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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. 8

(01 FEBRUARY 2019 – 30 APRIL 2019)

Prepared by: _____
LO, Ting Yi

Certified by: _____
LAU, Chi Leung
Environmental Team Leader

Issued Date: 14 May 2019 *Report No.: ENA93655*

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: HKDSD203/50/105750

Date: 17 May 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.8 (February 2019 – April 2019)

We refer to email of 14 May 2019 from ETS-Testconsult Limited attaching the Quarterly Environmental Monitoring and Audit Report No.8 (November 2018 – January 2019).

We have no further comment and hereby verify the Quarterly Environmental Monitoring and Audit Report No.8 (February 2019 – April 2019).

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

Yours faithfully
ANEWR CONSULTING LIMITED

Adi Lee
Independent Environmental Checker

LYMA/LHYF/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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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 eighth 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 February 2019 to 30 April 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: 38 Occasions at 1 designated location*
- *Weekly Site inspection: 12 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, there was one limit level exceedance of suspended solid at station R1b on 14 March 2019. After investigation, there was concluded that the exceedance was not relevant to this Contract since the results of effluent water sample sampled on 12 March 2019 at P8 complied with the discharge license requirement and thus the effluent discharged from the construction site was unlikely to deteriorate the water quality of Tin Shui Wai nullah and resulted in suspended solids exceedance at R1b. Besides, the surface runoff and wastewater generated from the construction activities in different sections of the construction sites was collected and stored in the temporary storage pool and then transferred to the Wetsep for proper treatment prior to discharge. Therefore, the exceedance of water samples taken from 13:15 to 13:26pm on 14 March 2019 was considered as non-Project related. The Investigation Reports No. 002 (including the causes of exceedance, action taken and recommendation for mitigation) for Action or Limit Level Non-compliance were provided in **Appendix K**. Other than the above exceedance, no exceedance of Action and Limit level was recorded in the reporting month.

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 eighth 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 February 2019 to 30 April 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*

Remark: (*) Mr. Nic Lam was resigned from ANewR from March 2019

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 (rc structure);*
- *Backfilling;*
- *Substructure (ELS & Bulk excavation);*
- *Superstructure (rc and metalworks);*
- *Removal of ELS;*
- *Water Tightness Test;*
- *Internal ABWF – CEPT;*
- *External ABWF – CEPT;*
- *ABWF - Sludge Dewatering Building;*
- *ABWF - Administration Building & Maintenance Workshop;*
- *ABWF for the EB1 Transformer Room;*
- *ABWF for the EB2 Transformer Room;*
- *ABWF for the EB3 Transformer Room;*
- *Pile Loading Test;*
- *Post-Drilling;*
- *ABWF for the EB4 Transformer Room;*
- *Bar Screen Installation;*
- *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, there was one limit level exceedance of suspended solid at station R1b on 14 March 2019. After investigation, there was concluded that the exceedance was not relevant to this Contract since the results of effluent water sample sampled on 12 March 2019 at P8 complied with the discharge license requirement and thus the effluent discharged from the construction site was unlikely to deteriorate the water quality of Tin Shui Wai nullah and resulted in suspended solids exceedance at R1b. Besides, the surface runoff and wastewater generated from the construction activities in different sections of the construction sites was collected and stored in the temporary storage pool and then transferred to the Wetsep for proper treatment prior to discharge. Therefore, the exceedance of water samples taken from 13:15 to 13:26pm on 14 March 2019 was considered as non-Project related. The Investigation Reports No. 002 (including the causes of exceedance, action taken and recommendation for mitigation) for Action or Limit Level Non-compliance were provided in **Appendix K**. Other than the above exceedance, no exceedance of Action and Limit level was recorded in the reporting month.

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

February 2019	March 2019	April 2019
08, 15, 22 and 28	08, 15, 22 and 28	04, 12, 18 and 26

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
08 February 2019	--	--	--
15 February 2019	1. General refuse was observed at P1	1. The general refuse was collected	22 February 2019
22 February 2019	1. Chemical material was found without drip tray.	1. The chemical material was removed.	28 February 2019
28 February 2019	--	--	--
08 March 2019	--	--	--
15 March 2019	2. Stagnant water was observed. 3. General refuse mixed with C&D wastes were observed.	1. The stagnant water was cleared. 2. The general refuse was collected.	22 March 2019

22 March 2019	--	--	--
28 March 2019	1. Oil container was observed without drip tray. 2. C&D waste and general refuse was observed stored together.	1. The chemical container was removed. 2. The general refuse and C&D wastes were collected.	04 April 2019
04 April 2019	1. General refuse was observed.	1. The general refuse were collected.	12 April 2019
12 April 2019	--	--	--
18 April 2019	1. Fill material was found without cover at UV Zone. 2. Stagnant water was observed at SDB Zone.	1. Fill material was covered properly at UV Zone. 2. Stagnant water was cleared.	26 April 2019
26 April 2019	1. Stagnant water was accumulated on the drip tray at P1 Zone.	Follow-up actions for outstanding observation will be inspected during the next site inspection.	--

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 04 and 22 February 2019, 08 and 22 March 2019 and 04 and 19 April 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 12 February 2019, only Wetsep at P1b was operated, the effluent water sample was sampled P1b. During 26 February 2019, both Wetsep at P1b and P8 were operated, the effluent water sample was sampled at P1b and P8. During March 2019, only Wetsep at P8 was operated, the effluent water sample was sampled at P8 only. For April 2019, as only Wetsep at P1a was operated, the effluent water sample was sampled at P1a only.

Table 3.3 Effluent Sampling Dates

February 2019	March 2019	April 2019
12 and 26	12 and 25	09 and 23

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 one limit level exceedance of suspended solid at station R1b on 14 March 2019. After investigation, there was concluded that the exceedance was not relevant to this Contract since the results of effluent water sample sampled on 12 March 2019 at P8 complied with the discharge license requirement and thus the effluent discharged from the construction site was unlikely to deteriorate the water quality of Tin Shui Wai nullah and resulted in suspended solids exceedance at R1b. Besides, the surface runoff and wastewater generated from the construction activities in different sections of the construction sites was collected and stored in the temporary storage pool and then transferred to the Wetsep for proper treatment prior to discharge. Therefore, the exceedance of water samples taken from 13:15 to 13:26pm on 14 March 2019 was considered as non-Project related. The Investigation Reports No. 002 (including the causes of exceedance, action taken and recommendation for mitigation) for Action or Limit Level Non-compliance were provided in **Appendix K**. Other than the above exceedance, no exceedance of Action and Limit level was recorded in the reporting month.

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 one limit level exceedance of suspended solid at station R1b on 14 March 2019. After investigation, there was concluded that the exceedance was not relevant to this Contract since the results of effluent water sample sampled on 12 March 2019 at P8 complied with the discharge license requirement and thus the effluent discharged from the construction site was unlikely to deteriorate the water quality of Tin Shui Wai nullah and resulted in suspended solids exceedance at R1b. Besides, the surface runoff and wastewater generated from the construction activities in different sections of the construction sites was collected and stored in the temporary storage pool and then transferred to the Wetsep for proper treatment prior to discharge. Therefore, the exceedance of water samples taken from 13:15 to 13:26pm on 14 March 2019 was considered as non-Project related. The Investigation Reports No. 002 (including the causes of exceedance, action taken and recommendation for mitigation) for Action or Limit Level Non-compliance were provided in **Appendix K**. Other than the above exceedance, no exceedance of Action and Limit level was recorded in the reporting month.

5.3.4. Environmental site inspections were carried out on 08, 15, 22 & 28 February 2019, 08, 15, 22 & 28 March 2019 and 04, 12, 18 & 26 April 2019. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site inspections.

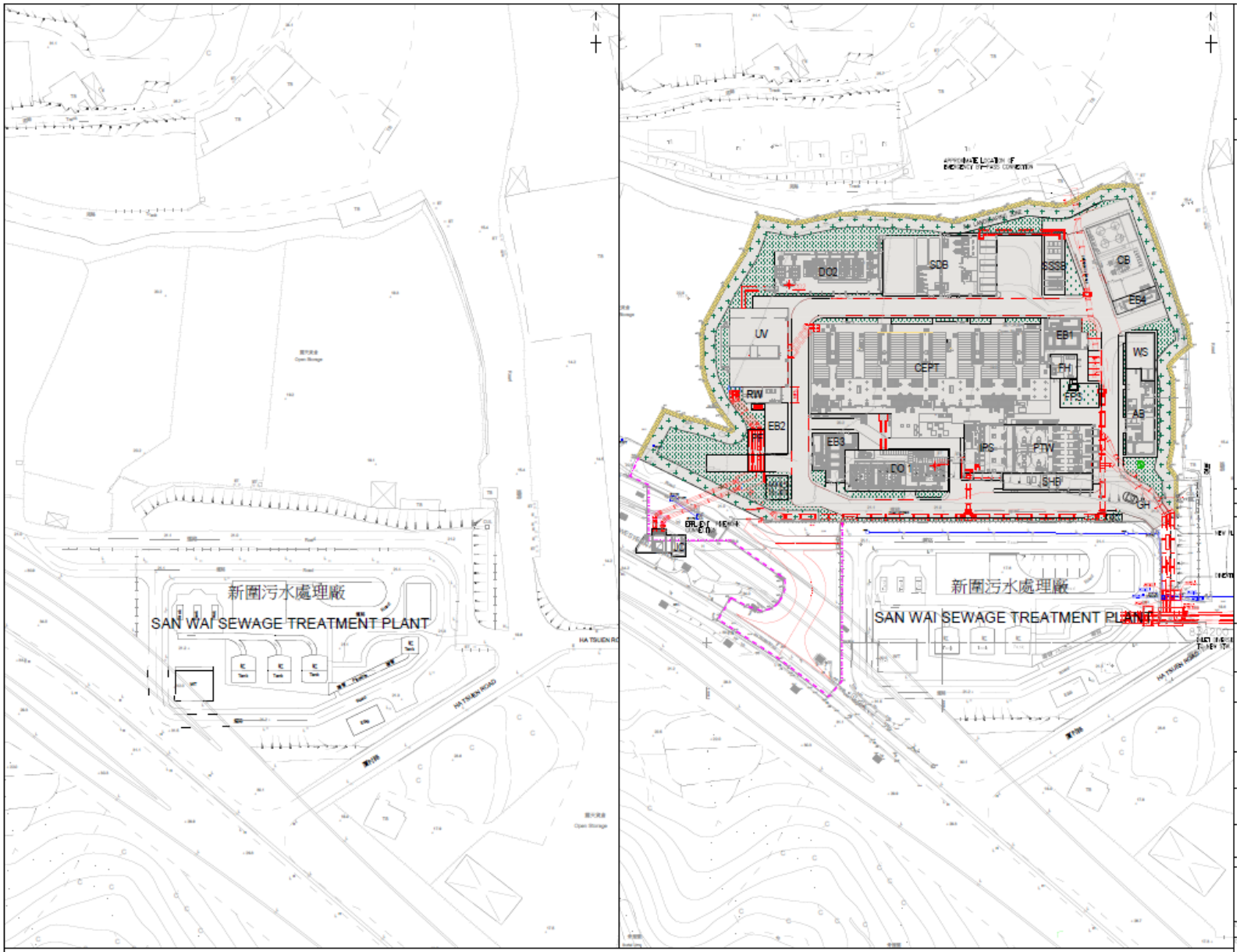
5.3.5. There were no complaints received during the reporting period.

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

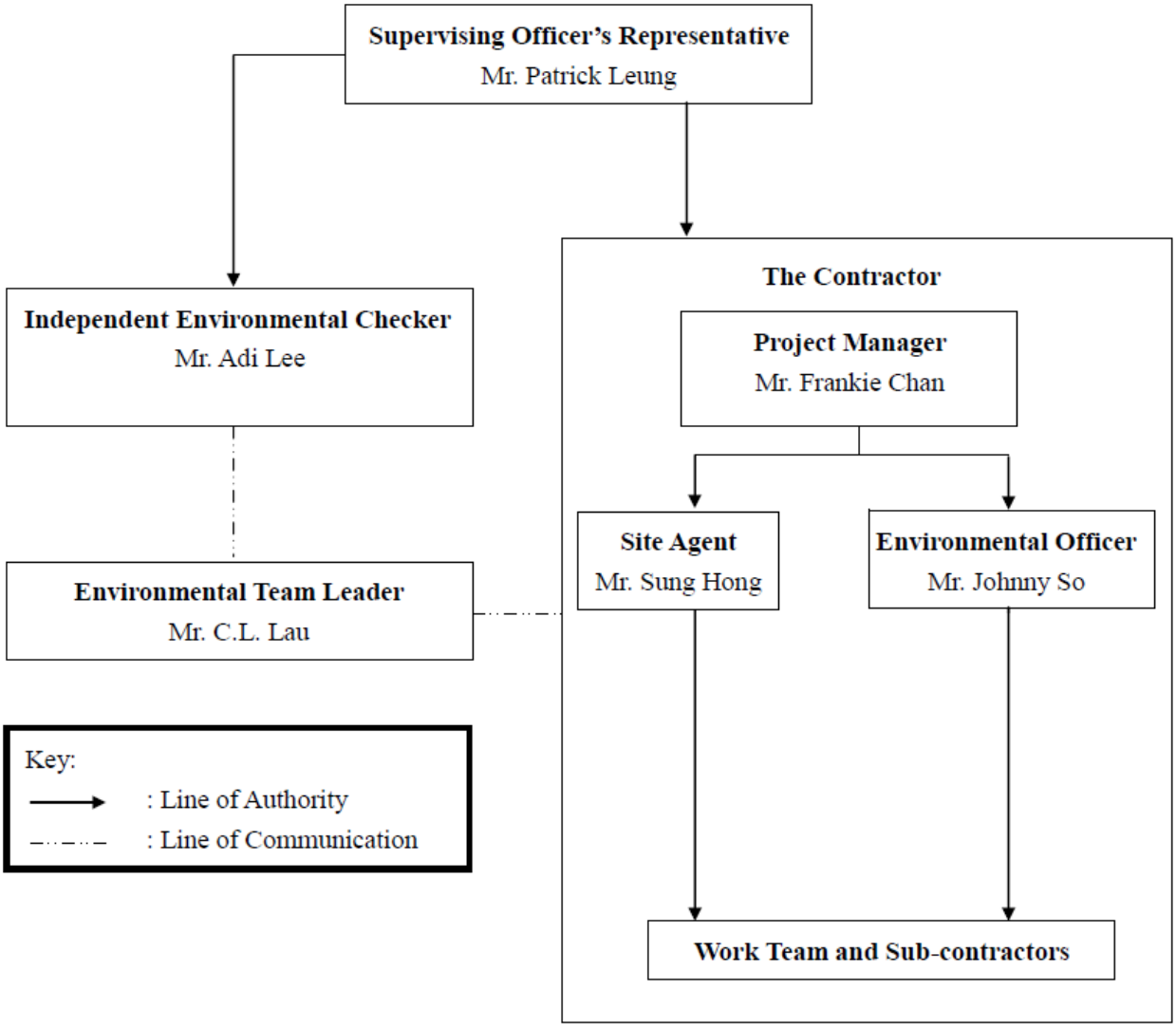


EXISTING SAN WAI SEWAGE TREATMENT WORKS

EXPANDED AND UPGRADED SAN WAI SEWAGE TREATMENT WORKS

Appendix B

Project Organization Chart

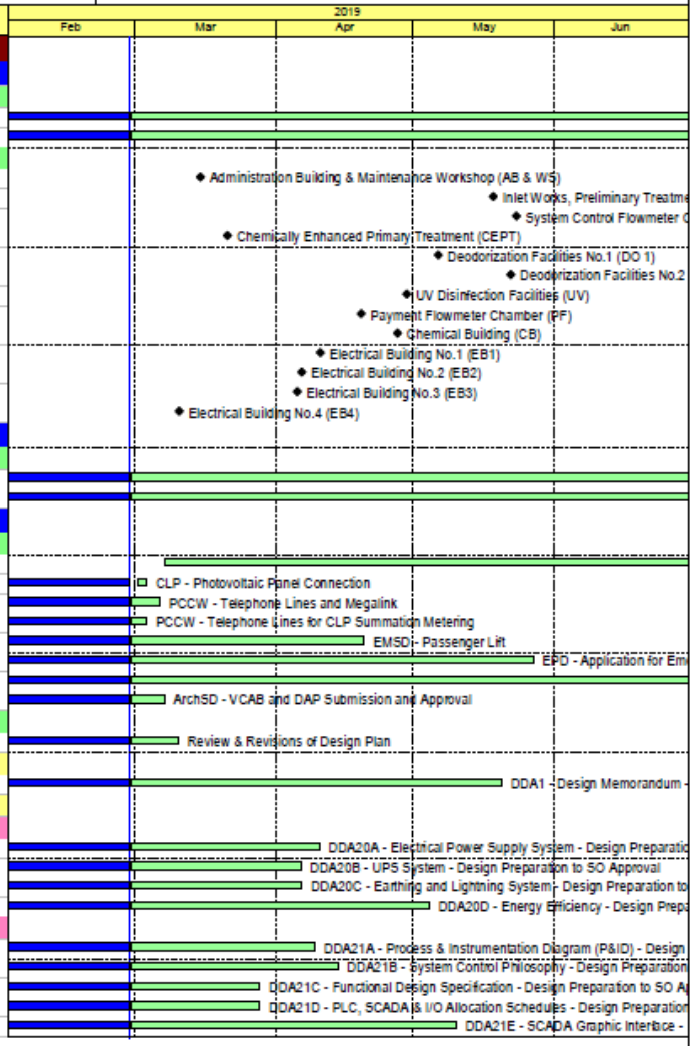

Supervising Officer's Representative
Mr. Patrick Leung
Independent Environmental Checker
Mr. Adi Lee
Environmental Team Leader
Mr. C.L. Lau
The Contractor
Project Manager
Mr. Frankie Chan
Site Agent
Mr. Sung Hong
Environmental Officer
Mr. Johnny So
Work Team and Sub-contractors
Key:
: Line of Authority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

Appendix C

Construction Programme

DATA DATE: 28-Feb-19 | LAYOUT: SW Project PHase 1 Rev 10 (3M 31Dec18) | PAGE 1 OF 9

