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ATAL-DEGREMONT-CHINA HARBOUR JOINT VENTURE

CONTRACT NO. DC/2013/10 - DESIGN, BUILD AND OPERATE SAN WAI SEWAGE TREATMENT WORKS – PHASE 1

QUARTERLY EM&A REPORT NO. 7

(01 NOVEMBER 2018 – 31 JANUARY 2019)

Prepared by: _____
LO, Ting Yi

Certified by: _____
LAU, Chi Leung
Environmental Team Leader

Issued Date: 21 February 2019 *Report No.: ENA91328*

ANEWR

Drainage Services Department
Sewage Services Branch
Harbour Area Treatment Scheme
5/F, Western Magistracy
2A Po Fu Lam Road
Hong Kong

Your reference:

Our reference: HKDSD203/50/105610

Date: 13 March 2019

Attention: Mr Albert Wong

BY EMAIL & POST
(email: awong@dsd.gov.hk)

Dear Sirs

Agreement No. HATS 02/2016
Services for Independent Environmental Checker (IEC) for
Contract No. DC/2013/10 – Design, Build and Operate San Wai Sewage Treatment Works – Phase 1
Quarterly Environmental Monitoring and Audit Report No.7 (November 2018 – January 2019)

We refer to emails of 21 February 2019 and 4, 6, 13 March 2019 from ETS-Testconsult Limited attaching the Quarterly Environmental Monitoring and Audit Report No.7 (November 2018 – January 2019).

We have no further comment and hereby verify the Quarterly Environmental Monitoring and Audit Report No.7 (November 2018 – January 2019).

Should you have any queries, please do not hesitate to contact the undersigned or our Mr Ricky Lau on 2618 2831.

Yours faithfully
ANEWR CONSULTING LIMITED

Adi Lee
Independent Environmental Checker

LYMA/LCCR/lhmh

cc AECOM – Mr Patrick Leung (email: patrick.leung@swstw-aecom.com)
ETS-Testconsult Limited – Mr C L Lau (email: env@ets-testconsult.com)

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

FIGURES

EXECUTIVE SUMMARY

This Quarterly Environmental Monitoring and Audit (EM&A) Report is prepared for Contract No. DC/2013/10 - Design, Build and Operate San Wai Sewage Treatment Works – Stage 1 (the Project) (hereafter referred to as "the Contract"). The Contract was awarded to ATAL-DEGREMONT-CHINA HARBOUR JOINT VENTURE (ADCJV) by the Drainage Services Department (DSD) and ETS-Testconsult Limited was appointed as the Environmental Team (ET) by ADCJV to implement the EM&A program in compliance with the EP and the EM&A Manuals.

According to the Section 25 of the Particular Specification (PS) and the Environmental Permit No. EP-464/2013, an EM&A programme should be implemented in accordance with the procedures and requirements in the EM&A Manual of the approved EIA report (Registration No. AEIAR-072/2003). The scope of monitoring works includes air quality, construction noise, water quality and environmental site audit.

Baseline monitoring was completed in April 2017. Action and Limit Levels were established for air quality, noise and water quality parameters based on the baseline monitoring results.

This is the seventh Quarterly Environmental Monitoring and Audit (EM&A) Report for the Contract which summaries findings of the EM&A works conducted during the reporting period from 01 November 2018 to 31 January 2019.

Environmental Monitoring and Audit Progress
The quarterly EM&A programme was undertaken in accordance with the EM&A Manual for this Contract. The summary of the monitoring activities in this reporting period is listed below:

- *24-hour TSP Monitoring: 16 Occasions at 2 designated locations*
- *1-hour TSP Monitoring: 48 Occasions at 2 designated locations*
- *Noise Monitoring (Day-time): 16 Occasions at 2 designated locations*
- *Water Quality Monitoring: 40 Occasions at 1 designated location*
- *Weekly Site inspection: 14 Occasions*

Breaches of Action and Limit Levels
Air Quality Monitoring
No exceedance of Action and Limit levels was recorded for 1-hr and 24-hr TSP monitoring in the reporting period.

Noise Monitoring
No exceedance of Action and Limit levels for noise monitoring was recorded in the reporting period.

Water Quality Monitoring
According to the summary of water monitoring results, no exceedance of Action and Limit levels was recorded in this reporting period.

Weekly Site Inspections
In general, performance on environmental mitigation measures implemented was found to be satisfactory in this reporting period. The major findings observed during site inspections are presented in the **Section 3.4.**

Complaint Log
There was no complaint received in relation to the environmental impact during the reporting period.

Notifications of Summons and Successful Prosecutions
There were no notifications of summons or prosecutions received during the reporting period.

Reporting Change
There were no reporting changes during the reporting period.

1 INTRODUCTION

1.1. Basic Project Information

1.1.1. This Quarterly Environmental Monitoring and Audit (EM&A) Report is prepared for Contract No. DC/2013/10 - Design, Build and Operate San Wai Sewage Treatment Works – Stage 1 (the Project) (hereafter referred to as "the Contract"). The Contract was awarded to ATAL-DEGREMONT-CHINA HARBOUR JOINT VENTURE (ADCJV) by the Drainage Services Department (DSD) and ETS-Testconsult Limited was appointed as the Environmental Team (ET) by ADCJV to implement the EM&A program in compliance with the EP and the EM&A Manuals.

1.1.2. The project involves expansion of the preliminary treatment works at San Wai STW from 164,000 m^3/d to 200,000 m^3/d Average Dry Weather Flow, upgrading the preliminary treatment level to CEPT and adding centralized disinfection. The site layout plan is shown in **Appendix A**. For any enquiries, hot line telephone (24 hours) at 9083 0560 was established.

1.1.3. According to the Section 25 of the Particular Specification (PS) and the Environmental Permit No. EP-464/2013, an EM&A programme should be implemented by an independent Environmental Team (ET) in accordance with the procedures and requirements in the EM&A Manual of the approved EIA report (Registration No. AEIAR-072/2003).These documents are available through the EIA Ordinance Register. The construction works of the Contract commenced on 16 May 2017.

1.1.4. The scope of monitoring works includes air quality, construction noise, water quality and environmental site audit. The EM&A requirements for each parameter described in the following sections include:

- *All monitoring parameters;*
- *Monitoring schedules for the reporting month and forthcoming months;*
- *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*

1.1.5. As part of the project EM&A program, baseline monitoring was conducted from 21 March 2017 to 15 April 2017 to determine the ambient environmental conditions before the project commence any major construction works and it had been verified by IEC and endorsed by EPD.

1.1.6. This is the seventh Quarterly Environmental Monitoring and Audit (EM&A) Report for the Contract which summaries the audit findings of the EM&A programme during the reporting period from 01 November 2018 to 31 January 2019.

1.2. Project Organization

1.2.1. The project organization structure and lines of communication with respect to the on-site environmental management structure is shown in **Appendix B**. The key personnel contact names and numbers are summarized in **Table 1.1.**

Table 1.1 Contact Information of Key Personnel

Party	*Position*	*Name of Key Staff*	*Tel. No.*	*E-mail*
Supervising Officer (AECOM Asia Co. Ltd.)	*Resident Engineer*	*Mr. Patrick Leung*	*5222 6561*	*patrick.leung@swstw-aecom.com*
Independent Environmental Checker (ANewR Consulting Limited)	*Technical Director*	*Mr. Adi Lee*	*2618 2836*	*aymlee@anewr.com*
	Senior Environmental Consultant	*Mr. Nic Lam*	*2618 2836*	*nhhlam@anewr.com*
Contractor (ATAL-DEGREMONT-CHINA HARBOUR JOINT VENTURE)	*Environmental Officer*	*Mr. Johnny So*	*9513 8899*	*johnny.so@c302.chechk.com*
Environmental Team (ETS-Testconsult Ltd.)	*Environmental Team Leader*	*Mr. C. L. Lau*	*2946 7791*	*env@ets-testconsult.com*

1.3. Construction Programme

1.3.1. A copy of the Contractor's construction programme is provided in **Appendix C**.

1.4. Construction Works Undertaken During the Reporting Period

1.4.1. A summary of the construction activities undertaken during this reporting period is shown below:

- *Substructure (ELS & Bulk excavation);*
- *Substructure (rc structure);*
- *Backfilling;*
- *Removal of ELS;*
- *Superstructure (rc and metalworks);*
- *Water Tightness Test;*
- *Internal ABWF – CEPT;*
- *ABWF - UV Disinfection Facility, Sludge Dewatering Building, Administration Building & Maintenance Workshop;*
- *Pile Loading Test;*
- *Post-Drilling;*
- *Bar Screen Installation;*
- *Site Formation along Boundary Wall (Perimeter);*
- *Slope works and Retaining Wall (Eastern Portion);*
- *Slope works and Retaining Wall (Northern Portion);*
- *Drainage Inlet connection;*
- *CLP Cable Duct and Draw Pits (within the Site);*
- *EVA (Road & Drainage);*
- *RC Trench and Odour Pipe (DO1, DO2);*
- *Emergency By-Pass Pipe;*
- *Sewage Pipe;*
- *Cable Duct and Draw Pits*

2 EM&A Requirement

2.1. Summary of EM&A Requirements

2.1.1. The scope of monitoring works includes air quality, construction noise, water quality and environmental site audit. The EM&A requirements for each parameter described in the following sections include:

- *All monitoring parameters;*
- *Monitoring schedules for the reporting month and forthcoming months;*
- *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*

2.2. Monitoring Requirements

2.2.1. Air Quality Monitoring

In accordance with the EM&A Manual, 1-hr and 24-hr TSP air quality monitoring were conducted three times and once per six days correspondingly. Air quality monitoring were conducted at ASR1a (晉榮貨櫃服務有限公司) and ASR2a (永康貨櫃服務有限公司), ASR1a (晉榮貨櫃服務有限公司) and ASR1a (晉榮貨櫃服務有限公司) and ASR2b (永康貨櫃服務有限公司) during November 2018, December 2018 and January 2019 respectively, which was shown in **Figure 1** and **Figure 2**.

2.2.2. Noise Monitoring

Noise levels (L_{eq}, L_{10} and L_{90}) were monitored in the reporting period in accordance with the EM&A Manual. Noise monitoring were performed at NSR1a (晉榮貨櫃服務有限公司) and NSR2a (永康貨櫃服務有限公司), NSR1a (晉榮貨櫃服務有限公司) and NSR1a (晉榮貨櫃服務有限公司) and NSR2b (永康貨櫃服務有限公司) during August 2018, September 2018 and October 2018 respectively, which was shown in **Figure 1** and **Figure 2**.

2.2.3. Water Quality Monitoring

Water quality was monitored 3 times per week in the reporting period in accordance with the EM&A Manual at the one alternative water quality monitoring station, R1b (at Tin Shui Wai Nullah) which shown in **Figure 2**.

2.2.4 The equipment, monitoring parameters, frequency and duration, monitoring methodology, monitoring schedule, meteorological information are detailed in the monthly EM&A Reports.

2.3. Action and Limit Levels

2.3.1. The Action and Limit Levels for 1-hr TSP and 24-hr TSP are provided in **Table 2.1**.

Table 2.1 Action and Limit Levels for 1-hr and 24-hr TSP

Air Quality Monitoring Station	*1-hr TSP ($\mu g/m^3$)*		*24-hr TSP ($\mu g/m^3$)*	
	Action Level	*Limit Level*	*Action Level*	*Limit Level*
ASR1a	*309*	*500*	*260*	*260*
ASR2b	*292*	*500*	*228*	*260*

2.3.2. The Action and Limit Levels for construction noise are provided in **Table 2.2**

Table 2.2 Action and Limit Levels for Construction Noise

Time Period	*Action*	*Limit*
0700 –1900 hrs normal weekdays	*When one documented complaint is received*	*75 dB(A)**

Remark: (*)70dB(A) for schools and 65dB(A) for schools during school examination period

2.3.3. The Action and Limit Levels for Water Quality are provided in **Table 2.3**

Table 2.3 Action and Limit Levels for Water Quality

Parameters	*Unit*	*Action*	*Limit*
Turbidity	*NTU*	*19.8*	*20.5*
Dissolved Oxygen	*mg/L*	*1.84*	*1.81*
Suspended Solid	*mg/L*	*17.0*	*17.8*

2.4. Event and Action Plans

2.4.1. The event and action plan is provided in **Appendix G**.

2.5. Mitigation Measures

2.5.1. Environmental mitigation measures for the Contract were recommended in the Approved EIA Report. **Appendix H** lists the recommended mitigation measures and the implementation status.

3 ENVIRONMENTAL MONITORING AND AUDIT

3.1. Air Quality Monitoring Result

3.1.1. No exceedance of Action and Limit levels was recorded for 1-hr and 24-hr TSP monitoring in this quarter. Graphical presentation of 1-hour and 24-hour TSP monitoring results is shown in **Appendix D**. Wind data included wind speed and wind direction was extracted from Wetland Park Station of Hong Kong Observatory and is presented in **Appendix I**.

3.1.2. Generally, 1-hour TSP and 24-hour TSP monitoring results fluctuated well below the Action Level in this reporting period. The major dust source observed near the monitoring stations was mainly from vehicles passing by the container yards and general earth works. It can be concluded that the contractor implemented sufficient dust mitigation measures during this reporting quarter.

3.1.3. Apart from the construction activities, the cargo trunks passing through the container yards (晉榮貨櫃服務有限公司 and 永康貨櫃服務有限公司) would also generate dust since the Ha Tsuen Road was mainly made by soil and sand. A part of 1-hour TSP and 24-hour TSP monitoring results were contributed by the cargo trunks.

3.2. Noise Monitoring Results

3.2.1. No exceedance of Action and Limit Level of noise monitoring results was recorded during the reporting quarter. Graphical presentation of 1-hour and 24-hour TSP monitoring results for the reporting period is shown in **Appendix E**.

3.2.2. The noise monitoring data were found to be lower than the limit level. The major noise source during the monitoring event was the vehicles passing through the container yard entrance and the general earth works inside the construction site.

3.2.3. Since NSR1a, NSR2a and NSR2b were located inside the container yards, the frequency of vehicles moving in and out the container yards would influence the noise monitoring results.

3.3. Water Quality Monitoring Result

3.3.1. According to the summary of water monitoring results, no exceedance of Action and Limit levels was recorded in this reporting period. Graphical presentation of the monitoring results for the reporting period is shown in **Appendix F**.

3.3.2. Generally, the turbidity and suspended solids were found to be lower than the action level. Besides, all results of dissolved oxygen measured in this reporting period were higher than the action level.

3.3.3. Aside from the discharge, weather condition would be a major factor that affects the water quality in Tin Shui Wan Nallah. In rainy day, the soil and other suspended materials were flushed along the shore and entered the Tin Shui Wai Nullah. Besides, the nullah water would flow rapidly and the sand and stones in the nullah bed were upturned. Thus, the water quality would be deteriorated.

3.4. Site Inspection

3.4.1. Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control mitigation measures for the project. The dates of environmental site inspections during the reporting period are listed in **Table 3.1**.

Table 3.1 Environmental Site Inspection Date

November 2018	December 2018	January 2019
02, 09, 16, 22 and 30	07, 12, 21 and 27	04, 11, 18, 25 and 30

3.4.2. Observations for the site inspections within this reporting period are summarized in **Table 3.2**.

Table 3.2 Summary of observation of site inspections

Date	Observations / Reminders	Follow-up Action	Closed Date
25 October 2018	1. Stagnant water was found accumulated on the road near SDB.	1. Stagnant water and oil were cleaned inside the chemical container near UV Zone.	02 November 2018
02 November 2018	1. General refuse was observed at SDB & UV area.	1. General refuse was collected at SDB & UV area.	09 November 2018
09 November 2018	--	--	--
16 November 2018	1. Damaged drip tray with oil stain for a generator was observed at P1.	1. Oil stain was cleared and stopper was provided for the drip tray.	22 November 2018
22 November 2018	--	--	--
30 November 2018	1. Dust emission was observed on the site. 2. Stagnant water was observed inside the drip tray near P1 area.	1. Watering was provided. 2. Drip tray was provided for chemical container storage.	07 December 2018
07 December 2018	1. Chemical wastes was observed without	1. Valid chemical labels were provided.	12 December 2018

	chemical label near P3.		
12 December 2018	--	--	--
21 December 2018	1. Stagnant pool was observed at Portion AB.	1. Stagnant pool was cleared.	27 December 2018
27 December 2018	1. Chemical containers without drip tray were observed.	1. Chemical containers were removed.	04 January 2019
04 January 2019	1. Stagnant water was observed at Portion P1.	1. Stagnant water was cleared at Portion P1.	11 January 2019
11 January 2019	--	--	--
18 January 2019	1. Chemical waste area was found without chemical label.	1. Correct chemical label was provided.	25 January 2019
25 January 2019	1. Water quality of Wetsep Tank should be improved.	1. Accumulated mud was cleaned.	30 January 2019

3.5. Advice on the Solid and Liquid Waste Management Status

3.5.1. All types of waste arising from the construction work are classified into the following:
- Construction & Demolition (C&D) Material;
- Chemical Waste;
- General Refuse; and
- Excavated Soil

3.5.2. The quantities of waste for disposal in this reporting period are summarized in the Monthly Summary Waste Flow Table which is shown in **Appendix J**.

3.5.3. To control over the site performance on waste management, the Contractor shall ensure that all solid and liquid waste management works are in full compliance with the relevant license/permit requirements, such as the effluent discharge license and the chemical waste producer registration. The Contractor is also reminded to implement the recommended environmental mitigation measures according to the EM&A Manual based on actual site conditions.

3.6. Landscape and Visual Audit

3.6.1. Landscape and visual audits were undertaken at least once every two weeks throughout the construction period by a competent landscape architect. During the reporting period, audits were carried out on 02, 16 and 30 November 2018, 17 and 28 December 2018 and 11 and 25 January 2019.

3.6.2. Observations and reminders were summarized in the landscape and visual impact assessment checklists which are attached in the monthly EM&A reports.

3.7. Discharge License and Results of Effluent Monitoring

3.7.1. Effluent quality was monitored in the reporting quarter in accordance with the EM&A Manual at the discharge point. The location of Wetsep treatment tank was shown in **Figure 3**. A discharge license under Water Pollution Control Ordinance was obtained by the Contractor upon commencement of the Project. Self-monitoring would be performed as per the requirement under the discharge license. According to the EM&A Manual, pH, chemical oxygen demand and total suspended solid are required to be analysed at least once every two week.

3.7.2. Effluent water samples were sampled by the Contractor. The dates of effluent sampling during the reporting period are listed in **Table 3.3**. During 13 November 2018, Wetsep at P1a, P1b and P8 were operated, the effluent water sample was sampled at P1a, P1b and P8. During 27 November 2018, only Wetsep at P1b was operated, the effluent water sample was sampled at P1b only. During

December 2018, as there was no water discharged from 11 to 19 December 2018 and only Wetsep at P1b was operated on 20 December 2018, the effluent water sample was sampled at P1b only on 20 December 2018. For January 2019, as there was no water discharged from 29 to 31 January 2019 and only Wetsep at P1b was operated on 03 January 2019, the effluent water sample was sampled at P1b only on 03 January 2019.

Table 3.3 Effluent Sampling Dates

November 2018	December 2018	January 2019
13 and 27	20	03 and 15

3.7.3. The required testing parameter including pH, chemical oxygen demand and total suspended solid were carried out in a HOKLAS laboratory. The methods of chemical oxygen demand and total suspended solid determination follow APHA 19ed 5220 B and APHA 19ed 2540 D respectively.

3.7.4. For effluent quality monitoring as per the discharge license requirement, the results complied with the discharge license requirement.

3.8. Implementation Status of Environmental Mitigation Measures

3.8.1. The environmental mitigation measures that recommended in the Environmental Monitoring and Audit Manual covered the issues of dust, noise and waste and they are summarized as following:

Dust Mitigation Measures

a. The working area for the uprooting of trees, shrubs, or vegetation or for the removal of boulders, poles, pillars or temporary or permanent structures should be sprayed with water or a dust suppression chemical immediately before, during and immediately after the operation so as to maintain the entire surface wet;
b. All demolished items (including trees, shrubs, vegetation, boulders, poles, pillars, structures, debris, rubbish and other items arising from site clearance) that may dislodge dust particles should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides within a day of demolition;
c. Vehicle washing facilities including a high pressure water jet should be provided at every discernible or designated vehicle exit point;
d. 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 hardcores;
e. Where a site boundary adjoins a road, street, service and or other area accessible to the public, hoarding of not less than 2.4m from ground level should be provided along the entire length of that portion of the site boundary except for a site entrance or exit;
f. Every main haul road (i.e. any course inside a construction site having a vehicle passing rate of higher than 4 in any 30 minutes) should be paved with concrete, bituminous materials, hardcores or metal plates, and kept clear of dusty materials; or sprayed with water or a dust suppression chemical so as to maintain the entire road surface wet;
g. The portion of any road leading only to a construction site that is within 30m of a discernible or designated vehicle entrance or exit should be kept clear of dusty materials;
h. Immediately before leaving a construction site, every vehicle should be washed to remove any dusty materials from its body and wheels;
i. Where a vehicle leaving a construction site is carrying a load of dusty materials, the load should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle;
j. The working area of any excavation or earth moving operation should be sprayed with water or a dusty suppression chemical immediately before, during and immediately after the operation so as to maintain the entire surface wet;
k. Exposed earth shall be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabilizer within 6 months after the last construction activity on the construction site or part of the construction site where the exposed earth lies;
l. Any stockpile of dusty material should be either covered entirely by impervious sheeting; placed in an area sheltered on the top and the 3 sides; or sprayed with water or a dust suppression chemical so as to maintain the entire surface wet.

Noise Mitigation Measures

a. Quiet plants should be used in order to reduce the noise impacts to protect the nearby NSRs.
b. Temporary and Movable Noise Barriers should be used in order to reduce the noise impact to the surrounding sensitive receivers
c. The contractor should site noisy equipment and activities as far from sensitive receivers as practical.
d. Idle equipment should be turned off or throttled down.
e. Construction activities should be planned so that parallel operation of several sets of equipment close to a given receiver is avoided
f. Construction plant should be properly maintained and operated.

Water Quality Mitigation Measures

a. Exposed stockpiles should be covered with tarpaulin or impervious sheets before a rainstorm occurs;
b. The exposed soil surfaces should also be properly protected to minimize dust emission;
c. The stockpiles of materials should be placed in the locations away from the drainage channel so as to avoid releasing materials into the channel;
d. Wheel washing facilities should be provided at site exits to ensure that earth, mud and debris would not be carried out of the works areas by vehicles;
e. Provision of site drainage systems and treatment facilities would be required to minimize the water pollution;
f. A discharge license needs to be applied from EPD for discharging effluent from the construction site;
g. The treated effluent quality is required to meet the requirements specified in the discharge license;
h. Provision of chemical toilets is required to collect sewage from workforce. The chemical toilets should be cleaned on a regular basis;
i. A licensed waste collector should be employed to clean the chemical toilets and temporary storage tank on a regular basis;
j. Illegal disposal of chemicals should be strictly prohibited;
k. Registration as a chemical waste producer is required if chemical wastes are generated and need to be disposed of. 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;
l. 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 should be used as a guideline for handing chemical wastes;
m. The impact from accidental spillage of chemicals can be effectively controlled through good management practices.

