

ATAL-Degrémont-China State Joint Venture

Contract No. DC/2008/03
Design, Build and Operate Pillar
Point Sewage Treatment Works:
Thirty-sixth Monthly EM&A Report

November 2013

Environmental Resources Management

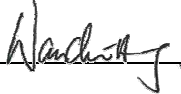

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Contract No. DC/2008/03
Design, Build and Operate Pillar
Point Sewage Treatment Works:
Thirty-sixth Monthly EM&A Report

November 2013

Reference 0119806

For and on behalf of ERM-Hong Kong, Limited	
Approved by:	Frank Wan
Signed:	
Position:	Partner
Certified by:	 (Environmental Team Leader – Winnie Ko)
Date:	8 November 2013
Certified by:	 (Registered Landscape Architect (R127) – Tai Kai Wai)
Date:	30 October 2013

Your Ref:
Our Ref: 60017423/C/iyyys13111102

By Hand & By Fax (2833 9162)

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

Attn: Mr. Kenley C.K. KWOK (T: 2159 3409)

11 November 2013

Dear Sir,

**Contract No. DC/2008/03
Design, Build and Operate
Pillar Point Sewage Treatment Works**

Monthly EM&A Report for October 2013

Reference is made to Environmental Team (ET)'s draft of the Monthly EM&A Report for October 2013 provided by email dated 6 and 8 November 2013. We have no further comment.

We hereby verify the said Monthly EM&A Report as having complied with the requirement as set out in the EM&A Manual in accordance with the condition 3.6 of Environmental Permit No. EP-321/2008/A.

Should you have any queries, please feel free to contact the undersigned at 3922 9393.

Yours faithfully,

For and on behalf of
AECOM Asia Co. Ltd.



Y T Tang
Independent Environmental Checker

c.c. AECOM – Mr. C Y Hung (Fax No. 2404 3310)
ERM – Ms. Winnie Ko (Fax No. 2723 5660)
ATAL–Degremont–China State JV – Mr. C.Y. Fong (Fax No. 2811 3321)

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EXECUTIVE SUMMARY

The construction works of *DC/2008/03 of Design, Build and Operate Pillar Point Sewage Treatment Works (the Project)* commenced on 13 November 2010. This is the 36th monthly Environmental Monitoring and Audit (EM&A) report presenting the EM&A works carried out during the period from 1 to 31 October 2013 in accordance with the EM&A Manual.

Summary of Construction Works undertaken during the Reporting Month

Works undertaken in the reporting month included:

- Construct finishing works at the Administration Building, Sludge Dewatering Building, UV Building, Septic Waste Reception Station, Sludge Skip Storage Building, PTW, CEPT, Reuse Water Pump Room, Existing Solid Handling Building, Empty Sludge Skip Storage Area and Chemical Building;
- Install E&M equipment at the Administration Building, Sludge Dewatering Building, PTW, CEPT, UV Building, Septic Waste Reception Station, Reuse Water Pump Room, Chemical Building, Sludge Skip Storage Building, Empty Sludge Skip Storage Area, Existing Solid Handling Building, Electrical buildings No.1, No.3 and No.4;
- Install BS and DO duct at the Deodorisation Units Portion A and Deodorisation Units Portion B;
- Construct drainage, cable ducts, water mains and boundary walls and installation of E&M Duct laying at P2;
- Conduct preparation works for Payment Flow Meter at Payment Flow Meter Chamber;
- Construct structural works at weigh bridge; and
- Construct backfilling and drainage works for the whole site.

Environmental Monitoring and Audit Progress

A summary of the monitoring activities undertaken in this reporting period is listed below:

- | | |
|---|---------|
| • 24-hour TSP Monitoring at each monitoring station (AM1 and AM2) | 5 sets |
| • 1-hour TSP Monitoring at each monitoring station (AM1 and AM2) | 15 sets |
| • Joint Environmental Site Inspection | 5 times |
| • Landscape & Visual Monitoring | Once |

Air Quality

5 sets of 24-hour TSP and 15 sets of 1-hr TSP measurements were carried out at each of the designated monitoring stations during the reporting period. No exceedance was recorded during the reporting period.

Waste Management

Waste generated from this Project includes inert construction and demolition (C&D) materials (public fill) and non-inert C&D materials (construction wastes). In total, 1701.99 tonnes of inert C&D material were generated from the Project, of which 45 tonnes were reused in this Contract and the remaining 1656.99 tonnes were disposed as public fill. 20.00 kg of metals, 60.00 kg of

papers/ cardboard packing and 5.00 kg of plastics were sent to recyclers for recycling during the reporting period.

Environmental Site Inspection

Five weekly joint environmental site inspections were carried out by the representatives of the Contractor, SOR and the Environmental Team (ET). Details of the audit findings and implementation status of the mitigation measures are presented in *Section 7.1*.

Landscape & Visual

Review on landscape and visual mitigation measures was performed on 18 October 2013. Details of the audit findings and implementation status of the mitigation measures are presented in *Sections 3.2* and *7.2*.

Environmental Exceedance/Non-conformance/Compliant/Summons and Prosecution

No exceedance was recorded during the reporting period.

No non-compliance event was recorded during the reporting period.

No environmental complaint and summon/prosecution was received in this reporting period.

Future Key Issues

Works to be undertaken in the next reporting month include:

- Construct finishing works at the Administration Building, Sludge Dewatering Building, UV Building, Septic Waste Reception Station, Sludge Skip Storage Building, PTW, CEPT, Reuse Water Pump Room, Existing Solid Handling Building, Empty Sludge Skip Storage Area and Chemical Building;
- Install E&M equipment at the Administration Building, Sludge Dewatering Building, PTW, CEPT, UV Building, Septic Waste Reception Station, Reuse Water Pump Room, Chemical Building, Sludge Skip Storage Building, Empty Sludge Skip Storage Area, Existing Solid Handling Building, Electrical buildings No.1, No.3 and No.4;
- Install BS and DO duct at the Deodorisation Units Portion A and Deodorisation Units Portion B;
- Construct drainage, cable ducts, water mains and boundary walls and installation of E&M Duct laying at P2;
- Conduct preparation works for Payment Flow Meter at Payment Flow Meter Chamber;
- Construct wall and roof at Sludge Skip Storage Building;
- Construct structural works at Empty Sludge Skip Storage Area; and
- Construct backfilling and drainage works for the whole site.

Environmental impacts arising from the above construction activities are mainly associated with dust, construction noise, site runoffs, waste management and landscaping issues.

1 INTRODUCTION

ERM-Hong Kong, Limited (ERM) was appointed by ATAL – Degrémont – China State Joint Venture (ADC-JV) (the Contractor) as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme for the *Contract No. DC/2008/03 of Design, Build and Operate Pillar Point Sewage Treatment Works (the Project)*.

1.1 PURPOSE OF THE REPORT

This is the 36th EM&A report which summarises the monitoring results and audit findings for the EM&A programme during the reporting period from 1 to 31 October 2013.

1.2 STRUCTURE OF THE REPORT

The structure of the report is as follows:

Section 1: **Introduction**

It details the scope and structure of the report.

Section 2: **Project Information**

It summarises the background and scope of the Project, site description, project organization, construction programme, construction works undertaken and status of the Environmental Permits (EP)/licences over the construction phase of the Project.

Section 3: **Environmental Monitoring Requirements**

It summarises the environmental monitoring requirements including monitoring parameters, programmes, methodologies, frequency, locations, Action and Limit Levels, Event/Action Plans, environmental mitigation measures as recommended in the approved EIA report, EP and relevant environmental requirements stated in the Contract Specification.

Section 4: **Implementation Status on Environmental Mitigation Measures**

It summarises the implementation of environmental protection measures during the reporting period.

Section 5: **Monitoring Results**

It summarises the monitoring results obtained in the reporting period.

Section 6: **Waste Management**

It summarises the quantity of public fill and construction waste generated in the reporting period

Section 7: **Environmental Site Inspection**

It summarises the audit findings of the weekly site inspections undertaken within the reporting period.

Section 8: **Environmental Non-conformance**

It summarises any exceedance of environmental performance standard, environmental complaints and summons received within the reporting period.

Section 9: **Further Key Issues**

It summarises the impact forecast and monitoring schedule for the next reporting month.

Section 10: **Review of the EM&A Data and Predictions**

It compares the monitoring data and waste quantity against the predictions in the approved Project EIA report.

Section 11 : **Conclusions**

2 PROJECT INFORMATION

2.1 BACKGROUND

The existing Pillar Point Sewage Treatment Works (PPSTW) is located to the north of the Tuen Mun River Trade Terminal and is abutting the Lung Mun Road in the north. It is a preliminary treatment works with screening and grit removal processes and the treated effluent is discharged to the sea (North Western Water Control Zone) via a twin submarine outfall. The *Review of the Tuen Mun and Tsing Yi Sewerage Master Plan* (RTMTYSMP), commissioned in February 1999, recommended that the sewage treatment capacity be expanded and the plant be upgraded to chemically enhanced primary treatment (CEPT) with disinfection. This is to cater for the projected ultimate population and planned developments in the Tuen Mun area, and to improve the effluent quality reducing pollution loadings to the receiving waters.

The upgrading of the PPSTW comprises the following works:

- expanding the treatment capacity of the existing PPSTW to cope with the increased peak wet-weather sewage flow in Tuen Mun area;
- upgrading the sewage treatment level of the existing PPSTW to incorporate chemical treatment with disinfection at minimum removal rates of 70%, 55% and 99.9% of suspended solids (SS), biochemical oxygen demand (BOD) and *E.coli*, respectively;
- upgrading the existing septic waste reception facilities at PPSTW; and
- providing and upgrading ancillary facilities including the administration building, workshop, laboratory, odour control facilities, sludge handling and dewatering facilities, access roads and minor landscaping works within the STW for the operation and maintenance of the upgraded STW.

The potential environmental impacts of the Project have been studied in the “*Upgrading of Pillar Point Sewage Treatment Works*” (EIAO Register No: AEIAR-145/2008). The EIA was approved on 10 June 2008 under the *Environmental Impact Assessment Ordinance* (EIAO) and an Environmental Permit (EP-321/2008) for the works was granted on 17 November 2008. A variation of an Environmental Permit was granted on 23 April 2013 (EP-321/2008/A). Under the requirements of Condition 3.1 of EP-321/2008/A, an EM&A programme as set out in the EM&A Manual is required to be implemented.

