump and pipeworks	10	0%	527	10-Nov-2015*	19-Nov-2015
Valve Chamber						
A2870	Installation of DN3600 KGV and Puddle Flange	15	90%	462	17-Apr-2015 A	03-Nov-2015
A2890	Water tightness test for Valve Chamber	21	0%	462	03-Nov-2015	24-Nov-2015
A2900	RC works for perimeter basement wall and staircase	75	0%	462	03-Nov-2015	17-Jan-2016
A2910	Installation of Muilitpart cover	6	0%	462	17-Jan-2016	23-Jan-2016
Sodium Hypochloride Storage Compound						
E&M installation						
A2610	Steel Bracket installation and FRP Railing at Tank Top (2nd tank)	38	60%	507	08-Apr-2015 A	17-Nov-2015
A2620	Corrocoat Application (2nd tank)	24	80%	507	20-May-2015	21-Nov-2015
A2690	Installation of NaOCL transfer system	45	60%	507	22-Sep-2015 A	09-Dec-2015
A2700	Installation of EOT crane (extension)	15	0%	510	22-Nov-2015	06-Dec-2015
A2740	Installation of PV panels	15	0%	506	26-Nov-2015	10-Dec-2015
Structural steel works (Roof Truss)						
A2720	Erection of roof truss	60	60%	506	20-May-2015	25-Nov-2015
Works for Section 4						
Time for Sectional Completion						
TC0091	Commecement date of section 4	0	0%	0	13-Dec-2015*	
TC0095	Forcasted Completion Date	0	0%	29		26-Jan-2016
Commissioning Test (with sewage water from HATS 2a PTW) (P.S. 45.07(1)(a)(iii)) & T&C Spec. Pt.1						
Flow Turning Period (P.S. 45.09)						
T01010	Diversion of flows from each of the HATS 2a PTW's sea outfalls to MPS2 & the downstream processes (P.S. 45.09(1)	30	45%	54	18-Sep-2015 A	18-Nov-2015
T01020	Process Testing And Commissioning during Flow Turning Period (P.S. 45.09(7)(a))	30	55%	57	01-Aug-2015 A	15-Nov-2015
Reliability Test (P.S. 45.07(1)(a)(iii))						
T02005	Notificaton of Reliability Testing (28 Days Notice) (P.S. 45.04(3))	1	0%	29	28-Nov-2015	28-Nov-2015
T02010	Reliability Testing (P.S. 45.10) during Reliability Period (P.S. 45.10(1))	30	0%	29	13-Dec-2015	11-Jan-2016
T02020	Process Testing And Commissioning during Reliability Tests (P.S. 45.10(15)(a))	30	0%	29	13-Dec-2015	11-Jan-2016
T02100	Submission of Reliability Test Report (P.S. 45.10(14)(b))	1	0%	29	12-Jan-2016	12-Jan-2016
T02110	Approval of Reliability Test Report (P.S. 45.10(14)(c))	14	0%	29	13-Jan-2016	26-Jan-2016
T02290	Date of Achievement of Works for Section 4	0	0%	29		26-Jan-2016
Works for Section 5						
Time for Sectional Completion						
TC0110	Duration for Section 5	1977	86.6%	279	24-Feb-2011 A	23-Jul-2016
TC0115	Forecasted Completion Date	0	0%	-1		29-Apr-2017
TC0120	Contractural Completion Date (Possession date on 15 Oct 15)	0	0%	0		28-Apr-2017*
Portion 7 (Polymer Building)						
Submission of design of E&M works						
P501370	Submission of design for the MEICA & BS works for Polymer Building	180	45%	62	01-Jul-2015 A	08-Feb-2016
P501380	Approval/ comment for the design of the MEICA and BS works for Polymer Building	180	35%	62	29-Jul-2015 A	26-Feb-2016
Procurement/ Order/ Manufacturing/ Delivery						
P501870	Procurement / Purchase Order of Lifting Appliance	30	0%	62	27-Feb-2016	27-Mar-2016
P501880	Manufacturing of Lifting Appliance	220	0%	62	28-Mar-2016	02-Nov-2016
P501890	Delivery of Lifting Appliance	30	0%	62	03-Nov-2016	02-Dec-2016
P501900	Procurement / Purchase Order of storage shelves	30	0%	122	27-Feb-2016	27-Mar-2016
P501910	Manufacturing of storage shelves	220	0%	122	28-Mar-2016	02-Nov-2016
P501920	Delivery of storage shelves	30	0%	122	03-Nov-2016	02-Dec-2016
P501930	Procurement / Purchase Order of building service equipment	30	0%	116	27-Feb-2016	27-Mar-2016
P501940	Manufacturing of building service equipment	180	0%	116	28-Mar-2016	23-Sep-2016
P501950	Delivery of building service equipment	30	0%	116	24-Sep-2016	23-Oct-2016
Foundation Works						
P700030	Mobilization of Piling Plant	10	0%	-1	08-Dec-2015	19-Dec-2015
Ground investigation						
P704200	Predrilling (10 Nos)	30	15%	-1	26-Oct-2015 A	01-Dec-2015
P704210	Confirm founding level of piles	6	0%	-1	01-Dec-2015	08-Dec-2015
P704220	Proof Drilling (2 Nos)	15	0%	-1	05-Apr-2016	22-Apr-2016
P704230	Pile Load Test	7	0%	-1	22-Apr-2016	30-Apr-2016
Rock Socketted Prebored H-pile						
P700040	Prebored and install casing (PS-1 to 3 & PS-11to 14, 7Nos)	10	0%	-1	19-Dec-2015	04-Jan-2016
P700050	Install H-pile	8	0%	-1	04-Jan-2016	13-Jan-2016
P700060	Grouting for prebored H-pile (PS-1 to 3 & PS-11to 14, 7Nos)	5	0%	-1	13-Jan-2016	19-Jan-2016
P700070	Prebored and install casing (PS-21 to 23 & PS-31to 33, 6Nos)	8	0%	-1	19-Jan-2016	28-Jan-2016
P700150	Install H-pile	9	0%	-1	28-Jan-2016	11-Feb-2016
P700160	Grouting for prebored H-pile (PS-21 to 23 & PS-31to 33, 6Nos)	4	0%	-1	11-Feb-2016	16-Feb-2016
P700170	Prebored and install casing (PS-41 to 43 & PS-51to 54, 7Nos)	10	0%	-1	16-Feb-2016	27-Feb-2016
P700180	Install H-pile	8	0%	-1	27-Feb-2016	08-Mar-2016
P700190	Grouting for prebored H-pile (PS-41 to 43 & PS-51to 54, 7Nos)	5	0%	-1	08-Mar-2016	14-Mar-2016



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

Contract No. DC/2009/10

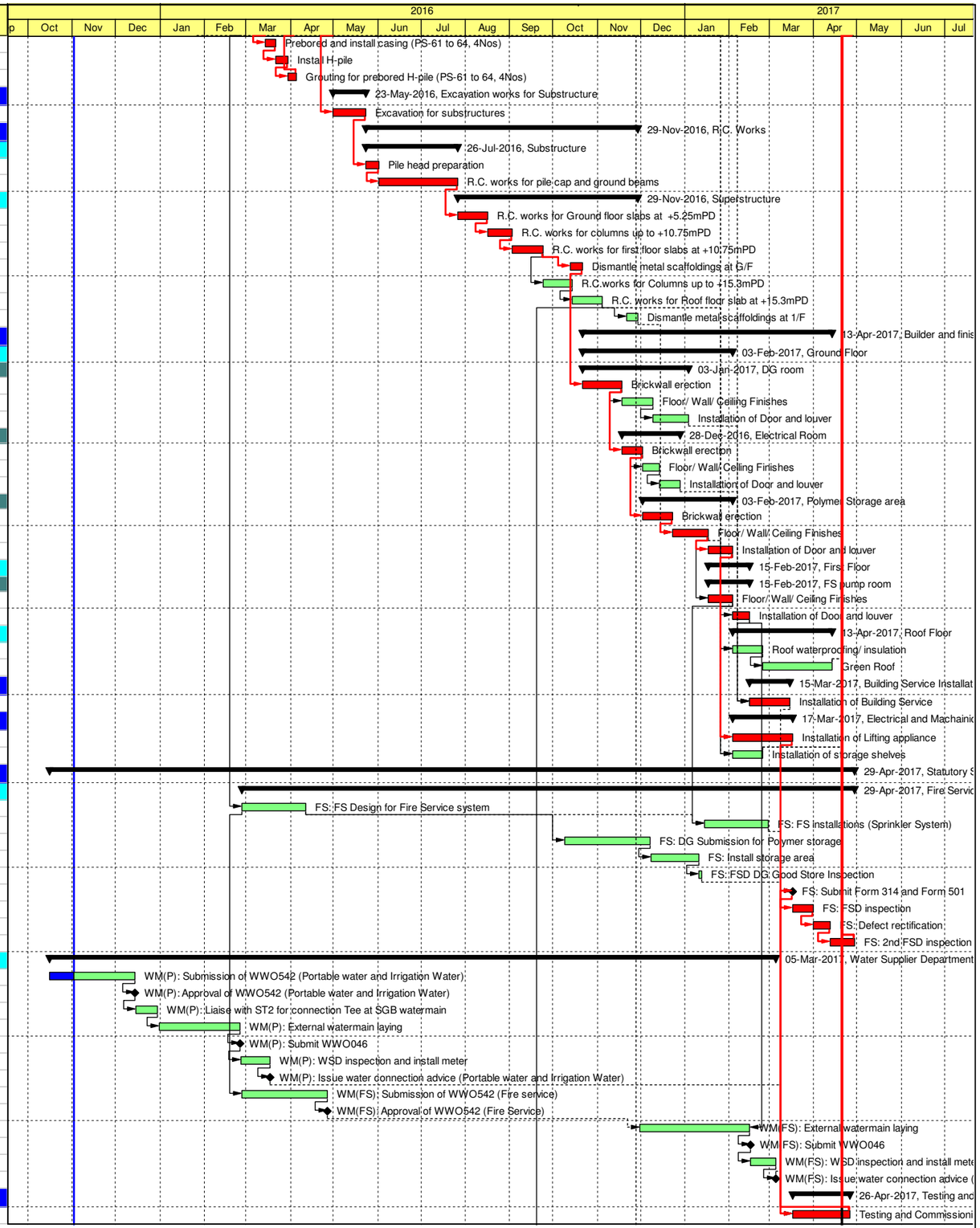
HATS Stage 2A - Upgrading works at StoneCutters Island Sewage Treatement Works

Target Works Programme (Revision 9)

DD: 6 ov 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	Activity % Complete	Total Float	Start	Finish
P700200	Prebored and install casing (PS-61 to 64, 4Nos)	6	0%	-1	14-Mar-2016	21-Mar-2016
P700210	Install H-pile	5	0%	-1	21-Mar-2016	30-Mar-2016
P700220	Grouting for prebored H-pile (PS-61 to 64, 4Nos)	4	0%	-1	30-Mar-2016	05-Apr-2016
Excavation works for Substructure						
P700240	Excavation for substructures	17	0%	-1	30-Apr-2016	23-May-2016
R.C. Works						
Substructure						
P700250	Pile head preparation	8	0%	-1	23-May-2016	01-Jun-2016
P700260	R.C. works for pile cap and ground beams	45	0%	-1	01-Jun-2016	26-Jul-2016
Superstructure						
P700265	R.C. works for Ground floor slabs at +5.25mPD	18	0%	-1	26-Jul-2016	16-Aug-2016
P700270	R.C. works for columns up to +10.75mPD	15	0%	-1	16-Aug-2016	02-Sep-2016
P700280	R.C. works for first floor slabs at +10.75mPD	18	0%	-1	02-Sep-2016	24-Sep-2016
P700285	Dismantle metal scaffoldings at G/F	7	0%	-1	13-Oct-2016	21-Oct-2016
P700290	R.C.works for Columns up to +15.3mPD	15	0%	21	24-Sep-2016	14-Oct-2016
P700300	R.C. works for Roof floor slab at +15.3mPD	18	0%	21	14-Oct-2016	04-Nov-2016
P700310	Dismantle metal scaffoldings at 1/F	7	0%	21	21-Nov-2016	29-Nov-2016
Builder and finishes Works						
Ground Floor						
DG room						
P701000	Brickwall erection	24	0%	-1	21-Oct-2016	18-Nov-2016
P701010	Floor/ Wall/ Ceiling Finishes	18	0%	36	18-Nov-2016	09-Dec-2016
P701020	Installation of Door and louver	18	0%	36	09-Dec-2016	03-Jan-2017
Electrical Room						
P701030	Brickwall erection	12	0%	-1	18-Nov-2016	02-Dec-2016
P701040	Floor/ Wall/ Ceiling Finishes	10	0%	40	02-Dec-2016	14-Dec-2016
P701050	Installation of Door and louver	10	0%	40	14-Dec-2016	28-Dec-2016
Polymer Storage area						
P701060	Brickwall erection	18	0%	-1	02-Dec-2016	23-Dec-2016
P701070	Floor/ Wall/ Ceiling Finishes	18	0%	-1	23-Dec-2016	17-Jan-2017
P701080	Installation of Door and louver	12	0%	-1	17-Jan-2017	03-Feb-2017
First Floor						
FS pump room						
P701090	Floor/ Wall/ Ceiling Finishes	12	0%	2	17-Jan-2017	03-Feb-2017
P701100	Installation of Door and louver	10	0%	2	03-Feb-2017	15-Feb-2017
Roof Floor						
P701110	Roof waterproofing/ insulation	18	0%	11	03-Feb-2017	24-Feb-2017
P701120	Green Roof	40	0%	11	24-Feb-2017	13-Apr-2017
Building Service Installation						
P700110	Installation of Building Service	24	0%	2	15-Feb-2017	15-Mar-2017
Electrical and Machainical Installation						
P700090	Installation of Lifting appliance	36	0%	-1	03-Feb-2017	17-Mar-2017
P700100	Installation of storage shelves	18	0%	51	03-Feb-2017	24-Feb-2017
Statutory Submission and Inspection						
Fire Service Department (FSD)						
P905340	FS: FS Design for Fire Service system	45	0%	81	27-Feb-2016	11-Apr-2016
P905350	FS: FS installations (Sprinkler System)	35	0%	15	14-Jan-2017	28-Feb-2017
P905360	FS: DG Submission for Polymer storage	60	0%	81	09-Oct-2016	07-Dec-2016
P905370	FS: Install storage area	26	0%	63	08-Dec-2016	10-Jan-2017
P905380	FS: FSD DG Good Store Inspection	2	0%	77	10-Jan-2017	12-Jan-2017
P905390	FS: Submit Form 314 and Form 501	0	0%	-1		17-Mar-2017
P905400	FS: FSD inspection	12	0%	-1	17-Mar-2017	31-Mar-2017
P905410	FS: Defect rectification	9	0%	-1	31-Mar-2017	12-Apr-2017
P905420	FS: 2nd FSD inspection	12	0%	-1	12-Apr-2017	29-Apr-2017
Water Supplier Department (WSD)						
P904970	WM(P): Submission of WWO542 (Portable water and Irrigation Water)	60	28.33%	364	16-Oct-2015 A	14-Dec-2015
P904980	WM(P): Approval of WWO542 (Portable water and Irrigation Water)	0	0%	364		14-Dec-2015
P904990	WM(P): Liaise with ST2 for connection Tee at SGB watermain	12	0%	295	15-Dec-2015	30-Dec-2015
P905000	WM(P): External watermain laying	45	0%	295	31-Dec-2015	25-Feb-2016
P905010	WM(P): Submit WWO046	0	0%	364		25-Feb-2016
P905020	WM(P): WSD inspection and install meter	18	0%	295	26-Feb-2016	17-Mar-2016
P905030	WM(P): Issue water connection advice (Portable water and Irrigation Water)	0	0%	364		17-Mar-2016
P905040	WM(FS): Submission of WWO542 (Fire service)	60	0%	229	27-Feb-2016	26-Apr-2016
P905050	WM(FS): Approval of WWO542 (Fire Service)	0	0%	229		26-Apr-2016
P905060	WM(FS): External watermain laying	60	0%	10	30-Nov-2016	15-Feb-2017
P905070	WM(FS): Submit WWO046	0	0%	12	15-Feb-2017	
P905080	WM(FS): WSD inspection and install meter	18	0%	12	15-Feb-2017	05-Mar-2017
P905090	WM(FS): Issue water connection advice (Portable water and process water)	0	0%	12		05-Mar-2017
Testing and Commissioning						
P400890	Testing and Commissioning	30	0%	-1	17-Mar-2017	26-Apr-2017



