

The EIA Ordinance Register Office Environmental Protection Department 27th floor, Southorn Centre 130 Hennessy Road Wanchai Hong Kong Your reference:

Our reference:

HKDSD201/50/105678

Date:

12 April 2019

BY HAND

Dear Sirs

Agreement No. SP 01/2015 Environmental Monitoring and Audit for Advance Works for Shek Wu Hui Sewage Treatment Works – Further Expansion Phase 1A Monthly EM&A Report for March 2019

On behalf of Drainage Services Department, we are pleased to submit herewith three hard copies and two electronic copies of the captioned report in accordance with Condition 3.4 of the Further Environmental Permit No. FEP-02-474/2013.

Should you have any queries, please do not hesitate to contact the undersigned or our Ms Hazel Chan on 2618 2831.

Yours faithfully ANEWR CONSULTING LIMITED

Adj Leo Independent Environmental Checker

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Drainage Services Department

Advance Works for Shek Wu Hui Sewage Treatment Works – Further Expansion Phase 1A

Monthly EM&A Report

(March 2019)

Verified by	•	Mr. Adi Lee
Position	:	Independent Environmental Checker
Date	:	10 April 2019

Drainage Services Department

Advance Works for Shek Wu Hui Sewage Treatment Works – Further Expansion Phase 1A

Monthly EM&A Report

(March 2019)

		Chapt
Certified by	:	Dr. Priscilla Choy
Position	•	Environmental Team Leader of Contract No. DE/2014/01
Date	:	10 April 2019

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Appendix A Monthly EM&A Report for Contract No. DE/2014/01

1. EXECUTIVE SUMMARY

This is the Monthly EM&A Report for the Project which summarises the EM&A works undertaken by the Contractor's ET of Contract No. DE/2014/01 under FEP No. FEP-02/474/2013 in March 2019 (the reporting period).

1.1 Summary of Major Construction Works taken in the Reporting Period

1.1.1 In the reporting period, the major construction works being undertaken by the respective Contractors under the Project are summarized in the below table.

Works Contract	Contract Title	Major Construction Works
DC/2013/09	Advance Works for Shek Wu Hui Sewage Treatment Works – Further Expansion Phase 1A and Sewerage Works at Ping Che Road	The major construction works under Contract No. DC/2013/09 has been certified as substantially completed by DSD.
DE/2014/01	Provision of Electrical and Mechanical Facilities for Shek Wu Hui Sewage Treatment Works – Further Expansion Phase 1A – Advance Works and Ng Chow South Road Sewage Pumping Station	• Installation of ancillary aeration blowers and associated accessories beside Bioreactor No.1 (BR1).

1.2 Environmental Monitoring and Audit Activities

1.2.1 The environmental monitoring activities under the EM&A programme are summarized in the below table. No Action and Limit Level exceedance of air quality and construction noise monitoring was recorded during the reporting period.

Environmental Environmental Issue Inspection		Occasions	Action Level Exceedance	Limit Level Exceedance
Air Quality	1-hour TSP	30	0	0
Air Quality	24-hour TSP	9	0	0
Construction Noise	LAeq(30min) Daytime	8	0	0

1.3 Environmental Complaint

1.3.1 No environmental complaint, notification of summons or successful prosecutions were received during the reporting period. It is summarized in the below table.

Works Contract	Environmental Complaints	Notification of Summons	Successful Prosecutions	Status / Follow-up Actions
DC/2013/09	0	0	0	N/A
DE/2014/01	0	0	0	N/A

1.4 Site Inspection

1.4.1 Joint site inspections to evaluate the site environmental performance by the RE, the ET and the Contractor were carried out on the following dates during the reporting period.

Contract No. DC/2013/09: No site inspection was carried out in the reporting period Contract No. DE/2014/01: 6, 14, 20 and 27 March 2019

1.4.2 IEC conducted site audit on 14 March 2019. No environmental non-compliance was identified in the reporting period.

1.5 Reporting Changes

1.5.1 The EM&A Programme of Contract No. DC/2013/09 was handed over to the ET of Contract No. DE/2014/01 since August 2018. Thus, the Monthly EM&A Report starting from September 2018 onwards will present the EM&A works undertaken by the ET of Contract No. DE/2014/01.

1.6 Future Key Issues

1.6.1 Key issues to be considered in the next reporting period for the Project are as follow:

Works Contract	Major Construction Works	Potential Pollution Issues	Mitigation Measures	
DC/2013/09	The construction works have been certified as substantially completed by DSD.	N/A	N/A	
DE/2014/01	 Installation of diffusers in Bioreactor No.1 (BR1). Installation of FRP platforms at G/F, MBR Facilities Building. Installation of pipework in Membrane Filtration Tanks. Installation of chemical dosing system in Chemical Rooms. Electrical installation in Bioreactor No.1 (BR1), Membrane Filtration Tanks and MBR Facilities Building. 	 Leakage from chemicals containers Waste accumulation on site 	 Waste should be stored and disposed properly to avoid accumulation and leakage Accumulated waste to be recycled on-site whenever possible 	

April 2019

2. INTRODUCTION

2.1 Background

- 2.1.1 The existing Shek Wu Hui Sewage Treatment Works (SWHSTW) is operated and maintained by the Drainage Services Department (DSD). It provides secondary level treatment to sewage collected from Sheung Shui, Fanling and adjacent areas, with design capacity of 93,000m³/day at ADWF.
- 2.1.2 To cope with the latest population growth and new developments in the catchment, further expansion of SWHSTW is planned to be carried out in three phases, namely Phases 1A, 1B and 2. Further Expansion Phase 1A is to cope with the forecast increase in sewage flow from local developments and extension of village sewerage in Sheung Shui, Fanling and adjacent areas. The scope of the Phase 1A Project comprises the followings:
 - (a) the construction of proposed treatment facilities to increase the treatment capacity of SWHSTW by at least 40,000m³/day with tertiary treatment level, with suitable allowance to cater for a further increase of treatment capacity by 20,000m³/day in Phase 1B; and
 - (b) modification/upgrading of the existing facilities of SWHSTW.
- 2.1.3 To cope with the projected sewage flow buildup and meet the tight implementation programme, Advance Works for SWHSTW Further Expansion Phase 1A (hereinafter referred as "the Project") are proposed to be carried out between 2015 and 2018. The Phase 1A Advance Works comprise a civil works contract and an Electrical & Mechanical (E&M) works contract. The civil works Contract No. DC/2013/09 "Advance Works for Shek Wu Hui Sewage Treatment Works Further Expansion Phase 1A and Sewerage Works at Ping Che Road" is supervised by the Sewerage Projects Division (SPD) of DSD. The E&M works Contract No. DE/2014/01 "Provision of Electrical and Mechanical Facilities for Shek Wu Hui Sewage Treatment Works Advance Works and Ng Chow South Road Sewage Pumping Station" is supervised by the Electrical & Mechanical Projects Division (E&MPD) of DSD.
- 2.1.4 The scope of Phase 1A Advance Works comprises the followings:
 - (a) the conversion of one existing bioreactor (BR1) and two existing final sedimentation tanks (FST1 and FST2) into one membrane bioreactor; and
 - (b) the ancillary works.
- 2.1.5 This Project is a part of designated project under item F.2 of Part 1, Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance. The EIA for the further expansion of SWHSTW Phases 1A, 1B and 2 is covered under the EIA Report of NENT NDAs (Register No. AEIAR-175-2013).
- 2.1.6 An Environment Permit (EP) No. EP-474/2013 for the further expansion of SWHSTW Phases 1A, 1B and 2 was issued by EPD to CEDD on 21 November 2013. On 23 January 2014, Further Environmental Permit (FEP) No. FEP-01/474/2013 was issued by EPD to DSD for the further expansion of SWHSTW Phase 1A works. On 15 February 2018, FEP No. FEP-02/474/2013 was issued by EPD to DSD covering the upgrading works of SWHSTW Phases 1A, 1B and 2.
- 2.1.7 With the issue of FEP No. FEP-02/474/2013, DSD has surrendered FEP No. FEP-01/474/2013 on 15 August 2018 which covering Phase 1A works only.

2.2 Project Programme

Two construction works contracts of the Project, i.e. civil works and E&M works, were commenced in October 2015 and October 2017 respectively. The major construction works under Contract No. DC/2013/09 has been certified as substantially completed by DSD and the remaining work is completed by the end of July 2018. The works of Contract No. DE/2014/01 is completed in early 2019 tentatively. *Table 2.1* summarises the information of the awarded Works Contracts.

Table 2.1 Summary of Awarded Works Contracts					
Works Contract	Description	Construction Start Date	Contractor	Environmental Team	
DC/2013/09	Advance Works for Shek Wu Hui Sewage Treatment Works – Further Expansion Phase 1A and Sewerage Works at Ping Che Road	October 2015	Tsun Yip Waterworks Construction Co Ltd (Tsun Yip)	Action-United Environmental Services & Consulting (AUES)	
DE/2014/01	Provision of Electrical and Mechanical Facilities for Shek Wu Hui Sewage Treatment Works – Further Expansion Phase 1A – Advance Works and Ng Chow South Road Sewage Pumping Station	October 2017	Jardine Engineering Corporation Limited (JEC)	Wellab Limited (Wellab)	

Table 2.1Summary of Awarded Works Contracts

2.3 **Purpose of the Report**

2.3.1 The Environmental Monitoring and Audit (EM&A) programme for Contract No. DC/2013/09 and No. DE/2014/01 commenced in October 2015 and October 2017 respectively. This is the Monthly EM&A Report for the Project which summarises the EM&A works undertaken by the Contractor's ET of Contract No. DE/2014/01 in March 2019 (the reporting period).

2.4 **Project Organization**

Organization structure and contact details of relevant parties with respect to on-site environmental management are shown in *Table 2.2* below.

Table 2.2Key Project Contacts

Table 2.2 Key II	oject Contacts			
Works Contract	Organization	Role	Name	Tel No.
DC/2013/09	DSD	Resident Engineer	Ms. Konica Cheung	2594 7463
	ANewR	Independent	Mr. Adi Lee	2618 2836
	Consulting	Environmental		
	Limited	Checker		
	Tsun Yip	Site Agent	Mr. Ken Wong	9161 9627
		Environmental	Mr. M. T. Ho	9507 9634
		Officer		
	AUES	Environmental	Mr. T. W. Tam	2959 6059
		Team Leader		
DE/2014/01	DSD	Resident Engineer	Mr. Fong Mo	2594 7329
	ANewR	Independent	Mr. Adi Lee	2618 2836
	Consulting	Environmental		
	Limited	Checker		
	JEC	Project Manager	Mr. Kim Hung Lau	2947 1125
		Environmental	Mr. George Ng	2947 1125
		Officer		
	Wellab	Environmental	Dr. Priscilla Choy	2151 2089
		Team Leader		

3. ENVIRONMENTAL MONITORING AND AUDIT

- 3.1 The Project has been divided into two construction works contracts which are covered by EP No. EP-474/2013 and FEP No. FEP-02/474/2013. As per the EP Conditions, EM&A Report for Works Contract No. DE/2014/01 prepared by the Contractor's ET is provided in *Appendix A*.
- 3.2 The EM&A Report provides details of the project information, EM&A requirements, impact monitoring and audit results for the corresponding Contracts.
- 3.3 A summary of the major construction activities undertaken by the respective Contractors of various Works Contracts during the reporting period are presented in *Table 3.1*.

Works	Contract Title	Major Construction Works
Contract		
DC/2013/09	Advance Works for	The major construction works under Contract No.
	Shek Wu Hui Sewage	DC/2013/09 has been certified as substantially completed by
	Treatment Works -	DSD.
	Further Expansion	
	Phase 1A and	
	Sewerage Works at	
	Ping Che Road	
DE/2014/01	Provision of Electrical	• Installation of air pipes for air blowers at 1/F, MBR
	and Mechanical	Facilities Building.
	Facilities for Shek Wu	• Installation of ancillary aeration blowers and
	Hui Sewage Treatment	associated accessories beside Bioreactor No.1 (BR1).
	Works – Further	• Installation of pipework in Bioreactor No.1 (BR1).
	Expansion Phase 1A –	• Installation of permeate pipes at G/F, MBR Facilities
	Advance Works and	Building.
	Ng Chow South Road	• Installation of FRP platforms at B/F, MBR Facilities
	Sewage Pumping	Building.
	Station	• Installation of pipework in Membrane Filtration Tanks.
		• Installation of chemical dosing system in Chemical
		Rooms.
		• Electrical installation in Bioreactor No.1 (BR1) and
		MBR Facilities Building.

 Table 3.1
 Summary of Major Construction Activities in the Reporting Period

- 3.4 As the major construction works under Contract No. DC/2013/09 has been certified as substantially completed by DSD and the remaining work is completed by the end of July 2018, air quality and construction noise monitoring have been handed over to the ET of Contract No. DE/2014/01.
- 3.5 Impact monitoring for air quality and construction noise were conducted in accordance with the Updated EM&A Manual in the reporting period. The monitoring results conducted by the ET of Contract No. DE/2014/01 for this reporting month are summarised in *Tables 3.2* to *3.4*. Details of the monitoring requirements, locations, equipment, methodology and QA/QC procedures are presented in the Monthly EM&A Report of Contract No. DE/2014/01 as provided in *Appendix A*.

3.6 No Action and Limit Level exceedance of air quality and construction noise monitoring was recorded during the reporting period.

Monitoring Station ID	Location	TSP Concentration (mg/m ³)	Action Level (mg/m ³)	Limit Level (mg/m3)	Exceedance due to the Project Construction (Yes/No)
AM1	No. 31 Wai Loi Tsuen	70.8 - 133.0	286	500	No
AM2	Fu Tei Au	65.5 – 128.0	276	500	No

Table 3.2 Summary of 1-Hour TSP Monitoring Results in the Reporting Period

Note:

(1) The environmental monitoring works of the Project were conducted by the Environmental Team of Contract No. DE/2014/01 in accordance with the Updated EM&A Manual.

Table 3.3 Summary of 24-Hour TSP Monitoring Results in the Reporting Period

Monitoring Station ID	Location	TSP Concentration (mg/m ³)	Action Level (mg/m ³)	Limit Level (mg/m3)	Exceedance due to the Project Construction (Yes/No)
AM1a	SWHSTW site boundary	13.5 – 59.9	147	260	No
AM2a	RE's Site Office	45.0 - 74.2	155	260	No

Note:

(1) The environmental monitoring works of the Project were conducted by the Environmental Team of Contract No. DE/2014/01 in accordance with the Updated EM&A Manual.

Table 3.4 Summary of Construction Noise Monitoring Results in the Reporting Period

Monitoring Station ID	Location	Noise Level (LAeq,30mins, dB(A))	Action Level (dB(A))	Limit Level (dB(A))	Exceedance due to the Project Construction (Yes/No)
NM1	No. 31 Wai Loi Tsuen	59.8 - 62.7	When one documented	75	No
NM2	Fu Tei Au	48.7 - 61.3	complaint is received	75	No

Note:

(1) The environmental monitoring works of the Project were conducted by the Environmental Team of Contract No. DE/2014/01 in accordance with the Updated EM&A Manual.

- 3.7 No environmental complaint, notification of summons or successful prosecutions were received during the reporting period. Log for environmental complaints, notification of summons and successful prosecutions are provided in *Table 3.5*.
- 3.8 Regular site inspections were conducted by the Contractor's ET on a weekly basis to check the implementation of environmental pollution control and mitigation measures for the Project. No non-compliance was identified in the reporting period. The site inspection for Contract No. DC/2013/09 was ceased upon received EPD's reply letter on 24 August 2018. Joint site inspections for Contract No. DE/2014/01 were carried out on 6, 14, 20 and 27 March 2019 during the reporting period. In addition, IEC conducted site audit on 14 March 2019. No environmental non-compliance was identified in the reporting period.

Table 3.5Log for Environmental Complaints, Notification of Summons and Successful
Prosecutions for the Reporting Month

Works Contract	Environmental Complaints	Notification of Summons	Successful Prosecutions
DC/2013/09	0	0	0
DE/2014/01	0	0	0

4. WASTE MANAGEMENT

- 4.1 Waste management was carried out by on-site Environmental Officer or an Environmental Supervisor of the Contractor from time to time.
- 4.2 The quantities of waste for disposal in this Reporting Period are summarized in *Tables 4.1* and *4.2* and the Monthly Summary Waste Flow Table of Contract No. DE/2014/01 is presented in the EM&A Report as provided in *Appendix A*. Whenever possible, materials were reused on-site as far as practicable.

Table 4.1	Summary of Quantities of Inert C&D Materials and C&D Wastes for Contract No.
	DC/2013/09

Type of Waste		Quantity		Disposal
	Prior	Reporting	Cumulated	Location
	Months	Month	Cumulated	
Total C&D Materials (Inert) (in '000m ³)	24.00	0	24.00	
Hard Rock and Large Broken Concrete	2.26	0	2.26	
(Inert) (in 000m^3)	2.20	0	2.20	
Reused in this Project (Inert) (in '000m ³)	3.67	0	3.67	
Reused in other Projects (Inert) (in '000m ³)	2.23	0	2.23	
Disposal as Public Fill (Inert) (in '000m ³)	15.93	0	15.93	
Metals (in '000kg)	142.00	0	142.00	
Paper / Cardboard Packing (in '000kg)	0.07	0	0.07	
Plastics (in '000kg)	0	0	0	
Chemical Wastes (in '000kg)	0	0	0	
General Refuses (in '000m ³)	1.19	0	1.19	

Table 4.2Summary of Quantities of Inert C&D Materials and C&D Wastes for Contract No.
DE/2014/01

Type of Waste		Quantity		Disposal
	Prior	Reporting	Cumulated	Location
	Months	Month	Cumulateu	
Total C&D Materials (Inert) (in '000m ³)	0	0	0	
Hard Rock and Large Broken Concrete (Inert) (in '000m ³)	0	0	0	
Reused in this Project (Inert) (in '000m ³)	0	0	0	
Reused in other Projects (Inert) (in '000m ³)	0	0	0	
Disposal as Public Fill (Inert) (in '000m ³)	0	0	0	
Metals (in '000kg)	0	0	0	
Paper / Cardboard Packing (in '000kg)	0.114	0.028	0.142	Lau Choi Kee Papers Co.Ltd.
Plastics (in '000kg)	0	0	0	
Chemical Wastes (in '000kg)	0	0	0	
General Refuses (in tonne)	62.48	3.99	66.47	NENT

5. IMPLEMENTATION STATUS ON THE ENVIRONMENTAL PROTECTION REQUIREMENTS

5.1 The Contractor has implemented all mitigation measures and requirements as stated in the EIA Reports, EM&A Manuals, EP No. EP-474/2013 and FEP No. FEP-02/474/2013. Summary of the relevant permits, licenses, and/or notifications on environmental protection for this Project in this reporting period are summarised in *Tables 5.1* and *5.2*.

Table 5.1 Summary of Environmental Licenses and Permits for Contract No. DC/2013/09

Item	Valid License/Permit	License/Permit Number
1	Further Environmental Permit	FEP-02/474/2013
1		(Valid from 15 February 2018)
2	Air Pollution Control (Construction Dust) Regulation	N/A
3	Chemical Waste Producer Registration	WPN5213-624-T3148-04
4	Water Pollution Control Ordinance	WT00022503-2015
5	Billing Account for Disposal of Construction Waste	Account Number: 7022898

Table 5.2 Summary of Environmental Licenses and Permits for Contract No. DE/2014/01

Item	Valid License/Permit	License/Permit Number
1	Further Environmental Permit	FEP-02/474/2013
1	Futurei Environmentai Fermit	(Valid from 15 February 2018)
2	Chemical Waste Producer Registration	WPN5213-624-T3685-01
3	Billing Account for Disposal of Construction Waste	Account Number: 7024165

6. CONCLUSION AND RECOMMENDATION

6.1 Conclusion

- 6.1.1 This is the Monthly EM&A Report for the Project which summarises the EM&A works undertaken by the Contractor's ET of Contract No. DE/2014/01 in March 2019 (the reporting period).
- 6.1.2 The EM&A Programme of Contract No. DC/2013/09 was handed over to the ET of Contract No. DE/2014/01 since August 2018. Thus, the Monthly EM&A Report starting from September 2018 onwards will present the EM&A works undertaken by the ET of Contract No. DE/2014/01.
- 6.1.3 No Action and Limit Level exceedance of 1-hour and 24-hour TSP monitoring was recorded during the reporting period.
- 6.1.4 No Action and Limit Level exceedance of construction noise monitoring was recorded during the reporting period.
- 6.1.5 Joint site inspections to evaluate the site environmental performance by the RE, the ET and the Contractors were carried out on the following dates during the reporting period.

Contract No. DC/2013/09: No site inspection was carried out in the reporting period Contract No. DE/2014/01: 6, 14, 20 and 27 March 2019

- 6.1.6 IEC conducted site audit on 14 March 2019. No environmental non-compliance was identified in the reporting period.
- 6.1.7 No documented complaint, notification of summons or successful prosecution was received during the reporting period.

6.2 Recommendation

6.2.1 The following recommendations were made for future reporting periods:

Air Quality

- To regularly maintain the machinery and vehicles on site;
- To follow up any exceedance caused by the construction works;
- Non-Road Mobile Machinery (NRMM) labels must be demonstrated on the registered equipment for inspection.

Noise

- To inspect the noise source 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.
- To provide adequate lubricant on mechanical equipment to reduce frictional noise; and
- To well maintain the mechanical equipment/ machineries to avoid abnormal noise nuisance.

Water Quality

- To identify any discharge of wastewater from the construction site;
- To avoid blockage of U channel and drainage system by sediment;
- To avoid water accumulation on site and carry out larviciding against mosquito breeding for stagnant water when mosquito larvae are observed; and
- To avoid spoilage of run-off from construction site to public area.
- The discharge quality must meet the requirements specified in the discharge license.

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 and chemical containers on site;
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the equipment;
- To avoid improper handling or storage of oil drum on site.

APPENDIX A

MONTHLY EM&A REPORT FOR CONTRACT NO. DE/2014/01

Jardine Engineering Corporation, Limited

Contract No. DE/2014/01 Provision of Electrical and Mechanical Facilities for Shek Wu Hui Sewage Treatment Works – Further Expansion Phase 1A – Advance Works and Ng Chow South Road Sewage Pumping Station

> Monthly Environmental Monitoring and Audit Report March 2019

> > (Version 1.0)

· · · · · · · · · · · · · · · · · · ·	Certified By	(Environmental Team Leader)
REMARKS:	REMARKS:	

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

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

WELLAB LTD

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ABBREVIATION AND ACRONYM

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

EXECUTIVE SUMMARY

Introduction

- 1. This is the 18th Monthly Environmental Monitoring and Audit (EM&A) Report prepared by Wellab Limited for DSD Contract No. DE/2014/01 "Provision of Electrical and Mechanical Facilities for Shek Wu Hui Sewage Treatment Works Further Expansion Phase 1A Advance Works and Ng Chow South Road Sewage Pumping Station" (The Project) which documents the key information of EM&A and environmental monitoring works undertaken by other Contract at the Shek Wu Hui Sewage Treatment Works under Phase 1A with Environmental Permit (Permit No. FEP-02/474/2013).
- 2. The site activities undertaken in the reporting month included:
 - Installation of air pipes for air blowers at 1/F, MBR Facilities Building.
 - Installation of ancillary aeration blowers and associated accessories beside Bioreactor No.1 (BR1).
 - Installation of pipework in Bioreactor No.1 (BR1).
 - Installation of permeate pipes at G/F, MBR Facilities Building.
 - Installation of FRP platforms at B/F, MBR Facilities Building.
 - Installation of pipework in Membrane Filtration Tanks.
 - Installation of chemical dosing system in Chemical Rooms.
 - Electrical installation in Bioreactor No.1 (BR1) and MBR Facilities Building.

Environmental Monitoring Works

- 3. From August 2018 onward, the environmental monitoring works of the Project were conducted by the ET of Contract No. DE/2014/01, which took over all the monitoring stations from Contract No. DC/2013/09 under the same FEP. The impact monitoring methodology conducted by DE/2014/01 will follow the requirements of the Updated EM&A Manual for Shek Wu Hui Sewage Treatment Works.
- 4. Site audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.
- 5. Summary of the non-compliance of the reporting month is tabulated in **Table I**.

Table I Summary Table for Non-compliance (Exceedances) Recorded in the Reporting Month

	and Manitaring		No. of		No. of Exceedance		
Monitored By	Monitoring Station	Parameter	Exceed Action	lance Limit	Due to the Action	e Project Limit	Action Taken
Бу	Station		Level	Level	Level	Linit Level	Таксп
	AM1	1-hr TSP	0	0	0	0	N/A
	AM1a	24-hr TSP	0	0	0	0	N/A
DE/2014/01	AM2	1-hr TSP	0	0	0	0	N/A
DE/2014/01	AM2a	24-hr TSP	0	0	0	0	N/A
	NM1	Noise	0	0	0	0	N/A
	NM2	noise	0	0	0	0	N/A

1-hour TSP Monitoring

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

24-hour TSP Monitoring

- 7. 24-hour TSP monitoring at AM2a on 7 and 13 March 2019 was cancelled due to power failure and technical problem. The monitoring was resumed on 20 March 2019.
- 8. 24-hour TSP monitoring at AM2a on 28 March 2019 was cancelled due to power failure and technical problem. The monitoring will be resumed on 1 April 2019.
- 9. No Action/Limit Level exceedance was recorded.

Construction Noise

10. All construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Environmental Licenses and Permits

11. Licenses/Permits granted to Shek Wu Hui Sewage Treatment Works - Further Expansion Phase 1A include the Environmental Permit (EP no. FEP-02/474/2013); Registered as a Chemical Waste Producer and Billing account for Disposal of Construction Waste for the Project.

Environmental Mitigation Implementation Schedule

12. According to the Updated EM&A Manual, air quality, noise and waste management would be the key environmental issues and mitigation measures shall be implemented during the construction phase. Details of the implementation of mitigation measures are provided in the **Appendix J**.

Key Information in the Reporting Month

13. Summary of key information in the reporting month is tabulated in Table II

Table II Summary Table for Key Information in the Reporting Month

Event	Ever	nt Details	Action Taken	Status	Remark
Event	Number	Nature	ACTION TAKEN	Status	
Complaint received	0		N/A	N/A	
Reporting Changes					
Notifications of any summons & prosecutions received	0		N/A	N/A	

Site Inspection Conducted by Government Department

14. No site inspection for Contract DE/2014/01 was conducted by Government Department in the reporting month.

Summary of Complaints, Prosecutions, Reporting Changes and Notification of Summons

- 15. No environmental complaint was received during the reporting period. No prosecution, reporting changes and notification of summons were received or reported since the commencement of the Project.
- 16. There were no environmental complaint received since the commencement of the Project. The Complaint Log is presented in **Appendix K**.

Future Key Issues

17. Key issues to be considered in the coming month for the Contract include:

- Leakage from chemicals containers.
- Waste accumulation on site.

1. INTRODUCTION

Background

- 1.1 The Project 'Provision of Electrical and Mechanical Facilities for Shek Wu Hui Sewage Treatment Works – Further Expansion Phase 1A – Advance Works and Ng Chow South Road Sewage Pumping Station' under Contract No: DE/2014/01 mainly comprises the Design, manufacture, supply, delivery, installation, inspection, testing and commissioning of E&M installations for the Advance Works in the SWHSTW. The general location plan of the Project is shown in **Figure 1**.
- 1.2 The Project is under North East New Territories New Development Areas and is part of the designated project with Register No. : AEIAR-175/2013. The current works under the Project and other Contracts at SWHSTW are covered by the Environmental Permit (Permit No. FEP-02/474/2013), which was issued on 15th February 2018 by the Environmental Protection Department (hereinafter called EPD) to the Drainage Services Department (hereinafter called the DSD) as the Permit Holder.
- 1.3 The environmental monitoring works on air quality and noise were covered by the ET of Contract DE/2014/01 for the Project.
- 1.4 The Jardine Engineering Corporation, Limited was commissioned by the DSD to undertake the construction of the Contract No. DE/2014/01 "Provision of Electrical and Mechanical Facilities for Shek Wu Hui Sewage Treatment Works Further Expansion Phase 1A Advance Works and Ng Chow South Road Sewage Pumping Station".
- 1.5 The site activities undertaken in the reporting month included:
 - Installation of air pipes for air blowers at 1/F, MBR Facilities Building.
 - Installation of ancillary aeration blowers and associated accessories beside Bioreactor No.1 (BR1).
 - Installation of pipework in Bioreactor No.1 (BR1).
 - Installation of permeate pipes at G/F, MBR Facilities Building.
 - Installation of FRP platforms at B/F, MBR Facilities Building.
 - Installation of pipework in Membrane Filtration Tanks.
 - Installation of chemical dosing system in Chemical Rooms.
 - Electrical installation in Bioreactor No.1 (BR1) and MBR Facilities Building.
- 1.6 Wellab Limited was commissioned and appointed by The Jardine Engineering Corporation Limited as the Environmental Team (ET) of Contract No. DE/2014/01 under Condition 2.1 of the FEP. The Environmental Monitoring and Audit (EM&A) works were conducted and reported during the reporting month according to the Updated EM&A Manual of this designated project.
- 1.7 This is the monthly EM&A report summarizing the EM&A works conducted for the Project in March 2019.