Waste Management Mitigation Measures

a. 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;
b. To encourage collection of aluminium cans by individual collectors, separate bins should be provided to segregate this waste from other general refuse generated by the workforce;
c. Any unused chemicals or those with remaining functional capacity should be recycled;
d. Prior to disposal of C&D waste, it is recommended that wood, steel and other metals be separated for re-use and/or recycling and inert waste as fill material to minimize the quantity of waste to be disposed of to landfill;
e. Proper storage and site practices to minimize the potential for damage or contamination of construction materials; and
f. Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste.

4 SUMMARY OF EXCEEDANCE, COMPLAINT, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTION

4.1. Summary of Exceedance of the Environmental Quality Performance Limit

4.1.1. There was no Action and Limit level exceedance of 1-hour and 24-hr TSP monitoring was recorded at station ASR1a and ASR2a during this reporting period.

4.1.2. There was no Action and Limit Level exceedance for noise recorded at station NSR1a and NSR2a during the reporting period.

4.1.3. According to the summary of water monitoring results, there was no Action and Limit Level exceedance for water quality monitoring recorded at station R1b during the reporting period.

4.2. Summary of Complaints, Notification of Summons and Successful Prosecution

4.2.1. There were no complaints received during the reporting period.

4.2.2. There were no notifications of summons or prosecutions received during the reporting period.

4.2.3. A summary of environmental complaints, notifications of summons and successful prosecutions was given in **Table 4.1**.

Table 4.1 Summary of Environmental Complaints Notification of Summons and Successful Prosecution

Reporting Period	Cumulative Statistic		
	Complaints	Notifications of summons	Successful prosecutions
The reporting period	0	0	0
From commencement date of construction to end of reporting month	0	0	0

5 COMMENTS, RECOMMENDATIONS AND CONCLUSION

5.1. Comments

5.1.1. According to the environmental site inspection undertaken during the reporting period, the following recommendations were provided:

- The Contractor was reminded to clear all the stagnant water pools;
- The Contractor was reminded to collect the general refuse properly;
- The Contractor was reminded to maintain the Wetsep properly.

5.2. Recommendations

5.2.1. With implementation of the recommended environmental mitigation measures, the contract's environmental impacts were considered environmentally acceptable. The weekly environmental site inspections ensured that all the environmental mitigation measures recommended were effectively implemented.

5.2.2. The recommended environmental mitigation measures, as included in the EM&A programme, effectively minimize the potential environmental impacts from the Contract. Also, the EM&A programme effectively monitored the environmental impacts from the construction activities and ensure the proper implementation of mitigation measures. No particular recommendation was advised for the improvement of the programme.

5.3. Conclusions

5.3.1. There was no Action and Limit level exceedance of 1-hour and 24-hr TSP monitoring was recorded at station ASR1a and ASR2a during this reporting period.

5.3.2. There was no Action and Limit Level exceedance for noise recorded at station NSR1a and NSR2a during the reporting period.

5.3.3. According to the summary of water monitoring results, there was no Action and Limit Level exceedance for water quality monitoring recorded at station R1b during the reporting period.

5.3.4. Environmental site inspections were carried out on 02, 09, 16, 22 & 30 November 2018, 07, 12, 21 & 27 December 2018 and 04, 11, 18, 25 & 30 January 2019. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site inspections.

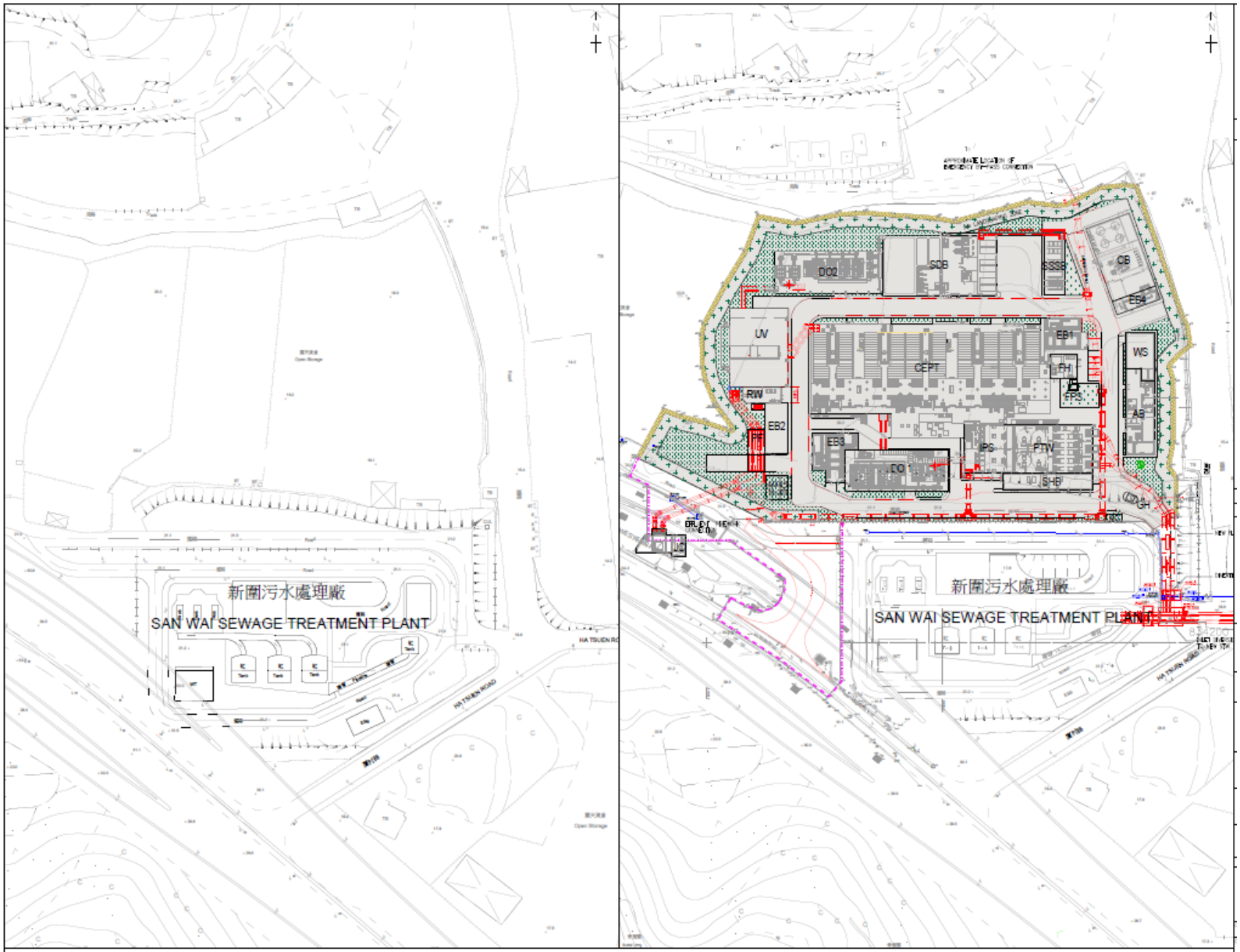
5.3.5. There were no complaints received during the reporting period.

5.3.6. There was no notification of summons and successful prosecution received during the reporting period.

- END OF REPORT -

Appendix A

Location of Works Areas

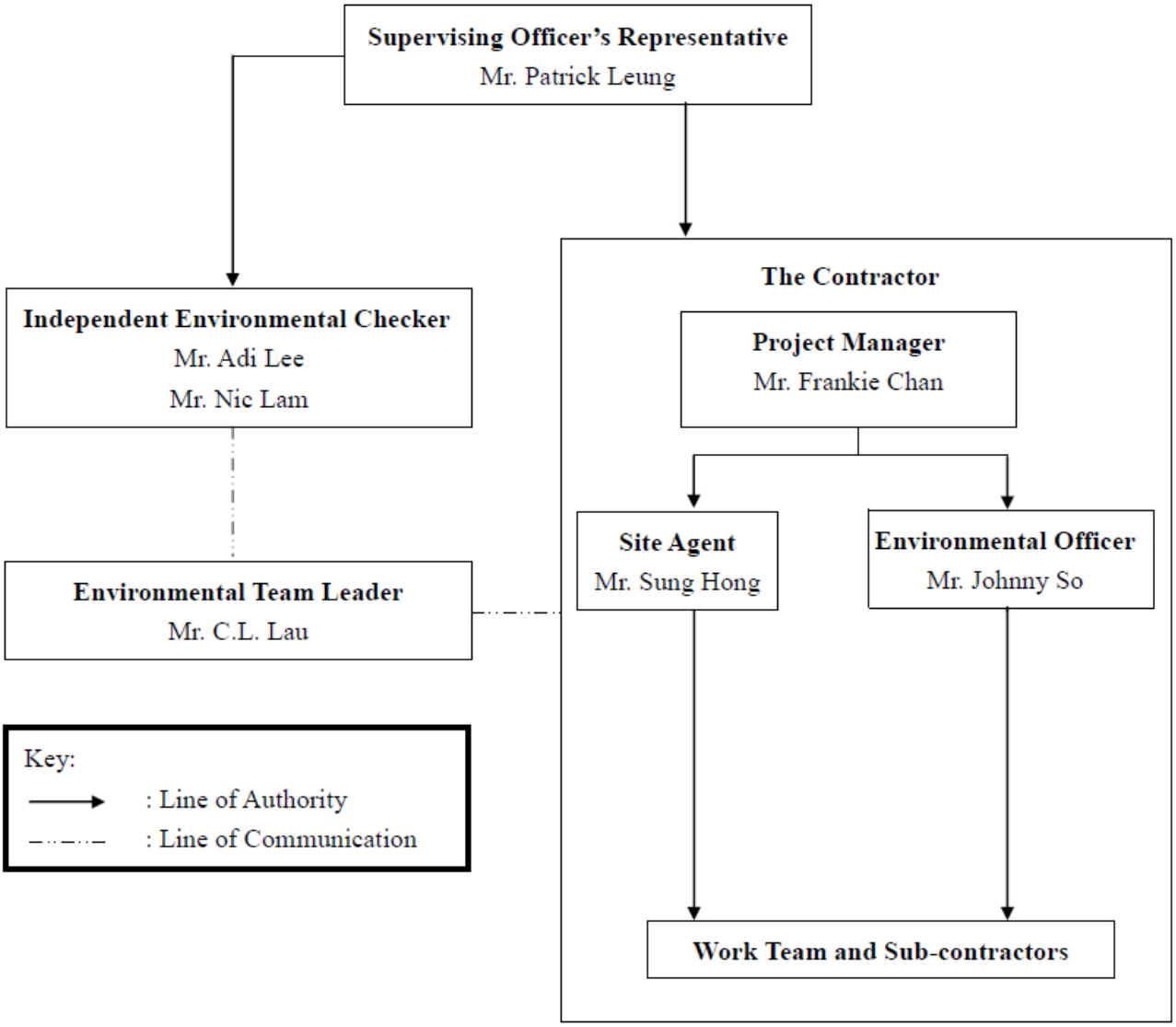


EXISTING SAN WAI SEWAGE TREATMENT WORKS

EXPANDED AND UPGRADED SAN WAI SEWAGE TREATMENT WORKS

Appendix B

Project Organization Chart

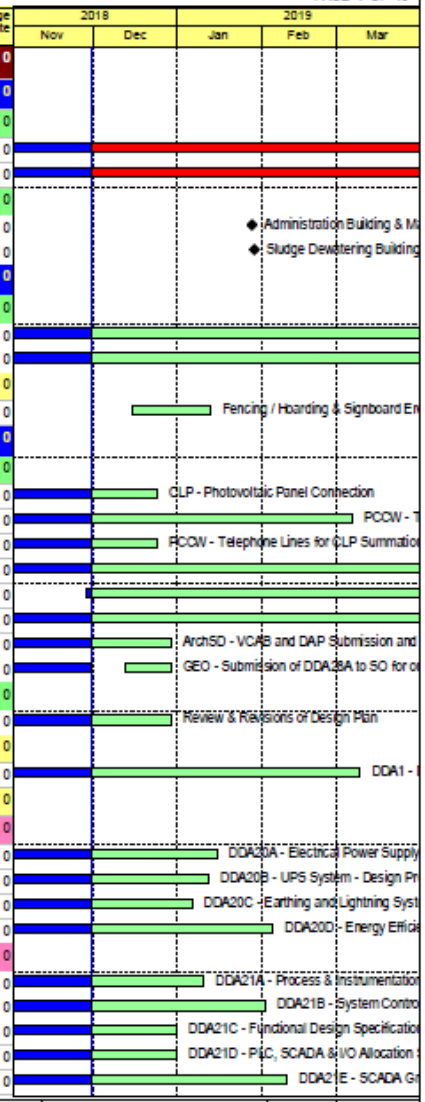

Supervising Officer's Representative
Mr. Patrick Leung
Independent Environmental Checker
Mr. Adi Lee
Mr. Nic Lam
Environmental Team Leader
Mr. C.L. Lau
The Contractor
Project Manager
Mr. Frankie Chan
Site Agent
Mr. Sung Hong
Environmental Officer
Mr. Johnny So
Work Team and Sub-contractors
Key:
: Line of Authority
: Line of Communication

Appendix C

Construction Programme

DATA DATE: 30-Nov-18 | LAYOUT: SW Project PHase 1 Rev 10 (3M 30Nov18) |

Activity ID	Activity Name	At Completion Duration	Start	Finish	Rev 10 BL Start	Rev 10 BL Finish	Slippage Start Date	Slippage Finish Date
San Wai Sewage Treatment Works Phase 1 - Rev 10 MP (Update as of 30 Nov 2018)		**1672**	**27-May-16 A**	**23-Dec-20**	**27-May-16**	**23-Dec-20**	**0**	**0**
Key Date		**1672**	**27-May-16 A**	**23-Dec-20**	**27-May-16**	**23-Dec-20**	**0**	**0**
Commencement & Completion of Works		1672	27-May-16 A	23-Dec-20	27-May-16	23-Dec-20	0	0
KD150	Section 1 - Handover to Home Affairs Department for Maintenance	1120	30-Nov-17 A	23-Dec-20	30-Nov-17	23-Dec-20	0	0
KD160	Section 2 - Period of Works (FOT P.3 cl 67, 71) - Including 88.5 Days Granted EOT	1672	27-May-16 A	23-Dec-20	27-May-16	23-Dec-20	0	0
Plant Room Handover Dates To E&M Installation		1	28-Jan-19	29-Jan-19	28-Jan-19	29-Jan-19	0	0
KD300	Administration Building & Maintenance Workshop (AB & WS)	0		28-Jan-19		28-Jan-19	0	0
KD314	Sludge Dewatering Building (SDB)	0		29-Jan-19		29-Jan-19	0	0
Preliminaries & General Requirement		**1362**	**01-Apr-17 A**	**22-Dec-20**	**01-Apr-17**	**22-Dec-20**	**0**	**0**
Contractor Requirement		1362	01-Apr-17 A	22-Dec-20	01-Apr-17	22-Dec-20	0	0
PS465	Impact Monitoring	1275	27-Jun-17 A	22-Dec-20	27-Jun-17	22-Dec-20	0	0
PS485	Site Drainage Plan Implementation	1362	01-Apr-17 A	22-Dec-20	01-Apr-17	22-Dec-20	0	0
Contractor Requirement for Working Area Portion (P8)		30	15-Dec-18	13-Jan-19	15-Dec-18	13-Jan-19	0	0
PS160	Fencing / Hoarding & Signboard Erection (P8)	30	15-Dec-18	13-Jan-19	15-Dec-18	13-Jan-19	0	0
Design & Design Checking of Permanent Works		**1639**	**26-Jun-16 A**	**20-Dec-20**	**26-Jun-16**	**20-Dec-20**	**0**	**0**
Statutory Submission		1377	15-Mar-17 A	20-Dec-20	15-Mar-17	20-Dec-20	0	0
DS166	CLP - Photovoltaic Panel Connection	366	24-Dec-17 A	24-Dec-18	24-Dec-17	24-Dec-18	0	0
DS173	PCCW - Telephone Lines and Megalink	618	27-Jun-17 A	06-Mar-19	27-Jun-17	06-Mar-19	0	0
DS174	PCCW - Telephone Lines for CLP Summation Metering	515	28-Jul-17 A	24-Dec-18	28-Jul-17	24-Dec-18	0	0
DS177	EMSD - Passenger Lift	326	29-May-18 A	19-Apr-19	29-May-18	19-Apr-19	0	0
DS180	EPD - Application for Emergency Generator Flue Gas Discharge License	180	28-Nov-18 A	27-May-19	28-Nov-18	27-May-19	0	0
DS195	BEAM Plus - Final Assessment (FA)	1026	01-Mar-18 A	20-Dec-20	01-Mar-18	20-Dec-20	0	0
DS200	ArchSD - VCAB and DAP Submission and Approval	655	15-Mar-17 A	29-Dec-18	15-Mar-17	29-Dec-18	0	0
DS230	GEO - Submission of DDA28A to SO for onward submission to GEO for Checking Certificate	514	03-Aug-17 A	29-Dec-18	03-Aug-17	29-Dec-18	0	0
AIP / DDA Submission & Approval		987	26-Jun-16 A	09-Mar-19	26-Jun-16	09-Mar-19	0	0
DS410	Review & Revisions of Design Plan	917	26-Jun-16 A	29-Dec-18	26-Jun-16	29-Dec-18	0	0
Design Memorandum (AIP1 / DDA1)		301	13-May-18 A	09-Mar-19	13-May-18	09-Mar-19	0	0
DS505	DDA1 - Design Memorandum - Design Preparation to SO Approval	301	13-May-18 A	09-Mar-19	13-May-18	09-Mar-19	0	0
Global Design		793	06-Jan-17 A	09-Mar-19	06-Jan-17	09-Mar-19	0	0
Electrical Power Supply System (AIP20 / DDA20ABCDE)		653	24-Apr-17 A	05-Feb-19	24-Apr-17	05-Feb-19	0	0
DG1891	DDA20A - Electrical Power Supply System - Design Preparation to SO Approval	632	24-Apr-17 A	15-Jan-19	24-Apr-17	15-Jan-19	0	0
DG3880	DDA20B - UPS System - Design Preparation to SO Approval	629	24-Apr-17 A	12-Jan-19	24-Apr-17	12-Jan-19	0	0
DG3896	DDA20C - Earthing and Lightning System - Design Preparation to SO Approval	623	24-Apr-17 A	06-Jan-19	24-Apr-17	06-Jan-19	0	0
DG3912	DDA20D - Energy Efficiency - Design Preparation to SO Approval	653	24-Apr-17 A	05-Feb-19	24-Apr-17	05-Feb-19	0	0
Control and Monitoring System (AIP21 / DDA21ABCDE)		760	12-Jan-17 A	10-Feb-19	12-Jan-17	10-Feb-19	0	0
DG1924	DDA21A - Process & Instrumentation Diagram (P&ID) - Design Preparation to SO Approval	729	12-Jan-17 A	10-Jan-19	12-Jan-17	10-Jan-19	0	0
DG1940	DDA21B - System Control Philosophy - Design Preparation to SO Approval	685	20-Mar-17 A	02-Feb-19	20-Mar-17	02-Feb-19	0	0
DG1956	DDA21C - Functional Design Specification - Design Preparation to SO Approval	638	03-Apr-17 A	31-Dec-18	03-Apr-17	31-Dec-18	0	0
DG1972	DDA21D - PLC, SCADA & I/O Allocation Schedules - Design Preparation to SO Approval	618	23-Apr-17 A	31-Dec-18	23-Apr-17	31-Dec-18	0	0
DG1988	DDA21E - SCADA Graphic Interface - Design Preparation to SO Approval	590	01-Jul-17 A	10-Feb-19	01-Jul-17	10-Feb-19	0	0



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

ATAL-Degremont-China Harbour Joint Venture

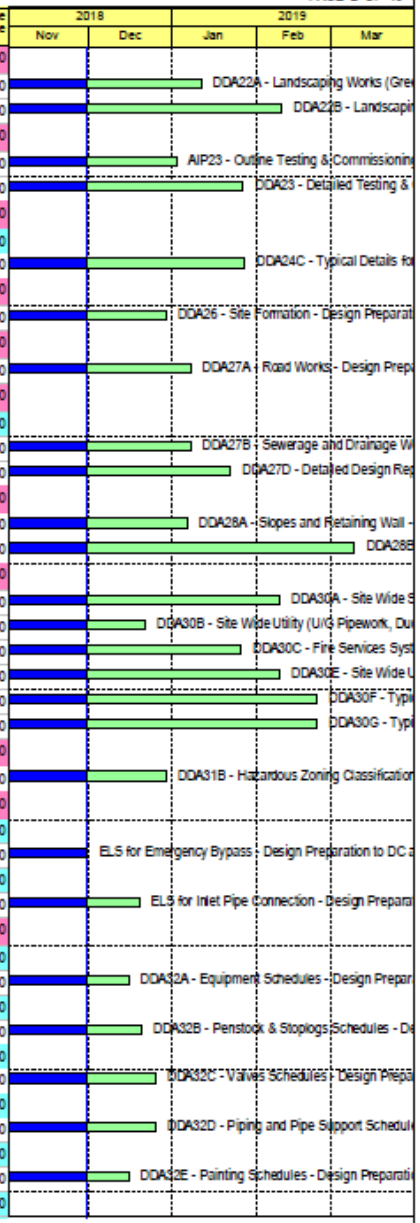
TASK filter: 3 Months Rolling Programme.

CONTRACT NO. DC/2013/10 DESIGN, BUILD & OPERATE
SAN WAI SEWAGE TREATMENT WORKS - PHASE 1
MASTER PROGRAMME Rev 10 (30 November 2018)
THREE (3) MONTHS ROLLING PROGRAMME

Date	Revision	Checked	Approved
30-Nov-18	Three (3) Months Rolling Programme...		