The construction works commenced on 13 November 2010 and are scheduled for completion by 2014.

2.2 GENERAL SITE DESCRIPTION

The open area adjacent to the existing PPSTW has been designated for the upgrading works. The layout of the upgrading works is illustrated in *Annex*

A.

2.3 CONSTRUCTION ACTIVITIES

A summary of the major construction activities undertaken in the reporting period is shown in *Table 2.1*. The locations of the construction activities are shown in *Annex B*. The construction programme of the Project in the reporting month and the upcoming month is presented in *Annex L*.

Table 2.1 *Summary of Construction Activities Undertaken in the Reporting Period*

Construction Activities Undertaken
<ul style="list-style-type: none">• Construct finishing works at the Administration Building, Sludge Dewatering Building, UV Building, Septic Waste Reception Station, Sludge Skip Storage Building, PTW, CEPT, Reuse Water Pump Room, Existing Solid Handling Building, Empty Sludge Skip Storage Area and Chemical Building;• Install E&M equipment at the Administration Building, Sludge Dewatering Building, PTW, CEPT, UV Building, Septic Waste Reception Station, Reuse Water Pump Room, Chemical Building, Sludge Skip Storage Building, Empty Sludge Skip Storage Area, Existing Solid Handling Building, Electrical buildings No.1, No.3 and No.4;• Install BS and DO duct at the Deodorisation Units Portion A and Deodorisation Units Portion B;• Construct drainage, cable ducts, water mains and boundary walls and installation of E&M Duct laying at P2;• Conduct preparation works for Payment Flow Meter at Payment Flow Meter Chamber;• Construct structural works at weigh bridge; and• Construct backfilling and drainage works for the whole site.

2.4 PROJECT ORGANISATION AND MANAGEMENT STRUCTURE

The project organisation chart and contact details are shown in *Annex C*.

2.5 STATUS OF ENVIRONMENTAL APPROVAL DOCUMENTS

A summary of the valid permits, licences, and/or notifications on environmental protection for this Project is presented in *Table 2.2*.

Table 2.2 *Summary of Environmental Licensing, Notification and Permit Status*

Permit/ Licences/ Notification	Reference	Validity Period	Remarks
Environmental Permit	EP-321/2008/A	Throughout the Contract	Permit granted on 23 April 2013
Notification of Construction Works under the Air Pollution Control (Construction Dust) Regulation	Ref No. 308136	Throughout the Contract	-

Permit/ Licences/ Notification	Reference	Validity Period	Remarks
Water Discharge License	WT00008027-2010	Till 31 December 2015	Wastewater discharge licence was issued by EPD on 7 December 2010.
Construction Noise Permit	GW-RW0466-13	28 July 2013 - 27 January 2014	-
Chemical Waste Producer Registration	5213-421-A2620-01	Throughout the Contract	Licence approved on 28 October 2010

3 ENVIRONMENTAL MONITORING REQUIREMENTS

3.1 AIR QUALITY MONITORING

3.1.1 Monitoring Location

The proposed air quality monitoring stations for the construction phase of the Project, as recommended in the approved EM&A Manual, are given in *Table 3.1* and shown in *Annex D*. The proposed locations (AM1 and AM2) have been agreed with the Drainage Services Department (DSD), Environmental Protection Department (EPD) and the Independent Environmental Checker (IEC).

Table 3.1 Construction Phase Air Monitoring Locations

Monitoring ID	Air Quality Monitoring Station
AM1	Tuen Mun EMSD Servicing Vehicle Station
AM2	River Trade Terminal Office

3.1.2 Monitoring Parameter and Frequency

The construction phase air quality monitoring has been conducted at the designated monitoring stations in accordance with the requirements stipulated in the EM&A Manual. 1-hour and 24-hour TSP levels have been monitored at the frequency and duration stated in *Table 3.2*. The construction phase TSP monitoring has been conducted as per the schedule presented in *Annex E*.

Table 3.2 Construction Phase Air Quality Monitoring Parameters and Frequency

Parameter	Frequency
24-hour average TSP	Once every 6 days
1-hour average TSP	3 times every 6 days

3.1.3 Action and Limit Levels

The Action and Limit levels have been established and presented in *Table 3.3*.

Table 3.3 Action and Limit Levels for Air Quality

Parameter	Air Monitoring Station	Action Level, μgm^{-3}	Limit Level, μgm^{-3}
24-hour TSP	AM1	183	260
	AM2	192	260
1-hour TSP	AM1	343	500
	AM2	383	500

3.1.4 Monitoring Equipment

Continuous 24-hour and 1-hour TSP monitoring was performed using High Volume Samplers (HVS) with appropriate sampling inlets located at the designated monitoring stations.

The performance specification of HVS complied with the standard method “*Determination of Suspended Particulate Matter in the Atmosphere (High Volume Method)*” as stipulated in *US EPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50 Appendix B)*. Table 3.4 summarises the equipment that were deployed for the 24-hour and 1-hour TSP monitoring respectively.

Table 3.4 *TSP Monitoring Equipment*

Monitoring Station	Monitoring Equipment (HVS and Calibrator)
<i>24-hr and 1-hr TSP</i>	
AM1	GMW GS-2310 (S/N 7580), CM-AIR-43 (S/N 0438320)
AM2	GMW GS-2310 (S/N 1252), CM-AIR-43 (S/N 0438320)

3.1.5 *Monitoring Methodology*

The setup locations of the HVSs were listed in *Table 3.1*. All HVSs were free-standing with no obstruction.

The following criteria were considered in the installation of the HVSs:

- appropriate support to secure the samplers against gusty wind were provided at AM1 and AM2;
- a minimum of 2m separation from walls, parapets and penthouses was required for rooftop samplers;
- no furnace or incinerator flues was nearby;
- airflow around the sampler was unrestricted; and
- permission was obtained to set up the samplers and gain access to the monitoring stations.

Preparation of Filter Papers

- glass fibre filters were labelled and sufficient filters that were clean and without pinholes were selected;
- all filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25°C and not variable by more than $\pm 3^\circ\text{C}$; the relative humidity (RH) was 40%; and
- SGS Hong Kong Ltd, a HOKLAS accredited laboratory, implemented comprehensive quality assurance and quality control programmes.

Field Monitoring

- the power supply was checked to ensure that the HVSs were working properly;

- the filter holder and area surrounding the filter were cleaned;
- the filter holder was removed by loosening the foul bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully;
- the filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter;
- swing bolts were fastened to hold the filter holder down to the frame. The pressure applied should be sufficient to avoid air leakage at the edges;
- the shelter lid was closed and secured with an aluminium strip;
- the HVSs were warmed-up for about 5 minutes to establish run-temperature conditions;
- a new flowrate record sheet was inserted into the flow recorder;
- the flow rates of the HVSs were checked and adjusted to between 1.22 and 1.37 m³ min⁻¹ which were within the range specified in the EM&A Manual (ie 0.6 to 1.7 m³ min⁻¹);
- the programmable timer was set for a sampling period of 24 hours ± 1 hour, and the starting time, weather condition and the filter number were recorded;
- the initial elapsed time was recorded;
- at the end of sampling, the sampled filter was removed carefully and folded in half l so that only surfaces with collected particulate matter were in contact;
- the filter was placed in a clean plastic envelope and sealed;
- all monitoring information was recorded on a standard data sheet; and
- filters were sent to SGS Hong Kong Ltd for analysis.

Maintenance and Calibration

- the HVSs and their accessories were maintained in good working condition, eg. motor brushes were replaced routinely and electrical wiring was checked to ensure a continuous power supply; and
- the flow rate of each HVS with mass flow controller was calibrated using an orifice calibrator. Initial calibrations of the dust monitoring equipment were conducted upon installation and prior to commissioning. Five-point calibration was carried out for HVSs using CM-AIR-43 Calibration Kit. HVSs are calibrated on a bi-monthly basis. The calibration records for the HVSs are given in *Annex F*.

Wind Data Monitoring

Average wind data (wind speed and wind direction) during the monitoring period were obtained from the meteorological station at Tuen Mun of the Hong Kong Observatory (HKO) and were presented in *Annex G*.

3.1.6 *Event and Action Plan*

The Event/ Action Plan (EAP) for air quality monitoring is presented in *Annex H*.

3.2 *LANDSCAPE AND VISUAL MONITORING*

In accordance with the EM&A Manual, monthly landscape and visual monitoring is required to ensure that the design, implementation and maintenance of landscape and visual mitigation measures recommended in the approved EIA Report are fully achieved. The monitoring procedures and criteria as described in the EM&A Manual were adopted.

3.3 *ENVIRONMENTAL MITIGATION MEASURES AND ENVIRONMENTAL REQUIREMENTS IN CONTRACT*

All the relevant environmental mitigation measures listed in the EIA Report and EM&A Manual as well as the specific environmental requirements stated in the Contract Specification are summarised in *Annex I*. A summary of the key environmental mitigation measures implemented as per the Contract Requirements is also presented in *Annex I*.

IMPLEMENTATION STATUS ON ENVIRONMENTAL PROTECTION REQUIREMENTS

The Contractor has implemented environmental mitigation measures and requirements as stated in the approved EIA Report, EM&A Manual and EP. The implementation status of the measures during the reporting period is summarised in *Annex I*.

5 *MONITORING RESULTS*

5.1 *AIR QUALITY*

A total of 5 sets of 24-hour and 15 sets of 1-hour TSP measurements were taken at each of the monitoring stations (AM1 and AM2) during the reporting period. The monitoring data for 24-hour and 1-hour TSP together with the wind data and graphical presentations for the past 4 months are presented in *Annex G*. The weather conditions during the monitoring period ranged from sunny to rainy. The local impacts near the monitoring stations of AM1 and AM2 were mainly associated with vehicular emissions. No exceedance of Action and Limit Level of the 1-hr and 24-hr TSP was recorded during the reporting period.

Wastes generated from this Project include inert construction and demolition (C&D) materials (public fill) and non-inert C&D materials (construction waste). Construction waste comprises general refuse, metals and paper/cardboard packaging materials. Metals generated from the Project are also grouped into construction waste as the materials were not disposed of with others at public fill. Reference has been made to the Monthly Summary Waste Flow Table prepared by the Contractor (see *Annex J*). With reference to the relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting month are summarised in *Table 6.1*.