Project Organizations

1.8 The contacts of the Project are shown in **Table 1.1** and the Project Organization Chart is shown in **Figure 4**.

Table 1.1 Key Project Contacts					
Party	Role	Name	Position	Phone No.	
Drainage Service Department	Resident Site Engineer	Mr. Fong Mo	Resident Engineer	2594 7329	
Wellab	Environmental Team	Dr. Priscilla Choy	ET Leader	2151 2089	
ANewR	Independent Environmental Checker	Mr. Adi Lee	Independent Environmental Checker	2618 2836	
The Jardine Engineering	Contractor	Mr. Kim Hung Lau	Project Manager	2947 1125	
Corporation, Limited	Conductor	Mr. George Ng	Environmental Officer	2947 1125	

Summary of EM&A Requirements

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

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, AM1, AM1a, AM2 and AM2a were selected for impact dust monitoring for the Project. **Table 2.1** describes the air quality monitoring locations and **Figure 2** indicated their positions in relation to the site boundary.

 Table 2.1
 Locations for Air Quality Monitoring

Monitoring Station	Monitored by	Location of Measurement
AM1		No. 31 Wai Loi Tsuen
AM2	DE/2014/01	Fu Tei Au
AM1a	DE/2014/01	SWHSTW site boundary
AM2a]	RE's Site Office

Monitoring Parameters, Frequency and Duration

2.3 **Table 2.2** 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 2.2
 Impact Dust Monitoring Parameters, Frequency and Duration

Monitoring Station	Parameter	Period	Frequency
AM1 AM2	1-hour TSP	0700-1900 hrs	three times every 6 days
AM1a AM2a	24-hour TSP	0000-2400 hrs	once every 6 days

Monitoring Equipment

2.4 **Table 2.3** summarizes the equipment used in the impact air quality monitoring programme. The high volume sampler for 24-hour TSP monitoring at AM1 has been relocated to the alterative monitoring station of AM1a. The copies of their calibration certificates is shown in **Appendix C**.

Table 2.3 Summary of Monitoring Equipment			
Equipment	Model and Make		
HVS	Tisch Model no. TE-5170		
Handheld Particle Counter	Met One Instruments Model no. AEROCET-831		
Calibrator	Tisch Model TE-5025A		

Table 2.3 Summary of Monitoring Equipment

Monitoring Methodology and QA/QC Procedure

- 2.5 The monitoring methodology and QA/QC procedures for impact air quality monitoring are presented as follow:
- 2.6 The general weather conditions (i.e. sunny, cloudy or rainy) were recorded by the field staff's observation on the monitoring day. The wind data is adopted from the website of Hong Kong Observatory (Ta Kwu Ling weather stations).

1 Hour TSP Monitoring Procedures with Laser Dust Monitor

- 2.7 The measuring procedures of the 1-hour dust meters were in accordance with the Manufacturer's Instruction Manual as follows:
 - The 1-hour dust meter is placed at least 1.3 meters above ground.
 - Set POWER to "ON" and make sure that the battery level will not flash or in low level.
 - Allow the instrument to stand for about 3 minutes and then the cap of the air sampling inlet will be released.
 - Push the knob at MEASURE position.
 - Set time/mode setting to [BG] by pushing the time setting switch. Then, start the background measurement by pushing the start/stop switch once. It will take 6 sec. to complete the background measurement.
 - Push the time setting switch to change the time setting display to [MANUAL] at the bottom left of the liquid crystal display. Finally, push the start/stop switch to stop the measuring after 1 hour sampling.
 - Information such as sampling date, time, count value and site condition will be recorded during the monitoring period.

Maintenance/Calibration

- 2.8 The following maintenance/calibration was required for the direct dust meters:
 - Check the meter at a 3-month interval and calibrate the meter at a 1-year interval throughout all stages of the air quality monitoring.

24 Hours TSP Monitoring with High Volume Sampler

Instrumentation

2.9 High Volume Sampler (HVS) completed with appropriate sampling inlets was employed for air quality monitoring. Each sampler comprised of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complies with that

required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).

- 2.10 The following guidelines were adopted during the installation of HVS:
 - Sufficient support was provided to secure the samplers against gusty wind.
 - No two samplers were placed less than 2 meters apart.
 - The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
 - A minimum of 2 meters of separation from walls, parapets and penthouses was required for rooftop samples.
 - A minimum of 2 meters separation from any supporting structure, measured horizontally was required.
 - No furnaces or incineration flues were nearby.
 - Airflow around the sampler was unrestricted.
 - The samplers were more than 20 meters from the drip line.
 - Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring.

Filer Preparation

- 2.11 Fiberglass filters, which have a collection efficiency of larger than 99% of particles of 0.3 µm in diameter, were used. A HOKLAS accredited laboratory, Wellab Ltd., was responsible for the preparation of 24-hr conditioned and pre-weighed filter papers for Wellab's monitoring team.
- 2.12 All filters, which were prepared by Wellab Ltd., were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ± 3 °C; the relative humidity (RH) was < 50% and not variable by more than $\pm 5\%$. A convenient working RH was 40%. Wellab Ltd. has a comprehensive quality assurance and quality control programme.

Operating/Analytical Procedures

- 2.13 Operating/analytical procedures for the air quality monitoring were highlighted as follows.
 - Prior to the commencement of the dust sampling, the flow rate of the HVS was properly set (between 1.1 m3/min. and 1.4 m3/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.
 - The power supply was checked to ensure the sampler worked properly.
 - On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air quality monitoring station.
 - The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centered with the stamped number upwards, on a supporting screen.
 - The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.

- The shelter lid was closed and secured with the aluminum strip.
- The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- After sampling, the filter was removed and sent to the Wellab Ltd. for weighing. The elapsed time was also recorded.
- Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than ± 3 °C; the relative humidity (RH) should be < 50% and not vary by more than ± 5 %. A convenient working RH is 40%. Weighing results were returned to Wellab for further analysis of TSP concentrations collected by each filter.

Maintenance and Calibration

- 2.14 The high volume motors and their accessories will be properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
- 2.15 All HVSs are calibrated (five point calibration) using TE-5025A Calibration Kit prior to the commencement of the impact monitoring. The five-point calibration would be carried out every two months

Results and Observations

2.16 **Table 2.4** summarizes the monitoring results at AM1, AM1a, AM2 and AM2a in the reporting month.

Air Quality Monitoring Station	Average µg/m ³	Range µg/m³	Action Level µg/m ³	Limit Level µg/m ³	
	1 hour TSP				
AM1	100.8	70.8 - 133.0	286	500	
AM2	91.4	65.5 - 128.0	276	500	
	24 hours TSP				
AM1a	39.1	13.5 - 59.9	147	260	
AM2a	56.5	45.0 - 74.2	155	200	

Table 2.4Summary of 1-hour and 24-hour TSP Monitoring Result in the
Reporting Period

- 2.17 The monitoring data and graphical presentations for 1-hour and 24-hour TSP monitoring results are shown in **Appendix D**.
- 2.18 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 F.**
- 2.19 The monitoring works for 1-hour TSP monitoring were conducted as scheduled in the reporting month.
- 2.20 24-hour TSP monitoring at AM2a on 7 and 13 March 2019 was cancelled due to power

failure and technical problem. The monitoring was resumed on 20 March 2019.

- 2.21 24-hour TSP monitoring at AM2a on 28 March 2019 was cancelled due to power failure and technical problem. The monitoring will be resumed on 1 April 2019..
- 2.22 Action/Limit Level exceedance was not recorded during the reporting period. Summary of exceedance is presented in **Appendix F.**
- 2.23 According to field observations during site inspection, identifiable dust emission sources near the monitoring stations were vehicles movement on Chuk Wan Street.

3. NOISE

Monitoring Requirements

3.1 Two noise monitoring station, namely NM1 and NM2 were designated in the Updated 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 the designated monitoring stations as listed in Table3.1 and Figure 3 indicated their positions in relation to the site boundary

 Table 3.1
 Location of Noise Monitoring Stations

Monitoring Station	Monitored By	Location of Measurement	
NM1	DE/2014/01	No. 31 Wai Loi Tsuen	
NM2	DE/2014/01	Fu Tei Au	

Monitoring Parameters, Frequency and Duration

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

Table 3.2	Noise Monitoring Parameters, Frequency and Duration
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Monitoring Stations	Parameter	Period	Frequency
NM1	L10(30 min.) dB(A) L90(30 min.) dB(A)	0700-1900 hrs on	Once per week
NM2	$L_{eq}(30 \text{ min.}) dB(A)$	normal weekdays	Once per week

Monitoring Equipment

3.4 **Table 3.3** summarizes the noise quality monitoring equipment and **Appendix C** shows the copies of calibration certificates for the equipment used during the reporting period.

Table 3.3Noise Monitoring Equipment

Equipment	Model
Integrating Sound Level Meter	SVANTEK, Model no: SVAN 957 BSWA, Model no: BSWA 801
Calibrator	SVANTEK, Model no: SV 30A B&K Model no.: 4231

Monitoring Methodology and QA/QC Procedures

- 3.5 The monitoring methodology and QA/QC procedure are presented as follow:
- 3.6 General weather conditions (i.e. sunny, cloudy or rainy) were recorded by field observation during equipment checking. Field Monitoring

- 3.7 The monitoring procedures are as follows:
 - The Sound Level Meter was set on a tripod at a height of 1.2 m above the ground. All monitoring stations were conducted at a distance of 1 m away from the exterior of the building façade.
 - The battery condition was checked to ensure good functioning of the meter.
 - Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
 - Frequency weighting : A
 - Time weighting : Fast
 - Measurement time : 30 minutes
 - Noise monitoring was carried out 30 minutes during on the monitoring days. Monitoring data was recorded and stored automatically within the sound level meter system. At the end of the monitoring period, noise levels in term of L_{eq} , L_{90} and L_{10} were recorded.
 - All the monitoring data within the sound level meter system was downloaded through the computer software, and all these data was checked and reviewed within the computer.
 - Since no wind or gusts shall exceed 5m/s or 10m/s respectively during the noise monitoring, a portable anemometer was used to check the wind speed at the monitoring stations. Weather conditions such as fog and rain were avoided during the monitoring.

Maintenance and Calibration

- 3.8 Maintenance and Calibration procedures were as follows:
 - The microphone head of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.
 - Prior to and after noise measurement, the meter was calibrated using the calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement is more than 1.0 dB, the measurement was considered invalid and repeat of noise measurement was required after re-calibration or repair of the equipment.
 - The sound level meter and calibrator were checked and calibrated at yearly intervals.

Results and Observations

3.9 **Table 3.4** summarizes the noise monitoring results in the reporting period.

 Table 3.4
 Summary the Noise Monitoring Results in Reporting Period

0700-1900 hrs. during weekdays				
Noise Monitoring StationRange, dB(A), Leq(30 min.)Limit Level, dB(A)				
NM1	59.8 - 62.7	75.0		
NM2	48.7 - 61.3	75.0		

- 3.10 The monitoring results and graphical presentations can be referred to **Appendix E**.
- 3.11 No Action/Limit Level exceedance was recorded in the reporting month. Summary of

exceedance is presented in Appendix F.

3.12 The major noise source identified at the designated noise monitoring stations was vehicles movement on Chuk Wan Street.

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 Project site. The summaries of site audits are attached in **Appendix G**.
- 4.2 Site audits were conducted on 6, 14, 20 and 27 March 2019 by ET after the commencement of construction works for the Contract. A joint site audit with the representative of IEC was carried out on 14 March 2019. The details of observations during site audit can refer to **Table 4.1**.

Implementation Status of Environmental Mitigation Measures

- 4.3 Details of the implementation of mitigation measures are provided in the **Appendix J.**
- 4.4 During the weekly environmental site inspections in the reporting period, no nonconformance was identified. The observations of the site audit for the Projects are summarized in **Table 4.1**.

Table 4.1 Observations of Site Audit						
Parameters	Date	Ref. No	Observations	Follow Up Action		
Water Quality	N/A	N/A				
Air Quality	N/A	N/A				
Noise	N/A	N/A				
Waste/Chemical Management	06/03/2019	190306-R01	General refuse/construction waste should be disposed properly.	General refuse/construction waste was removed on 14 Mar 2019.		
	20/03/2019	190320-R01	General refuse/construction waste should be disposed properly.	General refuse/construction waste was removed on 27 Mar 2019.		
Permit/ Licenses	N/A	N/A				

Table 4.1Observations of Site Audit

Review of Environmental Monitoring Procedures

4.5 The monitoring works conducted by Contract No. DE/2014/01 were reviewed at a regular basis to ensure the monitoring procedures were carried out properly.

Status of Environmental Licensing and Permitting

4.6 All permits/licenses obtained for the Contract DE/2014/01 are summarized in **Table 4.2**.

Table 4.2 Summary of Environmental Licensing and Permit Status

Permit No.	Valid Period			G4 4		
	From	То	Details	Status		
Environmental Permit						

D 4 N	Valid P	eriod	– Details Sta	
Permit No.	From	То		
FEP-02/474/2013	15/2/2018	N/A	The FEP was approved on 15/2/2018	Valid
Registered Chem	ical Waste Pr	oducer		
WPN5213-624- T3685-01	3/7/2017	N/A	The application was approved on 3/7/2017	Valid
Billing Account for Disposal of Construction Waste				
A/C No.7024165	4/2/2016	N/A	The application was approved on 4/2/2016	Valid

Status of Waste Management

4.7 The amount of wastes generated by the activities of the Project in the reporting month is shown in **Appendix H** and **Table 4.3**.

Table 4.3Quantities of Waste Generated from the Reporting Month

Type of waste		Quantity	Disposal Location
C&D Materials (inert)		$0 m^3$	-
C&D Materials	General Refuse	3.99 tonne	NENT
(non-inert)	Chemical Waste	0 <i>kg</i>	-
	Paper/ cardboard	28 kg	Lau Choi Kee Papers Co. Ltd (35 Po Wan Road, Sheung Shui, NT)
	Plastics	0 <i>kg</i>	-
	Metals	0 kg	-

Implementation Status of Event Action Plans

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

<u>1-hr TSP</u>

4.9 No Action/Limit Level exceedance was recorded.

24-hr TSP

4.10 No Action/Limit Level exceedance was recorded.

Construction Noise

4.11 No Action/Limit Level exceedance was recorded.

Landscape and Visual

4.12 No non-compliance was recorded.

Site Inspection Conducted by Government Department

4.13 No site inspection for Contract DE/2014/01 was conducted by Government Department in the reporting month.

Summary of Complaints, Prosecutions, Reporting Changes and Notification of Summons

4.14 No environmental complaint, prosecution, reporting changes and notification of summons were received or reported since the commencement of the Project. There were no environmental complaint received since the commencement of the Project. The Complaint Log is presented in **Appendix K.**

5. FUTURE KEY ISSUES

Key Issues for the Coming Month

5.1 Key issues to be considered in the coming month for the Contract include:

Table 5.1 Future Key Issue for the next Reporting Month

 Installation of diffusers in Bioreactor No.1 (BR1). Installation of FRP platforms at G/F, MBR Facilities Building. Installation of pipework in Membrane Filtration Tanks. Installation of chemical dosing system in Chemical Rooms. Electrical installation in Bioreactor No.1 (BR1), Leakage from chemicals containers. Leakage from chemicals containers. Waste should be stored and disposed properly to avoid accumulation and leakage. Accumulated waste to be recycled on-site whenever possible. 	Major Construction Works	Potential Pollution Issues	Mitigation Measures
Membrane Filtration Tanks and MBR Facilities Building.	 Bioreactor No.1 (BR1). Installation of FRP platforms at G/F, MBR Facilities Building. Installation of pipework in Membrane Filtration Tanks. Installation of chemical dosing system in Chemical Rooms. Electrical installation in Bioreactor No.1 (BR1), Membrane Filtration Tanks and 	containers.Waste accumulation on	and disposed properly to avoid accumulation and leakage.Accumulated waste to be recycled on-site

Monitoring Schedule for the Next Reporting Period

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

Construction Program for the Next Reporting Period

5.3 The tentative construction program is provided in **Appendix L.**

6. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

6.1 Environmental monitoring and audit works were performed in the reporting month for the Project. The results were checked and reviewed by the ET of Contract DE/2014/01.

1-hour TSP Monitoring

6.2 The monitoring works for the Project were covered by the ET of Contract DE/2014/01. 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 The monitoring works for the Project were covered by the ET of Contract DE/2014/01. No Action/Limit Level exceedance was recorded during the 24-hour TSP monitoring.
- 6.4 24-hour TSP monitoring at AM2a on 7 and 13 March 2019 was cancelled due to power failure and technical problem. The monitoring was resumed on 20 March 2019.
- 6.5 24-hour TSP monitoring at AM2a on 28 March 2019 was cancelled due to power failure and technical problem. The monitoring will be resumed on 1 April 2019.

Construction Noise Monitoring

6.6 The monitoring works for the Project were covered by the ET of Contract DE/2014/01. All Construction Noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Environmental Audit

6.7 Weekly environmental site audits were conducted by the ET of Contract No. DE/2014/01 at the site area during the reporting month. No non-compliance was recorded.

Complaint, notification of summons and Prosecution

- 6.8 No environmental complaint was received in the reporting month
- 6.9 No notification of summons and prosecution were received in the reporting month.

Recommendations for Future Reporting Months:

6.10 The following recommendations were made for future reporting months:

Air Quality

- To regularly maintain the machinery and vehicles on site;
- To follow up any exceedance caused by the construction works;
- Non-Road Mobile Machinery (NRMM) labels must be demonstrated on the registered equipment for inspection.

Noise

- To inspect the noise source 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.
- To provide adequate lubricant on mechanical equipment to reduce frictional noise; and
- To well maintain the mechanical equipment/ machineries to avoid abnormal noise nuisance.

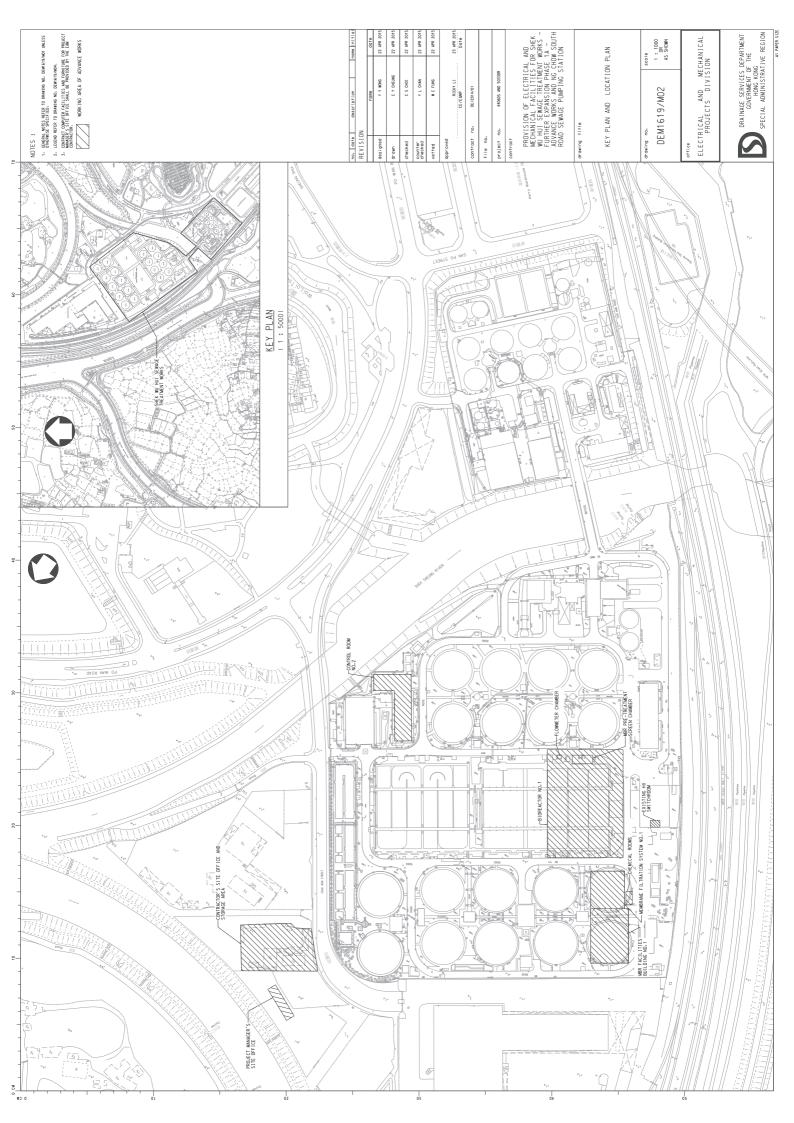
Water Quality

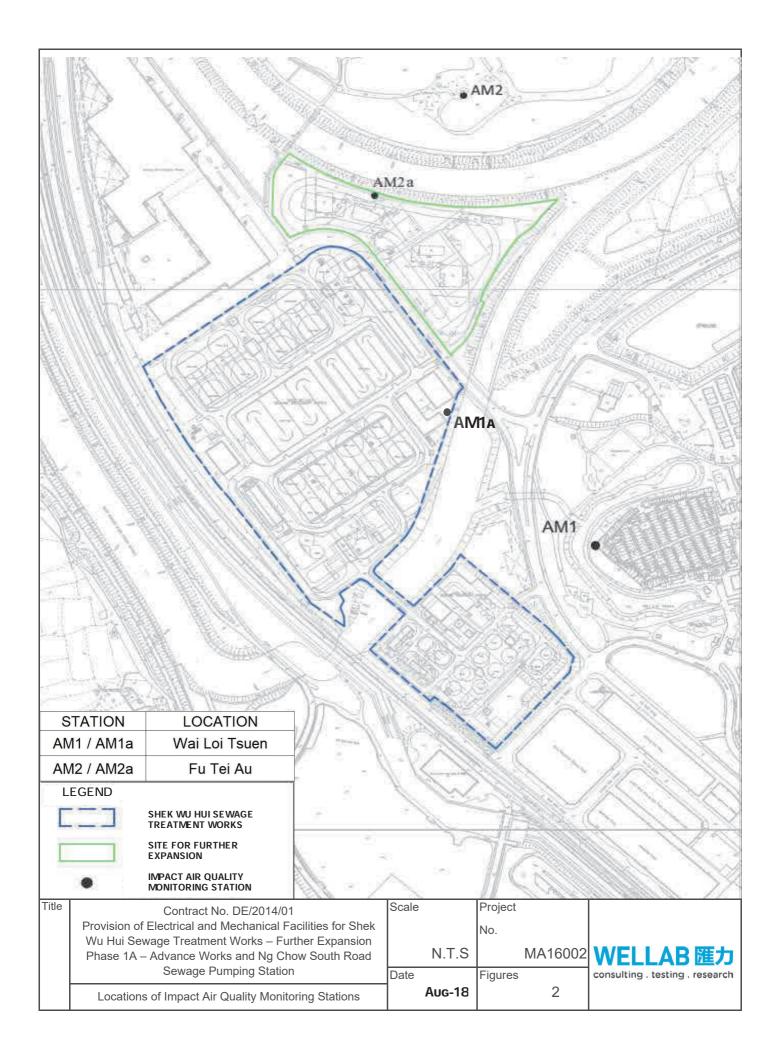
- To identify any discharge of wastewater from the construction site;
- To avoid blockage of U channel and drainage system by sediment;
- To avoid water accumulation on site and carry out larviciding against mosquito breeding for stagnant water when mosquito larvae are observed; and
- To avoid spoilage of run-off from construction site to public area.
- The discharge quality must meet the requirements specified in the discharge licence.

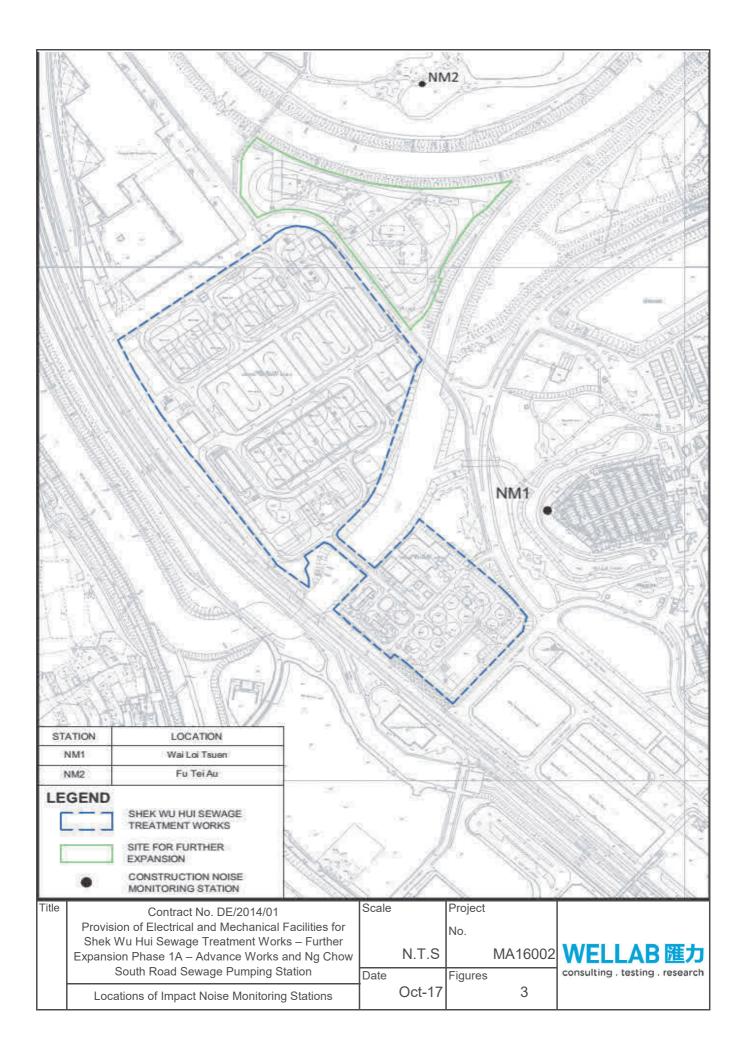
Waste/Chemical Management

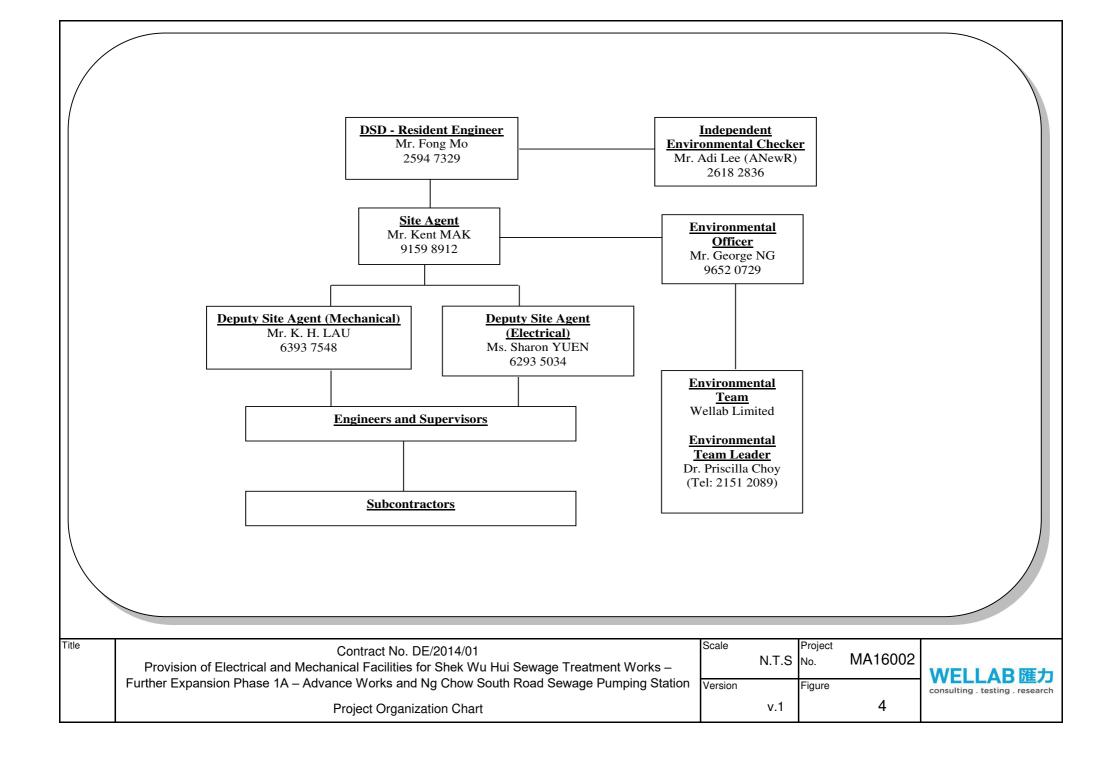
- To provide proper rubbish bins / skips for waste collection;
- To check for any accumulation of wasted materials or rubbish on site;
- To provide proper storage area or drip trays for oil and chemical containers on site;
- To avoid any discharge or accidental spillage of chemical waste or oil directly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

FIGURES









APPENDIX A ACTION AND LIMIT LEVELS FOR AIR QUALITY AND NOISE QUALITY Jardine Engineering Corporation Ltd.