DATA DATE: 30-Nov-18 | LAYOUT: SW Project PHase 1 Rev 10 (3M 30Nov18) |

Activity ID	Activity Name	At Completion Duration	Start	Finish	Rev 10 BL Start	Rev 10 BL Finish	Slippage Start Date	Slippage Finish Date
Landscaping Works (AIP22 / DDA22AB)		766	06-Jan-17 A	10-Feb-19	06-Jan-17	10-Feb-19	0	0
DG1260	DDA22A - Landscaping Works (Green Roof) - Design Preparation to SO Approval	736	06-Jan-17 A	11-Jan-19	06-Jan-17	11-Jan-19	0	0
DG1274	DDA22B - Landscaping Works (Site Wide) - Design Preparation to SO Approval	588	03-Jul-17 A	10-Feb-19	03-Jul-17	10-Feb-19	0	0
Testing and Commissioning Plan (AIP23 / DDA23)		426	28-Nov-17 A	27-Jan-19	28-Nov-17	27-Jan-19	0	0
DG3270	AIP23 - Outline Testing & Commissioning Plan - Design Preparation to SO Approval	401	28-Nov-17 A	02-Jan-19	28-Nov-17	02-Jan-19	0	0
DG3305	DDA23 - Detailed Testing & Commissioning Plan - Design Preparation to SO Approval	281	22-Apr-18 A	27-Jan-19	22-Apr-18	27-Jan-19	0	0
General Notes Drawings for Foundation and Civil & Structural (AIP24AB / DDA24AB)		705	22-Feb-17 A	27-Jan-19	22-Feb-17	27-Jan-19	0	0
General Notes Drawings for Civil & Structural (AIP24B / DDA24BC)		705	22-Feb-17 A	27-Jan-19	22-Feb-17	27-Jan-19	0	0
DG3706	DDA24C - Typical Details for Architecture - Design Preparation to SO Approval	705	22-Feb-17 A	27-Jan-19	22-Feb-17	27-Jan-19	0	0
Site Formation (AIP26 / DDA26)		715	14-Jan-17 A	29-Dec-18	14-Jan-17	29-Dec-18	0	0
DG660	DDA26 - Site Formation - Design Preparation to SO Approval	715	14-Jan-17 A	29-Dec-18	14-Jan-17	29-Dec-18	0	0
Road Works (AIP27A / DDA27A)		656	23-Mar-17 A	07-Jan-19	23-Mar-17	07-Jan-19	0	0
DG1060	DDA27A - Road Works - Design Preparation to SO Approval	656	23-Mar-17 A	07-Jan-19	23-Mar-17	07-Jan-19	0	0
Sewerage and Drainage Works (AIP27B / DDA27BC1C2DEF)		701	21-Feb-17 A	22-Jan-19	21-Feb-17	22-Jan-19	0	0
Civil and Structural Design (AIP27B / DDA27BD)		701	21-Feb-17 A	22-Jan-19	21-Feb-17	22-Jan-19	0	0
DG960	DDA27B - Sewerage and Drainage Works - Design Preparation to SO Approval	686	21-Feb-17 A	07-Jan-19	21-Feb-17	07-Jan-19	0	0
DG988	DDA27D - Detailed Design Report for Pipe Trenches - C&S - Design Preparation to SO Approval	625	08-May-17 A	22-Jan-19	08-May-17	22-Jan-19	0	0
Boundary Wall & Entrance (AIP28 / DDA28AB)		765	03-Feb-17 A	09-Mar-19	03-Feb-17	09-Mar-19	0	0
DG1160	DDA28A - Slopes and Retaining Wall - Design Preparation to SO Approval	703	03-Feb-17 A	06-Jan-19	03-Feb-17	06-Jan-19	0	0
DG1195	DDA28B - Boundary Wall & Entrance - Design Preparation to SO Approval	631	17-Jun-17 A	09-Mar-19	17-Jun-17	09-Mar-19	0	0
Site Wide Utility (AIP30 / DDA30ABCEFGI)		755	30-Jan-17 A	23-Feb-19	30-Jan-17	23-Feb-19	0	0
DG3515	DDA30A - Site Wide Security Access Control & Communication System - Design Preparation to SO Approval	741	30-Jan-17 A	09-Feb-19	30-Jan-17	09-Feb-19	0	0
DG3774	DDA30B - Site Wide Utility (U/G Pipework, Ductwork, Cable Route, Cable Draw Pit) - Design Preparation to SO Approval	562	08-Jun-17 A	21-Dec-18	08-Jun-17	21-Dec-18	0	0
DG3788	DDA30C - Fire Services System and Street Fire Hydrant System - Design Preparation to SO Approval	598	08-Jun-17 A	26-Jan-19	08-Jun-17	26-Jan-19	0	0
DG3816	DDA30E - Site Wide Utility (Road Lighting) - Design Preparation to SO Approval	597	23-Jun-17 A	09-Feb-19	23-Jun-17	09-Feb-19	0	0
DG3830	DDA30F - Typical Electrical Installation Drawings - Design Preparation to SO Approval	626	08-Jun-17 A	23-Feb-19	08-Jun-17	23-Feb-19	0	0
DG3844	DDA30G - Typical Building Services Installation Drawings - Design Preparation to SO Approval	611	23-Jun-17 A	23-Feb-19	23-Jun-17	23-Feb-19	0	0
HAZOP Report (DDA31B)		485	01-Sep-17 A	29-Dec-18	01-Sep-17	29-Dec-18	0	0
DG3545	DDA31B - Hazardous Zoning Classification Report - Design Preparation to SO Approval	485	01-Sep-17 A	29-Dec-18	01-Sep-17	29-Dec-18	0	0
ELS / Bulk Excavation (Temporary Works)		556	12-Jun-17 A	19-Dec-18	12-Jun-17	19-Dec-18	0	0
ELS for Emergency Bypass		537	12-Jun-17 A	30-Nov-18	12-Jun-17	30-Nov-18	0	0
DG3740	ELS for Emergency Bypass - Design Preparation to DC and SO Approval	537	12-Jun-17 A	30-Nov-18	12-Jun-17	30-Nov-18	0	0
ELS for Inlet Pipe Connection		472	04-Sep-17 A	19-Dec-18	04-Sep-17	19-Dec-18	0	0
DG3755	ELS for Inlet Pipe Connection - Design Preparation to DC and SO Approval	472	04-Sep-17 A	19-Dec-18	04-Sep-17	19-Dec-18	0	0
Miscellaneous Design		544	03-Jul-17 A	28-Dec-18	03-Jul-17	28-Dec-18	0	0
Equipment Schedules (DDA32A)		531	03-Jul-17 A	15-Dec-18	03-Jul-17	15-Dec-18	0	0
DG2012	DDA32A - Equipment Schedules - Design Preparation to SO Approval	531	03-Jul-17 A	15-Dec-18	03-Jul-17	15-Dec-18	0	0
Penstock & Stoplogs Schedules (DDA32B)		536	03-Jul-17 A	20-Dec-18	03-Jul-17	20-Dec-18	0	0
DG3216	DDA32B - Penstock & Stoplogs Schedules - Design Preparation to SO Approval	536	03-Jul-17 A	20-Dec-18	03-Jul-17	20-Dec-18	0	0
Valves Schedules (DDA32C)		541	03-Jul-17 A	25-Dec-18	03-Jul-17	25-Dec-18	0	0
DG3222	DDA32C - Valves Schedules - Design Preparation to SO Approval	541	03-Jul-17 A	25-Dec-18	03-Jul-17	25-Dec-18	0	0
Piping and Pipe Support Schedules (DDA32D)		541	03-Jul-17 A	25-Dec-18	03-Jul-17	25-Dec-18	0	0
DG3864	DDA32D - Piping and Pipe Support Schedules - Design Preparation to SO Approval	541	03-Jul-17 A	25-Dec-18	03-Jul-17	25-Dec-18	0	0
Painting Schedules (DDA32E)		531	03-Jul-17 A	15-Dec-18	03-Jul-17	15-Dec-18	0	0
DG3228	DDA32E - Painting Schedules - Design Preparation to SO Approval	531	03-Jul-17 A	15-Dec-18	03-Jul-17	15-Dec-18	0	0
Instrumentation Schedules (DDA32F)		544	03-Jul-17 A	28-Dec-18	03-Jul-17	28-Dec-18	0	0



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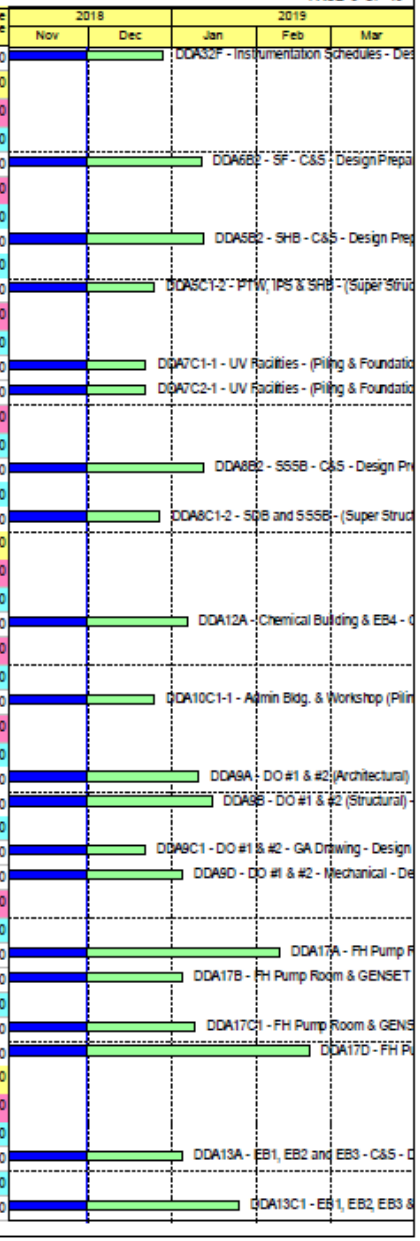
Activity ID	Activity Name	At Completion Duration	Start	Finish	Rev 10 BL Start	Rev 10 BL Finish	Slippage Start Date	Slippage Finish Date
DG3234	DDA32F - Instrumentation Schedules - Design Preparation to SO Approval	544	03-Jul-17 A	28-Dec-18	03-Jul-17	28-Dec-18	0	0
LOT #1 - Building / Facilities Design : CEPT+SF, PTW+IPS+SHB, UV, SDB+SSSB		752	22-Dec-16 A	12-Jan-19	22-Dec-16	12-Jan-19	0	0
CEPT and System Control Flowmeter Chamber		657	26-Mar-17 A	11-Jan-19	26-Mar-17	11-Jan-19	0	0
Civil and Structural Design (AIP6A / DDA6AB1B2)		657	26-Mar-17 A	11-Jan-19	26-Mar-17	11-Jan-19	0	0
DB4930	DDA6B2 - SF - C&S - Design Preparation to SO Approval	657	26-Mar-17 A	11-Jan-19	26-Mar-17	11-Jan-19	0	0
Inlet Work, Preliminary Treatment Works, IPS and SHB		706	06-Feb-17 A	12-Jan-19	06-Feb-17	12-Jan-19	0	0
Civil and Structural Design (AIP5A / DDA5AB1B2)		706	06-Feb-17 A	12-Jan-19	06-Feb-17	12-Jan-19	0	0
DB4830	DDA5B2 - SHB - C&S - Design Preparation to SO Approval	706	06-Feb-17 A	12-Jan-19	06-Feb-17	12-Jan-19	0	0
Electrical and Mechanical Design (AIP5B / DDA5C1C2DEF)		633	01-Apr-17 A	25-Dec-18	01-Apr-17	25-Dec-18	0	0
DB1264	DDA5C1-2 - PTW, IPS & SHB - (Super Structural Design) - GA Drawing - Design Preparation to SO Approval	633	01-Apr-17 A	25-Dec-18	01-Apr-17	25-Dec-18	0	0
UV Disinfection Facilities		730	22-Dec-16 A	22-Dec-18	22-Dec-16	22-Dec-18	0	0
Electrical and Mechanical Design (AIP7B / DDA7C1C2DEF)		730	22-Dec-16 A	22-Dec-18	22-Dec-16	22-Dec-18	0	0
DB1352	DDA7C1-1 - UV Facilities - (Piling & Foundation Design) - GA Drawing - Design Preparation to SO Approval	730	22-Dec-16 A	22-Dec-18	22-Dec-16	22-Dec-18	0	0
DB1384	DDA7C2-1 - UV Facilities - (Piling & Foundation Design) - CR Drawing - Design Preparation to SO Approval	730	22-Dec-16 A	22-Dec-18	22-Dec-16	22-Dec-18	0	0
Sludge Dewatering Building and Sludge Skip Storage Building		708	04-Feb-17 A	12-Jan-19	04-Feb-17	12-Jan-19	0	0
Civil and Structural Design (AIP8A / DDA8AB1B2)		708	04-Feb-17 A	12-Jan-19	04-Feb-17	12-Jan-19	0	0
DB4858	DDA8B2 - SSSB - C&S - Design Preparation to SO Approval	708	04-Feb-17 A	12-Jan-19	04-Feb-17	12-Jan-19	0	0
Electrical and Mechanical Design (AIP8B / DDA8C1C2DEF)		608	29-Apr-17 A	27-Dec-18	29-Apr-17	27-Dec-18	0	0
DB1476	DDA8C1-2 - SDB and SSSB - (Super Structural Design) - GA Drawing - Design Preparation to SO Approval	608	29-Apr-17 A	27-Dec-18	29-Apr-17	27-Dec-18	0	0
LOT #2 - Building / Facilities Design : AB+WS, DO, CB+EB4, FH		871	03-Oct-16 A	20-Feb-19	03-Oct-16	20-Feb-19	0	0
Chemical Building and EB 4		706	31-Jan-17 A	06-Jan-19	31-Jan-17	06-Jan-19	0	0
Civil and Structural Design for CB & EB4 (AIP12A / DDA12AB)		706	31-Jan-17 A	06-Jan-19	31-Jan-17	06-Jan-19	0	0
DB2123	DDA12A - Chemical Building & EB4 - C&S - Design Preparation to SO Approval	706	31-Jan-17 A	06-Jan-19	31-Jan-17	06-Jan-19	0	0
Administration Building & Maintenance Workshop		813	03-Oct-16 A	25-Dec-18	03-Oct-16	25-Dec-18	0	0
Electrical and Mechanical Design (AIP10B / DDA10C1C2DEF)		813	03-Oct-16 A	25-Dec-18	03-Oct-16	25-Dec-18	0	0
DB2286	DDA10C1-1 - Admin Bldg. & Workshop (Piling & Foundation Design) - GA Drawing - Design Preparation to SO Approval	813	03-Oct-16 A	25-Dec-18	03-Oct-16	25-Dec-18	0	0
Deodorization Facilities No.1 and No.2		762	15-Dec-16 A	15-Jan-19	15-Dec-16	15-Jan-19	0	0
Civil and Structural Design (AIP9A / DDA9AB)		720	26-Jan-17 A	15-Jan-19	26-Jan-17	15-Jan-19	0	0
DB2323	DDA9A - DO #1 & #2 (Architectural) - C&S - Design Preparation to SO Approval	715	26-Jan-17 A	10-Jan-19	26-Jan-17	10-Jan-19	0	0
DB5150	DDA9B - DO #1 & #2 (Structural) - C&S - Design Preparation to SO Approval	590	05-Jun-17 A	15-Jan-19	05-Jun-17	15-Jan-19	0	0
Electrical and Mechanical Design (AIP9B / DDA9C1C2DEF)		751	15-Dec-16 A	04-Jan-19	15-Dec-16	04-Jan-19	0	0
DB2348	DDA9C1 - DO #1 & #2 - GA Drawing - Design Preparation to SO Approval	737	15-Dec-16 A	21-Dec-18	15-Dec-16	21-Dec-18	0	0
DB4634	DDA9D - DO #1 & #2 - Mechanical - Design Preparation to SO Approval	709	26-Jan-17 A	04-Jan-19	26-Jan-17	04-Jan-19	0	0
Street Fire Hydrant Pump Room & GENSET Room		806	07-Dec-16 A	20-Feb-19	07-Dec-16	20-Feb-19	0	0
Civil and Structural Design (AIP17A / DDA17AB)		689	23-Mar-17 A	09-Feb-19	23-Mar-17	09-Feb-19	0	0
DB2423	DDA17A - FH Pump Room & GENSET Room (Architectural) - C&S - Design Preparation to SO Approval	689	23-Mar-17 A	09-Feb-19	23-Mar-17	09-Feb-19	0	0
DB5220	DDA17B - FH Pump Room & GENSET Room (Structural) - C&S - Design Preparation to SO Approval	522	01-Aug-17 A	04-Jan-19	01-Aug-17	04-Jan-19	0	0
Electrical and Mechanical Design (AIP17B / DDA17C1C2DE)		806	07-Dec-16 A	20-Feb-19	07-Dec-16	20-Feb-19	0	0
DB2448	DDA17C1 - FH Pump Room & GENSET Room - GA Drawing - Design Preparation to SO Approval	764	07-Dec-16 A	09-Jan-19	07-Dec-16	09-Jan-19	0	0
DB4648	DDA17D - FH Pump Room & GENSET Room - Electrical - Design Preparation to SO Approval	700	23-Mar-17 A	20-Feb-19	23-Mar-17	20-Feb-19	0	0
LOT #3 - Building / Facilities Design : EB1, EB2, EB3, EB4, RW, DG+ICW, Inlet/Outlet Connection		879	16-Sep-16 A	11-Feb-19	16-Sep-16	11-Feb-19	0	0
Electrical Building No.1, No.2, No.3, No.4		862	16-Sep-16 A	25-Jan-19	16-Sep-16	25-Jan-19	0	0
Civil and Structural Design for EB123 (AIP13A / DDA13AB)		637	08-Apr-17 A	04-Jan-19	08-Apr-17	04-Jan-19	0	0
DB3123	DDA13A - EB1, EB2 and EB3 - C&S - Design Preparation to SO Approval	637	08-Apr-17 A	04-Jan-19	08-Apr-17	04-Jan-19	0	0
Electrical and Mechanical Design for EB1234 (AIP13B / DDA13C1C2DE)		862	16-Sep-16 A	25-Jan-19	16-Sep-16	25-Jan-19	0	0
DB3148	DDA13C1 - EB1, EB2, EB3 & EB4 - GA Drawing - Design Preparation to SO Approval	862	16-Sep-16 A	25-Jan-19	16-Sep-16	25-Jan-19	0	0



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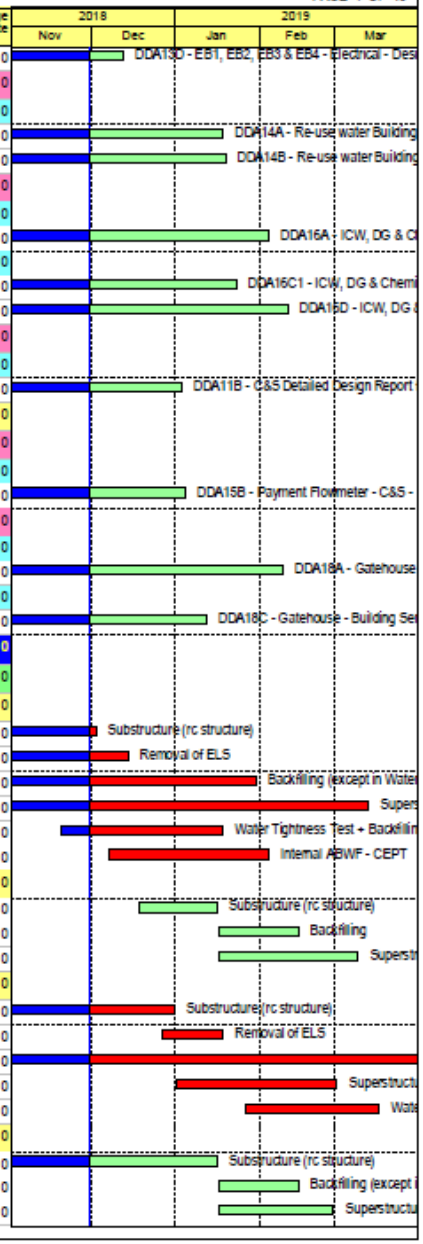
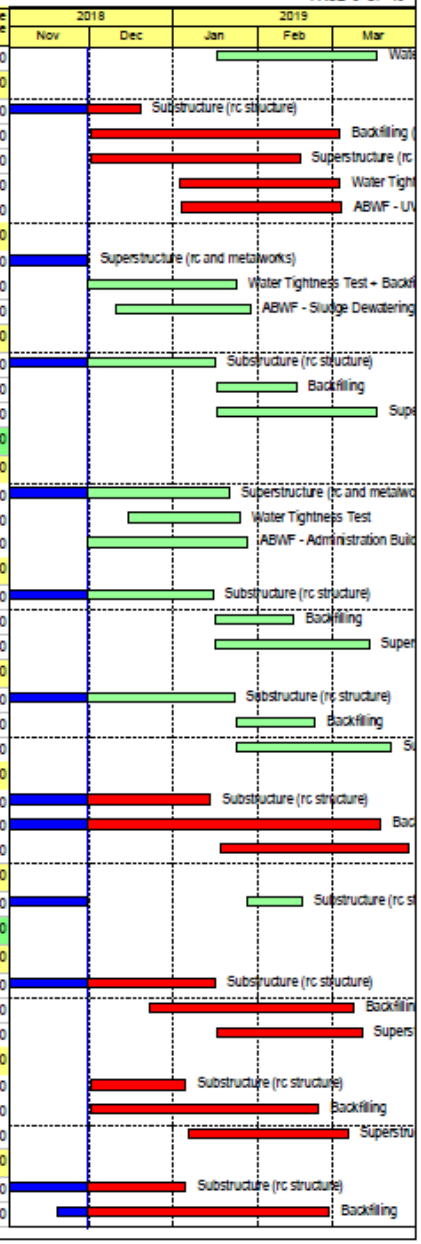
Activity ID	Activity Name	At Completion Duration	Start	Finish	Rev 10 BL Start	Rev 10 BL Finish	Slippage Start Date	Slippage Finish Date
DB4664	DDA13D - EB1, EB2, EB3 & EB4 - Electrical - Design Preparation to SO Approval	658	23-Feb-17 A	12-Dec-18	23-Feb-17	12-Dec-18	0	0
Re-use Water Building		647	13-Apr-17 A	19-Jan-19	13-Apr-17	19-Jan-19	0	0
Civil and Structural Design (AIP14A / DDA14AB)		647	13-Apr-17 A	19-Jan-19	13-Apr-17	19-Jan-19	0	0
DB3223	DDA14A - Re-use water Building (Architectural) - C&S - Design Preparation to SO Approval	646	13-Apr-17 A	18-Jan-19	13-Apr-17	18-Jan-19	0	0
DB5080	DDA14B - Re-use water Building (Structural) - C&S - Design Preparation to SO Approval	520	18-Aug-17 A	19-Jan-19	18-Aug-17	19-Jan-19	0	0
ICW and DG Store & Chemical Waste Storage Building		804	30-Nov-16 A	11-Feb-19	30-Nov-16	11-Feb-19	0	0
Civil and Structural Design (AIP16A / DDA16AB)		477	16-Oct-17 A	04-Feb-19	16-Oct-17	04-Feb-19	0	0
DB3323	DDA16A - ICW, DG & Chemical Stores - C&S - Design Preparation to SO Approval	477	16-Oct-17 A	04-Feb-19	16-Oct-17	04-Feb-19	0	0
Electrical and Mechanical Design (AIP16B / DDA16C1C2D)		804	30-Nov-16 A	11-Feb-19	30-Nov-16	11-Feb-19	0	0
DB3348	DDA16C1 - ICW, DG & Chemical Stores - GA Drawing - Design Preparation to SO Approval	785	30-Nov-16 A	23-Jan-19	30-Nov-16	23-Jan-19	0	0
DB4694	DDA16D - ICW, DG & Chemical Stores - Building Services - Design Preparation to SO Approval	629	24-May-17 A	11-Feb-19	24-May-17	11-Feb-19	0	0
Inlet & Outlet Pipe Connections and Diversion Pipeworks		636	08-Apr-17 A	03-Jan-19	08-Apr-17	03-Jan-19	0	0
Civil and Structural Design (AIP11 / DDA11ABC)		636	08-Apr-17 A	03-Jan-19	08-Apr-17	03-Jan-19	0	0
DB3438	DDA11B - C&S Detailed Design Report for Inlet Connections Pipework - Design Preparation to SO Approval	636	08-Apr-17 A	03-Jan-19	08-Apr-17	03-Jan-19	0	0
LOT #4 - Building / Facilities Design : GH, PF		668	13-Apr-17 A	09-Feb-19	13-Apr-17	09-Feb-19	0	0
Payment Flowmeter Chamber		632	13-Apr-17 A	04-Jan-19	13-Apr-17	04-Jan-19	0	0
Civil and Structural Design (AIP15A / DDA15B)		632	13-Apr-17 A	04-Jan-19	13-Apr-17	04-Jan-19	0	0
DB4323	DDA15B - Payment Flowmeter - C&S - Design Preparation to SO Approval	632	13-Apr-17 A	04-Jan-19	13-Apr-17	04-Jan-19	0	0
Gatehouse		657	24-Apr-17 A	09-Feb-19	24-Apr-17	09-Feb-19	0	0
Civil and Structural Design (AIP18A / DDA18AB)		572	18-Jul-17 A	09-Feb-19	18-Jul-17	09-Feb-19	0	0
DB4434	DDA18A - Gatehouse - C&S - Design Preparation to SO Approval	572	18-Jul-17 A	09-Feb-19	18-Jul-17	09-Feb-19	0	0
Electrical and Mechanical Design (AIP18B / DDA18C)		629	24-Apr-17 A	12-Jan-19	24-Apr-17	12-Jan-19	0	0
DB4754	DDA18C - Gatehouse - Building Services - Design Preparation to SO Approval	629	24-Apr-17 A	12-Jan-19	24-Apr-17	12-Jan-19	0	0
Civil & Structural Works		849	04-Oct-17 A	30-Jan-20	04-Oct-17	30-Jan-20	0	0
LOT #1 - Bldg / Facilities Const. (Arch'l & Struct'l) : CEPT+SF, PTW+IPS+SHB, UV, SDB+SSSB		543	07-Oct-17 A	02-Apr-19	07-Oct-17	02-Apr-19	0	0
Chemically Enhanced Primary Treatment (CEPT)		412	26-Jan-18 A	13-Mar-19	26-Jan-18	13-Mar-19	0	0
C51520	Substructure (rc structure)	311	26-Jan-18 A	02-Dec-18	26-Jan-18	02-Dec-18	0	0
C51525	Removal of ELS	47	29-Oct-18 A	14-Dec-18	29-Oct-18	14-Dec-18	0	0
C51526	Backfilling (except in Water Tightness Test area)	278	28-Apr-18 A	30-Jan-19	28-Apr-18	30-Jan-19	0	0
C51530	Superstructure (rc and metalworks)	385	22-Feb-18 A	13-Mar-19	22-Feb-18	13-Mar-19	0	0
C51534	Water Tightness Test + Backfilling	60	20-Nov-18 A	18-Jan-19	20-Nov-18	18-Jan-19	0	0
C51540	Internal ABWF - CEPT	60	07-Dec-18	04-Feb-19	07-Dec-18	04-Feb-19	0	0
System Control Flowmeter Chamber (SF)		82	18-Dec-18	09-Mar-19	18-Dec-18	09-Mar-19	0	0
C51400	Substructure (rc structure)	30	18-Dec-18	16-Jan-19	18-Dec-18	16-Jan-19	0	0
C51405	Backfilling	30	17-Jan-19	15-Feb-19	17-Jan-19	15-Feb-19	0	0
C51410	Superstructure (rc and metalworks)	52	17-Jan-19	09-Mar-19	17-Jan-19	09-Mar-19	0	0
Inlet Work, Preliminary Treatment Works and Inlet Pumping Station (PTW & IPS)		158	27-Oct-18 A	02-Apr-19	27-Oct-18	02-Apr-19	0	0
C51220	Substructure (rc structure)	66	27-Oct-18 A	31-Dec-18	27-Oct-18	31-Dec-18	0	0
C51224	Removal of ELS	23	27-Dec-18	18-Jan-19	27-Dec-18	18-Jan-19	0	0
C51226	Backfilling (except in Water Tightness Test area)	154	31-Oct-18 A	02-Apr-19	31-Oct-18	02-Apr-19	0	0
C51230	Superstructure (rc and metalworks)	60	01-Jan-19	01-Mar-19	01-Jan-19	01-Mar-19	0	0
C51235	Water Tightness Test + Backfilling	50	27-Jan-19	17-Mar-19	27-Jan-19	17-Mar-19	0	0
Solid Handling Building (SHB)		512	22-Oct-17 A	17-Mar-19	22-Oct-17	17-Mar-19	0	0
C51300	Substructure (rc structure)	452	22-Oct-17 A	16-Jan-19	22-Oct-17	16-Jan-19	0	0
C51305	Backfilling (except in Water Tightness Test area)	30	17-Jan-19	15-Feb-19	17-Jan-19	15-Feb-19	0	0
C51310	Superstructure (rc and metalworks)	43	17-Jan-19	28-Feb-19	17-Jan-19	28-Feb-19	0	0