Table 6.1 *Quantities of Waste Generated from the Project*

Month / Year	Quantity			
	Total Inert C&D Materials Generated ^(a)	Non-inert C&D Materials ^(b)		
		C&D Materials Recycled ^(c)	C&D Waste Disposed of at Landfill ^(d)	Chemical Waste
October 2013	1701.99 tonnes	85.00 kg	34.79 tonnes	0 L

Notes:

- (a) Inert C&D materials (public fill) include bricks, concrete, building debris, rubble and excavated spoil. In total, 1701.99 tonnes of inert C&D waste were generated from the Project, of which 45.00 tonnes were reused in this Contract and the remaining 1656.99 tonnes were disposed as public fill. The detailed waste flow is presented in *Annex J*.
- (b) Non-inert C&D materials (construction wastes) include metals, paper / cardboard packaging waste, plastics and other wastes such as general refuse. Metals generated from the Project were grouped into construction wastes as the materials were not disposed of with others at the public fill.
- (c) 20.00 kg of metals, 60.00 kg of papers/ cardboard packing and 5.00 kg of plastics were sent to recyclers for recycling during the reporting period
- (d) Construction wastes other than metals, paper/cardboard packaging, plastics and chemicals were disposed of at WENT Landfill by subcontractors.

7 ENVIRONMENTAL INSPECTIONS

7.1 WEEKLY SITE AUDITS

Joint site inspections were conducted by representatives of the Contractor, the SOR and the ET on 4, 11, 18, 25 and 29 October 2013. The IEC was also present at the joint inspection on 18 October 2013.

Major observations during the reporting period are summarised as follows:

4 October 2013

- The maintenance of equipment was observed outside hard standing areas. The Contractor was reminded to ensure the maintenance of equipment is within the specified hard standing areas.
- Tree tag was observed missing for the retained tree R43. The Contractor was reminded to provide a tree tag.
- Trees along Gate 3 were observed without tree protection zone. The Contractor was reminded to fence off a clear protection zone.

11 October 2013

- Stockpiles at Sludge Skip Loading Area A were observed dusty. The Contractor was reminded to provide sufficient watering to the stockpiles to suppress dust.
- Waste was observed without sorting at multiple locations within the site. The Contractor was reminded to separate the general refuse from the C&D waste on-site as far as practical.

18 October 2013

- Stockpiles at multiple locations within the site were still observed dusty. The Contractor was further reminded to provide sufficient watering to the stockpiles to suppress dust.
- Vehicles were observed not passing the wheel washing bay when leaving the construction site. Also muddy water was observed accumulating around the wheel washing bay. The Contractor was reminded to ensure that all vehicles have passed through the wheel washing bay before leaving the construction site.
- Waste was still observed without sorting at multiple locations within the site. The Contractor was further reminded to separate the general refuse from the C&D waste on-site as far as practicable.

25 October 2013

- Dark smoke emission was observed emitting from the excavator when it is operating. The Contractor was reminded to well maintain the plant/equipment to avoid dark smoke emission when in operation.
- Tree protection zones were observed unclear for the trees near the Outfall Pumping Station. The Contractor was reminded to keep a clear protection zone for the trees.

29 October 2013

- Dark smoke emission was observed emitting from the excavator when it is operating beside the Sludge Skip Storage Building. The Contractor was reminded to well maintain the plant/equipment to avoid dark smoke emission when in operation.
- Tree protection zones were still observed unclear for the trees near Outfall Pumping Station. The Contractor was reminded to provide a clear protection zone for the retained trees.

Follow-up actions resulting from the last site inspections were taken as reported by the Contractor and their results were observed in the site inspections conducted in the reporting period.

7.2

LANDSCAPE AND VISUAL MONITORING

In accordance with the EM&A Manual, monthly landscape and visual monitoring is required to ensure that the design, implementation and maintenance of landscape and visual mitigation measures recommended in the EIA Report are fully achieved. A review of the landscape and visual mitigation measures was performed on 18 October 2013. It was confirmed that most of the necessary landscape and visual mitigation measures as summarised in *Annex I* were implemented by the Contractor. The major findings are summarised as follow:

18 October 2013

- Fungus was observed on retained trees R147 and 278. The Contractor was reminded to remove the fungus and keep the tree protection zone clear at all times.

8 **ENVIRONMENTAL NON-CONFORMANCE**

8.1.1 ***Summary of Monitoring Exceedance***

No exceedances of the Action and Limit Levels of 1-hr and 24-hr TSP was recorded during the reporting period.

8.1.2 ***Summary of Environmental Non-Compliance***

No non-compliance event was recorded during the reporting period.

8.1.3 ***Summary of Environmental Complaint***

No complaint was received during the reporting period. The cumulative environmental complaint log is shown in *Annex K*.

8.1.4 ***Summary of Environmental Summon and Successful Prosecution***

No summon was received during the reporting period. The cumulative summons/prosecution log is shown in *Annex K*.

9.1.1 *Key Issues for the Coming Month*

Works to be undertaken for the coming monitoring period are summarised in *Table 9.1*.

Table 9.1 *Construction Works to be Undertaken in the Next Reporting Period*

Construction Activities Undertaken
<ul style="list-style-type: none"> • Construct finishing works at the Administration Building, Sludge Dewatering Building, UV Building, Septic Waste Reception Station, Sludge Skip Storage Building, PTW, CEPT, Reuse Water Pump Room, Existing Solid Handling Building, Empty Sludge Skip Storage Area and Chemical Building; • Install E&M equipment at the Administration Building, Sludge Dewatering Building, PTW, CEPT, UV Building, Septic Waste Reception Station, Reuse Water Pump Room, Chemical Building, Sludge Skip Storage Building, Empty Sludge Skip Storage Area, Existing Solid Handling Building, Electrical buildings No.1, No.3 and No.4; • Install BS and DO duct at the Deodorisation Units Portion A and Deodorisation Units Portion B; • Construct drainage, cable ducts, water mains and boundary walls and installation of E&M Duct laying at P2; • Conduct preparation works for Payment Flow Meter at Payment Flow Meter Chamber; • Construct wall and roof at Sludge Skip Storage Building; • Construct structural works at Empty Sludge Skip Storage Area; and • Construct backfilling and drainage works for the whole site.

Potential environmental impacts arising from the above construction activities will be mainly associated with dust, construction noise, site runoffs, waste management and landscaping issues.

9.1.2 *Monitoring Schedule for the Next Reporting Period*

The tentative schedule of TSP monitoring for the next reporting period was presented in *Annex E*. Environmental monitoring will be conducted at the same monitoring locations in the next reporting period. The monitoring programme has been reviewed and was considered adequate for the nature of works in progress.

9.1.3 *Construction Programme for the Next Three Months*

The most up-to-date construction programme for the Project is presented in *Annex L*.

10.1 AIR QUALITY

Since the EIA has only included a qualitative assessment of dust impact during the construction phase, a comparison was made between the monitoring results from the start of the Project and the Hong Kong Air Quality Objectives (HKAQO) (see *Table 10.1*).

Table 10.1 Comparison of the HKAQO and Air Quality Monitoring Results

Monitoring Station	Corresponding ASR in EIA	HKAQO, $\mu\text{g m}^{-3}$	Measured 24-hour TSP Monitoring Results, $\mu\text{g m}^{-3}$ (a) (b)	
		24 hour (a)	Average	Range
AM1	A1	260	72	50 - 100
AM2	A7	260	77	51 - 102

Notes:

(a) Only 24-hour TSP monitoring results were compared as there is no 1 hour TSP criterion in HKAQO.

(b) The average and range of data were calculated from the period between the commencement of the construction works and this reporting month.

The monitoring results show that the average and range of the 24-hour TSP levels recorded since the commencement of the construction works have been well below the 24-hour TSP criterion in the HKAQO. Recommended mitigation measures in *Section 3.7.1.1* of EIA have been implemented throughout the construction period and were considered effective.

10.2 WASTE MANAGEMENT

The estimated amount of waste generated from the Project and the cumulative quantities of waste generated up to this reporting month are presented in *Table 10.2*. The amount of inert C&D material sent to public fills is higher than the estimated amount in the EIA. With reference to the C&D Material Assessment (Contractor's General Submission (CSF) No.: DC200803/CSF/SAF/060026/A), the difference in quantities is mainly due to the differences in excavation depths and the excavation methods in the Contract Works and that assumed in the Reference Design. Recommended mitigation measures in *Sections 7.5.1.1* to *7.5.1.9* of the EIA will continue to be implemented during the construction stage.

Table 10.2 *Quantity of Amount of C&D Materials, General Wastes and Chemical Wastes Actually Generated and Estimated in the EIA and C&D Material Assessment*

Type of Material	Estimated Amount of Public Fill and Construction Waste in the EIA (inert & non-inert)	Estimated Amount of Public Fill and Construction Waste in C&D Material Assessment (CSF No.: DC200803/CSF/SAF/060026/A) ^(c)	Accumulated Actual Amount of Public Fill and Construction Waste Recorded ^(a) ^(b) (inert & non-inert)
Amount of C&D Materials Arising	61,489.00 m ³	77,600.00 m ³	127,819.57 m ³
Amount of C&D Materials Reused on other site	-	-	3,163.89 m ³
Amount of C&D Materials Reused on site	14,926.00 m ³	18,000.00 m ³	24,096.67 m ³
Amount of C&D Materials Sent to Fill Banks	46,563.00 m ³	59,600.00 m ³	100,558.69 m ³
General Refuse Small	-	-	1,876.33 tonnes
Chemical Waste Small	-	-	810.00 L

Notes:

- (a) The actual amount of C&D Materials has been recorded since the commencement of construction works.
- (b) The density of soil and rock (bulked) is 1.8 tonnes/m³.
- (c) The estimated amount of C&D material generated from the Contract Works was revised in the C&D Material Assessment and submitted to the SO on 9 September 2010 (CSF No.: DC200803/CSF/SAF/060026/A) because of the new plant & facility layout.

10.3 CONCLUSION OF THE REVIEW

The EIA predictions and monitoring results since the commencement of the construction works have been reviewed. The EIA concluded that the Project would not cause adverse impacts to the environment, and monitoring results have also confirmed that so far. Mitigation measures recommended in the EP, EIA and EM&A Manual will continue to be implemented throughout the construction phase of the Project.