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

Contract No. DC/2009/10

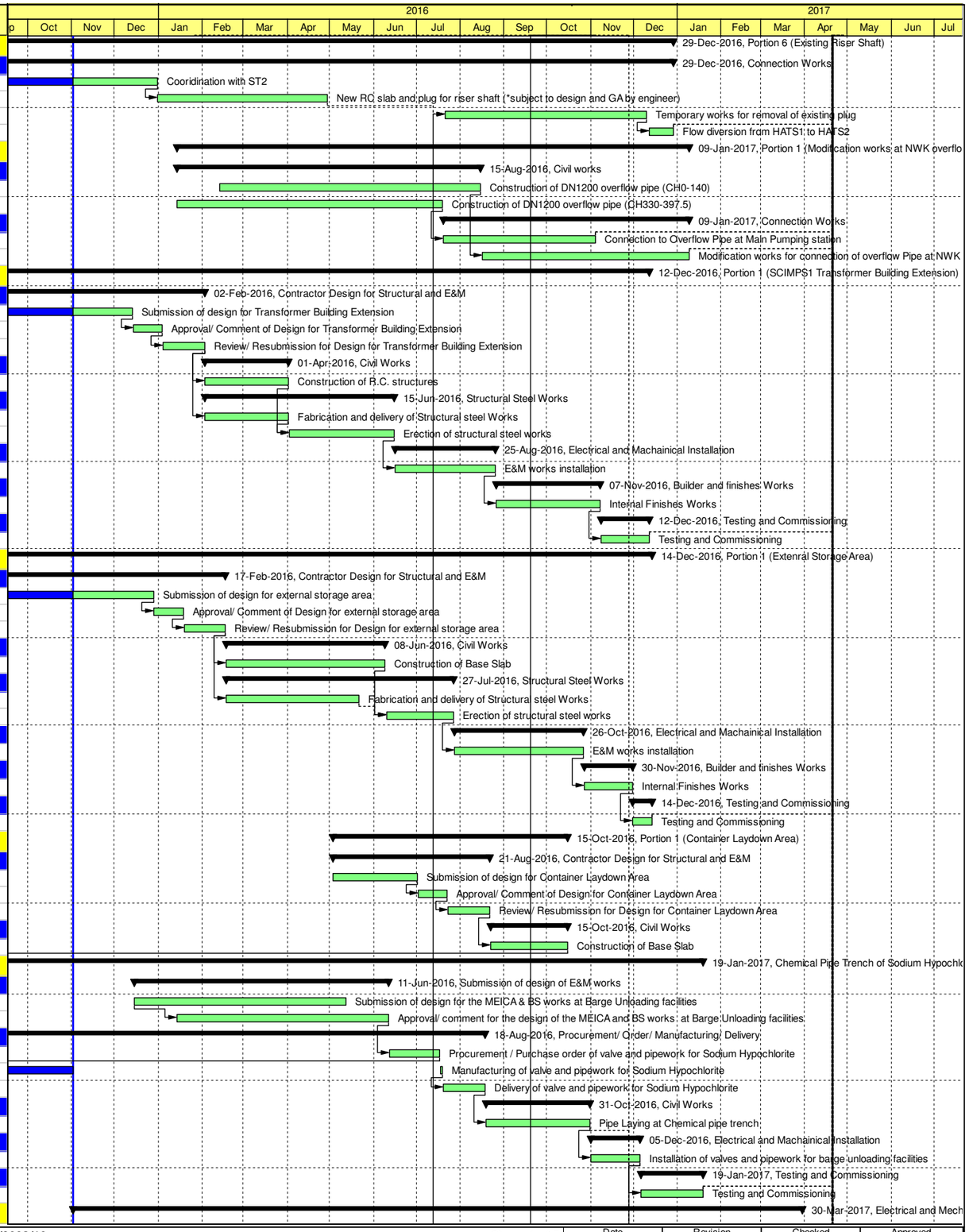
HATS Stage 2A - Upgrading works at StoneCutters Island Sewage Treatement Works

Target Works Programme (Revision 9)

DD: 6 ov 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	Activity % Complete	Total Float	Start	Finish
Portion 6 (Existing Riser Shaft)						
Connection Works						
P600075	Coordination with ST2	90	45%	159	04-Feb-2015 A	31-Dec-2015
P600076	New RC slab and plug for riser shaft (*subject to design and GA by engineer)	120	0%	199	31-Dec-2015	29-Apr-2016
P600080	Temporary works for removal of existing plug	120	0%	96	21-Jul-2016	10-Dec-2016
P600086	Flow diversion from HATS1 to HATS2	14	0%	86	12-Dec-2016	29-Dec-2016
Portion 1 (Modification works at NWK overflow chamber and SCIMPS2)						
Civil works						
P100700	Construction of DN1200 overflow pipe (CH0-140)	150	0%	87	13-Feb-2016	15-Aug-2016
P100710	Construction of DN1200 overflow pipe (CH330-397.5)	150	0%	140	14-Jan-2016	19-Jul-2016
Connection Works						
P100200	Connection to Overflow Pipe at Main Pumping station	90	0%	140	20-Jul-2016	04-Nov-2016
P100330	Modification works for connection of overflow Pipe at NWK overflow chamber	120	0%	87	16-Aug-2016	09-Jan-2017
Portion 1 (SCIMPS1 Transformer Building Extension)						
Contractor Design for Structural and E&M						
P100170	Submission of design for Transformer Building Extension	60	30%	138	01-Aug-2015 A	13-Dec-2015
P100180	Approval/ Comment of Design for Transformer Building Extension	21	0%	138	14-Dec-2015	03-Jan-2016
P100190	Review/ Resubmission for Design for Transformer Building Extension	30	0%	138	04-Jan-2016	02-Feb-2016
Civil Works						
P100130	Construction of R.C. structures	45	0%	108	03-Feb-2016	01-Apr-2016
Structural Steel Works						
P100150	Fabrication and delivery of Structural steel Works	45	0%	108	03-Feb-2016	01-Apr-2016
P100160	Erection of structural steel works	60	0%	108	02-Apr-2016	15-Jun-2016
Electrical and Machainical Installation						
P100120	E&M works installation	60	0%	108	16-Jun-2016	25-Aug-2016
Builder and finishes Works						
P100210	Internal Finishes Works	60	0%	108	26-Aug-2016	07-Nov-2016
Testing and Commissioning						
P100140	Testing and Commissioning	30	0%	108	08-Nov-2016	12-Dec-2016
Portion 1 (Extenral Storage Area)						
Contractor Design for Structural and E&M						
P100270	Submission of design for external storage area	60	5%	135	01-Sep-2015 A	28-Dec-2015
P100280	Approval/ Comment of Design for external storage area	21	0%	135	29-Dec-2015	18-Jan-2016
P100290	Review/ Resubmission for Design for external storage area	30	0%	135	19-Jan-2016	17-Feb-2016
Civil Works						
P100230	Construction of Base Slab	90	0%	108	18-Feb-2016	08-Jun-2016
Structural Steel Works						
P100250	Fabrication and delivery of Structural steel Works	75	0%	123	18-Feb-2016	21-May-2016
P100260	Erection of structural steel works	40	0%	108	10-Jun-2016	27-Jul-2016
Electrical and Machainical Installation						
P100220	E&M works installation	75	0%	108	28-Jul-2016	26-Oct-2016
Builder and finishes Works						
P100300	Internal Finishes Works	30	0%	108	27-Oct-2016	30-Nov-2016
Testing and Commissioning						
P100240	Testing and Commissioning	14	0%	135	30-Nov-2016	14-Dec-2016
Portion 1 (Container Laydown Area)						
Contractor Design for Structural and E&M						
P100340	Submission of design for Container Laydown Area	60	0%	100	03-May-2016	01-Jul-2016
P100350	Approval/ Comment of Design for Container Laydown Area	21	0%	100	02-Jul-2016	22-Jul-2016
P100360	Review/ Resubmission for Design for Container Laydown Area	30	0%	100	23-Jul-2016	21-Aug-2016
Civil Works						
P100370	Construction of Base Slab	45	0%	83	22-Aug-2016	15-Oct-2016
Chemical Pipe Trench of Sodium Hypochlorite Storage Compound						
Submission of design of E&M works						
P101390	Submission of design for the MEICA & BS works at Barge Unloading facilities	150	0%	45	15-Dec-2015	12-May-2016
P101400	Approval/ comment for the design of the MEICA and BS works at Barge Unloading facilities	150	0%	45	14-Jan-2016	11-Jun-2016
Procurement/ Order/ Manufacturing/ Delivery						
P101470	Procurement / Purchase order of valve and pipework for Sodium Hypochlorite	36	0%	45	12-Jun-2016	17-Jul-2016
P101480	Manufacturing of valve and pipework for Sodium Hypochlorite	60	96.67%	45	05-Sep-2015 A	19-Jul-2016
P101490	Delivery of valve and pipework for Sodium Hypochlorite	30	0%	45	20-Jul-2016	18-Aug-2016
Civil Works						
P101160	Pipe Laying at Chemical pipe trench	60	0%	36	19-Aug-2016	31-Oct-2016
Electrical and Machainical Installation						
P101450	Installation of valves and pipework for barge unloading facilities	30	0%	36	01-Nov-2016	05-Dec-2016
Testing and Commissioning						
P101460	Testing and Commissioning	36	0%	78	06-Dec-2016	19-Jan-2017
Electrical and Mechanical Installation						



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

Contract No. DC/2009/10

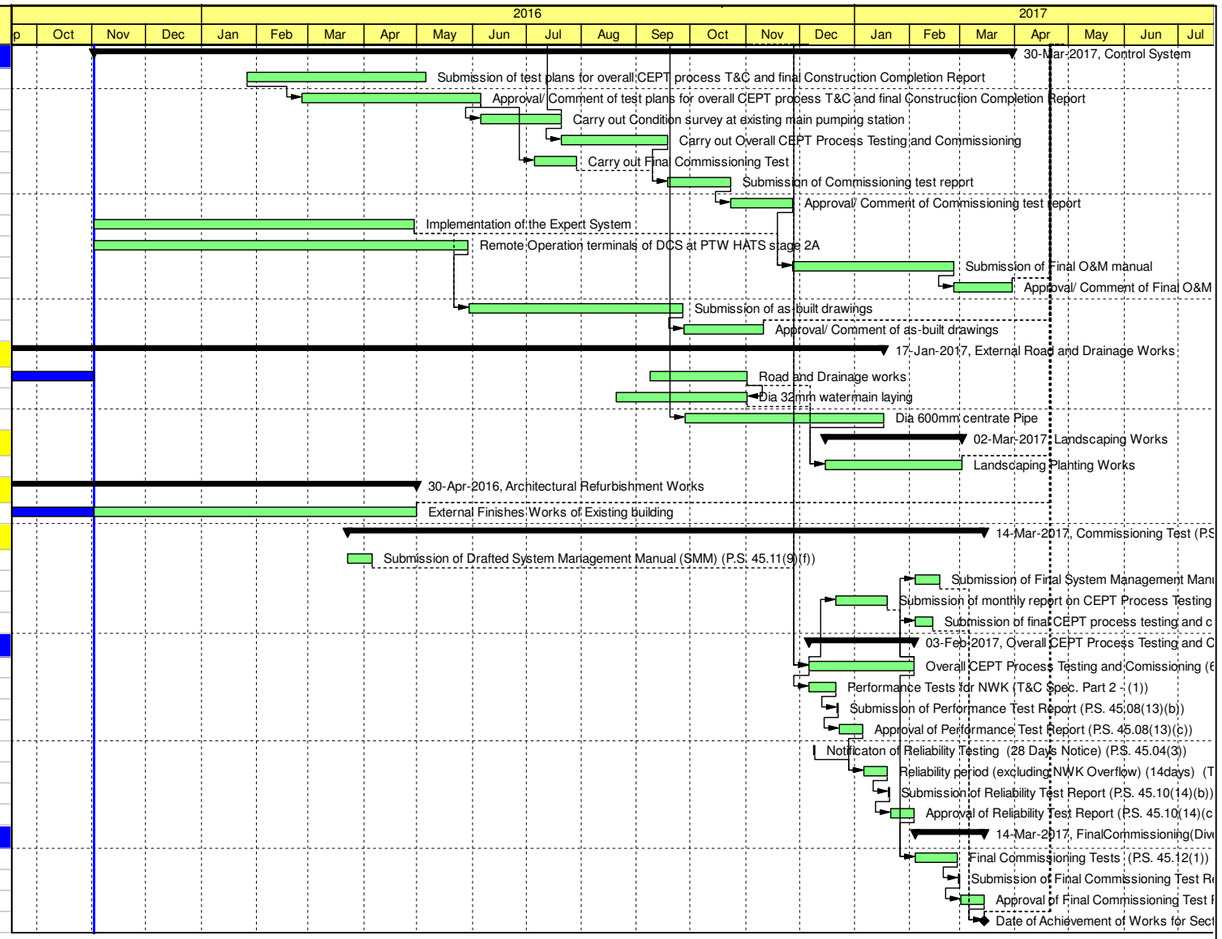
HATS Stage 2A - Upgrading works at StoneCutters Island Sewage Treatement Works

Target Works Programme (Revision 9)