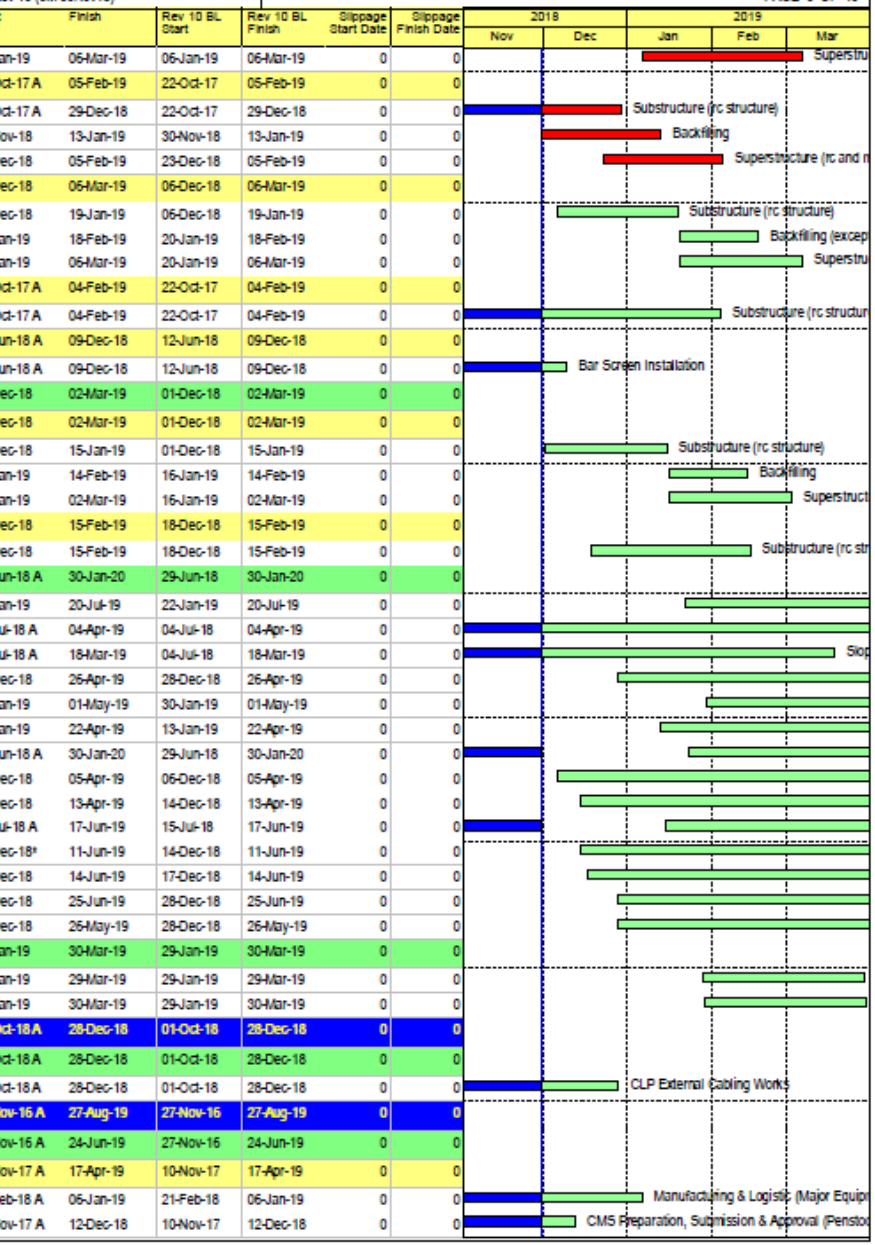
DATA DATE: 30-Nov-18 | LAYOUT: SW Project PHase 1 Rev 10 (3M 30Nov18) |

Activity ID	Activity Name	At Completion Duration	Start	Finish	Rev 10 BL Start	Rev 10 BL Finish	Slippage Start Date	Slippage Finish Date
C51315	Water Tightness Test + Backfilling	60	17-Jan-19	17-Mar-19	17-Jan-19	17-Mar-19	0	0
UV Disinfection Facility (UV)		514	07-Oct-17 A	04-Mar-19	07-Oct-17	04-Mar-19	0	0
C51910	Substructure (rc structure)	439	07-Oct-17 A	19-Dec-18	07-Oct-17	19-Dec-18	0	0
C51915	Backfilling (except in Water Tightness Test area)	93	01-Dec-18	03-Mar-19	01-Dec-18	03-Mar-19	0	0
C51920	Superstructure (rc and metalworks)	78	01-Dec-18	16-Feb-19	01-Dec-18	16-Feb-19	0	0
C51925	Water Tightness Test + Backfilling	60	03-Jan-19	03-Mar-19	03-Jan-19	03-Mar-19	0	0
C51930	ABWF - UV Disinfection Facility	60	04-Jan-19	04-Mar-19	04-Jan-19	04-Mar-19	0	0
Sludge Dewatering Building (SDB)		331	05-Mar-18 A	29-Jan-19	05-Mar-18	29-Jan-19	0	0
C51840	Superstructure (rc and metalworks)	271	05-Mar-18 A	30-Nov-18	05-Mar-18	30-Nov-18	0	0
C51845	Water Tightness Test + Backfilling	55	30-Nov-18	24-Jan-19	30-Nov-18	24-Jan-19	0	0
C51850	ABWF - Sludge Dewatering Building	50	10-Dec-18	29-Jan-19	10-Dec-18	29-Jan-19	0	0
Sludge Skip Storage Building (SSSB)		512	22-Oct-17 A	17-Mar-19	22-Oct-17	17-Mar-19	0	0
C52900	Substructure (rc structure)	452	22-Oct-17 A	16-Jan-19	22-Oct-17	16-Jan-19	0	0
C52905	Backfilling	30	17-Jan-19	15-Feb-19	17-Jan-19	15-Feb-19	0	0
C52910	Superstructure (rc and metalworks)	60	17-Jan-19	17-Mar-19	17-Jan-19	17-Mar-19	0	0
LOT #2 - Bldg / Facilities Const. (Arch'l & Struct'l) : AB+WS, DO, CB, FH		532	13-Oct-17 A	28-Mar-19	13-Oct-17	28-Mar-19	0	0
Administration Building & Maintenance Workshop (AB & WS)		202	11-Jul-18 A	28-Jan-19	11-Jul-18	28-Jan-19	0	0
C51120	Superstructure (rc and metalworks)	195	11-Jul-18 A	21-Jan-19	11-Jul-18	21-Jan-19	0	0
C51125	Water Tightness Test	42	15-Dec-18	25-Jan-19	15-Dec-18	25-Jan-19	0	0
C51130	ABWF - Administration Building & Maintenance Workshop	60	30-Nov-18	28-Jan-19	30-Nov-18	28-Jan-19	0	0
Deodorization Facilities No. 1 (DO 1)		512	19-Oct-17 A	14-Mar-19	19-Oct-17	14-Mar-19	0	0
C51610	Substructure (rc structure)	454	19-Oct-17 A	15-Jan-19	19-Oct-17	15-Jan-19	0	0
C51615	Backfilling	30	16-Jan-19	14-Feb-19	16-Jan-19	14-Feb-19	0	0
C51620	Superstructure (rc and metalworks)	58	16-Jan-19	14-Mar-19	16-Jan-19	14-Mar-19	0	0
Deodorization Facilities No. 2 (DO 2)		517	22-Oct-17 A	22-Mar-19	22-Oct-17	22-Mar-19	0	0
C51710	Substructure (rc structure)	459	22-Oct-17 A	23-Jan-19	22-Oct-17	23-Jan-19	0	0
C51715	Backfilling	30	24-Jan-19	22-Feb-19	24-Jan-19	22-Feb-19	0	0
C51720	Superstructure (rc and metalworks)	58	24-Jan-19	22-Mar-19	24-Jan-19	22-Mar-19	0	0
Chemical Building (CB)		532	13-Oct-17 A	28-Mar-19	13-Oct-17	28-Mar-19	0	0
C52310	Substructure (rc structure)	459	13-Oct-17 A	14-Jan-19	13-Oct-17	14-Jan-19	0	0
C52315	Backfilling	214	17-Aug-18 A	18-Mar-19	17-Aug-18	18-Mar-19	0	0
C52320	Superstructure (rc and metalworks)	70	18-Jan-19	28-Mar-19	18-Jan-19	28-Mar-19	0	0
Street Fire Hydrant Pump Room & GENSET Room (FH)		489	17-Oct-17 A	17-Feb-19	17-Oct-17	17-Feb-19	0	0
C53010	Substructure (rc structure)	489	17-Oct-17 A	17-Feb-19	17-Oct-17	17-Feb-19	0	0
LOT #3 - Bldg / Facilities Const. (Arch'l & Struct'l) : EB, RW, DG, ICW, JC		524	04-Oct-17 A	11-Mar-19	04-Oct-17	11-Mar-19	0	0
Electrical Building No.1 (EB1)		506	22-Oct-17 A	11-Mar-19	22-Oct-17	11-Mar-19	0	0
C52410	Substructure (rc structure)	452	22-Oct-17 A	16-Jan-19	22-Oct-17	16-Jan-19	0	0
C52415	Backfilling	76	23-Dec-18	08-Mar-19	23-Dec-18	08-Mar-19	0	0
C52420	Superstructure (rc and metalworks)	54	17-Jan-19	11-Mar-19	17-Jan-19	11-Mar-19	0	0
Electrical Building No.2 (EB2)		96	01-Dec-18	06-Mar-19	01-Dec-18	06-Mar-19	0	0
C52510	Substructure (rc structure)	36	01-Dec-18	05-Jan-19	01-Dec-18	05-Jan-19	0	0
C52515	Backfilling	85	01-Dec-18	23-Feb-19	01-Dec-18	23-Feb-19	0	0
C52520	Superstructure (rc and metalworks)	60	06-Jan-19	06-Mar-19	06-Jan-19	06-Mar-19	0	0
Electrical Building No.3 (EB3)		519	04-Oct-17 A	06-Mar-19	04-Oct-17	06-Mar-19	0	0
C52610	Substructure (rc structure)	459	04-Oct-17 A	05-Jan-19	04-Oct-17	05-Jan-19	0	0
C52615	Backfilling	101	19-Nov-18 A	27-Feb-19	19-Nov-18	27-Feb-19	0	0



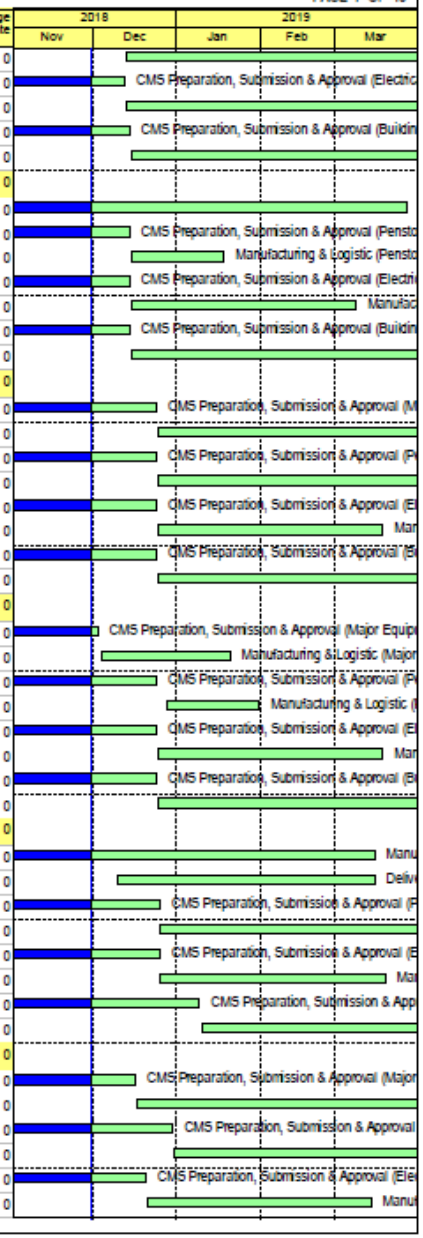
DATA DATE: 30-Nov-18 | LAYOUT: SW Project PHase 1 Rev 10 (3M 30Nov18) | PAGE 6 OF 10

Activity ID	Activity Name	At Completion Duration	Start	Finish	Rev 10 BL Start	Rev 10 BL Finish	Slippage Start Date	Slippage Finish Date
CS2620	Superstructure (rc and metalworks)	60	06-Jan-19	06-Mar-19	06-Jan-19	06-Mar-19	0	0
Electrical Building No.4 (EB4)		472	22-Oct-17 A	05-Feb-19	22-Oct-17	05-Feb-19	0	0
CS2710	Substructure (rc structure)	434	22-Oct-17 A	29-Dec-18	22-Oct-17	29-Dec-18	0	0
CS2715	Backfilling	45	30-Nov-18	13-Jan-19	30-Nov-18	13-Jan-19	0	0
CS2720	Superstructure (rc and metalworks)	45	23-Dec-18	05-Feb-19	23-Dec-18	05-Feb-19	0	0
Re-use Water Building (RW)		91	06-Dec-18	06-Mar-19	06-Dec-18	06-Mar-19	0	0
CS2010	Substructure (rc structure)	45	06-Dec-18	19-Jan-19	06-Dec-18	19-Jan-19	0	0
CS2015	Backfilling (except in Water Tightness Test area)	30	20-Jan-19	18-Feb-19	20-Jan-19	18-Feb-19	0	0
CS2020	Superstructure (rc and metalworks)	46	20-Jan-19	06-Mar-19	20-Jan-19	06-Mar-19	0	0
DG Store & Chemical Waste Storage Building (DG) and Irrigation & Cleansing Water Pump Room (ICW)		471	22-Oct-17 A	04-Feb-19	22-Oct-17	04-Feb-19	0	0
CS2800	Substructure (rc structure)	471	22-Oct-17 A	04-Feb-19	22-Oct-17	04-Feb-19	0	0
Existing Junction Chamber (JC)		181	12-Jun-18 A	09-Dec-18	12-Jun-18	09-Dec-18	0	0
CS2210	Bar Screen Installation	181	12-Jun-18 A	09-Dec-18	12-Jun-18	09-Dec-18	0	0
LOT #4 - Bldg / Facilities Const. (Arch'l & Struct'l) : GH, PF, FW		92	01-Dec-18	02-Mar-19	01-Dec-18	02-Mar-19	0	0
Payment Flowmeter Chamber (PF)		92	01-Dec-18	02-Mar-19	01-Dec-18	02-Mar-19	0	0
CS2100	Substructure (rc structure)	46	01-Dec-18	15-Jan-19	01-Dec-18	15-Jan-19	0	0
CS2105	Backfilling	30	16-Jan-19	14-Feb-19	16-Jan-19	14-Feb-19	0	0
CS2110	Superstructure (rc and metalworks)	46	16-Jan-19	02-Mar-19	16-Jan-19	02-Mar-19	0	0
Foul Water Pump Sump (FW)		60	18-Dec-18	15-Feb-19	18-Dec-18	15-Feb-19	0	0
CS3395	Substructure (rc structure)	60	18-Dec-18	15-Feb-19	18-Dec-18	15-Feb-19	0	0
External Works & Miscellaneous		581	29-Jun-18 A	30-Jan-20	29-Jun-18	30-Jan-20	0	0
CS3200	Site Formation along Boundary Wall (Perimeter)	180	22-Jan-19	20-Jul-19	22-Jan-19	20-Jul-19	0	0
CS3201	Slope works and Retaining Wall (Eastern Portion)	275	04-Jul-18 A	04-Apr-19	04-Jul-18	04-Apr-19	0	0
CS3203	Slope works and Retaining Wall (Northern Portion)	258	04-Jul-18 A	18-Mar-19	04-Jul-18	18-Mar-19	0	0
CS3210	Drainage Inlet connection (Diversion of Three Existing Sewage Rising Mains) incl. slope & retaining wall work @ P8	120	28-Dec-18	26-Apr-19	28-Dec-18	26-Apr-19	0	0
CS3225	Drainage Outlet connection to the Existing Stormwater Drainage System along Ha Tsuen Road	92	30-Jan-19	01-May-19	30-Jan-19	01-May-19	0	0
CS3230	CLP Cable Duct and Draw Pits (within the Site)	100	13-Jan-19	22-Apr-19	13-Jan-19	22-Apr-19	0	0
CS3250	EVA (Road & Drainage)	581	29-Jun-18 A	30-Jan-20	29-Jun-18	30-Jan-20	0	0
CS3252	RC Trench and Odour Pipe (DO1, DO2)	121	06-Dec-18	05-Apr-19	06-Dec-18	05-Apr-19	0	0
CS3254	Process Pipe	121	14-Dec-18	13-Apr-19	14-Dec-18	13-Apr-19	0	0
CS3258	Emergency By-Pass Pipe	338	15-Jul-18 A	17-Jun-19	15-Jul-18	17-Jun-19	0	0
CS3260	Sewage Pipe	180	14-Dec-18*	11-Jun-19	14-Dec-18	11-Jun-19	0	0
CS3262	Cable Duct and Draw Pits	180	17-Dec-18	14-Jun-19	17-Dec-18	14-Jun-19	0	0
CS3276	WSD External Watermain Laying Works	180	28-Dec-18	25-Jun-19	28-Dec-18	25-Jun-19	0	0
CS3278	Internal Watermain Laying Works	150	28-Dec-18	26-May-19	28-Dec-18	26-May-19	0	0
Green Roof		61	29-Jan-19	30-Mar-19	29-Jan-19	30-Mar-19	0	0
CS3340	Administration Building and Maintenance Workshop	60	29-Jan-19	29-Mar-19	29-Jan-19	29-Mar-19	0	0
CS3350	Sludge Dewatering Building	60	29-Jan-19	30-Mar-19	29-Jan-19	30-Mar-19	0	0
Statutory Works		89	01-Oct-18 A	28-Dec-18	01-Oct-18	28-Dec-18	0	0
Electrical Supply & Energization - CLP		89	01-Oct-18 A	28-Dec-18	01-Oct-18	28-Dec-18	0	0
SR135	CLP External Cabling Works	89	01-Oct-18 A	28-Dec-18	01-Oct-18	28-Dec-18	0	0
E&M Works		1004	27-Nov-16 A	27-Aug-19	27-Nov-16	27-Aug-19	0	0
Procurement		940	27-Nov-16 A	24-Jun-19	27-Nov-16	24-Jun-19	0	0
Chemically Enhanced Primary Treatment (CEPT)		524	10-Nov-17 A	17-Apr-19	10-Nov-17	17-Apr-19	0	0
EM3112	Manufacturing & Logistic (Major Equipment)	320	21-Feb-18 A	06-Jan-19	21-Feb-18	06-Jan-19	0	0
EM3114	CMS Preparation, Submission & Approval (Penstock, Pipe & Valve)	398	10-Nov-17 A	12-Dec-18	10-Nov-17	12-Dec-18	0	0



