


Bestwise – SFK Joint Venture

Contract No. DE/2018/17 Enhancement of Deodourisation System at Stonecutters Island Sewage Treatment Works

Quarterly Environmental
Monitoring and Audit Report
September 2021 to November 2021

(Version 1.0)

Certified By	 (Environmental Team Leader)
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REMARKS:

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

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

WELLAB LTD
Room 1714, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong
Tel: (852) 2898 2083 Fax: (852) 2898 7076
Email: info@wellab.com.hk

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

Attn: Mr. Adrian Leung – E/13 (HATS)

Our Reference
EC/AFK/DC/bw/T261332/
22.01/L-1519

3/F Manulife Place
(formerly International
Trade Tower)
348 Kwun Tong Road
Kowloon
Hong Kong

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

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

**Contract No. DE/2018/17 – Enhancement of Deodourisation System at
Stonecutters Island Sewage Treatment Works**

**Submission of 9th Quarterly EM&A Report for September to November 2021
(v1.0)**


31 December 2021

By Post

Dear Sir,

We refer to the captioned Quarterly EM&A Report for September to November 2021 (v1.0) received on 30 December 2021 and confirm that we have no comment.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED



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

c.c.
Ove Arup & Partners Hong Kong Limited

Bestwise – SFK Joint Venture
Wellab Limited

Mr. Mark Ngan / Fax: 2370 4377
Mr. Edmund Chow
Mr. Keith Ho By email
Dr. Priscilla Choy By email

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ABBREVIATION AND ACRONYM

AL Levels	Action and Limit Levels
DSD	Drainage Services Department
E / ER	Engineer/Engineer's Representative
EIA	Environmental Impact Assessment
EM&A	Environmental Monitoring and Audit
EMIS	Environmental Mitigation Implementation Schedule
EP	Environmental Permit
EPD	Environmental Protection Department
ET	Environmental Team
HVS	High Volume Sampler
IEC	Independent Environmental Checker
RE	Resident Engineer
RH	Relative Humidity
QA/QC	Quality Assurance / Quality Control
SLM	Sound Level Meter
WMP	Waste Management Plan
SCISTW	Stonecutters Island Sewage Treatment Works
HATS Stage 2A	Harbour Area Treatment Scheme Stage 2A
BSJV	Bestwise - SFK Joint Venture

EXECUTIVE SUMMARY**Introduction**

1. This is the 9th Quarterly Environmental Monitoring and Audit (EM&A) Report prepared by Wellab Limited for DSD Contract No. DE/2018/17 “Enhancement of Deodourisation System at SCISTW” (The Project) which documents the key information of EM&A and environmental monitoring works undertaken at the SCISTW under HATS Stage 2A Environmental Permit (Permit No. EP-322/2008/G).
2. The site activities undertaken in the reporting quarter included:

Table I Summary of site activities undertaken in the reporting quarter

September 2021	
E&M	<ul style="list-style-type: none"> • DOU System <ul style="list-style-type: none"> • Mechanical electrical installation in progress • Air Relief Duct <ul style="list-style-type: none"> • Leakage Test in process • Replacement FRP cover plate (CE)
October 2021	
E&M	<ul style="list-style-type: none"> • DOU System <ul style="list-style-type: none"> • Mechanical electrical installation in progress • Air Relief Duct <ul style="list-style-type: none"> • Leakage Test in process • Replacement FRP cover plate (CE)
November 2021	
E&M	<ul style="list-style-type: none"> • DOU System <ul style="list-style-type: none"> • DOU1Rauto run, foul air flow in (prepare for reliability test) • DOU4PS, DOU1PS, DOU4PS function test in progress • DOU2PS E&M installation • Air Relief Duct <ul style="list-style-type: none"> • Leakage Test in process • Replacement FRP cover plate (CE) • Isolation Device for Effluent Drop Shaft <ul style="list-style-type: none"> • PST43/45 installation in progress

Environmental Monitoring Works

3. The environmental monitoring works conducted for the Project in this reporting quarterly period at air quality monitoring stations AM6b, AM7 and AM8 and noise monitoring stations NM5 and NM6.
4. All the environmental monitoring works were conducted in accordance with the EM&A Manual. The monitoring results were checked and reviewed. 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 quarter is tabulated in **Table II**.

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

Monitoring Station	Parameter	No. of Exceedance		No. of Exceedance Due to the Project		Action Taken
		Action Level	Limit Level	Action Level	Limit Level	
AM6b	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	0	0	0	0	N/A
AM7	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	0	0	0	0	N/A
AM8	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	0	0	0	0	N/A
NM5	Noise	0	0	0	0	N/A
NM6	Noise	0	0	0	0	N/A

1-hour TSP Monitoring

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

24-hour TSP Monitoring

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

Construction Noise

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

Environmental Licenses and Permits

9. Licenses/Permits granted to the Project include the Environmental Permit (EP); Billing account for Disposal of Construction Waste, Registered as Chemical Waste Producer and Construction Noise Permits.

Environmental Mitigation Implementation Schedule

10. According to the EIA Report Section 3.74, 4.56 and 13.44, air quality, noise and landscape and visual 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 G**.

Key Information in the Reporting Quarter

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

Table III Summary Table for Key Information in the Reporting Quarter

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---
Status of submissions covering the reporting quarter	3	Monthly EM&A Reports from August, September and October 2021	Submitted to IEC for verification	No Comment	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

Summary of Complaints and Prosecutions

12. No environmental complaint and prosecution was received for the Project in the reporting quarter.
13. There were no environmental complaint and prosecution received since the commencement of the Project. The Complaint Log is presented in **Appendix H**.
14. The environmental concerns in the coming months are mainly on construction waste, chemical and general refuse storage; dust generated from the excavated dusty materials.

1. INTRODUCTION

Background

- 1.1 The Project ‘Enhancement of Deodourisation System at SCISTW’ under Contract No: DE/2018/17 mainly comprises the following major works:
- Construction of foundation for enhanced deodourisation system;
 - Design, supply, installation, testing and commissioning of enhanced deodourisation systems and associated accessories;
 - Enhancement of isolation devices at chemically enhanced primary treatment (CEPT) tanks;
 - Modification of air ducts at CEPT tanks;
 - Enhancement of sealing performance of existing covers for CEPT tanks; and
 - Any associated works as necessary to complete the above items.
- 1.2 The general location plan of the Project is shown in **Figure 1**.
- 1.3 The Project is under Harbour Area Treatment Scheme (HATS) Stage 2A and is a designated project with Register No. : AEIAR-121/2008. The current works under the Project at SCISTW for HATS 2A are covered by the Environmental Permit (Permit No. EP-322/2008/G), which was issued on 9th May 2014 by the Environmental Protection Department (hereinafter called EPD) to the Drainage Services Department (hereinafter called the DSD) as the Permit Holder.
- 1.4 Bestwise - SFK Joint Venture (hereafter called the BSJV) was commissioned by the DSD to undertake the construction of the Contract No. DE/2018/17 “Enhancement of Deodourisation System at SCISTW”. The date of commencement of construction of the Project is 9th July 2019.
- 1.5 Wellab Limited was commissioned by BSJV to undertake the Environmental Monitoring and Audit (EM&A) works for the project and was appointed as the Environmental Team (ET) of the Project under Condition 2.1 of the EP. The date of commencement of EM&A works is 2nd September 2019. The Project cover the environmental monitoring works at monitoring stations AM6b, AM7, AM8, NM5 and NM6.
- 1.6 This is the 9th quarterly EM&A report summarizing the EM&A works conducted for the Project in September to November 2021.

Project Organizations

- 1.7 The contacts of the Project are shown in **Table 1.1** and the organization chart of ET for Contract is shown in **Figure 2**.

Table 1.1 Key Project Contacts

Party	Role	Name	Position	Phone No.
Ove Arup & Partners Hong Kong Ltd	Project Management's Representative	Mr. Edmund Chow	Senior Resident Engineer	2370 4311
		Mr. Kevin Cheung	ER's Coordinator	3925 6506
Wellab	Environmental Team	Dr. Priscilla Choy	ET Leader	2151 2089
		Mr. Antony Leung	Project Coordinator	2151 2073
Mott MacDonald	Independent Environmental Checker	Dr. Anne Kerr	Independent Environmental Checker	2828 5757
Bestwise – SFK Joint Venture	Contractor	Mr. Ken Chan	Site Agent	2620 0070
		Mr. Leo Leung	Environmental Officer	2620 0070

Summary of EM&A Requirements

- 1.8 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.
- 1.9 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in **Section 4** of this report.
- 1.10 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 for September to November 2021.

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 Three designated monitoring stations, AM6b, AM7 and AM8 were selected for impact dust monitoring for the Project. **Table 2.1** describes the air quality monitoring locations, which are also depicted in **Figure 1**.

Table 2.1 Locations for Air Quality Monitoring

Monitoring Station	Monitored by	Location of Measurement
AM6b ⁽¹⁾	DC/2009/10	Works site boundary
AM7		North West Kowloon Sewage Pumping Station
AM8		Block A of Government Dockyard

Remark:

- (1) AM6b – The previous location of AM6a was relocated after handover of part of Portion 7.

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 could be referred in **Appendix C** in the monthly reports for the Contract DC/2009/10.

Table 2.2 Impact Dust Monitoring Parameters, Frequency and Duration

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

Monitoring Methodology and QA/QC Procedure

- 2.4 The monitoring methodology and QA/QC procedures are presented in Section 2.5 – 2.15 of monthly report of Contract DE/2018/17.
- 2.5 The general weather conditions (i.e. sunny, cloudy or rainy) were recorded by the field staff's observation on the monitoring day.

Results and Observations

- 2.6 All 1-hour and 24-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded. Summary of exceedance is presented in **Appendix B**.
- 2.7 The graphical plots of the 1-hour and 24-hour TSP monitoring results are shown in **Appendix C**.
- 2.8 According to field observations during site inspection, the identified dust sources at the monitoring stations were mainly from vehicles movement, dust generation from the excavated dusty materials and construction works of this Contract in the site.

3. NOISE

Monitoring Requirements

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

Monitoring Locations

- 3.2 Noise monitoring was conducted at two designated monitoring stations as listed in **Table 3.1**.