DD: 6 ov 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	Activity % Complete	Total Float	Start	Finish
Control System						
EM0010	Submission of test plans for overall CEPT process T&C and final Construction Completion Report	100	0%	29	26-Jan-2016	05-May-2016
EM0020	Approval/ Comment of test plans for overall CEPT process T&C and final Construction Completion Report	100	0%	29	26-Feb-2016	05-Jun-2016
EM0021	Carry out Condition survey at existing main pumping station	45	0%	29	05-Jun-2016	20-Jul-2016
EM0030	Carry out Overall CEPT Process Testing and Commissioning	60	0%	29	20-Jul-2016	18-Sep-2016
EM0040	Carry out Final Commissioning Test	24	0%	80	05-Jul-2016	29-Jul-2016
EM0045	Submission of Commissioning test report	35	0%	29	18-Sep-2016	23-Oct-2016
EM0050	Approval/ Comment of Commissioning test report	35	0%	29	23-Oct-2016	27-Nov-2016
EM0060	Implementation of the Expert System	180	0%	199	02-Nov-2015	29-Apr-2016
EM0065	Remote Operation terminals of DCS at PTW HATS stage 2A	210	0%	169	02-Nov-2015	29-May-2016
EM0070	Submission of Final O&M manual	90	0%	29	27-Nov-2016	25-Feb-2017
EM0080	Approval/ Comment of Final O&M manual	33	0%	29	25-Feb-2017	30-Mar-2017
EM0090	Submission of as-built drawings	120	0%	169	30-May-2016	26-Sep-2016
EM0100	Approval/ Comment of as-built drawings	45	0%	169	27-Sep-2016	10-Nov-2016
External Road and Drainage Works						
RW00010	Road and Drainage works	180	75.56%	83	20-May-2015	01-Nov-2016
RW00020	Dia 32mm watermain laying	60	0%	83	20-Aug-2016	01-Nov-2016
RW00030	Dia 600mm centrate Pipe	90	0%	46	28-Sep-2016	17-Jan-2017
Landscaping Works						
LA00010	Landscaping Planting Works	60	0%	46	15-Dec-2016	02-Mar-2017
Architectural Refurbishment Works						
AR00010	External Finishes Works of Existing building	450	67.56%	294	23-Oct-2014 A	30-Apr-2016
Commissioning Test (P.S. 45.07(1)(a)(iv)) & T&C Spec. Pt.1 & Pt.2						
T02105	Submission of Drafted System Management Manual (SMM) (P.S. 45.11(9)(f))	14	0%	279	23-Mar-2016*	05-Apr-2016
T02108	Submission of Final System Management Manual (SMM) (P.S. 45.11(9)(g))	14	0%	70	04-Feb-2017	17-Feb-2017
T02125	Submission of monthly report on CEPT Process Testing and Comissioning (P.S. 45.11(9)(d))	30	0%	89	21-Dec-2016	19-Jan-2017
T02127	Submission of final CEPT process testing and commissioning report (P.S. 45.11(9)(d))	10	0%	74	04-Feb-2017	13-Feb-2017
Overall CEPT Process Testing and Commissioning (P.S. 45.11)						
T02120	Overall CEPT Process Testing and Comissioning (60days) (P.S. 45.11(2))	60	0%	45	06-Dec-2016	03-Feb-2017
T02230	Performance Tests for NWK (T&C Spec. Part 2 - (1))	16	0%	45	06-Dec-2016	21-Dec-2016
T02235	Submission of Performance Test Report (P.S. 45.08(13)(b))	1	0%	45	22-Dec-2016	22-Dec-2016
T02236	Approval of Performance Test Report (P.S. 45.08(13)(c))	14	0%	45	23-Dec-2016	05-Jan-2017
T02242	Notificaton of Reliability Testing (28 Days Notice) (P.S. 45.04(3))	1	0%	45	09-Dec-2016	09-Dec-2016
T02250	Reliability period (excluding NWK Overflow) (14days) (T&C Spec. Part 2 - (2))	14	0%	45	06-Jan-2017	19-Jan-2017
T02260	Submission of Reliability Test Report (P.S. 45.10(14)(b))	1	0%	45	20-Jan-2017	20-Jan-2017
T02270	Approval of Reliability Test Report (P.S. 45.10(14)(c))	14	0%	45	21-Jan-2017	03-Feb-2017
FinalCommissioning(Divert flow ofHATS1toMPS2 via Interconnection Tunnel)(PS45.07(1)(a)(iv)&45.09(6))						
T02200	Final Commissioning Tests (P.S. 45.12(1))	24	0%	45	04-Feb-2017	27-Feb-2017
T02210	Submission of Final Commissioning Test Report (P.S. 45.12(5)(b))	1	0%	45	28-Feb-2017	28-Feb-2017
T02220	Approval of Final Commissioning Test Report (P.S. 45.12(5)(c))	14	0%	45	01-Mar-2017	14-Mar-2017
T02280	Date of Achievement of Works for Section 5	0	0%	45		14-Mar-2017



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

Contract No. DC/2009/10

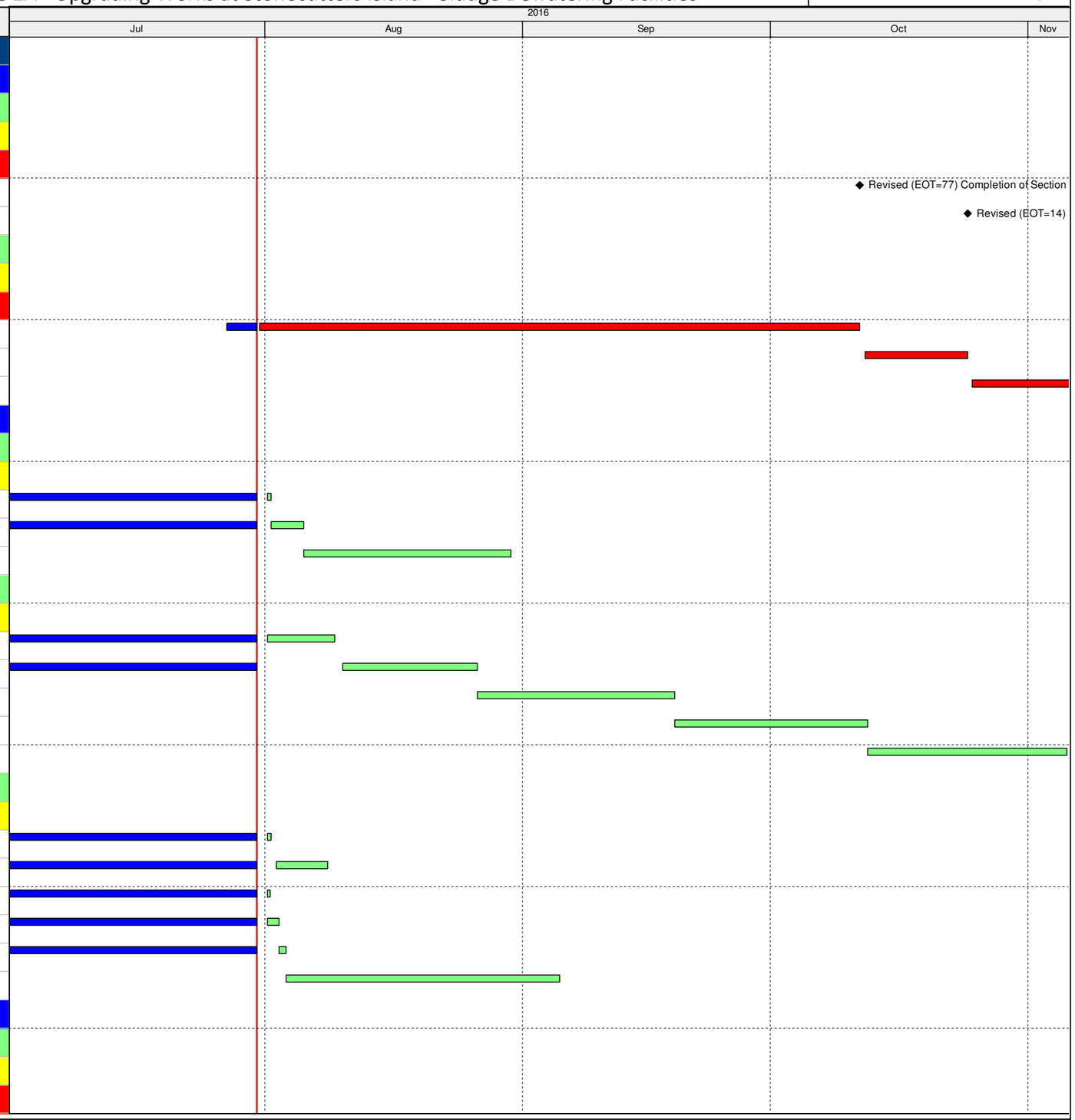
HATS Stage 2A - Upgrading works at StoneCutters Island Sewage Treatement Works

Target Works Programme (Revision 9)

DD: 6 ov 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
DC/2009/17 Detailed Works Programme Revision 3B_Updated up to 31-Jul-16						
KEY DATE						
Contract Dates						
Commencement and Completion						
Section 5 of the Works						
KD000053	Revised (EOT=77) Completion of Section 5 of the Works (2240 days)	0		11-Oct-16		11-Oct-16*
KD000054	Revised (EOT=14) Completion of Section 5 of the Works (2254 days)	0		24-Oct-16		24-Oct-16*
Completion						
Extension of Time						
Section 5 of the Works						
KD000047	Section 5 of the Works granted 77 days EOT	77	31-Jul-16	15-Oct-16	27-Jul-16 A	11-Oct-16
KD0000471	Section 5 of the Works granted 14 days EOT	13	12-Oct-16	24-Oct-16	12-Oct-16*	24-Oct-16
KD0000472	Section 5 of the Works expected 125days EOT	126	25-Oct-16	27-Feb-17	25-Oct-16*	27-Feb-17
Design of Permanent Works						
DDA7 (DOU5 and DGS)						
Sub-Package - B						
DP034230	DDA: DOU5&DGS - Engineer Comment Structural Design	19	09-Apr-16	03-May-16	09-Apr-16 A	01-Aug-16
DP034240	DDA: DOU5&DGS - Finalize Structural Design	19	05-Jul-16	27-Jul-16	01-Jun-16 A	05-Aug-16
DP034250	DDA: DOU5&DGS - Engineer Approve Structural Design	21	05-Aug-16	30-Aug-16	05-Aug-16	30-Aug-16
DDA5 (PWST & Pumping System)						
Sub-Package - B						
DP030210	DDA: PWST&PS - Submit Structure Design	142	30-May-15	18-Nov-15	28-Jul-14 A	09-Aug-16
DP030220	DDA: PWST&PS - ICE Approve Structure Design	96	17-Mar-16	16-Jul-16	13-Jan-16 A	26-Aug-16
DP030230	DDA: PWST&PS - Engineer Comment Structure Design	19	26-Aug-16	19-Sep-16	26-Aug-16	19-Sep-16
DP030240	DDA: PWST&PS - Finalize Structure Design	19	19-Sep-16	12-Oct-16	19-Sep-16	12-Oct-16
DP030250	DDA: PWST&PS - Engineer Approve Structure Design	21	12-Oct-16	05-Nov-16	12-Oct-16	05-Nov-16
Detailed Design Approval (DDA) Submission						
DDA 35 - Workshop Equipment						
DP008810	DDA: Workshop (E&M) - Designer to Compile DDA	107	05-Apr-13	14-Aug-13	05-Apr-13 A	01-Aug-16
DP008815	DDA: Workshop (E&M) - Comment, Review & Approval	56	01-Sep-15	07-Nov-15	08-Apr-15 A	08-Aug-16
DP008830	DDA: Workshop (E&M) - Engineer Comment	12	31-Dec-15	16-Jan-16	21-Dec-15 A	01-Aug-16
DP008840	DDA: Workshop (E&M) - Designer Response/Revision	19	29-Feb-16	21-Mar-16	11-Feb-16 A	02-Aug-16
DP008850	DDA: Workshop (E&M) - 2nd Submission & ICE Cert	6	02-Jul-16	11-Jul-16	02-May-16 A	03-Aug-16
DP008860	DDA: Workshop (E&M) - Engineer Approval	28	03-Aug-16	05-Sep-16	03-Aug-16	05-Sep-16
Section 5 of the Works						
Workshop Building						
Structure						
Superstructure						



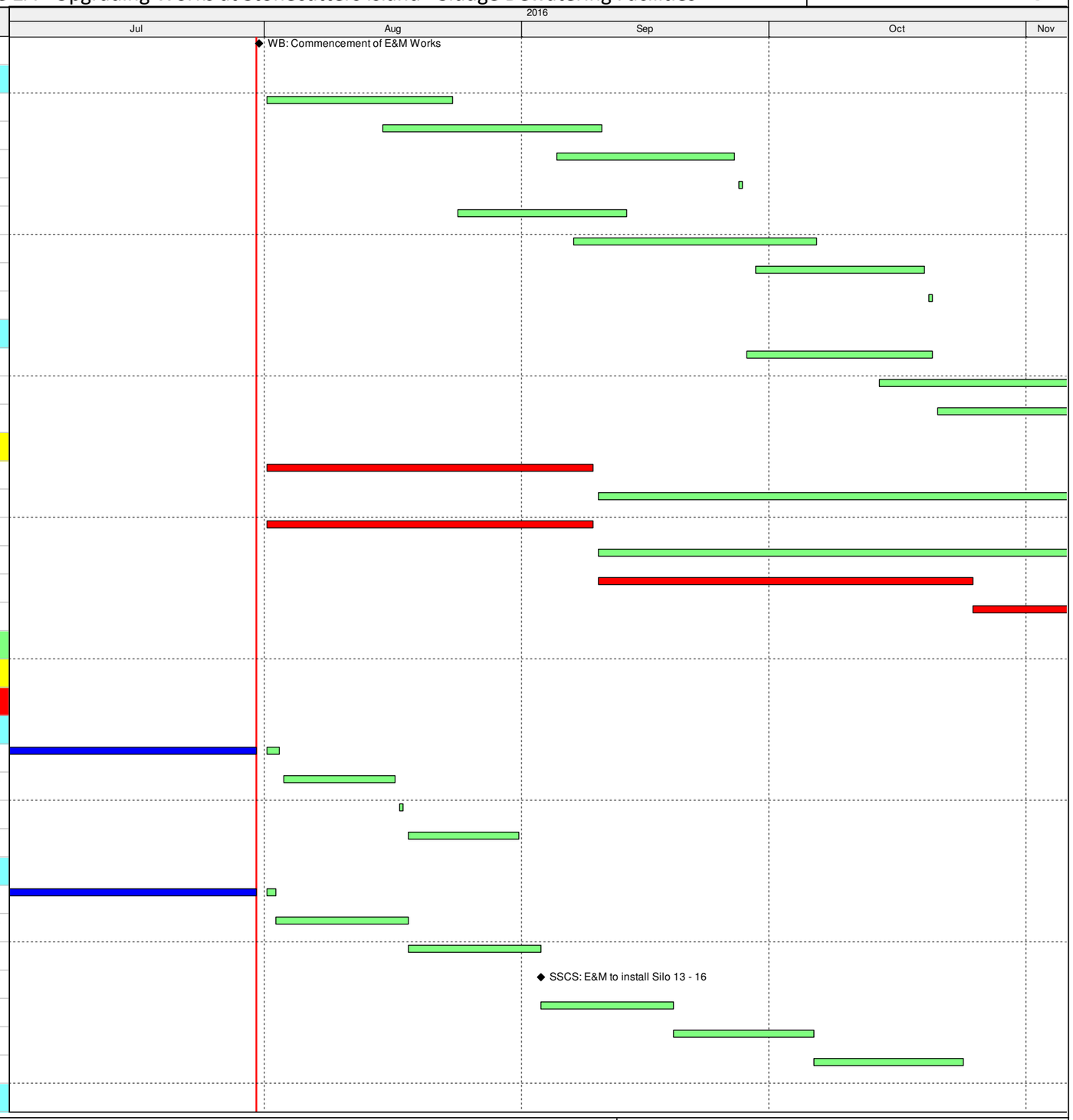
◆ ◆ Milestone
Actual Work
Remaining Work
Critical Remaining Work

Three Months Rolling Programme - August to October 2016

(Based on Detail Works Programme Rev.3B)