Appendix A Action and Limit Levels

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

Monitoring Stations	Action Le	vel (µg/m ³)	Limit Level (µg/m ³)		
Monitoring Stations	1-hour	24-hour	1-hour	24-hour	
AM1	286	N/A	500	N/A	
AM1a	N/A	147	N/A	260	
AM2	276	N/A	500	N/A	
AM2a	N/A	155	N/A	260	

Table A-2 Action and Limit Level for Construction Noise

Monitoring Stations	Time Period	Action Level	Limit Level in dB(A)
NM1	0700 1000 hours on normal wooldays	When one	>75*
NM2	0700-1900 hours on normal weekdays	documented complaint is received	10

Note: (*) Reduces to 70 dB(A) for schools and 65 dB(A) during the school examination periods.

APPENDIX B ENVIRONMENTAL MONITORING SCHEDULES

Contract No. DE/2014/01 Provision of Electrical and Mechanical Facilities for Shek Wu Hui Sewage Treatment Works Impact Air and Noise Monitoring Schedule for March 2019

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		ž			1-Mar	2-Mar
					24 hr TSP	
3-Mar	4-Mar	5-Mar	6-Mar	7-Mar	8-Mar	9-Mar
	1 hr TSP X3				1 hr TSP X3	
					Noise	
				24 hr TSP (AM2a cancelled)		
10-Mar	11-Mar	12-Mar	13-Mar	14-Mar	15-Mar	16-Mar
10-Mai	11-141	12-Mai	15-141	14-141	15-141	10-14141
				1 hr TSP X3		
				Noise		
			24 hr TSP (AM2a cancelled)			
			24 III 151 (Alviza cancencu)			
17-Mar	18-Mar	19-Mar	20-Mar	21-Mar	22-Mar	23-Mar
			1 hr TSP X3			
			Noise			
			TOBC			
		24 hr TSP (AM1a)	24 hr TSP (AM2a)			
24-Mar	25-Mar	26-Mar	27-Mar	28-Mar	29-Mar	30-Mar
		1 hr TSP X3				
		Noise				
	24 hr TSP			24 hr TSP (AM1a)		
31-Mar						
01 10101						
Pamarks:						

Remarks:

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

24hr TSP Monitoring at AM2a was cancelled due to power failure and technical problem on 7, 13 and 28 March 2019.

Air Quality Monitoring Station

AM1 - No. 31 Wai Loi Tsuen (1hr) AM2 - Fu Tei Au (1hr) AM2a - RE's Site Office (24hr) AM1a - SWHSTW site boundary (24hr)

Noise Monitoring Station

NM1 - No. 31 Wai Loi Tsuen NM2 - Fu Tei Au

Contract No. DE/2014/01 Provision of Electrical and Mechanical Facilities for Shek Wu Hui Sewage Treatment Works Tentative Impact Air and Noise Monitoring Schedule for April 2019

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Apr	2-Apr	3-Apr	4-Apr	5-Apr	6-Apr
	1 hr TSP X3			1 hr TSP X3		
	Noise			1 fir 1SP A3		
	TOBE					
	24hr TSP (AM2a)		24 hr TSP			
7-Apr	8-Apr	9-Apr	10-Apr	11-Apr	12-Apr	13-Apr
		1 hr TSP X3				
		Noise				
	24 hr TSP				24 hr TSP	
14 Apr	15 Arr	16 Arr	17 4	19 4	10.4	20.4
14-Apr	15-Apr	16-Apr	17-Apr	18-Apr	19-Apr	20-Apr
	1 hr TSP X3			1 hr TSP X3		
				Noise		
			24 hr TSP			
21-Apr	22-Apr	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr
			<u> </u>		<u> </u>	
			1 hr TSP X3			
			Noise			
		24 hr TSP			24 hr TSP	
		21111101			21111101	
28-Apr	29-Apr	30-Apr				
	$1 h_{\pi} TCD V2$					
	1 hr TSP X3 Noise					
	NOISE					

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

Air Quality Monitoring Station

Noise Monitoring Station

AM1 - No. 31 Wai Loi Tsuen (1hr) AM2 - Fu Tei Au (1hr) AM2a - RE's Site Office (24hr) AM1a - SWHSTW site boundary (24hr) NM1 - No. 31 Wai Loi Tsuen NM2 - Fu Tei Au

APPENDIX C COPIES OF CALIBRATION CERTIFICATES



TEST REPORT

APPLICANT:	Wellab Limited
	(EM&A Department)
	Room 1701, Technology Park,
	18 On Lai Street,
	Shatin, NT, Hong Kong

Test Report No.:	31065
Date of Issue:	2019-03-11
Date Received:	2019-03-08
Date Tested:	2019-0308
Date Completed:	2019-03-11
Next Due Date:	2019-05-10
Page:	1 of 1

ATTN:

Mr. W. K. Tang

Certificate of Calibration		
: Dust Monitor		
: Met One Instruments		
: AEROCET-831		
: X23807		
: 0.1 cfm		
: 0 count per 1 minute		
: WA-01-01		
: 17-22 degree Celsius		
: 40-70%		

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Tisch Environmental Inc.

2. In-house method in according to the instruction manual: The Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1.164

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

PATRICK TSE Laboratory Manager

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TEST REPORT

APPLICANT: Wellab Limited (EM&A Department) Room 1701, Technology Park, 18 On Lai Street, Shatin, NT, Hong Kong

Test Report No.:	30677B
Date of Issue:	2019-01-14
Date Received:	2019-01-11
Date Tested:	2019-01-11
Date Completed:	2019-01-14
Next Due Date:	2019-03-13
Page:	1 of 1

ATTN:

Mr. W. K. Tang

Certificate of Calibration		
Item for Calibration:		
Description	: Dust Monitor	
Manufacturer	: Met One Instruments	
Model No.	: AEROCET-831	
Serial No.	: X23809	
Flow rate	: 0.1 cfm	
Zero Count Test	: 0 count per 1 minute	
Equipment No.	: WA-01-03	
Test Conditions:		
Room Temperatre	: 17-22 degree Celsius	
Relative Humidity	: 40-70%	

1. Instruction and Operation Manual High Volume Sampler, Tisch Environmental Inc.

2. In-house method in according to the instruction manual: The Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Results:	
Correlation Factor (CF)	1.211

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PATRICK TSE Laboratory Manager



TEST REPORT

APPLICANT: Wellab Limited (EM&A Department) Room 1701, Technology Park, 18 On Lai Street, Shatin, NT, Hong Kong

Test Report No.:	31065B
Date of Issue:	2019-03-11
Date Received:	2019-03-08
Date Tested:	2019-03-08
Date Completed:	2019-03-11
Next Due Date:	2019-05-10
Page:	1 of 1

ATTN:

Mr. W. K. Tang

Certificate of Calibration		
Item for Calibration:		
Description	: Dust Monitor	
Manufacturer	: Met One Instruments	
Model No.	: AEROCET-831	
Serial No.	: X23809	
Flow rate	: 0.1 cfm	
Zero Count Test	: 0 count per 1 minute	
Equipment No.	: WA-01-03	
Test Conditions:		
Room Temperatre	: 17-22 degree Celsius	
Relative Humidity	: 40-70%	

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Tisch Environmental Inc.

2. In-house method in according to the instruction manual: The Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1.178

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PATRICK TSE Laboratory Manager



TEST REPORT

APPLICANT: Wellab Limited (EM&A Department) Room 1701, Technology Park, 18 On Lai Street, Shatin, NT, Hong Kong

· · · · · · · · · · · · · · · · · · ·	
Test Report No.:	30914
Date of Issue:	2019-02-25
Date Received:	2019-02-22
Date Tested:	2019-02-22
Date Completed:	2019-02-25
Next Due Date:	2019-04-24
Page:	1 of 1

ATTN:

Mr. W. K. Tang

Certificate of Calibration	
Item for Calibration:	
Description	: Dust Monitor
Manufacturer	: Met One Instruments
Model No.	: AEROCET-831
Serial No.	: X24476
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 1 minute
Equipment No.	: WA-01-05
Test Conditions:	
Room Temperatre	: 17-22 degree Celsius
Relative Humidity	: 40-70%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Tisch Environmental Inc.

2. In-house method in according to the instruction manual: The Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1.131

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TEST REPORT

APPLICANT: Wellab Limited (EM&A Department) Room 1701, Technology Park, 18 On Lai Street, Shatin, NT, Hong Kong

30914A
2019-02-25
2019-02-22
2019-02-22
2019-02-25
2019-04-24
1 of 1

ATTN:

Mr. W. K. Tang

Certificate of Calibration	
Item for Calibration:	
Description	: Dust Monitor
Manufacturer	: Met One Instruments
Model No.	: AEROCET-831
Serial No.	: X24477
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 1 minute
Equipment No.	: WA-01-06
Test Conditions:	
Room Temperatre	: 17-22 degree Celsius
Relative Humidity	: 40-70%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Tisch Environmental Inc.

2. In-house method in according to the instruction manual: The Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Results:	
Correlation Factor (CF)	1.117

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ν.

PATRICK TSE Laboratory Manager



TEST REPORT

APPLICANT: Wellab Limited (EM&A Department) Room 1701, Technology Park, 18 On Lai Street, Shatin, NT, Hong Kong

Test Report No.:	30677D
Date of Issue:	2019-01-14
Date Received:	2019-01-11
Date Tested:	2019-01-11
Date Completed:	2019-01-14
Next Due Date:	2019-03-13
Page:	1 of 1

ATTN:

Mr. W. K. Tang

Certificate of Calibration		
Item for Calibration:		
Description	: Dust Monitor	
Manufacturer	: Met One Instruments	
Model No.	: AEROCET-831	
Serial No.	: X24475	
Flow rate	: 0.1 cfm	
Zero Count Test	: 0 count per 1 minute	
Equipment No.	: WA-01-07	
Fest Conditions:		
Room Temperatre	: 17-22 degree Celsius	
Relative Humidity	: 40-70%	

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Tisch Environmental Inc.

2. In-house method in according to the instruction manual: The Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1 107
Correlation Factor (CF)	1 195
	1.175

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TEST REPORT

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

Test Report No.:	29499
Date of Issue:	2018-08-13
Date Received:	2018-08-11
Date Tested:	2018-08-11
Date Completed:	2018-08-13
Next Due Date:	2019-08-12
Page:	1 of 1

ATTN:

Mr. W.K. Tang

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21459
Microphone No.	: 43676
Equipment No.	: N-08-08

Test conditions:

Room Temperatre Relative Humidity : 17-22 degree Celsius : 40-70%

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

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TEST REPORT

APPLICANT: Cinotech Consultants Limited Room 1710, Technology Park, 18 On Lai Street,

Shatin, NT, Hong Kong

Test Report No.:	29500
Date of Issue:	2018-08-13
Date Received:	2018-08-11
Date Tested:	2018-08-11
Date Completed:	2018-08-13
Next Due Date:	2019-08-12
Page:	1 of 1

ATTN:

Mr. W.K. Tang

Certificate of Calibration

Item for calibration:

: 'SVANTEK' Integrating Sound Level Meter
: SVANTEK
: SVAN 957
: 21460
: 43679
: N-08-09

Test conditions:

Room Temperatre Relative Humidity : 17-22 degree Celsius : 40-70%

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

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TEST REPORT

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

Test Report No.:	30524C
Date of Issue:	2018-12-17
Date Received:	2018-12-15
Date Tested:	2018-12-15
Date Completed:	2018-12-17
Next Due Date:	2019-12-16
Page:	1 of 1

ATTN:

Mr. W.K. Tang

Certificate of Calibration

Item for calibration:

Description	: Sound & Vibration Analyser
Manufacturer	: BSWA
Model No.	: BSWA 801
Serial No.	: 35927
Equipment No.	: N-13-03
IS:	

Test conditions:

Room Temperatre Relative Humidity : 17-22 degree Celsius : 40-70%

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

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PATRICK TSE Laboratory Manager

WELLAB 随 Testing & Research カ			Rm: Tec S h Tel	LLAB LIMITED 3 1214, 1502, 1516, 1701 8 hnology Park, 18 On Lai atin, N.T., Hong K : 2898 7388 Fax: 2898 bsite: www.wellab.co	Street, Cong. 8 7076	
	TEST REPORT					
APPLICANT:	Cinotech Consultants I	imited	Test Report No.:	29816		
	Room 1710, Technolog	y Park,	Date of Issue:	2018-09-29		
	18 On Lai Street,		Date Received:	2018-09-28		
	Shatin, NT, Hong Kong	5	Date Tested:	2018-09-28		
			Date Completed:	2018-09-29		
			Next Due Date:	2019-09-28		
ATTN:	Mr. W.K. Tang		Page:	1 of 1	·	
Item for calibra	tion:					
Ľ	Description	: Acoustica	al Calibrator			
	Ianufacturer	: SVANTE	εĸ			
Ν	Iodel No.	: SV30A				
S	erial No.	: 24803				

Test conditions:

Room Temperatre Relative Humidity

Equipment No.

: 17-22 degree Celsius : 40-70%

: N-09-03

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	$114.0 \pm 0.1 \text{ dB}$

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PATRICK TSE Laboratory Manager



1 of 1

TEST REPORT

APPLICANT:	Cinotech Consultants Limited	Test Report No .:	29683
	Room 1710, Technology Park,	Date of Issue:	2018-08-20
	18 On Lai Street,	Date Received:	2018-08-17
	Shatin, NT, Hong Kong	Date Tested:	2018-08-17
		Date Completed:	2018-08-20
		Next Due Date:	2019-08-19

ATTN: Mr. W.K. Tang

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: Brüel & Kjær
Model No.	: 4231
Serial No.	: 2412367
Equipment No.	: N-02-03

Test conditions:

Room Temperatre Relative Humidity : 17-22 degree Celsius : 40-70 %

Page:

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	$94.0 \pm 0.1 \text{ dB}$	
At 114 dB SPL	114.0	114.0 ± 0.1 dB	

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P'ATRICK TSE Laboratory Manager

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High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

				File No.	MA16002/70/0004
Station:	AM1a - SWHS	STW site boundary	Operator:	HM	
Date: 22-Jan-19 Equipment No.: A-01-70		Next Due Date:	21-Mar-19		
			Serial No.	3216	
			Ambient Condition	n an tao amin'ny desira	
Temperatu	re, Ta (K)	286	Pressure, Pa (mmHg)	771.4	

Orifice Transfer Standard Information							
Serial No.	2896	Slope, mc	0.0585	Intercept, bc	-0.00045		
Last Calibration Date:	13-Feb-18	mc x Qstd + bc = $[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$					
Next Calibration Date:	13-Feb-19	Qstd = { $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ -bc} / mc					

	-	Calibration of	TSP Sampler		•
Calibration		Orfice			HVS
Point	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (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	3.52	60.11	7.7	2.85
2	9.7	3.20	54.73	6.0	2.52
3	7.4	2.80	47.80	4.9	2.28
4	5.0	2.30	39.30	3.4	1.90
5	3.4	1.90	32.41	2,5	1.63
By Linear Regr Slope , mw = Correlation c			Intercept, bw	0.205	7
*If Correlation C	Coefficient < 0.99	0, check and recalibrate.	-		
	· · · · · · · · · · · · · · · · · · ·	Set Point C	alculation		
From the TSP Fi	eld Calibration C	urve, take Qstd = 43 CFM			
From the Reares	sion Faustion the	e "Y" value according to			

mw x	Qstd	+ bw =	[ΔW x	(Pa/760)	x	(298/Ta)] ^{1/2}
------	------	--------	-------	----------	---	--------------------------

Therefore, Set Point; $W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = 4.04$

 Remarks:

 Conducted by:
 \underline{M}_{M} Signature:
 \underline{M}_{M} Date:
 \underline{M}_{I} \underline{M}_{I} <

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High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

				File N	o. MA16002/70/0005
Station:	AM1a - SWHS	TW site boundary	Operator:	WK	
Date:			Next Due Date:	20-May-19	
Equipment No.:			Serial No.	3216	_
	· · · · · · · · · · · · · · · · · · ·		Ambient Condition		
Temperatu	re, Ta (K)	300.1	Pressure, Pa (mmHg)	761.5	5

Orifice Transfer Standard Information							
Serial No.	0993	Slope, mc 0.0572 Intercept, bc -0.02285					
Last Calibration Date:	25-Feb-19	mc x Qstd + bc = $[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$					
Next Calibration Date:	25-Feb-20	Qstd = { $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ -bc} / mc					

		Calibration of	TSP Sampler		
Calibration		Orfice			HVS
Point	∆H (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$\frac{[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}}{Y-axis}$
1	11.6	3.40	59.79	7.3	2.70
2	9.8	3.12	54.99	6.1	2.46
3	7.5	2.73	48.15	5.0	2.23
4	5.1	2.25	39.78	3.4	1.84
5	3.5	1.87	33.02	2.5	1.58
Correlation c *If Correlation (0.9990 0, check and recalibrate.	-		
		Set Point C	alautation		
From the TSP F	ield Calibration C	urve, take Qstd = 43 CFM	aculation		
		e "Y" value according to			
	•	$\mathbf{m}\mathbf{w} \mathbf{x} \mathbf{Q}\mathbf{s}\mathbf{t}\mathbf{d} + \mathbf{b}\mathbf{w} = [\mathbf{\Delta}\mathbf{W} \mathbf{x}]$ $\mathbf{w} \mathbf{x} \mathbf{Q}\mathbf{s}\mathbf{t}\mathbf{d} + \mathbf{b}\mathbf{w}^{2} \mathbf{x} (760 / Pa) \mathbf{x} (760 / Pa)$. , .		
Remarks:					
Conducted by: Checked by:	wh Lang Lob and Mer	Signature: Kwa Signature: k	añ u ⁻		Date: $\mathcal{U}(3(2n)q)$ Date: $21(3/2n)q$

M	/E) [Д	B	隆	13
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High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

						File No.	MA16002/45/0004
Station:	AM2a - RE's Si	ite Office		Operator:	HM.	[
Date:	22-Jan-19		_	Next Due Date:	21-Ma	r-19	
Equipment No.:	: <u>A-01-45</u>		-	Serial No.	1309		
			Ambient (Condition			
Temperati	ıre, Ta (K)	286.4	Pressure, Pa			771.5	
	- <u></u>		• • • • • • • • • • • • • • • • • • • •		J		
	n de persona in generale	Or	fice Transfer Sta	ndard Inform	ation		
Seria	Il No.	2896	Slope, mc	0.0585	Intercep	·	-0.00045
Last Calibr	ation Date:	13-Feb-18		mc x Qstd + be	с = [ΔH x (Pa /76	0) x (298/Ta)]	1/2
Next Calibi	ration Date:	13-Feb-19		$Qstd = \{ [\Delta H x]$	(Pa/760) x (298/	$[Ta)]^{1/2} - bc\} / [$	me
		•			·····		
			Calibration of	TSP Sampler			
Calibration		Or	fice			HVS	
Point	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)] ^{1/2}		Qstd (CFM) X - axis	ΔW (HVS), in. of water		760) x (298/Ta)] ^{1/2} Y-axis
1	12.4		3.62	61.84	7.0		2.72
2	10.6		3.35	57.18	5.9		2.50
3	7.8	2	2.87	49.05	4.8		2.25
4	5.4	2	2.39	40.81	3.6		1.95
5	3.3		.87	31.91	2.4		1.59
Slope , mw = Correlation c		. 0.9	985	Intercept, bw :	0.436	3	
	· · · · · · · · · · · · · · · · · · ·	······	Set Point C	alculation			
From the TSP Fi	ield Calibration C	urve, take Ostd					
	sion Equation, the						
5	1						
		mw x Qs	std + bw = $[\Delta W x]$	(Pa/760) x (29	$(28/Ta)]^{1/2}$		
Thomas Co		~ 0 (1) (1) 2					
Incretore, Se	t Point; W = (mv	v x Qstd + bw)"	x (760 / Pa)x (ra/298) =	3.84		
Remarks:							
Conducted by:	120 Min HEr	Signature:	he	<i>3</i> 4		Date:	22/1/2019
		Signature:	Via	Davá		Date:	17/1248
	0						VF (/ FUI

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

						File No.	MA16002/45/0005			
Station:	AM2a - RE's S	Site Office		Operator:	WK	-	_			
Date:	21-Mar-19		. 1	Next Due Date:	20-May	~19	-			
Equipment No.:	A-01-45			Serial No.	1309	1309				
			Ambient (Condition						
Temperati	ıre, Ta (K)	300.2	Pressure, Pa			761.4				
remperate		20012	110000000,10	(1111116)	F	,01.1				
		Or	fice Transfer Sta	ndard Inform	ation					
Seria	l No.	0993	Slope, mc	0.0572	Intercep		-0.02285			
Last Calibr	ation Date:	25-Feb-19		me x Qstd + be	e = [ΔH x (Pa/760	0) x (298/Ta))] ^{1/2}			
Next Calibi	ration Date:	25-Feb-20		Qstd = $\{[\Delta H x]\}$	(Pa/760) x (298/	Ta)] ^{1/2} -bc} /	me			
	-		Calibration of	TSP Sampler						
Calibration		Or	fice			HVS				
Point	$\Delta H \text{ (orifice),}$ in. of water	[ΔH x (Pa/76	0) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of water	[∆W x (Pa	/760) x (298/Ta)] ^{1/2} Y-axis			
1	12.5		3.53	62.03	7.2		2.68			
2	10.7		3.26	57.42	6.4		2.52			
3	7.8		2.79	49.09	4.8		2.18			
4	5.2		2.27	40.15	3.2		1.78			
5	3.4		.84	32.54	2.4		1.54			
Slope , mw = Correlation c	oefficient* =		986	Intercept, bw =	0.238	7				
			Set Point C	alculation						
From the TSP F	ield Calibration	Curve, take Qstd								
		he "Y" value acco								
	1		std + bw = $[\Delta W]$ x	(Pa/760) x (29	$98/Ta) ^{1/2}$					
Therefore Se	at Point: $W = (m)$	-	x (760 / Pa) x (3.77					
Therefore, Se		iw x Qaid + 0w J	x(/00/14)x(147 290 j	3.//					
Remarks:										
		<u></u>					31/11/2			
•	WK. Tang	Signature:	Kw			Date:	21/3/2019 21/3/2019			
Checked by:	Lit Mon HE2	· Signature:	ŀ	ur		Date:	21/3/2019			

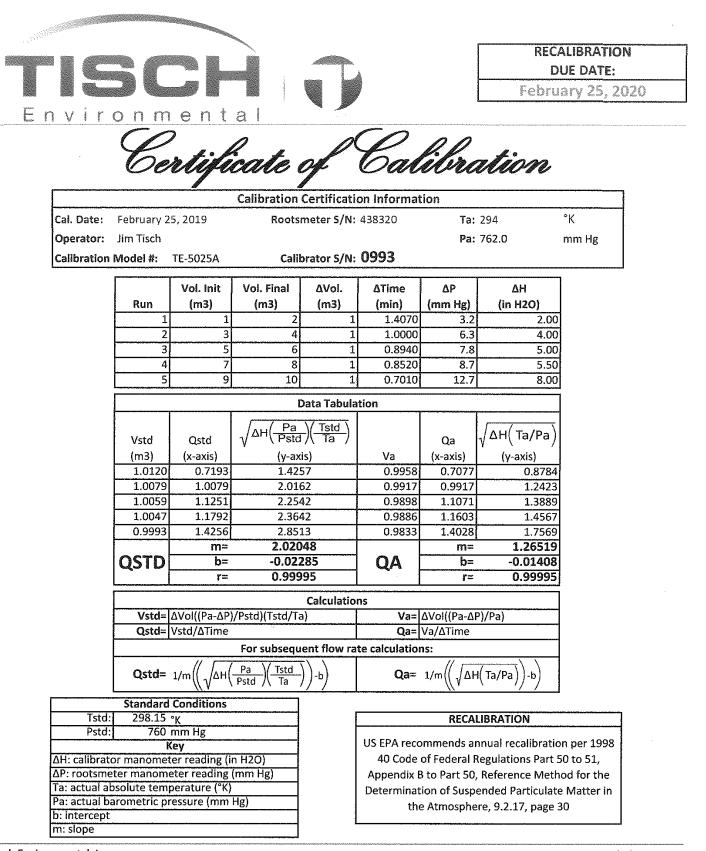
n vir	3 C o n m	ent	al	D	2 2 2		C	ALIBRATION DUE DATE: Jary 13, 201	
·	Ce	rtifa	cale (na n		rtion		
	and a second second second second			10				917	
Cal. Date:	February 1	3, 2018	Rootsi	meter S/N:	438320		293	°K	
Operator:	Jim Tisch					Pa;	763.3	mm Hg	
Calibration	Model #:	TE-5025A	Calik	brator S/N:	2896				
		Vol. Init	Vol. Final	ΔVol.	ΔTime	ΔP	ΔH	٦	
	Run	(m3)	(m3)	(m3)	(min)	(mm Hg)	(in H2O)		
	1	(115)	2	1	1.4570	3.2	2.00	5	
	2	3	4	1	1.0380	6.4	4.00		
	3	5	6	1	0.9220	8.0	5.00	ที	
	4	7	8	1	0.8840	8.8	5.50	5	
	5	9	10	1	0.7250	12.8	8.00	5	
	<u> </u>			Data Tabula	tion	1			
							· · · · · · · · · · · · · · · · · · ·		
	Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right)}$	$-\left(\frac{\text{Tstd}}{\text{Ta}}\right)$		Qa	√∆Н(Та/Ра)		
	(m3)	(x-axis)	y (Y-ax	1000000 0000 10	Va	(x-axis)	γ (y-axis)	3	
	1.0172	0.6934	1.429		0.9958	0.6788	0.8762		
	1.0129	0.9758	2.023	13	0.9916	0.9553	1.2392	Ĩ	
	1.0107	1.0962	2.259		0.9895	1.0732	1.3854]	
	1.0097	1.1422	2.370		0.9885	1.1182	1.4530		
	1.0043	1.3853	2.858		0.9832	1.3562	1.7524		
	OCTO	m= b=	2.067		0.4	m⇔ b=	1.29448		
	QSTD		0.999		QA	-u =1	0.99992		
			0.033						
	\/]		/Detal/Tetal/T-	Calculation		AVal//Da At		-	
		Vstd/ATime	/Pstd)(Tstd/Ta	≠J [™]		ΔVol((Pa-ΔF Va/ΔTime	()/rd)	4	
		- awy a tube	For subsequ	ent flow rat				1	
		// 1-7	Pa <u>Tstd</u> Pstd Ta			11	······································	1	
	Qstd=	(Ta/Pa))-b)							
F	Ctopdard	Conditions		<u>ll.</u>	27	М.	11	ł	
Tstd:				Г		RECA	IBRATION	1	
Pstd:		mm Hg			10 10 10 10 10 10 10 10 10 10 10 10 10 1				
	K	ey					nual recalibrati	NOT THE PARTY AND A DESCRIPTION	
		er reading (i					egulations Part		
ΔP: rootsme Ta: actual al		eter reading (mm Hg)				Reference Met		
					Determination of Suspended Particulate Matter in				
Pa: actual h	aronieurie or	Caserie minis	181						
Pa: actual bab b: intercept	Contract of the second s	essure (min	15/		the	e Atmosphe	re, 9.2.17, page	30	

Tisch Environmental, inc.

145 South Miami Avenue

Village of Cleves, OH 45002

<u>www.tisch-env.com</u> TOLL FREE: (877)263-7610 FAX: (513)467-9009



isch Environmental, Inc.