Table 3.1 Location of Noise Monitoring Stations

Monitoring Station	Monitored By	Location of Measurement
NM5	DC/2009/10	Near FSD Diving Rescue and Training Centre
NM6		Customs' Marine Base (Block H of Government Dockyard) Rooftop

Monitoring Parameters, Frequency and Duration

- 3.3 **Table 3.2** summarizes the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedule for the reporting period could be referred in **Appendix C** in the monthly reports for the Contract DC/2009/10.

Table 3.2 Noise Monitoring Parameters, Frequency and Duration

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

Monitoring Methodology and QA/QC Procedures

- 3.4 The monitoring methodology and QA/QC procedure could be referring to Section 3.7 of the monthly report for Contract DE/2018/17.

Results and Observations

- 3.5 The construction noise monitoring at the designated location was conducted by the ET of Contract DC/2009/10 as scheduled in the reporting quarter. The Graphical presentation of the noise monitoring result was shown in **Appendix D**.
- 3.6 No Action/Limit Level exceedance was recorded in the reporting quarter. Summary of exceedance is presented in **Appendix B**.
- 3.7 The major noise sources identified at the designated noise monitoring stations were generated by on-site vehicle movement and construction equipment from the Project, as well as construction activities from this Contract in Stonecutter Island STW.

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.
- 4.2 13 environmental site audits were conducted by ET and 3 IEC site audits were conducted for the Project in reporting quarter. No non-compliance was observed during the site audits.
- 4.3 Site inspections were undertaken to ensure and check that the implementation and maintenance of landscape and visual mitigation measures are being properly carried out in the reporting quarter in accordance to section 14.1 of the EM&A Manual. No non-compliance was observed during the site inspections.

Review of Environmental Monitoring Procedures

- 4.4 The monitoring works were conducted by the monitoring teams of Contract DC/2009/10. The monitoring procedures have been reviewed monthly.

Status of Environmental Licensing and Permitting

- 4.5 All permits/licenses obtained for the Contract DC/2009/10 are summarized in **Table 4.1**.

Table 4.1 Summary of Environmental Licensing and Permit Status

Reference Number	Valid Period		Details	Status
	From	To		
<i>Water Discharge License</i>				
WT00035198-2019	15/1/2020	31/1/2025	The application was approved on 15-1-2020.	Valid
<i>Registered Chemical Waste Producer</i>				
WPN5213-269-B2565-01	N/A	N/A	The application was approved on 14-8-2019.	Valid
<i>Billing Account for Disposal of Construction Waste</i>				
CSW03680	6/8/2019	N/A	The application was approved on 6-8-2019.	Valid
<i>Notification of Works Under APCO</i>				
447348	N/A	N/A	Notice form received by EPD on 17-7-2019.	N/A
<i>Construction Noise Permit</i>				
GW-RW0096-21	2/4/2021	25/9/2021	The application was approved on 26/3/2021.	Expired
GW-RW0374-21	26/9/2021	25/3/2022	The application was approved on 24/9/2021.	Valid

Waste Management Status

- 4.6 The amount of Inert and Non Inert wastes generated by the construction activities of the Project in the reporting quarter is summarized in the waste flow table as shown in **Appendix E**.

Implementation Status of Environmental Mitigation Measures

- 4.7 Details of the implementation of mitigation measures are provided in the **Appendix G**.
- 4.8 During the weekly environmental site inspections in the reporting period, no non-

conformance was identified. The observations of the site audit for the Projects are summarized in **Table 4.2a-c**.

Table 4.2a: Observations and Recommendations of Site Audits (September 2021)

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	210923-R01	Contractor was reminded to dispose general refuse regularly.	Item was remarked as 210930-R01.
	210923-R02	To provide drip tray for storage of chemical.	Chemical was removed from site.
	210930-R01	Contractor was reminded to dispose general refuse regularly.	Follow-up action will be report in next reporting period.
	210930-R02	To empty drip tray regularly to avoid leakage.	Follow-up action will be report in next reporting period.
Air Quality	N/A	There was no observation in the reporting month.	N/A
Noise	N/A	There was no observation in the reporting month.	N/A
Waste/ Chemical Management	210909-R01	Contractor was reminded to dispose general refuse regularly.	Item was remarked as 210915-R01.
	210915-R01	Contractor was reminded to dispose general refuse regularly.	Item was remarked as 210923-R01.
	210923-R01	Contractor was reminded to dispose general refuse regularly.	Item was remarked as 210930-R01.
	210923-R02	To provide drip tray for storage of chemical.	Chemical was removed from site.
	210930-R01	Contractor was reminded to dispose general refuse regularly.	Follow-up action will be report in next reporting period.
	210930-R02	To empty drip tray regularly to avoid leakage.	Follow-up action will be report in next reporting period.
Landscape and Visual	210923-R03	To set up protection zone for retained plants.	Item was remarked as 210930-R03.
	210930-R03	Contractor was reminded to fence off retained plants on site.	Follow-up action will be report in next reporting period.
Permit/ Licenses	N/A	There was no observation in the reporting month.	N/A

Table 4.2b: Observations and Recommendations of Site Audits (October 2021)

Water Quality	211007-R01	Contractor was reminded to dispose general refuse regularly.	General refuse were disposed of regularly.
Air Quality	211020-R01	Replace faded NRMM label on regulated machine.	Item was remarked as 211028-R01.
	211028-R01	Replace faded NRMM label on regulated machine.	Follow-up action will be report in next reporting period.
Noise	N/A	There was no observation in the reporting month.	N/A
Waste/ Chemical Management	210930-R01	Contractor was reminded to dispose general refuse regularly.	Item was remarked as 211007-R01.
	210930-R02	To empty drip tray regularly to avoid leakage.	Drip tray and chemical were removed.
	211007-R01	Contractor was reminded to dispose general refuse regularly.	General refuse were disposed of regularly.

	211028-R02	Remove general refuse and construction material on planting area.	Follow-up action will be report in next reporting period.
Landscape and Visual	210930-R03	Contractor was reminded to fence off retained plants on site.	Item was remarked as 211007-R02.
	211007-R02	Contractor was reminded to fence off retained plants on site.	Construction materials near the plants were removed.
Permit/ Licenses	N/A	There was no observation in the reporting month.	N/A

Table 4.2c: Observations and Recommendations of Site Audits (November 2021)

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	N/A	There was no observation in the reporting month.	N/A
Air Quality	211028-R01	Replace faded NRMM label on regulated machine.	Item was remarked as 211104-R01.
	211104-R01	Replace faded NRMM label on regulated machine.	Item was remarked as 211111-R01.
	211111-R01	Replace faded NRMM label on regulated machine.	Item was remarked as 211117-R01.
	211117-R01	Replace faded NRMM label on regulated machine.	Item was remarked as 211125-R01.
	211125-R01	NRMM Label should be pasted properly.	Follow-up action will be report in next reporting period.
Noise	N/A	There was no observation in the reporting month.	N/A
Waste/ Chemical Management	211028-R02	Remove general refuse and construction material on planting area.	General refuse and construction material were cleared.
	211125-R02	General Refuse should be disposed regularly and properly.	Follow-up action will be report in next reporting period.
Landscape and Visual	211125-R03	Existing trees retained on-site should be well preserved.	Follow-up action will be report in next reporting period.
Permit/ Licenses	N/A	There was no observation in the reporting month.	N/A

Implementation Status of Event Action Plans

4.9 The Event Action Plans for air quality and noise are presented in **Appendix F**.

1-hr TSP

4.10 No Action/Limit Level exceedance was recorded in the reporting quarter.

24-hr TSP

4.11 No Action/Limit Level exceedance was recorded in the reporting quarter.

Construction Noise

4.12 No Action/Limit Level exceedance was recorded in the reporting quarter.

Landscape and Visual

4.13 No non-compliance was recorded in the reporting quarter.

Summary of Complaints and Prosecutions

4.14 No environmental complaint and prosecution was received for the Project in the reporting quarter.

4.15 There were no environmental complaint and prosecution received since the commencement of the Project. The Complaint Log is presented in **Appendix H**.

5. FUTURE KEY ISSUES

Key Issues for the Coming Months

5.1 Key environmental issues in the coming months include:

- Storage of chemicals/fuel and chemical waste/waste oil on-site;
- Leakage of oil from equipment;
- Dust generation should be mitigated by adequate water spraying, especially in dry days;
- Stockpile should be properly covered by tarpaulin or impervious materials to mitigate dust generation;
- Noise from operation of equipment and machinery on-site;
- Silty surface runoff generated from the site area; and
- Silt and dust getting into the public area by the leaving site vehicles at the site exits without adequate wheel washing facilities.

Construction Program for the Coming Quarter

5.2 The tentative construction program is provided in **Appendix I**.

6. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

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

1-hour TSP Monitoring

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

24-hour TSP Monitoring

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

Construction Noise Monitoring

- 6.4 All construction noise monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded.

Environmental Audit

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

Complaint and Prosecution

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

Recommendations for the coming reporting period:

- 6.7 The following recommendations were made for the coming reporting period:

Air Quality

- To provide adequate water spray on site;
- To mitigate dust generation by adequate water spraying or covering by tarpaulin during dry days;
- To regularly maintain the machinery and vehicles on site;
- To follow up any exceedance caused by the construction works; and
- Non-Road Mobile Machinery (NRMM) labels must be demonstrated on the registered equipment for inspection.

Noise

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

- To provide temporary noise barriers for operations of noisy equipment near the noise sensitive receivers in an appropriate location.
- To provide adequate lubricant on mechanical equipments to reduce frictional noise; and
- To well maintain the mechanical equipments / machineries to avoid abnormal noise nuisance.

Water Quality

- To identify any discharge of wastewater from the construction site;
- To provide adequate temporary drainage system with adequate capacity;
- To provide adequate wastewater treatment facilities to treat the wastewater generated during construction works and heavy rain;
- To properly cover the stockpile and slope to prevent the generation of surface runoff; and
- To avoid water accumulation on site and carry out larviciding against mosquito breeding for stagnant water when mosquito larvae are observed.