3-M Rolling Programme			
Date	Revision	Checked	Approved
30-Jun-16			

Activity ID	Activity Name	Original Duration	BL Project Start	BL Project Finish	Start	Finish
S5002555	WB: Commencement of E&M Works	0		31-Jul-16		31-Jul-16
1st Floor, +13.65mPD						
S5010270	WB First Floor: Installation of scaffolding, west portion	20	01-Aug-16	23-Aug-16	01-Aug-16	23-Aug-16
S5010280	WB First Floor: Installation of formworks at west portion	24	15-Aug-16	10-Sep-16	15-Aug-16	10-Sep-16
S5010290	WB First Floor: Fixing of rebars at west portion	18	05-Sep-16	26-Sep-16	05-Sep-16	26-Sep-16
S5010300	WB First Floor: Concreting at west portion	1	27-Sep-16	27-Sep-16	27-Sep-16	27-Sep-16
S5010310	WB First Floor: Installation of scaffolding, east portion	18	24-Aug-16	13-Sep-16	24-Aug-16	13-Sep-16
S5010320	WB First Floor: Installation of formworks at east portion	24	07-Sep-16	06-Oct-16	07-Sep-16	06-Oct-16
S5010330	WB First Floor: Fixing of rebars at east portion	16	29-Sep-16	19-Oct-16	29-Sep-16	19-Oct-16
S5010340	WB First Floor: Concreting at east portion	1	20-Oct-16	20-Oct-16	20-Oct-16	20-Oct-16
2nd Floor, +18.65mPD						
S5002510	WB Second Floor: Installation of scaffolding, west portion	18	28-Sep-16	20-Oct-16	28-Sep-16	20-Oct-16
S5002520	WB Second Floor: Installation of formworks at west portion	24	14-Oct-16	10-Nov-16	14-Oct-16	10-Nov-16
S5002565	WB Second Floor: Installation of scaffolding, east portion	18	21-Oct-16	10-Nov-16	21-Oct-16	10-Nov-16
Procurement, Manufacture and Delivery						
S5002910	WB: Procure Balancing Machine for Centrifuge	35	01-Aug-16	09-Sep-16	01-Aug-16	09-Sep-16
S5002915	WB: Manufacture Balancing Machine for Centrifuge	100	10-Sep-16	10-Jan-17	10-Sep-16	10-Jan-17
S5002930	WB: Procure various E&M Equipment / Material	35	01-Aug-16	09-Sep-16	01-Aug-16	09-Sep-16
S5002935	WB: Manufacture various E&M Equipment / Material	120	10-Sep-16	07-Feb-17	10-Sep-16	07-Feb-17
S5002950	WB: Procurement of Travelling Crane	36	10-Sep-16	25-Oct-16	10-Sep-16	25-Oct-16
S5002955	WB: Manufacturing of Travelling Crane	142	25-Oct-16	19-Apr-17	25-Oct-16	19-Apr-17
Southern Sludge Cake Silo						
Structure						
Superstructure						
Zone 1						
S5003126	SSCS: Zone 1 Level B3 to B3A (+14.782 to 19.0mPD)	10	25-May-16	04-Jun-16	25-May-16 A	02-Aug-16
S5003128	SSCS: Zone 1 Level B3A to B3C (+19.0 to 23.768mPD)	12	03-Aug-16	16-Aug-16	03-Aug-16	16-Aug-16
S5003130	SSCS: Zone 1 Level B3C to B4 (+23.768 to +24.8mPD)	1	17-Aug-16	17-Aug-16	17-Aug-16	17-Aug-16
S5003132	SSCS: Zone 1 Level B3C to B4 (+23.768 to +28.364mPD)	12	18-Aug-16	31-Aug-16	18-Aug-16	31-Aug-16
Zone 2						
S5003152	SSCS: Zone 2 Grd Level to B2	12	01-Aug-16	13-Aug-16	25-May-16 A	02-Aug-16
S5003162	SSCS: Zone 2 B2 to B3 (+10.15 to +14.782mPD)	14	02-Aug-16	18-Aug-16	02-Aug-16	18-Aug-16
S5003164	SSCS: Zone 2 B3 to B3A (+14.782 to +19.0mPD)	14	18-Aug-16	03-Sep-16	18-Aug-16	03-Sep-16
S5003165	SSCS: E&M to install Silo 13 - 16	0		03-Sep-16		03-Sep-16
S5003166	SSCS: Zone 2 B3A to B3C (+19.0 to +23.768mPD)	12	03-Sep-16	19-Sep-16	03-Sep-16	19-Sep-16
S5003176	SSCS: Zone 2 B3C to B4 (+23.768 to +24.8mPD)	14	19-Sep-16	06-Oct-16	19-Sep-16	06-Oct-16
S5003178	SSCS: Zone 2 B3C to B4 (+23.768 to +28.364mPD)	14	06-Oct-16	24-Oct-16	06-Oct-16	24-Oct-16
Zone 3						



◆ Milestone
Actual Work
Remaining Work
Critical Remaining Work

Three Months Rolling Programme - August to October 2016

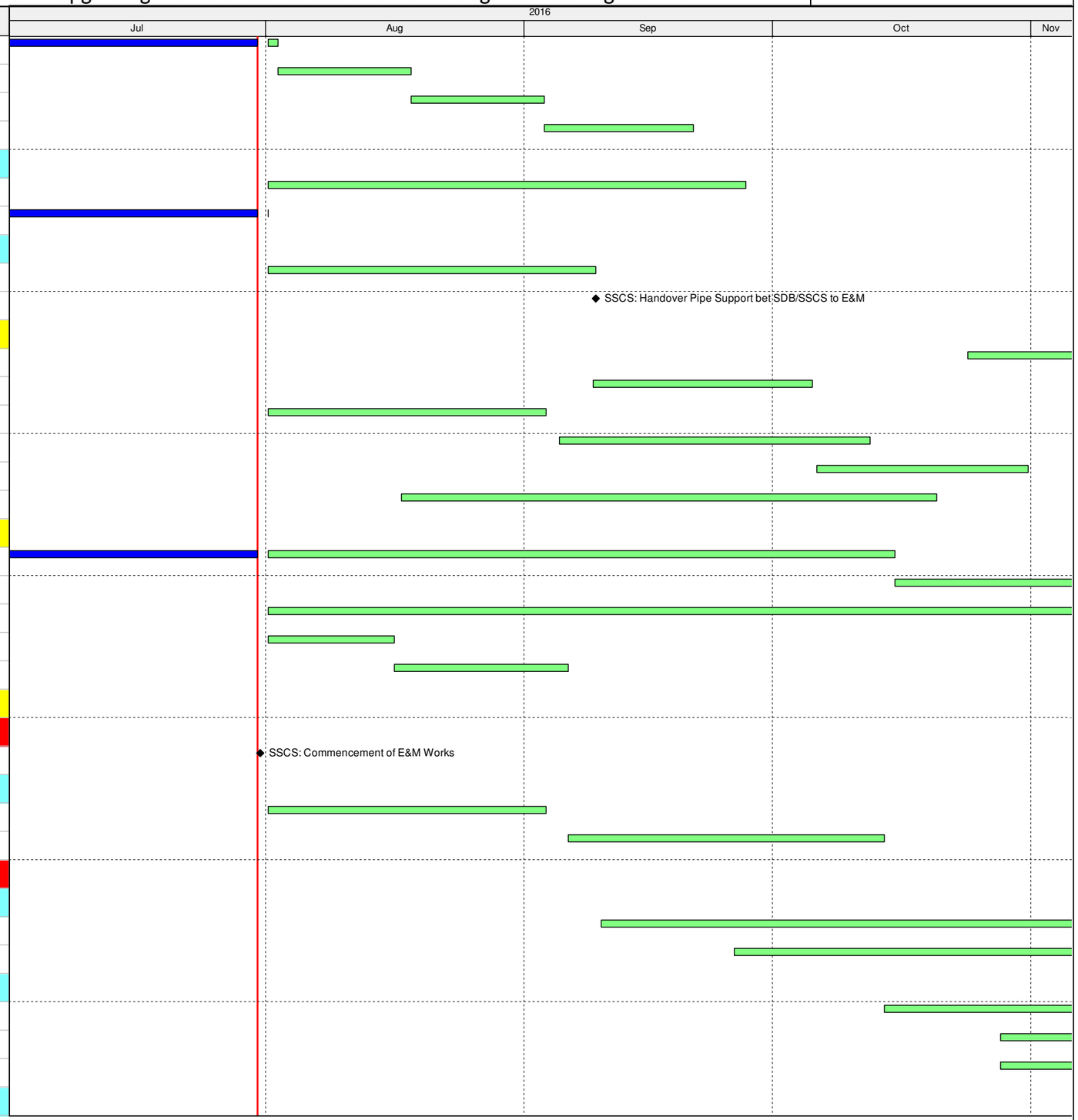
(Based on Detail Works Programme Rev.3B)

3-M Rolling Programme

Date	Revision	Checked	Approved
30-Jun-16			

C17TGPRev3B-1_160731	Harbour Area Treatment Scheme Stage 2A - Upgrading Works at Stonecutters Island - Sludge Dewatering Facilities	09-Aug-16

Activity ID	Activity Name	Original Duration	BL Project Start	BL Project Finish	Start	Finish
S5003214	SSCS: Zone 3 B3 to B3A (+14.782 to +19.0mPD)	14	03-Nov-16	19-Nov-16	15-Jun-16 A	02-Aug-16
S5003216	SSCS: Zone 3 B3A to B3C (+19.0 to +23.768mPD)	14	02-Aug-16	18-Aug-16	02-Aug-16	18-Aug-16
S5003218	SSCS: Zone 3 B3C to B4 (+23.768 to +24.8mPD)	14	18-Aug-16	03-Sep-16	18-Aug-16	03-Sep-16
S5003220	SSCS: Zone 3 B3C to B4 (+23.768 to 28.364mPD)	14	03-Sep-16	21-Sep-16	03-Sep-16	21-Sep-16
Vehicular Washing Area						
S5003230	SSCS: Vechicular Washing Area	49	01-Aug-16	27-Sep-16	01-Aug-16	27-Sep-16
S5003240	SSCS: Double Door Enclosure	67	14-Dec-16	08-Mar-17	14-Jan-15 A	01-Aug-16
Pipe Support						
S5003245	SSCS: Pipe Support bet SDB and SSCS	35	01-Aug-16	09-Sep-16	01-Aug-16	09-Sep-16
S5003248	SSCS: Handover Pipe Support bet SDB/SSCS to E&M	0		09-Sep-16		09-Sep-16
Architecture Finishes						
S5003300	SSCS: Blockwork	45	24-Oct-16	15-Dec-16	24-Oct-16	15-Dec-16
S5003350	SSCS: Epoxy to VWF	21	09-Sep-16	05-Oct-16	09-Sep-16	05-Oct-16
S5003380	SSCS: Waterproofing on Roof at Double Door Enclosure	30	01-Aug-16	03-Sep-16	01-Aug-16	03-Sep-16
S5003385	SSCS: Waterproofing on Roof at B4A	30	05-Sep-16	12-Oct-16	05-Sep-16	12-Oct-16
S5003386	SSCS: Waterproofing on Roof at VWF	21	06-Oct-16	31-Oct-16	06-Oct-16	31-Oct-16
S5003390	SSCS: Painting / Epoxy to Double Door Enclosure	53	17-Aug-16	20-Oct-16	17-Aug-16	20-Oct-16
Procurement, Manufacture and Delivery						
S5003530	SSCS: Manufacture Conveyor, Valve, Air Duct & Lifting Appliance	157	16-Nov-15	31-May-16	15-Oct-15 A	15-Oct-16
S5003535	SSCS: Factory Acceptance Test for Conveyor	53	15-Oct-16	17-Dec-16	15-Oct-16	17-Dec-16
S5003555	SSCS: Manufacture Vehicle Washing Machine	116	01-Aug-16	16-Dec-16	01-Aug-16	16-Dec-16
S5003596	SSCS: FAT Test for 2nd lot Silos (4 nos)	13	01-Aug-16	16-Aug-16	01-Aug-16	16-Aug-16
S5003610	SSCS: Delivery of 2nd Lot Silos (4 nos.)	18	16-Aug-16	06-Sep-16	16-Aug-16	06-Sep-16
E&M Installation and T&C						
Silos Installation by E&M						
S5003562	SSCS: Commencement of E&M Works	0	31-Jul-16		31-Jul-16	
Silo Installation						
S5003570	SSCS: Installation of Silo No. 9 - 12	30	01-Aug-16	03-Sep-16	01-Aug-16	03-Sep-16
S5003580	SSCS: Installation of Silo No. 13 - 16	30	06-Sep-16	14-Oct-16	06-Sep-16	14-Oct-16
E&M Works						
Level GF, B1 & B2						
S5004020	SSCS: Install DOU Ductwork	65	10-Sep-16	28-Nov-16	10-Sep-16	28-Nov-16
S5004030	SSCS: Sliding Frame & Discharge Screw Conveyor	53	26-Sep-16	29-Nov-16	26-Sep-16	29-Nov-16
Level B2A, B3, B4 & B4A						
S5004080	SSCS: Install Solid Pump & Pipework	75	14-Oct-16	12-Jan-17	14-Oct-16	12-Jan-17
S5004090	SSCS: Install DOU Ductwork	77	28-Oct-16	02-Feb-17	28-Oct-16	02-Feb-17
S5004100	SSCS: Install Cable Tray	77	28-Oct-16	02-Feb-17	28-Oct-16	02-Feb-17
Miscellaneous						



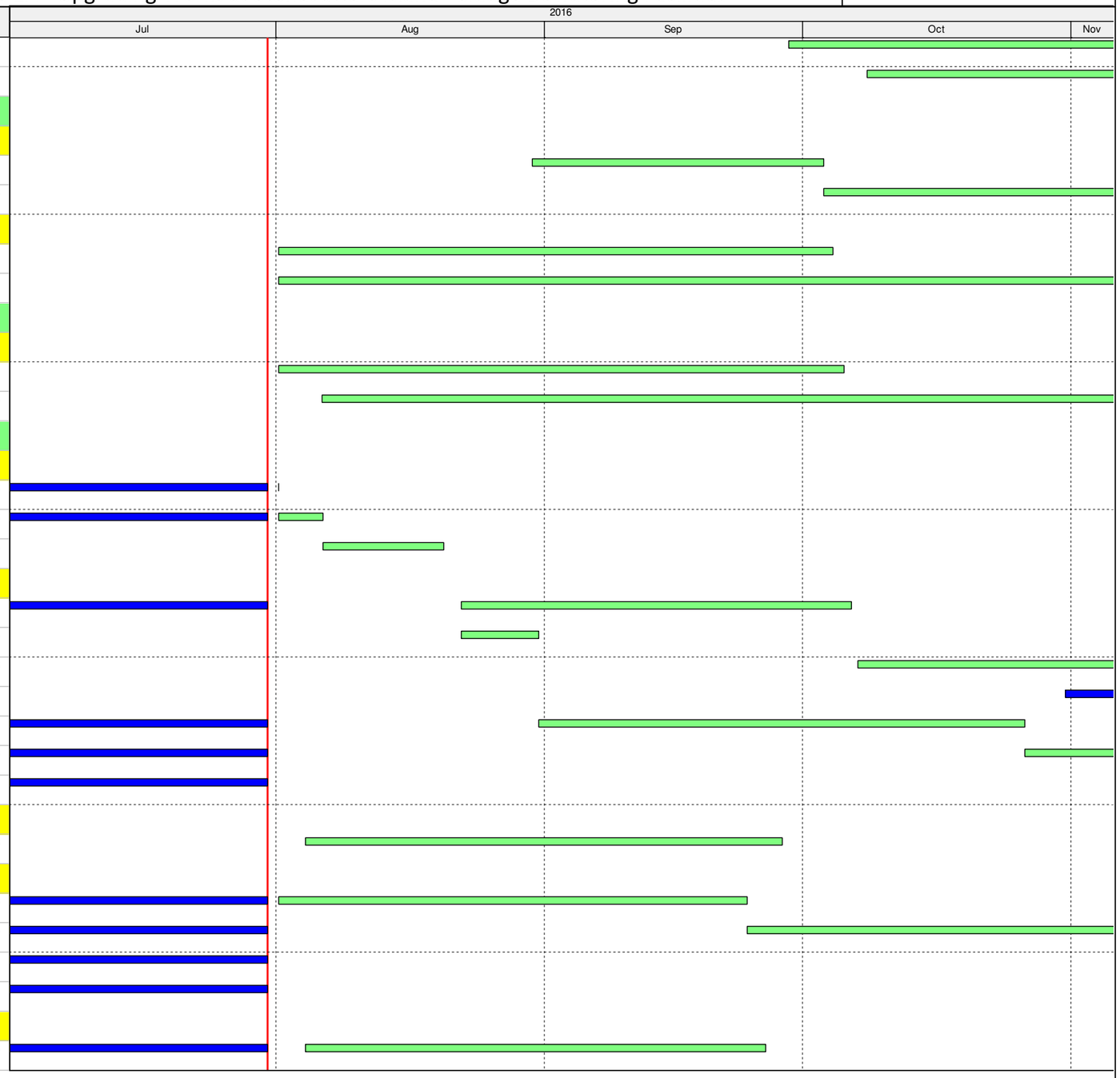
◆ Milestone
Actual Work
Remaining Work
Critical Remaining Work