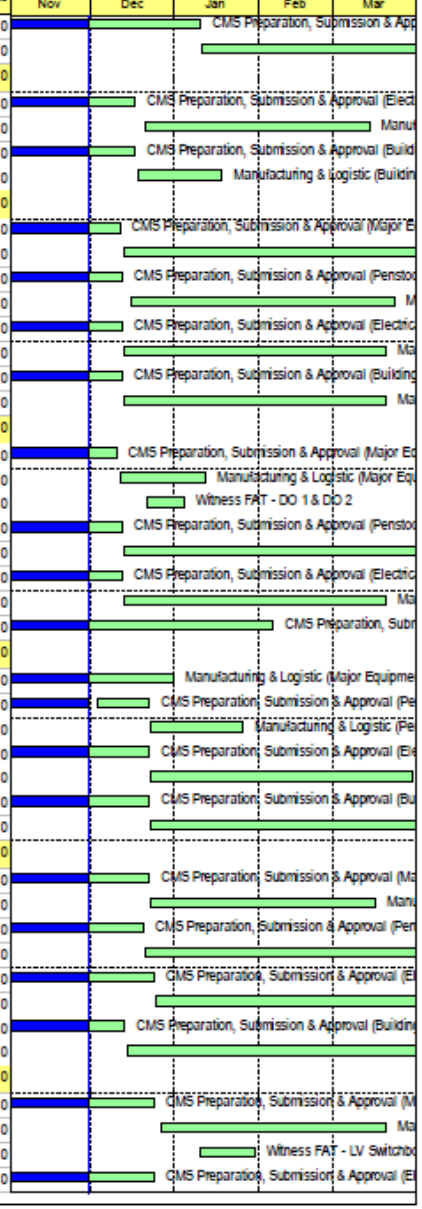
DATA DATE: 30-Nov-18 | LAYOUT: SW Project PHase 1 Rev 10 (3M 30Nov18) | PAGE 7 OF 10

Activity ID	Activity Name	At Completion Duration	Start	Finish	Rev 10 BL Start	Rev 10 BL Finish	Slippage Start Date	Slippage Finish Date
EM3116	Manufacturing & Logistic (Penstock, Pipe & Valve)	126	13-Dec-18	17-Apr-19	13-Dec-18	17-Apr-19	0	0
EM3118	CMS Preparation, Submission & Approval (Electrical)	398	10-Nov-17 A	12-Dec-18	10-Nov-17	12-Dec-18	0	0
EM3120	Manufacturing & Logistic (Electrical)	126	13-Dec-18	17-Apr-19	13-Dec-18	17-Apr-19	0	0
EM3122	CMS Preparation, Submission & Approval (Building Services)	400	10-Nov-17 A	14-Dec-18	10-Nov-17	14-Dec-18	0	0
EM3124	Manufacturing & Logistic (Building Services)	112	15-Dec-18	05-Apr-19	15-Dec-18	05-Apr-19	0	0
System Control Flowmeter Chamber (SF)		520	10-Nov-17 A	13-Apr-19	10-Nov-17	13-Apr-19	0	0
EM3134	Manufacturing & Logistic (Major Equipment)	181	28-Sep-18 A	27-Mar-19	28-Sep-18	27-Mar-19	0	0
EM3136	CMS Preparation, Submission & Approval (Penstock, Pipe & Valve)	400	10-Nov-17 A	14-Dec-18	10-Nov-17	14-Dec-18	0	0
EM3138	Manufacturing & Logistic (Penstock, Pipe & Valve)	35	15-Dec-18	18-Jan-19	15-Dec-18	18-Jan-19	0	0
EM3140	CMS Preparation, Submission & Approval (Electrical)	400	10-Nov-17 A	14-Dec-18	10-Nov-17	14-Dec-18	0	0
EM3142	Manufacturing & Logistic (Electrical)	84	15-Dec-18	08-Mar-19	15-Dec-18	08-Mar-19	0	0
EM3144	CMS Preparation, Submission & Approval (Building Services)	400	10-Nov-17 A	14-Dec-18	10-Nov-17	14-Dec-18	0	0
EM3146	Manufacturing & Logistic (Building Services)	120	15-Dec-18	13-Apr-19	15-Dec-18	13-Apr-19	0	0
Inlet Work, Preliminary Treatment Units and Inlet Pumping Station (PTW & IPS)		880	04-Jan-17 A	02-Jun-19	04-Jan-17	02-Jun-19	0	0
EM3135	CMS Preparation, Submission & Approval (Major Equipment)	720	04-Jan-17 A	24-Dec-18	04-Jan-17	24-Dec-18	0	0
EM3137	Manufacturing & Logistic (Major Equipment)	160	25-Dec-18	02-Jun-19	25-Dec-18	02-Jun-19	0	0
EM3635	CMS Preparation, Submission & Approval (Penstock, Pipe & Valve)	450	01-Oct-17 A	24-Dec-18	01-Oct-17	24-Dec-18	0	0
EM3645	Manufacturing & Logistic (Penstock, Pipe & Valve)	126	25-Dec-18	29-Apr-19	25-Dec-18	29-Apr-19	0	0
EM3655	CMS Preparation, Submission & Approval (Electrical)	450	01-Oct-17 A	24-Dec-18	01-Oct-17	24-Dec-18	0	0
EM3665	Manufacturing & Logistic (Electrical)	84	25-Dec-18	18-Mar-19	25-Dec-18	18-Mar-19	0	0
EM3675	CMS Preparation, Submission & Approval (Building Services)	450	01-Oct-17 A	24-Dec-18	01-Oct-17	24-Dec-18	0	0
EM3685	Manufacturing & Logistic (Building Services)	120	25-Dec-18	23-Apr-19	25-Dec-18	23-Apr-19	0	0
Solid Handling Building (SHB)		742	12-Apr-17 A	23-Apr-19	12-Apr-17	23-Apr-19	0	0
EM3145	CMS Preparation, Submission & Approval (Major Equipment)	600	12-Apr-17 A	02-Dec-18	12-Apr-17	02-Dec-18	0	0
EM3150	Manufacturing & Logistic (Major Equipment)	48	04-Dec-18	20-Jan-19	04-Dec-18	20-Jan-19	0	0
EM3695	CMS Preparation, Submission & Approval (Penstock, Pipe & Valve)	450	01-Oct-17 A	24-Dec-18	01-Oct-17	24-Dec-18	0	0
EM3705	Manufacturing & Logistic (Penstock, Pipe & Valve)	35	28-Dec-18	31-Jan-19	28-Dec-18	31-Jan-19	0	0
EM3715	CMS Preparation, Submission & Approval (Electrical)	450	01-Oct-17 A	24-Dec-18	01-Oct-17	24-Dec-18	0	0
EM3725	Manufacturing & Logistic (Electrical)	84	25-Dec-18	18-Mar-19	25-Dec-18	18-Mar-19	0	0
EM3735	CMS Preparation, Submission & Approval (Building Services)	450	01-Oct-17 A	24-Dec-18	01-Oct-17	24-Dec-18	0	0
EM3745	Manufacturing & Logistic (Building Services)	120	25-Dec-18	23-Apr-19	25-Dec-18	23-Apr-19	0	0
UV Disinfection Facility (UV)		547	21-Nov-17 A	21-May-19	21-Nov-17	21-May-19	0	0
EM3190	Manufacturing & Logistic (Major Equipment)	320	30-Apr-18 A	15-Mar-19	30-Apr-18	15-Mar-19	0	0
EM3192	Delivery To Site (Major Equipment)	96	10-Dec-18	15-Mar-19	10-Dec-18	15-Mar-19	0	0
EM3755	CMS Preparation, Submission & Approval (Penstock, Pipe & Valve)	400	21-Nov-17 A	25-Dec-18	21-Nov-17	25-Dec-18	0	0
EM3765	Manufacturing & Logistic (Penstock, Pipe & Valve)	147	26-Dec-18	21-May-19	26-Dec-18	21-May-19	0	0
EM3775	CMS Preparation, Submission & Approval (Electrical)	400	21-Nov-17 A	25-Dec-18	21-Nov-17	25-Dec-18	0	0
EM3785	Manufacturing & Logistic (Electrical)	84	26-Dec-18	19-Mar-19	26-Dec-18	19-Mar-19	0	0
EM3795	CMS Preparation, Submission & Approval (Building Services)	415	21-Nov-17 A	09-Jan-19	21-Nov-17	09-Jan-19	0	0
EM3805	Manufacturing & Logistic (Building Services)	120	10-Jan-19	09-May-19	10-Jan-19	09-May-19	0	0
Sludge Dewatering Building (SDB)		940	27-Nov-16 A	24-Jun-19	27-Nov-16	24-Jun-19	0	0
EM3175	CMS Preparation, Submission & Approval (Major Equipment)	750	27-Nov-16 A	16-Dec-18	27-Nov-16	16-Dec-18	0	0
EM3180	Manufacturing & Logistic (Major Equipment)	190	17-Dec-18	24-Jun-19	17-Dec-18	24-Jun-19	0	0
EM3815	CMS Preparation, Submission & Approval (Penstock, Pipe & Valve)	430	27-Oct-17 A	30-Dec-18	27-Oct-17	30-Dec-18	0	0
EM3825	Manufacturing & Logistic (Penstock, Pipe & Valve)	126	31-Dec-18	05-May-19	31-Dec-18	05-May-19	0	0
EM3835	CMS Preparation, Submission & Approval (Electrical)	420	27-Oct-17 A	20-Dec-18	27-Oct-17	20-Dec-18	0	0
EM3845	Manufacturing & Logistic (Electrical)	84	21-Dec-18	14-Mar-19	21-Dec-18	14-Mar-19	0	0



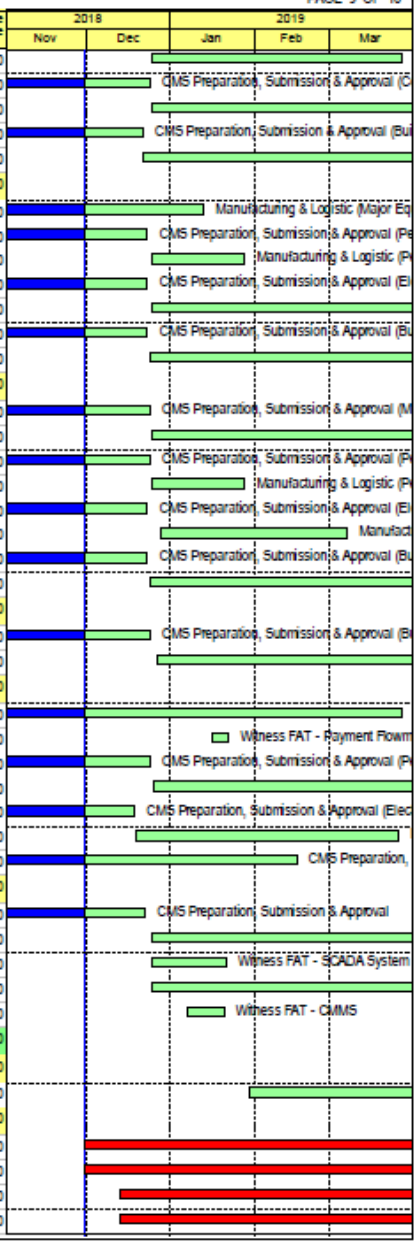
DATA DATE: 30-Nov-18 | LAYOUT: 5W Project PHase 1 Rev 10 (3M 30Nov18) | PAGE 8 OF 10

Activity ID	Activity Name	At Completion Duration	Start	Finish	Rev 10 BL Start	Rev 10 BL Finish	Slippage Start Date	Slippage Finish Date
EM3855	CMS Preparation, Submission & Approval (Building Services)	441	27-Oct-17 A	10-Jan-19	27-Oct-17	10-Jan-19	0	0
EM3865	Manufacturing & Logistic (Building Services)	120	11-Jan-19	10-May-19	11-Jan-19	10-May-19	0	0
Sludge Skip Storage Building (SSSB)		557	04-Sep-17 A	14-Mar-19	04-Sep-17	14-Mar-19	0	0
EM3875	CMS Preparation, Submission & Approval (Electrical)	470	04-Sep-17 A	17-Dec-18	04-Sep-17	17-Dec-18	0	0
EM3885	Manufacturing & Logistic (Electrical)	84	21-Dec-18	14-Mar-19	21-Dec-18	14-Mar-19	0	0
EM3895	CMS Preparation, Submission & Approval (Building Services)	470	04-Sep-17 A	17-Dec-18	04-Sep-17	17-Dec-18	0	0
EM3905	Manufacturing & Logistic (Building Services)	32	18-Dec-18	18-Jan-19	18-Dec-18	18-Jan-19	0	0
Administration Building & Maintenance Workshop (AB & WS)		796	31-Jan-17 A	06-Apr-19	31-Jan-17	06-Apr-19	0	0
EM3125	CMS Preparation, Submission & Approval (Major Equipment)	680	31-Jan-17 A	11-Dec-18	31-Jan-17	11-Dec-18	0	0
EM3130	Manufacturing & Logistic (Major Equipment)	115	13-Dec-18	06-Apr-19	13-Dec-18	06-Apr-19	0	0
EM3915	CMS Preparation, Submission & Approval (Penstock, Pipe & Valve)	470	30-Aug-17 A	12-Dec-18	30-Aug-17	12-Dec-18	0	0
EM3925	Manufacturing & Logistic (Penstock, Pipe & Valve)	98	16-Dec-18	23-Mar-19	16-Dec-18	23-Mar-19	0	0
EM3935	CMS Preparation, Submission & Approval (Electrical)	470	30-Aug-17 A	12-Dec-18	30-Aug-17	12-Dec-18	0	0
EM3945	Manufacturing & Logistic (Electrical)	98	13-Dec-18	20-Mar-19	13-Dec-18	20-Mar-19	0	0
EM3955	CMS Preparation, Submission & Approval (Building Services)	470	30-Aug-17 A	12-Dec-18	30-Aug-17	12-Dec-18	0	0
EM3965	Manufacturing & Logistic (Building Services)	98	13-Dec-18	20-Mar-19	13-Dec-18	20-Mar-19	0	0
Deodorization Facilities No. 1 & 2 (DO 1 & DO 2)		828	10-Jan-17 A	17-Apr-19	10-Jan-17	17-Apr-19	0	0
EM3165	CMS Preparation, Submission & Approval (Major Equipment)	700	10-Jan-17 A	10-Dec-18	10-Jan-17	10-Dec-18	0	0
EM3170	Manufacturing & Logistic (Major Equipment)	32	12-Dec-18	12-Jan-19	12-Dec-18	12-Jan-19	0	0
EM3171	Witness FAT - DO 1 & DO 2	14	22-Dec-18	04-Jan-19	22-Dec-18	04-Jan-19	0	0
EM3172	CMS Preparation, Submission & Approval (Penstock, Pipe & Valve)	470	30-Aug-17 A	12-Dec-18	30-Aug-17	12-Dec-18	0	0
EM3173	Manufacturing & Logistic (Penstock, Pipe & Valve)	126	13-Dec-18	17-Apr-19	13-Dec-18	17-Apr-19	0	0
EM3975	CMS Preparation, Submission & Approval (Electrical)	470	30-Aug-17 A	12-Dec-18	30-Aug-17	12-Dec-18	0	0
EM3985	Manufacturing & Logistic (Electrical)	98	13-Dec-18	20-Mar-19	13-Dec-18	20-Mar-19	0	0
EM3995	CMS Preparation, Submission & Approval (Building Services)	526	30-Aug-17 A	06-Feb-19	30-Aug-17	06-Feb-19	0	0
Chemical Building (CB)		530	08-Nov-17 A	21-Apr-19	08-Nov-17	21-Apr-19	0	0
EM3230	Manufacturing & Logistic (Major Equipment)	290	17-Mar-18 A	31-Dec-18	17-Mar-18	31-Dec-18	0	0
EM4015	CMS Preparation, Submission & Approval (Penstock, Pipe & Valve)	410	08-Nov-17 A	22-Dec-18	08-Nov-17	22-Dec-18	0	0
EM4025	Manufacturing & Logistic (Penstock, Pipe & Valve)	35	23-Dec-18	26-Jan-19	23-Dec-18	26-Jan-19	0	0
EM4035	CMS Preparation, Submission & Approval (Electrical)	410	08-Nov-17 A	22-Dec-18	08-Nov-17	22-Dec-18	0	0
EM4045	Manufacturing & Logistic (Electrical)	98	23-Dec-18	30-Mar-19	23-Dec-18	30-Mar-19	0	0
EM4055	CMS Preparation, Submission & Approval (Building Services)	410	08-Nov-17 A	22-Dec-18	08-Nov-17	22-Dec-18	0	0
EM4065	Manufacturing & Logistic (Building Services)	120	23-Dec-18	21-Apr-19	23-Dec-18	21-Apr-19	0	0
Street Fire Hydrant Pump Room & GENSET Room (FH)		764	23-Mar-17 A	25-Apr-19	23-Mar-17	25-Apr-19	0	0
EM3275	CMS Preparation, Submission & Approval (Major Equipment)	640	23-Mar-17 A	22-Dec-18	23-Mar-17	22-Dec-18	0	0
EM3280	Manufacturing & Logistic (Major Equipment)	84	23-Dec-18	16-Mar-19	23-Dec-18	16-Mar-19	0	0
EM4075	CMS Preparation, Submission & Approval (Penstock, Pipe & Valve)	446	01-Oct-17 A	20-Dec-18	01-Oct-17	20-Dec-18	0	0
EM4085	Manufacturing & Logistic (Penstock, Pipe & Valve)	126	21-Dec-18	25-Apr-19	21-Dec-18	25-Apr-19	0	0
EM4095	CMS Preparation, Submission & Approval (Electrical)	450	01-Oct-17 A	24-Dec-18	01-Oct-17	24-Dec-18	0	0
EM4105	Manufacturing & Logistic (Electrical)	98	25-Dec-18	01-Apr-19	25-Dec-18	01-Apr-19	0	0
EM4115	CMS Preparation, Submission & Approval (Building Services)	439	01-Oct-17 A	13-Dec-18	01-Oct-17	13-Dec-18	0	0
EM4125	Manufacturing & Logistic (Building Services)	120	14-Dec-18	12-Apr-19	14-Dec-18	12-Apr-19	0	0
Electrical Buildings (EB1, EB2, EB3 & EB4)		779	23-Feb-17 A	12-Apr-19	23-Feb-17	12-Apr-19	0	0
EM3235	CMS Preparation, Submission & Approval (Major Equipment)	670	23-Feb-17 A	24-Dec-18	23-Feb-17	24-Dec-18	0	0
EM3240	Manufacturing & Logistic (Major Equipment)	84	27-Dec-18	20-Mar-19	27-Dec-18	20-Mar-19	0	0
EM3245	Witness FAT - LV Switchboards (8 nos. for EB's and 4 nos. for SDB)	21	10-Jan-19	30-Jan-19	10-Jan-19	30-Jan-19	0	0
EM3300	CMS Preparation, Submission & Approval (Electrical)	470	11-Sep-17 A	24-Dec-18	11-Sep-17	24-Dec-18	0	0



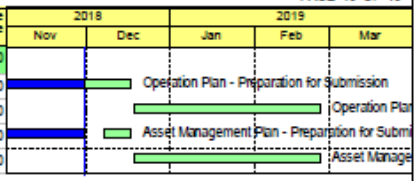
DATA DATE: 30-Nov-18 | LAYOUT: SW Project PHase 1 Rev 10 (3M 30Nov18) | PAGE 9 OF 10

Activity ID	Activity Name	At Completion Duration	Start	Finish	Rev 10 BL Start	Rev 10 BL Finish	Slippage Start Date	Slippage Finish Date
EM3305	Manufacturing & Logistic (Electrical)	93	25-Dec-18	27-Mar-19	25-Dec-18	27-Mar-19	0	0
EM3310	CMS Preparation, Submission & Approval (Control & Instrument)	470	11-Sep-17 A	24-Dec-18	11-Sep-17	24-Dec-18	0	0
EM3315	Manufacturing & Logistic (Control & Instrument)	98	25-Dec-18	01-Apr-19	25-Dec-18	01-Apr-19	0	0
EM3320	CMS Preparation, Submission & Approval (Building Services)	500	09-Aug-17 A	21-Dec-18	09-Aug-17	21-Dec-18	0	0
EM3325	Manufacturing & Logistic (Building Services)	112	22-Dec-18	12-Apr-19	22-Dec-18	12-Apr-19	0	0
Re-use Water Building (RW)		512	19-Nov-17 A	14-Apr-19	19-Nov-17	14-Apr-19	0	0
EM3200	Manufacturing & Logistic (Major Equipment)	200	28-Jun-18 A	13-Jan-19	28-Jun-18	13-Jan-19	0	0
EM4135	CMS Preparation, Submission & Approval (Penstock, Pipe & Valve)	400	19-Nov-17 A	23-Dec-18	19-Nov-17	23-Dec-18	0	0
EM4145	Manufacturing & Logistic (Penstock, Pipe & Valve)	35	25-Dec-18	28-Jan-19	25-Dec-18	28-Jan-19	0	0
EM4155	CMS Preparation, Submission & Approval (Electrical)	400	19-Nov-17 A	23-Dec-18	19-Nov-17	23-Dec-18	0	0
EM4165	Manufacturing & Logistic (Electrical)	98	25-Dec-18	01-Apr-19	25-Dec-18	01-Apr-19	0	0
EM4175	CMS Preparation, Submission & Approval (Building Services)	400	19-Nov-17 A	23-Dec-18	19-Nov-17	23-Dec-18	0	0
EM4185	Manufacturing & Logistic (Building Services)	112	24-Dec-18	14-Apr-19	24-Dec-18	14-Apr-19	0	0
DG Store & Chemical Waste Storage Building (DG) and Irrigation & Cleansing Water Pump Room (ICW)		691	24-May-17 A	14-Apr-19	24-May-17	14-Apr-19	0	0
EM3255	CMS Preparation, Submission & Approval (Major Equipment)	580	24-May-17 A	24-Dec-18	24-May-17	24-Dec-18	0	0
EM3260	Manufacturing & Logistic (Major Equipment)	98	25-Dec-18	01-Apr-19	25-Dec-18	01-Apr-19	0	0
EM4195	CMS Preparation, Submission & Approval (Penstock, Pipe & Valve)	380	10-Dec-17 A	24-Dec-18	10-Dec-17	24-Dec-18	0	0
EM4205	Manufacturing & Logistic (Penstock, Pipe & Valve)	35	25-Dec-18	28-Jan-19	25-Dec-18	28-Jan-19	0	0
EM4215	CMS Preparation, Submission & Approval (Electrical)	450	30-Sep-17 A	23-Dec-18	30-Sep-17	23-Dec-18	0	0
EM4225	Manufacturing & Logistic (Electrical)	70	28-Dec-18	07-Mar-19	28-Dec-18	07-Mar-19	0	0
EM4235	CMS Preparation, Submission & Approval (Building Services)	450	30-Sep-17 A	23-Dec-18	30-Sep-17	23-Dec-18	0	0
EM4245	Manufacturing & Logistic (Building Services)	112	24-Dec-18	14-Apr-19	24-Dec-18	14-Apr-19	0	0
Gatehouse (GH)		710	24-Apr-17 A	03-Apr-19	24-Apr-17	03-Apr-19	0	0
EM3285	CMS Preparation, Submission & Approval (Building Services)	610	24-Apr-17 A	24-Dec-18	24-Apr-17	24-Dec-18	0	0
EM3290	Manufacturing & Logistic (Building Services)	98	27-Dec-18	03-Apr-19	27-Dec-18	03-Apr-19	0	0
Payment Flowmeter Chamber (PF)		579	01-Sep-17 A	02-Apr-19	01-Sep-17	02-Apr-19	0	0
EM3210	Manufacturing & Logistic (Major Equipment)	181	28-Sep-18 A	27-Mar-19	28-Sep-18	27-Mar-19	0	0
EM3211	Witness FAT - Payment Flowmeter and Reference Flowmeter	7	16-Jan-19	22-Jan-19	16-Jan-19	22-Jan-19	0	0
EM4255	CMS Preparation, Submission & Approval (Penstock, Pipe & Valve)	480	01-Sep-17 A	24-Dec-18	01-Sep-17	24-Dec-18	0	0
EM4265	Manufacturing & Logistic (Penstock, Pipe & Valve)	98	26-Dec-18	02-Apr-19	26-Dec-18	02-Apr-19	0	0
EM4275	CMS Preparation, Submission & Approval (Electrical)	394	20-Nov-17 A	18-Dec-18	20-Nov-17	18-Dec-18	0	0
EM4285	Manufacturing & Logistic (Electrical)	98	19-Dec-18	26-Mar-19	19-Dec-18	26-Mar-19	0	0
EM4295	CMS Preparation, Submission & Approval (Building Services)	454	20-Nov-17 A	16-Feb-19	20-Nov-17	16-Feb-19	0	0
SCADA and CMMS Systems		654	01-Jul-17 A	15-Apr-19	01-Jul-17	15-Apr-19	0	0
EM3330	CMS Preparation, Submission & Approval	540	01-Jul-17 A	22-Dec-18	01-Jul-17	22-Dec-18	0	0
EM3335	Manufacturing & Logistic (SCADA)	112	25-Dec-18	15-Apr-19	25-Dec-18	15-Apr-19	0	0
EM3340	Witness FAT - SCADA System	28	25-Dec-18	21-Jan-19	25-Dec-18	21-Jan-19	0	0
EM3345	Manufacturing & Logistic (CMMS)	112	25-Dec-18	15-Apr-19	25-Dec-18	15-Apr-19	0	0
EM3350	Witness FAT - CMMS	14	07-Jan-19	20-Jan-19	07-Jan-19	20-Jan-19	0	0
Installation		271	30-Nov-18	27-Aug-19	30-Nov-18	27-Aug-19	0	0
Sludge Dewatering Building (SDB)		210	30-Jan-19	27-Aug-19	30-Jan-19	27-Aug-19	0	0
EM1800	Plant (Mechanical) Installation	210	30-Jan-19	27-Aug-19	30-Jan-19	27-Aug-19	0	0
Administration Building & Maintenance Workshop (AB & WS)		193	30-Nov-18	10-Jun-19	30-Nov-18	10-Jun-19	0	0
EM1100	SCADA System	180	30-Nov-18	28-May-19	30-Nov-18	28-May-19	0	0
EM1105	Plant Installation (WS)	180	30-Nov-18	28-May-19	30-Nov-18	28-May-19	0	0
EM1110	ELV System	180	13-Dec-18	10-Jun-19	13-Dec-18	10-Jun-19	0	0
EM1120	BS - MVAC Installation	180	13-Dec-18	10-Jun-19	13-Dec-18	10-Jun-19	0	0