45 South Miami Avenue

illage of Cleves, OH 45002

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

Appendix D - 1-hou	r TSP Monitoring R	esults
--------------------	--------------------	--------

Location AM	Location AM1 - No.31 Wai Loi Tsuen										
Date	Time	Weather	Particulate Concentration (µg/m³)								
4-Mar-19	8:30	Cloudy	101.9								
4-Mar-19	9:30	Cloudy	121.2								
4-Mar-19	10:30	Cloudy	100.6								
8-Mar-19	13:00	Cloudy	88.9								
8-Mar-19	14:00	Cloudy	98.5								
8-Mar-19	15:00	Cloudy	106.0								
14-Mar-19	9:00	Cloudy	97.7								
14-Mar-19	10:00	Cloudy	90.1								
14-Mar-19	11:00	Cloudy	101.8								
20-Mar-19	8:30	Sunny	109.1								
20-Mar-19	9:30	Sunny	125.0								
20-Mar-19	10:30	Sunny	133.0								
26-Mar-19	8:55	Sunny	94.3								
26-Mar-19	9:55	Sunny	72.5								
26-Mar-19	10:55	Sunny	70.8								
		Minimum	70.8								
		Maximum	133.0								
		Average	100.8								

Location AM	Location AM2 - Fu Tei Au										
Date	Time	Weather	Particulate Concentration (µg/m								
4-Mar-19	8:00	Cloudy	114.7								
4-Mar-19	9:00	Cloudy	96.9								
4-Mar-19	10:00	Cloudy	97.0								
8-Mar-19	9:00	Cloudy	75.7								
8-Mar-19	10:00	Cloudy	83.2								
8-Mar-19	11:00	Cloudy	72.9								
14-Mar-19	13:00	Cloudy	81.4								
14-Mar-19	14:00	Cloudy	69.1								
14-Mar-19	15:00	Cloudy	75.2								
20-Mar-19	8:55	Sunny	115.9								
20-Mar-19	9:55	Sunny	128.0								
20-Mar-19	10:55	Sunny	109.9								
26-Mar-19	13:10	Sunny	65.5								
26-Mar-19	14:10	Sunny	109.7								
26-Mar-19	15:10	Sunny	75.6								
-		Minimum	65.5								
		Maximum	128.0								
		Average	91.4								

Appendix D- 24-hour TSP Monitoring Results

AM1a - SWHSTW site boundary

Compling Data	Start Time	Weather Air		ir Atmospheric		Filter Weight (g)		Particulate Elapse Time		Sampling	Flow Rate (m ³ /min.)		Av. flow	Total vol.	Conc.
Sampling Date	Start Time	Condition	Temp. (K)	Pressure, Pa (mmHg)	Initial	Final	weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	(µg/m ³)
1-Mar-19	9:00	Cloudy	293.6	765.5	2.9746	3.0282	0.0536	16872.6	16896.6	24.0	1.19	1.19	1.19	1709.6	31.4
7-Mar-19	9:00	Cloudy	288.1	765.5	2.9919	3.0152	0.0233	16896.6	16920.6	24.0	1.20	1.20	1.20	1727.7	13.5
13-Mar-19	9:00	Cloudy	293.2	766.2	3.0611	3.1350	0.0739	16920.6	16944.6	24.0	1.19	1.19	1.19	1711.8	43.2
19-Mar-19	9:00	Cloudy	294.4	764.9	3.5310	3.6010	0.0700	16944.6	16968.6	24.0	1.19	1.18	1.18	1706.3	41.0
25-Mar-19	9:00	Sunny	289.6	766.8	3.5689	3.6767	0.1078	16968.6	16992.6	24.0	1.25	1.25	1.25	1801.1	59.9
28-Mar-19	9:00	Cloudy	296.9	762.9	3.5686	3.6493	0.0807	16992.6	17016.6	24.0	1.23	1.23	1.23	1771.4	45.6
-		-					-						-	Min	13.5
														Max	59.9

AM2a - RE's Site Office

Sampling Date	Start Time	Weather		Atmospheric	Filter Weight (g)		Particulate	Elapse Time		Elapse Time		Sampling	Flow Rate	e (m ³ /min.)	Av. flow	Total vol.	Conc.
		Condition	Temp. (K)	Pressure, Pa (mmHg)	Initial	Final	weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	(µg/m ³)		
1-Mar-19	9:00	Cloudy	293.4	765.8	3.0023	3.0881	0.0858	7885.2	7909.2	24.0	1.18	1.18	1.18	1705.3	50.3		
7-Mar-19	Power failure																
13-Mar-19	Power failure																
20-Mar-19	9:00	Cloudy	298.1	762.7	3.4510	3.5760	0.1250	7909.2	7933.2	24.0	1.17	1.17	1.17	1683.6	74.2		
25-Mar-19	9:00	Sunny	289.9	766.5	3.5027	3.5837	0.0810	7957.2	7981.2	24.0	1.25	1.25	1.25	1801.5	45.0		
28-Mar-19	Power failure																
														Min	45.0		
														Max	74.2		

Remarks:

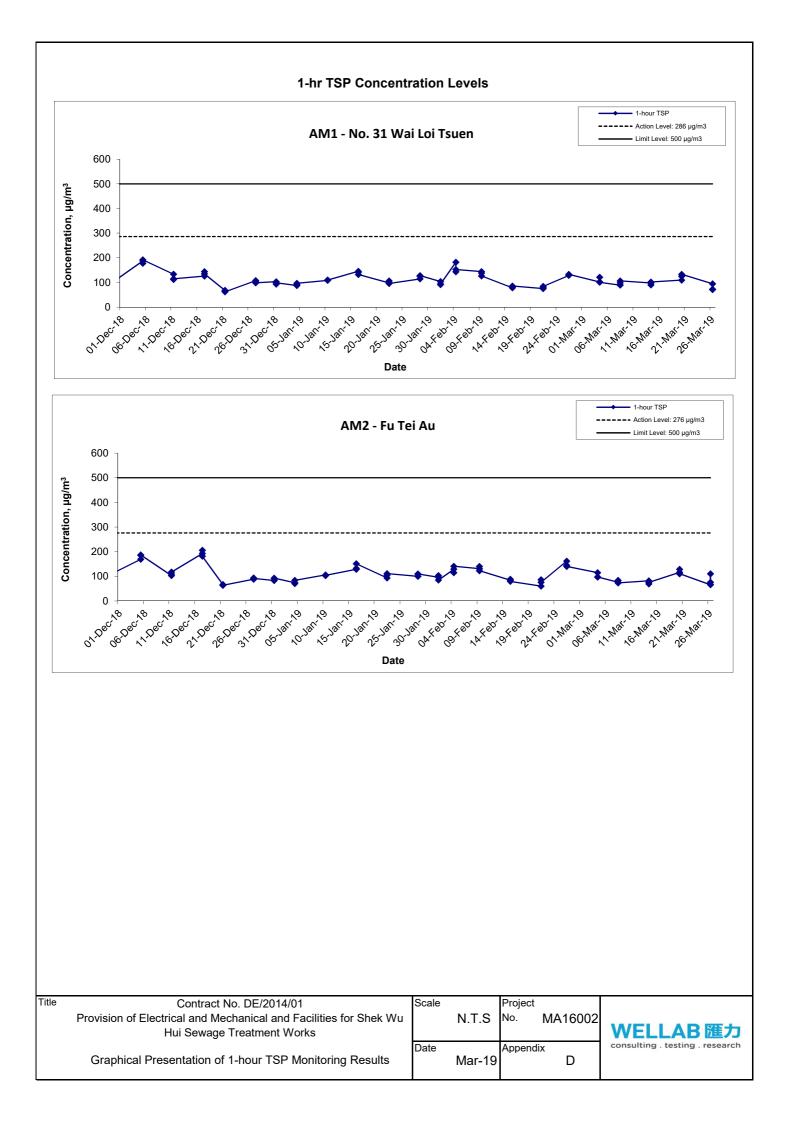
1. 24hr TSP Monitoring at AM2a was cancelled due to power failure on 7,13 and 28 March 2019.

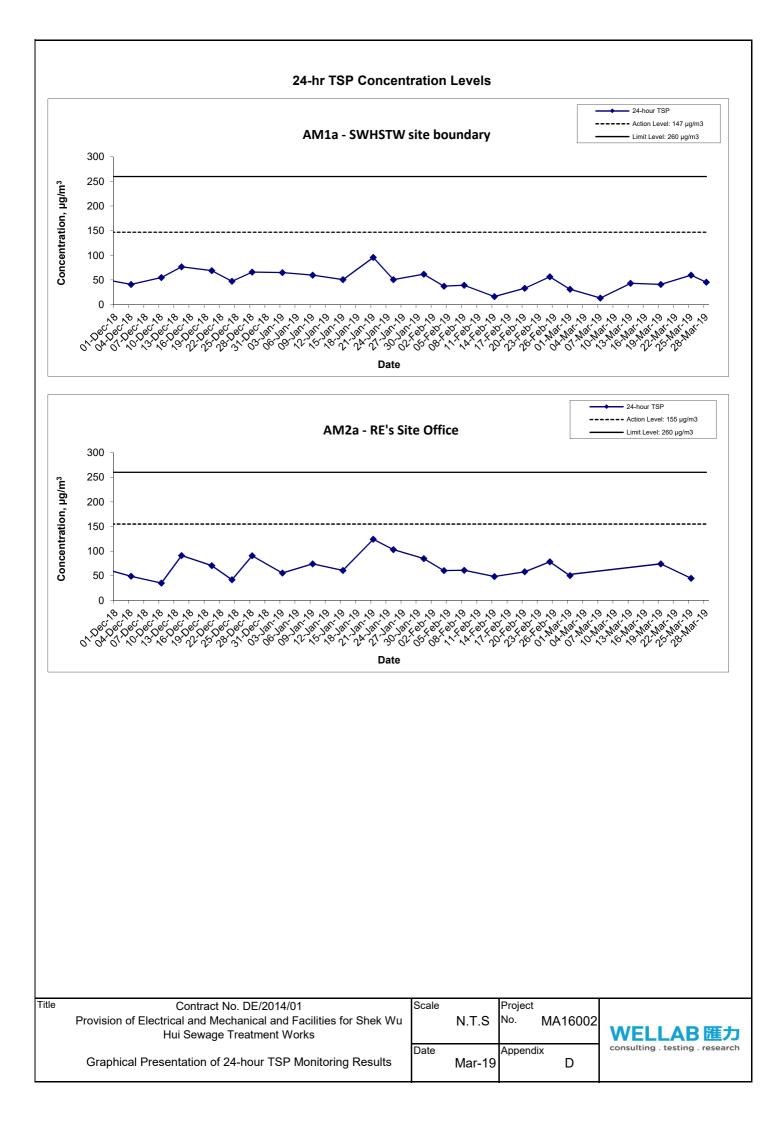
39.1

56.5

Average

Average





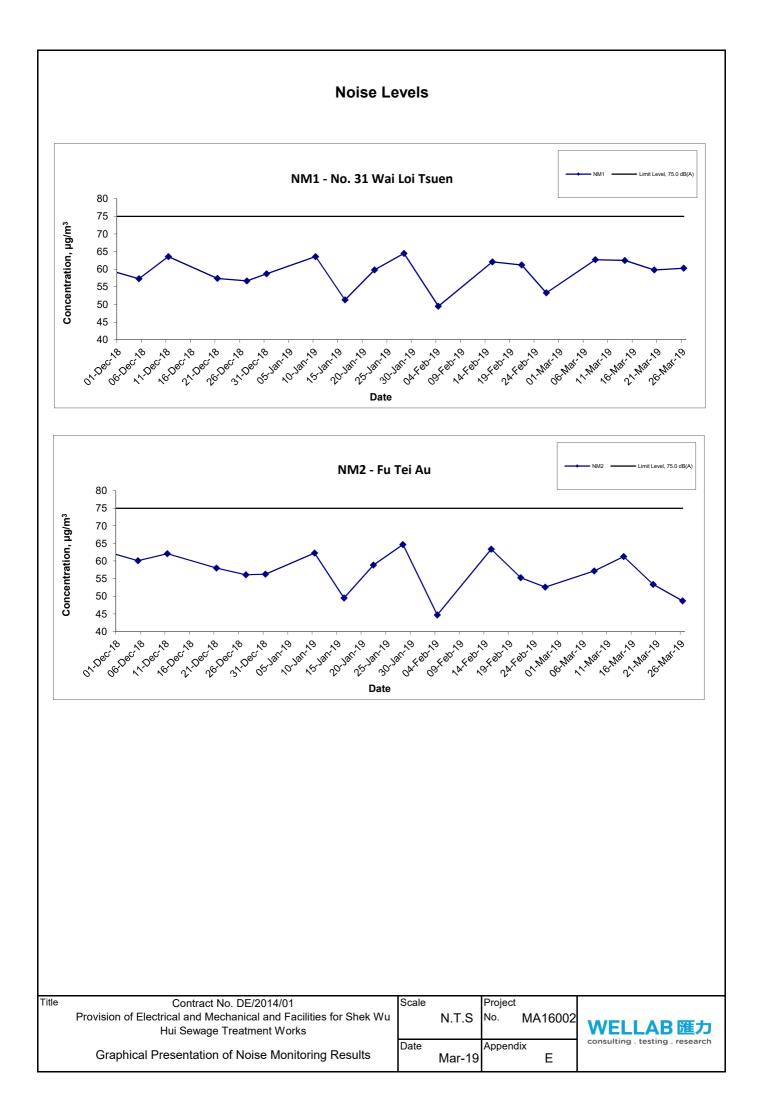
APPENDIX E NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Appendix E - Noise Monitoring Results

(0700-1900 hrs on Normal Weekdays)

Location NM1 - No.31 Wai Loi Tsuen							
				t: dB (A) (30-i	/		
Date	Time	Weather	Measured Noise Level				
			L _{eq}	L ₁₀	L ₉₀		
8-Mar-19	13:10	Cloudy	62.7	64.9	57.8		
14-Mar-19	9:15	Cloudy	62.5	64.8	56.2		
20-Mar-19	9:35	Sunny	59.8	60.3	52.4		
26-Mar-19	9:55	Sunny	60.3	62.8	56.4		

Location NM2 - Fu Tei Au							
			Unit	:: dB (A) (30-ı	min)		
Date	Time	Weather	Measured Noise Level				
			L _{eq}	L ₁₀	L ₉₀		
8-Mar-19	9:20	Cloudy	57.2	59.8	52.4		
14-Mar-19	13:15	Cloudy	61.3	64.7	56.9		
20-Mar-19	10:35	Sunny	53.4	54.7	50.2		
26-Mar-19	13:50	Sunny	48.7	50.1	42.3		



APPENDIX F SUMMARY OF EXCEEDANCE

APPENDIX F – SUMMARY OF EXCEEDANCE

Reporting Month: March 2019

- a) Exceedance Report for 1-hr TSP (NIL)
- b) Exceedance Report for 24-hr TSP (NIL)
- c) Exceedance Report for Construction Noise (NIL)

APPENDIX G SITE AUDIT SUMMARY

Contract No: DE/2014/01 Provision of Electrical and Mechanical Facilities for Shek Wu Hui Sewage Treatment Works -Further Expansion Phase 1A - Advance Works and Ng Chow South Road Sewage Pumping Station

Record Summary of Environmental Site Inspection

Checklist Reference Number	190306	
Date	6 March 2019 (Wednesday)	
Time	09:30-10:30	

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

Ref. No.	Remarks/Observations	Related Item No.
	Part C - Water Quality	
	• No environmental deficiency was identified during the site inspection.	
	Part D - Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	Part E – Construction Noise Impact	
	• No environmental deficiency was identified during the site inspection.	
190306-R01	 <i>Part F – Waste / Chemical Management</i> General refuse/ Construction waste should be disposed properly. 	F1iii
	 <i>Part G - Permit / Licenses</i> No environmental deficiency was identified during the site inspection. 	
	Others / Remarks	
	• Follow-up on previous audit session, all environmental deficiency was rectified.	

Name	Signature	Date
Eric Chan	rp	7 March 2019
Dr. Priscilla Choy	NF	7 March 2019
	Eric Chan	Eric Chan

Record Summary of Environmental Site Inspection

Checklist Reference Number	190314
Date	14 March 2019 (Thursday)
Time	09:30-10:30

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

Ref. No.	Remarks/Observations	Related Item No
	Part C - Water Quality	
	• No environmental deficiency was identified during the site inspection.	
	Part D - Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	Part E – Construction Noise Impact	
	• No environmental deficiency was identified during the site inspection.	
	 Part F – Waste / Chemical Management General refuse/ Construction waste should be disposed properly. 	
	 <i>Part G - Permit / Licenses</i> No environmental deficiency was identified during the site inspection. 	
	The environmental deficiency was identified during the site inspection.	
	Others / Remarks	
	• Follow-up on previous audit session, all environmental deficiency (190306-R01) was rectified.	

	Name	Signature	Date
Recorded by	Eric Chan	- h-p	15 March 2019
Checked by	Dr. Priscilla Choy	WZ	15 March 2019
	· · · · · · · · · · · · · · · · · · ·	• /	

Record Summary of Environmental Site Inspection

Checklist Reference Number	190320	
Date	20 March 2019 (Wednesday)	
Time	09:30-10:30	

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

Ref. No.	Remarks/Observations	Related Item No.
	 <i>Part C - Water Quality</i> No environmental deficiency was identified during the site inspection. 	
	 No environmental deficiency was identified during the site inspection. No environmental deficiency was identified during the site inspection. 	
	 <i>Part E – Construction Noise Impact</i> No environmental deficiency was identified during the site inspection. 	
190320-R01	 Part F – Waste / Chemical Management General refuse/ Construction waste should be disposed properly. 	F1iii
	 <i>Part G - Permit / Licenses</i> No environmental deficiency was identified during the site inspection. 	
	Others / Remarks	
	• No environmental deficiency was identified during the previous audit session.	

	Name	Signature	Date
Recorded by	Eric Chan	27	22 March 2019
Checked by	Dr. Priscilla Choy	Wit	22 March 2019

Record Summary of Environmental Site Inspection

Checklist Reference Number	190327	
Date	27 March 2019 (Wednesday)	
Time	09:30-10:30	

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

Ref. No.	Remarks/Observations	Related Item No.
	Part C - Water Quality	
	 No environmental deficiency was identified during the site inspection. Part D - Air Quality 	
	• No environmental deficiency was identified during the site inspection.	
	 <i>Part E – Construction Noise Impact</i> No environmental deficiency was identified during the site inspection. 	
	 <i>Part F – Waste / Chemical Management</i> No environmental deficiency was identified during the site inspection. 	
	<i>Part G - Permit / Licenses</i>No environmental deficiency was identified during the site inspection.	
	Others / Remarks	
	• Follow-up on previous audit session, all environmental deficiency (190320-R01) was rectified.	

	Name	Signature	Date
Recorded by	Eric Chan	2-p	4 April 2019
Checked by	Dr. Priscilla Choy	WZ	4 April 2019

APPENDIX H SUMMARY OF AMOUNT OF WASTE GENERATED Name of Department: Drainage Services Department

Contract No. : DE/2014/01

Monthly Summary Waste Flow Table for 2018

		Annual Quan	tities of Inert C	&D Materials Ger	nerated Monthly		Annual Quantities of C&D Materials Generated Monthly				
Month	Total Quantity Generated	Hard Rock & Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemicals Waste	Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)
Jan	0	0	0	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0	0	0	1.00
Mar	0	0	0	0	0	0	0	0	0	0	0
Apr	0	0	0	0	0	0	0	0	0	0	7.16
May	0	0	0	0	0	0	0	0	0	0	5.31
Jun	0	0	0	0	0	0	0	0	0	0	8.24
Sub-total	0	0	0	0	0	0	0	0	0	0	21.71
Jul	0	0	0	0	0	0	0	0	0	0	4.63
Aug	0	0	0	0	0	0	0	0.022	0	0	2.98
Sep	0	0	0	0	0	0	0	0.026	0	0	6.01
Oct	0	0	0	0	0	0	0	0.009	0	0	7.96
Nov	0	0	0	0	0	0	0	0	0	0	5.30
Dec	0	0	0	0	0	0	0	0.032	0	0	7.20
Total	0	0	0	0	0	0	0	0.089	0	0	55.79

	Forecast of Total Quantities of C&D Materials to be Generated from the Contractor									
Total Quantity Generated	Hard Rock & Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemicals Waste	Others, e.g. general refuse
(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)
0	0	0	0	0	0	0	1	0.5	0.5	70

Notes: (1) The performance targets are given in PS Clause 6.21.8(14).
 (2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
 (3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
 The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000 m³. (PS Clause 6.21.7(4)(b) refers).

Name of Department: Drainage Services Department

Contract No. : DE/2014/01

Monthly Summary Waste Flow Table for 2019

		Annual Quan	tities of Inert Co	&D Materials Ger	nerated Monthly		Annual Quantities of C&D Materials Generated Monthly				
Month	Total Quantity Generated	Hard Rock & Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemicals Waste	Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)
Jan	0	0	0	0	0	0	0	0.016	0	0	4.06
Feb	0	0	0	0	0	0	0	0.009	0	0	2.63
Mar	0	0	0	0	0	0	0	0.028	0	0	3.99
Apr	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0	0	0	0
Sub-total	0	0	0	0	0	0	0	0.053	0	0	10.68
Jul	0	0	0	0	0	0	0	0	0	0	0
Aug	0	0	0	0	0	0	0	0	0	0	0
Sep	0	0	0	0	0	0	0	0	0	0	0
Oct	0	0	0	0	0	0	0	0	0	0	0
Nov	0	0	0	0	0	0	0	0	0	0	0
Dec	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0.053	0	0	10.68

	Forecast of Total Quantities of C&D Materials to be Generated from the Contractor									
Total Quantity Generated	Hard Rock & Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemicals Waste	Others, e.g. general refuse
(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)
0	0	0	0	0	0	0	0.5	0.5	0.5	50

Notes: (1) The performance targets are given in PS Clause 6.21.8(14).
 (2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
 (3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
 The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000 m³. (PS Clause 6.21.7(4)(b) refers).

APPENDIX I EVENT ACTION PLANS

APPENDIX I – Event / Action Plans

Table I-1 Event / Action Plan For Air Quality

ACTION								
ET	IEC	ER	CONTRACTOR					
1. Identify source, investigate the causes of exceedance and propose	1. Check monitoring data submitted by ET;	1. Notify Contractor.	1. Rectify any unacceptable practice;					
remedial measures;	2. Check Contractor's working		2. Amend working methods					
 Inform IEC and ER; Repeat measurement to confirm finding; Increase monitoring frequency to 	method.		if appropriate.					
 Identify source; Inform IEC and ER; Advise the ER on the effectiveness of the proposed remedial measures; Repeat measurements to confirm findings; Increase monitoring frequency to daily; Discuss with IEC and Contractor on remedial actions required; If exceedance continues, arrange meeting with IEC and ER; If exceedance continues, attace 	 Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the ET on the effectiveness of the proposed remedial measures; Supervise Implementation of remedial measures. 	 Confirm receipt of notification of exceedance writing; Notify Contractor; Ensure remedial measures properly implemented 	 Submit proposals for remedial actions to IEC within three working days of notification; Implement the agreed proposals; Amend proposal if appropriate. 					
	ET 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. Identify source; 2. Inform IEC and ER; 3. Advise the ER on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial actions required; 7. If exceedance continues, arrange	ETIEC1. Identify source, investigate the causes of exceedance and propose remedial measures;1. Check monitoring data submitted by ET;2. Inform IEC and ER; 3. Repeat measurement to confirm finding;2. Check Contractor's working method.4. Increase monitoring frequency to daily.1. Check monitoring data submitted by ET;3. Advise the ER on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings;1. Check monitoring data submitted by ET;3. Advise the ER on the effectiveness of the proposed remedial measures; findings;1. 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. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 8. If exceedance stops, cease additional	ETIECER1. 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. 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;1. Check monitoring data submitted by ET; 2. Check Contractor's working method;1. Confirm receipt of notification of exceedance writing; 2. Notify Contractor; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 8. If exceedance stops, cease additional1. Coeffectiveness remedial measures.					

	ACTION			
EVENT	ET	IEC	ER	CONTRACTOR
LIMIT LEVEL				
1. Exceedance for	1. Identify source, investigate the	1. Check monitoring data submitted	1. Confirm receipt of	1. Take immediate action to
one sample	causes of exceedance and propose	by ET;	notification of failure in	avoid further exceedance;
	remedial measures;	2. Check Contractor's working	writing;	2. Submit proposals for
	2. Inform Contractor ,IEC, ER, and	method;	2. Notify Contractor;	remedial actions to IEC
	EPD;	3. Discuss with ET and Contractor	3. Ensure remedial	within 3 working days of
	3. Repeat measurement to confirm	on possible remedial measures;	measures properly	notification;
	finding;	4. Advise the ER on the	implemented	3. Implement the agreed
	4. Increase monitoring frequency to	effectiveness of the proposed		proposals;
	daily;	remedial measures;		4. Amend proposal if
	5. Assess effectiveness of Contractor's	5. Supervise implementation of		appropriate
	remedial actions and keep IEC, EPD	remedial measures		
	and ER informed of the results.			
2. Exceedance for	1. Notify IEC, ER, Contractor and	1. Discuss amongst ER, ET, and	1. Confirm receipt of	1. Take immediate action to
two or more	EPD;	Contractor on the potential remedial	notification of exceedance	avoid further exceedance;
consecutive	2. Identify source;	actions;	in writing;	2. Submit proposals for
samples	3. Repeat measurement to confirm	2. Review Contractor's remedial	2. Notify Contractor;	remedial actions to IEC
	findings;	actions whenever necessary to	3. In consolidation with the	within 3 working days of
	4. Increase monitoring frequency to	assure their effectiveness and advise	IEC, agree with the	notification;
	daily;	the ER accordingly;	Contractor on the remedial	3. Implement the agreed
	5. Carry out analysis of Contractor's	3. Supervise the implementation of	measures to be	proposals;
	working procedures to determine	remedial measures.	implemented;	4. Resubmit proposals if
	possible mitigation to be		4. Ensure remedial	problem still not under
	implemented;		measures properly	control;
	6. Arrange meeting with IEC and ER to		implemented;	5. Stop the relevant portion
	discuss the remedial actions to be		5. If exceedance continues,	of works as determined by

	ACTION			
EVENT	ET	IEC	ER	CONTRACTOR
	taken;		consider what portion of	the ER until the exceedance
	7. Assess effectiveness of Contractor's		the work is responsible and	is abated
	remedial actions and keep IEC, EPD		instruct the Contractor to	
	and ER informed of the results;		stop that portion of work	
	8. If exceedance stops, cease additional		until the exceedance is	
	monitoring		abated.	