Three Months Rolling Programme - August to October 2016

(Based on Detail Works Programme Rev.3B)

3-M Rolling Programme			
Date	Revision	Checked	Approved
30-Jun-16			

Activity ID	Activity Name	Original Duration	BL Project Start	BL Project Finish	Start	Finish
S5004130	SSCS: Install Pipework	78	29-Sep-16	31-Dec-16	29-Sep-16	31-Dec-16
S5004140	SSCS: Building Services Equipment	76	08-Oct-16	09-Jan-17	08-Oct-16	09-Jan-17
Deodourization Unit 5 and DG Store						
Structure						
S5008290	DOU5 & DGS: Excavation for Ground Beam and Slab	27	30-Aug-16	03-Oct-16	30-Aug-16	03-Oct-16
S5008300	DOU5 & DGS: Ground Floor	72	03-Oct-16	28-Dec-16	03-Oct-16	28-Dec-16
Procurement and Delivery						
S5008510	DOU5 & DGS: Procurement of DOU5 & other E&M Equipment	53	01-Aug-16	04-Oct-16	01-Aug-16	04-Oct-16
S5008520	DOU5 & DGS: Manufacturing of DOU5 & other E&M Equipment	187	01-Aug-16	16-Mar-17	01-Aug-16	16-Mar-17
Process Water Storage Tank						
Procurement, Manufacture and Delivery						
S5009660	PWST: Procure Tanks & other E&M Equipment / Material	55	01-Aug-16	05-Oct-16	01-Aug-16	05-Oct-16
S5009670	PWST: Manufacture Tanks & other E&M Equipment / Material	120	06-Aug-16	28-Dec-16	06-Aug-16	28-Dec-16
External (Civil) Works						
SDB Area						
S5009812	Concrete pillar box	52	14-Nov-14	16-Jan-15	29-Sep-14 A	01-Aug-16
S5009814	Permanent carrigeway	52	14-Nov-14	16-Jan-15	29-Sep-14 A	06-Aug-16
S5009818	Cable duct and draw pit P29	12	06-Aug-16	20-Aug-16	06-Aug-16	20-Aug-16
General Area						
S5009832	Cable duct at portion 3 & 4	50	22-Jul-16	20-Sep-16	01-Jun-16 A	06-Oct-16
S5009836	Laying of fresh watermain line around entrance of Gammon site	8	22-Aug-16	31-Aug-16	22-Aug-16	31-Aug-16
S5009838	Foul sewer & manholes F10 & F11 along area adjacent to gate 4	50	07-Oct-16	06-Dec-16	07-Oct-16	06-Dec-16
S5009846	Storm water drainage & catch pit S8 along portion 5	50	31-Oct-16	29-Dec-16	31-Oct-16 A	06-Feb-17
S5009866	PCCW cable duct & draw pit T1 & T2	48	28-Oct-16	23-Dec-16	01-Jun-16 A	26-Oct-16
S5009868	Storm water drainage & catch pits S10 & S10A	48	23-Dec-16	24-Feb-17	01-Jun-16 A	19-Dec-16
S5009872	Sodium Hypochlorite Pipe in Chemical Trench	48	24-Feb-17	25-Apr-17	01-Jun-16 A	16-Feb-17
WB Area						
S5009842	Storm water drainage & catch pit S41 & S43 around WB	47	04-Aug-16	28-Sep-16	04-Aug-16	28-Sep-16
SSCS Area						
S5009862	Cable duct and draw pits P8, P9 & P10	49	29-Jul-16	24-Sep-16	01-Jun-16 A	24-Sep-16
S5009878	Storm drainage and catch pits S23, S51A & S27	49	26-Sep-16	23-Nov-16	01-Jun-16 A	21-Nov-16
S5009882	Process watermain & chamber	49	24-Nov-16	21-Jan-17	01-Jun-16 A	16-Jan-17
S5009884	Cable duct & draw pit P12A	49	23-Jan-17	24-Mar-17	01-Jun-16 A	16-Mar-17
PWST Area						
S5009844	Storm water drainage & cable duct adjacent to PWST	47	05-Jul-16	29-Aug-16	01-Jun-16 A	26-Sep-16



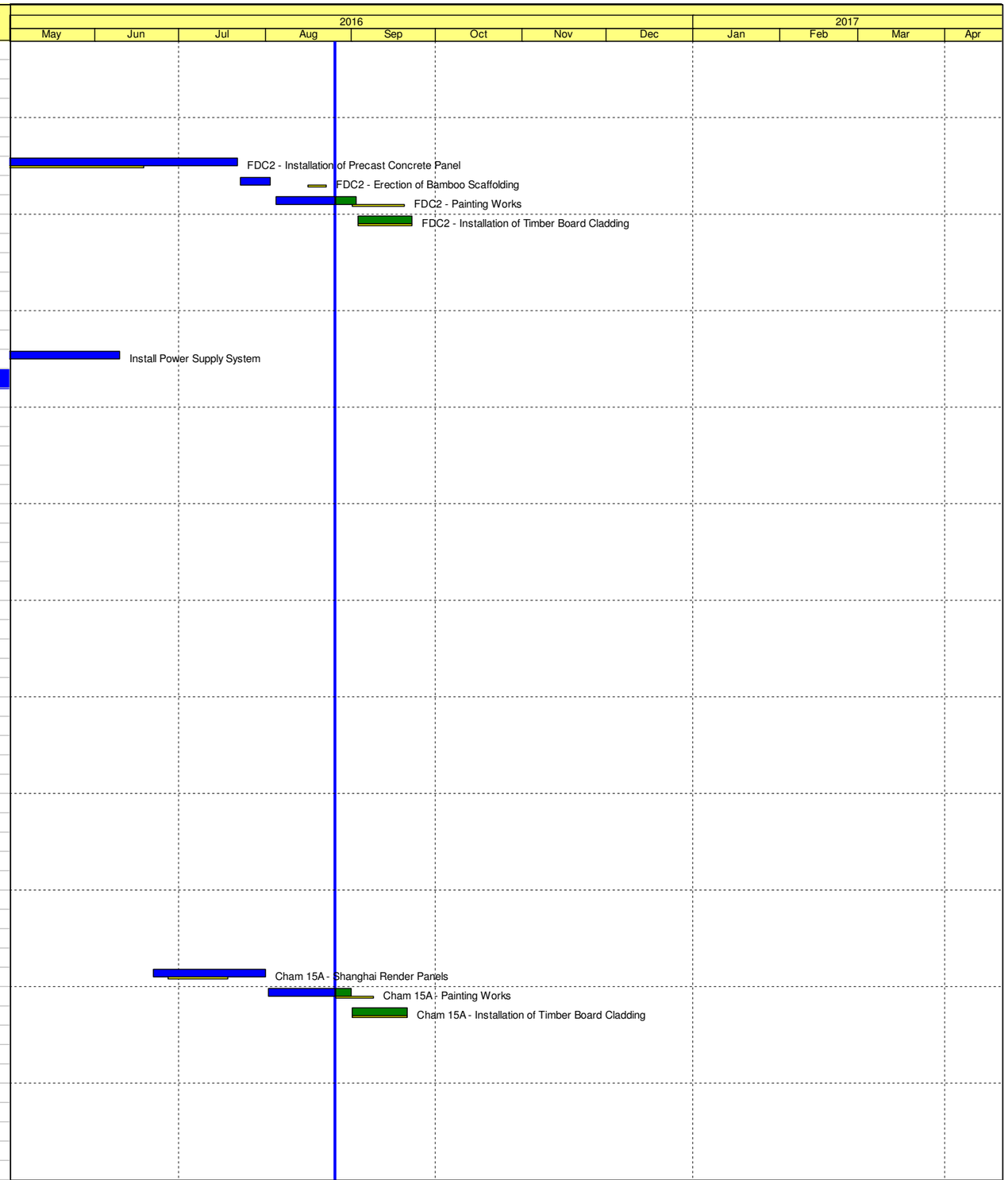
◆ Milestone
Actual Work
Remaining Work
Critical Remaining Work

Three Months Rolling Programme - August to October 2016

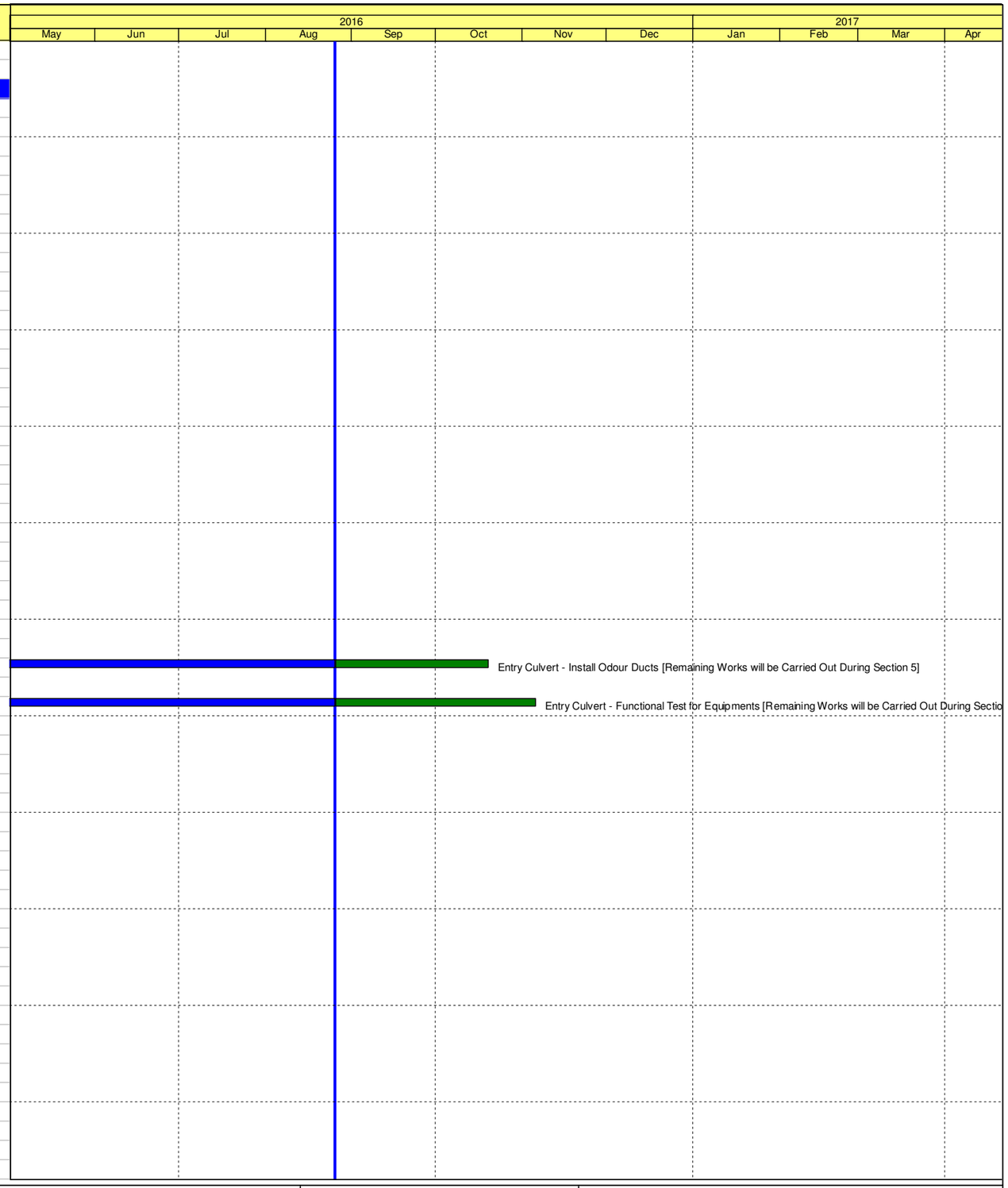
(Based on Detail Works Programme Rev.3B)