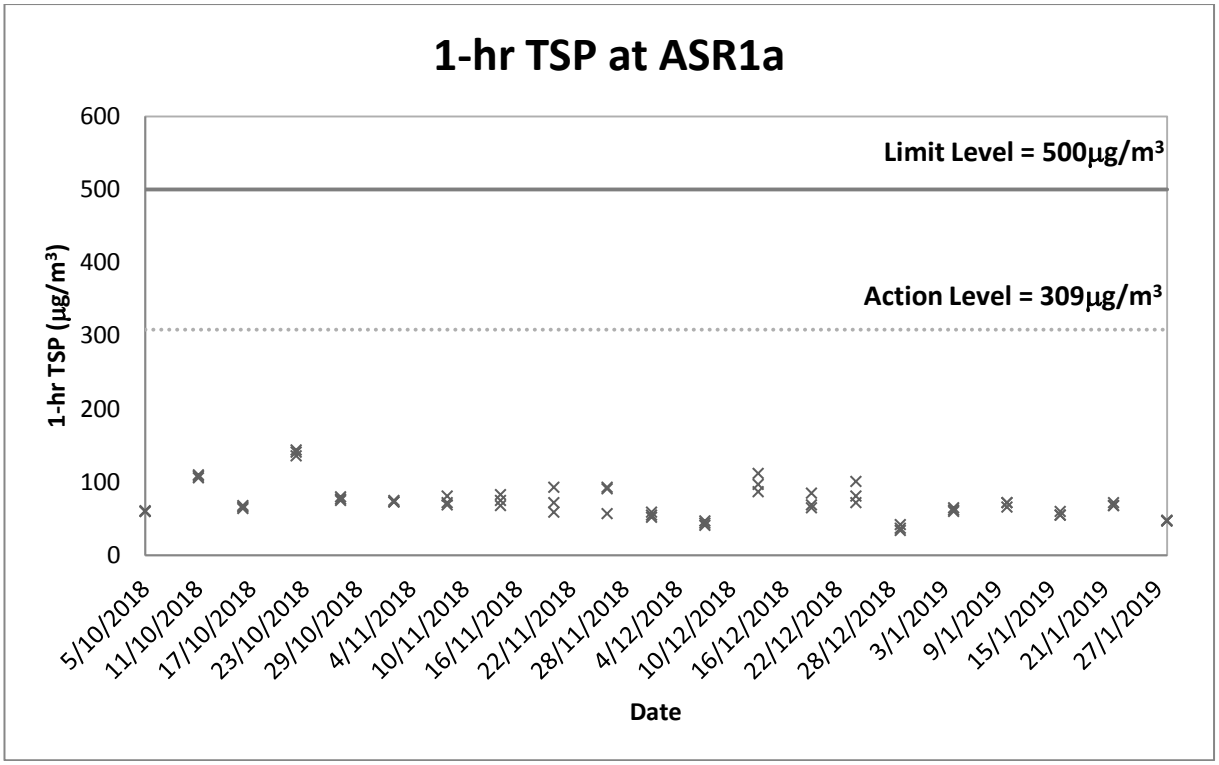
DATA DATE: 30-Nov-18 | LAYOUT: SW Project PHase 1 Rev 10 (3M 30Nov18) |

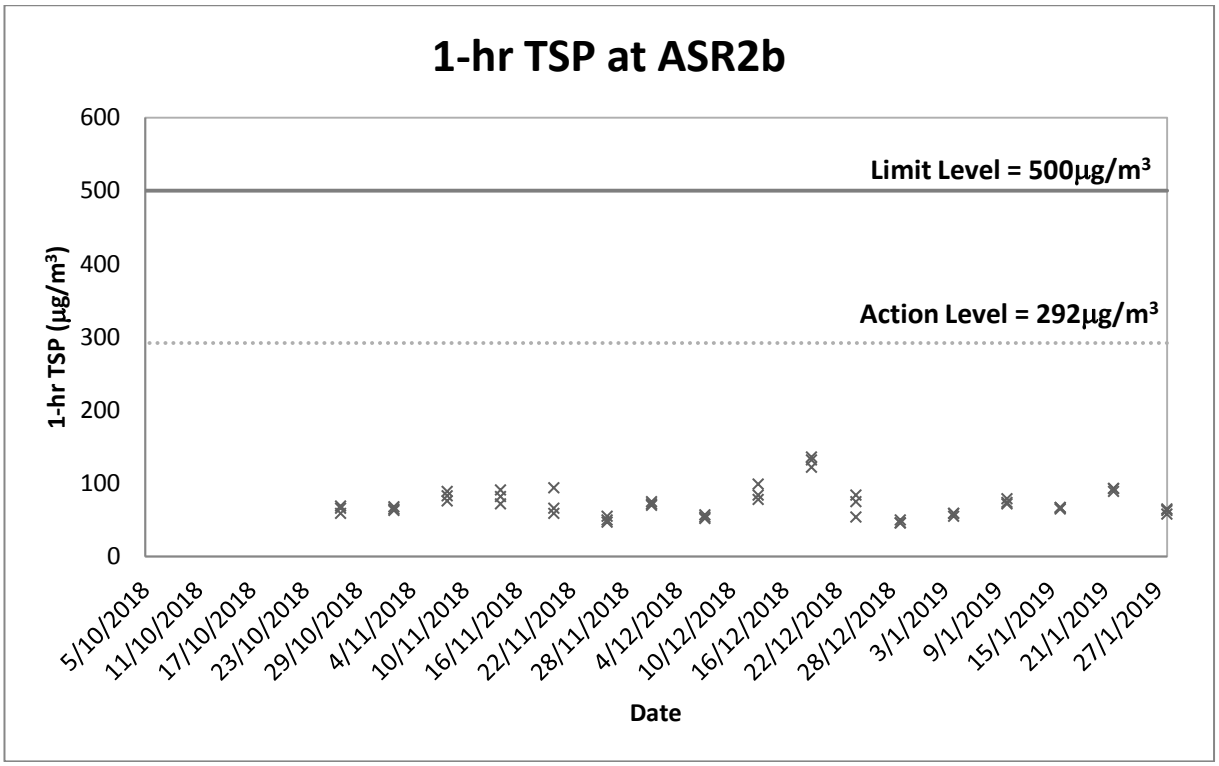
Activity ID	Activity Name	At Completion Duration	Start	Finish	Rev 10 BL Start	Rev 10 BL Finish	Slippage Start Date	Slippage Finish Date
Testing & Commissioning		268	03-Jun-18 A	25-Feb-19	03-Jun-18	25-Feb-19	0	0
TC030	Operation Plan - Preparation for Submission	198	03-Jun-18 A	17-Dec-18	03-Jun-18	17-Dec-18	0	0
TC035	Operation Plan - Submission to SO for Review and Approval	70	18-Dec-18	25-Feb-19	18-Dec-18	25-Feb-19	0	0
TC040	Asset Management Plan - Preparation for Submission	198	03-Jun-18 A	17-Dec-18	03-Jun-18	17-Dec-18	0	0
TC045	Asset Management Plan - Submission to SO for Review and Approval	70	18-Dec-18	25-Feb-19	18-Dec-18	25-Feb-19	0	0

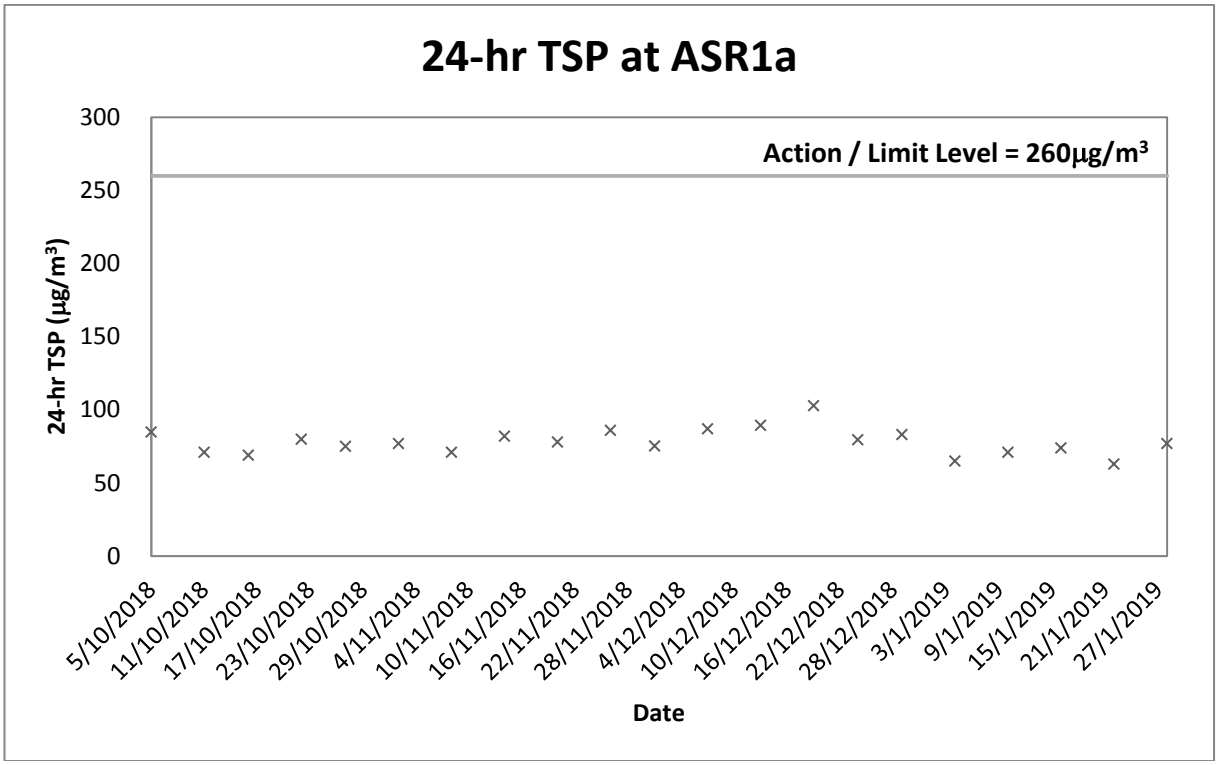


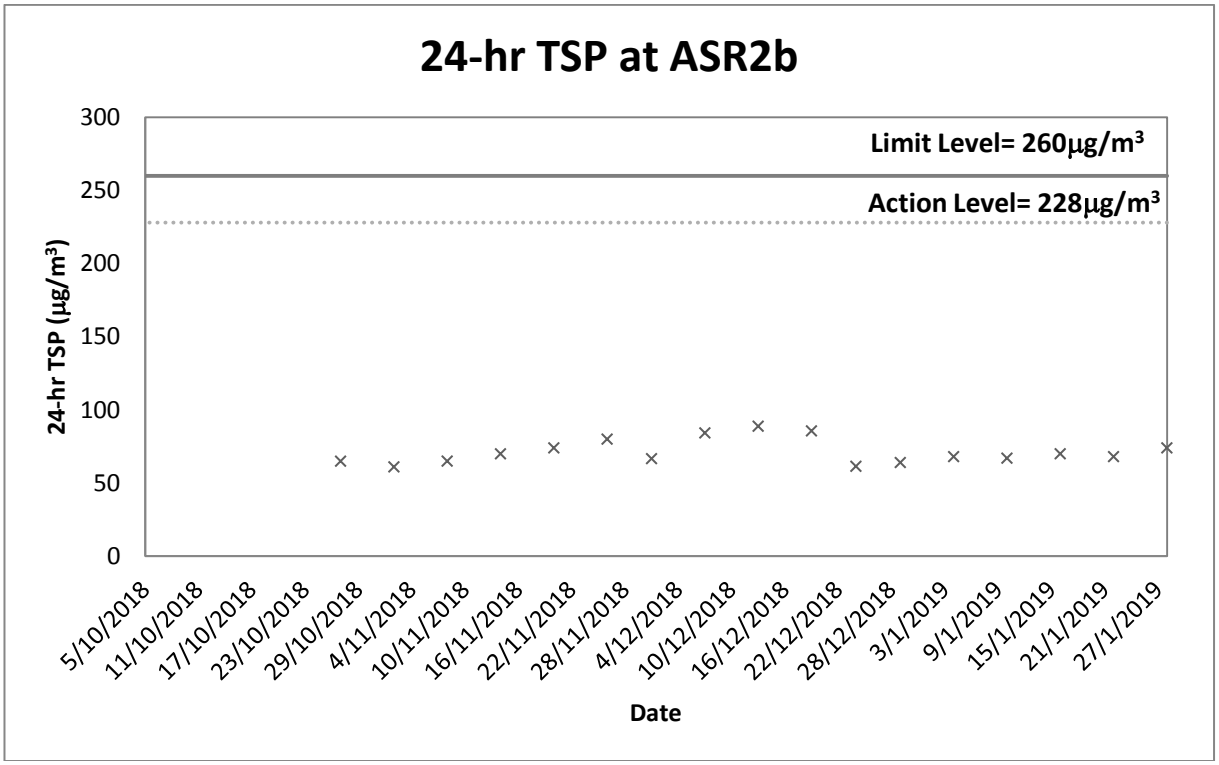
Appendix D

Graphical Plots of Impact Air Quality Monitoring Results


1-hr TSP at ASR1a
Limit Level = 500μg/m³
Action Level = 309μg/m³
1-hr TSP (μg/m³)
600
500
400
300
200
100
0
5/10/2018
11/10/2018
17/10/2018
23/10/2018
29/10/2018
4/11/2018
10/11/2018
16/11/2018
22/11/2018
28/11/2018
4/12/2018
10/12/2018
16/12/2018
22/12/2018
28/12/2018
3/1/2019
9/1/2019
15/1/2019
21/1/2019
27/1/2019
Date

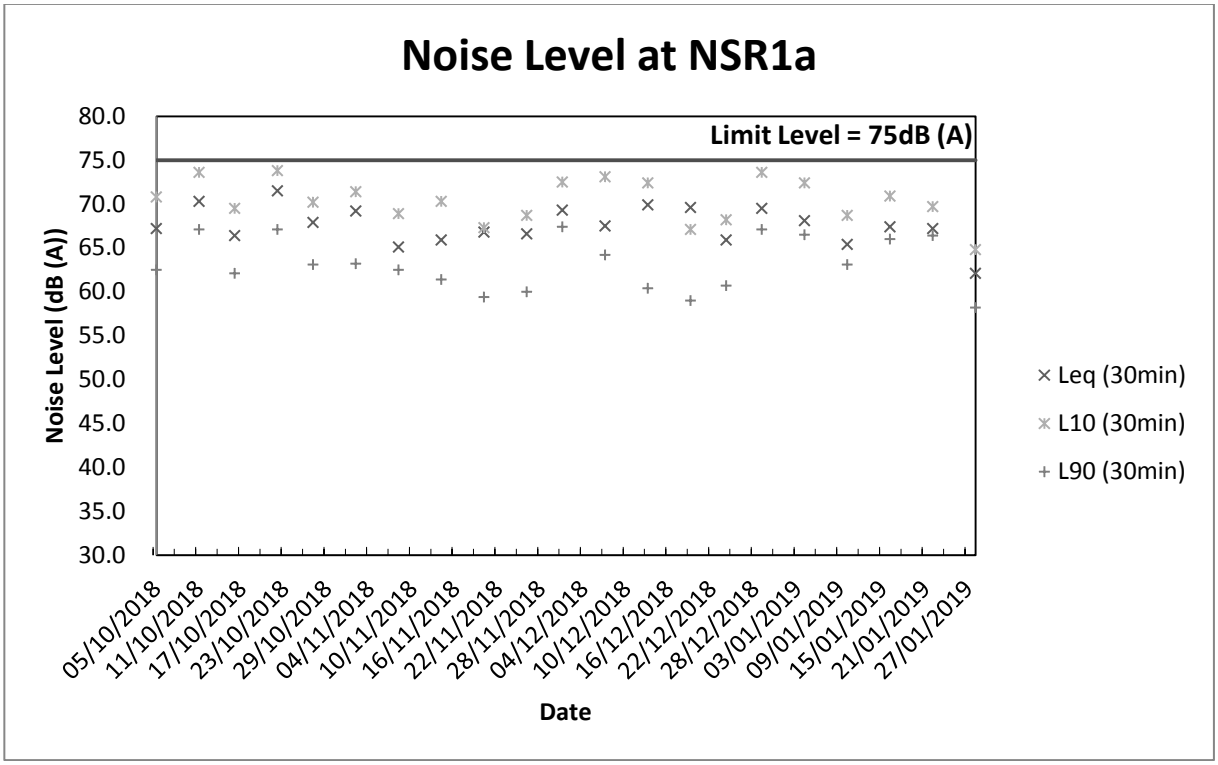

1-hr TSP at ASR2b
Limit Level = 500μg/m³
Action Level = 292μg/m³
1-hr TSP (μg/m³)
600
500
400
300
200
100
0
5/10/2018
11/10/2018
17/10/2018
23/10/2018
29/10/2018
4/11/2018
10/11/2018
16/11/2018
22/11/2018
28/11/2018
4/12/2018
10/12/2018
16/12/2018
22/12/2018
28/12/2018
3/1/2019
9/1/2019
15/1/2019
21/1/2019
27/1/2019
Date

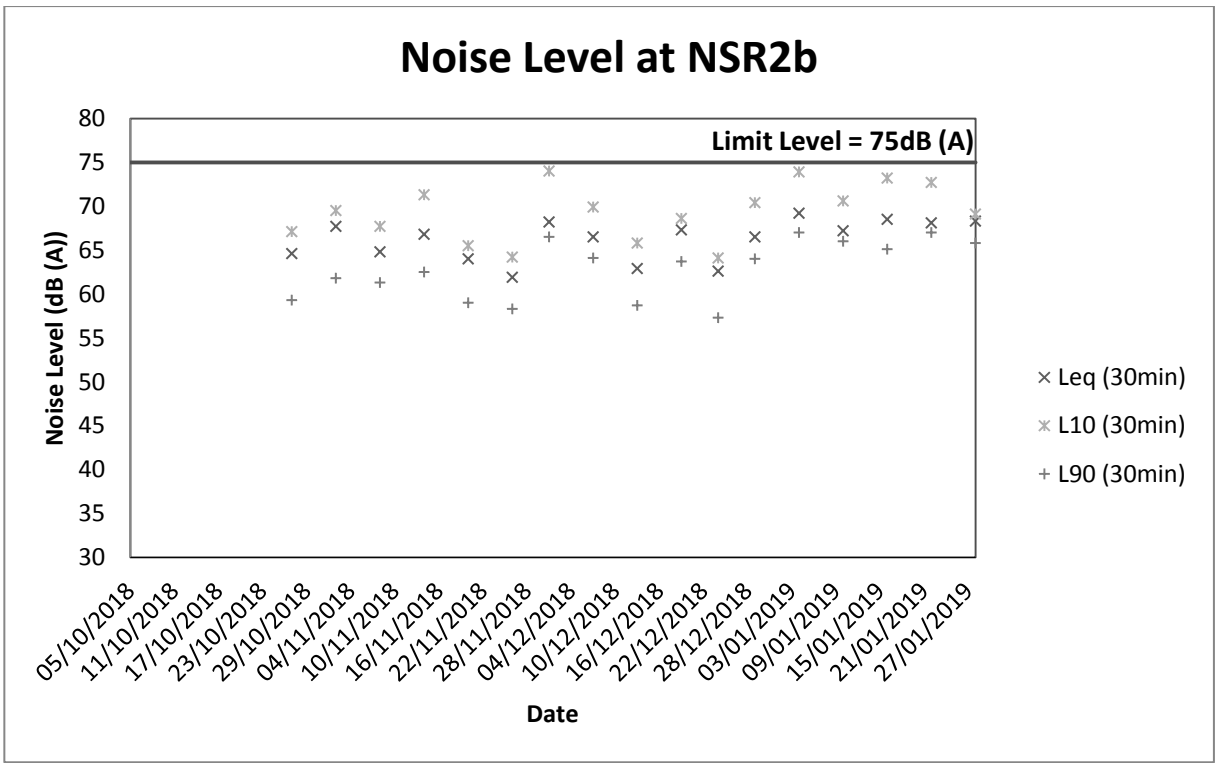

24-hr TSP at ASR1a
Action / Limit Level = 260μg/m³
24-hr TSP (μg/m³)
300
250
200
150
100
50
0
5/10/2018
11/10/2018
17/10/2018
23/10/2018
29/10/2018
4/11/2018
10/11/2018
16/11/2018
22/11/2018
28/11/2018
4/12/2018
10/12/2018
16/12/2018
22/12/2018
28/12/2018
3/1/2019
9/1/2019
15/1/2019
21/1/2019
27/1/2019
Date