Table I-2 Event / Action Plan For Construction Noise

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

APPENDIX J ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE (EMIS)

Objectives of the Who to Location When to **Requirements** / EM&A Recommended of the Relevant **Recommended Mitigation Measures** implement the implement the Ref. Measures measures? measures? Legislations measure Air Quality Α Dust suppression measures stipulated in the Air Pollution Control S2.4.1.3 To minimize the Contractor Work Sites Construction phase Air Pollution Control (Construction Dust) Regulation and good site practices: dust impact of Advance Works Ordinance (APCO) Any excavated or stockpile of dusty material should be covered entirely • and Main Works of and Air Pollution by impervious sheeting or spraved with water to maintain the entire Phase 1A Control (Construction surface wet and then removed or backfilled or reinstated where Dust) Regulation practicable within 24 hours of the excavation or unloading; Any dusty material remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones; The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; Where practicable, vehicle washing facilities with high pressure water ٠ jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; Surfaces where any pneumatic or power-driven drilling, cutting, ٠ polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; Any area that involves demolition activities should be spraved with ٠ water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; Any skip hoist for material transport should be totally enclosed by ٠ impervious sheeting; Every stock of more than 20 bags of cement or dry pulverized fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; Cement or dry PFA delivered in bulk should be stored in a closed silo ٠ fitted with an audible high level alarm which is interlocked with the

APPENDIX J IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES (EMIS)

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures	Who to implement the measures?	Location of the measure	When to implement the measures?	Requirements / Relevant Legislations
	 material filling line and no overfilling is allowed; Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system. 					
В	Noise					
S3.4.1.1	wooden frames barrier with a small-cantilevered upper portion of superficial density not less than 14kg/m ² on a skid footing with 25mm thick internal sound absorptive lining.	To minimize construction noise impact arising from the Project at the affected noise sensitive receivers (NSRs)	Contractor	Work Sites	Construction phase of Advance Works and Main Works of Phase 1A	EIAO-TM,
S3.4.1.2	 Good Site Practice: Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program. Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program. Mobile plant, if any, should be sited as far away from NSRs as possible. Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities. 	To minimize	Contractor	Work Sites	Construction period of Advance Works and Main Works of Phase 1A	EIAO-TM, NCO
С	Ecological Impact					
S4.2.1.2	Avoid unnecessary lighting.	Minimize mortality impacts on birds.	Design/ Contractor/ Plant Operator	Work Sites	Construction phase of Advance Works and Main Works of Phase 1A	EIAO-TM
S4.2.1.3	Good construction site practice to minimise dust generation should be followed on all construction sites. Measures to avoid, minimise and mitigate impacts on air quality are detailed in this schedule	Minimize dust generation from construction sites.	Contractor	Work Sites	Construction phase of Advance Works and Main Works of Phase 1A	EIAO-TM

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures	Who to implement the measures?	Location of the measure	When to implement the measures?	Requirements / Relevant Legislations
S4.2.1.4	 The following measures to avoid, minimise and mitigate impact on water quality during construction phase shall be implemented Temporary severage and drainage to be designed and installed to collect wastewater and prevent it from entering water bodies; Proper locations well away from nearby water bodies should be used for temporary storage of materials (i.e. equipment, filling materials, chemicals and fuel) and temporary stockpiles of construction debris and spoil, and these should be identified before commencement of works; To prevent muddy water entering nearby water bodies, work sites close to nearby water bodies should be isolated, using such items as sandbags or silt curtains with lead edge at bottom and properly supported props. Other protective measures should also be taken to ensure that no pollution or siltation occurs to the water gathering grounds of the work sites; Construction debris and spoil should be covered and/or properly disposed of as soon as possible to avoid these being washed into nearby water bodies; Proper locations for discharge outlets of temporary wastewater treatment facilities well away from sensitive receivers should be identified; Adequate lateral support should be erected where necessary in order to prevent soil/mud from slipping into water bodies; Site boundaries should be clearly marked and any works beyond the boundary strictly prohibited; Regular water monitoring and site audit should be carried out at adequate points along any watercourses where construction works are underway upstream within their catchments and also on the Ng Tung, Sheung Yue and Shek Sheung Rivers. If the monitoring and audit results show that pollution occurs, adequate measures including temporarily cessation of works should be considered; Excavation profiles should be indentified before insult and safety; Where soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the		Contractor	Work Sites	Construction phase of Advance Works and Main Works of Phase 1A	EIAO-TM

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures	Who to implement the measures?	Location of the measure	When to implement the measures?	Requirements / Relevant Legislations
	 water bodies; and Supply of suitable clean backfill material after excavation, if required. Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent discharge during transport or during wet season; Speed control for the trucks carrying contaminated materials should be enforced; Vehicle wheel washing facilities at construction sites' exit points should be established and used, where necessary; and Other measures as detailed in this schedule. 					
D	Water Quality Impact					
\$5.2.2.1	Construction Site Runoff Practices and measures provided in the Practice Note for Professional Persons on Construction Site Drainage, (PROPECC PN1/94) should be followed where applicable.	Control construction runoff	Contractors	Work Sites	Construction phase of Advance Works and Main Works of Phase 1A	EIAO-TM, WPCO, EIAO
\$5.2.2.2 \$5.2.2.3	 Sewage from Workforce Portable chemical toilets and sewage holding tanks should be provided for handling the construction sewage generated by the workforce. A licensed Contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project. Regular environmental audit on construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site. It is anticipated that sewage generation during the construction phase of the Project would not cause water quality impact after undertaking all required measures 	Handling of site sewage	Contractors	Work Sites	Construction phase of Advance Works and Main Works of Phase 1A	EIAO-TM, WPCO, EIAO
Е	Waste Management					
S6.2.2.1	 Good Site Practices and Waste Reduction Measures: Nomination of an approved person, such as a site manager, to be responsible for the implementation of 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 site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; 	Minimize waste Generation during construction	Contractor	Work Sites	Construction phase of Advance Works and Main Works of Phase 1A	Waste Disposal Ordinance (WDO)

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures	Who to implement the measures?	Location of the measure	When to implement the measures?	Requirements / Relevant Legislations
	 Provision of sufficient waste disposal points and regular collection for disposal; Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; An Environmental Management Plan (EMP) should be prepared by the contractor and submitted to the Engineer for approval. 					
\$6.2.3.1	 Waste Reduction Measures: Segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal; Proper storage and site practices to minimize the potential for damage and contamination of construction materials; Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; Sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); and Provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling. 		Contractor	Work Sites	Prior to the commencement of construction of Advance Works and Main Works of Phase 1A	WDO
S6.2.4.1 - S6.2.4.2	 Storage, Collection and Transportation of Waste Should any temporary storage or stockpiling of waste is required, recommendations to minimize the impacts include: Waste, such as soil, should be handled and stored well to ensure secure containment, thus minimizing the potential of pollution; Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and Different locations should be designated to stockpile each material to enhance reuse. Remove waste in timely manner; Employ the trucks with cover or enclosed containers for waste transportation; Obtain relevant waste disposal permits from the appropriate authorities; and Disposal of waste should be done at licensed waste disposal facilities. 	Minimize waste impacts arising from waste storage	Contractor	Work Sites	Construction phase of Advance Works and Main Works of Phase 1A	WDO
\$6.2.5.3	 C&D Material from Buildings Demolition and New Building Construction The Contractor should recycle as much as possible of the C&DM on- site. Public fill and C&DM waste should be segregated and stored in 	Minimize waste impacts from building demolition and new	Contractor	Work Sites	Construction phase of Advance Works and Main Works of Phase 1A	Land (Miscellaneou s Provisions) Ordinance, WDO,

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures	Who to implement the measures?	Location of the measure	When to implement the measures?	Requirements / Relevant Legislations
	 different containers or skips to enhance reuse or recycling of materials and their proper disposal. For example, concrete and masonry can be crushed and used as fill, and steel reinforcing bar can be used by scrap steel mills. Different areas of the work sites should be designated for such segregation and storage. The use of wooden hoardings shall not be allowed. An alternative material, such as metal, aluminium or alloy etc, could be used. Government has developed a charging policy for the disposal of waste to landfill at present. It will provide additional incentive to reduce the volume of generated waste and ensure proper segregation to allow reuse of the inert material on site when implemented. In order to minimize the impacts of the demolition works, the generated wastes must be cleared as quickly as possible after demolition. Therefore, the demolition and clearance works should be undertaken simultaneously. To facilitate proper segregation of inert and non-inert C&D material arising from demolition works, selective demolition method should be adopted. 	building construction				ETWB TCW No. 19/2005
\$6.2.5.4	 Chemical Waste If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producers. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste contractor. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation 	Control the chemical waste and ensure proper storage, handling and disposal	Contractor	Work Sites	Construction phase of Advance Works and Main Works of Phase 1A	Waste Disposal (Chemical Waste General) Regulation, Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
\$6.2.5.5	 General Refuse General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean. A reputable waste collector should be employed to remove general refuse on a daily basis. 	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	Work Sites	Construction phase of Advance Works and Main Works of Phase 1A	Waste Disposal (Chemical Waste General) Regulation, Code of Practice on the Packaging, Labelling and Storage of Chemical Waste