3-M Rolling Programme			
Date	Revision	Checked	Approved
30-Jun-16			

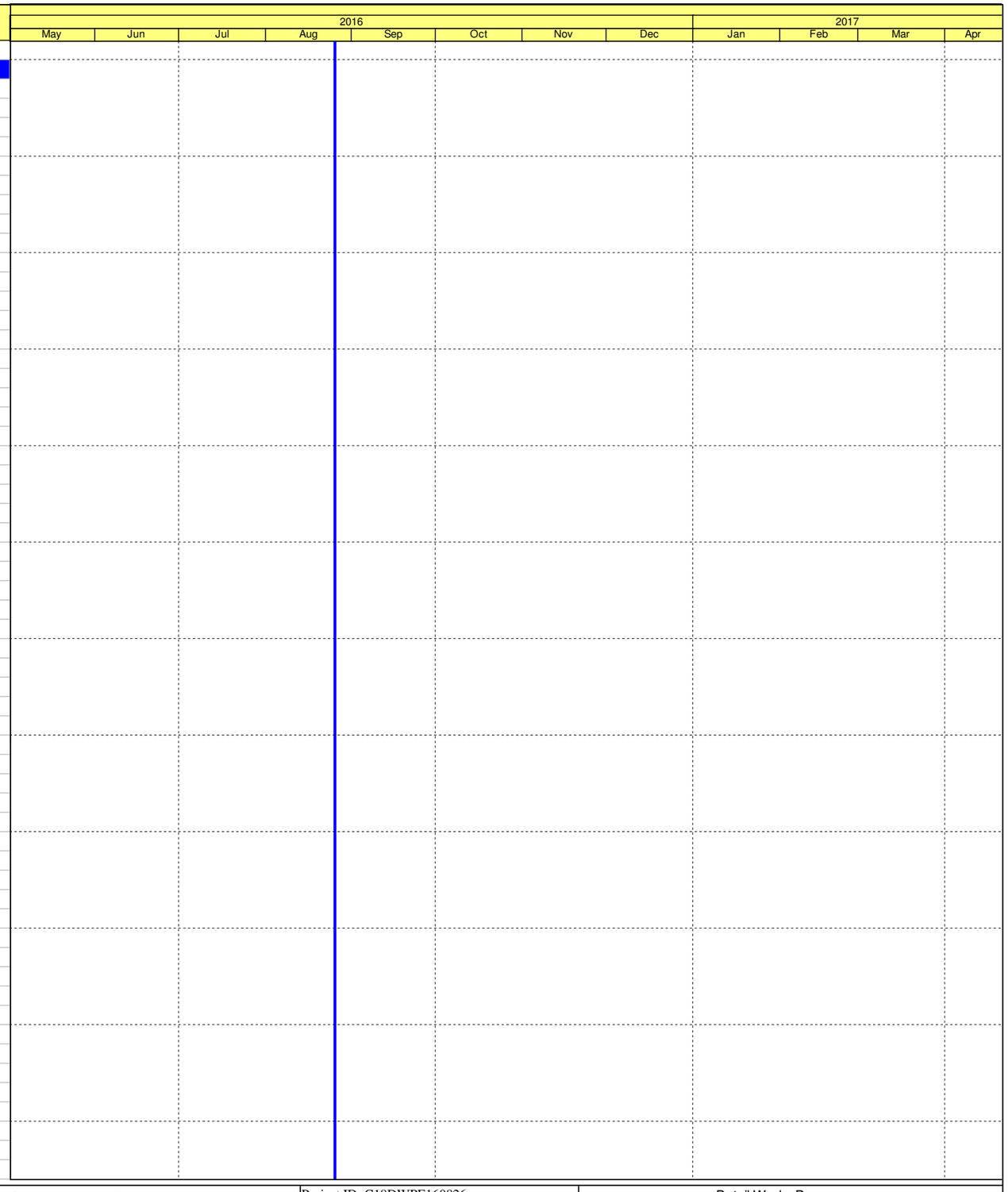
Activity ID	Activity Name	Start	Finish	Physical % Complete
	6.06.5.5 - Finishing Works			
18-66320N	FDC2- PVC Liner Touch Up Work	22-Sep-15 A	10-Oct-15 A	100%
18-66310	FDC2- Install FRP Covers & Handrail	26-Sep-15 A	06-Feb-16 A	100%
18-66330N	FDC2- Waterproofing System	01-Oct-15 A	08-Oct-15 A	100%
18-66180	FDC2 - Staircase	07-Oct-15 A	12-Oct-15 A	100%
18-66290	FDC2 - Install Temp Cover	12-Oct-15 A	16-Oct-15 A	100%
18-66890	FDC2 - Installation of Precast Concrete Panel	08-Apr-16 A	22-Jul-16 A	100%
18-66900	FDC2 - Erection of Bamboo Scaffolding	23-Jul-16 A	03-Aug-16 A	100%
18-66200	FDC2 - Painting Works	05-Aug-16 A	02-Sep-16	80%
18-66190	FDC2 - Installation of Timber Board Cladding	03-Sep-16	22-Sep-16	0%
	6.06.5.6 - E&M Works			
18-66220	Static Mixer On-site Assembly	19-Aug-15 A	21-Sep-15 A	100%
18-66170	Handover to E&M Works	22-Sep-15 A		100%
18-66300	Install Static Mixer	24-Sep-15 A	30-Sep-15 A	100%
18-66240	Install Flow Measurement Sensor/Transducer	08-Oct-15 A	19-Oct-15 A	100%
18-66230	Install Air Duct	14-Jan-16 A	18-Mar-16 A	100%
18-66210	Install Power Supply System	07-Mar-16 A	10-Jun-16 A	100%
	6.06.6 - Chamber 15A			
	6.06.6.1 - Foundation			
18-58650	Cham 15A - G.I - Pre Drilling (4 Nos.)	11-Oct-11 A	09-Nov-11 A	100%
18-58700	Cham 15A - Setting Out Pile Points	03-Nov-11 A	09-Nov-11 A	100%
18-58800	Cham 15A - H-Piles (15 nos.)	30-Mar-12 A	29-May-12 A	100%
	6.06.6.2 - Temporary Works			
18-58910	Cham 15A - Trial Pile	26-Aug-14 A	30-Aug-14 A	100%
18-58900	Cham 15A - Sheet Pile Driving Works	13-Sep-14 A	28-Nov-14 A	100%
18-58950	Cham 15A - ELS 1st Layer	03-Dec-14 A	17-Jan-15 A	100%
18-58960	Cham 15A - ELS 2nd Layer	18-Jan-15 A	09-Feb-15 A	100%
18-58980	Cham 15A - ELS Formation + Blinding	09-Feb-15 A	12-Mar-15 A	100%
18-59000	Cham 15A - ELS Removal + Backfill	15-Apr-15 A	23-May-15 A	100%
18-58990	Cham 15A - Sheet Pile Removal	22-Aug-15 A	26-Aug-15 A	100%
	6.06.6.3 - Structure			
C181120	Cham 15A - Installation of Pile Head	13-Mar-15 A	20-Mar-15 A	100%
C181140	Cham 15A - Diaphragm Wall Cutting Works	16-Mar-15 A	14-Jul-15 A	100%
	6.06.6.3.1 Stage 1			
C183040	Cham 15A - Base Slab (Level -2.0 to 0 mPD)	20-Mar-15 A	14-Apr-15 A	100%
C181260	Cham 15A - Lower Wall (Level 0 to +5.15 mPD)	15-Apr-15 A	20-May-15 A	100%
C181530	Cham 15A - Upper Wall (Level + 5.15 to +11.5 mPD)	21-May-15 A	02-Jul-15 A	100%
	6.06.6.3.2 Stage 2			
C181800	Cham 15A - Base Slab (Level -2.0 to 0 mPD)	15-Jun-15 A	27-Jul-15 A	100%
C181910	Cham 15A - Lower Wall (Level 0 to +5.2 mPD)	28-Jul-15 A	17-Aug-15 A	100%
C181900	Cham 15A - Removal of 1st Layer Struct and Backfill	19-Aug-15 A	20-Aug-15 A	100%
C181960	Cham 15A - Removal of 2nd Layer Struct and Backfill	21-Aug-15 A	22-Aug-15 A	100%
C182180	Cham 15A - Upper Wall (Level + 5.2 to +11.5 mPD)	22-Aug-15 A	05-Sep-15 A	100%
C181970	Cham 15A - Temporary Scaffolding for Wall Construction	24-Aug-15 A	28-Aug-15 A	100%
	6.06.6.4 - Finishing Works			
18-59060N	Cham 15A - Handover for Finishing Works	22-Sep-15 A		100%
18-66320	Cham 15A - Install FRP Covers & Handrail	23-Sep-15 A	15-Dec-15 A	100%
18-59110	Cham 15A - FRP Baffle Wall	24-Sep-15 A	19-Oct-15 A	100%
18-59080	Cham 15A - Shanghai Render Panels	22-Jun-16 A	01-Aug-16 A	100%
18-66910	Cham 15A - Painting Works	02-Aug-16 A	31-Aug-16	90%
18-59090	Cham 15A - Installation of Timber Board Cladding	01-Sep-16	20-Sep-16	0%
	6.06.6.5 - E&M Works			
18-59140	Cham 15A - Install Power Supply System	01-Aug-15 A	20-Nov-15 A	100%
18-59150D	Cham 15A - Install TRC Measurement System	05-Aug-15 A	26-Sep-15 A	100%
18-59100D	Cham 15A - Install Penstock	10-Aug-15 A	22-Sep-15 A	100%
18-59120	Cham 15A - Install Effluent Pumps	25-Aug-15 A	14-Nov-15 A	100%
18-59099N	Chamber 15A Handover for E&M Works	15-Sep-15 A		100%
18-59100D10	Cham 15A - Install Chemical Dosing Unit	24-Sep-15 A	02-Oct-15 A	100%
18-59100D20	Cham 15A - Install Air Ducts at Area 2	26-Sep-15 A	14-Nov-15 A	100%



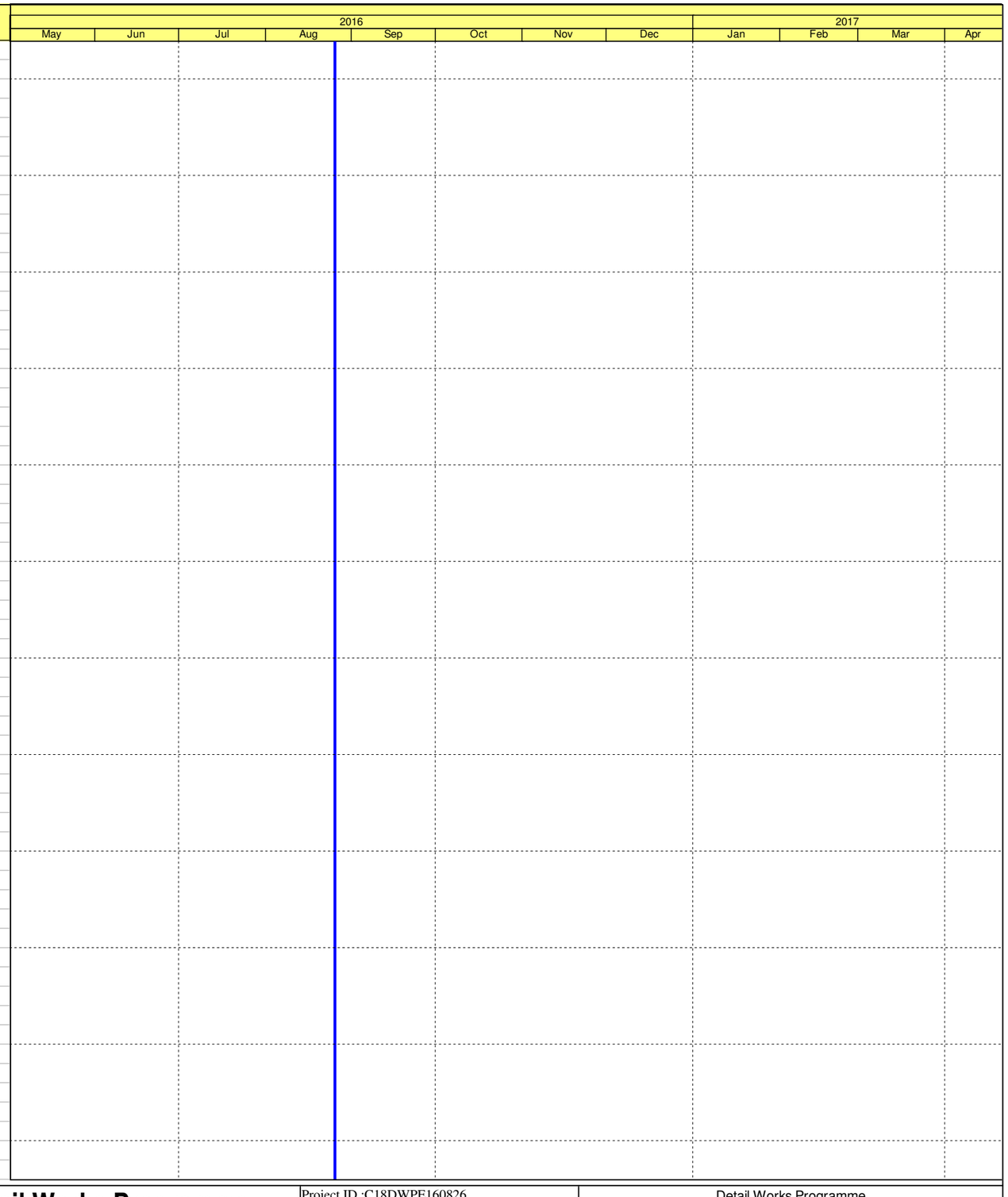
Activity ID	Activity Name	Start	Finish	Physical % Complete
18-59160	Cham 15A - Install Odour Ducts	26-Sep-15 A	14-Nov-15 A	100%
18-59130	Cham 15A - Install Pipes & Valves	26-Sep-15 A	20-Nov-15 A	100%
6.06.7 - Entry Culvert				
6.06.7.1 - Foundation				
18-59550	Entry Culvert - G.I - Pre-drilling (2 Nos.)	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	19-Oct-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	05-Nov-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%



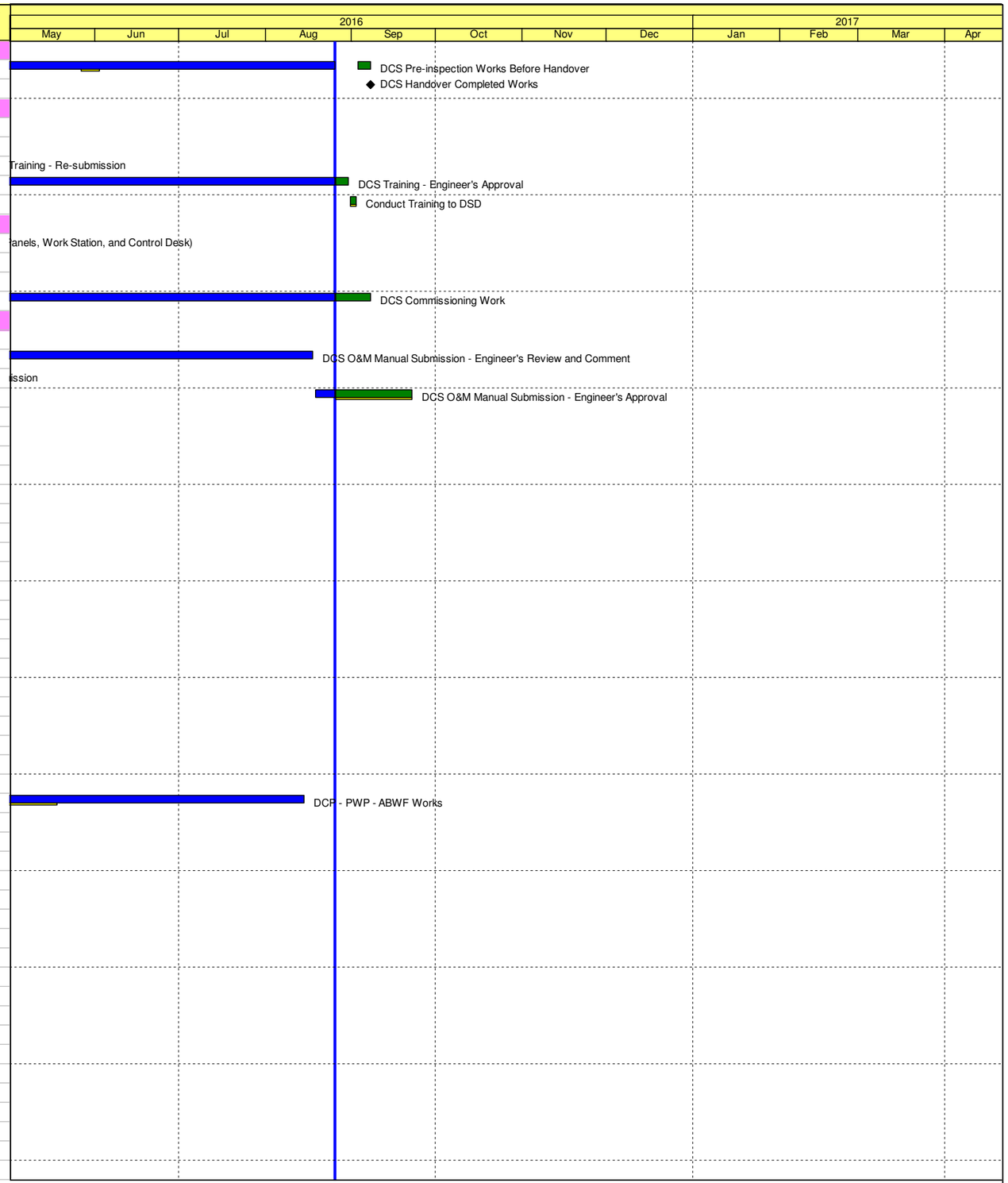
Activity ID	Activity Name	Start	Finish	Physical % Complete
18-59533	Existing Outfall Drop Shaft - Installation of FRP Cover	23-Nov-15 A	01-Dec-15 A	100%
6.06.8 - Dechlorination Plant (DCP)				
6.06.8.1 - DCP - Foundation				
18-59800	DCP - G.I- Pre Drilling (7 Nos.)	08-Dec-11 A	31-Jan-12 A	100%
18-59810	DCP -Setting Out Pile Points	05-Mar-12 A	13-Mar-12 A	100%
18-59850	DCP - Pre-Bore H-Piles (20 nos.)	14-Mar-12 A	30-Jun-12 A	100%
18-59930	DCP - Test Piles	06-Oct-12 A	15-Oct-12 A	100%
6.06.8.2 - DCP - Structure				
18-60010D	DCP - Excavate Foundation + Blinding	10-Dec-12 A	24-Dec-12 A	100%
18-60040N	DCP - Mobilization and Breaking of Concrete Surface	10-Dec-12 A	13-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%
18-60020D	DCP - R.C. Intermidiate Slab	08-Jan-13 A	02-May-13 A	100%
18-60120N	DCP - Construction of Toe Wall	08-Jan-13 A	18-Jan-13 A	100%
18-60111N	DCP - Pile Cap Concreting	19-Jan-13 A	19-Jan-13 A	100%
18-60140N	DCP - Ground Slab, Waterproofing	22-Jan-13 A	22-Jan-13 A	100%
18-60130N	DCP - Ground Slab, Erection of Permanent Formworks	23-Jan-13 A	02-May-13 A	100%
18-60025	DCP - R.C. Plinths and Boundary Wall	28-Jan-13 A	04-Mar-13 A	100%
18-60160N	DCP - Ground Slab Steel Fixing	28-Jan-13 A	02-May-13 A	100%
18-60141N	DCP - Ground Slab, Installation of UPVC Cable Ducting	26-Feb-13 A	13-Apr-13 A	100%
18-60142N	DCP - Ground Slab, Installation of UPVC Cast-Iron Pipe	11-Apr-13 A	18-Apr-13 A	100%
18-60143N	DCP - Ground Slab Cast-Iron Pipe Water Test	19-Apr-13 A	22-Apr-13 A	100%
18-60170N	DCP - Ground Slab, Concreting	02-May-13 A	02-May-13 A	100%
18-60171N	DCP - Ground Slab, Removal of Formworks	03-May-13 A	08-May-13 A	100%
18-60030D	DCP - R.C. Walls/Roof	04-Jul-13 A	04-Oct-13 A	100%
18-60030N	DCP - R.C. Wall Scaffolding & Formworks Erection	04-Jul-13 A	17-Aug-13 A	100%
18-60053N	DCP - R.C. Walls Steel Fixing	29-Jul-13 A	10-Aug-13 A	100%
18-60052N	DCP - R.C. Roof Formworks Erection	12-Aug-13 A	20-Aug-13 A	100%
18-60055N	DCP - R.C. Roof Steel Fixing	21-Aug-13 A	26-Aug-13 A	100%
18-60054N	DCP - R.C. Walls/Roof, Cast Concrete	27-Aug-13 A	27-Aug-13 A	100%
18-60056N	DCP - R.C. Walls/Roof, Concrete Wall and Roof Curing	28-Aug-13 A	12-Sep-13 A	100%
18-60046N	DCP - R.C. Roof Parapet, Fix Roof Parapet Wall Reinforcement	05-Sep-13 A	13-Sep-13 A	100%
18-60035D	DCP - R.C. Roof Parapet	05-Sep-13 A	04-Oct-13 A	100%
18-60045N	DCP - R.C. Roof Parapet, Erection of Formwork	09-Sep-13 A	18-Sep-13 A	100%
18-60058N	DCP - R.C. Walls/Roof, Removal of Formworks and Falseworks	13-Sep-13 A	04-Oct-13 A	100%
18-60048N	DCP - R.C. Roof Parapet, Cast Roof Concrete Parapet	19-Sep-13 A	19-Sep-13 A	100%
18-60049N	DCP - R.C. Roof Parapet, Curing and Removal of Formworks	20-Sep-13 A	04-Oct-13 A	100%
18-60065N	DCP - Cleaning and Preparation for Finishing and E&M	05-Oct-13 A	02-Nov-13 A	100%
18-64651N	DCP - 3600x1200 Sump Pit Near Bund Wall	17-Oct-13 A	02-Nov-13 A	100%
18-60059N	DCP - R.C. Roof Parapet, Waterproofing	01-May-14 A	31-May-14 A	100%
18-60173N	DCP - Ground Slab, Bund Wall Waterproofing	01-Feb-15 A	20-Apr-15 A	100%
18-60040D	DCP - Steel Strucutre & 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 Strucutre & 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%