24-hr TSP at ASR2b
Limit Level= 260μg/m³
Action Level= 228μg/m³
24-hr TSP (μg/m³)
300
250
200
150
100
50
0
5/10/2018
11/10/2018
17/10/2018
23/10/2018
29/10/2018
4/11/2018
10/11/2018
16/11/2018
22/11/2018
28/11/2018
4/12/2018
10/12/2018
16/12/2018
22/12/2018
28/12/2018
3/1/2019
9/1/2019
15/1/2019
21/1/2019
27/1/2019
Date

Appendix E

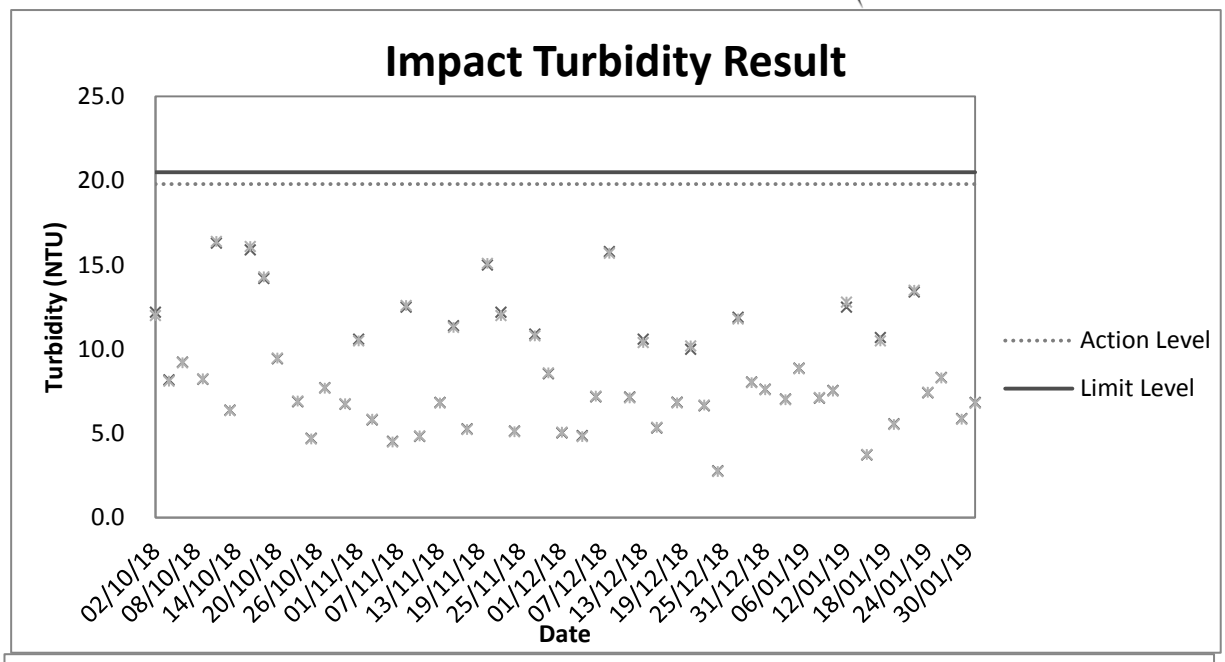
Graphical Plots of Impact Noise Monitoring Data

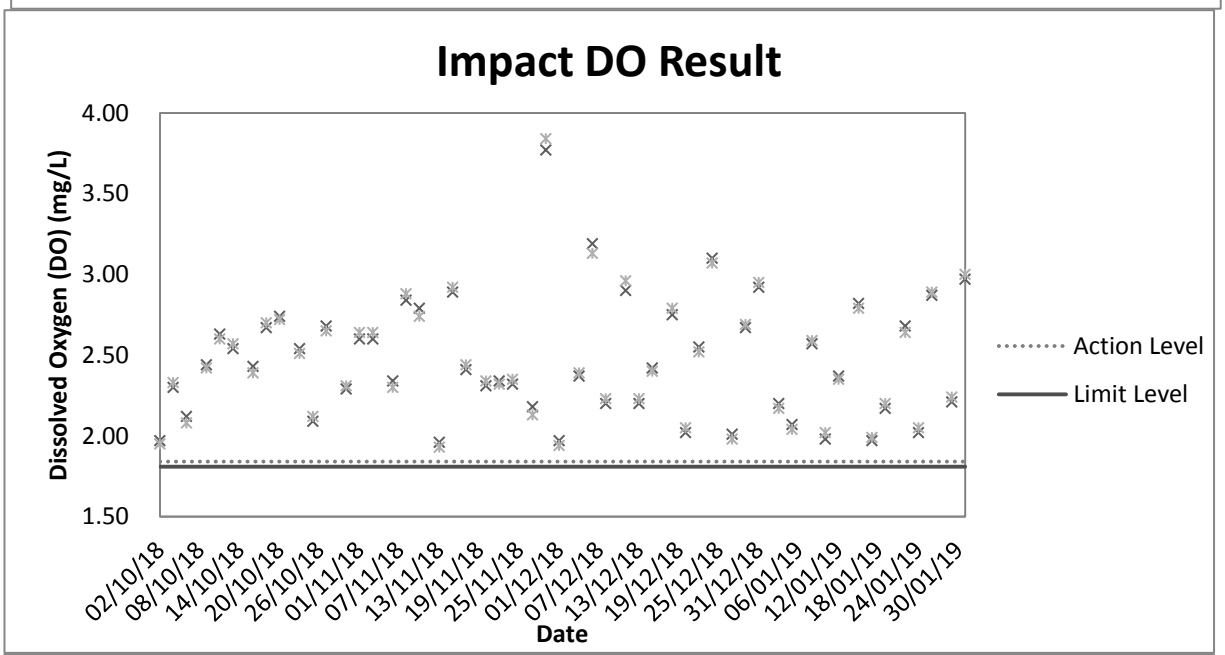

Noise Level at NSR1a
Limit Level = 75dB (A)
Noise Level (dB (A))
80.0
75.0
70.0
65.0
60.0
55.0
50.0
45.0
40.0
35.0
30.0
05/10/2018
11/10/2018
17/10/2018
23/10/2018
29/10/2018
04/11/2018
10/11/2018
16/11/2018
22/11/2018
28/11/2018
04/12/2018
10/12/2018
16/12/2018
22/12/2018
28/12/2018
03/01/2019
09/01/2019
15/01/2019
21/01/2019
27/01/2019
Date
Leq (30min)
L10 (30min)
L90 (30min)

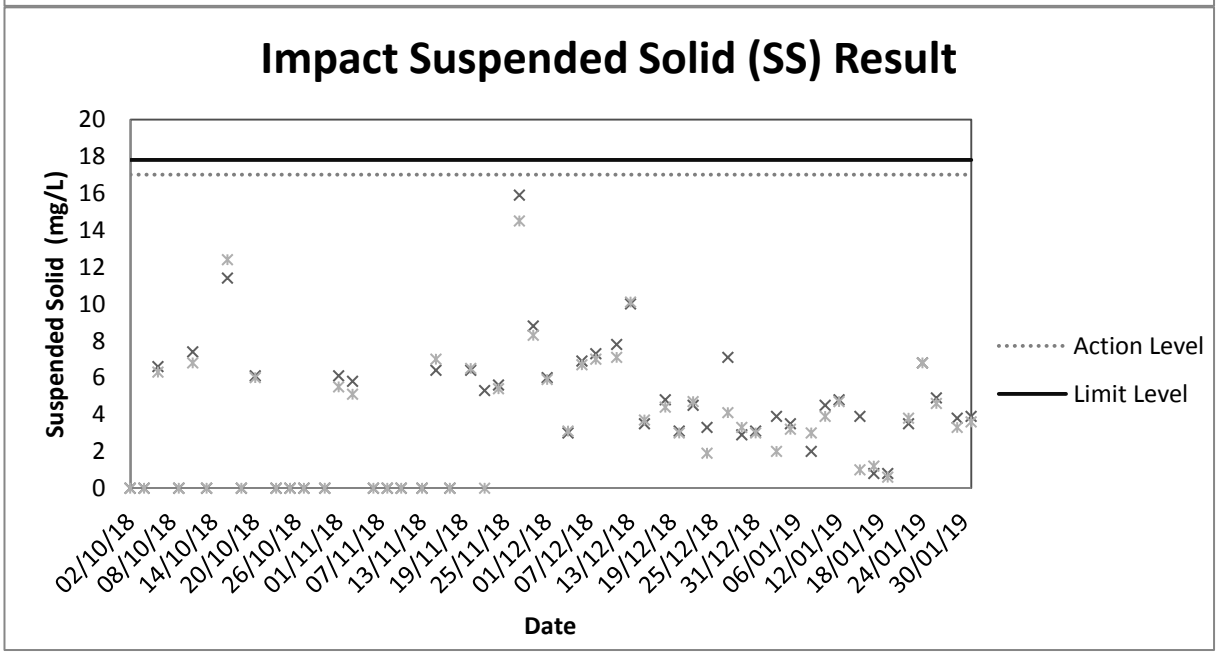

Noise Level at NSR2b
Limit Level = 75dB (A)
Noise Level (dB (A))
80
75
70
65
60
55
50
45
40
35
30
05/10/2018
11/10/2018
17/10/2018
23/10/2018
29/10/2018
04/11/2018
10/11/2018
16/11/2018
22/11/2018
28/11/2018
04/12/2018
10/12/2018
16/12/2018
22/12/2018
28/12/2018
03/01/2019
09/01/2019
15/01/2019
21/01/2019
27/01/2019
Date
Leq (30min)
L10 (30min)
L90 (30min)

Appendix F

Graphical Plots of Impact Water Quality Monitoring Data


Impact Turbidity Result
Turbidity (NTU)
25.0
20.0
15.0
10.0
5.0
0.0
02/10/18
08/10/18
14/10/18
20/10/18
26/10/18
01/11/18
07/11/18
13/11/18
19/11/18
25/11/18
01/12/18
07/12/18
13/12/18
19/12/18
25/12/18
31/12/18
06/01/19
12/01/19
18/01/19
24/01/19
30/01/19
Date
Action Level
Limit Level


Impact DO Result
Dissolved Oxygen (DO) (mg/L)
4.00
3.50
3.00
2.50
2.00
1.50
02/10/18
08/10/18
14/10/18
20/10/18
26/10/18
01/11/18
07/11/18
13/11/18
19/11/18
25/11/18
01/12/18
07/12/18
13/12/18
19/12/18
25/12/18
31/12/18
06/01/19
12/01/19
18/01/19
24/01/19
30/01/19
Date
Action Level
Limit Level


Impact Suspended Solid (SS) Result
Suspended Solid (mg/L)
20
18
16
14
12
10
8
6
4
2
0
02/10/18
08/10/18
14/10/18
20/10/18
26/10/18
01/11/18
07/11/18
13/11/18
19/11/18
25/11/18
01/12/18
07/12/18
13/12/18
19/12/18
25/12/18
31/12/18
06/01/19
12/01/19
18/01/19
24/01/19
30/01/19
Date
Action Level
Limit Level

Appendix G

Event and Action Plan

Event and Action Plan for Air Quality (Dust) during Construction Phase

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded for one sample	1. Identify source; 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.
Action Level being exceeded for two or more consecutive samples	1. Identify source; 2. Inform IEC and ER; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency to daily; 5. Discuss with IEC and Contractor on remedial actions required; 6. If exceedance continues, arrange meeting with IEC and ER; 7. 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 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 are properly implemented.	1. Submit proposals for remedial actions to IEC within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.
Limit Level being exceeded for one sample	1. Identify source; 2. Inform IEC, ER and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's	1. Check monitoring data submitted by ET and Contractor's working method; 2. Discuss with Contractor on the possible mitigation measures; 3. Review the proposed mitigation	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Check monitoring data and Contractor's working methods; 4. Discuss with IEC and Contractor on potential	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to ER within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	remedial actions; 6. Keep EPD and ER informed of the results.	measures submitted by Contractor and advise the ER accordingly.	remedial actions; 5. Ensure remedial actions properly implemented.	appropriate.
Limit Level being exceeded for two or more consecutive samples	1. Identify source; 2. Inform IEC, ER and EPD the causes & actions taken for the exceedances; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Investigate the causes of exceedance; 6. Arrange meeting with EPD and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET and Contractor's working method; 2. Discuss with Contractor on the possible mitigation measures; 3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly; 4. Supervise the implementation of mitigation measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 4. Discuss with IEC and the Contractor on potential remedial actions; 5. Review Contractor's remedial actions whenever necessary to assure their effectiveness; 6. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to ER within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not resolved; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event and Action Plan for Construction Noise

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

	effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.		portion of work until the exceedance is abated.	is abated.

Event and Action Plan for Water Quality

Event	Action			
	ET Leader	IEC	ER	Contractor
Action Level being exceeded by one sampling day	1. Repeat in-situ measurement to confirm findings; 2. Identify reasons for non-compliance and sources of impact; 3. Inform IEC and Contractor; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC and Contractor; 6. Repeat measurement on next day of exceedance.	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with IEC on the proposed mitigation measures; 2. make agreement on the mitigation measures to be implemented; 3. Assess the effectiveness of the implemented mitigation measures.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment 4. Consider changes of working methods; 5. Discuss with ET and IEC and propose mitigation measures to IEC and ER; 6. Implement the agreed mitigation measures.
Action Level being exceeded by more than two consecutive sampling days	1. Repeat in-situ measurement to confirm findings; 2. Identify reasons for non-compliance and sources of impact; 3. Inform IEC	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor	1. Discuss with IEC on the proposed mitigation measures; 2. Make agreement on the mitigation measures to be implemented;	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and

Event	Action			
	ET Leader	IEC	ER	Contractor
	and Contractor; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC and Contractor; 6. Ensure mitigation measures are implemented; 7. Prepare to increase the monitoring frequency to daily; 8. Repeat measurement on next day of exceedance.	and advise the ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures.	3. Assess the effectiveness of the implemented mitigation measures.	equipment; 4. Consider changes of working methods; 5. Discuss with ET and IEC and propose mitigation measures to IEC and ER within 3 working days; 6. Implement the agreed mitigation measures.
Limit Level being exceeded by one sampling day	1. Repeat in-situ measurement to confirm findings; 2. Identify reasons for non-compliance and sources of impact; 3. Inform IEC, Contract or and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with IEC, ET and Contractor on the proposed mitigation measures; 2. Request Contractor to critically review the working methods; 3. Make agreement on the mitigation measures to be implemented; 4. Assess the effectiveness of the implemented mitigation measures.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 3 working days; 6. Implement the agreed mitigation measures.

Event	Action			
	ET Leader	IEC	ER	Contractor
	monitoring frequency to daily until no exceedance of Limit Level.			
Limit Level being exceeded by more than two consecutive sampling days	1. Repeat in-situ measurement to confirm findings; 2. Identify reasons for non-compliance and sources of impact; 3. Inform IEC, Contractor and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Limit Level for two consecutive days.	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with IEC, ET and Contractor on the proposed mitigation measures; 2. Request Contractor to critically review the working methods; 3. Make agreement on the mitigation measures to be implemented; 4. Assess the effectiveness of the implemented mitigation measures; 5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit Level.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 3 working days; 6. Implement the agreed mitigation measures; 7. As directed by the ER, to slow down or to stop all or part of the marine work or construction activities.

Appendix H

Implementation Schedule for Environmental Mitigation Measures (EMIS)

Environmental Mitigation Measures	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
Air Quality					
• The working area for the uprooting of trees, shrubs, or vegetation or for the removal of boulders, poles, pillars or temporary or permanent structures should be sprayed with water or a dust suppression chemical immediately before, during and immediately after the operation so as to maintain the entire surface wet;	Site Area	√			
• All demolished items (including trees, shrubs, vegetation, boulders, poles, pillars, structures, debris, rubbish and other items arising from site clearance) that may dislodge dust particles should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides within a day of demolition;	Site Area	√			
• Vehicle washing facilities including a high pressure water jet should be provided at every discernible or designated vehicle exit point;	Site Entrance	√			
• 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 hardcores;	Site Exit	√			
• Where a site boundary adjoins a road, street, service and or other area accessible to the public, hoarding of not less than 2.4m from ground level should be provided along the entire length of that portion of the site boundary except for a site entrance or exit;	Site Area	√			
• Every main haul road (i.e. any course inside a construction site having a vehicle passing rate of higher than 4 in any 30 minutes) should be paved with concrete, bituminous materials, hardcores or metal plates, and kept clear of dusty materials; or sprayed with water or a dust suppression chemical so as to maintain the entire road surface wet;	Main Haul Road		√		
• The portion of any road leading only to a construction site that is within 30m of a discernible or designated vehicle entrance or exit should be kept clear of dusty materials;	Site Entrance and Exit	√			
• Immediately before leaving a construction site, every vehicle should be washed to remove any dusty materials from its body and wheels;	Site Exit	√			
• Where a vehicle leaving a construction site is carrying a load of dusty materials, the load should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle;	--	√			
• The working area of any excavation or earth moving operation should be sprayed with water or a dusty suppression chemical immediately before, during and immediately after the operation so as to maintain the entire surface wet;	Site Area	√			
• Exposed earth shall be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable	Site Area	√			

surface stabilizer within 6 months after the last construction activity on the construction site or part of the construction site where the exposed earth lies;					
• Any stockpile of dusty material should be either covered entirely by impervious sheeting; placed in an area sheltered on the top and the 3 sides; or sprayed with water or a dust suppression chemical so as to maintain the entire surface wet.	Site Area	√			
Noise					
• Quiet plants should be used in order to reduce the noise impacts to protect the nearby NSRs.	Site Area	√			
• Temporary and Movable Noise Barriers should be used in order to reduce the noise impact to the surrounding sensitive receivers	Site Area	√			
• Intermittent noisy activities should be scheduled to minimize exposure of nearby NSRs to high levels of construction noise.	Site Area	√			
• Idle equipment should be turned off or throttled down.	Site Area	√			
• Construction activities should be planned so that parallel operation of several sets of equipment close to a given receiver is avoided	Site Area	√			
• Construction plant should be properly maintained and operated.	Site Area	√			
Water Quality					
• Exposed stockpiles should be covered with tarpaulin or impervious sheets before a rainstorm occurs;	Site Area	√			
• The exposed soil surfaces should also be properly protected to minimize dust emission;	Site Area	√			
• The stockpiles of materials should be placed in the locations away from the drainage channel so as to avoid releasing materials into the channel;	Site Area	√			
• Wheel washing facilities should be provided at site exits to ensure that earth, mud and debris would not be carried out of the works areas by vehicles;	Site Exit	√			
• Provision of site drainage systems and treatment facilities would be required to minimize the water pollution;	Site Area		√		
• A discharge license needs to be applied from EPD for discharging effluent from the construction site;	--	√			
• The treated effluent quality is required to meet the requirements specified in the discharge license;	--	√			
• Provision of chemical toilets is required to collect sewage from workforce. The chemical toilets should be cleaned on a regular basis;	Chemical Toilet	√			

• A licensed waste collector should be employed to clean the chemical toilets and temporary storage tank on a regular basis;	--	√			
• Illegal disposal of chemicals should be strictly prohibited;	Site Area	√			
• Registration as a chemical waste producer is required if chemical wastes are generated and need to be disposed of. 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;	Site Area	√			
• 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 should be used as a guideline for handing chemical wastes;	Site Area		√		
• The impact from accidental spillage of chemicals can be effectively controlled through good management practices.	Site Area		√		
Waste Management					
• 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;	Site Area	√			
• To encourage collection of aluminium cans by individual collectors, separate bins should be provided to segregate this waste from other general refuse generated by the workforce;	Site Area	√			
• Any unused chemicals or those with remaining functional capacity should be recycled;	Site Area	√			
• Prior to disposal of C&D waste, it is recommended that wood, steel and other metals be separated for re-use and/or recycling and inert waste as fill material to minimize the quantity of waste to be disposed of to landfill;	Site Area	√			
• Proper storage and site practices to minimize the potential for damage or contamination of construction materials; and	Site Area		√		
• Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste.	Site Area	√			
Landscape and Visual					
1. Detailed tree survey should have been completed	Site Area	√			
• Trees should be transplanted to their final positions clear of the construction site	--			√	
• Erect site hoarding to protect adjacent vegetation from damage	Site Area	√			

• Regular inspections of the transplanted trees should be made to ensure the effectiveness of the hoarding	Site Area	√			
• Any topsoil excavated during the course of the works should be stored and protected on site for reuse for the restoration and screen planting works	Site Area			√	

Appendix I

Weather Condition

Daily Extract of Meteorological Observations, November 2018 – Wetland Park

Day	Mean Pressure (hPa)	Air Temperature			Mean Dew Point (deg. C)	Mean Relative Humidity (%)	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
		Absolute Daily Max (deg. C)	Mean (deg. C)	Absolute Daily Min (deg. C)					
01	1013.2	28.0	23.8	21.1	10.1	44	0.0	020	11.0
02	1016.1	23.2	20.9	19.4	16.5	76	0.0	340	6.2
03	1017.0	22.8	21.2	18.6	18.4	85	0.0	070	3.4
04	1016.6	27.7	22.6	20.6	20.5	89	0.5	060	2.5
05	1016.7	30.2	24.5	21.2	20.4	79	0.0	070	5.1
06	1017.3	30.2	24.9	21.4	19.9	76	0.0	060	6.1
07	1017.4	30.9	25.1	21.2	20.7	78	0.0	070	4.9
08	1016.8	28.5	24.5	21.5	20.5	79	0.0	330	4.7
09	1017.0	29.6	23.6	20.1	17.7	70	0.0	060	6.8
10	1017.8	27.3	23.8	22.1	19.7	78	0.0	090	8.4
11	1016.9	28.7	23.8	20.3	19.8	80	0.0	060	5.4
12	1014.0	30.6	24.9	21.0	20.3	77	0.0	080	3.2
13	1014.1	28.2	23.7	21.0	18.8	74	0.0	080	5.2
14	1015.3	29.0	24.0	22.0	18.6	72	0.0	070	8.8
15	1016.1#	25.2#	23.0#	21.8#	19.0#	79#	0.0	090	9.0
16	1014.6#	26.4#	24.6#	23.9#	22.1#	86#	0.0	070	5.8
17	1015.6	25.3	23.8	22.9	21.9	89	0.0	070	5.5
18	1016.0	30.0	24.5	21.9	21.8	86	0.0	060	4.1
19	1017.7	27.3	23.5	20.7	18.6	75	0.0	070	6.0
20	1017.1	27.7	23.2	20.3	19.4	80	0.0	060	7.5
21	1016.4	29.0	24.5	19.8	20.6	80	0.0	070	6.1
22	1020.6	24.0	20.2	17.6	13.3	65	0.0	020	8.8
23	1020.3	25.6	20.5	16.2	13.8	67	0.0	060	5.4
24	1019.6	25.7	21.0	17.9	17.5	82	0.0	060	4.1
25	1019.0	21.3	18.4	16.5	17.2	93	32.5	080	3.0
26	1019.1	21.2#	18.3	16.4#	17.5	95	14.0	060	4.3
27	1019.2	22.7#	19.6	18.0#	17.9	90	1.0	360	2.6
28	1019.4	22.7	20.2	18.9	19.4	95	8.0	100	3.5
29	1021.0	26.6#	20.8	17.3#	17.4	83	0.0	070	4.3
30	1020.2	25.4	21.4	17.8	16.8	77	0.0	050	4.8