This EM&A Report presents the EM&A programme undertaken during the reporting period from 1 to 31 October 2013 in accordance with EM&A Manual and requirements of EP (EP-321/2008/A).

No exceedance of Action and Limit Levels of 24-hour TSP and 1-hour TSP was recorded at the monitoring stations during the reporting period.

Monthly landscape and visual monitoring was conducted in the reporting period. Most of the necessary landscape and visual mitigation measures recommended in the EIA Report were implemented by the Contractor. Follow-up actions are required by the Contractor to improve protection of the retained or to-be transplanted trees.

No non-compliance event was recorded during the reporting period.

No complaint and summons/prosecution was received during the reporting period.

The ET will keep track of the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all the necessary mitigation measures in the coming periods.

Annex A

Location of Project

PROPOSED FACILITIES AND BUILDINGS

SECTION 1 INLET PUMPING STATION AND PRELIMINARY TREATMENT WORKS

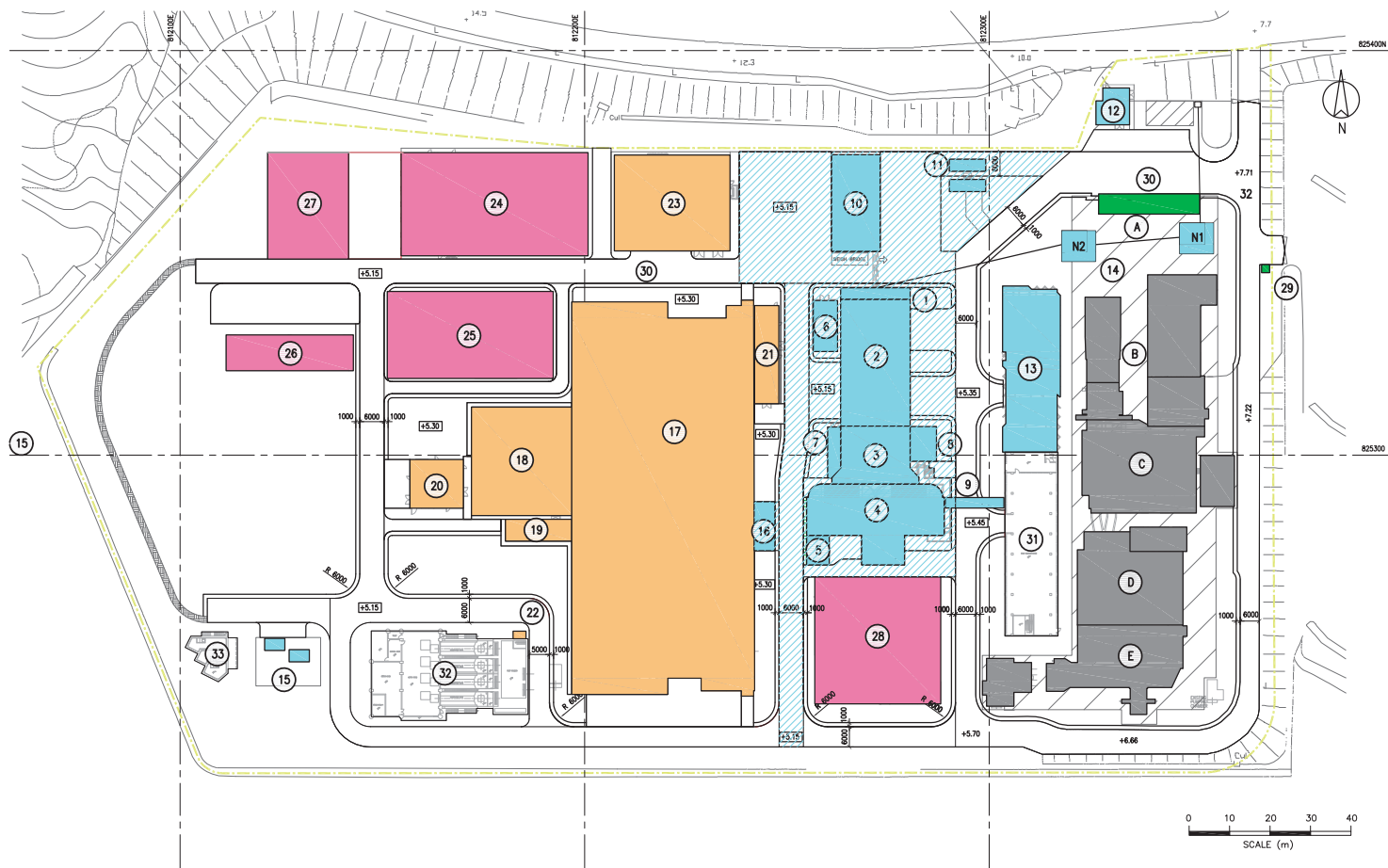
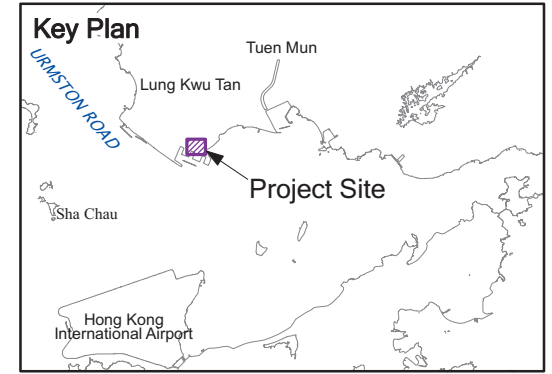
- ① INLET CHAMBER
- ② COARSE SCREENS AND INLET PUMPING STATION
- ③ FINE SCREEN CHANNELS
- ④ GRIT CHAMBERS
- ⑤ INLET FLOWMETER CHAMBER
- ⑥ PTW MCC ROOM
- ⑦ BLOWER ROOM
- ⑧ SCREENING SKIP HOUSE
- ⑨ ODOR DUCT SUPPORTING BRIDGE
- ⑩ SEPTIC WASTE RECEPTION STATION
- ⑪ WEIGHBRIDGE
- ⑫ ELECTRICAL BUILDING 1
- ⑬ ADMINISTRATION BUILDING
- ⑭ INLET CHAMBERS
- ⑮ PAYMENT FLOWMETER CHAMBER
- ⑯ CEPT INLET CHAMBER

SECTION 2 CEPT TANKS UV DISINFECTION

- ⑰ CEPT TANKS
- ⑱ UV DISINFECTION CHANNELS
- ⑲ REUSE WATER PUMP ROOM
- ⑳ ELECTRICAL BUILDING 3
- ㉑ ELECTRICAL BUILDING 2
- ㉒ OUTFALL PUMPING STATION CONNECTION CHAMBER
- ㉓ CHEMICAL BUILDING

SECTION 3 SLUDGE TREATMENT & HANDLING AND ODOUR CONTROL

- ㉔ SLUDGE DEMATERING BUILDING
- ㉕ DEODORISATION UNITS (B)
- ㉖ SLUDGE SKIP STORAGE BUILDING
- ㉗ SLUDGE SKIP LOADING AREA
- ㉘ DEODORISATION UNITS (A)



SECTION 4 EXISTING BUILDINGS TO BE DEMOLISHED

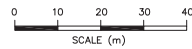
- Ⓐ ADMINISTRATION BUILDING
- Ⓑ INLET SCREW PUMPING STATION AND MOTOR HOUSE
- Ⓒ COARSE SCREENS
- Ⓓ BLOWER HOUSE AND GRIT CHANNELS
- Ⓔ FINE SCREEN CHANNELS AND FLOWMETER CHAMBER