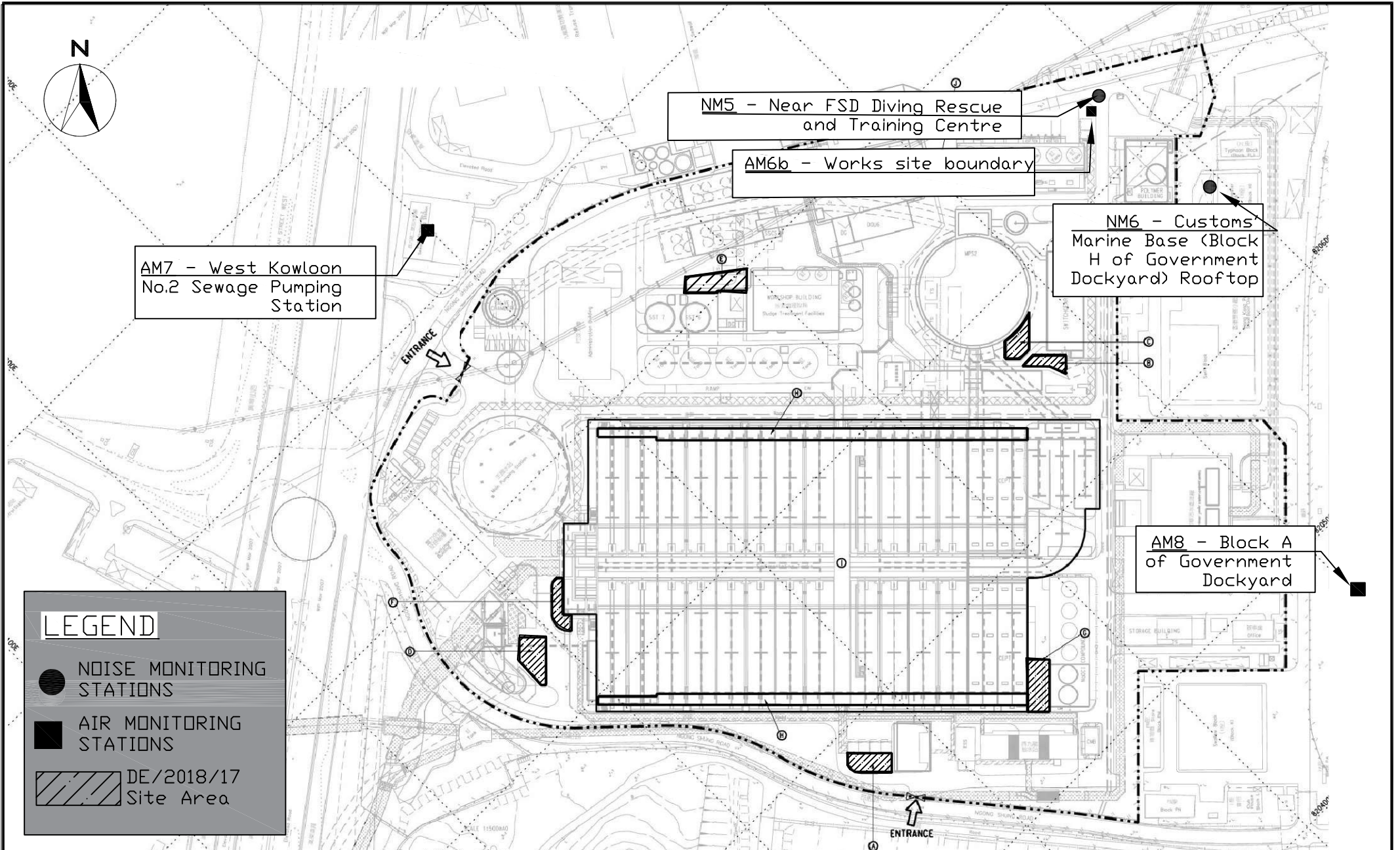
Waste/Chemical Management

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

Landscape and Visual

- To erect and maintain the protection fence around the retaining tree; and
- To avoid any heavy materials placed into tree protection zone.

FIGURES



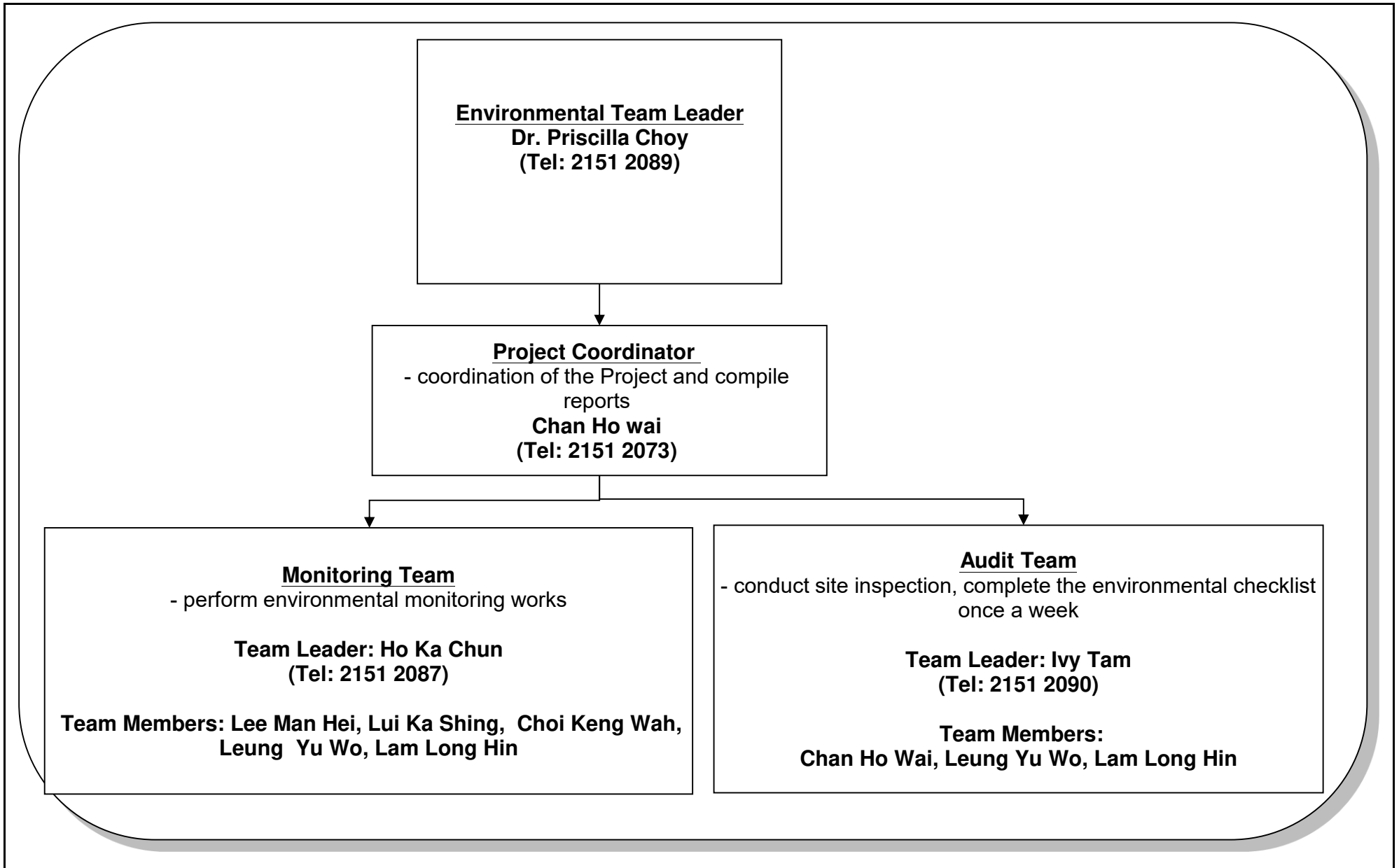
LEGEND


- NOISE MONITORING STATIONS
- AIR MONITORING STATIONS
- ▨ DE/2018/17 Site Area

WELLAB

Contract No. DE/2018/17 Enhancement of Deodourisation System at Stonecutters Island Sewage Treatment Works
 General Location Plan of the project and Locations of Air and Noise Monitoring Locations

SCALE	1:180 @ A4	DATE	Nov 2020
CHECK	-	DRAWN	HC
Project No	WMA19011	FIGURE NO.	1
		REV	-



Title	Contract No. DE/2018/17 Enhancement of Deodourisation System at SCISTW	Scale	Project	 consulting . testing . research
		N.T.S	No. WMA19011	
	ET's Organization Chart	Version	Figure	
		v.3	2	

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

Appendix A Action and Limit Levels

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

Monitoring Stations	Action Level ($\mu\text{g}/\text{m}^3$)		Limit Level ($\mu\text{g}/\text{m}^3$)	
	1-hour	24-hour	1-hour	24-hour
AM6b	346	196	500	260
AM7	322	207	500	260
AM8	307	158	500	260

Table A-2 Action and Limit Level for Construction Noise

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

Notes: If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.