Activity ID	Activity Name	At Completion Duration	Start	Finish
San Wai Sewage Treatment Works Phase 1 - Rev 10 MP (Update as of 28 Feb 2019)		**1672**	**27-May-16 A**	**23-Dec-20**
Key Date		**1672**	**27-May-16 A**	**23-Dec-20**
Commencement & Completion of Works		1672	27-May-16 A	23-Dec-20
KD150	Section 1 - Handover to Home Affairs Department for Maintenance	1120	30-Nov-17 A	23-Dec-20
KD160	Section 2 - Period of Works (FOT P.3 cl 67, 71) - Including 88.5 Days Granted EOT	1671	27-May-16 A	23-Dec-20
Plant Room Handover Dates To E&M Installation		74	10-Mar-19	23-May-19
KD300	Administration Building & Maintenance Workshop (AB & WS)	0		15-Mar-19*
KD302	Inlet Works, Preliminary Treatment Units & Inlet Pumping Station (PTW & IPS)	0		18-May-19
KD306	System Control Flowmeter Chamber (SF)	0		23-May-19
KD308	Chemically Enhanced Primary Treatment (CEPT)	0		21-Mar-19*
KD310	Deodorization Facilities No.1 (DO 1)	0		06-May-19
KD312	Deodorization Facilities No.2 (DO 2)	0		22-May-19
KD316	UV Disinfection Facilities (UV)	0		29-Apr-19*
KD320	Payment Flowmeter Chamber (PF)	0		19-Apr-19
KD324	Chemical Building (CB)	0		27-Apr-19
KD326	Electrical Building No.1 (EB1)	0		10-Apr-19*
KD328	Electrical Building No.2 (EB2)	0		06-Apr-19*
KD330	Electrical Building No.3 (EB3)	0		05-Apr-19*
KD331	Electrical Building No.4 (EB4)	0		10-Mar-19*
Preliminaries & General Requirement		**1362**	**01-Apr-17 A**	**23-Dec-20**
Contractor Requirement		1362	01-Apr-17 A	23-Dec-20
PS465	Impact Monitoring	1275	27-Jun-17 A	23-Dec-20
PS485	Site Drainage Plan Implementation	1362	01-Apr-17 A	22-Dec-20
Design & Design Checking of Permanent Works		**1639**	**26-Jun-16 A**	**20-Dec-20**
Statutory Submission		1377	15-Mar-17 A	20-Dec-20
DS150	Application of Discharge License for Operation	180	07-Mar-19	03-Sep-19
DS166	CLP - Photovoltaic Panel Connection	435	24-Dec-17 A	03-Mar-19
DS173	PCCW - Telephone Lines and Megalink	617	27-Jun-17 A	06-Mar-19
DS174	PCCW - Telephone Lines for CLP Summation Metering	584	28-Jul-17 A	03-Mar-19
DS177	EMSD - Passenger Lift	326	29-May-18 A	20-Apr-19
DS180	EPD - Application for Emergency Generator Flue Gas Discharge License	180	28-Nov-18 A	27-May-19
DS195	BEAM Plus - Final Assessment (FA)	1026	01-Mar-18 A	20-Dec-20
DS200	ArchSD - VCAB and DAP Submission and Approval	723	15-Mar-17 A	07-Mar-19
AIP / DDA Submission & Approval		1060	26-Jun-16 A	21-May-19
DS410	Review & Revisions of Design Plan	988	26-Jun-16 A	10-Mar-19
Design Memorandum (AIP1 / DDA1)		372	13-May-18 A	20-May-19
DS505	DDA1 - Design Memorandum - Design Preparation to SO Approval	372	13-May-18 A	20-May-19
Global Design		855	06-Jan-17 A	10-May-19
Electrical Power Supply System (AIP20 / DDA20ABCDE)		741	24-Apr-17 A	04-May-19
DG1891	DDA20A - Electrical Power Supply System - Design Preparation to SO Approval	717	24-Apr-17 A	10-Apr-19
DG3880	DDA20B - UPS System - Design Preparation to SO Approval	712	24-Apr-17 A	06-Apr-19
DG3896	DDA20C - Earthing and Lightning System - Design Preparation to SO Approval	713	24-Apr-17 A	06-Apr-19
DG3912	DDA20D - Energy Efficiency - Design Preparation to SO Approval	741	24-Apr-17 A	04-May-19
Control and Monitoring System (AIP21 / DDA21ABCDE)		849	12-Jan-17 A	10-May-19
DG1924	DDA21A - Process & Instrumentation Diagram (P&ID) - Design Preparation to SO Approval	818	12-Jan-17 A	09-Apr-19
DG1940	DDA21B - System Control Philosophy - Design Preparation to SO Approval	756	20-Mar-17 A	14-Apr-19
DG1956	DDA21C - Functional Design Specification - Design Preparation to SO Approval	724	03-Apr-17 A	28-Mar-19
DG1972	DDA21D - PLC, SCADA & I/O Allocation Schedules - Design Preparation to SO Approval	704	23-Apr-17 A	28-Mar-19
DG1988	DDA21E - SCADA Graphic Interface - Design Preparation to SO Approval	679	01-Jul-17 A	10-May-19



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

ATAL-Degremont-China Harbour Joint Venture

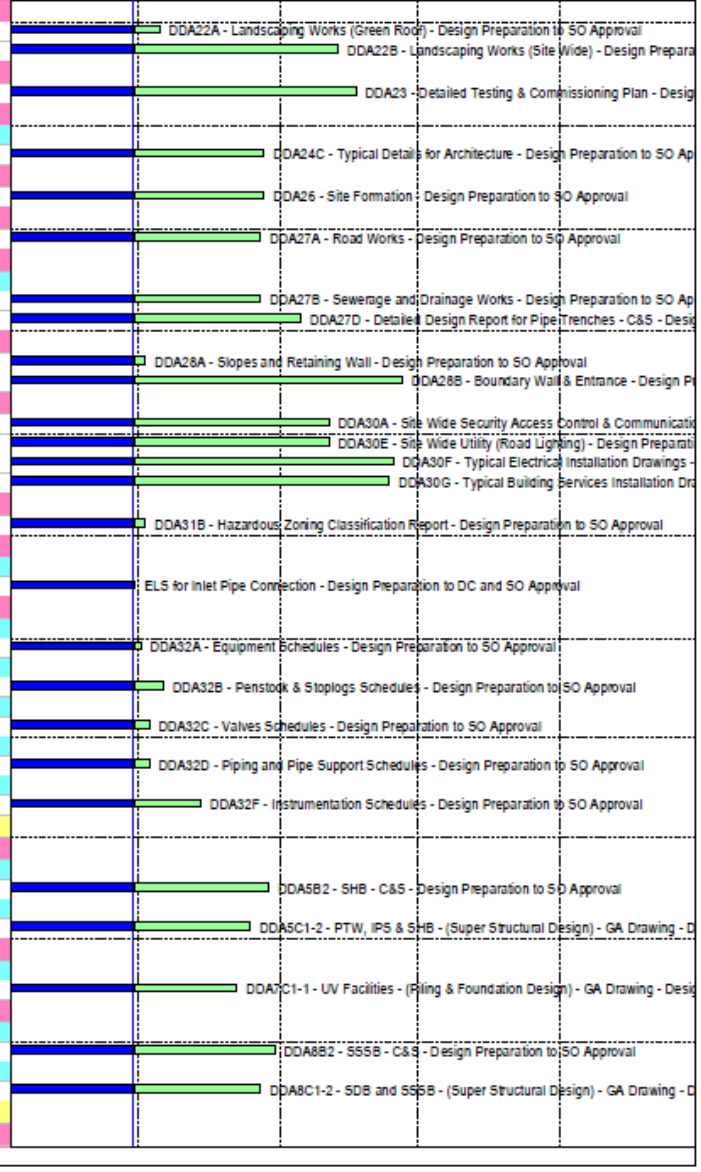
TASK filter: 3 Months Rolling Programme.

CONTRACT NO. DC/2013/10 DESIGN, BUILD & OPERATE
SAN WAI SEWAGE TREATMENT - PHASE 1
MASTER SCHEDULE Rev 10 (28 February 2019)
THREE (3) MONTHS ROLLING PROGRAMME

Date	Revision	Checked	Approved
28-Feb-19	Three (3) Months Rolling Programme		

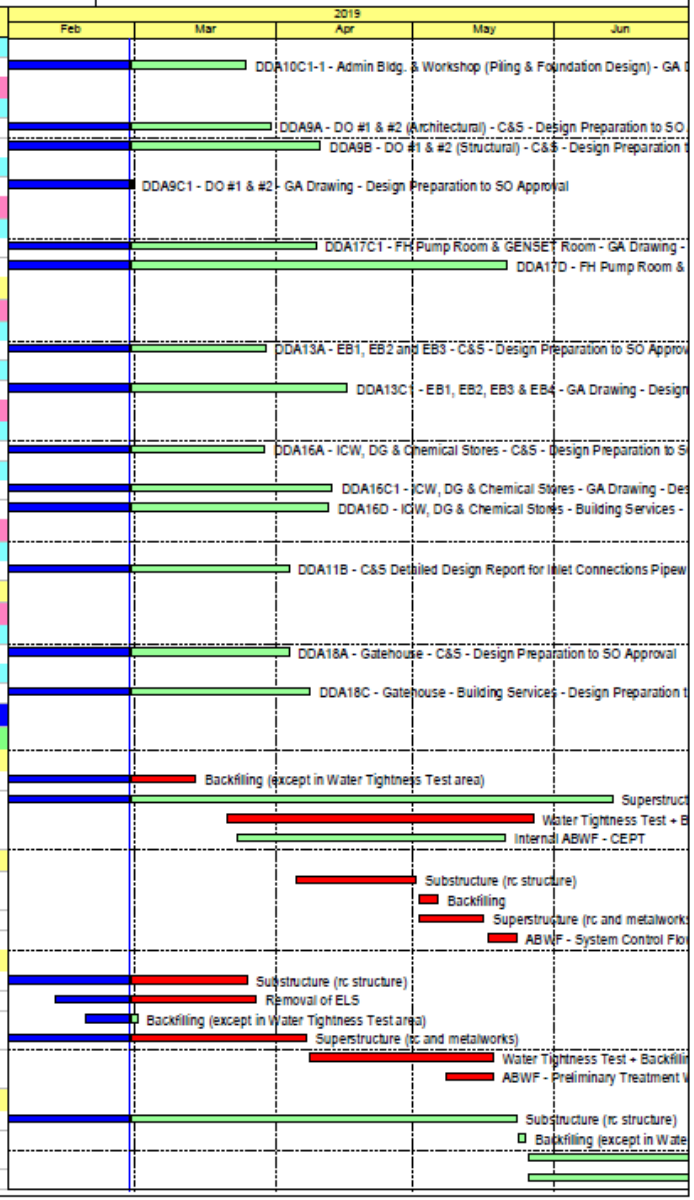
DATA DATE: 28-Feb-19 | LAYOUT: SW Project PHase 1 Rev 10 (3M 31Dec18) |

Activity ID	Activity Name	At Completion Duration	Start	Finish
	Landscaping Works (AIP22 / DDA22AB)	828	06-Jan-17 A	13-Apr-19
DG1260	DDA22A - Landscaping Works (Green Roof) - Design Preparation to SO Approval	789	06-Jan-17 A	05-Mar-19
DG1274	DDA22B - Landscaping Works (Site Wide) - Design Preparation to SO Approval	650	03-Jul-17 A	13-Apr-19
	Testing and Commissioning Plan (AIP23 / DDA23)	360	22-Apr-18 A	17-Apr-19
DG3305	DDA23 - Detailed Testing & Commissioning Plan - Design Preparation to SO Approval	360	22-Apr-18 A	17-Apr-19
	General Notes Drawings for Foundation and Civil & Structural (AIP24AB / DDA24AB)	765	22-Feb-17 A	28-Mar-19
	General Notes Drawings for Civil & Structural (AIP24B / DDA24BC)	765	22-Feb-17 A	28-Mar-19
DG3706	DDA24C - Typical Details for Architecture - Design Preparation to SO Approval	765	22-Feb-17 A	28-Mar-19
	Site Formation (AIP26 / DDA26)	803	14-Jan-17 A	28-Mar-19
DG660	DDA26 - Site Formation - Design Preparation to SO Approval	803	14-Jan-17 A	28-Mar-19
	Road Works (AIP27A / DDA27A)	735	23-Mar-17 A	27-Mar-19
DG1060	DDA27A - Road Works - Design Preparation to SO Approval	735	23-Mar-17 A	27-Mar-19
	Sewerage and Drainage Works (AIP27B / DDA27BC1C2DEF)	773	21-Feb-17 A	05-Apr-19
	Civil and Structural Design (AIP27B / DDA27BD)	773	21-Feb-17 A	05-Apr-19
DG960	DDA27B - Sewerage and Drainage Works - Design Preparation to SO Approval	765	21-Feb-17 A	27-Mar-19
DG988	DDA27D - Detailed Design Report for Pipe Trenches - C&S - Design Preparation to SO Approval	697	08-May-17 A	05-Apr-19
	Boundary Wall & Entrance (AIP28 / DDA28AB)	814	03-Feb-17 A	27-Apr-19
DG1160	DDA28A - Slopes and Retaining Wall - Design Preparation to SO Approval	758	03-Feb-17 A	02-Mar-19
DG1195	DDA28B - Boundary Wall & Entrance - Design Preparation to SO Approval	680	17-Jun-17 A	27-Apr-19
	Site Wide Utility (AIP30 / DDA30ABCEFGI)	816	30-Jan-17 A	25-Apr-19
DG3515	DDA30A - Site Wide Security Access Control & Communication System - Design Preparation to SO Approval	802	30-Jan-17 A	11-Apr-19
DG3816	DDA30E - Site Wide Utility (Road Lighting) - Design Preparation to SO Approval	658	23-Jun-17 A	11-Apr-19
DG3830	DDA30F - Typical Electrical Installation Drawings - Design Preparation to SO Approval	687	08-Jun-17 A	25-Apr-19
DG3844	DDA30G - Typical Building Services Installation Drawings - Design Preparation to SO Approval	671	23-Jun-17 A	24-Apr-19
	HAZOP Report (DDA31B)	548	01-Sep-17 A	02-Mar-19
DG3545	DDA31B - Hazardous Zoning Classification Report - Design Preparation to SO Approval	548	01-Sep-17 A	02-Mar-19
	ELS / Bulk Excavation (Temporary Works)	542	04-Sep-17 A	28-Feb-19
	ELS for Inlet Pipe Connection	542	04-Sep-17 A	28-Feb-19
DG3755	ELS for Inlet Pipe Connection - Design Preparation to DC and SO Approval	542	04-Sep-17 A	28-Feb-19
	Miscellaneous Design	620	03-Jul-17 A	14-Mar-19
	Equipment Schedules (DDA32A)	607	03-Jul-17 A	01-Mar-19
DG2012	DDA32A - Equipment Schedules - Design Preparation to SO Approval	607	03-Jul-17 A	01-Mar-19
	Penstock & Stoplogs Schedules (DDA32B)	612	03-Jul-17 A	06-Mar-19
DG3216	DDA32B - Penstock & Stoplogs Schedules - Design Preparation to SO Approval	612	03-Jul-17 A	06-Mar-19
	Valves Schedules (DDA32C)	608	03-Jul-17 A	03-Mar-19
DG3222	DDA32C - Valves Schedules - Design Preparation to SO Approval	608	03-Jul-17 A	03-Mar-19
	Piping and Pipe Support Schedules (DDA32D)	608	03-Jul-17 A	03-Mar-19
DG3864	DDA32D - Piping and Pipe Support Schedules - Design Preparation to SO Approval	608	03-Jul-17 A	03-Mar-19
	Instrumentation Schedules (DDA32F)	620	03-Jul-17 A	14-Mar-19
DG3234	DDA32F - Instrumentation Schedules - Design Preparation to SO Approval	620	03-Jul-17 A	14-Mar-19
	LOT #1 - Building / Facilities Design : CEPT+SF, PTW+IPS+SHB, UV, SDB+SSSB	829	22-Dec-16 A	30-Mar-19
	Inlet Work, Preliminary Treatment Works, IPS and SHB	781	06-Feb-17 A	29-Mar-19
	Civil and Structural Design (AIP5A / DDA5AB1B2)	781	06-Feb-17 A	29-Mar-19
DB4830	DDA5B2 - SHB - C&S - Design Preparation to SO Approval	781	06-Feb-17 A	29-Mar-19
	Electrical and Mechanical Design (AIP5B / DDA5C1C2DEF)	723	01-Apr-17 A	25-Mar-19
DB1264	DDA5C1-2 - PTW, IPS & SHB - (Super Structural Design) - GA Drawing - Design Preparation to SO Approval	723	01-Apr-17 A	25-Mar-19
	UV Disinfection Facilities	820	22-Dec-16 A	22-Mar-19
	Electrical and Mechanical Design (AIP7B / DDA7C1C2DEF)	820	22-Dec-16 A	22-Mar-19
DB1352	DDA7C1-1 - UV Facilities - (Piling & Foundation Design) - GA Drawing - Design Preparation to SO Approval	820	22-Dec-16 A	22-Mar-19
	Sludge Dewatering Building and Sludge Skip Storage Building	785	04-Feb-17 A	30-Mar-19
	Civil and Structural Design (AIP8A / DDA8AB1B2)	785	04-Feb-17 A	30-Mar-19
DB4858	DDA8B2 - SSSB - C&S - Design Preparation to SO Approval	785	04-Feb-17 A	30-Mar-19
	Electrical and Mechanical Design (AIP8B / DDA8C1C2DEF)	698	29-Apr-17 A	27-Mar-19
DB1476	DDA8C1-2 - SDB and SSSB - (Super Structural Design) - GA Drawing - Design Preparation to SO Approval	698	29-Apr-17 A	27-Mar-19
	LOT #2 - Building / Facilities Design : AB+WS, DO, CB+EB4, FH	961	03-Oct-16 A	21-May-19
	Administration Building & Maintenance Workshop	903	03-Oct-16 A	25-Mar-19