SECTION 5 EXTERNAL WORKS

- ⑳ GATE HOUSE
- ㉑ CAR PARK

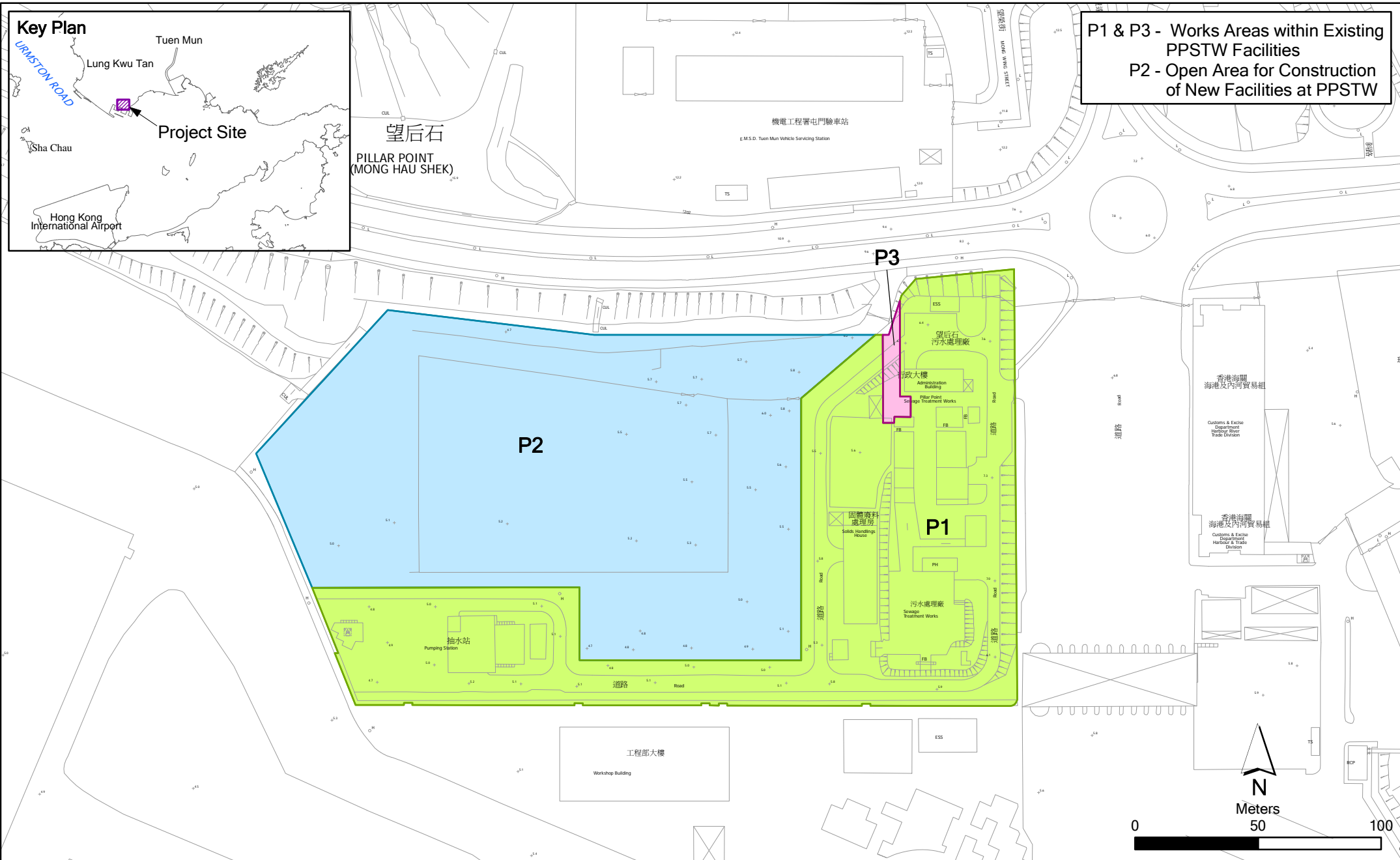
EXISTING BUILDING TO BE RETAINED

- ㉒ EXISTING SOLID HANDLING BUILDING
- ㉓ EXISTING OUTFALL PUMPING STATION
- ㉔ EXISTING TERMINAL MANHOLE



Annex B

Works Location



P1 & P3 - Works Areas within Existing PPSTW Facilities
P2 - Open Area for Construction of New Facilities at PPSTW

Annex B

Location of Works Areas

File: 0119806_location of works.mxd
Date: 15/12/2010

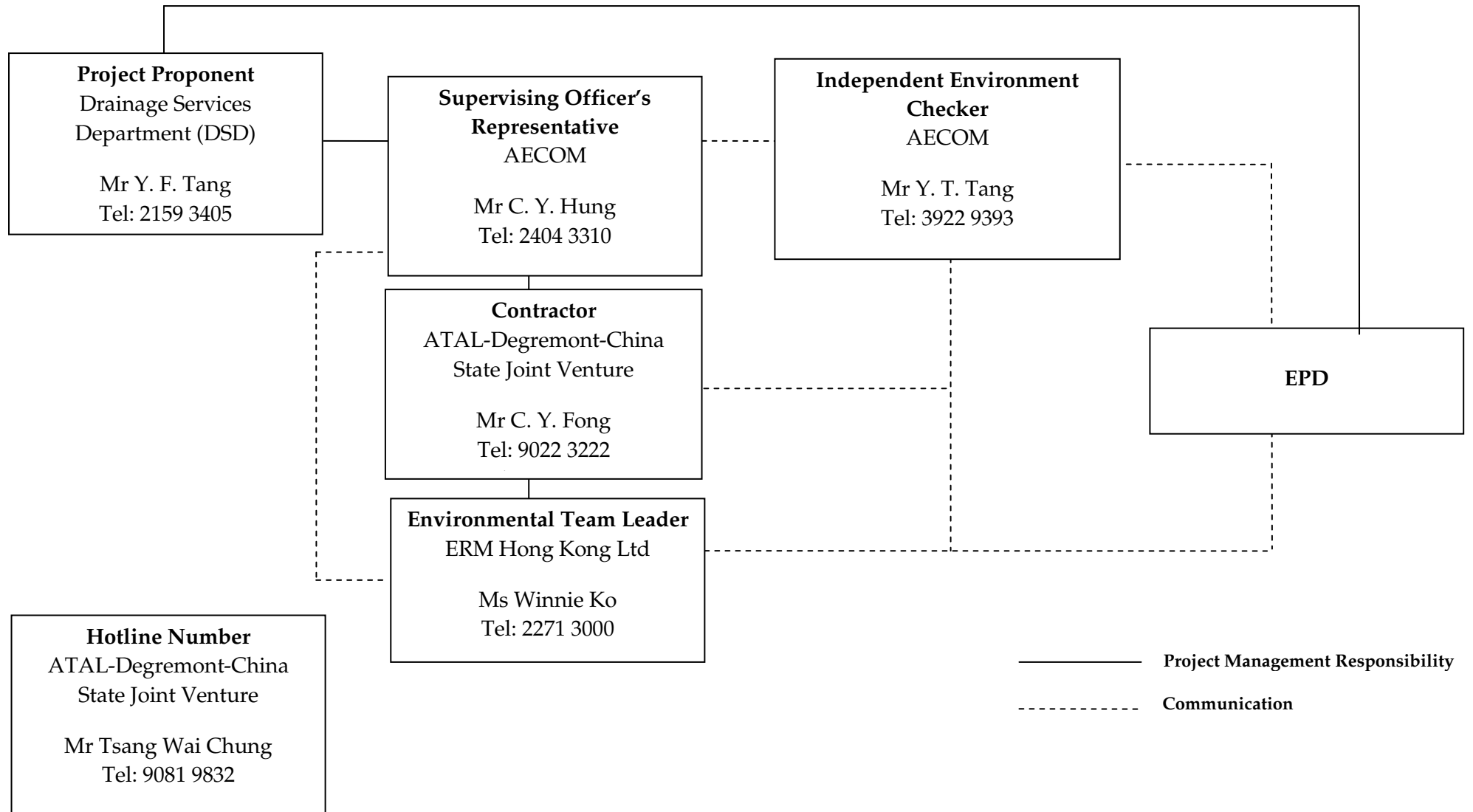
Environmental Resources Management



Annex C

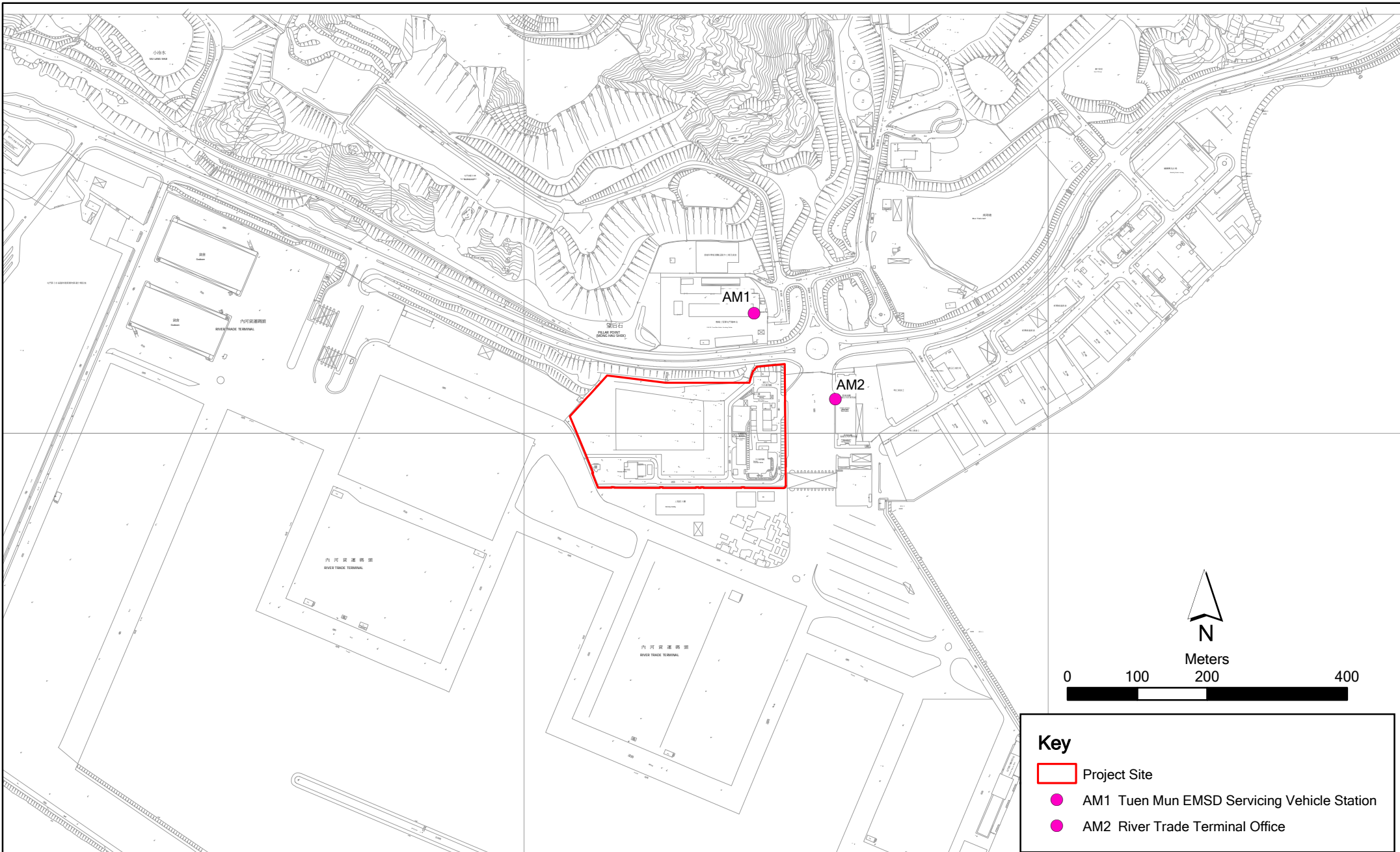
Project Organization Chart with Contact Details

Project Organization During Construction Phase (with contact details)



Annex D

Locations of Air Quality Monitoring Stations



Key

- Project Site
- AM1 Tuen Mun EMSD Servicing Vehicle Station
- AM2 River Trade Terminal Office

Annex D

Contract No. DC/2008/03 Design, Build and Operate of Pillar Point Sewage Treatment Works