 # data incomplete

Rainfall measured in increment of 0.5 mm. Amount of < 0.5 mm cannot be detected

Daily Extract of Meteorological Observations, December 2018 – Wetland Park

Day	Mean Pressure (hPa)	Air Temperature			Mean Dew Point (deg. C)	Mean Relative Humidity (%)	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
		Absolute Daily Max (deg. C)	Mean (deg. C)	Absolute Daily Min (deg. C)					
01	1018.1	27.1	22.2	19.3	18.9	83	0.0	060	5.3
02	1016.2	28.0	22.4	18.2	19.4	85	0.0	180	4.2
03	1016.4	28.8	22.9	19.5	20.8	89	0.0	320	3.0
04	1016.1	29.9	23.5	19.5	21.3	89	0.0	060	2.5
05	1015.5	27.0	23.1	21.3	21.1	89	0.0	070	5.8
06	1015.4	26.0	23.1	21.0	21.1	89	0.0	060	4.8
07	1019.0	22.1#	19.2	16.3#	17.8	92	0.0	050	7.0
08	1022.5	19.0#	16.0	14.5#	11.8	76	0.0	040	8.8
09	1022.6	15.0#	13.8	12.9#	11.1	84	0.0	060	7.6
10	1020.9	17.0#	14.3	11.8#	11.5	84	0.0	060	4.4
11	1021.7	20.3	16.0	13.4	11.3	74	0.0	350	6.8
12	1025.6	15.9#	12.8	11.5#	7.6	71	0.0	020	7.8
13	1026.0	17.8#	13.8	11.1#	8.2	69	0.0	050	7.7
14	1026.1	16.8	14.8	13.0	10.8	77	0.0	050	4.7
15	1024.0	24.2#	17.9	14.5#	13.9	79	0.0	060	4.3
16	1022.9	21.0	17.7	15.8	15.0	84	0.5	340	5.3
17	1022.8	22.0	16.3	11.6	9.3	67	0.0	350	6.0
18	1022.3	23.4#	16.4	10.9#	9.9	69	0.0	060	4.5
19	1019.3	25.1	20.3	16.0	16.9	81	0.0	060	4.8
20	1016.2	26.7	22.0	18.8	19.7	87	0.0	320	4.3
21	1015.8	28.1	22.5	19.4	19.8	86	0.0	100	5.0
22	1016.9	28.2	22.4	18.0	18.8	81	0.0	060	4.1
23	1018.2	22.1	19.7	16.2	17.9	90	3.5	050	7.4
24	1018.1	17.9	16.4	15.1	15.2	93	2.5	070	6.0
25	1015.7	21.7	18.6	16.2	17.0	91	0.0	070	2.9
26	1014.4	25.8#	20.7	16.4#	18.1	87	0.0	320	3.0
27	1016.8	24.8	19.9	17.7	16.0	79	0.0	060	5.8
28	1022.2	21.7	17.4	14.1	12.0	71	0.0	050	10.9
29	1027.2	16.0#	12.3	10.4#	7.2	71	0.0	020	11.3
30	1027.7	15.1#	10.9	8.9#	5.9	71	0.0	360	8.3
31	1028.3	15.5#	11.2	9.1#	6.5	73	0.0	350	7.0

Remark(s):

1. *# data incomplete*
2. *Rainfall measured in increment of 0.5 mm. Amount of < 0.5 mm cannot be detected*
3. *The* meteorological observations extracted from Hong Kong Observatory only shown the daily average and may be varied from the weather condition recorded during monitoring.

Daily Extract of Meteorological Observations, January 2019 – Wetland Park

Day	Mean Pressure (hPa)	Air Temperature			Mean Dew Point (deg. C)	Mean Relative Humidity (%)	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
		Absolute Daily Max (deg. C)	Mean (deg. C)	Absolute Daily Min (deg. C)					
01	1027.7	15.6#	12.0	9.1#	7.6	75	0.0	360	6.8
02	1026.5	16.2	13.3	11.1	8.6	74	0.0	350	5.9
03	1025.2	15.3	13.8	12.4	11.2	85	0.0	060	6.0
04	1023.0	21.1	17.7	14.5	16.0	90	0.5	270	3.1
05	1021.0	22.5	18.9	17.2	17.5	92	0.0	320	2.9
06	1022.1	19.4#	17.4	16.2#	14.2	82	0.0	060	6.2
07	1021.4	20.4#	18.1	16.5#	16.2	89	0.0	050	2.4
08	1021.5	21.1#	19.0	17.8#	15.8	82	0.0	340	3.2
09	1022.4	23.6#	18.3	16.2#	14.5	79	0.0	060	6.3
10	1020.2	24.0#	19.9	17.1#	16.9	83	0.0	050	4.9
11	1018.6	27.0	21.0	17.1	18.7	88	0.0	330	2.7
12	1018.4	23.2	20.3	17.8	18.0	87	0.0	320	2.8
13	1019.2	21.1	19.3	17.8	17.6	90	0.0	060	5.7
14	1018.6	21.7#	19.3	17.6#	17.0	87	0.0	060	5.0
15	1019.1	22.3	19.0	17.1	17.1	89	6.0	040	4.1
16	1021.4	19.2#	16.2	14.4#	10.7	70	0.0	020	8.8
17	1022.7	21.9#	16.0	13.1#	9.8	67	0.0	050	6.3
18	1022.5	19.2#	16.1	12.7#	11.2	73	0.0	060	5.0
19	1019.6	24.3#	19.1	14.9#	15.1	79	0.0	060	4.0
20	1018.9	25.6#	20.8	17.6#	16.4	77	0.0	060	3.7
21	1022.4	21.0#	17.0	14.9#	10.0	63	0.0	010	7.7
22	1022.9	20.0	14.6	10.9	5.7	57	0.0	340	5.6
23	1021.3	21.0#	14.8	9.4#	6.8	62	0.0	060	3.4
24	1020.5	22.0#	15.6	10.8#	11.2	79	0.0	310	3.5
25	1021.3	25.7#	17.4	12.3#	12.5	76	0.0	010	2.8
26	1023.1	24.2#	17.8	14.1#	11.6	70	0.0	050	4.0
27	1023.5	21.7#	16.7	13.7#	11.9	75	0.0	040	4.8
28	1021.6	22.7#	17.2	13.5#	11.5	72	0.0	060	4.5
29	1021.3	23.4#	17.9	12.5#	11.9	72	0.0	060	5.8
30	1020.7	23.9#	18.0	12.9#	14.5	82	0.0	060	3.5
31	1019.2	26.7#	20.8	15.6#	17.2	82	0.0	320	3.2

Remark(s):

1. *# data incomplete*
2. *Rainfall measured in increment of 0.5 mm. Amount of < 0.5 mm cannot be detected*
3. *The* meteorological observations extracted from Hong Kong Observatory only shown the daily average and may be varied from the weather condition recorded during monitoring.

Appendix J

Waste Flow Table

Name of Department: DSD

Year: 2018

Project: Design, Build and Operate San Wai Sewage Treatment Works - Phase 1

Contract No.: DC/2013/10

Waste Flow Table

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Broken Concrete (see Note [3])	Reused in the Contract (see Note)	Reused in other Projects	Disposed as Public Fill (see Note [4])	Imported Fill (see Note [4])	Metals	Paper/ cardboard packaging	Plastics (see Note [2])	Chemical 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 '000kg)	(in '000kg)	(in '000kg)	(in '000 kg)
Jan	8.809	0.000	0.000	0.000	8.809	0.000	0.000	0.000	0.000	0.000	18.480
Feb	3.231	0.000	0.000	0.000	3.231	0.000	0.000	0.200	0.000	0.000	2.700
Mar	2.246	0.000	0.000	0.000	2.246	0.752	0.000	0.000	0.000	0.000	9.210
Apr	2.035	0.000	0.000	0.000	2.035	2.068	0.005	0.150	0.000	0.000	16.970
May	0.343	0.000	0.000	0.000	0.343	0.567	0.000	0.000	0.000	0.000	34.590
Jun	0.794	0.000	0.000	0.000	0.794	0.074	0.000	0.000	0.000	0.000	53.050
Jul	1.929	0.000	0.000	0.000	1.929	0.000	0.000	0.300	0.000	0.000	68.095
Aug	1.588	0.000	0.000	0.000	1.588	0.082	0.000	0.000	0.000	0.000	33.520
Sep	2.846	0.000	0.000	0.000	2.846	0.181	0.000	0.000	0.000	0.000	44.030
Oct	4.600	0.000	0.000	0.000	4.600	0.576	0.000	0.000	0.000	0.000	56.600
Nov	1.682	0.000	0.000	0.000	1.682	1.648	0.002	0.250	0.000	0.000	42.940
Dec	1.505	0.000	0.000	0.000	1.505	0.561	0.000	0.000	0.000	0.000	75.700
Total	31.608	0.000	0.000	0.000	31.608	6.525	0.007	0.900	0.000	0.000	455.885

Notes: (1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.

(2) Plastics refer to plastic bottles/ containers, plastic sheets/ foam from packaging materials.

(3) Broken concrete for recycling into aggregates.

(4) Assumption: The densities of subbase, Type A, Type B, Rockfill, Soil, Mix Rock and Soil, Reclaimed Asphalt Pave, Slurry are 2.0 ton/m^3; the densities of Building debris and special fill materials are 2.1 ton/m^3; the densities of Broken Concrete is 2.4 ton/m^3.

DSD Contract: DC/2013/10
Design, Build and Operate
San Wai Sewage Treatment Works Phase 1

ATAL-Degremont-China Harbour Joint Venture

Name of Department: DSD

Year: 2019

Project: Design, Build and Operate San Wai Sewage Treatment Works - Phase 1

Contract No.: DC/2013/10

Waste Flow Table

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Broken Concrete (see Note [3])	Reused in the Contract (see Note)	Reused in other Projects	Disposed as Public Fill (see Note [4])	Imported Fill (see Note [4])	Metals	Paper/ cardboard packaging	Plastics (see Note [2])	Chemical 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 '000kg)	(in '000kg)	(in '000kg)	(in '000 kg)
Jan	0.988	0.000	0.000	0.000	0.988	0.449	0.000	0.000	0.000	0.000	55.820
Feb											
Mar											
Apr											
May											
Jun											
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
Total	0.988	0.000	0.000	0.000	0.988	0.449	0.000	0.000	0.000	0.000	55.820

Notes: (1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.

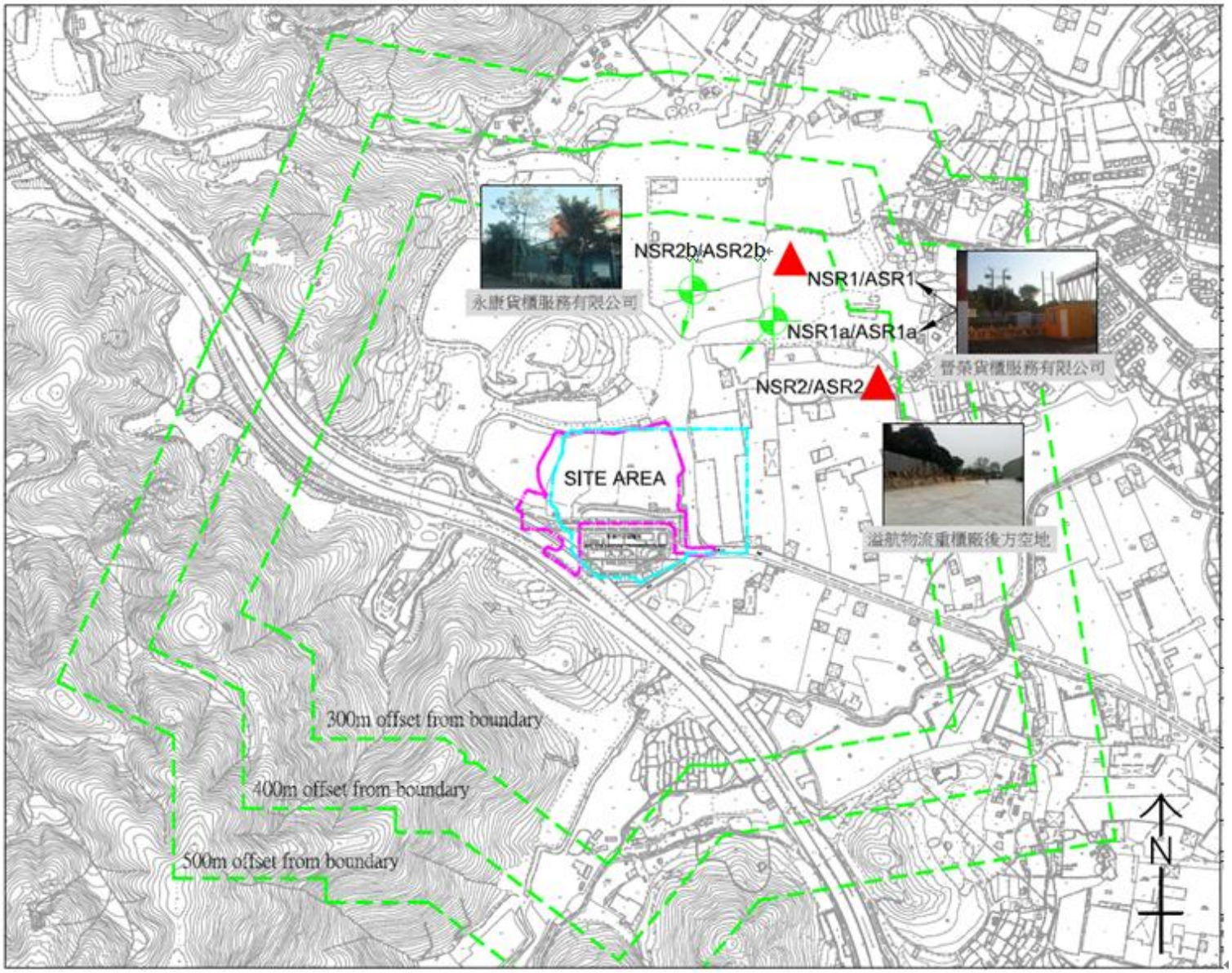
(2) Plastics refer to plastic bottles/ containers, plastic sheets/ foam from packaging materials.

(3) Broken concrete for recycling into aggregates.

(4) Assumption: The densities of subbase, Type A, Type B, Rockfill, Soil, Mix Rock and Soil, Reclaimed Asphalt Pave, Slurry are 2.0 ton/m^3; the densities of Building debris and special fill materials are 2.1 ton/m^3; the densities of Broken Concrete is 2.4 ton/m^3.

Figure 1

Locations of Air Quality and Noise Monitoring Stations



Project: Contract No. DC/2013/10 - Design, Build and Operate San Wai Sewage Treatment Works – Phase 1

Figure 1 Locations of Air Quality and Noise Monitoring Stations

Figure 2

Locations of Water Quality Monitoring Station

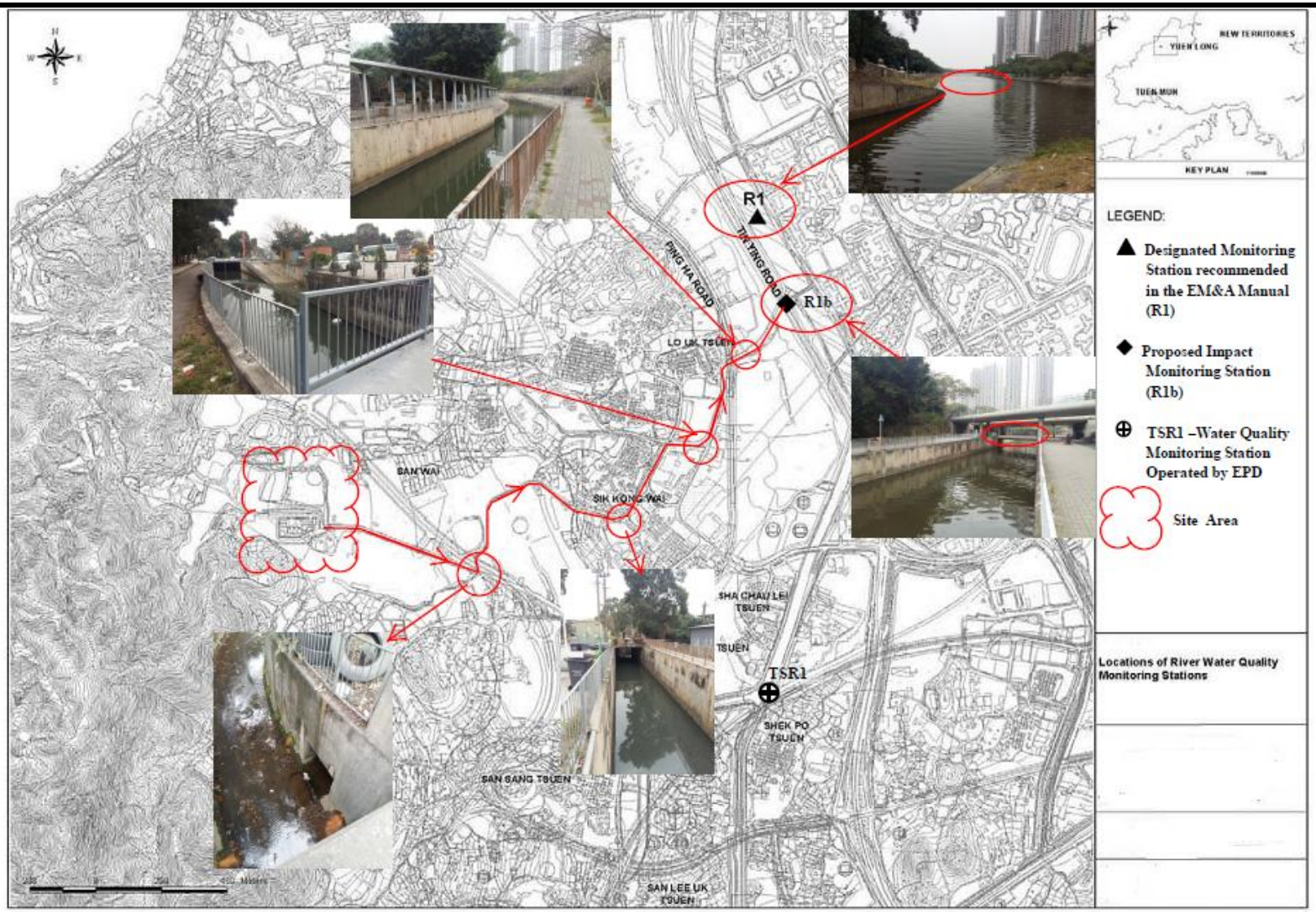


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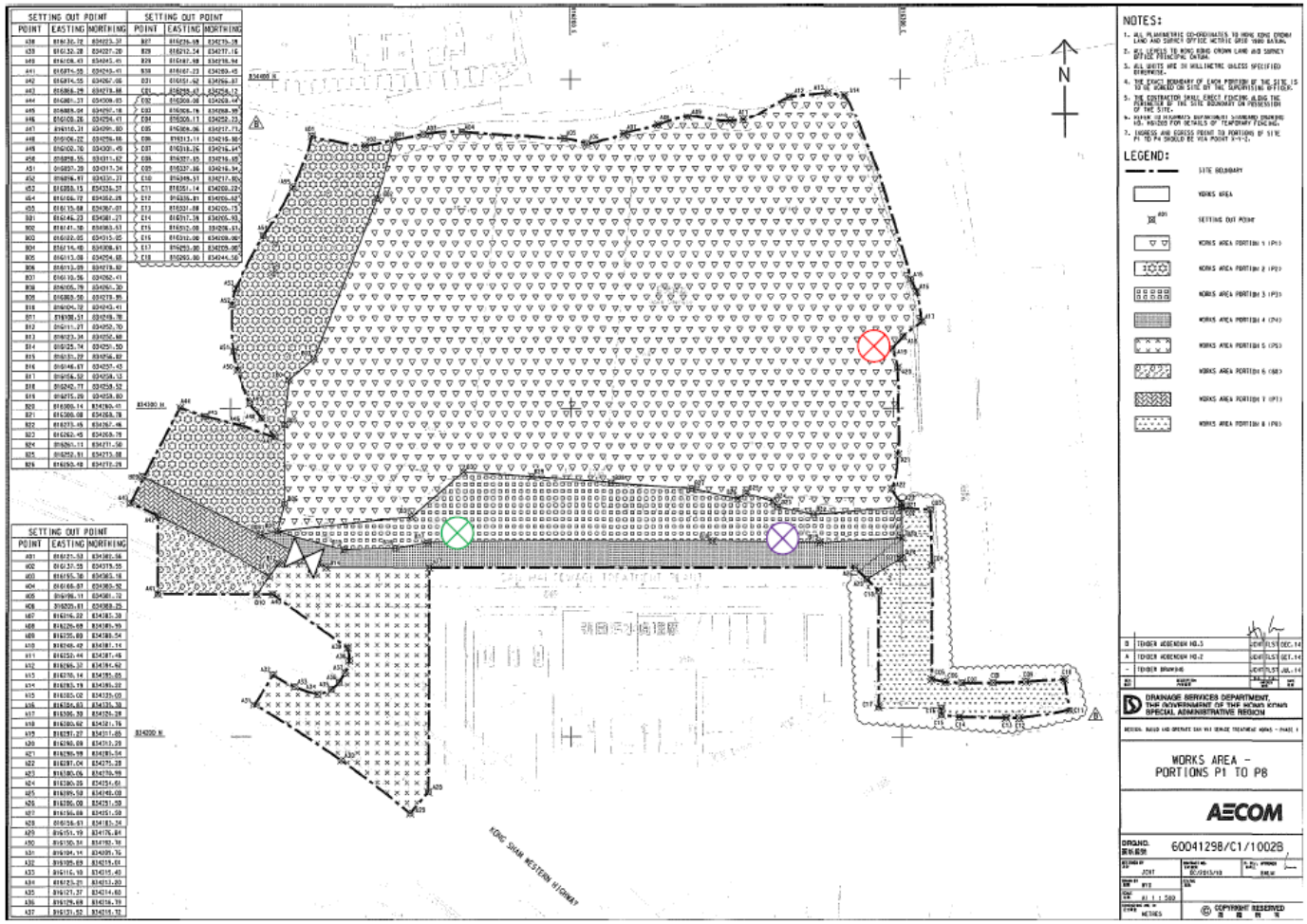
Figure 2 Locations of Water Quality Monitoring Station

Figure 3

Location Plan for the Wetsep Treatment Tank



Legend: ⊗ Wetsep treatment tank P1a ⊗ Wetsep treatment tank P1b ⊗ Wetsep treatment tank P8

Project: Contract No. DC/2013/10 - Design, Build and Operate San Wai Sewage Treatment Works – Phase 1

Figure 3 Location Plan for the Wetsep Treatment Tank