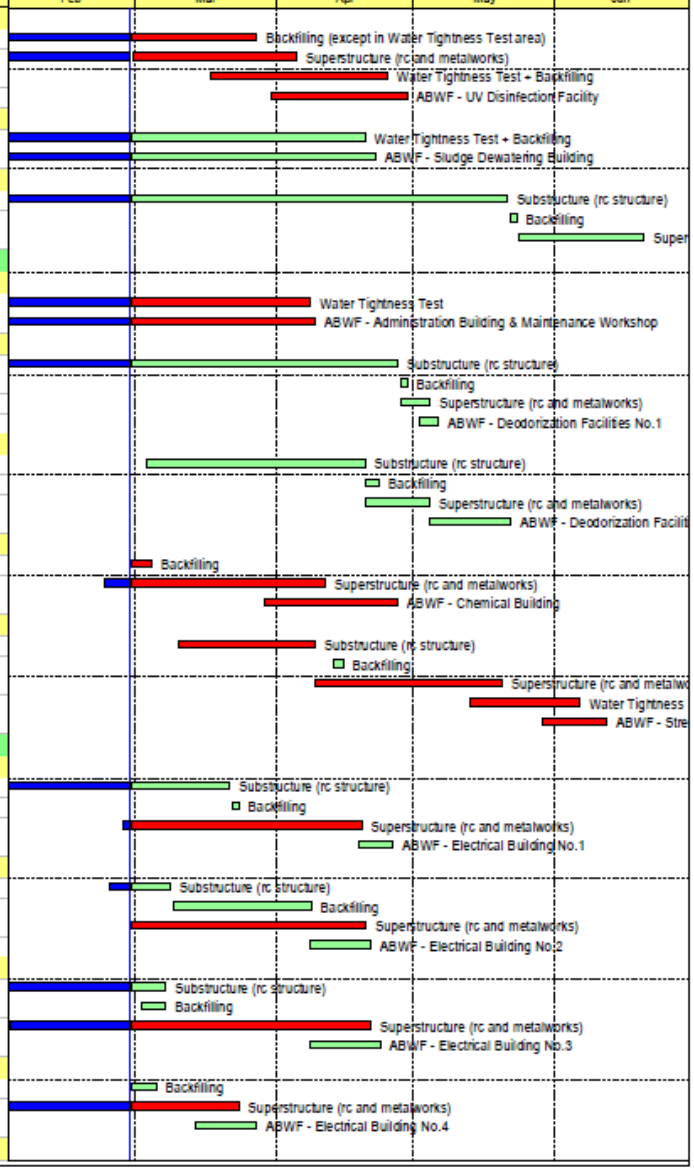
DATA DATE: 28-Feb-19 | LAYOUT: SW Project PHase 1 Rev 10 (3M 31Dec18) |

Activity ID	Activity Name	At Completion Duration	Start	Finish
	Electrical and Mechanical Design (AIP10B / DDA10C1C2DEF)	903	03-Oct-16 A	25-Mar-19
DB2286	DDA10C1-1 - Admin Bldg. & Workshop (Piling & Foundation Design) - GA Drawing - Design Preparation to SO Ap	903	03-Oct-16 A	25-Mar-19
	Deodorization Facilities No.1 and No.2	847	15-Dec-16 A	10-Apr-19
	Civil and Structural Design (AIP9A / DDA9AB)	805	26-Jan-17 A	10-Apr-19
DB2323	DDA9A - DO #1 & #2 (Architectural) - C&S - Design Preparation to SO Approval	794	26-Jan-17 A	30-Mar-19
DB5150	DDA9B - DO #1 & #2 (Structural) - C&S - Design Preparation to SO Approval	675	05-Jun-17 A	10-Apr-19
	Electrical and Mechanical Design (AIP9B / DDA9C1C2DEF)	805	15-Dec-16 A	28-Feb-19
DB2348	DDA9C1 - DO #1 & #2 - GA Drawing - Design Preparation to SO Approval	805	15-Dec-16 A	28-Feb-19
	Street Fire Hydrant Pump Room & GENSET Room	896	07-Dec-16 A	21-May-19
	Electrical and Mechanical Design (AIP17B / DDA17C1C2DE)	896	07-Dec-16 A	21-May-19
DB2448	DDA17C1 - FH Pump Room & GENSET Room - GA Drawing - Design Preparation to SO Approval	854	07-Dec-16 A	09-Apr-19
DB4648	DDA17D - FH Pump Room & GENSET Room - Electrical - Design Preparation to SO Approval	790	23-Mar-17 A	21-May-19
	LOT #3 - Building / Facilities Design : EB1, EB2, EB3, EB4, RW, DG+ICW, Inlet/Outlet Connection	943	16-Sep-16 A	16-Apr-19
	Electrical Building No.1, No.2, No.3, No.4	943	16-Sep-16 A	16-Apr-19
	Civil and Structural Design for EB123 (AIP13A / DDA13AB)	721	08-Apr-17 A	29-Mar-19
DB3123	DDA13A - EB1, EB2 and EB3 - C&S - Design Preparation to SO Approval	721	08-Apr-17 A	29-Mar-19
	Electrical and Mechanical Design for EB1234 (AIP13B / DDA13C1C2DE)	943	16-Sep-16 A	16-Apr-19
DB3148	DDA13C1 - EB1, EB2, EB3 & EB4 - GA Drawing - Design Preparation to SO Approval	943	16-Sep-16 A	16-Apr-19
	ICW and DG Store & Chemical Waste Storage Building	864	30-Nov-16 A	13-Apr-19
	Civil and Structural Design (AIP16A / DDA16AB)	529	16-Oct-17 A	29-Mar-19
DB3323	DDA16A - ICW, DG & Chemical Stores - C&S - Design Preparation to SO Approval	529	16-Oct-17 A	29-Mar-19
	Electrical and Mechanical Design (AIP16B / DDA16C1C2D)	864	30-Nov-16 A	13-Apr-19
DB3348	DDA16C1 - ICW, DG & Chemical Stores - GA Drawing - Design Preparation to SO Approval	864	30-Nov-16 A	13-Apr-19
DB4694	DDA16D - ICW, DG & Chemical Stores - Building Services - Design Preparation to SO Approval	688	24-May-17 A	12-Apr-19
	Inlet & Outlet Pipe Connections and Diversion Pipeworks	726	08-Apr-17 A	03-Apr-19
	Civil and Structural Design (AIP11 / DDA11ABC)	726	08-Apr-17 A	03-Apr-19
DB3438	DDA11B - C&S Detailed Design Report for Inlet Connections Pipework - Design Preparation to SO Approval	726	08-Apr-17 A	03-Apr-19
	LOT #4 - Building / Facilities Design : GH, PF	714	24-Apr-17 A	08-Apr-19
	Gatehouse	714	24-Apr-17 A	08-Apr-19
	Civil and Structural Design (AIP18A / DDA18AB)	625	18-Jul-17 A	03-Apr-19
DB4424	DDA18A - Gatehouse - C&S - Design Preparation to SO Approval	625	18-Jul-17 A	03-Apr-19
	Electrical and Mechanical Design (AIP18B / DDA18C)	714	24-Apr-17 A	08-Apr-19
DB4754	DDA18C - Gatehouse - Building Services - Design Preparation to SO Approval	714	24-Apr-17 A	08-Apr-19
	Civil & Structural Works	922	04-Oct-17 A	12-Apr-20
	LOT #1 - Bldg / Facilities Const. (Arch'l & Struct'l) : CEPT+SF, PTW+IPS+SHB, UV, SDB+SSSB	627	22-Oct-17 A	10-Jul-19
	Chemically Enhanced Primary Treatment (CEPT)	477	22-Feb-18 A	13-Jun-19
C51526	Backfilling (except in Water Tightness Test area)	320	28-Apr-18 A	14-Mar-19
C51530	Superstructure (rc and metalworks)	477	22-Feb-18 A	13-Jun-19
C51534	Water Tightness Test + Backfilling	67	21-Mar-19	27-May-19
C51540	Internal ABWF - CEPT	59	23-Mar-19	21-May-19
	System Control Flowmeter Chamber (SF)	49	05-Apr-19	23-May-19
C51400	Substructure (rc structure)	27	05-Apr-19	01-May-19
C51405	Backfilling	5	02-May-19	06-May-19
C51410	Superstructure (rc and metalworks)	15	02-May-19	16-May-19
C51420	ABWF - System Control Flowmeter Chamber	7	17-May-19	23-May-19
	Inlet Work, Preliminary Treatment Works and Inlet Pumping Station (PTW & IPS)	204	27-Oct-18 A	18-May-19
C51220	Substructure (rc structure)	150	27-Oct-18 A	25-Mar-19
C51224	Removal of ELS	45	11-Feb-19 A	27-Mar-19
C51226	Backfilling (except in Water Tightness Test area)	12	18-Feb-19 A	01-Mar-19
C51230	Superstructure (rc and metalworks)	96	02-Jan-19 A	07-Apr-19
C51235	Water Tightness Test + Backfilling	41	08-Apr-19	18-May-19
C51240	ABWF - Preliminary Treatment Works and Inlet Pumping Station	11	08-May-19	18-May-19
	Solid Handling Building (SHB)	627	22-Oct-17 A	10-Jul-19
C51300	Substructure (rc structure)	579	22-Oct-17 A	23-May-19
C51305	Backfilling (except in Water Tightness Test area)	2	24-May-19	25-May-19
C51310	Superstructure (rc and metalworks)	36	26-May-19	30-Jun-19
C51315	Water Tightness Test + Backfilling	46	26-May-19	10-Jul-19



DATA DATE: 28-Feb-19 | LAYOUT: SW Project PHase 1 Rev 10 (3M 31Dec18) |

Activity ID	Activity Name	At Completion Duration	Start	Finish
UV Disinfection Facility (UV)		150	01-Dec-18 A	29-Apr-19
C51915	Backfilling (except in Water Tightness Test area)	117	01-Dec-18 A	27-Mar-19
C51920	Superstructure (rc and metalworks)	125	01-Dec-18 A	05-Apr-19
C51925	Water Tightness Test + Backfilling	39	17-Mar-19	25-Apr-19
C51930	ABWF - UV Disinfection Facility	30	30-Mar-19	29-Apr-19*
Sludge Dewatering Building (SDB)		133	11-Dec-18 A	22-Apr-19
C51845	Water Tightness Test + Backfilling	82	28-Jan-19 A	20-Apr-19
C51850	ABWF - Sludge Dewatering Building	133	11-Dec-18 A	22-Apr-19
Sludge Skip Storage Building (SSSB)		607	22-Oct-17 A	20-Jun-19
C52900	Substructure (rc structure)	577	22-Oct-17 A	21-May-19
C52905	Backfilling	2	22-May-19	23-May-19
C52910	Superstructure (rc and metalworks)	28	24-May-19	20-Jun-19
LOT #2 - Bldg / Facilities Const. (Arch'l & Struct'l) : AB+WS, DO, CB, FH		602	19-Oct-17 A	12-Jun-19
Administration Building & Maintenance Workshop (AB & WS)		129	01-Dec-18 A	09-Apr-19
C51125	Water Tightness Test	81	18-Jan-19 A	08-Apr-19
C51130	ABWF - Administration Building & Maintenance Workshop	129	01-Dec-18 A	09-Apr-19
Deodorization Facilities No. 1 (DO 1)		565	19-Oct-17 A	06-May-19
C51610	Substructure (rc structure)	556	19-Oct-17 A	27-Apr-19
C51615	Backfilling	2	28-Apr-19	29-Apr-19
C51620	Superstructure (rc and metalworks)	7	28-Apr-19	04-May-19
C51630	ABWF - Deodorization Facilities No.1	5	02-May-19	06-May-19
Deodorization Facilities No. 2 (DO 2)		80	03-Mar-19	22-May-19
C51710	Substructure (rc structure)	48	03-Mar-19	20-Apr-19
C51715	Backfilling	3	20-Apr-19	23-Apr-19
C51720	Superstructure (rc and metalworks)	14	20-Apr-19	04-May-19
C51730	ABWF - Deodorization Facilities No.2	18	04-May-19	22-May-19
Chemical Building (CB)		65	22-Feb-19 A	27-Apr-19
C52315	Backfilling	5	28-Feb-19	04-Mar-19
C52320	Superstructure (rc and metalworks)	49	22-Feb-19 A	11-Apr-19
C52330	ABWF - Chemical Building	30	29-Mar-19	27-Apr-19
Street Fire Hydrant Pump Room & GENSET Room (FH)		94	10-Mar-19	12-Jun-19
C53010	Substructure (rc structure)	30	10-Mar-19	09-Apr-19
C53015	Backfilling	2	13-Apr-19	15-Apr-19
C53020	Superstructure (rc and metalworks)	41	09-Apr-19	20-May-19
C53025	Water Tightness Test	24	13-May-19	06-Jun-19
C53030	ABWF - Street Fire Hydrant Pump Room & GENSET Room	14	29-May-19	12-Jun-19
LOT #3 - Bldg / Facilities Const. (Arch'l & Struct'l) : EB, RW, DG, ICW, JC		632	04-Oct-17 A	27-Jun-19
Electrical Building No.1 (EB1)		552	22-Oct-17 A	26-Apr-19
C52410	Substructure (rc structure)	516	22-Oct-17 A	21-Mar-19
C52415	Backfilling	2	22-Mar-19	23-Mar-19
C52420	Superstructure (rc and metalworks)	53	26-Feb-19 A	19-Apr-19
C52430	ABWF - Electrical Building No.1	8	19-Apr-19	26-Apr-19
Electrical Building No.2 (EB2)		58	23-Feb-19 A	21-Apr-19
C52510	Substructure (rc structure)	14	23-Feb-19 A	08-Mar-19
C52515	Backfilling	31	09-Mar-19	08-Apr-19
C52520	Superstructure (rc and metalworks)	51	28-Feb-19 A	20-Apr-19
C52530	ABWF - Electrical Building No.2	14	08-Apr-19	21-Apr-19
Electrical Building No.3 (EB3)		567	04-Oct-17 A	23-Apr-19
C52610	Substructure (rc structure)	520	04-Oct-17 A	07-Mar-19
C52615	Backfilling	6	02-Mar-19	07-Mar-19
C52620	Superstructure (rc and metalworks)	80	01-Feb-19 A	21-Apr-19
C52630	ABWF - Electrical Building No.3	16	08-Apr-19	23-Apr-19
Electrical Building No.4 (EB4)		88	30-Dec-18 A	27-Mar-19
C52715	Backfilling	6	28-Feb-19	05-Mar-19
C52720	Superstructure (rc and metalworks)	84	30-Dec-18 A	23-Mar-19
C52730	ABWF - Electrical Building No.4	14	14-Mar-19	27-Mar-19
Re-use Water Building (RW)		55	15-Apr-19	08-Jun-19



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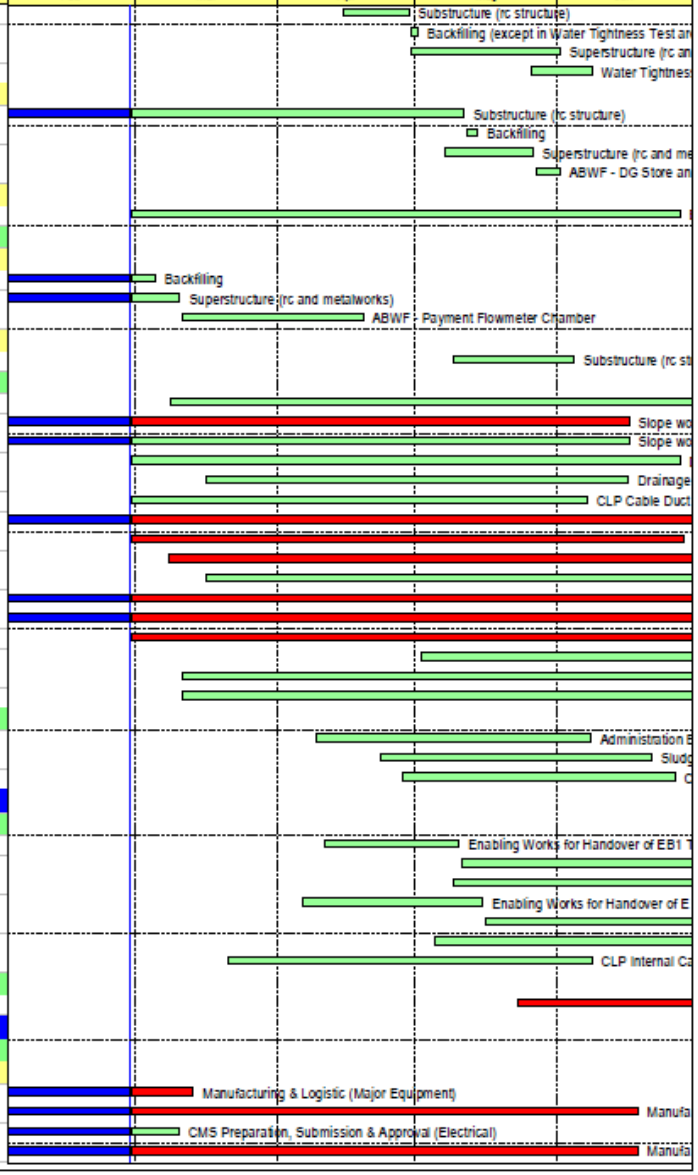
Activity ID	Activity Name	At Completion Duration	Start	Finish
CS2010	Substructure (rc structure)	15	15-Apr-19	29-Apr-19
CS2015	Backfilling (except in Water Tightness Test area)	2	30-Apr-19	01-May-19
CS2020	Superstructure (rc and metalworks)	33	30-Apr-19	01-Jun-19
CS2025	Water Tightness Test + Backfilling	14	26-May-19	08-Jun-19
DG Store & Chemical Waste Storage Building (DG) and Irrigation & Cleansing Water Pump Room (ICW)		588	22-Oct-17 A	01-Jun-19
CS2800	Substructure (rc structure)	567	22-Oct-17 A	11-May-19
CS2805	Backfilling	3	12-May-19	14-May-19
CS2810	Superstructure (rc and metalworks)	20	07-May-19	26-May-19
CS2820	ABWF - DG Store and Chemical Waste Storage Building / Irrigation and Cleansing Water Pump Room	6	27-May-19	01-Jun-19
Existing Junction Chamber (JC)		120	28-Feb-19	27-Jun-19
CS2210	Bar Screen Installation	120	28-Feb-19	27-Jun-19
LOT #4 - Bldg / Facilities Const. (Arch'l & Struct'l) : GH, PF, FW		138	18-Jan-19 A	04-Jun-19
Payment Flowmeter Chamber (PF)		92	18-Jan-19 A	19-Apr-19
CS2105	Backfilling	43	21-Jan-19 A	05-Mar-19
CS2110	Superstructure (rc and metalworks)	52	18-Jan-19 A	10-Mar-19
CS2120	ABWF - Payment Flowmeter Chamber	40	11-Mar-19	19-Apr-19
Foul Water Pump Sump (FW)		27	09-May-19	04-Jun-19
CS3395	Substructure (rc structure)	27	09-May-19	04-Jun-19
External Works & Miscellaneous		654	29-Jun-18 A	12-Apr-20
CS3200	Site Formation along Boundary Wall (Perimeter)	180	08-Mar-19	04-Sep-19
CS3201	Slope works and Retaining Wall (Eastern Portion)	348	04-Jul-18 A	16-Jun-19
CS3203	Slope works and Retaining Wall (Northern Portion)	348	04-Jul-18 A	16-Jun-19
CS3210	Drainage Inlet connection (Diversion of Three Existing Sewage Rising Mains) incl. slope & retaining wall work @ P8	120	28-Feb-19	27-Jun-19
CS3225	Drainage Outlet connection to the Existing Stormwater Drainage System along Ha Tsuen Road	92	16-Mar-19	16-Jun-19
CS3230	CLP Cable Duct and Draw Pits (within the Site)	100	28-Feb-19	07-Jun-19
CS3250	EVA (Road & Drainage)	654	29-Jun-18 A	12-Apr-20
CS3252	RC Trench and Odour Pipe (DO1, DO2)	121	28-Feb-19	28-Jun-19
CS3254	Process Pipe	121	08-Mar-19	06-Jul-19
CS3256	Drainage Pipe (Stormwater) incl. Surface Drainage at Site Platform & On Slope	121	16-Mar-19	14-Jul-19
CS3258	Emergency By-Pass Pipe	411	15-Jul-18 A	29-Aug-19
CS3260	Sewage Pipe	253	14-Dec-18 A	23-Aug-19
CS3262	Cable Duct and Draw Pits	180	28-Feb-19	26-Aug-19
CS3264	Road Formation	180	02-May-19	28-Oct-19
CS3276	WSD External Watermain Laying Works	180	11-Mar-19	06-Sep-19
CS3278	Internal Watermain Laying Works	150	11-Mar-19	07-Aug-19
Green Roof		79	09-Apr-19	26-Jun-19
CS3340	Administration Building and Maintenance Workshop	60	09-Apr-19	08-Jun-19
CS3350	Sludge Dewatering Building	60	23-Apr-19	21-Jun-19
CS3360	Chemical Building	60	28-Apr-19	26-Jun-19
Statutory Works		249	21-Mar-19	24-Nov-19
Electrical Supply & Energization - CLP		116	21-Mar-19	14-Jul-19
SR100	Enabling Works for Handover of EB1 Transformer Rooms to CLP	30	11-Apr-19	10-May-19
SR105	CLP Works in EB1 Transformer Rooms	60	11-May-19	09-Jul-19
SR110	LV Switchboard Installation & Cabling Works in EB1 Switch Rooms	55	09-May-19	02-Jul-19
SR115	Enabling Works for Handover of EB3 Transformer Room to CLP	40	06-Apr-19	15-May-19
SR120	CLP Works in EB3 Transformer Room	60	16-May-19	14-Jul-19
SR125	LV Switchboard Installation & Cabling Works in EB3 Switch Room	60	05-May-19	03-Jul-19
SR140	CLP Internal Cabling Works	80	21-Mar-19	08-Jun-19
Fire Services - FSD		185	23-May-19	24-Nov-19
SR300	FS Pump Room & Tank Installation (FH)	185	23-May-19	24-Nov-19
E&M Works		1089	27-Nov-16 A	21-Nov-19
Procurement		971	27-Nov-16 A	25-Jul-19
Chemically Enhanced Primary Treatment (CEPT)		586	10-Nov-17 A	18-Jun-19
EM3112	Manufacturing & Logistic (Major Equipment)	386	21-Feb-18 A	13-Mar-19
EM3116	Manufacturing & Logistic (Penstock, Pipe & Valve)	202	29-Nov-18 A	18-Jun-19
EM3118	CMS Preparation, Submission & Approval (Electrical)	486	10-Nov-17 A	10-Mar-19
EM3120	Manufacturing & Logistic (Electrical)	202	29-Nov-18 A	18-Jun-19