File: 0119806_Site Boundary.mxd
Date: 15/12/2010

**Environmental
Resources
Management**





AM1 – Tuen Mun EMSD Servicing Vehicle Station



AM2 - River Trade Terminal Office

Annex E

Monitoring Schedule of Reporting Month and Next Month

**Contract No. DC/2008/03 - Design, Build and Operate Pillar Point Sewage Treatment Works
(Tuen Mun EMSD Servicing Vehicle Station - AM1 & River Trade Terminal Office - AM2)
October 2013**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		01-Oct	02-Oct	03-Oct	04-Oct	05-Oct
		Public Holiday				3X1-hr & 1X 24-hr TSP
06-Oct	07-Oct	08-Oct	09-Oct	10-Oct	11-Oct	12-Oct
					3X1-hr & 1X 24-hr TSP	
13-Oct	14-Oct	15-Oct	16-Oct	17-Oct	18-Oct	19-Oct
	Public Holiday			3X1-hr & 1X 24-hr TSP		
20-Oct	21-Oct	22-Oct	23-Oct	24-Oct	25-Oct	26-Oct
			3X1-hr & 1X 24-hr TSP			
27-Oct	28-Oct	29-Oct	30-Oct	31-Oct		
		3X1-hr & 1X 24-hr TSP				

**Contract No. DC/2008/03 - Design, Build and Operate Pillar Point Sewage Treatment Works
(Tuen Mun EMSD Servicing Vehicle Station - AM1 & River Trade Terminal Office - AM2)
November 2013**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					01-Nov	02-Nov
03-Nov	04-Nov	05-Nov	06-Nov	07-Nov	08-Nov	09-Nov
	3X1-hr & 1X 24-hr TSP				3X1-hr & 1X 24-hr TSP	
10-Nov	11-Nov	12-Nov	13-Nov	14-Nov	15-Nov	16-Nov
				3X1-hr & 1X 24-hr TSP		
17-Nov	18-Nov	19-Nov	20-Nov	21-Nov	22-Nov	23-Nov
			3X1-hr & 1X 24-hr TSP			
24-Nov	25-Nov	26-Nov	27-Nov	28-Nov	29-Nov	30-Nov
		3X1-hr & 1X 24-hr TSP				

Annex F

Calibration Reports for HVSs

TSP Monitoring Equipment

Monitoring Station ID	Location	Monitoring Equipment		Last Calibration Date	Next Calibration Date
<i>24-hr and 1-hr TSP</i>		HVS	Calibrator		
AM1	Tuen Mun EMSD Vehicle Servicing Station	GMW GS-2310 (S/N 7580)	CM-AIR-43 (S/N 0438320)	03 September 2013	03 November 2013
AM2	River Trade Terminal Office	GMW GS-2310 (S/N 1252)	CM-AIR-43 (S/N 0438320)	03 September 2013	03 November 2013

High-Volume TSP Sampler
5-Point Calibration Record

Location : EMSD
 Calibrated by : K.T.Ho
 Date : 03/09/2013

Sampler

Model : GMWS-2310 ACCU-VOL
 Serial Number : S/N 7580

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2323
 Service Date : 26 Dec 2012
 Slope (m) : 2.09107
 Intercept (b) : -0.02838
 Correlation Coefficient(r) : 0.99996

Standard Condition

Pstd (hpa) : 1013
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1008
 Ta(K) : 304

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1 18 holes	11.1	3.287	1.586	51	50.3
2 13 holes	9.0	2.960	1.429	46	45.4
3 10 holes	6.8	2.573	1.244	40	39.5
4 7 holes	4.4	2.070	1.003	32	31.6
5 5 holes	2.5	1.560	0.760	24	23.7

Sampler Calibration Relationship

Slope(m):32.311 Intercept(b): -0.828 Correlation Coefficient(r): 0.9999

Checked by: Magnum Fan

Date: 05/09/2013

High-Volume TSP Sampler
5-Point Calibration Record

Location : River Trade
 Calibrated by : P.F.Yeung
 Date : 03/09/2013

Sampler

Model : GMWS-2310 ACCU-VOL
 Serial Number : S/N 1252

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2323
 Service Date : 26 Dec 2012
 Slope (m) : 2.09107
 Intercept (b) : -0.02838
 Correlation Coefficient(r) : 0.99996

Standard Condition

Pstd (hpa) : 1013
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1008
 Ta(K) : 304

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1 18 holes	11	3.272	1.578	64	63.1
2 13 holes	9.0	2.960	1.429	57	56.2
3 10 holes	6.8	2.573	1.244	48	47.4
4 7 holes	4.2	2.022	0.981	37	36.5
5 5 holes	2.2	1.463	0.713	26	25.7

Sampler Calibration Relationship

Slope(m):43.293 Intercept(b): -5.669 Correlation Coefficient(r): 0.9993

Checked by: Magnum Fan

Date: 05/09/2013



TISCH ENVIRONMENTAL, INC.
 145 SOUTH MIAMI AVE.
 VILLAGE OF CLEVELAND, OH 45002
 513.467.9000
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 513.467.9009 FAX
 WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Dec 26, 2012 Rootsmeter S/N 0438320 Ta (K) - 295
 Operator Tisch Orifice I.D. - 2323 Pa (mm) - 753.11

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4440	3.2	2.00
2	NA	NA	1.00	1.0240	6.4	4.00
3	NA	NA	1.00	0.9120	8.0	5.00
4	NA	NA	1.00	0.8720	8.8	5.50
5	NA	NA	1.00	0.7200	12.8	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9967	0.6902	1.4149	0.9957	0.6896	0.8851
0.9925	0.9693	2.0010	0.9915	0.9683	1.2517
0.9903	1.0858	2.2372	0.9893	1.0847	1.3995
0.9893	1.1345	2.3464	0.9883	1.1334	1.4678
0.9840	1.3666	2.8299	0.9830	1.3652	1.7702
Qstd slope (m) = 2.09107			Qa slope (m) = 1.30939		
intercept (b) = -0.02838			intercept (b) = -0.01775		
coefficient (r) = 0.99996			coefficient (r) = 0.99996		
y axis = SQRT[H2O(Pa/760)(298/Ta)]			x axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

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

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

For subsequent flow rate calculations:

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

Annex G

24-hour and 1-hour TSP Monitoring Results

Annex G - 24-hour and 1-hour TSP Monitoring Results

1-hour TSP Monitoring Results

Station AM1

Date	Start Time	Finish Time	Weather	TSP Concentration ($\mu\text{g}/\text{m}^3$)	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)	Site Conditions / Observations / Remarks	Temperature ($^{\circ}\text{C}$)	Wind Speed * (m/s)	Sampler ID	Filter ID
05-10-2013	13:10	14:10	Sunny	111	343	500	Construction work in progress	26.0	*	7580	8436
	14:10	15:10	Sunny	115	343	500	Construction work in progress	26.0	*	7580	8437
	15:10	16:10	Sunny	119	343	500	Construction work in progress	26.0	*	7580	8438
11-10-2013	13:10	14:10	Sunny	128	383	500	Construction work in progress	28.0	*	7580	8459
	14:10	15:10	Sunny	124	383	500	Construction work in progress	28.0	*	7580	8460
	15:10	16:10	Sunny	130	383	500	Construction work in progress	28.0	*	7580	8461
17-10-2013	13:10	14:10	Cloudy	135	343	500	Construction work in progress	24.0	*	7580	8482
	14:10	15:10	Cloudy	144	343	500	Construction work in progress	24.0	*	7580	8483
	15:10	16:10	Cloudy	135	343	500	Construction work in progress	24.0	*	7580	8484
23-10-2013	13:10	14:10	Sunny	119	343	500	Construction work in progress	24.0	*	7580	8511
	14:10	15:10	Sunny	114	343	500	Construction work in progress	24.0	*	7580	8512
	15:10	16:10	Sunny	130	343	500	Construction work in progress	24.0	*	7580	8513
29-10-2013	13:10	14:10	Fine	130	343	500	Construction work in progress	23.0	*	7580	8532
	14:10	15:10	Fine	130	343	500	Construction work in progress	23.0	*	7580	8533
	15:10	16:10	Fine	116	343	500	Construction work in progress	23.0	*	7580	8534
				Min.	111						
				Max.	144						
				Average	125						

* Wind Speed data is presented in the Meteorological Data table

Annex G - 24-hour and 1-hour TSP Monitoring Results

1-hour TSP Monitoring Results

Station AM2

Date	Start Time	Finish Time	Weather	TSP Concentration ($\mu\text{g}/\text{m}^3$)	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)	Site Conditions / Observations / Remarks	Temperature ($^{\circ}\text{C}$)	Wind Speed * (m/s)	Sampler ID	Filter ID
05-10-2013	13:00	14:00	Sunny	124	383	500	Construction work in progress	26.0	*	1252	8432
	14:00	15:00	Sunny	118	383	500	Construction work in progress	26.0	*	1252	8433
	15:00	16:00	Sunny	116	383	500	Construction work in progress	26.0	*	1252	8434
11-10-2013	13:00	14:00	Sunny	124	383	500	Construction work in progress	28.0	*	1252	8454
	14:00	15:00	Sunny	122	383	500	Construction work in progress	28.0	*	1252	8456
	15:00	16:00	Sunny	126	383	500	Construction work in progress	28.0	*	1252	8457
17-10-2013	13:00	14:00	Cloudy	140	383	500	Construction work in progress	24.0	*	1252	8478
	14:00	15:00	Cloudy	151	383	500	Construction work in progress	24.0	*	1252	8479
	15:00	16:00	Cloudy	163	383	500	Construction work in progress	24.0	*	1252	8480
23-10-2013	13:00	14:00	Sunny	132	383	500	Construction work in progress	24.0	*	1252	8507
	14:00	15:00	Sunny	133	383	500	Construction work in progress	24.0	*	1252	8508
	15:00	16:00	Sunny	122	383	500	Construction work in progress	24.0	*	1252	8509
29-10-2013	13:10	14:10	Fine	130	343	500	Construction work in progress	23.0	*	7580	8528
	14:10	15:10	Fine	134	343	500	Construction work in progress	23.0	*	7580	8529
	15:10	16:10	Fine	141	343	500	Construction work in progress	23.0	*	7580	8530
				Min.	116						
				Max.	163						
				Average	132						