APPENDIX K COMPLAINT LOG

APPENDIX K – COMPLAINT LOG

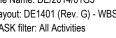
Reporting Month: March 2019

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

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

APPENDIX L CONSTRUCTION PROGRAMME

Activity ID	Activity Name	Remaining Start Duration	Finish	Total Float	Oct	Nov -1	Dec	Jan 2	Feb 3	Mar	Apr	May 6	201 Jun	Jul 8	Aug	Sep	Oct	Nov 12	Dec 13	Jan 14	Feb 15	Mar 16	2019 Apr 17	May 18	Jun 19	Jul ig 20 !1
Shek Wu Hu	ui STW - Master Programme DE/2014/01				-2	-		2		4	5	0		0	3	10		12	13	14	13	10	17	10	19	20 .1
Contract Da	uata e & Completion Date																									
AS000010	Contract Date (LOA)	0 28-Dec-15 A																								
AS000020	Contract Starting Date	0 30-Dec-15 A																								
AS000110	Original Contract Period	297 30-Dec-15 A	23-Oct-18	182														28-Oct-18 O	riginal Contra	of Period						
AS000110 AS000220		297 30-Dec-13A		102														25-001-10, 0		d Feriou			•	22 Apr 10 Co	atract Campl	btion Data farith
	Contract Completion Date for the whole of the Works	0	23-Apr-19	0																			•	23-Apr-19, Co	itract Comp	etion Date for th
Access Date		0 00 Dec 15 A	07 4 10 4	_																						
AS001010	PM's Site Office and Contractor's Site Office and Storage Area, (within 120 days)	0 30-Dec-15 A																								
AS001012	Planned Access Date for PM's Site Office and Contractor's Site Office and Storage Area	0 27-Apr-16 A				<u></u>																				
AS001020	Flowmeter Chamber, MBR Pre-treatment Screen Chamber and its vicinity, (within 560 days)	0 30-Dec-15 A																								
AS001022	Planned Access Date for Flowmeter Chamber, MBR Pre-treatment Screen Chamber and its vicinity	0 06-Nov-17 A				1																				
AS001030	Bioreactor no.1 (BR1) and its vicinity, (within 560 days)	0 30-Dec-15 A																								
AS001032	Planned Access Date for Bioreactor no.1 (BR1) and its vicinity	0 01-Dec-17 A					1																			
AS001040	MBR Facilities Building, Membrane Filtration System No.1 (MFS1) and its vicinity, (within 566 days)	0 30-Dec-15 A																								
AS001042	Planned Access Date for MBR Facilities Building, Membrane Filtration System No.1 (MFS1) and its vicinity	0 19-Nov-17 A					1 1 1 1																			
AS001050	Ng Chow South Road Sewage Pumping Station - (within 158 days)	0 30-Dec-15 A																								
AS001052	Planned Access Date for Ng Chow South Road Sewage Pumping Station	0 04-Jun-16 A																								
AS001100	New Access Date for MFB -B/F	1 30-Mar-18	30-Mar-18*	0					30-	Mar-18 I	30-Mar-18*, N	lew Access Da	ate for MFB	-B/F												
AS001120	New Access Date for MFB -G/F	0 06-Dec-17 A	06-Dec-17 A				1												<u> </u>							
AS001150	New Access Date for MFB -CLP Rm C	0 29-Sep-17 A	29-Sep-17 A																							
AS001160	New Access Date for MFB -CLP Rm D	0 26-Sep-17 A	26-Sep-17 A																							
AS001170g	New Access Date for MFB -11kV Switchroom	0 03-Nov-17 A	03-Nov-17 A			I																				
AS001175g	New Access Date for MFB -LV Switchroom 1 at G/F	1 30-Mar-18	30-Mar-18*	17					30-	Mar-18 I	30-Mar-18*, N	lew Access Da	ate for MFB	-LV Switchro	om 1 at G/F											
AS001180	New Access Date for MFB -1/F (Air Blowers Area)	1 20-Feb-18	20-Feb-18*	17				20-	Feb-18 20-F	eb-18*, Nev	v Access Date	for MFB - 1/F	(Air Blowers	s Area)												
AS001180g	New Access Date for MFB -1/F (Other Areas)	1 30-Mar-18	30-Mar-18*	22					30-	Mar-18 I	30-Mar-18*, N	lew Access Da	ate for MFB	-1/F (Other A	vreas)											
AS001200	New Access Date for MFB -LR/F	1 30-Mar-18	30-Mar-18*	237					30-	Mar-18 I	30-Mar-18*, N	lew Access Da	ate for MFB	-LR/F												
AS001220	New Access Date for MFB -UR/F	1 30-Mar-18	30-Mar-18*	237					30-	Mar-18 I	30-Mar-18*, N	lew Access Da	ate for MFB	-UR/F												
AS001240	New Access Date for MFB -Parapet & Roof	1 30-Mar-18	30-Mar-18*	237					30-	Mar-18 I	30-Mar-18*, N	lew Access Da	ate for MFB	-Parapet & R	oof											
AS001300	New Access Date for Pre-treatment Screen Chamber	1 03-Jan-18	03-Jan-18*	4			03-Jan-18	I 03-Jan-1	18*, New Access I	Date for Pre	-treatment Sc	reen Chamber	r													
AS001320	New Access Date for Flowmeter Chamber	1 30-Mar-18	30-Mar-18*	87					30-	Mar-18 I	30-Mar-18*, N	lew Access Da	ate for Flown	neter Chamb	er											1
AS001340	New Access Date for Bioreactor No. 1 - 2nd Lane	0 06-Dec-17 A	06-Dec-17 A				T																			
AS001342	New Access Date for Bioreactor No. 1 - 1st Lane (2nd Half)	1 25-Jan-18	25-Jan-18*	77			2	Jan-18 🛛	25-Jan-18*, Nev	w Access Da	te for Bioreac	tor No. 1 - 1st	Lane (2nd H	Half)												
AS001342g	New Access Date for Bioreactor No. 1 - 1st Lane (1st Half)	1 30-Mar-18	30-Mar-18*	10					30-	Mar-18 I	30-Mar-18*, N	lew Access Da	ate for Biorea	actor No. 1	1st Lane (1st	t Half)										
AS001344	New Access Date for Bioreactor No. 1 - Post Anoxic Zone	1 30-Mar-18	30-Mar-18*	13					30-	Mar-18 I	30-Mar-18*, N	lew Access Da	ate for Biorea	actor No. 1	Post Anoxic	Zone										
AS001360	New Access Date for Membrane Tanks	1 30-Mar-18	30-Mar-18*	17				+	30-	Mar-18 I	30-Mar-18*, N	lew Access Da	ate for Memb	orane Tanks								÷				
AS001380	Availability of CLP Cable Ducts	0 03-Nov-17 A	03-Nov-17 A			I .																				
AS001400	New Access Date for Other Cable Ducts	1 30-Mar-18	30-Mar-18*	8					30-	Mar-18 I	30-Mar-18*, N	lew Access Da	ate for Other	Cable Ducts												
AS001420	New Access Date for Chemical Room	1 30-Apr-18	30-Apr-18*	72						30	0-Apr-18	30-Apr-18*, N	lew Access D	Date for Chem	nical Room											
AS001440	New Access Date for LV Switchroom No.3	1 30-Apr-18	30-Apr-18*	37						30	0-Apr-18	30-Apr-18*, N	lew Access D	Date for LV S	vitchroom No	0.3										
Key Dates															t											
AS002010	Completion of NCSRPSP E&M Works including testing and commissioning	0 30-Dec-15 A	28-Jul-17 A																							
	File Name: DE/2014/01G3	Remain										Contra	ct No.	DE/20	14/01					Da Da		Revisi		Checked		proved
	Layout: DE1401 (Rev. G) - WBS TASK filter: All Activities	Critical						P	rovision	of E&I						age Tre	eatme	nt Wor	ks	08-Jan- 22-Jun-		Rev. 0 Rev. D		H Lau H Lau	KM KM	
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ctivity ID	Activity Name	Remaining Start Duration	Finish	Tota Floa				Feb Mar	Apr Ma	2018 ay Jun Jul	Aug	Sep	Oct Nov			eb Mar	2019 Apr May	Jun Jul I
AS002020	Completion of SWHSTW - Further Expansion Phase 1A - Advance Works E&M Works including T&C, process commissioning	380 30-Dec-15 A	23-Apr-19	(-2 -1	1	2	3 4	5 6	6 7 8	9	10	11 12	13	14	15 16	17 18 23-Apr-19, Com	19 20 Provide the 20 Providence P
Section I AS200010	Contract Completion of the works - Section I	0 30-Dec-15 A	23-Sep-16 A															
AS200020	Completion date - Section I (272 days from starting date)	0	23-Sep-16 A															
Time Risk All	lowance and Planned Completion																	
AS200040	Planned Completion date - Section I	0	23-Sep-16 A															
Section II AS300010	Contract Completion of the works - Section II	0 30-Dec-15 A	18-Mar-16 A															
AS300020	Completion date - Section II (80 days from starting date)	0	18-Mar-16 A															
Time Risk All	Iowance and Planned Completion Planned Completion date - Section II	0	18-Mar-16 A															
Section III AS400010	Contract Completion of the works - Section III	440 30-Dec-15 A	15-Mar-19	39	9											15-M	ar-19, Contract Completion	of the works - Section III
AS400020	Completion date - Section III (1029 days from starting date)	0	23-Apr-19	0)													npletion date - Section III (
Time Risk All	lowance and Planned Completion																	
AS400030	Time Risk Allowance for Completion of Function Test of Section III (4% of installation duration, 463-469 days)	18 06-Apr-19	23-Apr-19	C	0											06-Apr-19	23-Apr-19, Time	
AS400040	Planned Completion date - Section III	0	23-Apr-19	C)												♦ 23-Apr-19, Plan	ned Completion date - Se
Section IV AS500010	Contract Completion of the works - Section IV	0 30-Dec-15 A	28-Jul-17 A															
AS500020	Completion date - Section IV (278 days from starting date)	0	28-Jul-17 A		ate - Section IV (278 d	lays from startir	ig date)											
	lowance and Planned Completion																	
AS500030	Time Risk Allowance for Section IV (4% of installation duration, 120 days)	0 22-Jun-17 A																
AS500040	Planned Completion Date	0	28-Jul-17 A		pletion Date													
Activity Sch 1.01 - Prelimin	edule No.1 - Preliminaries naries																	
Contractor's AS101010	Site Office Construction	0 22-Jul-16 A	00 Con 16 A															
AS101010	Construction of Contractor's Site Office & Store Maintain Contractor's Site Office & Store	450 27-Oct-16 A	23-Sep-16 A 25-Mar-19	5	3												25-Mar-19, Maintain Contra	rtor's Site Office & Store
AS101012	Removal of Site Office, Store & Relevant Facilities	21 26-Mar-19	15-Apr-19		3												15-Apr-19, Remove	
Site Facilities																		
AS101030	Set up Temp. Electricity Supply, Water Supply	0 18-Aug-16 A	23-Sep-16A															
AS101032	Provision of Temp. Electricity & Water Supply for execution for the Contract	471 27-Oct-16 A	15-Apr-19	٤	3												15-Apr-19, Provisio	on of Temp. Electricity & W
Permanent U AS101040	tilities Services Applications to the Public Utilities for Provision of Services	0 29-Jan-16 A	23-Sep-16 A															
AS101041	Completion of CLP 11kV Switchroom No. 1 & No.2 (by Other Contractor)	0	29-Sep-17 A		29-Sep-17 A, Comp	etion of CLP 11	kV Switchroom	No. 1 & No.2 (by Other Co	ntractor)									
AS101042	BS Works for CLP11 kV Switchroom No.1 & No. 2	0 30-Sep-17 A	02-Nov-17 A															
AS101042g	H/O Inspection of 11 kV Switchroom with CLP	13 03-Nov-17 A	12-Jan-18		5 3-Nov-17 A			an-18, H/O Inspection of 11		1 CLP								
AS101043	Handover of 11 kV Switchroom to CLP	0	12-Jan-18	75				an-18, Handover of 11 kV S		10 Mar 10 D			D)					
AS101045	Provision of Permanent Electricity Supply (by CLP) CLP Meters Installed	120 13-Jan-18	12-May-18	75		13-Ja	in-18			 12-May-18, Provision of Per 22-May-18, CLP Meters 		ppiy (by CL	-*')					
AS101045a	CLP Meters Installed Provision of Telemetry & Telephone Lines	0 30 19-Aug-18	22-May-18 17-Sep-18	34								17-5	Sep-18, Provision of Telem	etry & Telenh	one Lines			
	ecessary labour, tools, materials, equipment and supervision													etty a relepin				
AS101050	Environmental Auditing and fulfilling the Environmental Permit	471 29-Jan-16 A	15-Apr-19	8	3												15-Apr-19, Environ	mental Auditing and fulfillin
O&M Manual AS101061	s and As-Built Drawings Prepare & Submit the first draft O&M Manuals	90 19-May-18	16-Aug-18	87	7				19-May-18		16-040	-18. Prend	re & Submit the first draft	0&M Manuale	5			
AS101061	Acceptance the first draft O&M Manuals	28 17-Aug-18	13-Sep-18	87	7				10 may-10				p-18, Acceptance the first					
AS101071	Prepare & Submit the final draft O&M Manuals & all Drawings	90 23-Nov-18	20-Feb-19	17	7								23-Nov-18			20-Feb-19, Pre	pare & Submit the final draf	ft O&M Manuals & all Draw
	· · · · · · · · · · · · · · · · · · ·																	
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AS101072	Acceptance the final draft O&M Manuals & all Drawings	28 21-Feb-19	20-Mar-19	34	-2 -1	1	2	3	4	5	6	/	8	9	10	11	12	13	14 21-F	15 eb-19	16 20¦Ma	17 ar-19, Accepta	ance the fin	19 al draft O&N	20 M Manuals &
Training to E	Employer's Staff on the O&M of the Plant																								
AS101080	Provide Training for the Employer's Staff	45 21-Feb-19	06-Apr-19	17															21-F	eb-19 🗖		06-Apr-19,	Provide Tra	ining for the	e Employer's
PM's Site Of	ífice																								
AS101090	Provide E&M equipment & Office Stationary for the use of Project Manager and	471 29-Mar-16 A	15-Apr-19	8																		💻 15-Apr-	19, Provide	E&M equip	ipment & Offic
AS101160	Supervisors Provide clerical support to the Project Manager's site office	471 28-Apr-16 A	15-Apr-19	8																		15-Apr-	19, Provide	clerical sup	pport to the P
AS101100	Provide all necessary photographs, video clips and accessories	471 07-Jun-16 A	15-Apr-19	8																		15-Apr-	19, Provide	all necessa	ary photograp
A																									
AS101110	Provision of one contract vehicle service (Electric Vehicle) during the normal working	0 30-Dec-15 A	28-Jan-16 A																						
	hours				-																				
AS101120	Provide Contract Vehicle Service; one (Petrol-Electricity) & one (Electric) during the normal working hours	0 30-Dec-15 A	20-Jan-16 A																						
AS101130	Provide O&M of the Contract Cars; Driving Services; Mobile Phone Services (normal working hours)	471 29-Jan-16 A	15-Apr-19	8																		15-Apr-	19, Provide	O&M of the	ne Contract C
AS101140	Provide O&M of the Electric Contract Cars; Driving Services (outside normal working hours)	471 29-Jan-16 A	15-Apr-19	8													-					15-Apr-	19, Provide	O&M of the	ne Electric Co
AS101150	Provide O&M of the Petrol-Electricity Contract Cars; Driving Services (outside normal	471 29-Jan-16 A	15-Apr-19	8																		15-Apr-	19, Provide	O&M of the	ne Petrol-Elec
11	working hours)																								
Uniform AS101170	Uniform for Site Personnel and self-employed workers	471 29-Jan-16 A	15-Apr-19	8																		15-Apr-	19, Uniform	ı for Site Pe	ersonnel and
AS101180	Provision of Independent Certified Engineer in accordance with the Specification	471 29-Jan-16 A	15-Apr-19	8																		15-Apr-	19, Provisio	n of Indepe	endent Certifi
			· ·																					·	
Automated E AS101190	External Defibrillator (AED) Provide Automated External Defibrillator (AED) and associated accessories	0 18-Nov-16 A	12-Dec-16 A																						
AS101192	Provide Training for Qualified on-site personnels for the use of AED	0 13-Dec-16 A	22-Dec-16 A																						
	ment Plan for Trip Ticket System																								
AS102010	Complete site management plan for trip ticket system	0 30-Dec-15 A	13-Mar-16 A																						
AS102020	Implementation of site management plan for trip ticket system	471 14-Mar-16 A	15-Apr-19	8													-					15-Apr-	19, Implem	entation of	site manager
Site Cleaning	g and Tidiness																								
AS103010	(i) Site and works area in Shek Wu Hui Sewage Treatment Works - Daily	471 26-Sep-17 A	19-Apr-19	4		-								:	:	1	1	1	1			19-Ap	or-19, (i) 💲	te and worl	rks area in Sh
AS103020	(ii) Site and works area in Ng Chow Nam Road Sewage Pumping Station - Daily	0 05-Jun-16 A	27-Sep-16 A																						
AS103030	(i) Site and works area in Shek Wu Hui Sewage Treatment Works - Weekly	471 26-Sep-17 A	19-Apr-19	4			-															19+Ac	vr-19.(i) Si	te and work	rks area in Sh
					_																				
AS103040	(ii) Site and works area in Ng Chow Nam Road Sewage Pumping Station - Weekly	0 05-Jun-16 A	27-Sep-16 A																						
	ctor Management Plan																								
AS104010	Complete sub-contractor management plan	0 30-Dec-15 A	27-Feb-16A																						
AS104020	Quarterly updating of sub-contractor management plan	471 29-May-16 A	15-Apr-19	8																		15-Apr-	19, Quarte	ly updating	g of sub-contr
Waste Manag	gement Plan																								
AS105010	Complete waste management plan	0 30-Dec-15 A	28-Mar-16 A																						
AS105020	Review and updating of waste management plan	471 29-Mar-16 A	15-Apr-19	8													1	1	1		1	= 15-Apr-	19, Review	and updati	ting of waste r
Safety Scher	me																								
AS106010	Complete Safety Plan	0 30-Dec-15 A	27-Feb-16 A																						
AS106030	Update Safety Plan	471 29-Feb-16 A	19-Apr-19	4																		19-Ar	r-19, Upda	e Safetv Pl	lan
				-																					
AS106050	Provide Safety Officer	471 28-Apr-16 A	15-Apr-19	8																			19, Provide		
AS106070	Attend Site Safety and Environment Management Committee	471 28-Apr-16 A	15-Apr-19	8																		= 15-Apr-	19, Attend	Site Safety a	and Environn
AS106080	Attend Site Safety and Environment Committee	471 28-Apr-16 A	15-Apr-19	8										:	:		-					15-Apr-	19, Attend	Site Safety a	and Environn
AS106090	Arrange and attend weekly safety walk	471 28-Apr-16 A	15-Apr-19	8											i 							15-Apr-	19, Arrange	and attend	o weekly safe
AS106100																									id weekly envi
	Arrange and attend weekly environmental walk	471 28-Apr-16 A	15-Apr-19	8																					
AS106110	Provide safety and environment training - (i) 1 day course (for first attendance)	471 28-Apr-16 A	15-Apr-19	8																		15-Apr-	19, Provide	safety and	d environmen
AS106120	Provide safety and environment training - (ii) 0.5 day revalidation course	471 28-Apr-16 A	15-Apr-19	8													-					15-Apr-	19, Provide	safety and	d environment
AS106130	Provide safety and environment training - site specific induction training	471 28-Apr-16 A	15-Apr-19	8																		15-Apr-	19, Provide	safety and	d environment
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AS106140	Provide safety and environment training - t			28-Apr-16 A		8								1	1									15-Apr-19, Provide s	-
AS106150	Provide safety and environment training:Pa instructed by the Engineer	articipate in safety promotional campaign as	471	28-Apr-16 A	15-Apr-19	8													1					15-Apr-19, Provide s	afety and environ
AS107010	Arrange and hold Pre-work Activities of Sit	te Safety Cycle	471	28-Apr-16 A	15-Apr-19	8																		15-Apr-19, Arrange a	and hold Pre-worl
AS107020	Provide safety bulletin board		471	28-Apr-16 A	15-Apr-19	8	-	-					1				1				1			15-Apr-19, Provide s	afety bulletin boa
AS107030	Use of quality powered mechanical equipn	nent	471	28-Apr-16 A	15-Apr-19	8																		15-Apr-19, Use of qu	uality powered me
AS109010	Confined Space Training for Competent P	Persons to competent persons	471	28-Apr-16 A	15-Apr-19	8																	<u></u>	15-Apr-19, Confined	Space Training fr
						0													1						
AS109020	Confined Space Training for Certified Wor	kers to certified workers	471	28-Apr-16 A	15-Apr-19	8													1			1		15-Apr-19, Confined	Space Training f
invironmenta				00 D 15 A	07 5 1 40 4																				
AS106020	Complete Environmental Management Pla	an	0	30-Dec-15 A	27-Feb-16 A																				
AS106040	Update Environmental Management Plan		471	29-Feb-16 A	19-Apr-19	4		-	-				1		1		1		1		1			19 Apr-19, Update	Environmental M
AS106060	Provide Environmental Officer		471	29-Jan-16 A	15-Apr-19	8																		15-Apr-19, Provide E	Environmental Of
AS108010	Use of mechanical dump truck covers		471	29-Feb-16 A	19-Apr-19	4																		19-Apr-19, Use of r	mechanical dum
AS111010	Update the EM&A Manual		471	28-Feb-16 A	15-Apr-19	8																		15-Apr-19, Update the second secon	he EM&A Manua
AS111020	Implement all necessary environmental imp	nact mitigation measures	471	28-Feb-16 A	15-Apr-19	8																		15-Apr-19, Implemer	nt all necessary e
	· · ·	pact miligation measures																							nt all necessary e
AS111030	Employ Environmental Team		0) 30-Dec-15 A	27-Apr-16 A																				
AS111032	Provide Environmental Team Services		471	28-Apr-16 A	15-Apr-19	8							1											15-Apr-19, Provide E	nvironmental Te
.12 - Process	s Commissioning																								
AS112000	Process Commissioning (Refer to Section	III)	0)	05-Apr-19	0																	♦ 05	5-Apr-19, Process Com	missioning (Refe
	Procurement Programme																								
AS003000	Prepare & Submit Procurement Programm	ne	0) 30-Dec-15 A	27-Feb-16 A																				
ection I of	Works																								
ctivity Scheo																							(
- Design Ca AS201100	alculation of Plant and Materials Complete Design Calculation of Plant & Ma	aterial (Refer to P&M Submission Schedule	0) 30-Dec-15 A	23-Sep-16 A																				
	for details)																								
2 - CIVII Requ AS202100	uirment Drawings for the Plant Complete Civil Requirment Drawings for F	Flowmeter Chamber, Pre-treatment Screen,	0) 30-Dec-15 A	28-Mar-16 A																		·		
	MF Tanks & MFB (B/L)	as (Refer to Dwgs Submission Schedule for) 30-Dec-15 A																					
AS202200	details)	s (Refer to Dwgs Submission Schedule for	0	50-Dec-15 A	23-30p-16 A																				
3 - Detailed D AS203100	Design and Plant Layout Drawings Complete Detailed Design and Plant Layou		0) 29-Mar-16 A	23-Sep-16 A																				
	Schedule for details)	ut Drawings (Heler to Dwgs Submission	U	29-IVIAI - 10 A	23-3ep-10 A																				
ection II of																							ļ		
ctivity Scheo 1 - Design Ca	alculation of Plant and Material																								
AS301100		aterial (Refer to P&M Submission Schedule	0	0 30-Dec-15 A	18-Mar-16 A																				
2 - Civil Requ	uirment Drawings for the Plant																								
AS302100		er to Dwgs Submission Schedule for details)	0	0 30-Dec-15 A	18-Mar-16 A																				
3 - Detailed D	Design and Plant Layout Drawings	5																					·		
AS303100	Complete Detailed Design and Plant Layor Schedule for details)		0) 30-Dec-15 A	18-Mar-16 A																				
ection III o	,																						(
	ial Procurement																								
	ward of Suppliers - Mechanical -		-	00 14-11 10 1	00 8 t0 t																				
AS400100	Procurement of BR Feedpumps & Associa			28-May-16 A																					
AS400110	Procurement of MBR Pre-treatment Scree	en	0	29-Mar-16 A	21-Jun-16 A																				
AS400120	Procurement of Wash compactors, baggin	ng system	0	28-May-16 A	25-Aug-16 A																				
AS400120a	Procurement of screenings skips		0	0 30-Sep-16 A	19-Oct-17 A																				
AS400130	Procurement of Associated ductworks, pipe	eworks and valves	0) 30-Sep-16 A	20-Sep-17 A																				
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AS400140	Procurement of Mist system, FRP kiosk an	iu urain pumping system		30-Sep-16 A											- - - - - -		1 1 1 1	- - - - -							
AS400150	Procurement of Ancillary areation system		0) 27-Jun-16 A	22-Sep-16 A																				
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AS400160	Procurement of Other Associated Equip't for MBR Pre-treatment Screen Facilities	23 20-Nov-17 A	22-Jan-18	91	-2 -1 20-Nov-17 A					Associated Equip't fo			een Facilities	10		12	13	14	13	10	17	10	-13	20
	Award of Suppliers - Mechanical - BR1		1																					
AS400200	Procurement of Aeration Blowers	0 27-Jun-16 A	-					ļ																
AS400210	Procurement of Submersible Mixers	0 28-May-16 A																						
AS400220	Procurement of Mixed Liquor Return pumps	0 28-May-16 A													1 1 1 1									
AS400230	Procurement of Surplus Activated Sludge Pumps	0 28-May-16 A	22-Sep-16 A																					
AS400240	Procurement of Air Diffusion System	0 29-Mar-16 A	01-Jun-16 A																					
AS400250	Procurement of Associated pipework, ductwork & valves BR1	23 30-Sep-16 A	22-Jan-18	62				22-Jan-18, Procure	ement of Associa	ated pipework, duct	vork & valves	BR1												
AS400260	Procurement of Foam control system and wash water spraying system	0 27-Jun-16 A	22-Sep-16 A																					
AS400270	Procurement of Other associated equipment for BR1	23 30-Sep-16 A	22-Jan-18	64			2	22-Jan-18, Procure	ement of Other	associated equipme	nt for BR1													
Tender and A	Award of Suppliers - Mechanical - MFS1 Procurement of Membrane Modules - MFS1	0 14 May 16 A	20 Apr 16 A																					
		0 14-Mar-16 A																						
AS400310	Procurement of Permeate Pumps - MFS1	0 12-Jun-16A																						
AS400320	Procurement of RAS / Backwash Pumps - MFS1	0 12-Jun-16A																						