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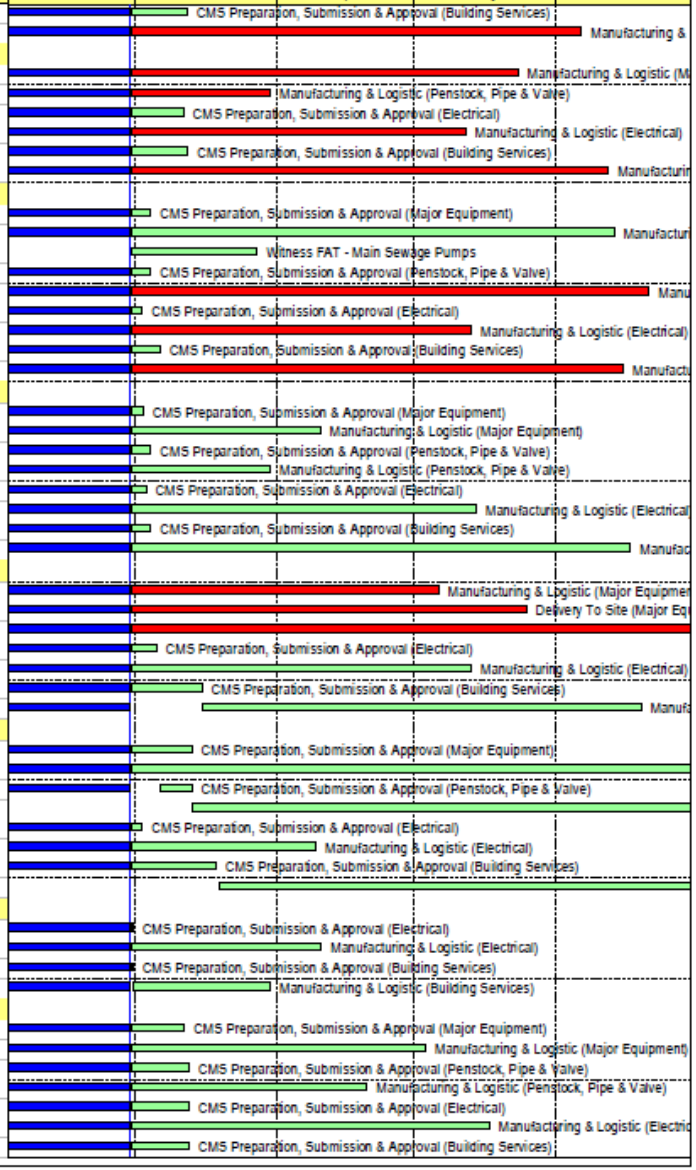
Activity ID	Activity Name	At Completion Duration	Start	Finish
EM3122	CMS Preparation, Submission & Approval (Building Services)	487	10-Nov-17 A	12-Mar-19
EM3124	Manufacturing & Logistic (Building Services)	190	29-Nov-18 A	06-Jun-19
System Control Flowmeter Chamber (SF)		579	10-Nov-17 A	12-Jun-19
EM3134	Manufacturing & Logistic (Major Equipment)	238	28-Sep-18 A	23-May-19
EM3138	Manufacturing & Logistic (Penstock, Pipe & Valve)	121	29-Nov-18 A	30-Mar-19
EM3140	CMS Preparation, Submission & Approval (Electrical)	487	10-Nov-17 A	11-Mar-19
EM3142	Manufacturing & Logistic (Electrical)	164	29-Nov-18 A	12-May-19
EM3144	CMS Preparation, Submission & Approval (Building Services)	487	10-Nov-17 A	12-Mar-19
EM3146	Manufacturing & Logistic (Building Services)	195	29-Nov-18 A	12-Jun-19
Inlet Work, Preliminary Treatment Units and Inlet Pumping Station (PTW & IPS)		898	04-Jan-17 A	21-Jun-19
EM3135	CMS Preparation, Submission & Approval (Major Equipment)	789	04-Jan-17 A	04-Mar-19
EM3137	Manufacturing & Logistic (Major Equipment)	186	10-Dec-18 A	13-Jun-19
EM3141	Witness FAT - Main Sewage Pumps	28	28-Feb-19	27-Mar-19
EM3635	CMS Preparation, Submission & Approval (Penstock, Pipe & Valve)	519	01-Oct-17 A	04-Mar-19
EM3645	Manufacturing & Logistic (Penstock, Pipe & Valve)	192	11-Dec-18 A	21-Jun-19
EM3655	CMS Preparation, Submission & Approval (Electrical)	518	01-Oct-17 A	02-Mar-19
EM3665	Manufacturing & Logistic (Electrical)	160	05-Dec-18 A	13-May-19
EM3675	CMS Preparation, Submission & Approval (Building Services)	521	01-Oct-17 A	06-Mar-19
EM3685	Manufacturing & Logistic (Building Services)	196	02-Dec-18 A	15-Jun-19
Solid Handling Building (SHB)		796	12-Apr-17 A	17-Jun-19
EM3145	CMS Preparation, Submission & Approval (Major Equipment)	690	12-Apr-17 A	02-Mar-19
EM3150	Manufacturing & Logistic (Major Equipment)	151	11-Nov-18 A	10-Apr-19
EM3695	CMS Preparation, Submission & Approval (Penstock, Pipe & Valve)	519	01-Oct-17 A	04-Mar-19
EM3705	Manufacturing & Logistic (Penstock, Pipe & Valve)	139	11-Nov-18 A	30-Mar-19
EM3715	CMS Preparation, Submission & Approval (Electrical)	518	01-Oct-17 A	03-Mar-19
EM3725	Manufacturing & Logistic (Electrical)	156	10-Dec-18 A	14-May-19
EM3735	CMS Preparation, Submission & Approval (Building Services)	519	01-Oct-17 A	04-Mar-19
EM3745	Manufacturing & Logistic (Building Services)	189	10-Dec-18 A	17-Jun-19
UV Disinfection Facility (UV)		599	21-Nov-17 A	13-Jul-19
EM3190	Manufacturing & Logistic (Major Equipment)	371	30-Apr-18 A	06-May-19
EM3192	Delivery To Site (Major Equipment)	166	10-Dec-18 A	25-May-19
EM3765	Manufacturing & Logistic (Penstock, Pipe & Valve)	213	12-Dec-18 A	13-Jul-19
EM3775	CMS Preparation, Submission & Approval (Electrical)	470	21-Nov-17 A	05-Mar-19
EM3785	Manufacturing & Logistic (Electrical)	153	12-Dec-18 A	13-May-19
EM3795	CMS Preparation, Submission & Approval (Building Services)	480	21-Nov-17 A	15-Mar-19
EM3805	Manufacturing & Logistic (Building Services)	161	10-Jan-19 A	19-Jun-19
Sludge Dewatering Building (SDB)		962	27-Nov-16 A	17-Jul-19
EM3175	CMS Preparation, Submission & Approval (Major Equipment)	836	27-Nov-16 A	13-Mar-19
EM3180	Manufacturing & Logistic (Major Equipment)	263	27-Oct-18 A	16-Jul-19
EM3815	CMS Preparation, Submission & Approval (Penstock, Pipe & Valve)	502	27-Oct-17 A	13-Mar-19
EM3825	Manufacturing & Logistic (Penstock, Pipe & Valve)	126	13-Mar-19	17-Jul-19
EM3835	CMS Preparation, Submission & Approval (Electrical)	492	27-Oct-17 A	02-Mar-19
EM3845	Manufacturing & Logistic (Electrical)	131	29-Nov-18 A	09-Apr-19
EM3855	CMS Preparation, Submission & Approval (Building Services)	508	27-Oct-17 A	18-Mar-19
EM3865	Manufacturing & Logistic (Building Services)	120	19-Mar-19	16-Jul-19
Sludge Skip Storage Building (SSSB)		584	04-Sep-17 A	10-Apr-19
EM3875	CMS Preparation, Submission & Approval (Electrical)	542	04-Sep-17 A	28-Feb-19
EM3885	Manufacturing & Logistic (Electrical)	133	29-Nov-18 A	10-Apr-19
EM3895	CMS Preparation, Submission & Approval (Building Services)	542	04-Sep-17 A	28-Feb-19
EM3905	Manufacturing & Logistic (Building Services)	122	29-Nov-18 A	30-Mar-19
Administration Building & Maintenance Workshop (AB & WS)		836	31-Jan-17 A	17-May-19
EM3125	CMS Preparation, Submission & Approval (Major Equipment)	770	31-Jan-17 A	11-Mar-19
EM3130	Manufacturing & Logistic (Major Equipment)	155	29-Nov-18 A	03-May-19
EM3915	CMS Preparation, Submission & Approval (Penstock, Pipe & Valve)	560	30-Aug-17 A	12-Mar-19
EM3925	Manufacturing & Logistic (Penstock, Pipe & Valve)	143	29-Nov-18 A	20-Apr-19
EM3935	CMS Preparation, Submission & Approval (Electrical)	560	30-Aug-17 A	12-Mar-19
EM3945	Manufacturing & Logistic (Electrical)	169	29-Nov-18 A	17-May-19
EM3955	CMS Preparation, Submission & Approval (Building Services)	560	30-Aug-17 A	12-Mar-19



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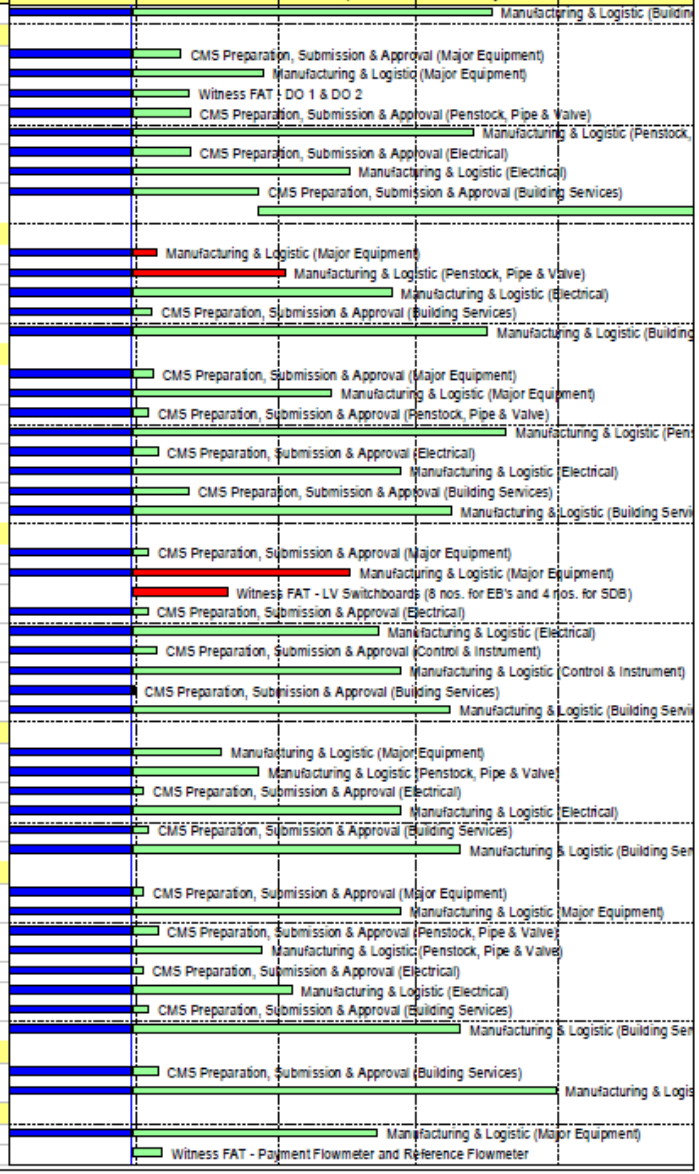
Activity ID	Activity Name	At Completion Duration	Start	Finish
EM3965	Manufacturing & Logistic (Building Services)	169	29-Nov-18 A	17-May-19
Deodorization Facilities No. 1 & 2 (DO 1 & DO 2)		927	10-Jan-17 A	25-Jul-19
EM3165	CMS Preparation, Submission & Approval (Major Equipment)	790	10-Jan-17 A	10-Mar-19
EM3170	Manufacturing & Logistic (Major Equipment)	122	27-Nov-18 A	28-Mar-19
EM3171	Witness FAT - DO 1 & DO 2	106	27-Nov-18 A	12-Mar-19
EM3172	CMS Preparation, Submission & Approval (Penstock, Pipe & Valve)	560	30-Aug-17 A	12-Mar-19
EM3173	Manufacturing & Logistic (Penstock, Pipe & Valve)	167	27-Nov-18 A	13-May-19
EM3975	CMS Preparation, Submission & Approval (Electrical)	560	30-Aug-17 A	12-Mar-19
EM3985	Manufacturing & Logistic (Electrical)	140	27-Nov-18 A	16-Apr-19
EM3995	CMS Preparation, Submission & Approval (Building Services)	575	30-Aug-17 A	27-Mar-19
EM4005	Manufacturing & Logistic (Building Services)	120	27-Mar-19	25-Jul-19
Chemical Building (CB)		555	08-Nov-17 A	16-May-19
EM3230	Manufacturing & Logistic (Major Equipment)	353	17-Mar-18 A	05-Mar-19
EM4025	Manufacturing & Logistic (Penstock, Pipe & Valve)	111	12-Dec-18 A	02-Apr-19
EM4045	Manufacturing & Logistic (Electrical)	135	12-Dec-18 A	25-Apr-19
EM4055	CMS Preparation, Submission & Approval (Building Services)	481	08-Nov-17 A	04-Mar-19
EM4065	Manufacturing & Logistic (Building Services)	156	12-Dec-18 A	16-May-19
Street Fire Hydrant Pump Room & GENSET Room (FH)		789	23-Mar-17 A	20-May-19
EM3275	CMS Preparation, Submission & Approval (Major Equipment)	712	23-Mar-17 A	04-Mar-19
EM3280	Manufacturing & Logistic (Major Equipment)	122	12-Dec-18 A	12-Apr-19
EM4075	CMS Preparation, Submission & Approval (Penstock, Pipe & Valve)	519	01-Oct-17 A	03-Mar-19
EM4085	Manufacturing & Logistic (Penstock, Pipe & Valve)	160	12-Dec-18 A	20-May-19
EM4095	CMS Preparation, Submission & Approval (Electrical)	521	01-Oct-17 A	05-Mar-19
EM4105	Manufacturing & Logistic (Electrical)	137	12-Dec-18 A	27-Apr-19
EM4115	CMS Preparation, Submission & Approval (Building Services)	527	01-Oct-17 A	12-Mar-19
EM4125	Manufacturing & Logistic (Building Services)	148	12-Dec-18 A	08-May-19
Electrical Buildings (EB1, EB2, EB3 & EB4)		804	23-Feb-17 A	08-May-19
EM3235	CMS Preparation, Submission & Approval (Major Equipment)	739	23-Feb-17 A	03-Mar-19
EM3240	Manufacturing & Logistic (Major Equipment)	130	08-Dec-18 A	16-Apr-19
EM3245	Witness FAT - LV Switchboards (8 nos. for EB's and 4 nos. for SDB)	21	28-Feb-19	20-Mar-19
EM3300	CMS Preparation, Submission & Approval (Electrical)	538	11-Sep-17 A	03-Mar-19
EM3305	Manufacturing & Logistic (Electrical)	136	08-Dec-18 A	22-Apr-19
EM3310	CMS Preparation, Submission & Approval (Control & Instrument)	540	11-Sep-17 A	05-Mar-19
EM3315	Manufacturing & Logistic (Control & Instrument)	141	08-Dec-18 A	27-Apr-19
EM3320	CMS Preparation, Submission & Approval (Building Services)	569	09-Aug-17 A	28-Feb-19
EM3325	Manufacturing & Logistic (Building Services)	151	08-Dec-18 A	08-May-19
Re-use Water Building (RW)		538	19-Nov-17 A	10-May-19
EM3200	Manufacturing & Logistic (Major Equipment)	265	28-Jun-18 A	19-Mar-19
EM4145	Manufacturing & Logistic (Penstock, Pipe & Valve)	133	15-Nov-18 A	27-Mar-19
EM4155	CMS Preparation, Submission & Approval (Electrical)	468	19-Nov-17 A	02-Mar-19
EM4165	Manufacturing & Logistic (Electrical)	137	12-Dec-18 A	27-Apr-19
EM4175	CMS Preparation, Submission & Approval (Building Services)	470	19-Nov-17 A	03-Mar-19
EM4185	Manufacturing & Logistic (Building Services)	150	12-Dec-18 A	10-May-19
DG Store & Chemical Waste Storage Building (DG) and Irrigation & Cleansing Water Pump Room (ICW)		717	24-May-17 A	10-May-19
EM3255	CMS Preparation, Submission & Approval (Major Equipment)	648	24-May-17 A	02-Mar-19
EM3260	Manufacturing & Logistic (Major Equipment)	137	12-Dec-18 A	27-Apr-19
EM4195	CMS Preparation, Submission & Approval (Penstock, Pipe & Valve)	451	10-Dec-17 A	05-Mar-19
EM4205	Manufacturing & Logistic (Penstock, Pipe & Valve)	106	12-Dec-18 A	28-Mar-19
EM4215	CMS Preparation, Submission & Approval (Electrical)	518	30-Sep-17 A	02-Mar-19
EM4225	Manufacturing & Logistic (Electrical)	113	12-Dec-18 A	03-Apr-19
EM4235	CMS Preparation, Submission & Approval (Building Services)	520	30-Sep-17 A	03-Mar-19
EM4245	Manufacturing & Logistic (Building Services)	150	12-Dec-18 A	10-May-19
Gatehouse (GH)		767	24-Apr-17 A	31-May-19
EM3285	CMS Preparation, Submission & Approval (Building Services)	681	24-Apr-17 A	05-Mar-19
EM3290	Manufacturing & Logistic (Building Services)	170	12-Dec-18 A	31-May-19
Payment Flowmeter Chamber (PF)		575	20-Nov-17 A	17-Jun-19
EM3210	Manufacturing & Logistic (Major Equipment)	207	28-Sep-18 A	22-Apr-19
EM3211	Witness FAT - Payment Flowmeter and Reference Flowmeter	7	28-Feb-19	06-Mar-19