* Wind Speed data is presented in the Meteorological Data table

Annex G - 24-hour and 1-hour TSP Monitoring Results

24-hour TSP Monitoring Results

Station AM1

Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m ³ /min)			TSP Conc. (µg/m ³)	Action Level (µg/m ³)	Limit Level (µg/m ³)	Observations / Remarks	Sampler ID	Filter ID		
Date	Time	Date	Time		Initial	Final	Initial	Final		Initial	Final	Average								
05-10-2013	16:10	06-10-2013	16:10	Sunny	2.8311	2.9597	15140.18	15164.18	24	1.26	1.26	1.26	71	183	260	Construction work in progress	7580	8439		
11-10-2013	16:10	12-10-2013	16:10	Sunny	2.8097	2.9461	15167.18	15191.18	24	1.26	1.26	1.26	75	183	260	Construction work in progress	7580	8462		
17-10-2013	16:10	18-10-2013	16:10	Sunny	2.8117	2.9370	15032.18	15056.18	24	1.26	1.26	1.26	69	183	260	Construction work in progress	7580	8191		
23-10-2013	16:10	24-10-2013	16:10	Sunny	2.7903	2.9293	15221.18	15245.18	24	1.26	1.26	1.26	77	183	260	Construction work in progress	7580	8514		
29-10-2013	16:10	30-10-2013	16:10	Fine	2.7811	2.9090	15248.18	15272.18	24	1.26	1.26	1.26	70	183	260	Construction work in progress	7580	8535		
												Min.	69							
												Max.	77							
												Average	72							

24-hour TSP Monitoring Results

Station AM2

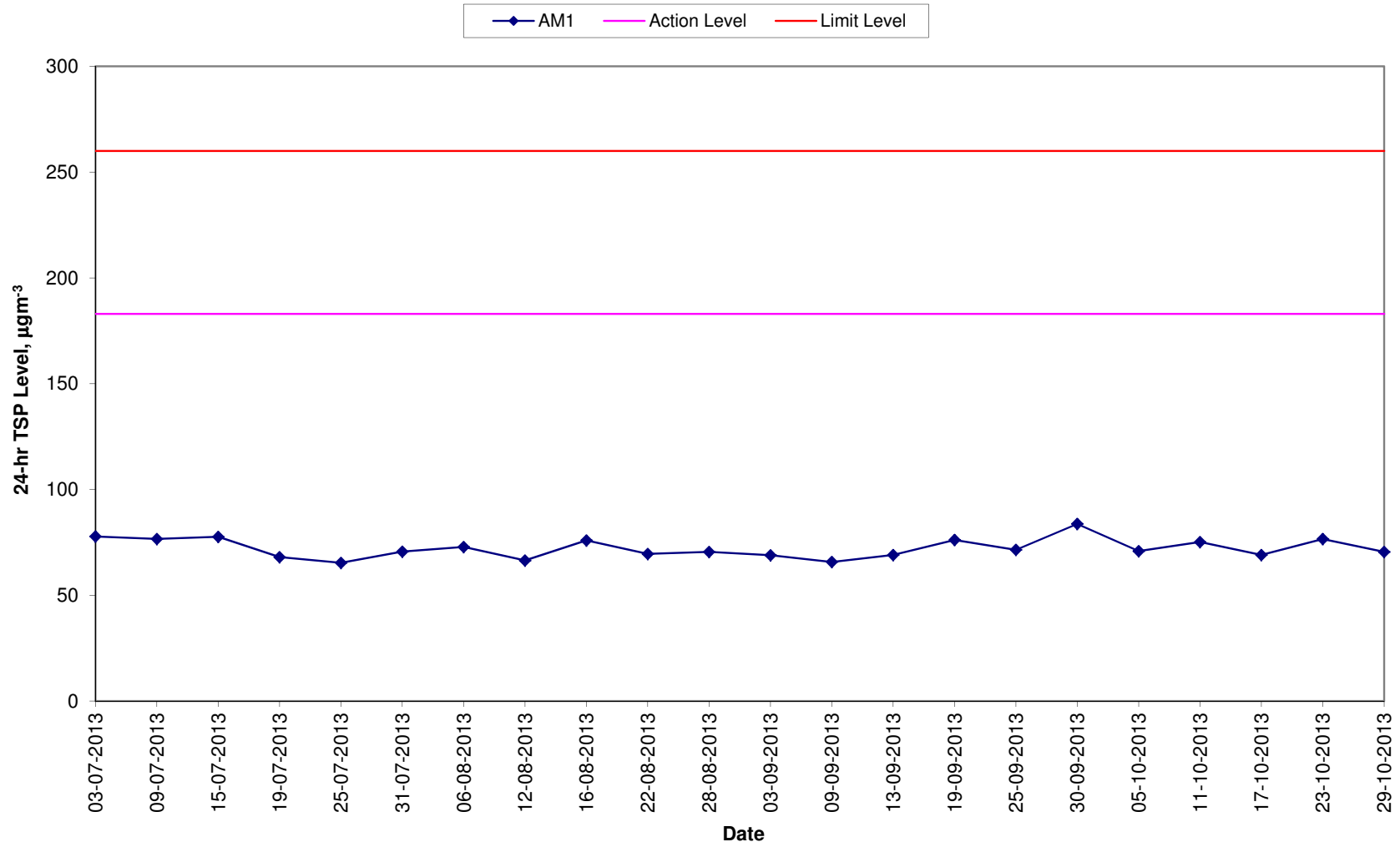
Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m ³ /min)			TSP Conc. (µg/m ³)	Action Level (µg/m ³)	Limit Level (µg/m ³)	Observations / Remarks	Sampler ID	Filter ID		
Date	Time	Date	Time		Initial	Final	Initial	Final		Initial	Final	Average								
05-10-2013	16:00	06-10-2013	16:00	Sunny	2.8209	2.9571	23158.20	23182.20	24	1.24	1.24	1.24	76	192	260	Construction work in progress	1252	8435		
11-10-2013	16:00	12-10-2013	16:00	Sunny	2.8069	2.9393	23185.20	23209.20	24	1.24	1.24	1.24	74	192	260	Construction work in progress	1252	8458		
17-10-2013	16:00	18-10-2013	16:00	Cloudy	2.8300	2.9769	23212.20	23236.20	24	1.24	1.24	1.24	82	192	260	Construction work in progress	1252	8481		
23-10-2013	16:00	24-10-2013	16:00	Sunny	2.7991	2.9450	23239.32	23263.20	24	1.24	1.24	1.24	82	192	260	Construction work in progress	1252	8510		
29-10-2013	16:00	30-10-2013	16:00	Fine	2.7800	2.9216	23266.20	23290.20	24	1.24	1.24	1.24	79	192	260	Construction work in progress	1252	8531		
												Min.	74							
												Max.	82							
												Average	79							

Meteorological Data Extracted from the Hong Kong Observatory

Date	Weather	Tuen Mun Station				
		Average Air Temperature (°C)	Average Relative Humidity (%)	Total Rainfall (mm)	Average Wind Speed (km/h)	Wind Direction
05-10-2013	Sunny	26.0	42-81	0.0	9.0	N
06-10-2013	Sunny	25.0	38-57	0.0	10.0	N
11-10-2013	Sunny	28.0	65-89	0.0	9.0	N-SE
12-10-2013	Sunny	28.0	50-79	Trace	12.0	N-SE
17-10-2013	Cloudy	24.0	67-79	Trace	9.0	N-E
18-10-2013	Rainy	26.0	53-75	Trace	8.0	N
23-10-2013	Sunny	24.0	39-56	0.0	9.0	N
24-10-2013	Sunny	24.0	29-51	0.0	9.0	N
29-10-2013	Fine	23.0	56-83	0.0	6.0	N-E
30-10-2013	Fine	24.0	62-83	0.0	12.0	SE-N

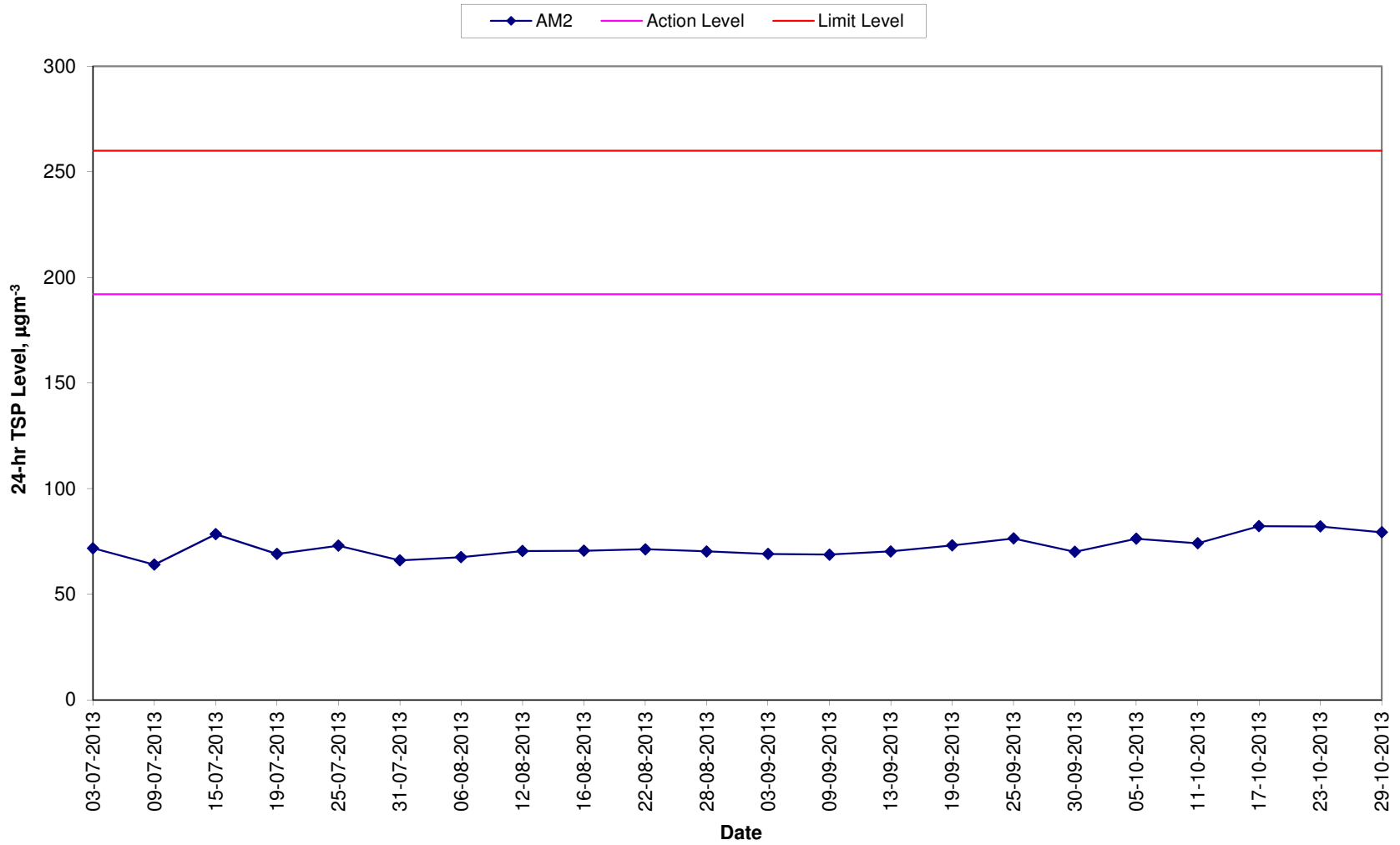
Annex G TSP Monitoring Results

24-hr TSP Levels for the Past 4 Months AM1 (River Trade Terminal Office)