APPENDIX B
SUMMARY OF EXCEEDANCE

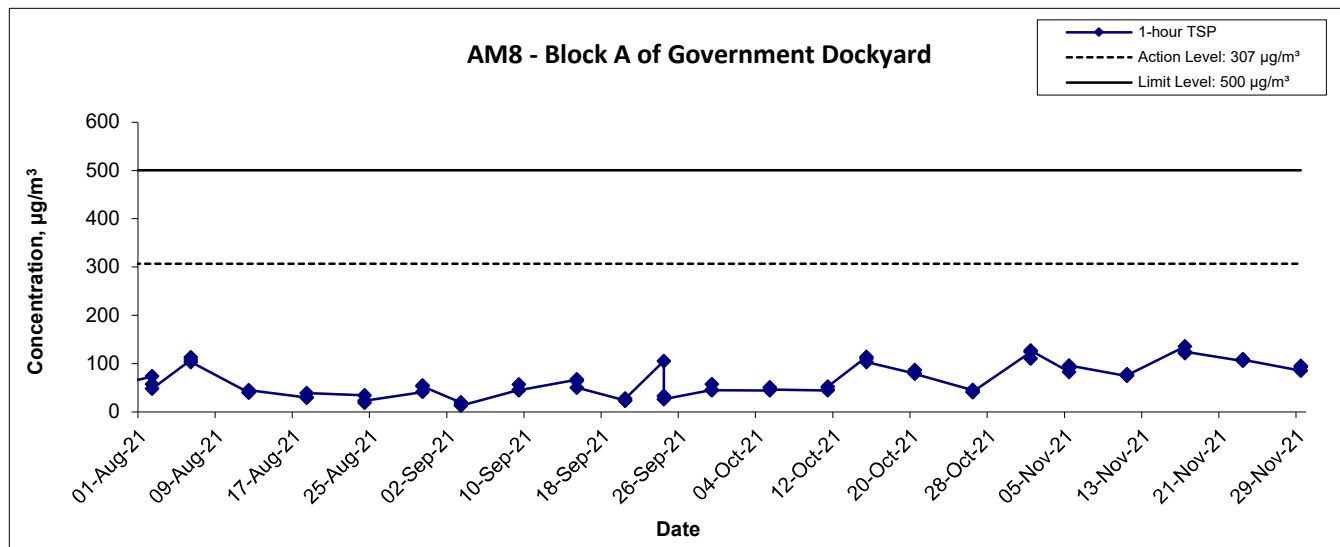
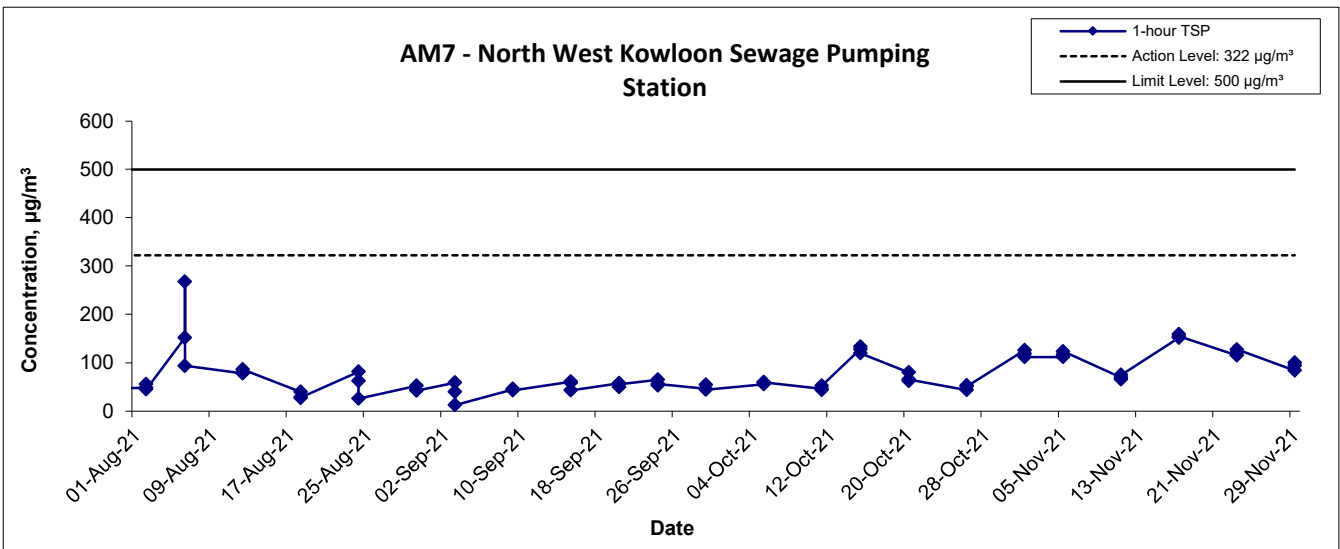
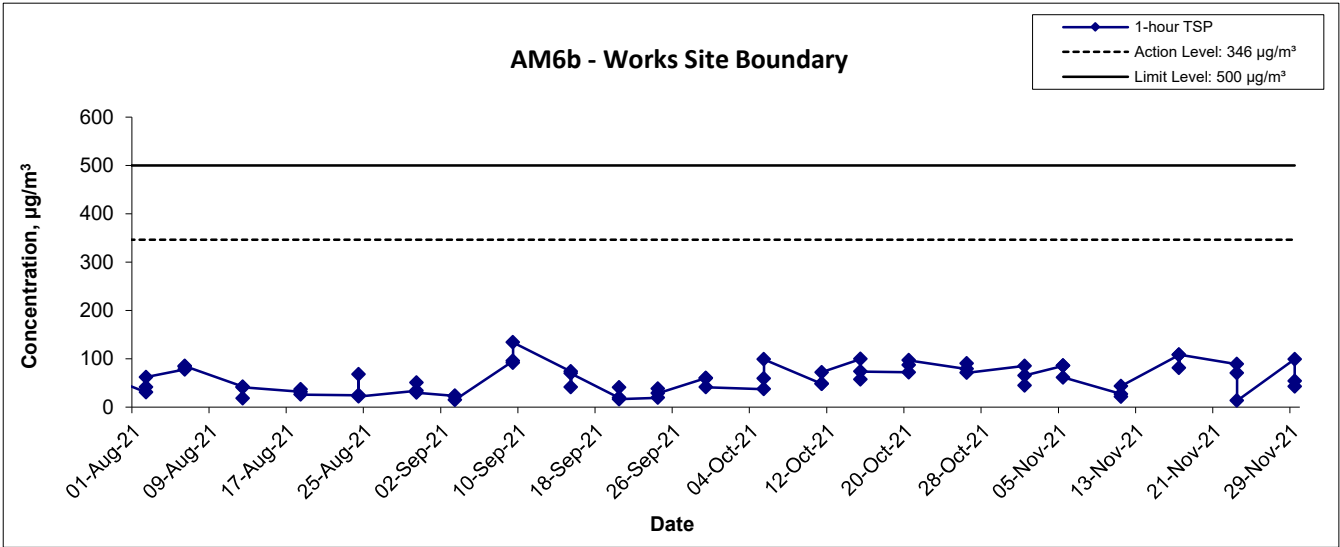
APPENDIX B – SUMMARY OF EXCEEDANCE


Reporting Quarter: September 2021 to November 2021

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

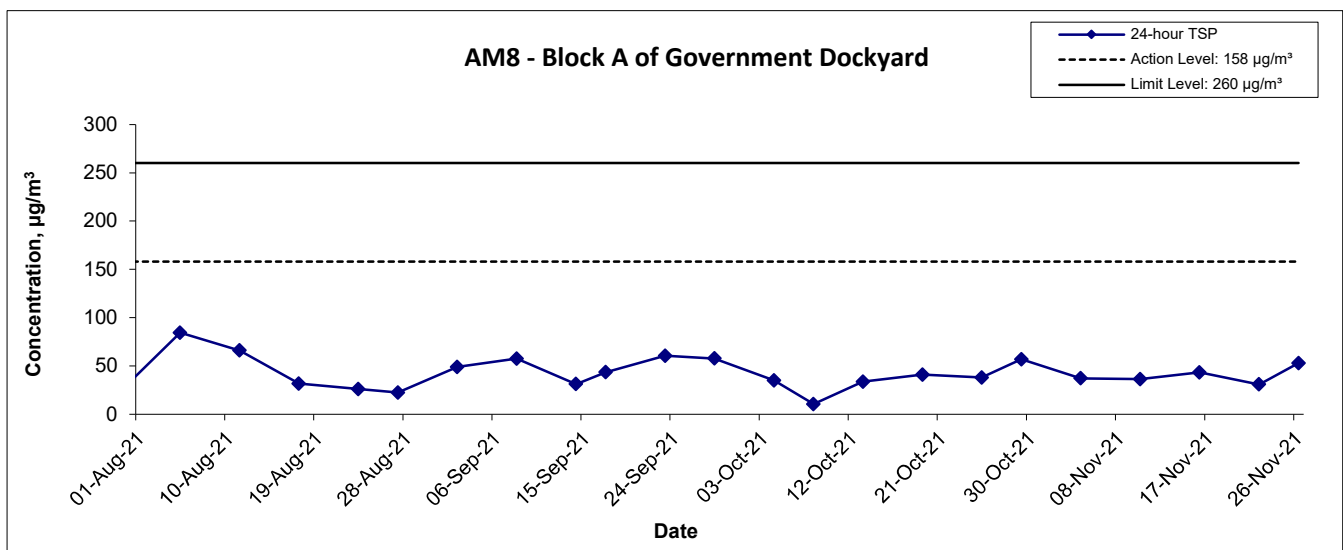
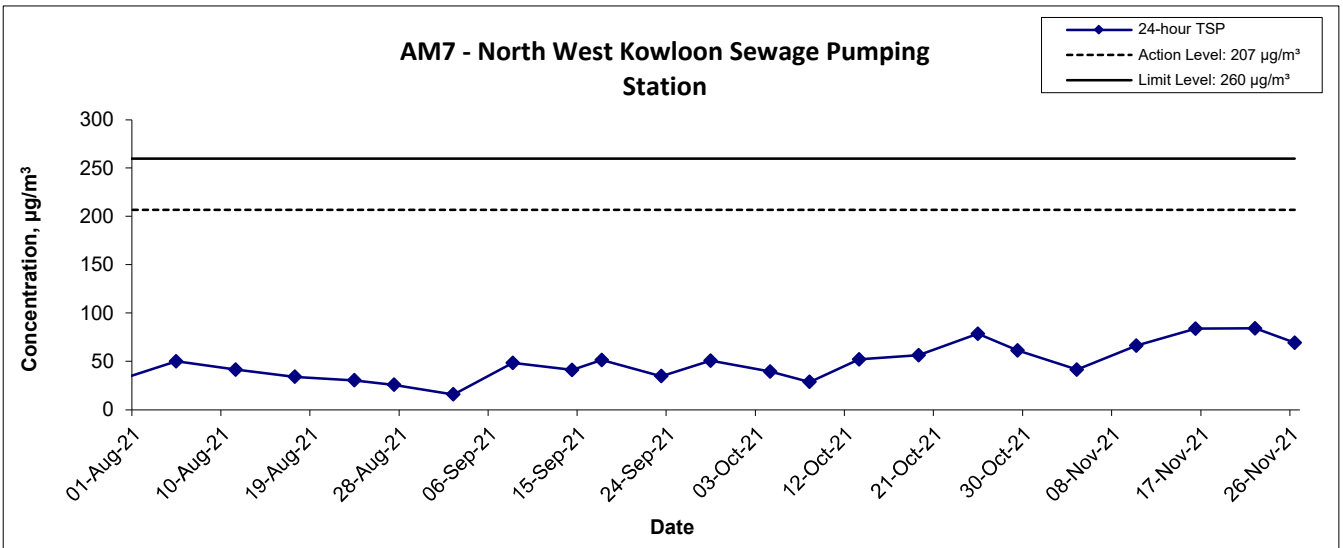
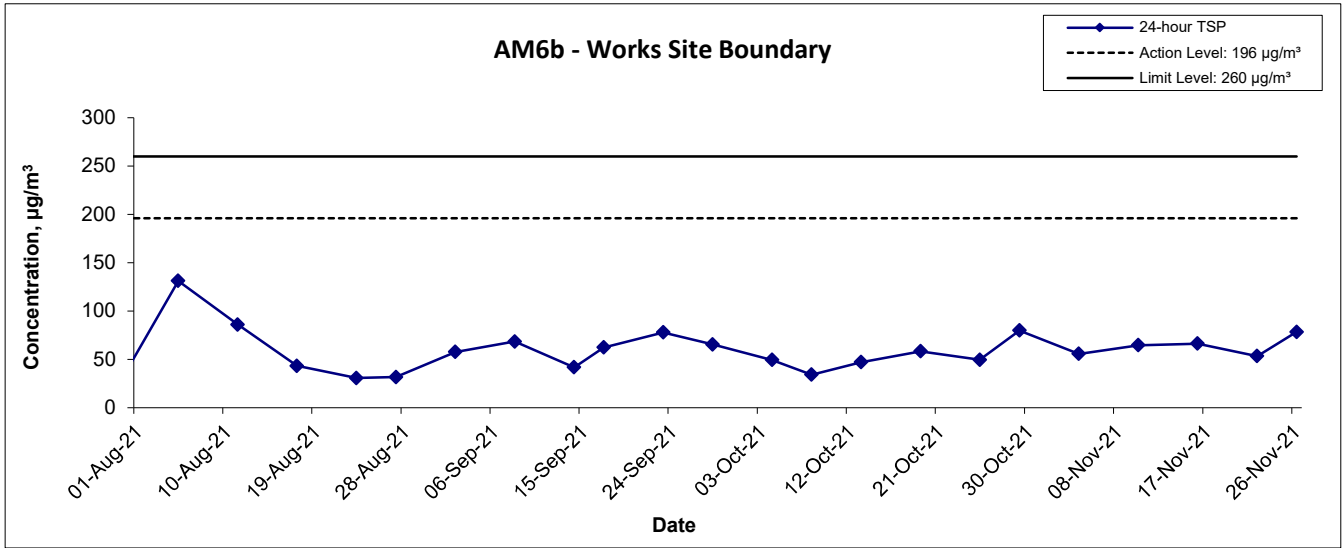
**APPENDIX C
1-HOUR AND 24-HOUR TSP
GRAPHICAL PRESENTATION**