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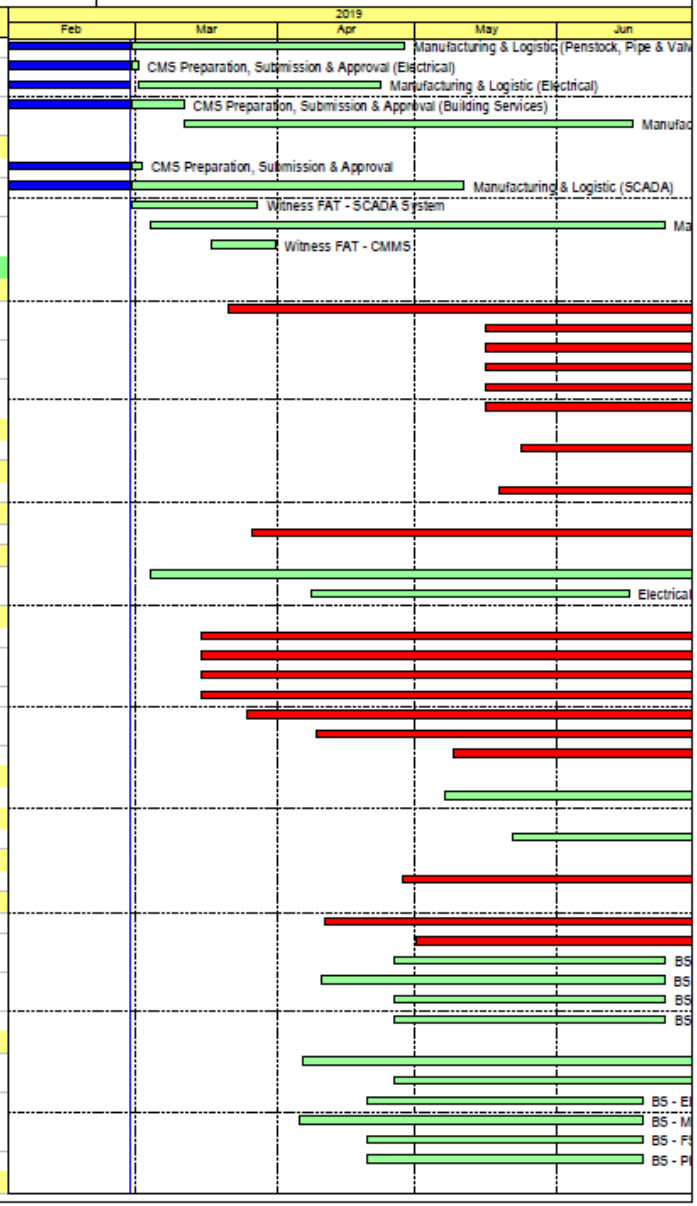
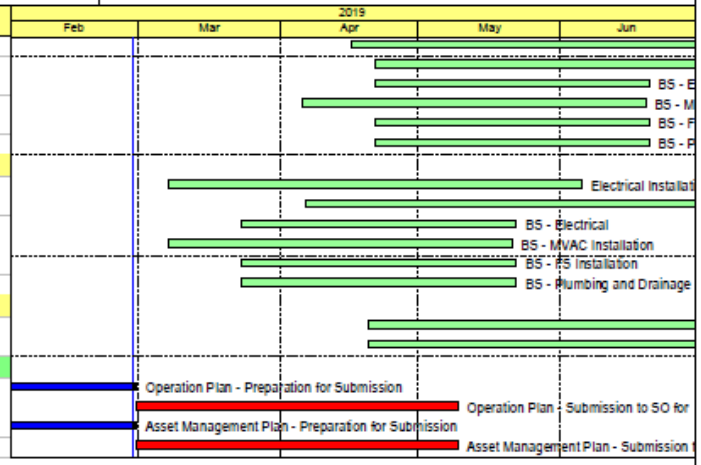
Activity ID	Activity Name	At Completion Duration	Start	Finish
EM4265	Manufacturing & Logistic (Penstock, Pipe & Valve)	139	11-Dec-18 A	28-Apr-19
EM4275	CMS Preparation, Submission & Approval (Electrical)	467	20-Nov-17 A	01-Mar-19
EM4285	Manufacturing & Logistic (Electrical)	143	02-Dec-18 A	23-Apr-19
EM4295	CMS Preparation, Submission & Approval (Building Services)	477	20-Nov-17 A	11-Mar-19
EM4305	Manufacturing & Logistic (Building Services)	98	11-Mar-19	17-Jun-19
SCADA and CMMS Systems		723	01-Jul-17 A	24-Jun-19
EM3330	CMS Preparation, Submission & Approval	609	01-Jul-17 A	02-Mar-19
EM3335	Manufacturing & Logistic (SCADA)	151	12-Dec-18 A	11-May-19
EM3340	Witness FAT - SCADA System	28	28-Feb-19	27-Mar-19
EM3345	Manufacturing & Logistic (CMMS)	112	04-Mar-19	24-Jun-19
EM3350	Witness FAT - CMMS	14	17-Mar-19	31-Mar-19
Installation		262	04-Mar-19	21-Nov-19
Chemically Enhanced Primary Treatment (CEPT)		176	21-Mar-19	13-Sep-19
EM1500	Plant (Mechanical) Installation	142	21-Mar-19	10-Aug-19
EM1505	Pipeworks	120	16-May-19	13-Sep-19
EM1510	Electrical Installation	75	16-May-19	30-Jul-19
EM1515	Cabling Works	120	16-May-19	13-Sep-19
EM1525	BS - MVAC Installation	120	16-May-19	13-Sep-19
EM1535	BS - Plumbing and Drainage Installation	120	16-May-19	13-Sep-19
System Control Flowmeter Chamber (SF)		60	24-May-19	22-Jul-19
EM1400	Plant (Mechanical) Installation	60	24-May-19	22-Jul-19
Inlet Work, Preliminary Treatment Units and Inlet Pumping Station (PTW & IPS)		180	19-May-19	14-Nov-19
EM1200	Plant (Mechanical) Installation	180	19-May-19	14-Nov-19
UV Disinfection Facility (UV)		240	26-Mar-19	21-Nov-19
EM1900	Plant (Mechanical) Installation	240	26-Mar-19	21-Nov-19
Sludge Dewatering Building (SDB)		210	04-Mar-19	29-Sep-19
EM1800	Plant (Mechanical) Installation	210	04-Mar-19	29-Sep-19
EM1810	Electrical Installation	70	08-Apr-19	16-Jun-19
Administration Building & Maintenance Workshop (AB & WS)		235	15-Mar-19	05-Nov-19
EM1100	SCADA System	180	15-Mar-19	11-Sep-19
EM1105	Plant Installation (WS)	180	15-Mar-19	11-Sep-19
EM1110	ELV System	180	15-Mar-19	11-Sep-19
EM1120	BS - MVAC Installation	180	15-Mar-19	11-Sep-19
EM1130	Passenger Lift	180	25-Mar-19	21-Sep-19
EM1140	BS - FS System & Control	180	09-Apr-19	06-Oct-19
EM1145	BS - Electrical	180	09-May-19	05-Nov-19
Deodorization Facilities No. 1 (DO 1)		90	07-May-19	04-Aug-19
EM1600	Plant (Mechanical) Installation	90	07-May-19	04-Aug-19
Deodorization Facilities No. 2 (DO 2)		90	22-May-19	20-Aug-19
EM1700	Plant (Mechanical) Installation	90	22-May-19	20-Aug-19
Chemical Building (CB)		120	28-Apr-19	26-Aug-19
EM2300	Plant (Mechanical) Installation	120	28-Apr-19	26-Aug-19
Electrical Building No.1 (EB1)		110	10-Apr-19	29-Jul-19
EM2400	Electrical Installation	90	11-Apr-19	09-Jul-19
EM2410	Cabling Works	90	01-May-19	29-Jul-19
EM2420	BS - Electrical	60	26-Apr-19	24-Jun-19
EM2425	BS - MVAC Installation	75	10-Apr-19	24-Jun-19
EM2430	BS - FS Installation	60	26-Apr-19	24-Jun-19
EM2435	BS - Plumbing and Drainage Installation	60	26-Apr-19	24-Jun-19
Electrical Building No.2 (EB2)		111	05-Apr-19	25-Jul-19
EM2500	Electrical Installation	90	06-Apr-19	05-Jul-19
EM2510	Cabling Works	90	26-Apr-19	25-Jul-19
EM2520	BS - Electrical	60	20-Apr-19	19-Jun-19
EM2525	BS - MVAC Installation	75	05-Apr-19	19-Jun-19
EM2530	BS - FS Installation	60	20-Apr-19	19-Jun-19
EM2535	BS - Plumbing and Drainage Installation	60	20-Apr-19	19-Jun-19
Electrical Building No.3 (EB3)		106	05-Apr-19	20-Jul-19



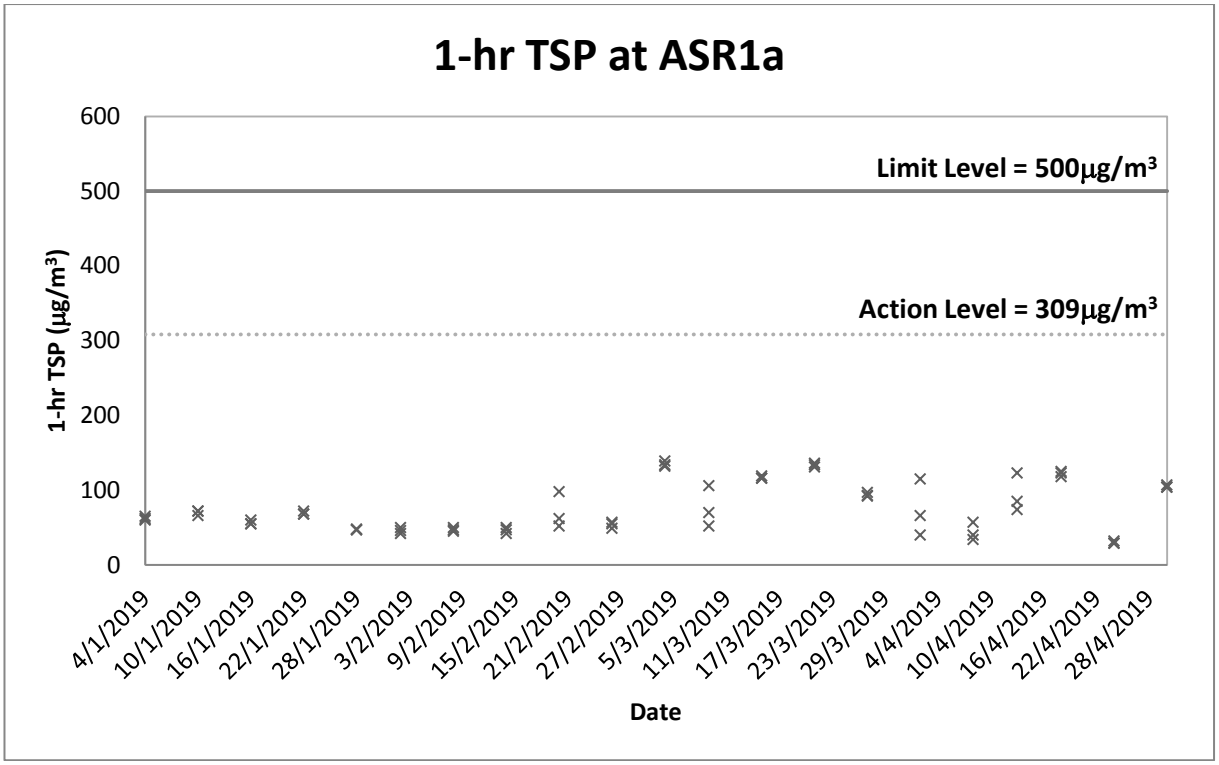
DATA DATE: 28-Feb-19 | LAYOUT: SW Project PHase 1 Rev 10 (3M 31Dec18) |

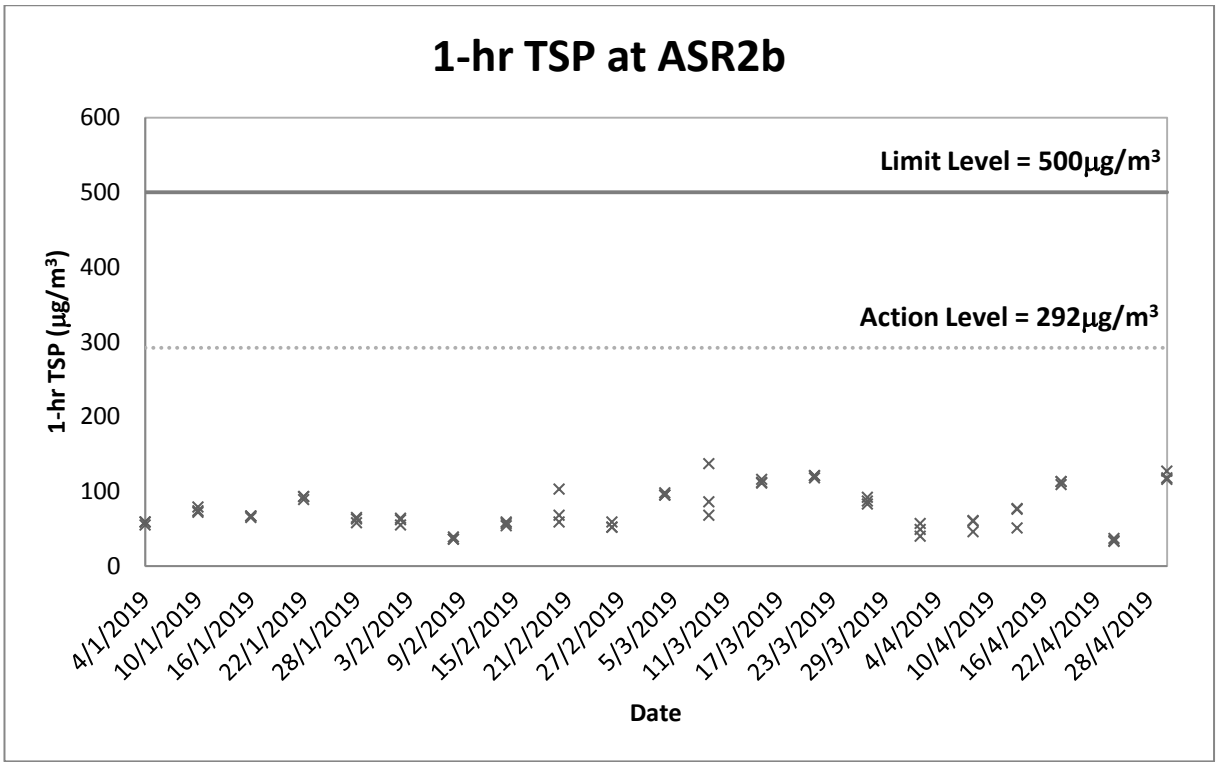
Activity ID	Activity Name	At Completion Duration	Start	Finish
EM2600	Electrical Installation	90	16-Apr-19	15-Jul-19
EM2610	Cabling Works	90	21-Apr-19	20-Jul-19
EM2620	BS - Electrical	60	21-Apr-19	20-Jun-19
EM2625	BS - MVAC Installation	75	05-Apr-19	19-Jun-19
EM2630	BS - FS Installation	60	21-Apr-19	20-Jun-19
EM2635	BS - Plumbing and Drainage Installation	60	21-Apr-19	20-Jun-19
Electrical Building No.4 (EB4)		120	07-Mar-19	05-Jul-19
EM3400	Electrical Installation	90	07-Mar-19	05-Jun-19
EM3410	Cabling Works	90	06-Apr-19	05-Jul-19
EM3420	BS - Electrical	60	23-Mar-19	22-May-19
EM3425	BS - MVAC Installation	75	07-Mar-19	21-May-19
EM3430	BS - FS Installation	60	23-Mar-19	22-May-19
EM3435	BS - Plumbing and Drainage Installation	60	23-Mar-19	22-May-19
Payment Flowmeter Chamber (PF)		120	20-Apr-19	17-Aug-19
EM2100	Plant (Mechanical) Installation	120	20-Apr-19	17-Aug-19
EM2105	Pipeworks	120	20-Apr-19	17-Aug-19
Testing & Commissioning		341	03-Jun-18 A	09-May-19
TC030	Operation Plan - Preparation for Submission	271	03-Jun-18 A	28-Feb-19
TC035	Operation Plan - Submission to SO for Review and Approval	70	28-Feb-19	09-May-19
TC040	Asset Management Plan - Preparation for Submission	271	03-Jun-18 A	28-Feb-19
TC045	Asset Management Plan - Submission to SO for Review and Approval	70	28-Feb-19	09-May-19