AS400330	Procurement of Air Scouring Blowers - MFS1	0 13-May-16 A																						
AS400340	Procurement of Air Compressor - MFS1	0 14-Mar-16 A	21-Dec-17 A																					
AS400350	Procurement of Chemical Dosing System	0 30-Sep-16 A	29-Jun-17 A																					
AS400360	Procurement of Permeate Drain Pumps, Drain Pumps for MFS1 & Cleaning drain pumps	0 30-Sep-16 A	05-Sep-17 A									1 1 1 1			1 1 1 1									
AS400370	Procurement of Wash Water Pumping System	0 03-Jul-17 A	05-Sep-17 A											 										
AS400380	Procurement of Associated Pipes, Valves & Fittings- MFS1	23 09-Jan-17 A	22-Jan-18	53			2	22-Jan-18, Procure	ement of Associa	ated Pipes, Valves &	Fittings- MF	S 1												
AS400390	Procurement of Other Associated Equipment - MFS1	23 09-Jan-17 A	22-Jan-18	23			2	22-Jan-18, Procure	ement of Other	Associated Equipme	nt - MFS1													
	Award of Suppliers - Mechanical - Flowmeter Chamber																							
AS400400	Procurement of Flowmeters	0 28-May-16 A						ļ																
AS400410	Procurement of Flange Adaptors & Other Associated Equipment	0 27-Oct-16 A	20-Sep-17 A																					
AS400500	Award of Suppliers - Penstocks, Lifting Appliance & Deorderisation Procurement of Stoplogs	0 30-Sep-16 A	15-Feb-17 A																					
AS400510	Procurement of Penstocks	0 30-Sep-16 A																						
AS400520	Procurement of Deodorisers System	0 24-Feb-17A																						
	Award of Suppliers - Electrical Main & Sub-main							+																
AS400600	Procurement of 11kV HV Switchboard	0 28-Apr-16 A	21-Sep-16 A																					
AS400610	Procurement of 3.3kV HV Switchboard	0 28-Apr-16 A	21-Sep-16 A																					
AS400620	Procurement of Transformer	0 28-Apr-16 A	21-Sep-16 A																					
AS400630	Procurement of L.V. Switchboard	0 28-Apr-16 A	22-Sep-16 A																					
AS400640	Procurement of Variable Speed Drive	0 30-Sep-16 A	02-Mar-17 A					+														·		
AS400650	Procurement of Starter for Motor, Screen & Mixer etc.	0 22-Aug-16 A	22-Sep-16 A									1 1 1 1			1 1 1 1									
AS400660	Procurement of Power Supply Cables	0 30-Sep-16 A				_																		
AS400670	Procurement of Earthing & Lightning Materials	11 26-Nov-16 A	10-Jan-18	55			10lar	n-18, Procurement	t of Farthing & I	iahtnina Materials														
AS400680	Procurement of Cable Tray & Trunking etc.	0 26-Nov-16 A								gg														
	Award of Suppliers - Monitoring and Control System	0 20-100	24100-17 A																			·		
AS400700	Procurement of Monitoring & Control System	0 26-Nov-16 A	18-Jul-17 A																					
Tender and	Award of Suppliers - Building Services																							
AS400720	Procurement of B.S. Plant & Materials	90 26-Nov-16 A	30-Mar-18	21					30-M	ar-18, Procurement	of B.S. Plan	& Materials												
Tender and A	Award of Suppliers - Fire Services Procurement of F.S. Plant & Materials	60 26-Nov-16 A	28-Eeh-19	96					Feb-18 Proc	rement of F.S. Plant	& Materiale											·		
		20-110V- 10 A	20-1-60-10	30					- eu- 10, r*1000	onen, or F.S. Fidfil	a waterials													
Subcontractio	ng Process												<u> </u>					<u>. </u>	<u> </u>				<u></u>	
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	Page 5 of 16								Ng Cho	w South F		-	-	ng Stat	ion			17-Oct		Rev. F		l Lau	KM	
	EC									Ma	aster P	rogran	nme					27-Mai	r-18	Rev. G	KF	l Lau	KM	
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Subcontracti	ing Prodedure and Acceptance				-2 -1		2	3	+	<u> </u>	6				10 11	12 13	14 10	10	17 18	13 20
AS400800	Submit Details of the Tender, Tenderers & Procedures for Subcontractor Selection	60 30-Dec-15 A	28-Feb-18	10					28-Feb-18, Subr	nit Details of t	he Tender, Te	nderers & Pr	ocedures for	r Subcontra	ictor Selection					
AS400810	Comment on Details of the Tender, Tenderers & Procedures for Subcontractor	0 31-Aug-16 A	31-Aug-16 A																	
AS400820	Selection Resubmit Details of the Tender, Tenderers & Procedures for Subcontractor Selection	0 31-Aug-16 A	31-Aug-16 A					·												
AS400830	Acceptance of Details of Tender, Tenderers & Procedures for Subcontractor Selection for the S/C by PM	83 20-Sep-16 A	23-Mar-18	1					23-Ma	-18, Acceptar	nce of Lletails	of lender, le	enderers & P	rocedures	for Subcontractor Se	election for the S/C by PM				
	Award of Subontractors																			
AS300850	Procurement for Subcontracting - Mechanical Installation (BR1)	25 14-Mar-17 A	24-Jan-18	64				24-Jan-18, Pr	rocurement for Sul	contracting -	Mechanical II	nstallation (BF								
AS300860	Procurement for Subcontracting - Mechanical Installation (MFS1)	83 01-Aug-17 A	23-Mar-18	396					23-Ma	-18, Procure	ment for Sub	contracting - I	Mechanical Ir	nstallation (MFS1)					
AS300870	Procurement for Subcontracting - Mechanical Installation (Penstocks / Stoplogs)	83 14-Mar-17 A	23-Mar-18	64					23-Ma	-18, Procure	ment for Sub	contracting - I	Mechanical Ir	nstallation (Penstocks / Stoplogs	3)				
AS300880	Procurement for Subcontracting - Mechanical Installation (Flowmeter Chamber)	0 14-Mar-17 A	30-Nov-17 A																	
AS300890	Procurement for Subcontracting - Mechanical Installation (DO System -Supply &	0 28-Feb-17A	26-, Jul- 17 A																	
	Install)																			
AS300900	Procurement for Subcontracting - Mechanical Installation (NCSRSPS)	0 25-May-16 A	12-Sep-16 A																	
AS400840	Procurement for Subcontracting - Mechanical Installation (MBR Pre-treatment Screen Chamber)	0 21-Mar-17 A	30-Nov-17 A			-														
AS400910	Procurement for Subcontracting - FRP Cover (Supply & Install)	0 28-Feb-17A	08-May-17 A																	
AS400920	Procurement for Subcontracting - FRP Platform & Kiosk (Supply & Install)	91 02-Nov-17 A	31-Mar-18	11	-Nov-17 A				31-	Mar-18, Proc	urement for S	Subcontracting	g - FRP Platf	form & Kips	sk (Supply & Install)					
AS400930	Procurement for Subcontracting - Lifting Appliances (Supply & Install)	0 25-Oct-16 A																		
AS400940	Procurement for Subcontracting - Electrical (HV) Installation	0 20-Oct-16 A	01-Sep-17 A																	
AS400950	Procurement for Subcontracting - Electrical (LV) Installation	41 19-Nov-16 A	09-Feb-18	117				09-Fe	b-18, Procurement	for Subcontra	acting - Electr	ical (LV) Insta	allation							
AS400960	Procurement for Subcontracting - PQEM System (Supply & Install)	0 08-May-17 A	18-Jul-17 A																	
AS400970	Procurement for Subcontracting - SCADA / PLC System (Supply & Install)	0 30-Sep-16A	18-Jul-17 A																	
AS400980	Procurement for Subcontracting - Building Services (Supply & Install)	11 10-Feb-17A	10-Jan-18	36			10-Jar	18 Procure	ment for Subcontr	actina - Buildir	na Services (S	Supply & Insta	all)							
							- 10 04													
AS400982	Procurement for Subcontracting - SS316 Air Duct (Supply & Install)	33 10-Feb-17 A	01-Feb-18	123				01-Feb-18	8, Procurement for	Subcontractir	1g - 55316 Al	r Duct (Suppl	y & Install)							
AS400990	Procurement for Subcontracting - Fire Services (Supply & Install)	60 10-Feb-17 A	28-Feb-18	36					28-Feb-18, Proc	urement for S	ubcontracting	J - Fire Servic	xes (Supply 8	& Install)						
AS400992	Procurement for Subcontracting - FS Water Tanks (Supply & Install)	60 10-Feb-17A	28-Feb-18	36					28-Feb-18, Proc	irement for S	subcontracting) - FS Water	Tanks (Supp	oly & Install)						
Activity Sche	edule No. 4																			
	or MBR Pre-treatment Screen Chamber																			
	ng, FAT and Delivery Purchase Order for BR Feedpumps & Associated Equipment	0 06-Sep-16 A	23-Sep-16 A																	
AS401012	Manufacturing, FAT & Delivery to Site - BR Feedpumps & Associated Equipment	0 14-Oct-16 A	18-Jul-17 A																	
AS401030	Purchase Order for MBR Pre-treatment Screen	0 01-Jun-16 A	21-Jun-16 A																	
AS401032	Manufacturing, FAT & Delivery to Site - MBR Pre-treatment Screen	53 06-Jul-16 A	21-Feb-18	16				2	1-Feb-18, Manufa	cturing, FAT 8	Delivery to S	Site - MBR Pro	e-treatment	Screen						
AS401050	Purchase Order for Wash Compactors, bagging system	0 23-May-16 A	21-Jun-16 A																	
AS401050a	Purchase Order for Screening skips & FRP Kiosk	0 16-Oct-17 A	19-Oct-17 A																	
AS401052	Manufacturing, FAT & Delivery to Site - Wash Compactors, bagging system	53 31-Aug-16 A	21-Feb-18	91				2	1-Feb-18, Mànufa	turina. FAT 8	Delivery to S	Site - Wash C	ompactors, b	baqqinq svs	stem					
				EE	17.4					U.										
AS401052a	Manufacturing, FAT & Delivery to Site - Screening skips & FRP Kiosk	152 20-Oct-17 A		55	-17 A						31-	way-ro, wan	iaiaoiuni(iy, F	AL & DEIM	si y to oite - Screenir	ig skips & FRP Kiosk				
AS401070	Purchase Order for Mist system and drain pumping system	0 14-Aug-17 A	05-Sep-17 A																	
AS401072	Manufacturing, FAT & Delivery to Site - Mist system and drain pumping system	152 06-Sep-17 A	31-May-18	22							31-	May-18, Man	ufacturing, F	FAT & Delive	ery to Site - Mist syst	em and drain pumping system	1			
AS401090	Purchase Order for Associated pipeworks and valves	0 18-Sep-17A	20-Sep-17 A																	
AS401092	Manufacturing, FAT & Delivery to Site - Associated pipeworks and valves	47 21-Sep-17A	15-Feb-18	7				15-	Feb-18, Manufactu	ring, FAT & D	elivery to Site	- Associated	pipeworks a	and valves						
AS401110	Purchase Order for Ancillary areation system	0 13-Sep-16A	22-Sep-16 A																	
									00 E-5 40 M	facture	T 0 D - 1	- Cite		ou 101						
AS401112	Manufacturing, FAT & Delivery to Site - Ancillary areation system	60 05-May-17 A		114					28-Feb-18, Man											
AS401130	Purchase Order for Other associated equipment for MBR Pre-treatment Screen Facilities	14 09-Jan-18	22-Jan-18	91		09-Jan-18	2	2-Jan-18, Pu	rchase Order for (ther associat	ed equipmen	t for MBR Pre	e-treatment S	Screen Fac	ilities					
AS401132	Manufacturing & Delivery to Site / FAT - Other associated equipment for MBR Pre-treatment Screen Facilities	110 23-Jan-18	12-May-18	91		23-J	an-18 🗖				12-May-18,	Manufacturin	ng & Delivery	y to Site / FA	AT - Other associated	d equipment for MBR Pre-trea	timent Screen Facilitie	5		
Install, T&C f	for Pre-treatment Screen Chamber (incl. Provision for Health & Safety Requirement	ents)																		
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	Page 6 of 16	Actual	11091835							-					g Station		17-Oct-17	Rev. F	KH Lau	KM
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D	Activity Name	Remaining Start Duration	Finish	Total Float	t Oct	Nov	Dec	Jan	Feb	Mar	Apr	Мау	Jun	2018 Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar		ıy Jun	
AS401002	Mobilisation of Works - MBR Pre-Treatment Screen Chamber	14 04-Jan-18	17-Jan-18	36	-2 6	-1	1 04-Jan-18	2	3 Jan-18, Mot	4 disation of Wo	5 rks - MBR P	6	7 Screen Cha	8 mber	9	10	11	12	13	14	15	16	17 18	19	20
AS401020	Install BR Feedpumps, Control, Site Test	30 08-Apr-18	07-May-18	16	3					08-Apr-18	3	07-May	-18, Install B	R Feedpump	s, Control, Sit	te Test									
	Install MBR Pre-treatment Screens, Control, Site Test	45 22-Feb-18	07-Apr-18	16	3			22-	Feb-18 🗖		07-Apr	18 Install M	B Pre-treatr	ment Screens	Control Site	Test									
				10																					
	Install Wash Compactors & bagging system	30 08-May-18	06-Jun-18	16							08-May-1		<u>.</u>	-18, Install Wa											
AS401060a	Install Screening skips & FRP Kiosk	30 07-Jun-18	06-Jul-18	49	9							07-Jun-18	3	06-Jul-	18, Install Scr	eening skips	& FRP Kiosk								
AS401080	Install Mist system and drain pumping system	30 07-Jun-18	06-Jul-18	16	6							07-Jun-18	3	06-Jul-	18, Install Mis	t system and	drain pumping	system							
AS401100	Install Associated pipeworks and valves	120 17-Feb-18*	16-Jun-18	6	6			17-Fe	b-18* 💻				16	-Jun-18, Insta	allAssociated	pipeworks an	id valves								
AS401120	Install Ancillary areation system	60 17-Jun-18	15-Aug-18	6	5							17-Ju	in-18 💻		15	Aug-18, Inst	all Ancillary are	ation system							
AS401140	Install Other associated equipment for MBR Pre-treatment Screen Facilities	30 17-Jul-18	15-Aug-18	6	5								17	Jul-18	15	Aug-18, Inst	all Other assoc	iated equipme	ant for MBR P	re-treatment Scr	een Facilities				
AS401800	Complete Power Cables Laying from Switchboard to Inlet Screen Chamber	0	02-Aug-18	22	2										♦ 02-Aug-	18, Complete	Power Cable	Laying from	\$witchboard to	o Inlet Screen Ch	namber				
	Site test and commission for MBR pre-treatment System	30 24-Aug-18	22-Sep-18	1	_															MBR pre-treatme					
	<i>r Bioreactor No. 1 (BR1)</i> g, FAT and Delivery																								
AS402010	Purchase Order for Aeration Blowers & master control for aeration system	0 18-Aug-16 A	24-Aug-16 A																						
	Manufacturing, FAT & Delivery to Site - Aeration Blowers & master control for aeration system	30 04-Jul-16 A	29-Jan-18	147	7	 			29-Jan-18	, Manufacturin	g, FAT & De	ivery to Site -	Aeration Blo	wers & maste	er control for	aeration syste	em								
	Purchase Order for Submersible Mixers	0 06-Sep-16 A	22-Sep-16 A		-																				
AS402032	Manufacturing, FAT & Delivery to Site - Submersible Mixers	0 14-Oct-16 A	22-Sep-17 A		-																				
AS402050	Purchase Order for Mixed Liquor Return pumps	0 06-Sep-16 A	22-Sep-16 A		_																				
AS402052	Manufacturing, FAT & Delivery to Site - Mixed Liquor Return pumps	0 14-Oct-16 A	06-Jul-17 A		_																				
	Purchase Order for Surplus Activated Sludge Pumps	0 06-Sep-16 A					+																		
					_																				
AS402072	Manufacturing, FAT & Delivery to Site - Surplus Activated Sludge Pumps	0 14-Oct-16 A	26-Sep-17A																						
AS402090	Purchase Order for Air Diffusion System	0 02-May-16 A	01-Jun-16 A																						
AS402092	Manufacturing, FAT & Delivery to Site - Air Diffusion System	106 31-Mar-17 A	15-Apr-18	41			1 1 1	1 1 1			15-	Apr-18, Manu	facturing, FA	T & Delivery t	to Site - Air D	iffusion Syste	m								
AS402110	Purchase Order for Associated ductworks, pipeworks and valves	0 13-Nov-17 A	17-Nov-17 A																						
AS402112	Manufacturing, FAT & Delivery to Site - Associated ductworks, pipeworks and valves	0 18-Nov-17 A	18-Dec-17 A			-																			
AS402130	Purchase Order for Foam control system & wash spraying system	0 13-Sep-16A	22-Sep-16 A		-																				
AS402132	Manufacturing, FAT & Delivery to Site - Foam control system & wash spraying system	68 14-Oct-16 A	08-Mar-18	79	9					08-Mar-	18, Manufac	turing, FAT &	Delivery to S	Siţe - Foam co	ontrol system	& wash spray	ying system								
AS402150	Purchase Order for Other associated equipment for Other associated equipment for	14 09-Jan-18	22-Jan-18	64	1		09-Jan-1	8 🗖 2	22-Jan-18, P	urchase Order	for Other a	sociated equ	ipment for O	ther associate	ed equipment	for BR1									
	BR1 Manufacturing, FAT & Delivery to Site - Other associated equipment for BR1	60 23-Jan-18	23-Mar-18	64	1		23	Jan-18 🗖						ery to Site - O			t for BB1								
	r BR1 (incl. Provision for Health & Safety Requirements) Mobilisation of Works - BR1	0 07-Dec-17 A	21-Dec-17 A																						
AS402020	Install Aeration blowers & master control system	60 28-Apr-18	26-Jun-18	59	Э					2	8-Apr-18	, , ,		26-Jun-18,	Install Aeratio	n blowers & i	måster control	system							
AS402040	Install Submersible Mixers	30 03-Apr-18	02-May-18	10)					03-Apr-18		02-May-1	8, Install Sub	mersible Mixe	ers										
AS402060	Install Mixed Liquor Return pumps	14 03-May-18	16-May-18	10	1						03-Mav-18	16-	Mav-18 Inst	al Mixed Liqu	or Beturn pu	mbs									
]												
	Install Surplus Activated Sludge Pumps	14 17-May-18	30-May-18	86									JU-IVIAY-18	8, Install Surp											
	Install Air Diffusion Aeration System	90 03-May-18	31-Jul-18	24							03-May-18						ffusion Aeratio	system							
AS402120	Install Associated ductworks, pipeworks and valves	111 22-Dec-17 A	20-Apr-18	36	6	22-De	əc-17 A 🗖				20	-Apr-18, Ins	all Associated	d ductworks, p	pipeworks an	d valves									
AS402140	Install Foam control system & wash spraying system	30 03-May-18	01-Jun-18	24	1						03-May-18		01-Jun-1	8. Install Foar	m control syst	em & wash s	praying systen	1							
AS402160	Install Other associated equipment for BR1	90 17-May-18	14-Aug-18	10	0						17-Ma	ay-18 💻	1		14-	Aug-18, Insta	all Other assoc	iated equipme	ht for BR1						
AS402800	Complete Power Cable Laying from Switchboard to Plants for BR1	0	19-Aug-18	6	6										♦ 1	9-Aug-18, Co	omplete Power	Cable Laying	from Switchb	oard to Plants fo	r BR1				
AS402900	Site Testing & Commissioning for BR1	60 24-Aug-18	22-Oct-18	1	-									24	1-Aug-18		:	22-Oct-18, Sit	e Testing & Co	dmmissioning for	BR1				
4.3 Works for	r Membrane Filtration System (MFS1)																								
Manufacturing,	, FAT and Delivery		00.4== 10.4																						
AS403010	Purchase Order for Membrane Modules	0 18-Apr-16 A	29-Apr-16 A																						
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Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	2018 Jul	Aug	Sep	Oct	Nov	Dec
AS403012	Manufacturing, FAT & Delivery to Site - Membrane Modules	151	28-Mar-16 A	30-May-18	56	-2	-1	1	2	3	4	5	6	30-May-1	8, Manufacturii	9 ng, FAT & Deliv	ery to Site -	Membrane N	12 Modules	13
AS403030	Purchase Order for Permeate Pumps	0	13-Sep-16 A	23-Sep-16 A																
AS403032	Manufacturing, FAT & Delivery to Site - Permeate Pumps	88	07-Oct-16 A	28-Mar-18	9	-						28-Mar-18,	Manufacturin	g, FAT & Del	ivery to Site - I	Permeate Pump	os			
AS403050	Purchase Order for Return Activated Sludge Pumps	0	13-Sep-16 A	23-Sep-16 A																
AS403052	Manufacturing, FAT & Delivery to Site - Return Activated Sludge Pumps	0	07-Oct-16 A	06-Sep-17 A																
AS403070	Purchase Order for Backwash Pumps (Item Deleted)	0	31-Aug-16 A	31-Aug-16 A					-											
AS403072	Manufacturing, FAT & Delivery to Site - Backwash Pumps (Item Deleted)	0	31-Aug-16 A	31-Aug-16 A		-														
AS403090	Purchase Order for Air Scouring Blowers	0	15-Aug-16 A	24-Aug-16 A																
AS403092	Manufacturing, FAT & Delivery to Site - Air Scouring Blowers	30	11-Apr-16 A	29-Jan-18	102					29-Jan-18,	Manufacturin	g, FAT & Del	very to Site -	Air Scouring	Blowers					
AS403110	Purchase Order for Air Compressor	0	18-Dec-17 A	21-Dec-17 A		-														
AS403112	Manufacturing, FAT & Delivery to Site - Air Compressor	120	22-Dec-17 A	29-Apr-18	57		22-Dec	-17A 🗖	-				29-Apr-18,	Manufacturi	ng, FAT & Deli	very to Site - Ai	r Compress	or		
AS403130	Purchase Order for Chemical Dosing System (i) NaOCI dosing pumps	0	05-Jun-17 A	29-Jun-17 A		-														
AS403132	Manufacturing, FAT & Delivery to Site - Chemical Dosing System (i) NaOCI dosing	121	30-Jun-17 A	30-Apr-18	86	_							30-Apr-18	Manufactur	ing, FAT & Del	ivery to Site - C	hemical Do:	ing System (i) NaOCI dosi	ing pumps
AS403150	pumps Purchase Order for Chemical Dosing System (ii) Citric Acid dosing pumps		05-Jun-17 A	29-Jun-17 A																
AS403152	Manufacturing, FAT & Delivery to Site - Chemical Dosing System (ii) Citric Acid dosing		30-Jun-17 A	30-Apr-18	116								30-Apr-18	Manufactur	ing, FAT & Del	ivery to Site - C	hemical Do:	sing System ((ii) Citric Acid (dosing pumps
AS403170	pumps Purchase Order for Chemical Dosing System (iii) Chemical storage tank	0	06-Feb-17A	28-Feb-17 A					-											
AS403172	Manufacturing, FAT & Delivery to Site - Chemical Dosing System (iii) Chemical storage	121	01-Mar-17 A	30-Apr-18	116								30-Apr-18	Manufactur	ing, FAT & Del	ivery to Site - C	hemical Dos	sing System ((iii) Chemical s	storage tank
AS403190	tank Purchase Order for Permeate Drain Pumps, Drain Pumps for MFS1 and Cleaning		28-Aug-17 A	05-Sep-17A		-									0.	-				°
AS403192	Drain Pumps Manufacturing, FAT & Delivery to Site - Permeate Drain Pumps, Drain Pumps for		06-Sep-17A	02-May-18	93	-							02-Mav-1	8. Manufactu	urina. FAT & De	elivery to Site -	Permeate D	rain Pumps.	Drain Pumps	for MFS1 and
AS403210	MFS1 and Cleaning Drain Pumps Purchase Order for Wash water pumping system		28-Aug-17 A	05-Sep-17A																
AS403212	Manufacturing, FAT & Delivery to Site - Wash water pumping system		06-Sep-17A	30-Apr-18	125								30-Apr-18	Manufactur	ina. FAT & Del	ivery to Site - W	/ash water i	oumpina syste	em	
AS403230	Purchase Order for Associated ductworks, pipeworks and valves		23-Jan-18	02-Feb-18	53			23	3-Jan-18	02-Feb-18	3, Purchase C	Order for Ass			orks and valves					
AS403232	Manufacturing, FAT & Delivery to Site - Associated ductworks, pipeworks and valves	90	03-Feb-18	03-May-18	53				03-Feb-18				03-May-1	8, Manufact	uring, FAT & D	elivery to Site	Associated	ductworks, pi	ipeworks and	valves
AS403250	Purchase Order for Other associated equipment for MFS1	11	23-Jan-18	02-Feb-18	23			23	3-Jan-18 🗖	02-Feb-18	3, Purchase C	Order for Oth	er associated	lequipment	for MFS1					
AS403252	Manufacturing, FAT & Delivery to Site - Other associated equipment for MFS1	60	03-Feb-18	03-Apr-18	23	-			03-Feb-18			03-Apr-1	s, Manufactu	ring, FAT & E	elivery to Site	· Other associa	ated equipm	ent for MFS1	1	
Install, T&C f	or MFS1 (incl. Provision for Health & Safety Requirements)								-									¦ +		
AS403002	Mobilisation of Works - MBR Facilities Building G/F	0	07-Dec-17 A	20-Dec-17 A									1 1 1 1 1							
AS403002a	Mobilisation of Works - MBR Facilities Building B/F	7	31-Mar-18	06-Apr-18	0					,	31-Mar-18	06-Apr-	8, Mobilisati	on of Works	- MBR Facilitie	s Building B/F				
AS403004	Mobilisation of Works - MFS1	7	03-Apr-18	09-Apr-18	17						03-Apr-18	09-Apr	-18, Mobilisa	tion of Works	MFS1					
AS403020	Install Membrane Modules, MFS Tank	60	26-Jul-18	23-Sep-18	0									1	26-Jul-18 📕					ine Modules, M
AS403040	Install Permeate Pumps, No.1 - No.6, MBR Bldg	45	07-Apr-18	21-May-18	0						07-Apr-18		2	1-May-18, In	stall Permeate	Pumps, No.1 -	No.6, MBR	Bldg		
AS403060	Install Return Activated Sludge Pumps, No.1 - No.5, MBR Bldg	30	26-Jun-18	25-Jul-18	0								2	6-Jun-18		25-Jul-18, Insta	all Return Ac	tivated Sludg	e Pumps, No.	.1 - No.5, MBF
AS403080	Install Backwash Pumps -MBR Bldg (Not required)	0	30-Dec-17 A	30-Dec-17 A					I											
AS403100	Install Air Scouring Blowers, MBR Bldg	45	28-Apr-18	11-Jun-18	14						2	8-Apr-18		11 -Ju	un-18, Install A	ir Scouring Blav	wers, MBR I	Bldg		
AS403120	Install Air Compressor, MBR Bldg.	30	12-Jun-18	11-Jul-18	14								12-Jun	18	11-Jul	-18, Install Air C	Comp re ssor,	MBR Bldg.		
AS403140	Mobilisation of Works - Chemical Rooms	14	01-May-18	14-May-18	72						(01-May-18	14 -N	/ay-18, Mobi	lisation of Wor	ks - Chemical F	Rooms			
AS403142	Install NaOCI Dosing Pumps & Storage Tank	30	15-May-18	13-Jun-18	72							15-May	-18	13-	Jun-18, Install I	NaOCI Dosing I	Pumps & St	orage Tank		
AS403160	Install Citric Acid Dosing Pumps & Storage Tank	30	14-Jun-18	13-Jul-18	72								14-Jur	18	13-Ju	ıl-18, Install Citr	ric Acid Dosi	ng Pumps &	Storage Tank	
AS403180	Install Acetic Acid Dosing Pumps & Storage Tank	30	14-Jul-18	12-Aug-18	81									14-Jı	ıl 18	12-Aug	-18, Install A	cetic Acid Do	sing Pumps 8	3 Storage Tank
AS403200	Install Permeate Drain Pumps, Drain Pumps for MFS1 and Cleaning Drain Pumps, MFS1 Drain Chamber	30	22-May-18	20-Jun-18	74							22-1	Nay-18 💻	2	0-Jun-18, Inst	all Permeate Di	rain Pumps,	Drain Pump	s for MFS1 an	nd Cleaning Dr
AS403220	Install Wash water pumping system, MBR Bldg.	21	21-Jun-18	11-Jul-18	74								21-	Jun-18 🗖	11-Jul	-18, Install Was	sh water pur	nping system	, MBR Bldg.	
AS403240	Install Associated ductworks, pipeworks and valves	120	28-Apr-18	25-Aug-18	29						2	8-Apr-18	1			2	5-Aug-18, Ir	istall Associat	ed ductworks,	s, pipeworks an