1-hr TSP Concentration Levels



Title Contract No. DE/2018/17 Enhancement of Deodourisation System at Stonecutters Island Sewage Treatment Works Graphical Presentation of 1-hour TSP Monitoring Results	Scale N.T.S	Project No. WMA19011	 consulting . testing . research
	Date Nov 21	Appendix D	

24-hr TSP Concentration Levels

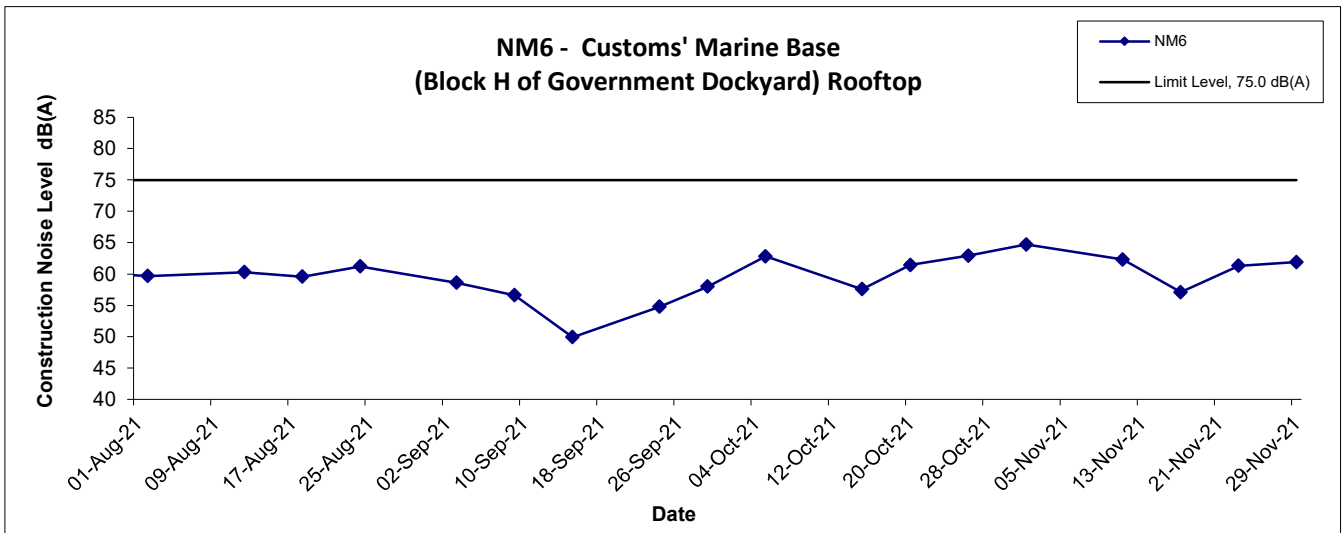
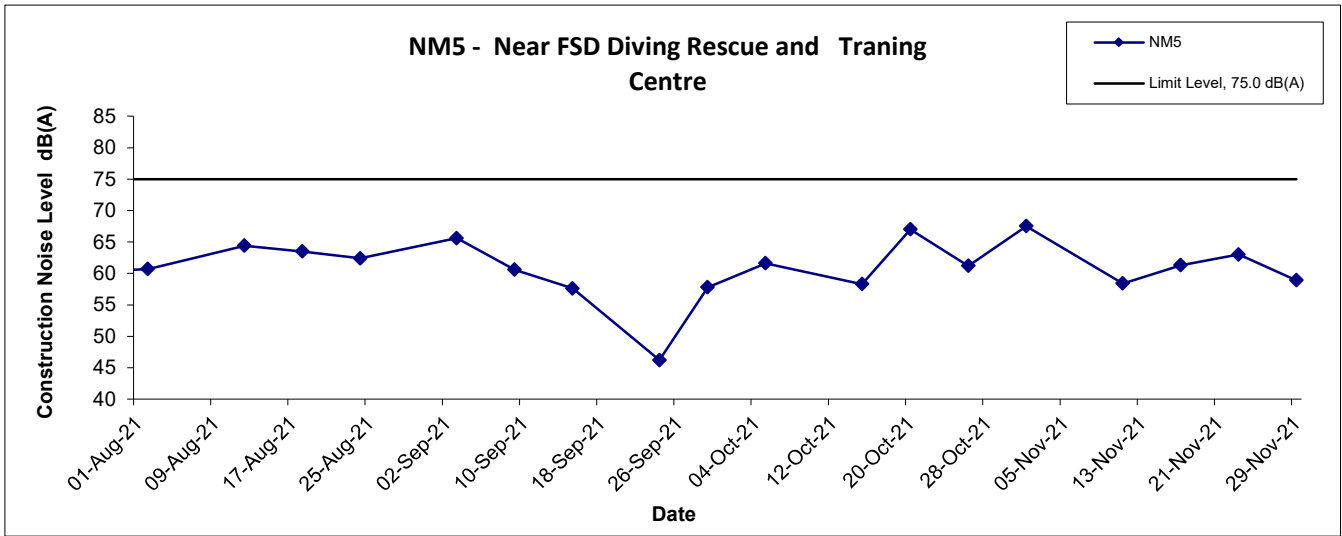


Title Contract No. DE/2018/17 Enhancement of Deodourisation System at Stonecutters Island Sewage Treatment Works Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. WMA19011	
	Date Nov 21	Appendix D	

**APPENDIX D
NOISE MONITORING GRAPHICAL
PRESENTATIONS**

Noise Levels

(0700-1900 hrs on Normal Weekdays)



Title Contract No. DE/2018/17 Enhancement of Deodourisation System at Stonecutters Island Sewage Treatment Works Graphical Presentation of Noise Monitoring Result	Scale	N.T.S	Project No.	WMA19011	consulting . testing . research
	Date	Nov 21	Appendix	E	

**APPENDIX E
SUMMARY OF AMOUNT OF WASTE
GENERATED**

Name of Department: DSD

Contract No. : DE/2018/17

Monthly Summary Waste Flow Table for 2021 (year)

Month	Actual Quantities of inert C&D Materials Generated Monthly						Actual Quantities of C&D Materials Generated Monthly				
	Total Quantity Generated	Hard Rock and 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)	Chemical Waste	Other, e.g. general refuse
	(In '000m ³)	(In '000m ³)	(In '000m ³)	(In '000m ³)	(In '000m ³)	(In '000m ³)	(In '000kg)	(In '000kg)	(In '000kg)	(In '000kg)	(In '000m ³)
Jan	0.200	0.000	0.000	0.000	0.200	0.000	0.000	1.332	0.000	0.000	0.007
Feb	0.179	0.000	0.000	0.000	0.179	0.000	0.000	3.083	0.000	0.000	0.007
Mar	0.170	0.000	0.000	0.000	0.170	0.000	0.000	3.614	0.000	0.000	0.004
Apr	0.085	0.000	0.000	0.000	0.085	0.000	0.000	2.022	0.000	0.000	0.008
May	0.070	0.000	0.000	0.000	0.070	0.000	0.000	1.456	0.000	0.000	0.002
June	0.052	0.000	0.000	0.000	0.052	0.000	0.000	0.695	0.000	0.000	0.002
Sub-total	0.755	0.000	0.000	0.000	0.755	0.000	0.000	12.202	0.000	0.000	0.030
July	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008
Aug	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005
Sep	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.258	0.000	0.000	0.006
Oct	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.207	0.000	0.000	0.002
Nov	0.012	0.000	0.000	0.000	0.012	0.000	0.000	0.160	0.000	0.000	0.003
Dec											
Total	0.768	0.000	0.000	0.000	0.768	0.000	0.000	12.827	0.000	0.000	0.053
Total since commence ment of project	4.508	0.399	0.000	0.000	4.508	0.000	12.260	19.553	0.000	0.000	0.102

- Notes:
- (1) The performance targets are given in PS Clause 25.37(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
 - (4) The conversion factor for tonne to m³ for inert C&D materials is 1.9 tonne/m³.
 - (5) The conversion factor for tonne to m³ for general refuse is 1.8 tonne/m³.