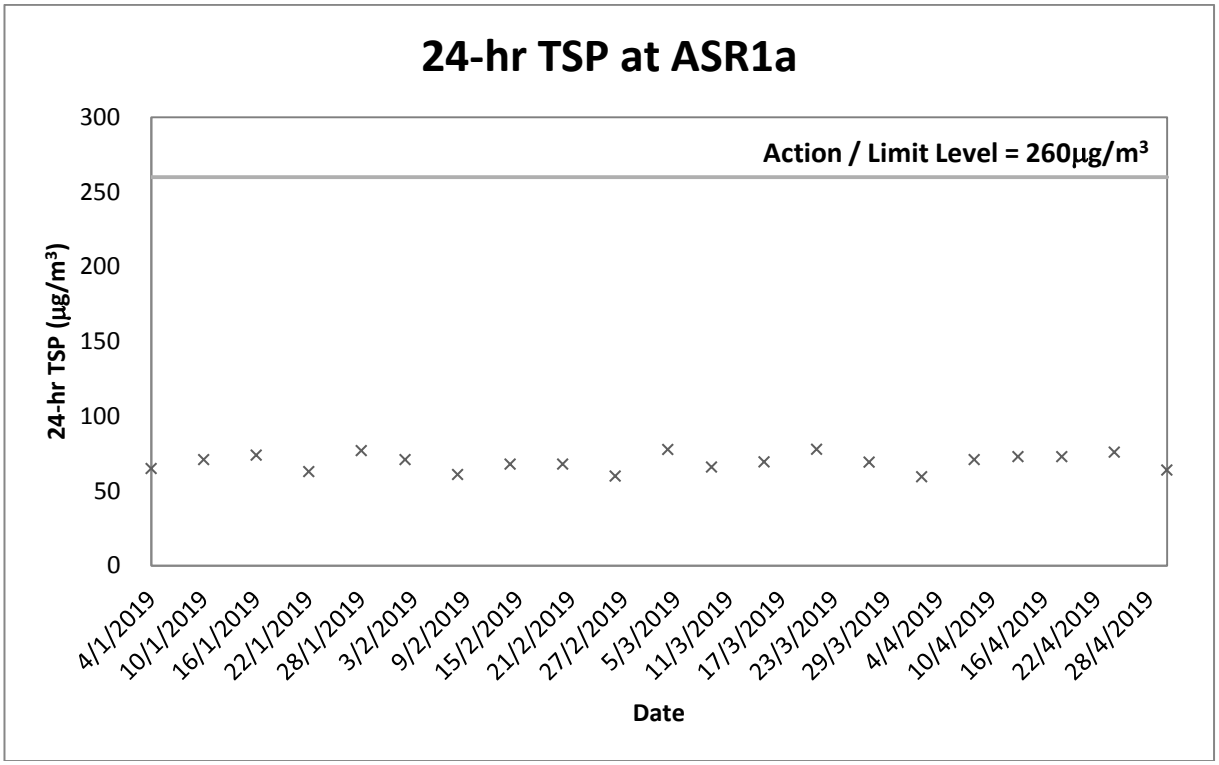


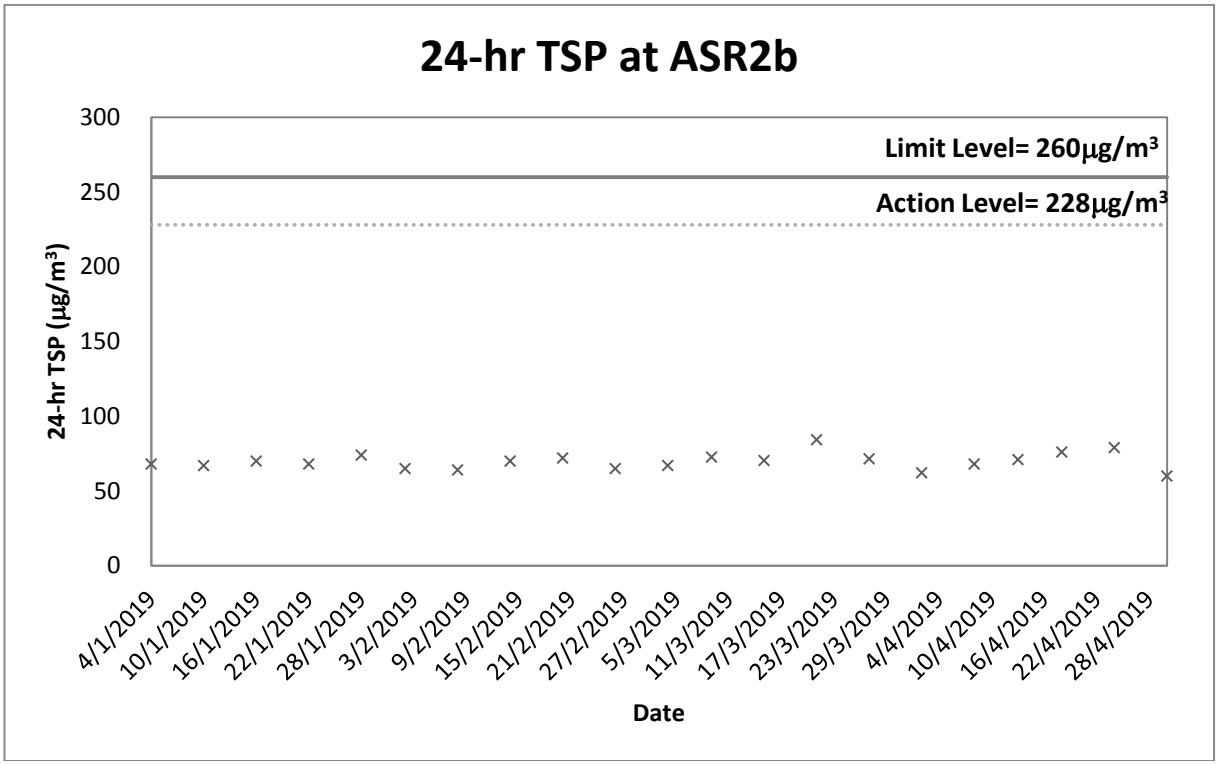
Appendix D

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
4/1/2019
10/1/2019
16/1/2019
22/1/2019
28/1/2019
3/2/2019
9/2/2019
15/2/2019
21/2/2019
27/2/2019
5/3/2019
11/3/2019
17/3/2019
23/3/2019
29/3/2019
4/4/2019
10/4/2019
16/4/2019
22/4/2019
28/4/2019
Date

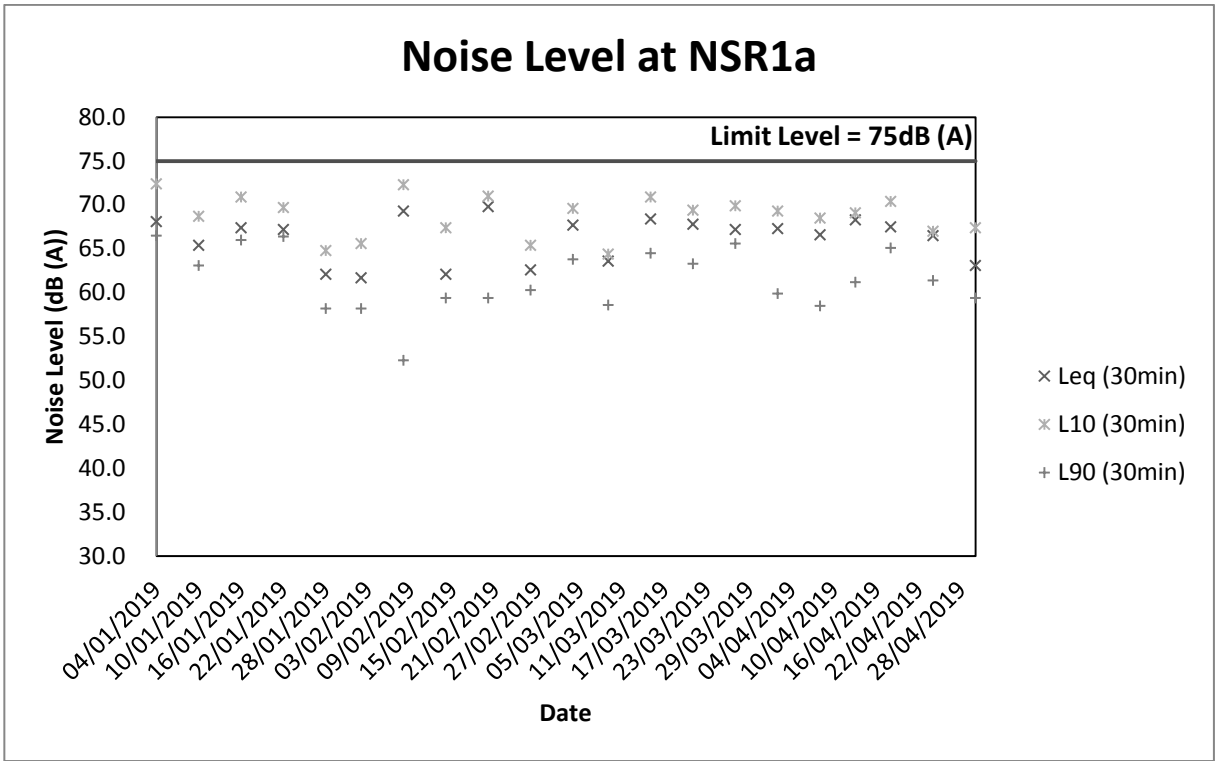

1-hr TSP at ASR2b
Limit Level = 500μg/m³
Action Level = 292μg/m³
1-hr TSP (μg/m³)
600
500
400
300
200
100
0
4/1/2019
10/1/2019
16/1/2019
22/1/2019
28/1/2019
3/2/2019
9/2/2019
15/2/2019
21/2/2019
27/2/2019
5/3/2019
11/3/2019
17/3/2019
23/3/2019
29/3/2019
4/4/2019
10/4/2019
16/4/2019
22/4/2019
28/4/2019
Date

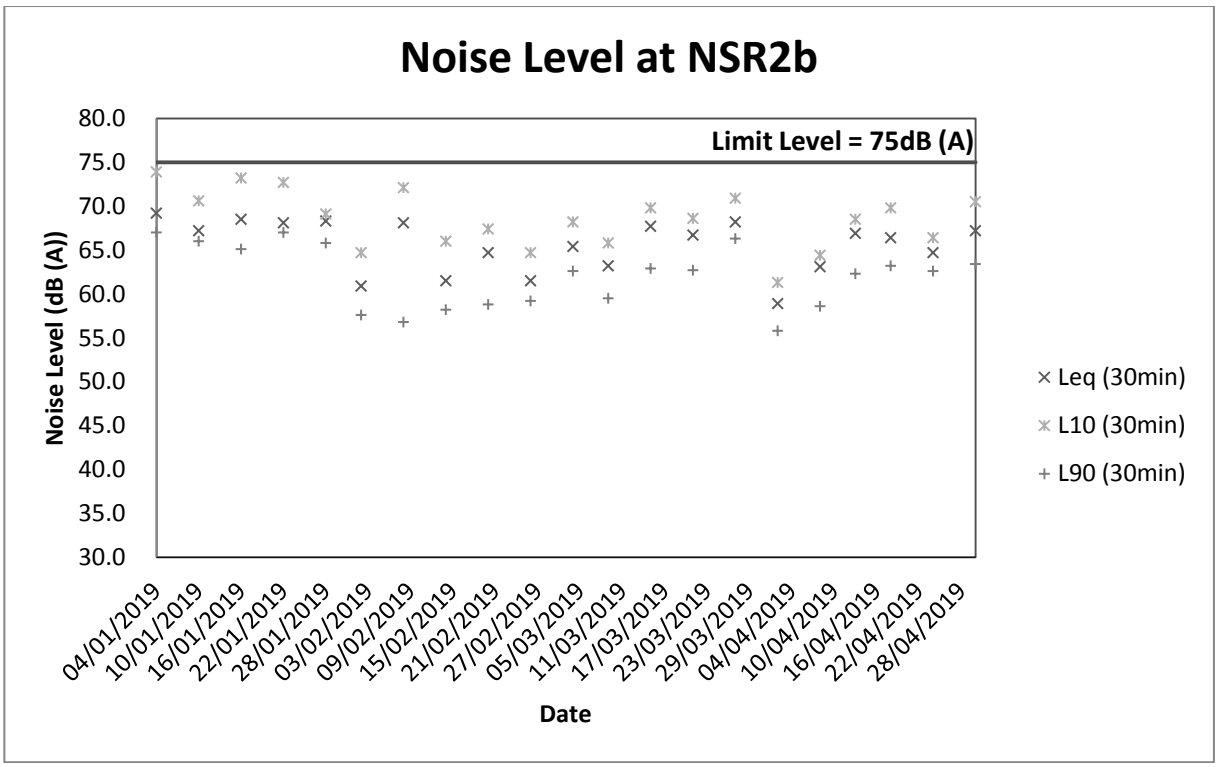

24-hr TSP at ASR1a
Action / Limit Level = 260μg/m³
24-hr TSP (μg/m³)
300
250
200
150
100
50
0
4/1/2019
10/1/2019
16/1/2019
22/1/2019
28/1/2019
3/2/2019
9/2/2019
15/2/2019
21/2/2019
27/2/2019
5/3/2019
11/3/2019
17/3/2019
23/3/2019
29/3/2019
4/4/2019
10/4/2019
16/4/2019
22/4/2019
28/4/2019
Date


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
4/1/2019
10/1/2019
16/1/2019
22/1/2019
28/1/2019
3/2/2019
9/2/2019
15/2/2019
21/2/2019
27/2/2019
5/3/2019
11/3/2019
17/3/2019
23/3/2019
29/3/2019
4/4/2019
10/4/2019
16/4/2019
22/4/2019
28/4/2019
Date

Appendix E

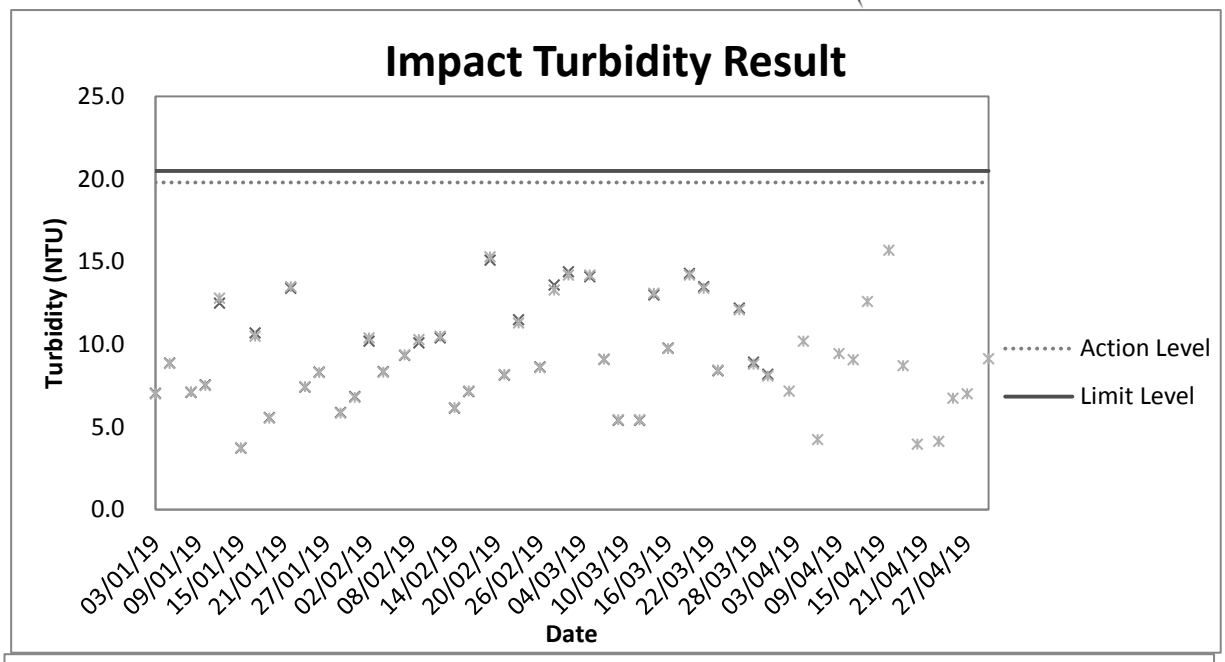
Graphical Plots of Impact Noise Monitoring Data

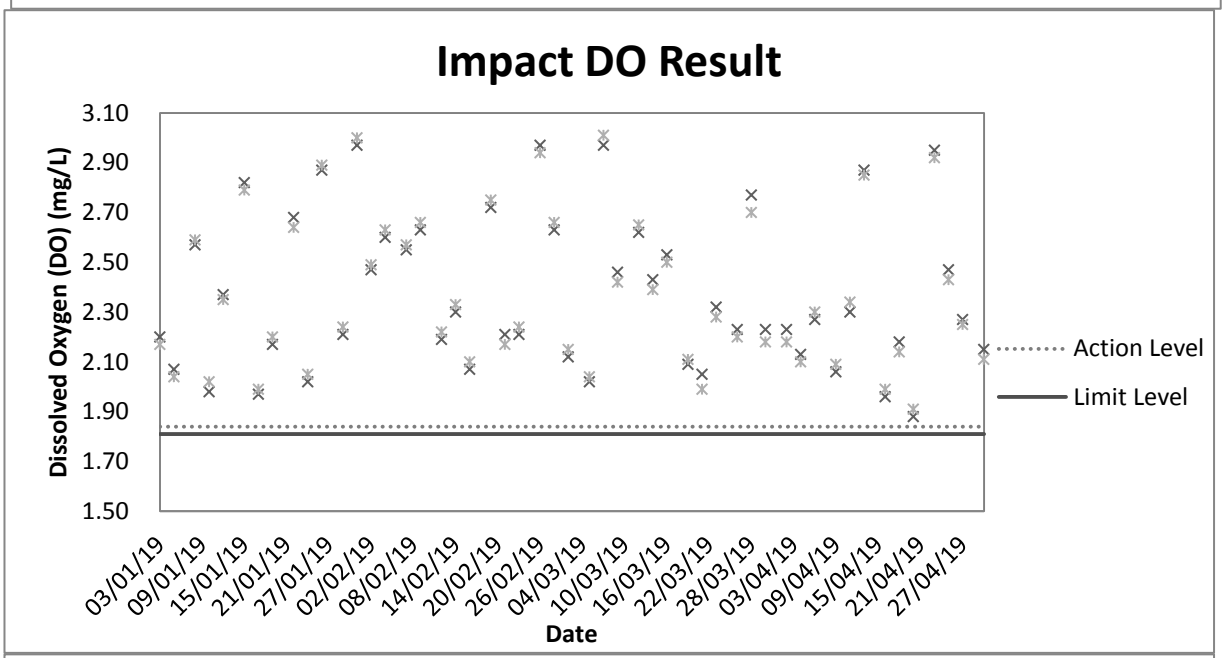

Noise Level at NSR1a
Limit Level = 75dB (A)
Noise Level (dB (A))
80.0
75.0
70.0
65.0
60.0
55.0
50.0
45.0
40.0
35.0
30.0
04/01/2019
10/01/2019
16/01/2019
22/01/2019
28/01/2019
03/02/2019
09/02/2019
15/02/2019
21/02/2019
27/02/2019
05/03/2019
11/03/2019
17/03/2019
23/03/2019
29/03/2019
04/04/2019
10/04/2019
16/04/2019
22/04/2019
28/04/2019
Date
Leq (30min)
L10 (30min)
L90 (30min)