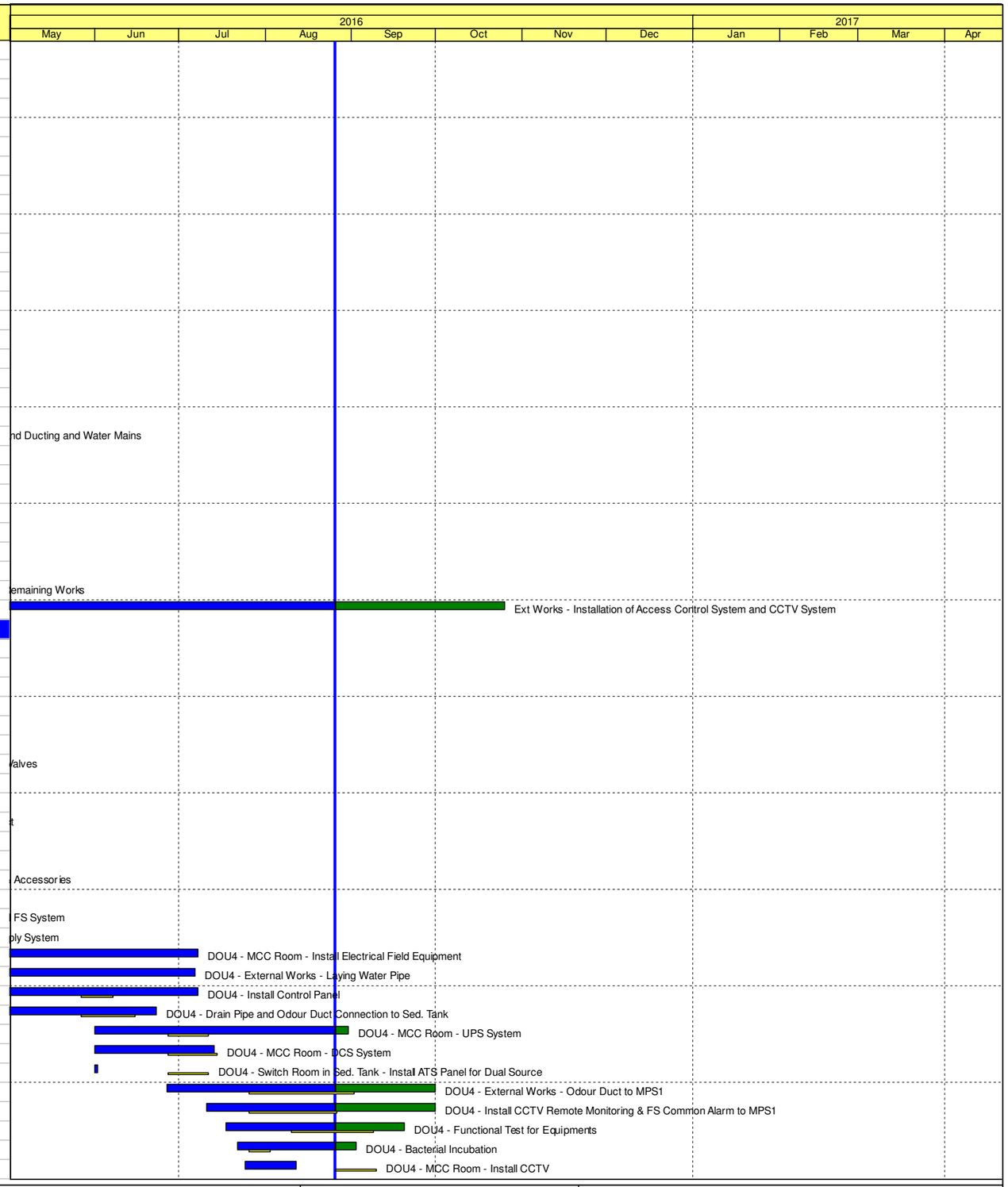
Activity ID	Activity Name	Start	Finish	Physical % Complete
18-60052D	DCP - STC - Piping Works	27-Jun-14 A	20-Nov-15 A	100%
18-60066	DCP - STC - Cabling & Wiring	22-Dec-14 A	15-Jul-15 A	100%
18-60054D	DCP - STC - Cable Containment Works	22-Dec-14 A	02-Jul-15 A	100%
18-60068D	DCP - STC - Electrical Fixtures	22-Dec-14 A	10-Jul-15 A	100%
18-60067	DCP - STC - Electrical Control & Instrumentation	22-Dec-14 A	10-Jul-15 A	100%
18-60070D	DCP - STC - Fire Services	03-Feb-15 A	15-Jul-15 A	100%
18-60074N	DCP - STC - Install Sodium Bisulphate Dosing Units	24-Sep-15 A	10-Oct-15 A	100%
18-60080	DCP - STC - Functional Test	25-Sep-15 A	29-Sep-15 A	100%
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%
18-63493N	DCP - PH Handover for Finishing Works	15-Jul-14 A		100%
18-63515	DCP - PH - Door, Shutter and Louvre	03-Nov-14 A	17-Nov-14 A	100%
18-63495	DCP - PH - FRP Open Mesh Flooring	12-Sep-15 A	09-Jan-16 A	100%
6.06.8.4.2 - E&M Works				
18-63485D	DCP - PH - Airducts	14-Jul-14 A	29-Apr-15 A	100%
18-63492D	DCP - PH - Air Grilles	14-Jul-14 A	29-Apr-15 A	100%
18-63474N	DCP Pump Hall Handover for E&M Works	15-Jul-14 A		100%
18-63489	DCP - PH - Electrical Fixture	22-Dec-14 A	10-Jul-15 A	100%
18-63480D	DCP - PH - Cable Containment	22-Dec-14 A	29-Apr-15 A	100%
18-63487D	DCP - PH - Cabling & Wiring	22-Dec-14 A	29-Apr-15 A	100%
18-63488D	DCP - PH - Electrical Control & Instrumentation	22-Dec-14 A	10-Jul-15 A	100%
18-63478D	DCP - PH - Piping Works	05-Jan-15 A	20-Sep-15 A	100%
18-63476D	DCP - PH - Fume Recovery System	15-Jan-15 A	15-Jul-15 A	100%
18-63490D	DCP - PH - Fire Services	03-Feb-15 A	10-Aug-15 A	100%
18-63475D	DCP - PH - Pump & Dehumidifier Install	01-Jun-15 A	15-Jun-15 A	100%
18-63494D	DCP - PH - Functional Test	21-Sep-15 A	29-Sep-15 A	100%
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%
18-63635D	DCP - SSR - Epoxy Coating & Painting	15-Apr-14 A	05-Jun-14 A	100%
18-63625	DCP - SSR - Door & Louvres	03-Nov-14 A	18-Nov-14 A	100%
6.06.8.5.2 - E&M Works				
18-63574N	DCP Sensor Store Room Handover for E&M Works	15-May-14 A		100%
18-63585D	DCP - SSR - Airducts	14-Jul-14 A	29-Apr-15 A	100%
18-63655D	DCP - SSR - Air Grilles	14-Jul-14 A	29-Apr-15 A	100%
18-63595D	DCP - SSR - Cabling & wiring	22-Dec-14 A	10-Aug-15 A	100%
18-63575D	DCP - SSR - Cable Containment	22-Dec-14 A	01-Aug-15 A	100%
18-63645D	DCP - SSR - Electrical Fixtures	22-Dec-14 A	10-Jul-15 A	100%
18-63491D	DCP - SSR - Fire Services	03-Feb-15 A	15-Jul-15 A	100%
18-63658D	DCP - SSR - Functional Test	21-Sep-15 A	22-Sep-15 A	100%
6.06.8.6 - DCP - Control Room & UPS Room				
6.06.8.6.1 - Finishing Works				
18-63709N	DCP - CR/UPS Handover for Finshing Works	31-Mar-14 A		100%
18-63720N	DCP - CR/UPS Partition Wall	31-Mar-14 A	11-Apr-14 A	100%
18-63725D	DCP - CR/UPS - Epoxy Coating and Painting	15-Apr-14 A	05-Jun-14 A	100%
18-63715	DCP - CR/UPS - Door & Louvre	03-Nov-14 A	18-Nov-14 A	100%
18-63710	DCP - CR/UPS - Metal Works	01-Jun-15 A	19-Jun-15 A	100%
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%
18-63615D	DCP - CR/UPS - Airducts	14-Jul-14 A	29-Apr-15 A	100%
18-63705D	DCP - CR/UPS - Air grilles	14-Jul-14 A	29-Apr-15 A	100%
18-63605D	DCP - CR/UPS - Cable Containment	22-Dec-14 A	10-Jul-15 A	100%
18-63685D	DCP - CR/UPS - Cabling & Wiring	22-Dec-14 A	10-Jul-15 A	100%
18-63695D	DCP - CR/UPS - Electrical Fixtures	22-Dec-14 A	10-Jul-15 A	100%
18-63495D	DCP - CR/UPS - Fire Services	03-Feb-15 A	15-Jul-15 A	100%
18-63736	DCP - CR/UPS - Control System Equipment	21-Sep-15 A	20-Nov-15 A	100%
18-63748	DCP - CR/UPS - Functional Test	23-Sep-15 A	26-Dec-15 A	100%
18-63735	DCP - CR/UPS - UPS Equipment	09-Nov-15 A	20-Nov-15 A	100%