APPENDIX F
EVENT ACTION PLANS

APPENDIX F – Event / Action Plans

Table F-1 Event / Action Plan For Air Quality

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

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

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	<p>implemented;</p> <p>6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken;</p> <p>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</p> <p>8. If exceedance stops, cease additional monitoring</p>	<p>advise the ER accordingly;</p> <p>5. Supervise the implementation of remedial measures.</p>	<p>5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</p>	<p>control;</p> <p>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated</p>

Table F-2 Event / Action Plan For Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded	<ol style="list-style-type: none"> 1. Notify ER, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; 5. Increase monitoring frequency to check mitigation effectiveness 	<ol style="list-style-type: none"> 1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Advise the ER on the effectiveness of the proposed remedial measures 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals
Limit Level being exceeded	<ol style="list-style-type: none"> 1. Inform IEC, ER, Contractor and EPD; 2. Repeat measurements to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance; 5. Carry out analysis of Contractor's working procedures; 6. Discuss with the IEC, Contractor and ER on remedial measures required; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification; 3. Implement the agreed proposals; 4. Submit further proposal if problem still not under control; 5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated

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

APPENDIX G IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES (EMIS)

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
A	Air Quality		
3.74	Skip hoist for material transport should be totally enclosed by impervious sheeting.	All construction sites	^
	Vehicle washing facilities should be provided at every vehicle exit point.		^
	The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcore.		^
	Where a site boundary adjoins a road, streets or other areas accessible to the public, hoarding of not less than 2.4 m high from ground level should be provided along the entire length except for a site entrance or exit.		N/A
	Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.		^
	Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines.		^
	Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs.		^
	Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.		^
	Imposition of speed controls for vehicles on unpaved site roads. Ten kilometers per hour is the recommended limit.		^
	Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the 3 sides.		^
	Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.		^
3.74	Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.	All construction sites	^
B	Airborne Noise		

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
4.56– 4.61	Use of quiet PME, movable barriers and acoustic mats.	All construction sites	^
4.67	Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction program.		^
	Silencers or mufflers on construction equipment shall be utilized and shall be properly maintained during the construction program.		^
	Mobile plant, if any, shall be sited as far away from NSRs as possible.		^
	Machines and plant (such as trucks) that may be in intermittent use shall be shut down between works periods or shall be throttled down to a minimum.		^
4.67	Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.		^
	Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from on-site construction activities.		^
C	Water Quality		
6.349 to 6.375	Construction Site Runoff and General Construction Activities The mitigation measures as outlined in the ProPECC PN 1/94 Construction Site Drainage should be adopted where applicable.	All construction sites	^
6.376	Effluent Discharge There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the WPCO license which is under the ambit of regional office (RO) of EPD. Minimum distances of 100 m should be maintained between the discharge points of construction site effluent and the existing saltwater intakes.		^
6.377	Accidental Spillage of Chemicals Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.		^
6.378	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and		^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
	equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.		
6.379	<p>Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows:</p> <ul style="list-style-type: none"> • Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. • Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. • Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area. 		^
6.380	<p>Construction Works in Close Proximity of Storm Drains or Seafront:</p> <p>To minimize the potential water quality impacts from the construction works located at or near any watercourse, the practices outlined below should be adopted where applicable.</p> <ul style="list-style-type: none"> • The use of less or smaller construction plants may be specified to reduce the disturbance to the storm water courses or marine environment. • Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works. • Stockpiling of construction materials and dusty materials should be covered and located away from any water courses. • Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers. • Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable. • Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert or sea. 	All construction sites	^
D	Waste Management		

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
9.107	Reusable steel or concrete panel shutters, fencing and hoarding and signboard should be used as a preferred alternative to items made of wood, to minimize wastage of wood. Attention should be paid to WBTC No. 19/2001 - Metallic Site Hoardings and Signboards to reduce the amount of timber used on construction sites. Metallic alternatives to timber are readily available and should be used rather than new timber. Precast concrete units should be adopted wherever feasible to minimize the use of timber formwork.	All construction sites	^
9.109	All waste materials should be segregated into categories covering: <ul style="list-style-type: none"> • excavated materials suitable for reuse on-site; • excavated materials suitable for public filling facilities; • remaining C&D waste for landfill; • chemical waste; and • general refuse for landfill. 	All construction sites	^
9.113	Sort C&D waste from demolition of existing facilities to recover recyclable portions such as metals.	All construction sites	^
	Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.		^
	Encourage collection of aluminum cans, PET bottles and paper by providing separate labeled bins to enable these wastes to be segregated from other general refuse generated by the work force.		^
	Any unused chemicals or those with remaining functional capacity shall be recycled.		^
	Proper storage and site practices to minimize the potential for damage or contamination of construction materials.		^
9.115	Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.		All construction sites
	Training of site personnel in proper waste management and chemical waste handling procedures.	^	
9.115	Develop and provide toolbox talk for on-site sorting of C&D materials to enhance worker's awareness in handling, sorting, reuse and recycling of C&D materials.	^	
	Provision of sufficient waste disposal points and regular collection of waste.	#	
	Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.	^	

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
9.125	Bentonite slurries used in diaphragm wall construction should be reconditioned and reused wherever practicable. The disposal of residual used bentonite slurry should follow the good practice guidelines stated in ProPECC PN 1/94 "Construction Site Drainage".	All construction sites	^
9.131	Adequate number of portable toilets at temporary works areas or the PTWs to ensure that sewage from site staff would be properly collected.		^
9.133	General refuse should be stored in enclosed bins, skips or compaction units separating from C&D material and disposed of at designated landfill.		^
9.135	The recyclable component of the municipal waste generated by the workforce, such as aluminum cans, paper and cleansed plastic containers should be separated from other waste. Provision and collection of recycling bins for different types of recyclable waste should be set up by the Contractor. The Contractor should also be responsible for arranging recycling companies to collect these materials.		^
9.137	If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.		^
9.142	Prior to excavation of the marine deposit layer, the deposit should be tested in accordance with the ETWB TC(W) No. 34/2002 and the results should be presented in a Preliminary Sediment Quality Report. The marine deposit should be disposed of at the disposal site designated by the Marine Fill Committee (MFC) or Director of Environmental Protection (DEP) depending on the test results.		N/A

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
E	Terrestrial Ecology		
10.94	To implement effective noise mitigation measures as recommended in Section 4 of EIA.	All construction sites	N/A
10.95	Dust control practices such as regular watering, complete coverage of any aggregate or dusty material storage piles, and re-schedule of dusty activities during high-wind conditions as well as other measures recommended in Section 3 of EIA, should be implemented.		^
10.96	Fences/hoardings should be erected and installed along the boundary of the works areas.		^
10.97	Standard good site practices as suggested in Section 10 of EIA should be implemented.		N/A
10.98	Provision of proper drainage system and runoff control measures such as use of sand/silt traps, oil/grease separators, sedimentation tanks, etc.		^
F	Landscape and Visual		
Table 13.7	Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical.	All construction sites	^
	Existing trees to be retained on site should be carefully protected during construction.		#
	Trees unavoidably affected by the works should be transplanted where practical.		^
	Compensatory tree planting should be provided to compensate for felled trees.		^
	Control of night-time lighting.		^
Table 13.7	Erection of decorative screen hoarding compatible with the surrounding setting.	All construction sites	N/A
G	Marine Ecology		
11.137	To minimize the potential indirect impacts on water quality from construction site runoff and various construction activities, the practices outlined in ProPECC PN 1/94 Construction Site Drainage should be adopted.	All construction sites	^
H	Hazard to Life		
14A.201	Limiting use of cranes in terms of locations, lifting height, swing angle and setting up safety zone.	Exact location will be determined on construction site by the engineer	^

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

**APPENDIX H
COMPLAINT LOG**

APPENDIX H – COMPLAINT LOG**Reporting Quarter:** September to November 2021

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 quarter.