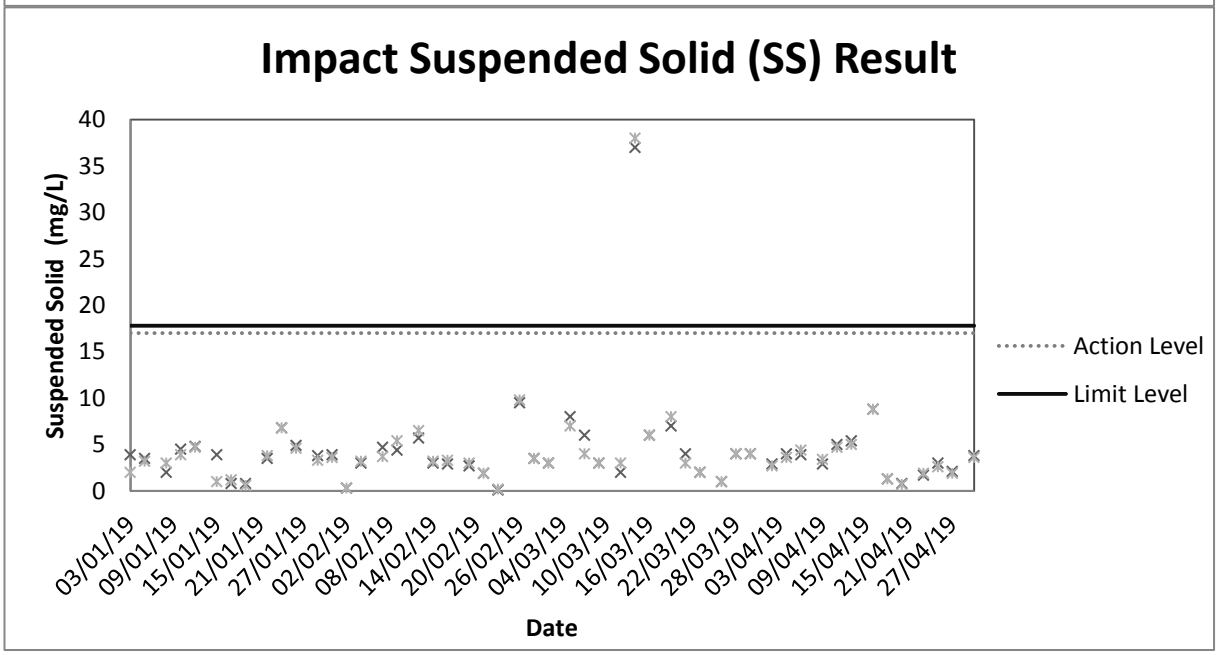

Noise Level at NSR2b
Limit Level = 75dB (A)
Noise Level (dB (A))
80.0
75.0
70.0
65.0
60.0
55.0
50.0
45.0
40.0
35.0
30.0
04/01/2019
10/01/2019
16/01/2019
22/01/2019
28/01/2019
03/02/2019
09/02/2019
15/02/2019
21/02/2019
27/02/2019
05/03/2019
11/03/2019
17/03/2019
23/03/2019
29/03/2019
04/04/2019
10/04/2019
16/04/2019
22/04/2019
28/04/2019
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
03/01/19
09/01/19
15/01/19
21/01/19
27/01/19
02/02/19
08/02/19
14/02/19
20/02/19
26/02/19
04/03/19
10/03/19
16/03/19
22/03/19
28/03/19
03/04/19
09/04/19
15/04/19
21/04/19
27/04/19
Date
Action Level
Limit Level


Impact DO Result
Dissolved Oxygen (DO) (mg/L)
3.10
2.90
2.70
2.50
2.30
2.10
1.90
1.70
1.50
03/01/19
09/01/19
15/01/19
21/01/19
27/01/19
02/02/19
08/02/19
14/02/19
20/02/19
26/02/19
04/03/19
10/03/19
16/03/19
22/03/19
28/03/19
03/04/19
09/04/19
15/04/19
21/04/19
27/04/19
Date
Action Level
Limit Level


Impact Suspended Solid (SS) Result
Suspended Solid (mg/L)
40
35
30
25
20
15
10
5
0
03/01/19
09/01/19
15/01/19
21/01/19
27/01/19
02/02/19
08/02/19
14/02/19
20/02/19
26/02/19
04/03/19
10/03/19
16/03/19
22/03/19
28/03/19
03/04/19
09/04/19
15/04/19
21/04/19
27/04/19
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, February 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	1022.1	20.4#	17.6	16.2#	11.2	67	0.0	030	7.5
02	1018.2	25.0#	19.1	16.8#	15.7	81	0.0	060	7.0
03	1017.2	27.4	21.7	18.2	18.6	84	0.0	320	3.8
04	1018.0	26.9#	21.0	17.3#	18.5	87	0.0	110	4.3
05	1017.0	25.6	21.0	18.1	17.7	82	0.0	170	6.8
06	1014.3	26.7	22.2	19.2	19.6	86	0.0	170	7.2
07	1014.6	27.5	23.2	20.4	19.6	81	0.0	170	9.0
08	1014.9	27.3	22.0	19.1	19.2	85	0.0	110	7.4
09	1017.4	24.0	20.7	19.0	18.5	87	0.0	070	8.3
10	1021.4	21.3	19.2	18.1	17.0	87	0.0	070	9.8
11	1024.7	19.3	17.1	15.9	14.3	83	0.0	060	7.3
12	1024.2	23.6	18.6	14.7	15.7	84	0.0	060	6.5
13	1021.8	26.1#	20.9	17.6#	17.8	83	0.0	050	2.8
14	1020.3	26.1#	21.6	18.3#	18.0	81	0.0	070	6.0
15	1019.6	24.6	21.1	18.2	18.5	85	0.0	060	5.3
16	1017.7	28.2	22.6	18.9	18.6	80	0.0	180	6.8
17	1017.5	21.9	19.8	18.1	17.1	84	0.0	070	10.0
18	1015.2	19.8#	18.2	17.1#	16.8	92	22.5	090	8.5
19	1016.5	26.2#	20.8	17.3#	19.3	92	15.0	060	3.6
20	1018.1	26.9#	23.4	20.6#	21.7	91	0.0	160	7.5
21	1017.0	27.2	23.1	19.9	20.5	86	0.0	170	8.0
22	1017.5	24.7	20.1	17.4	16.5	81	1.0	340	6.1
23	1016.1	20.2	17.1	13.2	15.1	88	5.0	060	8.8
24	1017.6	17.9#	14.9	12.2#	12.5	86	1.5	360	5.4
25	1018.1	18.1#	16.0	13.6#	13.6	86	0.5	050	4.6
26	1017.5	23.3#	18.7	15.6#	16.6	88	0.0	060	6.6
27	1015.1	26.4#	21.7	18.4#	18.8	85	0.0	060	5.6
28	1014.5	27.9	22.6	19.3	19.8	86	0.0	180	4.3

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, March 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	1015.8	25.3#	21.6	20.0#	19.3	87	0.0	070	7.0
02	1012.4	27.1	22.3	19.1	19.5	85	0.0	160	7.0
03	1011.3	25.1	21.3	18.4	19.2	89	10.5	160	4.8
04	1013.6	24.8	20.6	17.6	17.5	84	9.0	070	8.5
05	1011.7	26.3	22.6	18.5	20.5	89	29.5	160	8.8
06	1013.1	23.5	21.0	19.5	20.0	94	9.5	050	6.0
07	1016.2	19.5	16.7	15.5	16.2	97	29.5	040	6.5
08	1016.0	18.4#	16.7	15.0#	15.5	93	4.0	080	8.8
09	1012.4	18.7	17.6	16.5	17.2	98	11.5	050	4.6
10	1014.3	17.2#	16.6	16.1#	15.6	94	5.5	350	4.3
11	1015.3	23.4	17.6	14.5	14.5	83	3.0	030	4.0
12	1016.4	24.2	18.9	14.5	15.2	81	0.0	060	4.3
13	1017.6	26.0	20.8	16.1	15.3	73	0.0	080	6.4
14	1018.5	21.8#	20.4	18.4#	17.4	84	7.5	080	5.4
15	1021.1	18.8#	17.8	16.7#	15.0	84	2.0	050	6.0
16	1020.1	23.6	20.1	16.8	12.8	66	0.0	070	6.5
17	1018.6	25.4#	21.4	19.6#	16.4	73	0.0	070	7.0
18	1016.6	26.0#	21.5	18.6#	18.9	86	0.0	040	3.9
19	1014.7	27.9#	23.2	19.3#	20.1	84	0.0	170	6.7
20	1012.7	27.2	24.2	22.1	21.5	86	0.0	170	8.2
21	1011.2	28.2#	25.0	22.3#	22.1	85	0.0	160	7.2
22	1011.7	27.8	25.4	23.3	23.2	88	0.0	160	6.5
23	1017.1	25.1	19.6	15.3	18.4	93	2.0	060	9.1
24	1018.3	18.0	16.4	14.3	15.5	95	1.5	040	6.7
25	1017.1	22.0#	19.4	16.6#	17.8	91	1.0	330	3.9
26	1018.2	27.0#	22.2	19.7#	19.6	86	0.0	050	5.7
27	1016.9	27.5	22.7	19.9	20.0	85	0.0	060	5.3
28	1012.5	28.8	24.1	20.6	21.7	87	0.0	170	4.3
29	1010.3	27.5	24.6	22.3	22.4	88	1.0	170	4.5
30	1013.1	25.9	23.2	21.4	21.0	88	0.0	050	4.8
31	1016.3	25.0	22.5	21.2	19.0	81	0.0	100	10.1

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, April 2019

Day	Mean Pressure (hPa)	Air Temperature			Mean Dew Point (deg. C)	Mean Relative Humidity (%)	Total Rainfall (mm)	Prevailing Wind Direction (degrees)
		Absolute Daily Max (deg. C)	Mean (deg. C)	Absolute Daily Min (deg. C)				
01	1019.3	21.6	20.3	19.7	16.8	81	91	Trace
02	1018.2	23.0	20.7	18.9	16.3	76	89	Trace
03	1016.9	25.7	22.8	20.7	19.0	80	85	Trace
04	1016.7	23.8	21.7	20.4	18.6	83	86	Trace
05	1014.5	27.4	24.0	20.9	19.5	76	37	0.0
06	1013.0	28.1	25.1	22.4	21.0	79	27	0.0
07	1012.5	28.0	25.7	23.7	21.9	80	48	0.0
08	1011.6	29.9	26.7	25.1	23.0	80	80	0.0
09	1011.1	28.9	26.6	25.5	23.1	81	79	0.0
10	1010.9	30.1	27.1	25.3	23.2	80	79	0.0
11	1010.0	29.9	27.3	25.3	23.7	81	84	0.7
12	1013.3	25.2	22.3	21.0	20.3	89	91	6.1
13	1014.3	22.3	21.2	20.3	19.9	92	98	3.8
14	1013.8	24.4	22.7	21.9	20.9	90	92	10.4
15	1014.4	23.1	22.1	20.9	19.4	85	91	1.1
16	1012.6	23.6	21.2	19.5	19.6	91	87	9.2
17	1012.2	26.1	23.5	21.5	20.7	85	77	0.0
18	1010.0	25.0	24.0	23.0	22.1	90	91	6.7
19	1007.7	28.6	23.7	21.3	22.3	93	90	75.8
20	1007.2	26.2	23.3	21.9	22.5	95	93	43.6
21	1008.0	30.1	26.2	23.2	24.0	88	81	0.3
22	1009.3	30.1	27.5	25.6	24.5	84	72	0.0
23	1010.4	31.0	28.0	26.0	24.3	81	58	0.0
24	1009.9	31.2	28.0	26.2	23.7	78	57	0.0
25	1009.3	31.1	28.5	26.4	24.0	77	39	0.0
26	1010.4	31.5	28.4	26.2	24.7	81	58	0.9
27	1012.8	26.4	24.9	22.3	22.4	86	91	16.6
28	1013.2	26.9	24.3	22.7	22.4	89	85	3.1
29	1010.9	29.2	26.4	24.7	23.8	86	71	0.0
30	1008.0	28.8	26.7	25.3	23.3	82	83	7.5
Mean/Total	1012.1	27.2	24.7	22.9	21.7	84	76	185.8
Normal[§]	1012.9	25.0	22.6	20.8	19.4	83	81	174.7

Remark(s):

1. *Trace means rainfall less than 0.05 mm*
2. *§ 1981-2010 Climatological Normal*
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: 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	0.632	0.000	0.000	0.000	0.632	0.637	0.000	0.300	0.000	0.000	87.830
Mar	0.750	0.000	0.000	0.000	0.750	0.182	0.000	0.000	0.000	0.000	103.440
Apr	0.625	0.000	0.000	0.000	0.625	0.024	0.000	0.200	0.000	0.000	129.800
May											
Jun											
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
Total	2.995	0.000	0.000	0.000	2.995	2.990	0.000	0.500	0.000	0.000	376.890

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.

Appendix K

Investigation Reports on Action Level or Limit Level Non-compliance

Report No. **003**
Monitoring Date **14 March 2019**

The Action and Limit Levels of suspended solids (SS) determined from baseline monitoring data are reproduced below:

Monitoring Parameter	Action Level (AL)	Limit Level (LL)
Suspended Solid (mg/L)	17.0	17.8

Suspended Solid (in mg/L)

Monitoring Station	Monitoring Duration	Result			Level Exceedance
		Trial 1	Trial 2	Average	
R1b	13:15 to 13:26	37.4	38.4	37.9	Limit

Investigation Results:

a) Causes of exceedances

Exceedance was not due to construction works under Contract No. DC/2013/10 because:

- The surface runoff and wastewater generated from the construction activities in different sections of the construction sites was collected and stored in the temporary storage pool and then transferred to the Wetsep for proper treatment prior to discharge as shown in **Appendix A**. The effluent was thus brought into an acceptable minimum level and also complied with the requirements specified in the discharge license before discharge.
- According to the monthly checklist of Wetsep provided by the contractor as shown in **Appendix B**, during 12 to 14 March 2019, there were no malpractice or abnormal performance recorded.
- Besides, effluent water sample was scheduled to be collected on 12 March 2019 at P8. As per the discharge license requirement, the results complied with the discharge license requirement. The effluent quality report was shown in **Appendix C**. Thus, the effluent discharged from the construction site was unlikely to deteriorate the water quality of Tin Shui Wai nullah and resulted in suspended solids exceedance at R1b.
- Thus, the exceedance of water samples taken from 13:15 to 13:26pm on 14 March 2019 was considered as non-Project related.

b) Action required under the action plan

Refer to Table 4.4 of the EM&A Manual.

c) Action taken under the action plan

1. Not applicable as suspended solids was not measured in-situ;
2. After considered the above mentioned investigation results, it appears that it was unlikely that the suspended solids exceedance was attributed to the work site of this Contract;
3. The exceedance was informed to IEC, Contractors and EPD;
4. Monitoring data, all plant, equipment and Contractor's working methods were checked;
5. Mitigation measures and recommendations were provided in item d).
6. The water quality monitoring results of 16 March 2019 was shown below:

Test Parameters	Trial 1	Trial 2	Average	Action Level	Limit Level
Turbidity (NTU)	9.78	9.75	9.77	19.8	20.5
Dissolved Oxygen (mg/L)	2.53	2.50	2.52	1.84	1.81
Suspended Solid (mg/L)	6.2	6.3	6.3	17.0	17.8

The results of suspended solid of the water samples collected on 16 March 2019 were under the action limit.

d) ET's conclusions and recommendations for mitigation

- All relevant water quality mitigation measures were checked to be fully implemented including provision of site drainage systems and treatment facilities, maintaining the existing silt trap to ensure good efficiency of wheel wash facilities, transferring the runoffs and wastewater to the Wetsep for removal of the suspended solids and other pollutants in order to ensure the treated effluent complied with the requirements specified in the discharge license.

- The Contractor was reminded to ensure all construction activities that generate wastewater with high concentrations of suspended solids (SS) should be collected to sedimentation tanks or package treatment systems for proper treatment prior to discharge.

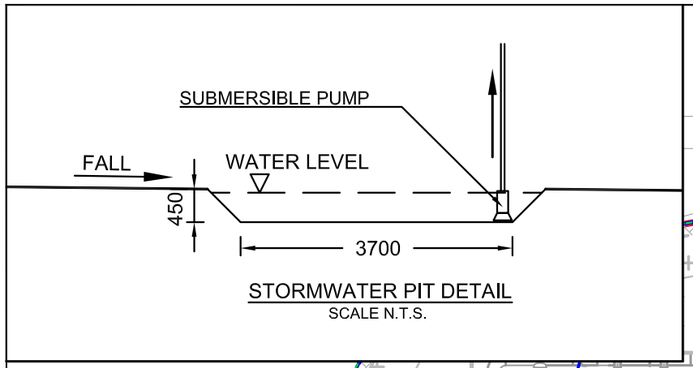
e) Contractor's actions to implement the mitigation

- All construction activities that generate wastewater with high concentrations of suspended solids (SS) like wheel washing etc. was collected to sedimentation tanks or package treatment systems for proper treatment prior to discharge.
- All silt removal facilities, channels and manholes was maintained and any deposited silt and grit was removed regularly.

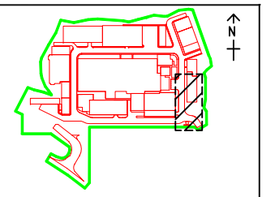
Prepared by: _____
LO, Ting Yi

Certified by: _____
LAU, Chi Leung
Environmental Team Leader

Appendix A



STORMWATER PIT DETAIL
SCALE N.T.S.