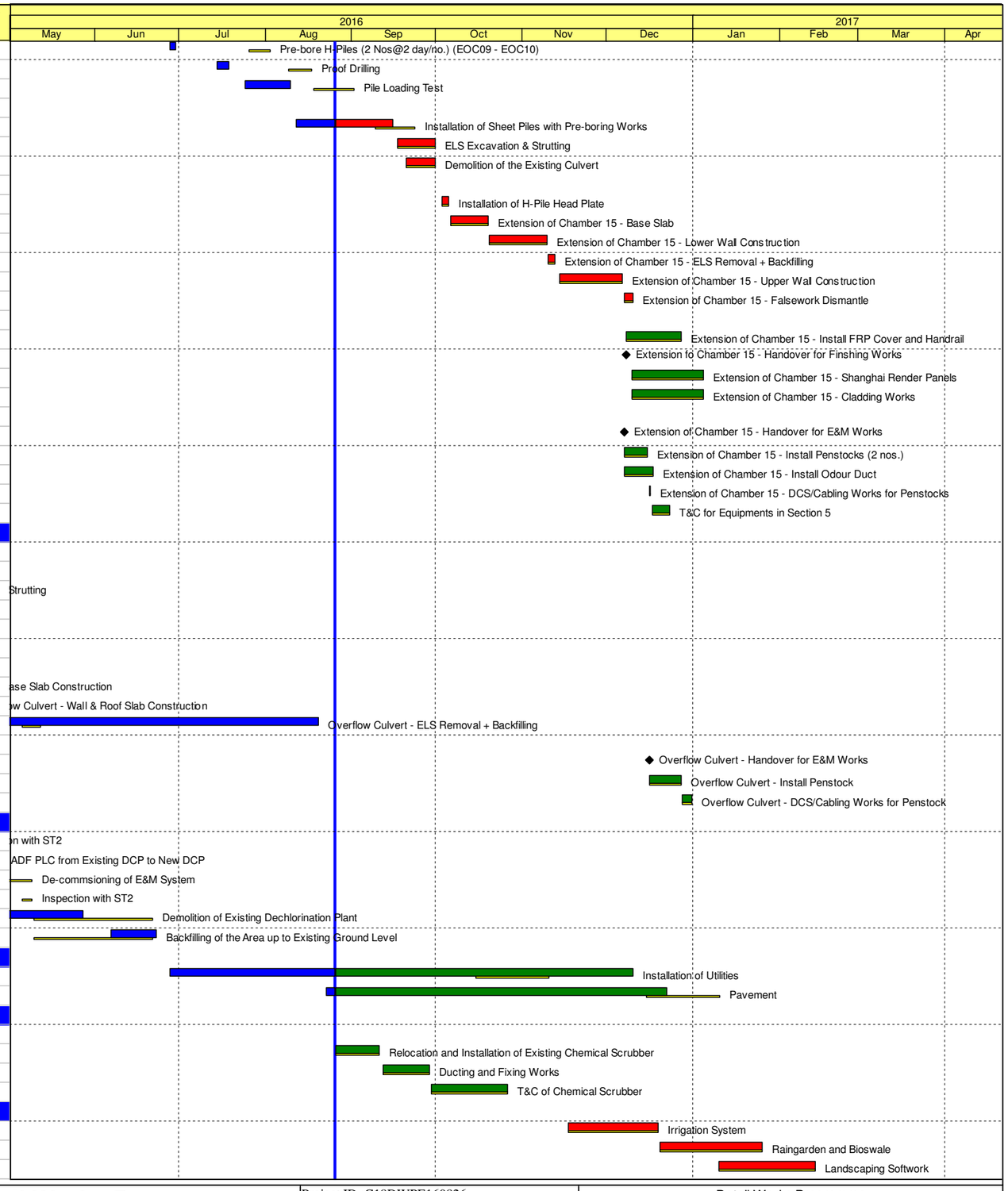


Activity ID	Activity Name	Start	Finish	Physical % Complete
6.06.8.6.2.3 - Completion of DCS Works				
18-63760	DCS Pre-inspection Works Before Handover	04-Jan-16 A	07-Sep-16	95%
18-63761	DCS Handover Completed Works		07-Sep-16	0%
6.06.8.6.2.3 - DCS Training				
18-63828N	DCS Training - Submission of 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	19-Apr-16 A	100%
18-63858	DCS Training - Engineer's Approval	11-Jan-16 A	30-Aug-16	90%
18-63868	Conduct Training to DSD	31-Aug-16	02-Sep-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	22-Feb-16 A	07-Sep-16	90%
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	18-Aug-16 A	100%
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	19-Aug-16 A	22-Sep-16	20%
6.06.8.7 - DCP - Switch Room				
6.06.8.7.1 - Finishing Works				
18-63774N	DCP - CR/UPS Switch Room Handover for Finshing 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 Lovre	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	16-Mar-16 A	15-Aug-16 A	100%
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 Install	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 - Partion Wall & Plaster	31-Mar-14 A	11-Apr-14 A	100%
18-63974N	DCP - SSR Handover for Finishing Works	15-Apr-14 A		100%
18-64005D	DCP - SSR - Epoxy Coating and Painting	15-Apr-14 A	05-Jun-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%



Activity ID	Activity Name	Start	Finish	Physical % Complete
18-63896D	DCP - SSR - MVAC System	22-Dec-14 A	29-Apr-15 A	100%
18-64015D	DCP - SSR - Electrical Works	22-Dec-14 A	10-Jul-15 A	100%
18-64025D	DCP - SSR - Fire Services	03-Feb-15 A	15-Jul-15 A	100%
6.06.8.10 - DCP Statut ory Inspection				
18-60600	WSD Connection	28-Oct-15 A	12-Nov-15 A	100%
18-60650	Prep & Sub Form 314 to FSD	13-Nov-15 A	19-Nov-15 A	100%
18-60700	Prep & Sub Form 501 to FSD	13-Nov-15 A	19-Nov-15 A	100%
18-60750	FSD Inspection	11-Mar-16 A	11-Mar-16 A	100%
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%
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%
18-64647N	Ext Works - RS Stage 1, Draw Pit & Cable Duct	25-Apr-14 A	15-Jul-14 A	100%
18-64670N	Ext Works - MH (SW) 01		25-Apr-14 A	100%
18-64648N	Ext Works - RS Stage 1, Pipe Trench & DN300 Pipe & DN150 Pipe	14-May-14 A	06-Aug-14 A	100%
18-64668N	Ext Works - E3 Cable Draw Pit		07-Jun-14 A	100%
18-64667N	Ext Works - MH (FS) 10		12-Jun-14 A	100%
18-64666N	Ext Works - E14 Cable Draw Pit		25-Jun-14 A	100%
18-64687N	Ext Works - E15 Cable Draw Pit		25-Jun-14 A	100%
18-64660N	Ext Works - Riser Shaft - Stage 2 After NE Demolition (Main Drainage, Ducting, Water Supply, Pipe Trenc	27-Jun-14 A	17-Jul-15 A	100%
18-64680N	Ext Works - E13 Cable Draw Pit		27-Jun-14 A	100%
18-64644	Ext Works - RS Stage 2, Draw Pit and Ducting and Water Mains	10-Jul-14 A	29-Feb-16 A	100%
18-64690N	Ext Works - MH (FS) 06		11-Jul-14 A	100%
18-64665N	Ext Works - MH (FS) 05		11-Jul-14 A	100%
18-64688N	Ext Works - E16 Cable Draw Pit		15-Jul-14 A	100%
18-64662N	Ext Works - MH (FS) 03		19-Jul-14 A	100%
18-64663N	Ext Works - Last Manhole		04-Oct-14 A	100%
18-64646N	Ext Works - RS Stage 2, Last Manhole and 1050mm Pipe	04-Oct-14 A	06-Nov-14 A	100%
18-64645N	Ext Works - RS Stage 2, Remaining Pipe Trench	12-Jul-15 A	17-Jul-15 A	100%
18-64661	Ext Works - Riser Shaft - Stage 3 Remaining Works	22-Jul-15 A	29-Feb-16 A	100%
18-64671	Ext Works - Installation of Access Control System and CCTV System	15-Sep-15 A	25-Oct-16	80%
6.06.9 - DOU4 (Variation Order No. 0092)				
18-60800	DOU4 - Plinth [Part 1]	10-Jul-15 A	03-Aug-15 A	100%
18-60100	DOU4 Handover for E&M Works	05-Aug-15 A		100%
18-61050	DOU4 - Install Air Extraction Fan	22-Sep-15 A	07-Nov-15 A	100%
18-61000	DOU4 - Install Bio Trickling Filters	22-Sep-15 A	14-Dec-15 A	100%
18-61100	DOU4 - Install Pumps	05-Oct-15 A	04-Jan-16 A	100%
18-66340	DOU4 - MCC Room	15-Oct-15 A	20-Nov-15 A	100%
18-61120	DOU4 - Install Pipes & Valves	01-Nov-15 A	25-Feb-16 A	100%
18-66360	DOU4 - Pipe Trench	04-Nov-15 A	07-Dec-15 A	100%
18-61140	DOU4 - Install Tanks	21-Nov-15 A	08-Jan-16 A	100%
18-61220	DOU4 - External Works - Laying Cable Duct	01-Dec-15 A	30-Dec-15 A	100%
18-61170	DOU4 - MCC Room - Install BS Electrical	15-Dec-15 A	29-Jan-16 A	100%
18-60110	DOU4 - Plinth [Part 2]	19-Dec-15 A	11-Jan-16 A	100%
18-61070	DOU4 - Install FRP Air Duct & Accessories	05-Jan-16 A	29-Feb-16 A	100%
18-61110	DOU4 - MCC Room - Install MVAC	11-Jan-16 A	20-Feb-16 A	100%
18-61310	DOU4 - MCC Room - Install FS System	15-Jan-16 A	29-Feb-16 A	100%
18-61160	DOU4 - Install Power Supply System	27-Jan-16 A	17-Feb-16 A	100%
18-61260	DOU4 - MCC Room - Install Electrical Field Equipment	15-Feb-16 A	08-Jul-16 A	100%
18-61210	DOU4 - External Works - Laying Water Pipe	23-Feb-16 A	07-Jul-16 A	100%
18-61180	DOU4 - Install Control Panel	28-Mar-16 A	08-Jul-16 A	100%
18-61275	DOU4 - Drain Pipe and Odour Duct Connection to Sed. Tank	25-Apr-16 A	23-Jun-16 A	100%
18-61280	DOU4 - MCC Room - UPS System	01-Jun-16 A	30-Aug-16	95%
18-61290	DOU4 - MCC Room - DCS System	01-Jun-16 A	14-Jul-16 A	100%
18-61270	DOU4 - Switch Room in Sed. Tank - Install ATS Panel for Dual Source	01-Jun-16 A	02-Jun-16 A	100%
18-61230	DOU4 - External Works - Odour Duct to MPS1	27-Jun-16 A	30-Sep-16	60%
18-61250	DOU4 - Install CCTV Remote Monitoring & FS Common Alarm to MPS1	11-Jul-16 A	30-Sep-16	50%
18-61200	DOU4 - Functional Test for Equipments	18-Jul-16 A	19-Sep-16	50%
18-61190	DOU4 - Bacterial Incubation	22-Jul-16 A	02-Sep-16	30%
18-61300	DOU4 - MCC Room - Install CCTV	25-Jul-16 A	12-Aug-16 A	100%



Activity ID	Activity Name	Start	Finish	Physical % Complete
18-61240	DOU4 - Sampling Test	03-Sep-16	12-Sep-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	08-Apr-16 A	20-Apr-16 A	100%
18-62351	Section 4 - Complete Remaining Works		19-Sep-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	Enginer 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%
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 Firemains 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	30-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 [Not Effective]	16-Feb-16 A	07-Mar-16 A	100%
18-62590	Condition Survey at Existing Box Culvert	03-Mar-16 A	08-Mar-16 A	100%
18-62560	Installation of Temporary Steel Panels at Chamber 15 [Not Effective]	14-Mar-16 A	19-Mar-16 A	100%
18-66770	Installation of Temporary Steel Panels at Chamber 9	30-Mar-16 A	18-Apr-16 A	100%
18-66830	Re-installation of Steel Panels at Chamber 15 [1st attempt]	22-Apr-16 A	27-Apr-16 A	100%
18-66850	Underwater Sealing Up Works at Chamber 15 [2nd attempt]	12-May-16 A	04-Jun-16 A	100%
18-66790	Dewatering of Existing Box Culvert	28-May-16 A	25-Jun-16 A	100%
18-66920	Underwater Sealing Up Works at Chamber 9 [2nd attempt]	22-Jun-16 A	23-Jun-16 A	100%
18-66930	Underwater Sealing Up Works at Chamber 15 [3rd attempt]	23-Jun-16 A	23-Jun-16 A	100%
6.07.1.2 - Foundation				
18-62580	De-commissioning of Existing Box Culvert, Pipe Trench and TRC System	04-May-16 A	16-Jun-16 A	100%
18-66760	Mobilization of Piling Rig and Accessories	13-May-16 A	18-May-16 A	100%
18-66720	Pre-bore H-Piles (6 Nos@2 day/no.) (EOC03 - EOC08)	19-May-16 A	07-Jun-16 A	100%
18-66940	Pre-bore H-Piles (2 Nos@2 day/no.) (EOC01 - EOC02)	05-Jun-16 A	09-Jul-16 A	100%
18-66950	Boring Works to Overcome Unforeseen Obstructions for EOC01 and EOC02	10-Jun-16 A	29-Jun-16 A	100%
18-66880	Demolition of Portion of Existing Box Culvert	13-Jun-16 A	27-Jun-16 A	100%

Activity ID	Activity Name	Start	Finish	Physical % Complete
18-66860	Pre-bore H-Piles (2 Nos@2 day/no.) (EOC09 - EOC10)	28-Jun-16 A	30-Jun-16 A	100%
18-66970	Proof Drilling	15-Jul-16 A	19-Jul-16 A	100%
18-66740	Pile Loading Test	25-Jul-16 A	10-Aug-16 A	100%
6.07.1.3 - Temporary Works				
18-62550	Installation of Sheet Piles with Pre-boring Works	12-Aug-16 A	15-Sep-16	10%
18-62600	ELS Excavation & Strutting	17-Sep-16	30-Sep-16	0%
18-66400	Demolition of the Existing Culvert	20-Sep-16	30-Sep-16	0%
6.07.1.4 - Structure				
18-66640	Installation of H-Pile Head Plate	03-Oct-16	05-Oct-16	0%
18-62650	Extension of Chamber 15 - Base Slab	06-Oct-16	19-Oct-16	0%
18-66650	Extension of Chamber 15 - Lower Wall Construction	20-Oct-16	09-Nov-16	0%
18-66680	Extension of Chamber 15 - ELS Removal + Backfilling	10-Nov-16	12-Nov-16	0%
18-66660	Extension of Chamber 15 - Upper Wall Construction	14-Nov-16	06-Dec-16	0%
18-66670	Extension of Chamber 15 - Falsework Dismantle	07-Dec-16	10-Dec-16	0%
6.07.1.5 - Architectural incld. Exist. C15				
18-62700	Extension of Chamber 15 - Install FRP Cover and Handrail	08-Dec-16	27-Dec-16	0%
18-62699	Extension fo Chamber 15 - Handover for Finshing Works	08-Dec-16		0%
18-62709	Extension of Chamber 15 - Shanghai Render Panels	10-Dec-16	04-Jan-17	0%
18-62719	Extension of Chamber 15 - Cladding Works	10-Dec-16	04-Jan-17	0%
6.07.1.6 - E&M				
18-62749	Extension of Chamber 15 - Handover for E&M Works	07-Dec-16		0%
18-62750	Extension of Chamber 15 - Install Penstocks (2 nos.)	07-Dec-16	15-Dec-16	0%
18-62760	Extension of Chamber 15 - Install Odour Duct	07-Dec-16	17-Dec-16	0%
18-62770	Extension of Chamber 15 - DCS/Cabling Works for Penstocks	16-Dec-16	16-Dec-16	0%
18-62800	T&C for Equipments in Section 5	17-Dec-16	23-Dec-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 A	100%
18-63060	Overflow Culvert - Wall & Roof Slab Construction	01-Mar-16 A	21-Mar-16 A	100%
18-63070	Overflow Culvert - ELS Removal + Backfilling	22-Mar-16 A	20-Aug-16 A	100%
6.07.2.4 - E&M				
18-66810	Overflow Culvert - Handover for E&M Works	16-Dec-16		0%
18-66820	Overflow Culvert - Install Penstock	16-Dec-16	27-Dec-16	0%
18-66870	Overflow Culvert - DCS/Cabling Works for Penstock	28-Dec-16	31-Dec-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	23-Mar-16 A	100%
18-63110	De-commsioning of E&M System	08-Apr-16 A	20-Apr-16 A	100%
18-63120	Inspection with ST2	12-Apr-16 A	20-Apr-16 A	100%
18-63100	Demolition of Existing Dechlorination Plant	21-Apr-16 A	28-May-16 A	100%
18-66960	Backfilling of the Area up to Existing Ground Level	07-Jun-16 A	23-Jun-16 A	100%
6.07.4 - External Works				
18-63150	Installation of Utilities	28-Jun-16 A	10-Dec-16	10%
18-63210	Pavement	23-Aug-16 A	22-Dec-16	0%
6.07.5 - DOU4 - Chemical Scrubber (Variation Order No. 0092)				
18-63310	Construction of Plinth	11-Mar-16 A	15-Mar-16 A	100%
18-63320	Relocation and Installation of Existing Chemical Scrubber	26-Aug-16	10-Sep-16	0%
18-63330	Ducting and Fixing Works	12-Sep-16	28-Sep-16	0%
18-63340	T&C of Chemical Scrubber	29-Sep-16	26-Oct-16	0%
6.07.6 - Landscape Works				
18-63300	Irrigation System	17-Nov-16	19-Dec-16	0%
18-63220	Raingarden and Bioswale	20-Dec-16	25-Jan-17	0%
18-63200	Landscaping Softwork	10-Jan-17	13-Feb-17	0%