File Name: DE/2014/01G3 Layout: DE1401 (Rev. G) - WBS TASK filter: All Activities Remaining Work
Critical Activity
Milestone

Actual Progress

Contract No. DE/2014/01 Provision of E&M Facilities for Shek Wu Hui Sewage Treatment Works Further Expansion Phase 1A - Advance Works and Ng Chow South Road Sewage Pumping Station Master Programme

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Activity ID	Activity Name	Remaining	Start	Finish	Total										2018										2
		Duration	i l		Float	Oct -2	Nov -1	Dec 1	Jan 2	Feb 3	Mar 4	Apr 5	May 6	Jun 7		Jul 8	Aug 9	Sep 10	Oct 11	Nov 12	Dec 13	14	Feb 15	Mar 16	A 1
AS403260	Install Power Supply / Other associated equipment for MFS1	150) 27-Apr-18	23-Sep-18	0						2	7-Apr-18										associated equipm			
AS403800	Complete Laying Power Cable from Switchboard to Plant for MFS1	()	23-Sep-18	0														23-Sep-18, (Complete Layi	ng Power Cal	e from Switchboa	rd to Plant	for MFS1	
AS403900	Site test and commission for Membrane Filtration System (MFS1)	60	24-Sep-18	22-Nov-18	0												24-9	Sep-18		-	22-Nov-18, Si	te test and commis	sion for Me	embrane Fi	tration
	pr Flowmeter Chamber g, FAT and Delivery																								
AS404010	Purchase Order for Flowmeter	(28-Aug-16 A	22-Sep-16 A																					
AS404012	Manufacturing, FAT & Delivery to Site - Flowmeter	(04-Oct-16 A	21-Aug-17 A																					
AS404030	Purchase Order for Associated ductworks, pipeworks and valves	(0 18-Sep-17 A	20-Sep-17 A																					
AS404032	Manufacturing, FAT & Delivery to Site - Associated ductworks, pipeworks and valves	9.	1 21-Sep-17 A	31-Mar-18	86							31-Mar-18	3 Manufactur	ring, FAT &	Delivery to	o Site - Asso	ciated du	ctworks, pip	eworks and	valves					
AS404050	Purchase Order for Flange Adaptor	(0 18-Sep-17 A	18-Sep-17 A																					
AS404052	Manufacturing, FAT & Delivery to Site - Flange Adaptor	9.	1 21-Sep-17 A	31-Mar-18	86		-	 				31-Mar-18	3 Manufactur	ring, FAT &	Delivery to	o Site - Flan	ge Adapto	or							
Install, T&C f	or Flowmeter Chamber (incl. Provision for Health & Safety Requirements)																								
AS404020	Install Flowmeter, Flange Adaptor, Associated Ductworks, pipeworks & Valves (MBR1)	45	5 17-Jul-18	30-Aug-18	24									1	7-Jul-18			30-Aug-18	, Install Flow	meter, Flange	Adaptor, Ass	ciated Ductworks,	pipeworks	s & Valves (N	/IBR 1)
AS404040	Install Flowmeter, Flange Adaptor, Associated Ductworks, pipeworks & Valves (BR1)	4	5 02-Jun-18	16-Jul-18	24								02-Jun-18			16-Jul-18	i, Install F	lowmeter, F	lange Adapto	or Associated	Ductworks, pi	peworks & Valves (BR 1)		
	r Penstocks, Actuators and Stoplogs																								
AS405010	Purchase Order for (i) Wier Penstocks - Outlet of MBR Pre-treatment Screens S7 & S8	(08-Feb-17A	15-Feb-17 A																					
AS405012	Manufacturing, FAT & Delivery to Site - (i) Wier Penstocks - Outlet of MBR Pre-treatment Screens S7 & S8	(0 16-Feb-17A	28-Nov-17 A			: 																		
AS405030	Purchase Order for (II) Inlet of influent channel of membrane tanks, S1 & S2	(08-Feb-17A	15-Feb-17 A																					
AS405032	Manufacturing, FAT & Delivery to Site - (II) Inlet of influent channel of membrane tanks, S1 & S2	, (0 16-Feb-17A	28-Nov-17 A			-																		
AS405050	Purchase Order for (III) Inlet of membrane tanks PS1 - PS6	(09-Feb-17A	15-Feb-17 A																					
AS405052	Customs Manufacturing, FAT & Delivery to Site - (III) Inlet of membrane tanks PS1 -	(0 16-Feb-17A	28-Nov-17 A																					
AS405070	PS6 Purchase Order for (IV) Outlet of membrane tanks Gate Valves	(26-Jun-17 A	07-Jul-17 A																					
AS405072	Manufacturing, FAT & Delivery to Site - (IV) Outlet of membrane tanks - 6 nos.	9.	1 08-Jul-17 A	31-Mar-18	51							31-Mar-18	3, Manufactur	ring, FAT &	Delivery to	o Site - (IV)	Outlet of	membrane	anks - 6 nos						
AS405090	Purchase Order for Other associated equipment for penstocks & stoplogs	(09-Feb-17A	15-Feb-17 A																					
AS405092	Manufacturing, FAT & Delivery to Site - Other associated equipment for penstocks &	(0 16-Feb-17A	28-Nov-17 A																					
Install, T&C f	stoplogs or Penstocks, Actuators & Stoplogs (incl. Provision for Health & Safety Requiren	nents)																							
AS405020	Install (i) Wier Penstocks - Outlet of MBR Pre-treatment Screens S7 & S8	30	08-Apr-18	07-May-18	49						08-Apr-18	3	07-Ma	y-18, Install	ll (i) Wier F	Penstocks - 0	Dutlet of N	/IBR Pre-tre	atment Scre	ens S7 & S8					
AS405040	Install Penstocks w/ Actuator for Inlet of Membrane Tanks - PS1 to PS6, MFS1	30	26-Jun-18	25-Jul-18	30								2	26-Jun-18		25-Ji	ıl-18, Inst	all Penstock	w/ Actuato	r for Inlet of N	embrane Tar	ks - PS1 to PS6, N	FS1		
AS405060	Install (II) Inlet of influent channel of membrane tanks, S1 & S2	30	08-May-18	06-Jun-18	49							08-May-1	8	06-Ji	lun-18, Ins	tall (II) Inlet	of influen	t channel of	membrane t	anks, S1 & S2					
AS405080	Install Gatevalve w/ Actuator for Outlet of membrane tanks	35	5 22-May-18	25-Jun-18	0							22-	May-18 💻		25-Jur	n-18, Install	Gatevalve	w/ Actuato	for Outlet o	of membrane	anks				
AS405100	Install Other associated equipment for penstocks & stoplogs	60	26-Jun-18	24-Aug-18	30								2	26-Jun-18	_		2	4-Aug-18, li	stall Other a	ssociated equ	ipment for pe	nstocks & stoplogs			
	or Building Services and Fire Services			_																					
AS406500	Dission / Inspection (FSD) Prepare & Submit F314 & F501	14	4 24-Jan-19	06-Feb-19	37																24	Jan-19 🗖	06-Feb-1	9, Prepare	& Subn
AS406510	F.S. Inspection	14	4 23-Feb-19	08-Mar-19	21																	23-Feb	19	0 8-Mar-	19, F.S
AS406520	Report of Completion on Ventilation System		7 24-Jan-19	30-Jan-19	44																24	Jan-19 🗖 30	Jan-19, R	Report of Co	mpletic
AS406530	VAC Inspection	14	4 31-Jan-19	13-Feb-19	44																	31-Jan-19	13-Feb	o-19, VAC Ir	nspecti
AS406540	Issuance of Acceptance Letter		7 09-Mar-19	15-Mar-19	21																	0	9-Mar-19	🗖 15-M	ar-19,
AS406550	Application of D.G. Licence	(02-Apr-18*		138						02-Apr-18*	Applicatio	n of D.G. Lic	ence											
AS406560	Processing of D.G. Licence Application	180	0 02-Apr-18*	28-Sep-18	138)2-Apr-18*								28-Sep-18	, Processing of	f D.G. Licenc	e Application			
AS406570	D.G. Inspection & Issue D.G. Licence) 24-Jan-19	22-Feb-19	21						·												22	-Feb-19, D	G. Ins
	pmission / Inspection (WSD)																								
AS406600	Submit WWO46 Pt. I & II to WSD (FS)	30	0 30-May-18*	28-Jun-18	158							3	80-May-18*		28 -Ji	un-18, \$ubm	nit WWO	16 Pt. I & II 1	WSD (FS)						
AS406610	Approval of WWO46 Pt. I & II by WSD (FS)	30) 29-Jun-18	28-Jul-18	158									29-Jun-18	3	28-	Jul-18, Ap	proval of W	WO46 Pt. I 8	II by WSD (I	S)				
AS406620	Submit WWO46 Pt. IV to WSD (FS)		7 24-Jan-19	30-Jan-19	28																24	Jan-19 🗖 30	Jan-19 S	Submit WW	D46 Pt
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Power Cable	e from Switch	idoard to Pla								
-Nov-18, Site	test and con	nmission for	Membrane Fi	tration S	ysten	n (MFS1)				
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daptor, Assoc	iated Ductwo	rks, pipewor	ks & Valves (I	MBR1)						
uctworks, pipe	eworks & Valv	ves (BR 1)								
nbrane Tanks	s - PS1 to PS	6, MFS1								
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ment for pens	stocks & stop	ogs								
24-	Jan-19 🗖	06-Feb	19, Prepare	& Submit	F31	4 & F501				
- /										
	23-	Feb-19	08- Mar-	19, F.S.	Inspe	ection				
24-	Jan-19 🗖	30-Jan-19	Report of Co	mpletion	on	entilation Sys	tem			
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Activity ID	Activity Name	Remaining	Start	Finish	Total		Doo	lan	Feb	Mar	r Apr	May	l lup	2018	Aug	Son	Oct	Nov	Dee	lan	Ech	Mor	2019	Mov	hup	hul I
AS406630	WSD Inspection (FS)	Duration	31-Jan-19	01-Mar-19	Float 28	Oct Nov -2 -1	Dec 1	2	3	4	r Apr 5	May 6	Jun 7	Jul 8	Aug 9	Sep 10	Oct 11	12	Dec 13	Jan 14 31-Jan-19	Feb 15	Mar 16 01-Mar-19	Apr 17 WSD Inspection	18		Jul iç 20
		50	51-0an-15	01-10121-13	20																	01-101-13	WOD Inspection	11(10)		
AS406010	, FAT and Delivery Purchase Order for Indoor Lighting	14	17-Mar-18	30-Mar-18	72			-	17-N	Mar-18 🗖	30-Mar-18	Purchase O	rder for Indo	or Lighting												
AS406012	Manufacturing, FAT & Delivery to Site - Indoor Lighting	90	31-Mar-18	28-Jun-18	72					31-Mar-	18			28-Jun-18,	Manufacturi	ng, FAT & Delivery	to Site - Indo	or Lighting								
AS406030	Purchase Order for Air-conditioning & ventilation System	14	17-Mar-18	30-Mar-18	34				17-N	Mar-18 🗖	30-Mar-18	, Purchase O	order for Air-c	ohditioning &	ventilation Sy	stem										
AS406032	Manufacturing, FAT & Delivery to Site - Air-conditioning & ventilation System	120	31-Mar-18	28-Jul-18	34					31-Mar-	-18				28-Jul-18,	Manufacturing, FA	T & Delivery t	o Site - Air	-conditioning	g & ventilation \$	System					
AS406050	Purchase Order for Outdoor lighting installation for relevant area	14	17-Mar-18	30-Mar-18	147				17-N	Mar-18	30-Mar-18	Purchase O	order for Out	door lighting in	stallation for	relevant area										
AS406052	Manufacturing, FAT & Delivery to Site - Outdoor Lighting installation for relevant area	90	31-Mar-18	28-Jun-18	147			-		31-Mar-			<u>.</u>			ng, FAT & Delivery	to Site - Outo	oor Lightin	o installation	n for relevant a	rea					
AS406070	Purchase Order for Other B.S. installation for relevant area		17-Mar-18	30-Mar-18	21				17-N		30-Mar-18	Purchase O							5				í.			
AS406072	Manufacturing, FAT & Delivery to Site - Other B.S. installation for relevant area		31-Mar-18	28-Jun-18	21					31-Mar-			-			ng, FAT & Delivery	to Site - Othe	r B S inet	allation for re	elevant area						
					21				01 Mar 19		14-Mar-18, Purch	and Order fo						D.O. 110								
AS406090	Purchase Order for F.S. Fittings & Equipment		01-Mar-18	14-Mar-18	30						14-iviµr-16, Purch	ase Order to					F.O. 511									
AS406092	Manufacturing, FAT & Delivery to Site - F.S. Fittings & Equipment	90	15-Mar-18	12-Jun-18	36				15-Ma	ar-18 🗖		 	12-J	un-18, Manut	acturing, FAI	6 Delivery to Site	- F.S. Fittings	& Equipm	ent							
AS406020	r Building Services (incl. Provision for Health & Safety Requirements) Install Indoor Lighting - Trunking / Conduits, MBR Building	60	29-Jun-18	27-Aug-18	72								29-Jun-18			27-Aug-18, Inst	all Indoor Ligh	ting - Trun	king / Condu	uits, MBR Buildi	ing					
AS406022	Install Indoor Lighting Fittings, MBR Building	60	28-Aug-18	26-Oct-18	72										28-Aug-18		26-	Oct-18, Ins	stall Indoor L	Lighting Fittings	, MBR Build	ling				
AS406024	Install Indoor Lighting - Trunking / Conduits, Chemical Rooms	7	28-Aug-18	03-Sep-18	104										28-Aug-18	03-Sep-18,	nstall Indoor L	ighting - Ti	runking / Co	onduits, Chemic	al Rooms					
AS406026	Install Indoor Lighting Fittings, Chemical Rooms	7	04-Sep-18	10-Sep-18	125										04-Sep-18	3 🗖 10-Sep-1	3, Install Indoo	r Lighting	Fittings, Che	emical Rooms						
AS406040	Ductwork for Ventilation System, MBR Building		02-May-18	30-Jul-18	34						02-May-18					, Ductwork for Ven										
AS406041	Install Ventilation Fans & Control, MBR Building		31-Jul-18	20-Aug-18	57											20-Aug-18, Install				ldina						
AS406042	Complete Ventilation System	0		20-Aug-18	57											20-Aug-18, Compl			,, mort our				-			
				-	07							1 1 1 1							ma Air aand	litioning MPD P	Juilding		j j			
AS406043	Install Split Type Air-conditioning, MBR Building		28-Aug-18	01-Oct-18	97										28-Aug-18			tali Spiit iy	pe Air-cond	Illioning, MBR B	suliaing					
AS406044	MVAC Ready		02-Oct-18		97											02-Oct-18 🔶							; ;			
AS406045	Provision of Temp. A/C for H.V. Switchroom	21	31-Jul-18	20-Aug-18	34									31-Jul-18	2	20-Aug-18, Provisi	on of Temp. A	C for H.V.	Switchroom	n						
AS406046	Temporary MVAC Ready	0	21-Aug-18		34									21-	Aug-18 🔶	Temporary MVAC	Ready									
AS406060	Install Outdoor Lighting for Pre-treatment Screen & Flowmeter Chamber	30	29-Jun-18	28-Jul-18	162								29-Jun-18		28-Jul-18,	Install Outdoor Lig	hting for Pre-	reatment	Screen & Flo	owmeter Cham	ber					
AS406061	Install Outdoor Lighting for BR1 & its Vicinity Areas	45	29-Jun-18	12-Aug-18	147								29-Jun-18		12-4	Aug-18, Install Out	door Lighting	or BR1 & i	ts Vicinity Ar	reas						
AS406062	Install Outdoor Lighting for MBR Building & its Vicinity Areas	45	29-Jun-18	12-Aug-18	147								29-Jun-18		12-4	Aug-18, Install Out	door Lighting	or MBR B	uilding & its	Vicinity Areas						
AS406063	Install Outdoor Lighting for MFS1 & its Vicinity area	30	29-Jun-18	28-Jul-18	162								29-Jun-18		28-Jul-18,	Install Outdoor Lig	hting for MFS	1 & its Viol	nity area							
AS406064	Install Outdoor Lighting for Chemical Rooms	14	11-Sep-18	24-Sep-18	125							1 1 1 1			11-Sep	-18 24-	Sep-18, Instal	Outdoor I	ighting for C	Chemical Room	ns		j j			
AS406080	Install Other B.S. (Switches for Power Supply to Equipment), Pre-treatment Screen & Flowmeter Chamber	30	29-Jun-18	28-Jul-18	21								29-Jun-18	-	28-Jul-18,	Install Other B.S.	Switches for I	Power Sup	ply to Equip	oment), Pre-trea	atment Scre	en & Flowmet	er Chamber			
AS406081	Install Other B.S. (Switches for Power Supply to Equipment), BR1 & its Vicinity Areas	30	29-Jul-18	27-Aug-18	21									29-Jul-18		27-Aug-18, Inst	all Other B.S.	(Switches	for Power S	Supply to Equip	ment), BR1	& its Vicinity Ar	eas			
AS406082	Install Other B.S. (Switches for Power Supply to Equipment), MBR Facilities Building	45	28-Aug-18	11-Oct-18	21										28-Aug-18		11-Oct-18	, Install Ot	her B.S. (Sw	witches for Pow	er Supply to	x Equipment),	MBR Facilities B	Building		
AS406083	Install Other B.S. (Switches for Power Supply to Equipment), MFS1 & its Vicinity area	45	12-Oct-18	25-Nov-18	21			-								12-Oct-18		2	5-Nov-18, I	Install Other B.S	S. (Switches	for Power Su	lpply to Equipme	ent), MFS1 &	its Vicinity area	4
AS406084	Install Other B.S. (Switches for Power Supply to Equipment), Chemical Rooms	21	26-Nov-18	16-Dec-18	21												26-N	ov-18 🗖	16-	Dec-18, Install	Other B.S.	Switches for	Power Supply to	Equipment),	Chemical Roc	ims
AS406800	Testing and Commission of B.S. Installation	21	17-Dec-18	06-Jan-19	21													17-Dec	-18	06-Jan-1	9, Testing a	nd Commissio	n of B.S. Installa	ation		
	Fire Services (incl. Provision for Health & Safety Requirements)																		_							
AS406101	Install Trunking & Conduits for AFA System - MBR Facilities Building		13-Jun-18	12-Jul-18	36							13-Jun				Trunking & Condui										
AS406102	Install AFA Fittings & Accessories, Wiring - MBR Faclities Building	60	13-Jul-18	10-Sep-18	36									I-18 		10-Sep-1						ding				
AS406104	Install Trunking & Conduits for AFA System - Chemical Rooms/D.G. Store	7	14-Jul-18	20-Jul-18	81								14-Jı	il 18 🗖 2	0-Jul-18, Inst	all Trunking & Cor	duits for AFA	System - C	hemical Roo	oms/D.G. Store	e		1			
AS406106	Install AFA Fittings & Accessories, Wiring - Chemical Rooms/D.G. Store	7	21-Jul-18	27-Jul-18	81								2	I-Jul-18 🗖	27-Jul-18, I	Install AFA Fittings	& Accessories	, Wiring - (Chemical Ro	ooms/D.G. Stor	re					
AS406108	Install F.S.Main Control System	7	11-Sep-18	17-Sep-18	36										11-Sep	-18 🗖 17-Se	o-18, Install F.	S.Main Co	ntrol System	n						
AS406180	Pipework for Sprinkler, HR/HR - MBR Facilities Building	14	29-Jul-18	11-Aug-18	158									29-Jul-18	11-A	ug-18, Pipework f	or Sprinkler, H	R/HR - M	BR Facilities	Building						
AS406182	Install Sprinkler Head, Hose Reel & Fire Hydrant - MBR Facilities Building	35	12-Aug-18	15-Sep-18	158									12-Aug	18	15-Sep	18, Install Sp	inkler Hea	d, Hose Ree	el & Fire Hydra	Int - MBR Fa	aclities Building	1			
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	Page 10 of 16									Ν	Ng Chow			-	-	ing Statio	n			17-Oct- 27-Mar-		Rev. F Rev. G	KH L		KM KM	
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AS407100 Purchase Order for Starter for Motor, Szreen & Morer etc. D D S-8p-16A D S-8p-16A D S-8p-16A D S-9p-16A D S-9p-17A D S-9p-17A <thd s-9p-17a<="" th=""> D S-9p-17A <thd s-9<="" td=""><td></td></thd></thd>	
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AS407001 Mobilisation & Preparation Works - MBR Facilities Building CLP Rm C & D 0	
AS407002 Mobilisation of Works - MBR Facilities Buiking O	
AS407020 Install 11kV HV Switchboard, SAT G Install 11kV HV Switchboard, SAT Install 11kV HV Switchboard,	
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AS407024 CLP Inspection / Install Meters CL CLP Inspection / Install Meters AS407026 11kV HV Switchboard Energization 0 23-May-18 75 23-May-18 11kV HV Switchboard Energization AS407026 Install 3.3kV HV Switchboard, SAT 0 23-May-18 12-Jun-18 12-Jun-18 12-Jun-18 12-Jun-18 12-Jun-18 12-Jun-18 12-Jun-18 12-Jun-18 12-Jun-18 10-Jul-18 27-Jun-18 10-Jul-18, Functional Test - 3.3kV HV Switchboard, SAT AS407060 Install Transformers (No. 3 & 4) 14 06-Apr-18 2 -Apr-18, Install Transformers (No. 3 & 4) 06-Apr-18 2 -Apr-18, Install Transformers (No. 1 & 2) AS407062 Install Transformers (No. 1 & 2) 14 30-Apr-18 13-May-18 13-May-18, Install Transformers (No. 1 & 2)	
AS407026 1kV HV Switchboard Energization 0 2-May -18 0<	
AS407040 Install 3.3kV HV Switchboard, SAT As40 AS407042 Functional Test - 3.3kV HV Switchboard 14 27-Jun-18 12-Jun-18, Install 3.3kV HV Switchboard, SAT AS407060 Install Transformers (No. 3 & 4) 14 08-Apr-18 21 Apr-18 10-Jul-18 AS407062 Install Transformers (No. 1 & 2) 10+Apr-18 13-May-18 21	
AS407042 Functional Test - 3.3kV HV Switchboard 14 27-Jun-18 10-Jul-18, Functional Test - 3.3kV HV Switchboard AS407060 Install Transformers (No. 3 & 4) 08-Apr-18 30 AS407062 Install Transformers (No. 1 & 2) 11 30-Apr-18 12	
AS407060 Install Transformers (No. 3 & 4) 08-Apr-18 21-Apr-18 30 AS407062 Install Transformers (No. 1 & 2) 14 08-Apr-18 21 -Apr-18 13-May-18, Install Transformers (No. 3 & 4) AS407062 Install Transformers (No. 1 & 2) 14 30-Apr-18 21 -Apr-18 13-May-18, Install Transformers (No. 1 & 2)	
AS407062 Install Transformers (No. 1 & 2) 14 30-Apr-18 13-May-18 13-May-18 Install Transformers (No. 1 & 2)	
AS407080 Install L.V. Switchboard No.1 & MCB Distribution Board, SAT 45 16-Apr-18 30-May-18 1 16-Apr-18 30-May-18 Install L.V. Switchboard No.1 & MCB Distribution Board, SAT	
AS407081 Install VSD for BR Feedpumps, 2 nos. 3 31-May-18 02-Jun-18 102-Jun-18, Install VSD for BR Feedpumps, 2 nos.	
AS407082 Install L.V. Switchboard No.2 & MCB Distribution Board, SAT 45 16-May-18 29-Jun-18 1 16-May-18 29-Jun-18, Install L.V. Switchboard No.2 & MCB Distribution Board, SAT	
AS407083 Mobilisation of Works - Chemical Rooms 7 29-Jun-18 05-Jul-18 1	
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TASK TITE: All Activities	ev. 0 KH Lau KM
Ng Chow South Road Sewage Pumping Station 17-Oct-17 Rev	v. 0 KH Lau KM v. D KH Lau KM
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	AS407084	Install MCB Distribution Board, DB-P6 (Chemical Room 2)	14 06-Jul-18	19-Jul-18	1								06-Jul-18	19-	Jul-18, Instal	I:MCB Distrit	oution Board, I	DB-P6 (Chem	ical Room 2)						
	AS407085	Functional Test - L.V. Switchboard No. 1	30 20-Jul-18	18-Aug-18	1							 	20-	Jul-18	18-	Aug-18, Fur	nctional Test -	.V. Switchbo	ard No. 1						
	AS407086	L.V. Switchboard No. 1 Ready for Energisation	0 19-Aug-18		1									19-Aı	ıg-18 ♦ L.\	/ Switchboa	rd No. 1 Read	y for Energisa	tion						
	AS407087	Functional Test - L.V. Switchboard No. 2	30 30-Jun-18	29-Jul-18	21								30-Jun-18		29-Jul-18, F	unctional Te	st - L.V. Switc	nboard No. 2							
	AS407088	L.V. Switchboard No. 2 Ready for Energisation	0 19-Aug-18		1									10 /	a 19 🔺 L V	(Switchhoo	rd No. 2 Read	v for Eporaica	tion						
					'											. Switchboa									
	AS407500	Install , T&C of PQEMS	60 26-Aug-18	24-Oct-18	29									26	Aug-18	1		24-Oct-18, Ins	stall, T&C of PQEMS						
	AS407600	Earthing System for MFS1 Completed	0 19-Aug-18		29									19-Aı	ig-18 ♦ Ea	rthing Syster	m for MFS1 C	ompleted							
	AS407620	Submit WR1 to EMSD for Electrical System, MFS1	7 19-Aug-18	25-Aug-18	29									19-Aı	ig-18 🗖	25-Aug-18,	Submit WR1 t	o EMSD for E	ectrical System, MFS1						
	AS407640	Power On for MFS1 System	0 26-Aug-18		29									26	Aug-18 🔶	Power On fe	or MFS1 Syste	m							
	Install, T&C fo	or BR1's Vicinity Area (incl. Provision for Health & Safety Requirements)																							
	AS407003	Mobilisation of Works - BR1's Vicinity area	14 01-May-18	14-May-18	37						01-May-18	14 -N	ay-18, Mobili	sation of Worl	ks - BR1's Vic	inty area									
	AS407004	Construction of Canopy for housing the L.V. Switchboard No.3	0 15-May-18	15-May-18	37						15-May	-18 15-N	lay-18, Const	ruction of Car	opy for hous	ing the L.V.	Switchboard N	o.3							
	AS407089a	Install L.V. Switchboard No.3 (with Canopy)	30 15-May-18	13-Jun-18	37						15-May	-18	13-Ju	n-18, Install L	.V. Switchbo	ard No.3 (wi	th Canopy)								
	AS407089b	Functional Test - L.V. Switchboard No. 3	30 14-Jun-18	13-Jul-18	37							14-Jun	÷18	13-Ju	-18. Function	nal Test - L.V	Switchboard	No. 3							
					27																				
			0 14-Jul-18		3/												for Energisatio								
	AS407089d	Install MCB Distribution Board, DB-P8 (Power supply from Switchboard No.3)	7 14-Jul-18	20-Jul-18	170								14-Jul	18 🗖 20	Jul-18, Insta	II MCB Distri	bution Board,	DB-P8 (Powe	r supply from Switchbo	ard No.3)					
	AS407700	Complete Earthing & Lightning System for BR1	0	19-Aug-18	1										♦ 19	-Aug-18, Co	mplete Earthir	ng & Lightning	System for BR1						
	AS407720	Submit WR1 to EMSD for Electrical System, BR1	5 19-Aug-18	23-Aug-18	1									19-Aı	ig-18 🗖 2	23-Aug-18, S	Submit WR1 to	EMSD for Ele	ctrical System, BR1						
	AS407740	Power On for BR1 System	0 24-Aug-18		1									24-	Aug-18 🔶 I	Power On fo	r BR1 System								
1.1	4.8 Lifting A	ppliance																							
	Manufacturin	ig, FAT and Delivery																							
	AS408010	Purchase Order for 1 no. 1,500 kgs Lifting Appliance - (I) For Pre-treatment Screen Chamber	0 08-Feb-17 A	14-Feb-17 A																					
	AS408012	Manufacturing, FAT & Delivery to Site - 1 no. 1,500 kgs Lifting Appliance - (I) For Pre-treatment Screen Chamber	0 15-Feb-17A	06-Dec-17 A			-																		
	AS408030	Purchase Order for 1 no. 500 kgs Lifting Appliance - (II) For BR1	0 08-Feb-17 A	14-Feb-17 A																					
	AS408032	Manufacturing, FAT & Delivery to Site - 1 no. 500 kgs Lifting Appliance - (II) For BR1	39 15-Feb-17 A	07-Feb-18	66				07-Feb	b-18, Manufad	cturing, FAT &	Delivery to S	ite - 1 no. 500	kgs Lifting A	ppliance - (II)	For BR1									
	AS408050	Purchase Order for 1 no. 3,000 kgs & 1 no. 4,000 kgs Lifting Appliance - (III) In G/F of	0 08-Feb-17 A	14-Feb-17 A																					
	AS408052	Membrane Facilities Building Manufacturing, FAT & Delivery to Site - 1 no. 3,000 kgs & 1 no. 4,000 kgs Lifting	0 15-Feb-17A	06-Dec-17 A								 													
		Appliance - (III) In G/F of MF Bldg.																							
	AS408070	Purchase Order for 2 nos. 8,500 kgs Lifting Appliance - (IV) In 1/F of Membrane Facilities Building	0 08-Feb-17 A	14-Feb-17 A																					
	AS408072	Manufacturing, FAT & Delivery to Site - 2 nos. 8,500 kgs Lifting Appliance - (IV) In 1/F of Membrane Facilities Building	39 15-Feb-17 A	07-Feb-18	30				07-Feb	b-18, Manufad	dturing, FAT &	Delivery to S	ite - 2 nos. 8,	500 kgs Lifting	Appliance -	(IV) In 1/F o	f Membrane F	acilities Buildir	g						
	AS408090	Purchase Order for 2 nos. 5,000 kgs Lifting Appliance - (V) For MFS1	0 08-Feb-17 A	14-Feb-17 A																					
	AS408092	Manufacturing, FAT & Delivery to Site - 2 nos. 5,000 kgs Lifting Appliance - (V) For MFS1	91 15-Feb-17 A	31-Mar-18	58	1	:		;	1	31-Mar-18	Manufacturi	ng, FAT & Del	livery to Site -	2 nos. 5,000	kgs Lifting A	ppliance - (V)	For MFS1							
	Install, T&C fo	or Pre-Treatment Screen Chamber (incl. Provision for Health & Safety Requirement	s)																						
	AS408020	Mobilisation of Works - MBR Pre-Treatment Screen Chamber	14 04-Jan-18	17-Jan-18	37		04-Jan-18	17-	Jan-18, Mob	ilisation of Wo	orks - MBR Pr	e-Treatment	Screen Charr	ber											
	AS408022	Install Monorail A-shape support column. 1,500kgs S.W.L. Electric Chain Hoist	45 08-Feb-18*	24-Mar-18	16			08-Feb-18	3	2	24-Mar-18, In	stall Monorai	A-shape sup	oort column. 1	,500kgs S.W	L.⊟ectricC	hain Hoist								
	AS408024	SAT of Lifting Appliance	14 25-Mar-18	07-Apr-18	16				25	5 Mar-18 🗖	07-Apr-	18, SAT of Li	ting Appliance	3											
	Install, T&C fo	or Bioreactor No.1 (BR1) (incl. Provision for Health & Safety Requirements)																							
	AS408040	Install Monorail 500kgs S.W.L. Manual Hoist c/w Trolley	14 03-Apr-18	16-Apr-18	12					03-Apr-18	16-/	Apr-18, Instal	Monorail 500	kgs S.W.L. M	anual Hoist c	/w Trolley									
	AS408042	SAT of Lifting Appliance	14 17-Apr-18	30-Apr-18	12					17-Aı	pr-18 💻	30-Apr-18	SAT of Lifting	Appliance											
		or MBR Facilities Building (incl. Provision for Health & Safety Requirements)	I										_												
	AS408060	Install Electric Travelling Crane for 1 No. 3,000 kg S.W.L & 1 No. 4,000 S.W.L G/F	65 07-Dec-17 A	05-Mar-18	7	07-Dec-17 A				05-Mar-1	18, Install Elec	tric Travelling	Crane for 1	No. 3,000 kg	5.W.L. & 1 N	o. 4,000 S.W	/.L G/F								
	AS408062	SAT of Lifting Appliance, G/F	25 06-Mar-18	30-Mar-18	7				06-Mar-18	3	3 0-Mar-18,	SAT of Lifting	Appliance, G	/F											
	AS408080	Install 2 Nos. Electric Travelling Crane for 8,500 kg S.W.L - 1/F	35 24-Feb-18	30-Mar-18	14			24	-Feb-18 🗖		30-Mar-18,	Install 2 Nos	Electric Trave	elling Crane fo	or 8,500 kg S	.W.L 1/F									
	AS408082	SAT of Lifting Appliance, 1/F	28 31-Mar-18	27-Apr-18	14					31-Mar-18		27-Apr-18, 5	SAT of Lifting	Appliance, 1/F											
	Install, T&C fo	or MFS1 (incl. Provision for Health & Safety Requirements)																							
	AS408101	Install 2 Nos. Electric Travelling Crane for 5,000 kg S.W.L - MFS1 Tanks	30 01-Apr-18	30-Apr-18	58					01-Apr-18		30-Apr-18,	Install 2 Nos.	Electric Trave	lling Crane f	ar 5,000 kg \$	5.W.L MFS	Tanks							
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		Page 12 of 16		- 3. 500						Ng	Chow S	South I	Road Se	ewage	Pumpi	ng Sta	tion			Oct-17	Rev. F		l Lau	KM	
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	AS408102	SAT of Lifting Appliance (MFS1 Tanks)	28 01-May-18	28-May-18	Float		Nov -1	Dec 1	Jan 2	Feb 3	Mar 4	Apr 5 01-May-18	6	7	8	Aug 9 Appliance (M	10	Oct 11	12		Jan 14	Feb 15	Mar 16	Apr 17	May 18	Jun Jul 19 20
			20 01-101ay-10	20-imay-10	50							01-Way-10		20-1viay-10,												
	Manufacturing	Earthing and Lightning Protection System , FAT and Delivery																								
	AS409010	Purchase Order for Cables between HV Switchboard and TX	0 04-Dec-17 A	07-Dec-17 A			I																			
	AS409012	Manufacturing & Delivery to Site - Cables between HV Switchboard and TX	97 08-Dec-17 A	06-Apr-18	107	08-1	Dec-17 A					06-Apr-	8, Manufacti	uring & Delive	ry to Site - Ca	bles between	HV Switchbo	ard and TX								
	AS409014	Purchase Order for Cables between TX/ 3.3kV SW. and Air Blower	0 04-Dec-17 A	07-Dec-17 A			I																			
	AS409016	Manufacturing of Manufacturing & Delivery to Site - Cables between TX/ 3.3kV SW. and Air Blower	97 08-Dec-17 A	06-Apr-18	149	08-1	Dec-17 A					06-Apr-	8, Manufacti	ring of Manu	facturing & D	elivery to Site	Cables betw	veen TX/ 3.3k	/ SW. and Ai	r Blower						
	AS409030	Purchase Order for Cables between TX and LV Switchboard	0 04-Dec-17 A	07-Dec-17 A			I																			
	AS409032	Manufacturing & Delivery to Site - Cables between TX and LV Switchboard	97 08-Dec-17 A	06-Apr-18	149	08-1	Dec-17 A					06-Apr-	8, Manufacti	uring & Delive	ry to Site - Ca	bles between	TX and LV S	witchboard								
	AS409050	Purchase Order for Cables between LV Switchboard and Plant	0 04-Dec-17 A	07-Dec-17 A			I																			
	AS409052	Manufacturing & Delivery to Site - Cables between LV Switchboard and Plant	97 08-Dec-17 A	06-Apr-18	80	08-1	Dec-17 A				:	06-Apr-	8, Manufacti	uring & Delive	ry to Site - Ca	bles between	LV Switchbo	ard and Plant								
	AS409070	Purchase Order for Earthing Sys Inlet Screen Chamber, BR1 & MFS1	7 04-Jan-18	10-Jan-18	55			04-Jan-18	🗖 10-Jar	18, Purchas	se Order for	Earthing Sys.	Inlet Screer	Chamber, B	R1 & MFS1											
	AS409072	Manufacturing & Delivery to Site - Earthing Sys Inlet Screen Chamber, BR1 & MFS1	120 11-Jan-18	10-May-18	55			11-Jan-1	8				10-Ma	y-18, Manufa	cturing & Deli	very to Site - E	arthing Sys.	- Inlet Screen	Chamber, Bl	R1 & MFS1						
	AS409090	Purchase Order for Lightning Sys Inlet Screen Chamber, BR1 & MFS1	7 04-Jan-18	10-Jan-18	77			04-Jan-18	🗖 10-Jar	18, Purchas	se Order for	Lightning Sys.	- Inlet Scree	n Chamber, E	R1 & MFS1											
	AS409092	Manufacturing & Delivery to Site - Lightning Sys Inlet Screen Chamber, BR1 & MFS1	120 11-Jan-18	10-May-18	77			11-Jan-1	8				10-Ma	v-18. Manufa	cturina & Deli	verv to Site - L	iahtnina Svs	- Inlet Screen	Chamber. B	R1 & MFS1						
	AS409110	Purchase Order for Cables Tray	0 20-Nov-17 A	-											<u>j</u>	,	3 - 3 - 7 -		,							
		Manufacturing & Delivery to Site - Cables Tray	83 25-Nov-17 A		50	25-Nov-1	7.					23-Mar-18, M		Delivery to	ita Cablaa	L										
			63 23-NOV-17 A	23-10101-16	59	23-1100-1						29-11/181-10, 11	anuiacturing a	s Delivery to	Sile - Cables	iray										
		r MBR Facilities Building (incl. Provision for Health & Safety Requirements) Complete Cable Pits & Ducting between New/Existing 11kV Switch Room	0	30-Mar-18	38						•	• 30-Mar-18,	Complete Ca	able Pits & Du	cting betweer	New/Existing	11kV Switch	Room								
	AS409002	Complete HV Switchboard and TX Installation	0	12-Jun-18	40									🔶 12-Ju	n-18, Comple	te HV Switch	board and TX	Installation								
	AS409003	Mobilisation of Works - MBR Facilities Building	14 31-Mar-18	13-Apr-18	38						31-Mar-18	13-A	or-18, Mobilis	ation of Work	s - MBR Facil	lities Building										
	AS409020	Laying Cables between HV Switchboard and TX	14 13-Jun-18	26-Jun-18	40								13-Jun	18	26-Jun-18, L	aying Cables	petween HV	Switchboard a	nd TX							
	AS409022	Laying Cables between TX/ 3.3kV SW. and Air Blower	14 04-Jul-18	17-Jul-18	61									04-Jul-18	17-	Jul-18, Laying	Cables betw	een TX/ 3.3kV	SW. and Air	Blower						
	AS409039	Complete LV Switchboard and TX Installation	0	19-Aug-18	248													hplete LV Swith			h					
	AS409040	Laying Cables between TX and LV Switchboard	14 27-Jun-18	10-Jul-18	68								2	√- lun-18	10- lul		-	n TX and LV S								
		Laying Cables between LV Switchboard and Plant - MBR Facilities Building	60 04-Jun-18										ے 04-Jun-18		10-001			les between L		d and Plant	MPR Equilitio	e Duilding				
				02-Aug-18	22							ba 4 40										5 Duiluii iy				
	AS409121	Install Cable Tray/Trunking between HV Switchboard and TX	7 30-Apr-18	06-May-18	22							30-Apr-18				king between										
		Install Cable Tray/Trunking between TX/3.3kV SW. and Air Blower	7 27-Jun-18	03-Jul-18	61													g between TX		and Air Blowe	r					
	AS409123	Install Cable Tray/Trunking between LV Switchboard and TX	7 07-May-18	13-May-18	22							07-May-18	🗖 13-M	ay-18, Install	Cable Tray/T	runking betwe	en LV Switch	board and TX								
	AS409124	Install Cable Tray/Trunking between LV Switchboard and Plant - MBR Facilities Building	21 14-May-18	03-Jun-18	22							14-May	18	📮 03-Jun-1	8, Install Cabl	e Tray/Trunkir	g between L	V Switchboard	and Plant - I	MBR Facilitie	es Building					
	AS409900	Complete Earthing & Lightning System for MFS1	0	19-Aug-18	29											19-	Aug-18, Con	nplete Earthin	& Lightning	System for N	MFS1					
		r Plant's Vicinity Areas (incl. Provision for Health & Safety Requirements) Complete Cable Pits & Ducting between LV Switchboard and Plant - Relevant Areas	0	30-Mar-18	57							• 30-Mar-18.	Complete Ca	able Pits & Du	ctina betweer	LV Switchbo	ard and Plan	t - Relevant Ar	eas							
		Complete Lightning Pits & Ducting	0	30-Mar-18	118							• 30-Mar-18,														
		Complete Earth Pits & Ducting	0		00																					
		,	U	30-Mar-18	96						•	• 30-Mar-18,			-	=										
	AS409081	Install Earth Electrode & Earthing Conductor - Earthing System for HV & LV Equipment	14 11-May-18	24-May-18	55													tor - Earthing								
	AS409082	Install Earth Electrode & Earthing Conductor - Lightning System for HV & LV Equipment	10 25-May-18	03-Jun-18	63							25	May-18 🗖	U3-Jun-1				ductor - Lightr								
	AS409083	Install Earthing Conductor for Inlet Screen Chamber	14 05-Aug-18	19-Aug-18	29													all Earthing Co			-					
	AS409084	Install Earthing Conductor for BR1, Testing	30 20-Jul-18	19-Aug-18	1									20-	Jul-18	19-	Aug-18, Inst	all Earthing Co	nductor for E	BR1, Testing						
	AS409085	Install Earthing Conductor - Lightning System for HV & LV Equipment	55 25-Jun-18	19-Aug-18	1								25	-Jun-18 🗖		19-	Aug-18, Inst	all Earthing Co	nductor - Lig	htning Syster	m for HV & LV	Equipment				
	AS409086	Install Earthing Conductor for MFS1, Testing	60 20-Jun-18	19-Aug-18	29								20-J	lun-18 🗖		19-	Aug-18, Inst	all Earthing Co	nductor for N	WFS1, Testing	g					
	AS409125	Install Cable Tray/Trunking for Plant - Relevant Areas	90 31-Mar-18	28-Jun-18	57						31-Mar-18				28-Jun-18,	Ihstall Cable T	ray/Trunking	for Plant - Re	evant Areas							
	4.10 Deodori			1																						
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ctivity ID	Activity Name		Remaining Start Duration	Finish	Total Float	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	2018 Jul	Aug	Sep	Oct	Nov	Dec	
AS410010	Purchase Order for De	odorisers system with dehumidifier	0 10-Jul-17 A	26-Jul-17 A		-2	-1	1	2	3	4	5	6	/	8	9	10	11	12	13	1
AS410012	Manufacturing, FAT & I	Delivery to Site - Deodorisers system with dehumidifier	136 27-Jul-17 A	15-May-18	66				, , ,				15-1	May-18, Man	ufacturing, F	AT & Delivery to	o Site - Deod	drisers system	n with dehumi	idifier	
AS410030	Purchase Order for S.S.	S. Ducting & Accessories	0 24-Jul-17 A	26-Jul-17 A																	
AS410032	Manufacturing & Delive	ery to Site - S.S. Ducting & Accessories	136 27-Jul-17 A	15-May-18	96						-		15-1	May-18, Man	ufacturing &	Delivery to Site	S.S. Ductir	nġ & Accessori	ies		
Install, T&C f	or MBR Facilities Build	ing (incl. Provision for Health & Safety Requirements)																			
AS410020	Install Deodorising Plar	nt	45 16-May-18	29-Jun-18	66							16-Ma	ay-18 💻		29-Jun-18	8, Install Deodo	rising Plant				
AS410040	Install S.S. Ducting, Acc	cessories & Deodorising Control System	35 15-Jun-18	19-Jul-18	66								15-Ju	n-18 💻	1	19-Jul-18, Instal	IS.S. Ducting	3, Accessories	& Deodorisino	d Control Syst	tem
	nance Platform & Co g, FAT and Delivery	overs																			
AS411010		aintenance platforms, stairways, hand railings and covers	7 01-Apr-18*	07-Apr-18	4						01-Apr-18*	🗖 07-Apr	-18, Purchase	Order for m	aintenance	platforms, stairv	vays, hand ra	ailings and cov	/ers		
AS411012	Manufacturing & Delive	ery to Site - maintenance platforms, stairways, hand railings and	60 08-Apr-18	06-Jun-18	4						08-Apr-1	8	 	06-Jun	18, Manufad	cturing & Delive	ry to Site - m	aintenance pl	atforms, stairv	ways, hand rai	uiling
AS411030		aintenance Platform in Basement of MBR Facilities Building	7 01-Apr-18	07-Apr-18	19						01-Apr-18	🗖 07-Apr	-18, Purchase	Order for N	aintenance I	Platform in Base	ement of MBI	R Facilities Bu	ıilding		
AS411032	Manufacturing & Delive Building	ary to Site - Maintenance Platform in Basement of MBR Facilities	45 08-Apr-18	22-May-18	19						08-Apr-1	3	2	2-May-18, N	anufacturing	g & Delivery to S	Site - Mainter	ance Platform	n in Basement	t of MBR Facil	ilities
AS411050		RP covers for Membrane Facilities Tanks	0 02-May-17 A	08-May-17 A																	
AS411052	Manufacturing & Delive	ery to Site - FRP covers for Membrane Facilities Tanks	91 09-May-17 A	31-Mar-18	26							31-Mar-18	3. Manufactur	ng & Deliver	/to Site - FR	P covers for M	embrane Fac	cilities Tanks			
AS411070		eel Cover for Air Blower Opening on 1/F of MBR Bldg. (Not	0 30-Dec-17 A	30-Dec-17 A				I													
AS411072		ery to Site - Steel Cover for Air Blower Opening on 1/F of MBR	0 30-Dec-17 A	30-Dec-17 A				1													
Install, T&C f	Bldg. (Not required) or Maintenance Platfor	m & Covers (incl. Provision for Health & Safety Requiremer	nts)																		
AS411020	Install maintenance pla	tforms, stairways, hand railings and covers	75 07-Jun-18	20-Aug-18	4								07-Jun-18	3	1	20)-Aug-18, Ins	tall maintenar	nce platforms,	, stairways, hai	ind i
AS411040	Install Hand Rail & Mai	ntenance Platform in Basement of MBR Facilities Building	45 23-May-18	06-Jul-18	19							23-	May-18 🗖		06-Jul-	-18, Install Hand	d Rail & Main	tenance Platfo	orm in Basem	ent of MBR F	acili
AS411060	Install FRP covers for M	Nembrane Facilities Tanks	60 10-Apr-18	08-Jun-18	17						10-Apr-	8		08-Jur	18, Install F	RP covers for I	Membrane F	acilities Tanks			
AS411080	Install Steel Cover for A	Air Blower Opening on 1/F of MBR Bldg. (Not required)	0 30-Dec-17 A	30-Dec-17 A				I													
4.12 SCAD																					
Manufacturin AS412010	g, FAT and Delivery Purchase Order for Pre	oposed SCADA	0 03-Jul-17 A	18-Jul-17 A																	
AS412012	Manufacturing & Delive	ery to Site - Proposed SCADA	90 19-Jul-17 A	30-Mar-18	48							30-Mar-18	, Manufacturi	ng & Delivery	to Site - Pro	oposed SCADA					
AS412030	Purchase Order for PL	.C System	0 10-Jul-17 A	18-Jul-17 A																	
AS412032	Manufacturing & Delive	ary to Site - PLC System	90 19-Jul-17 A	30-Mar-18	48							30-Mar-18	Manufacturi	nta & Delivery	to Site - PL	C \$ystem					
AS412050		strumentation in Flowmeter and MBR Pre-treatment Screen	91 31-Dec-17	31-Mar-18	23		3.	1-Dec-17				31-Mar-18	Purchase C	rder for Instr	umentation i	in Flowmeter ar	nd MBR Pre-	treatment Scr	reen Chamber	rs	
	Chambers	ery to Site - Instrumentation in Flowmeter and MBR	90 01-Apr-18	29-Jun-18	23						01-Apr-18					8, Manufacturin					hd M
AS412070	Pre-treatment Screen Purchase Order for Ins	Chambers	91 31-Dec-17	31-Mar-18	37		2	1-Dec-17				31-Mar-19	B Purchase C	rder for Instr			g a bontory				-
AC412070					37		0	1-060-17			01-Apr-18	51-IVIAI-TO				8, Manufacturin	of Instrum	ntation in PD			
AS412072	Manufacturing of Instru		90 01-Apr-18	29-Jun-18							01-Apr-18										
AS412090		strumentation in MFS1 & MFB	91 31-Dec-17	31-Mar-18	51		31	1-Dec-17				31-Mar-18	, Purchase C	rder for Instr		in MFS1 & MFB					
AS412092		ery to Site - Instrumentation in MFS1 & MFB	90 01-Apr-18	29-Jun-18	51						01-Apr-18				29-Jun-18	8, Manufacturin	g & Delivery 1	io Site - Instru	mentation in N	MFS1 & MFB	
AS412052 AS412070 AS412072 AS412090 AS412092 AS412100 AS412110 AS412112 AS412130 AS412132	Purchase Order UPS f		0 03-Jul-17 A	18-Jul-17 A																	
AS412112	Manufacturing & Delive	ery to Site - UPS for PLC Systems A	90 19-Jul-17 A	30-Mar-18	177				1			30-Mar-18	, Manufacturi	ng & Delivery	to Site - UP	S for PLC Syste	əms A				
AS412130	Purchase Order UPS f	or PLC Systems B	0 03-Jul-17 A	18-Jul-17 A																	
AS412132	Manufacturing & Delive	ery to Site - UPS for PLC Systems B	90 19-Jul-17 A	30-Mar-18	177				1 1 1		1	30-Mar-18	, Manufacturi	ng & Delivery	to Site - UP	S for PLC Syste	ams B				
Install, T&C f AS412001		ion for Health & Safety Requirements) Areas for laying works of optical fibres	7 03-Apr-18	09-Apr-18	8						03-Apr-18	🗖 09-Ap	r⊦18, Mobilisa	tion of Works	Areas for I	laying works of	optical fibres				
AS412020	Laying Fibre Optical Et		30 10-Apr-18	09-May-18	8						10-Apr-			-		I Ethernet Ring					
AS412021		ate all the Functionality of the Proposed SCADA/PLC System A	45 10-May-18	23-Jun-18	8							10-May-	-			Set Up and Den		the Functiona	lity of the Pro	nosed SCADA	Δ/ΡΙ
AS412021 AS412022			45 10-iviay-16 45 24-Jun-18		10							- wiay-							r Station at Co		
		Station at Control Room		07-Aug-18	12								24	HJun-18 🗖	00.4						
AS412023	Install SCADA Master S	סומווטוו	35 08-Aug-18	11-Sep-18	12										08-Aug-				SCADA Maste		
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AS412024	Wiring for Control & Me	onitoring Circuits, Termination - SCADA	30 12-Sep-18	11-Oct-18	12											12-Sep-	-18	11-Oc	ct-18, Wiring f		Mon
AS412024	Wiring for Control & Me	onitoring Circuits, Termination - SCADA File Name: DE/2014/01G3	30 12-Sep-18		12								Cont	ract N/		12-Sep- 2014/01		11-Oc	ct-18, Wiring f		

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Milestone

Actual Progress

Contract No. DE/2014/01 Provision of E&M Facilities for Shek Wu Hui Sewage Treatment Works Further Expansion Phase 1A - Advance Works and Ng Chow South Road Sewage Pumping Station Master Programme

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A51100 Orkeyy of Sparse & Toos for SCACA System, RC system and Instrumentation 00 01 01 02 <t< td=""><td>22-Mar-19, Delivery of Spares & Tools for LV Switchboard</td></t<>	22-Mar-19, Delivery of Spares & Tools for LV Switchboard
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