KEY PLAN

LEGEND:

- SITE BOUNDARY
- SEDIMENTATION TANK
- WETSEP
- WHEEL WASHING BAY
- STORMWATER PIT
- (585) EXCAVATED AREA CATCHMENT EXTENT (CATCHMENT AREA BOUNDED)
- (585) GROUND LEVEL CATCHMENT EXTENT (CATCHMENT AREA BOUNDED)
- TOE BERM UNDER HOARDING
- WASTEWATER FLOW PATH
- TREATED WATER FLOW PATH
- DISCHARGE POINT
- SAMPLING POINT
- ELS LAYOUT
- SUBMERSIBLE PUMP

REV.	DATE	BY	DESCRIPTION
J	25/02/19	JS	REVISING ROUTING
I	10/10/18	JS	REVISING ROUTING
H	19/07/17	JS	REVISING ROUTING
G	24/03/17	JS	REVISING ROUTING

THE GOVERNMENT OF HONG KONG SPECIAL ADMINISTRATIVE REGION
DRAINAGE SERVICES DEPARTMENT

SUPERVISING OFFICER
AECOM

CONTRACTOR
ATAL – Degremont – China Harbour Joint Venture

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

DDA PACKAGE NO:

DRAWING TITLE:
PROPOSED SITE DRAINAGE PLAN
AT WORKS AREA – PORTION P1 TO P4

DESIGNED	CHECKED	APPROVED	
JS	JS		
CAD FILE NO.	DRAWN	SCALE	DATES
	CYC	1:750(A3)	25/02/2019

DRAWING NO. DC201310-S-SW-SK-00020 REV. J

Appendix B

DC/2013/10

Design , Build and operate

San Wai Sewage Treatment Works Phase 1

ATAL-Degremont-China Harbour Joint Venture

Checklist for Using Wetsep Treatment Tank

環保缸檢查清單

位置: P8 月份: 3

Date 日期			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
A. Condition Check 現況檢測																																	
Item 項目	Requirement 要求	Frequency 檢查密度																															
A1	No leakage found in connections 喉通接駁良好，無漏水情況	Every 7 days 每 7 天	✓						✓						✓						✓												
A2	Good condition of tank, platform and secure ground condition nearby 缸身，鐵台情況良好及附近環境穩固	Every 7 days 每 7 天	✓						✓						✓						✓												
A3	Chemicals stored with cover to prevent getting wet 化學物品存放在有蓋範圍以免沾濕	Every 3 days 每 3 天	✓			✓			✓				✓			✓				✓			✓				✓						
A4	Chemicals sufficient for at least 7 days use 化學物品足夠應付 7 日所需	Every 3 days 每 3 天	✓			✓			✓				✓			✓				✓			✓				✓						
A5	Good condition of discharge point 排水點暢通無阻，排水良好	Every 7 days 每 7 天	✓						✓						✓						✓												

** 註 *Note* :

檢查結果 *Inspection Result*

✓ - 良好狀況 *Satisfactory*

✗ - 需改善及更換 *Need Improvement & Replacement*

DC/2013/10

Design , Build and operate

San Wai Sewage Treatment Works Phase 1

ATAL-Degremont-China Harbour Joint Venture

Date 日期			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
A6	Good condition of discharge point 排水點暢通無阻，排水良好	Every 7 days 每 7 天	✓						✓						✓						✓												
A7	Sludge ready to be disposed off 泥漿池已曬乾並可準備處理	Every 3 days 每 3 天	✓			✓			✓				✓			✓				✓			✓				✓						
A8	No loosen object/material left in tank may result in blockage 沒有大件的物件/物料留在缸內造成阻塞	Every 3 days 每 3 天	✓			✓			✓				✓			✓				✓			✓				✓						
A9	Sample at effluent and compare with standard solution 抽取水辦和樣辦比較	Every day 每天	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓						
B. Tank Operation 基本運作																																	
Item 項目	Requirement 要求	Frequency 檢查密度																															
B1	Water level of dosage tanks more than 20% 白药，黃药，酸桶水量不少於 20%	Every day 每天	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓						
B2	Stirrer functioning properly 白药，黃药內攪拌器運作正常	Every day 每天	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓						

** 註 *Note* :

檢查結果 *Inspection Result*

✓ - 良好狀況 *Satisfactory*

✗ - 需改善及更換 *Need Improvement & Replacement*

DC/2013/10

Design , Build and operate

San Wai Sewage Treatment Works Phase 1

ATAL-Degremont-China Harbour Joint Venture

			Date 日期	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
B3	pH value maintain between 6-10 錶板上酸鹼度維持在 6-10pH 值	Every day 每天		✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓						
B4	Release sludge from Wetsep to sludge pool 排放環保缸泥漿至泥漿池	Every day 每天		✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓						
B5	Washing Wetsep tank 清洗環保缸	Every 3 days 每 3 天		✓			✓			✓				✓			✓				✓			✓				✓						
B6	No leakage found in sedimentation tank 沉澱缸無漏水情況	Every 3 days 每 3 天		✓			✓			✓				✓			✓				✓			✓				✓						
B7	Remove sludge in sedimentation tank 清理沉澱缸泥漿	Every 3 days 每 3 天		✓			✓			✓				✓			✓				✓			✓				✓						
Inspected by 巡查人員				✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓						
Signature 簽署				✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓						

** 註 *Note* :

檢查結果 *Inspection Result*

✓ - 良好狀況 *Satisfactory*

✗ - 需改善及更換 *Need Improvement & Replacement*

Appendix C

東業德勤測試顧問有限公司
ETS-TESTCONSULT LTD.™

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HKAS HOKLAS 022 TEST CAL

TEST REPORT

Testing of Water and Wastewater

Report No. : ENA91938
Date of Issue : 18 March 2019

Information Provided by Customer

Customer Name	:	ATAL-Degremont-China Harbour Joint Venture
Customer Address	:	19/F, China Harbour Building, 370-374 King's Road, North Point, Hong Kong
Sample Source	:	Contract No. DC/2013/10 - Design, Build and Operate San Wai Sewage Treatment Works - Stage 1
Sample Type	:	Wastewater
Date of Sampling	:	12 March 2019
Sample Description	:	Sample was stored in 1L plastic bottle (for pH and Total Suspended Solids). Sample was stored in 500ml plastic bottle (for Chemical Oxygen Demand). Sample for Chemical Oxygen Demand was preserved by adding conc. H_2SO_4 to pH <2. Sample was collected by the customer and refrigerated after received.

Laboratory Information

Date of Received	:	12 March 2019
Date of Testing Period	:	12 to 13 March 2019
Lab Ref. No.	:	W43501

Result

Sample ID	Sample No.	Test	Method Used	Result	Unit
P8	01	pH	In house method TPE/003/W	8.3	(at 25°C)
		Total Suspended Solids	In house method TPE/006/W	<5*	mg/L
	02	Chemical Oxygen Demand	In house method TPE/002/W	<10	mgO_2/L

Remark(s):
1. The results relate only to the tested sample as received.
2. *200ml sample was used for Total Suspended Solids analysis. PQL of Total Suspended Solids reported less than 5 mg/L.

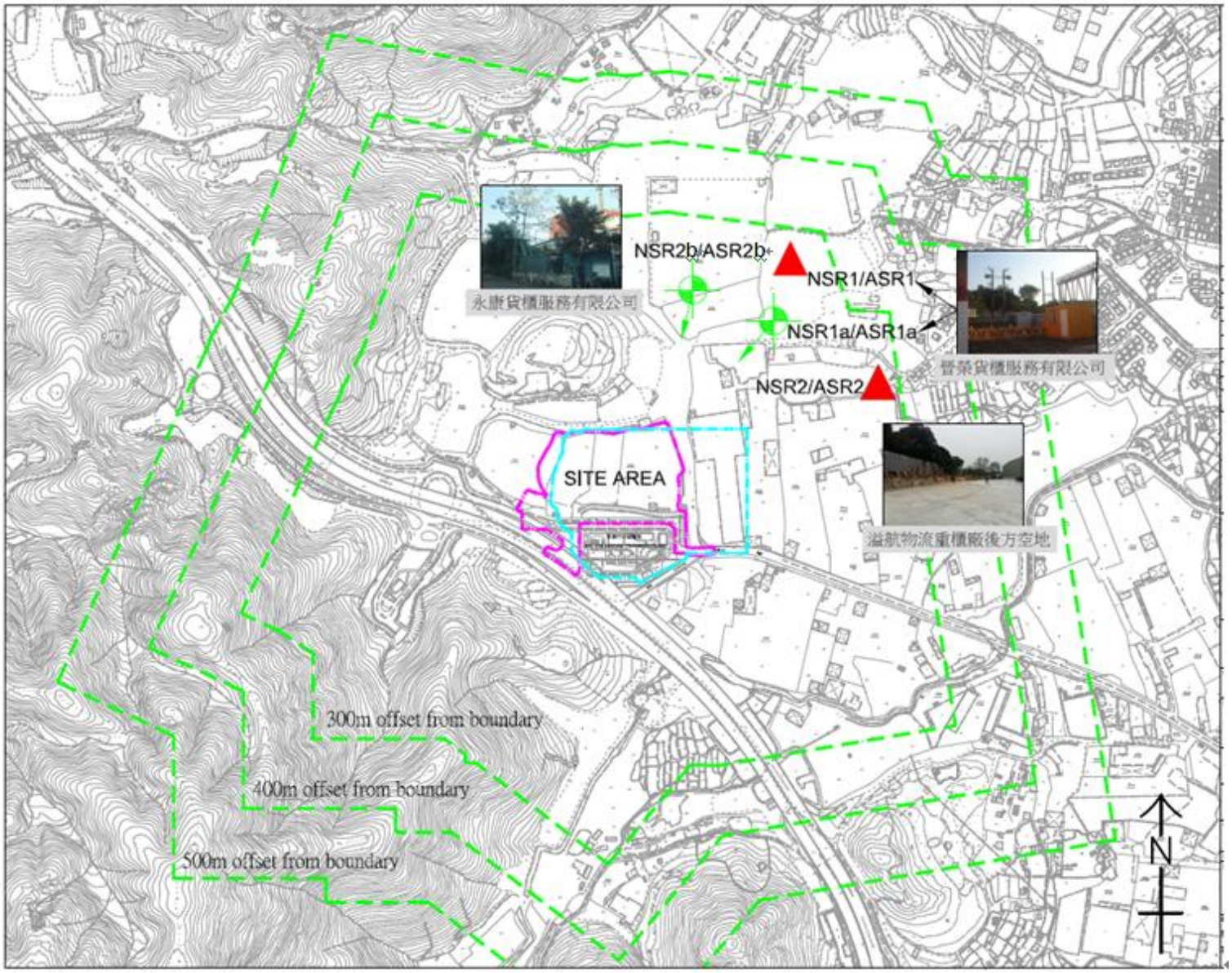
Approved Signatory : _____
LAU, Chi Leung

TPE/001/W

- END OF REPORT -

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

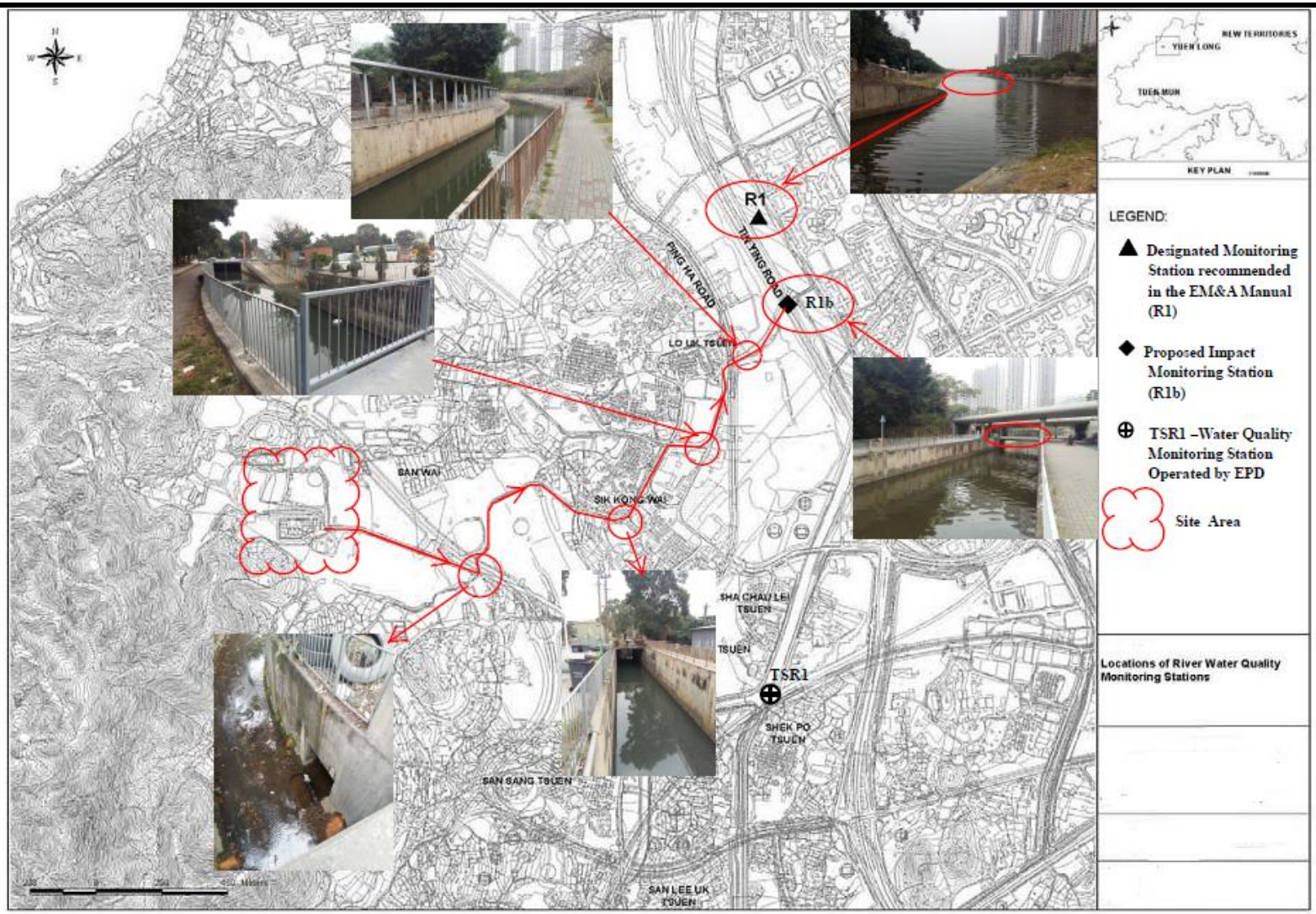


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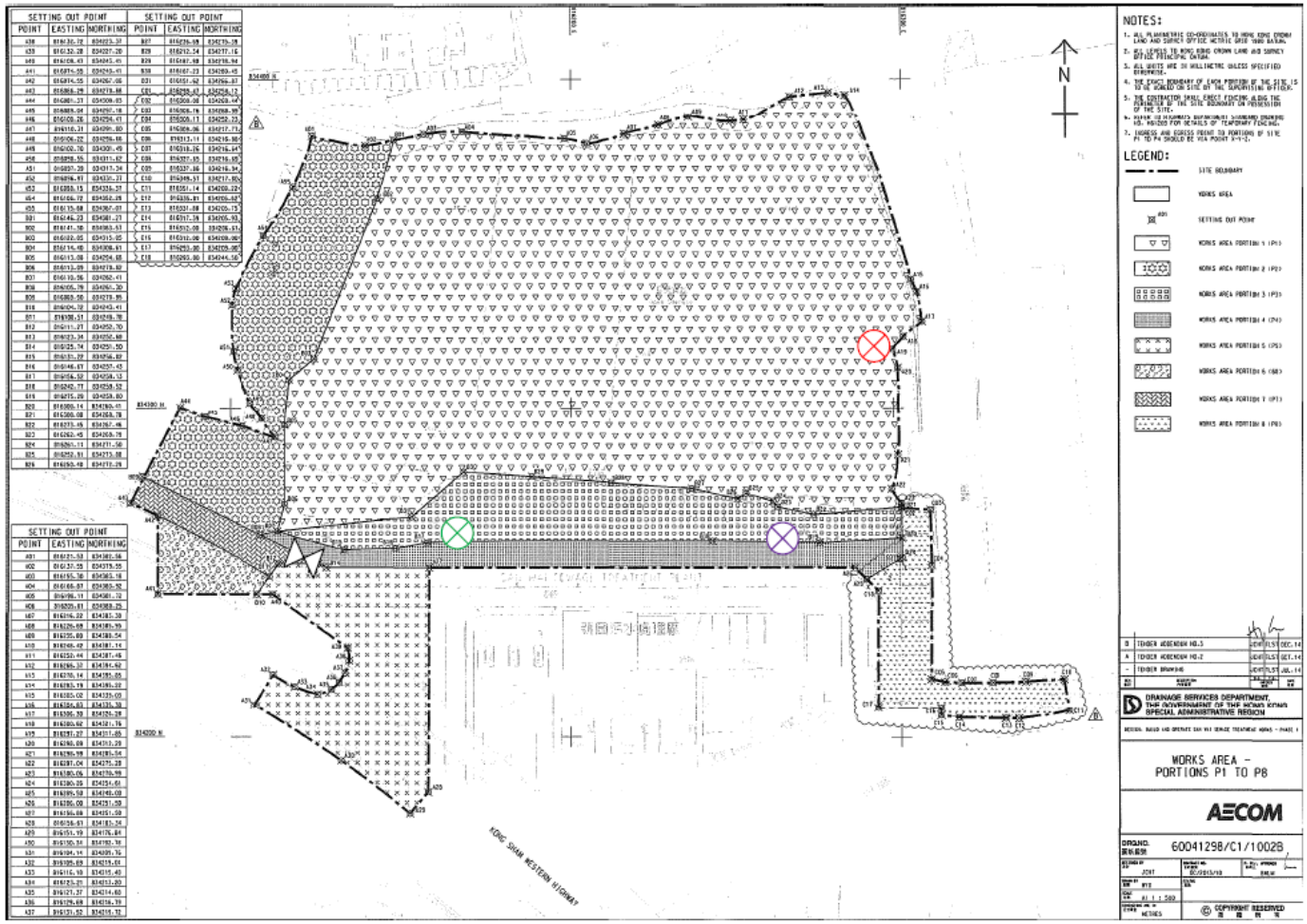
Figure 2 Locations of Water Quality Monitoring Station

Figure 3

Location Plan for the Wetsep Treatment Tank



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

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Figure 3 Location Plan for the Wetsep Treatment Tank