APPENDIX I
CONSTRUCTION PROGRAMME

Activity ID	Activity Name	Activity % Complete	Total Float	Original Duration	Start	Finish	2021	
							Q3	Q4
Works Programme (Revise Programme_20210810)								
Infrastructure Construction Works								
Section 1 of the Works								
CEPT tank								
Air ducts of effluent drop shaft								
A7090_CE	Installation of FRP air relief duct for effluent drop structure for PST9-29 (Odd no)	0%	54	48	07-Dec-20 A	11-Nov-21		Installation of FRP air relief duct for effluent drop structure for PST9-29 (Odd no)
A7091_CE	Installation of FRP air relief duct for effluent drop structure for PST31-54 (Odd no)	70%	54	40	27-Jan-21 A	17-Nov-21		Installation of FRP air relief duct for effluent drop structure for PST31-54 (Odd no)
A7091_CE	Delivery of air relief ducts and support affected by Covid-19 in China at end 2020	71.11%	124	90	15-Feb-21 A	04-Sep-21		Delivery of air relief ducts and support affected by Covid-19 in China at end 2020
A7092_CE	Installation of FRP air relief duct for effluent drop structure for PST10-30 (even no)	50%	54	40	02-Mar-21 A	24-Nov-21		Installation of FRP air relief duct for effluent drop structure for PST10-30 (even no)
A7093_CE	Installation of FRP air relief duct for effluent drop structure for PST32-54 (Even no)	0%	48	40	23-Mar-21 A	01-Dec-21		Installation of FRP air relief duct for effluent drop structure for PST32-54 (Even no)
A7180_CE	Reliability Test of FRP air relief ducts for effluent Drop Structure	0%	30	55	05-Mar-21 A	22-Dec-21		Reliability Test of FRP air relief ducts for effluent Drop Structure
Effluent Launder								
A7130	Full scale Installation of Isolation Devices for Effluent Drop Structure	51.25%	26	240	09-Oct-19 A	28-Dec-21		Full scale Installation of Isolation Devices for Effluent Drop Structure
A7130_CE	Repair of existing concrete surface at CEPT launder (24nos)	99.44%	26	180	25-Jan-20 A	29-Dec-21		Repair of existing concrete surface at CEPT launder (24nos)
A7185	Installation of isolation devices at the existing CEPT launder (24 Nos)	45.11%	26	180	25-Jan-20 A	29-Dec-21		Installation of isolation devices at the existing CEPT launder (24 Nos)
A7190	Performance test (smoke Test) of the isolation device for effluent drop structure	34.44%	26	180	25-Jan-20 A	29-Dec-21		Performance test (smoke Test) of the isolation device for effluent drop structure
Section 2 of the Works								
E&M Design Submission (DDA)								
A6138	Approval of DDA Design of Functional Design Specification for DOU Polishing Systems	65%	30	200	13-Sep-20 A	18-Oct-21		Approval of DDA Design of Functional Design Specification for DOU Polishing Systems
A8310	Approval of DDA Design of network integration with the existing DCS	70.66%	125	167	16-Oct-20 A	27-Sep-21		Approval of DDA Design of network integration with the existing DCS
A8780	Re-submission of DDA I/O schedule, cable schedule, cabling routing for DOUs polishing stage	0%	143	3	24-Mar-21 A	06-Sep-21		Re-submission of DDA I/O schedule, cable schedule, cabling routing for DOUs polishing stage
A8790	Approval of DDA I/O schedule, cable schedule, cabling routing for DOUs polishing stage	0%	143	3	07-Sep-21	09-Sep-21		Approval of DDA I/O schedule, cable schedule, cabling routing for DOUs polishing stage
Procurement and Delivery of Equipment/ Material for Section 2 of Works								
A6310	FAT of PLC and SCADA Systems for DOU Polishing Systems and fiber network equipment	50%	67	14	11-Apr-21 A	16-Aug-21		FAT of PLC and SCADA Systems for DOU Polishing Systems and fiber network equipment
A6320	Delivery of hardware of PLC and SCADA Systems for DOU Polishing Systems and fiber network equipment	0%	67	12	17-Aug-21	28-Aug-21		Delivery of hardware of PLC and SCADA Systems for DOU Polishing Systems and fiber network equipment
A6322	Procurement of DCS for DOU polishing systems	71.11%	132	90	25-Feb-21 A	04-Sep-21		Procurement of DCS for DOU polishing systems
A6324	FAT of DCS for DOU polishing systems	0%	132	7	05-Sep-21	11-Sep-21		FAT of DCS for DOU polishing systems
A6326	Delivery of DCS for DOU polishing systems	0%	132	9	12-Sep-21	20-Sep-21		Delivery of DCS for DOU polishing systems
A8630_NC1	Procurement of kiosks of fluorescent type sensor (SS316)	49.21%	142	63	16-Jul-21 A	10-Sep-21		Procurement of kiosks of fluorescent type sensor (SS316)
DOU 1								
E&M installation (2nd stage)								
A7210	Installation of DOU1 wet scrubber and air duct connection for DOU1	88%	62	175	26-Oct-20 A	03-Sep-21		Installation of DOU1 wet scrubber and air duct connection for DOU1
A7233	Wiring works for PLC of DOU equipments	53.49%	61	43	12-May-21	01-Sep-21		Wiring works for PLC of DOU equipments
A7242	Installation of Building Service, earthing and lightning protection for DOU polishing system, MCC room	90.48%	84	105	02-Jan-21 A	20-Aug-21		Installation of Building Service, earthing and lightning protection for DOU polishing system, MCC room
A7252	Installation of Fire services for DOU polishing system & MCC room	82.86%	77	105	18-Mar-21 A	30-Aug-21		Installation of Fire services for DOU polishing system & MCC room
A7292	Software development for new DOU polishing stage	70.83%	68	120	12-Apr-21 A	08-Nov-21		Software development for new DOU polishing stage
A7300_NC	Installation of kiosk and fluorescent type sensor (SS316)	0%	80	21	10-Sep-21*	08-Oct-21		Installation of kiosk and fluorescent type sensor (SS316)
Underground Drainage and cabling works								
A8840	Submit WWO46 Part 4&5 for WSD inspection and water meter connection	0%	40	47	30-Aug-21*	15-Oct-21		Submit WWO46 Part 4&5 for WSD inspection and water meter connection
Testing and commissioning								
A7152	Installation test, leakage test & megger test for DOU1PS	0%	110	5	05-Jul-21 A	27-Aug-21		Installation test, leakage test & megger test for DOU1PS
A7262	Performance Test of the DOU1 wet scrubber	0%	37	8	11-Oct-21*	18-Oct-21		Performance Test of the DOU1 wet scrubber
A7267	Function test of DOU1PS	12%	80	50	02-Aug-21 A	08-Oct-21		Function test of DOU1PS
A7272	Hardware, point/end to point/end, interlock, simulation & interface test for PLC, SCADA & DCS for DOU polishing system	0%	74	10	02-Sep-21	12-Sep-21		Hardware, point/end to point/end, interlock, simulation & interface test for PLC, SCADA & DCS for DOU polishing system
A7280_NC	Calibration and function test of kiosks and fluorescent type sensor	0%	75	5	11-Oct-21*	15-Oct-21		Calibration and function test of kiosks and fluorescent type sensor
A7282	Reliability test of the polishing system of DOU1	0%	17	36	08-Nov-21*	13-Dec-21		Reliability test of the polishing system of DOU1
A7312	Performance test of building service for DOU polishing system, MCC room and NaOH bulk storage compound	0%	91	31	31-Aug-21*	30-Sep-21		Performance test of building service for DOU polishing system, MCC room and NaOH bulk storage compound
A7322	Performance test of fire service for DOU polishing system, MCC room and NaOH bulk storage compound	0%	92	30	31-Aug-21	29-Sep-21		Performance test of fire service for DOU polishing system, MCC room and NaOH bulk storage compound
DOU 1R								
Underground Drainage and cabling works								
A8930	Submit WWO46 Part 4&5 for WSD inspection and water meter connection	29.73%	56	74	19-Jul-21 A	30-Sep-21		Submit WWO46 Part 4&5 for WSD inspection and water meter connection
E&M installation								
A7311	Wiring works for PLC of DOU equipments	50%	50	30	02-Jun-21 A	26-Aug-21		Wiring works for PLC of DOU equipments
A7315_EV	Installation of byproduct drainage pipework (to MDC)	0%	100	16	20-Aug-21*	10-Sep-21		Installation of byproduct drainage pipework (to MDC)
A8260	Software development for new DOU polishing stage	43.33%	31	60	05-Apr-21 A	18-Sep-21		Software development for new DOU polishing stage
A8270_NC	Installation of kiosks and fluorescent type sensor (SS316)	0%	90	11	10-Sep-21*	24-Sep-21		Installation of kiosks and fluorescent type sensor (SS316)
Testing and commissioning								
A7335	Performance Test of the DOU1R	0%	38	7	04-Oct-21*	11-Oct-21		Performance Test of the DOU1R
A7435	Function test of DOU1R	0%	90	5	19-Jul-21 A	24-Sep-21		Function test of DOU1R
A7530	Hardware, point/end to point/end, interlock, simulation & interface test for PLC, SCADA & DCS for DOU polishing system	0%	38	30	19-Sep-21	18-Oct-21		Hardware, point/end to point/end, interlock, simulation & interface test for PLC, SCADA & DCS for DOU polishing system
A7540_NE	Calibration and function test of kiosk and fluorescent type sensor	0%	84	7	24-Sep-21*	04-Oct-21		Calibration and function test of kiosk and fluorescent type sensor
A7550	Reliability test of the polishing system of DOU1R	0%	38	35	19-Oct-21	22-Nov-21		Reliability test of the polishing system of DOU1R
A7570	Performance test of building service for DOU polishing system & MCC room	0%	104	36	13-Aug-21*	17-Sep-21		Performance test of building service for DOU polishing system & MCC room
A7580	Performance test of fire service for DOU polishing system, MCC room and NaOH bulk storage compound	0%	91	31	31-Aug-21*	30-Sep-21		Performance test of fire service for DOU polishing system, MCC room and NaOH bulk storage compound
DOU 2								
Underground Drainage and cabling works								
A9020	Submit WWO46 Part 4&5 for WSD inspection and water meter connection	0%	46	47	30-Aug-21*	15-Oct-21		Submit WWO46 Part 4&5 for WSD inspection and water meter connection
E&M installation								
A6880	Installation of the chemical scrubber and air duct for DOU2	82.14%	55	168	09-Nov-20 A	14-Sep-21		Installation of the chemical scrubber and air duct for DOU2
A6880_NC	Installation of air ducts for connection of DOU3 and DOU2	0%	0	85	10-Aug-21*	18-Nov-21		Installation of air ducts for connection of DOU3 and DOU2
A7450_NC	Installation of Power supply and distribution system for DOU polishing systems (including panel and cabling works)	63.85%	37	130	17-Dec-20 A	04-Oct-21		Installation of Power supply and distribution system for DOU polishing systems (including panel and cabling works)
A7460_NC	Upgrading and Replacement of the existing power supply system	0%	48	6	01-Feb-21 A	04-Oct-21		Upgrading and Replacement of the existing power supply system
A7471	Wiring works for PLC of DOU equipments	86.05%	64	43	12-May-21	06-Sep-21		Wiring works for PLC of DOU equipments
A7480	Installation of Building Service, earthing and lightning protection for DOU polishing system, MCC room	0%	40	54	10-Aug-21*	12-Oct-21		Installation of Building Service, earthing and lightning protection for DOU polishing system, MCC room

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Contract No. DE/2018/17
Enhancement of Deodorization System at Stonecutter Island Sewage Treatment Works
3 Month Rolling Programme (Sep 2021 to Nov 2021)

Activity ID	Activity Name	Activity % Complete	Total Float	Original Duration	Start	Finish	2021	
							Q3	Q4
A7490	Installation of Fire services for DOU polishing system & MCC room	0%	67	24	13-Aug-21*	10-Sep-21	Installation of Fire services for DOU polishing system & MCC room	
A8400	Software development for new DOU polishing stage	30%	26	60	30-May-21*	06-Dec-21	Software development for new DOU polishing stage	
A8420_NC	Installation of kiosk and fluorescent type sensor (SS316)	0%	50	51	10-Sep-21*	19-Nov-21	Installation of kiosk and fluorescent type sensor (SS316)	
Testing and commissioning								
A6850	Installation test, leakage test and megger test	0%	55	41	17-Sep-21*	12-Nov-21	Installation test, leakage test and megger test	
A6910	Function test of DOU2PS	0%	50	37	30-Sep-21*	19-Nov-21	Function test of DOU2PS	
A7590	Hardware, point/end to point/end, interlock, simulation & interface test for PLC, SCADA & DCS for DOU polishing system	0%	30	13	19-Oct-21	31-Oct-21	Hardware, point/end to point/end, interlock, simulation & interface test for PLC, SCADA & DCS for DOU polishing system	
A7630	Performance test of building service for DOU polishing system and MCC room	0%	48	31	13-Oct-21*	12-Nov-21	Performance test of building service for DOU polishing system and MCC room	
A7640	Performance test of fire service for DOU polishing system and MCC room	0%	80	31	11-Sep-21*	11-Oct-21	Performance test of fire service for DOU polishing system and MCC room	
DOU 4								
RC works								
A7208_CE	RC footing for air duct support (10nr)	56.67%	62	60	25-Mar-21 A	09-Sep-21	RC footing for air duct support (10nr)	
Underground Drainage and cabling works								
A9110	Submit WWO46 Part 4&5 for WSD inspection and water meter connection	0%	39	74	10-Aug-21*	22-Oct-21	Submit WWO46 Part 4&5 for WSD inspection and water meter connection	
E&M installation								
A6700	Installation of the DOU4 polishing Unit and air duct connection for DOU4	61.33%	30	150	03-Dec-20 A	18-Oct-21	Installation of the DOU4 polishing Unit and air duct connection for DOU4	
A6710_NC	Installation of NaOCl feed pipe (upgrading)	0%	100	21	13-Aug-21*	10-Sep-21	Installation of NaOCl feed pipe (upgrading)	
A7421	Wiring works for PLC for DOU equipments	56%	56	45	05-May-21	16-Sep-21	Wiring works for PLC for DOU equipments	
A8420	Software development for new DOU polishing stage	70%	59	40	03-May-21	17-Sep-21	Software development for new DOU polishing stage	
A8425_NC	Installation of kiosks and fluorescent type sensor (SS314)	0%	70	31	10-Sep-21*	22-Oct-21	Installation of kiosks and fluorescent type sensor (SS314)	
Testing and commissioning								
A6705	Installation check, leakage test & megger test	0%	64	44	01-Sep-21*	01-Nov-21	Installation check, leakage test & megger test	
A6710	Performance Test of the DOU4 polishing Unit	0%	22	8	01-Nov-21*	08-Nov-21	Performance Test of the DOU4 polishing Unit	
A6740	Function test of DOU4PS	0%	64	32	17-Sep-21*	01-Nov-21	Function test of DOU4PS	
A7650	Hardware, point/end to point/end, interlock, simulation & interface test for PLC, SCADA & DCS for DOU polishing system	0%	22	18	22-Oct-21*	08-Nov-21	Hardware, point/end to point/end, interlock, simulation & interface test for PLC, SCADA & DCS for DOU polishing system	
A7660_NC	Calibration and function test of kiosks and fluorescent type sensor	0%	63	8	22-Oct-21*	02-Nov-21	Calibration and function test of kiosks and fluorescent type sensor	
A7670	Reliability test of the polishing system of DOU4	0%	22	30	09-Nov-21	08-Dec-21	Reliability test of the polishing system of DOU4	
A7680	Reliability test of NaOH bulk Storage and transfer system	15%	88	30	18-Apr-21 A	04-Sep-21	Reliability test of NaOH bulk Storage and transfer system	
A7690	Performance test of building service for DOU polishing system and MCC room	0%	91	31	31-Aug-21*	30-Sep-21	Performance test of building service for DOU polishing system and MCC room	
A7700	Performance test of fire service for DOU polishing system and MCC room	0%	91	31	31-Aug-21*	30-Sep-21	Performance test of fire service for DOU polishing system and MCC room	
DOU 5								
Underground Drainage and cabling works								
A9200	Submit WWO46 Part 4&5 for WSD inspection and water meter connection	0%	43	47	30-Aug-21*	15-Oct-21	Submit WWO46 Part 4&5 for WSD inspection and water meter connection	
E&M installation								
A7070_CE	Installation of cable containment and power cable of DOU5 PS	46.67%	1	30	15-Mar-21 A	27-Aug-21	Installation of cable containment and power cable of DOU5 PS	
A7070_NC	Installation of air ducts for connection of DOU5	36.67%	36	60	16-Apr-21 A	30-Sep-21	Installation of air ducts for connection of DOU5	
A7345_NC	Installation of Power supply and distribution system for DOU polishing systems (including panel and cabling works)	87.69%	8	130	19-Nov-20 A	27-Aug-21	Installation of Power supply and distribution system for DOU polishing systems (including panel and cabling works)	
A7366	Wiring works for PLC of DOU equipments	73.33%	5	45	03-May-21	23-Aug-21	Wiring works for PLC of DOU equipments	
A7375	Installation of Building Service, earthing and lightning protection for DOU polishing system, MCC room	82.5%	73	120	19-Nov-20 A	03-Sep-21	Installation of Building Service, earthing and lightning protection for DOU polishing system, MCC room	
A7385	Installation of Fire services for DOU polishing system, MCC room and NaOH bulk storage compound	91.67%	84	120	26-Dec-20 A	20-Aug-21	Installation of Fire services for DOU polishing system, MCC room and NaOH bulk storage compound	
A7395_NC	Installation of kiosk and fluorescent type sensor	0%	60	41	10-Sep-21*	05-Nov-21	Installation of kiosk and fluorescent type sensor	
A8440	Software development for new DOU polishing stage	83.08%	32	65	07-Apr-21 A	30-Oct-21	Software development for new DOU polishing stage	
A8450_CE	Installation of new SCADA system at Sludge Dewatering Building	0%	52	41	10-Aug-21*	27-Sep-21	Installation of new SCADA system at Sludge Dewatering Building	
Testing and commissioning								
A7381	Installation test, leakage test & megger test	0%	62	29	24-Sep-21*	03-Nov-21	Installation test, leakage test & megger test	
A7705	Function test of DOU5PS	0%	50	35	04-Oct-21*	19-Nov-21	Function test of DOU5PS	
A7710	Hardware, point/end to point/end, interlock, simulation & interface test for PLC, SCADA & DCS for DOU polishing system	0%	1	91	28-Aug-21	26-Nov-21	Hardware, point/end to point/end, interlock, simulation & interface test for PLC, SCADA & DCS for DOU polishing system	
A7720_NC	Calibration and function test of kiosks and fluorescent type sensor	0%	113	5	05-Nov-21 A	24-Aug-21	Calibration and function test of kiosks and fluorescent type sensor	
A7750	Performance test of building service for DOU polishing system and MCC room	0%	87	31	04-Sep-21*	04-Oct-21	Performance test of building service for DOU polishing system and MCC room	
A7760	Performance test of fire service for DOU polishing system and MCC room	0%	91	31	31-Aug-21*	30-Sep-21	Performance test of fire service for DOU polishing system and MCC room	
MPS1 SYSCON, MPS2 and sludge Dewatering Bldg (SDB)								
A7349	Hardware test of SCADA	0%	53	24	10-Aug-21	07-Sep-21*	Hardware test of SCADA	
A7350	Integration works for MPS1 SYSCON and MPS2	0%	32	24	20-Sep-21	19-Oct-21	Integration works for MPS1 SYSCON and MPS2	
A7355	Network intergation and interface test	0%	53	24	25-Aug-21	22-Sep-21	Network intergation and interface test	
A7370	Software development for SCADA-DCS interface	67.11%	65	76	07-Apr-21 A	08-Sep-21	Software development for SCADA-DCS interface	
A7380	Installation of DCS equipment	0%	101	19	10-Aug-21*	31-Aug-21	Installation of DCS equipment	
Statutory Inspection by FSD								
A7759	Comment and approval of DG application of DOUs	0%	55	45	10-Aug-21	23-Sep-21	Comment and approval of DG application of DOUs	
A7769	DG inspection by FSD	0%	55	45	24-Sep-21	07-Nov-21	DG inspection by FSD	
A7770	Submission of Application for FS inspection of FSD	0%	1	14	30-Oct-21*	12-Nov-21	Submission of Application for FS inspection of FSD	
Handover of E&M equipment								
A8210	Submission of O&M manual, Training manual, draft as-built drawings and spare part list	0%	6	30	04-Oct-21*	08-Nov-21	Submission of O&M manual, Training manual, draft as-built drawings and spare part list	
A8220	Submission of final version of training manual	0%	6	24	09-Nov-21	06-Dec-21	Submission of final version of training manual	
A8235	Prehandover inspection of electrical and mechanical system and ICA system of DOU polishing unit	0%	18	40	06-Nov-21	22-Dec-21	Prehandover inspection of electrical and mechanical system and ICA system of DOU polishing unit	

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