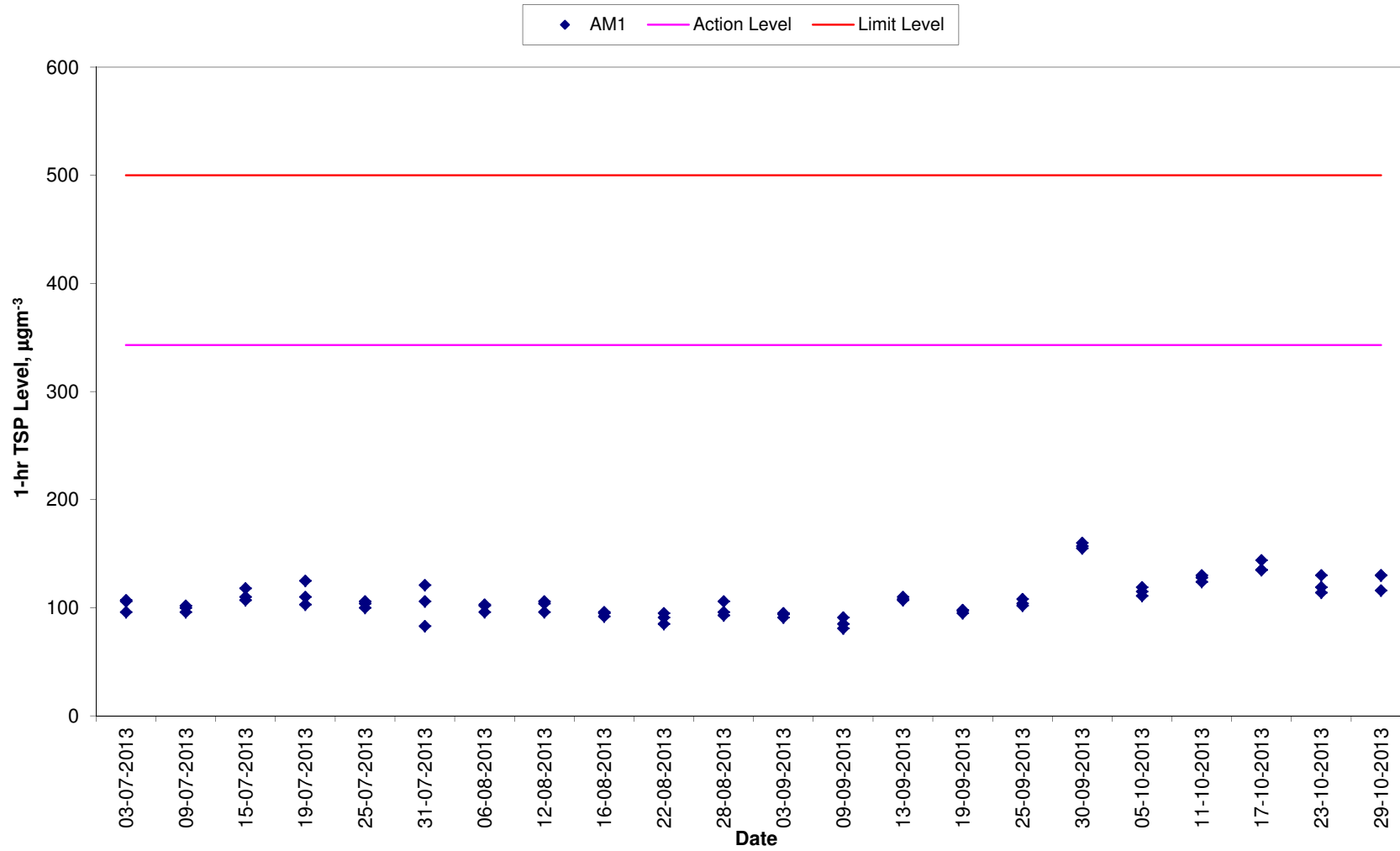
Annex G TSP Monitoring Results

24-hr TSP Levels for the Past 4 Months AM2 (River Trade Terminal Office)



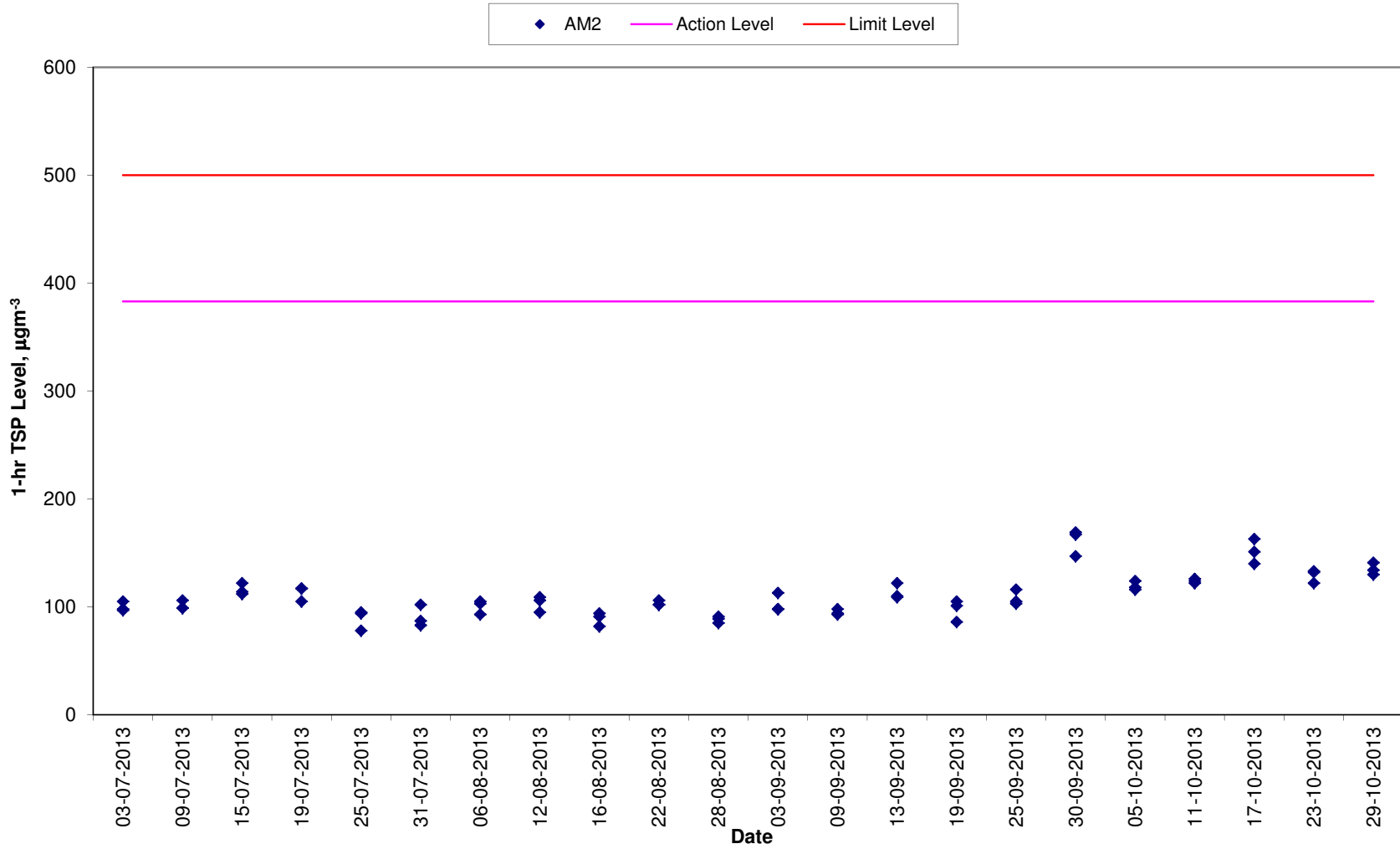
Annex G TSP Monitoring Results

1-hr TSP Levels for the Past 4 Months AM1 (Tuen Mun EMSD Vehicle Servicing Station)



Annex G TSP Monitoring Results

1-hr TSP Levels for the Past 4 Months AM2 (River Trade Terminal Office)



Annex H

Event/Action Plan for Air Quality Monitoring

Table H1 *Event Action Plan for Air Quality Monitoring*

Action Level/Limit Level	Environmental Team Leader (ETL)	Independent Environmental Checker (IEC)	Supervising Officer Representative (SOR)	Contractor
<i>Action Level</i>				
Exceedance for one sample	<ul style="list-style-type: none"> Identify source, investigate the causes of complaint and propose remedial measures; Inform IEC and SOR; Repeat measurement to confirm findings; Increase monitoring frequency to daily. 	<ul style="list-style-type: none"> Check monitoring data submitted by ET; Check Contractor’s working method. 	<ul style="list-style-type: none"> Notify Contractor and DSD. 	<ul style="list-style-type: none"> Rectify any unacceptable practice; Amend working methods if appropriate.
Exceedance for two or more consecutive samples	<ul style="list-style-type: none"> Identify source; Inform IEC and SOR; Advise the SOR on the effectiveness of the proposed remedial measures; Repeat measurements to confirm findings; Increase monitoring frequency to daily; Discuss with IEC and Contractor on remedial actions required; If exceedance continues, arrange meeting with IEC and SOR; If exceedance stops, cease additional monitoring. 	<ul style="list-style-type: none"> Check monitoring data submitted by ET; Check Contractor’s working method; Discuss with ET and Contractor on possible remedial measures; Advise the ET on the effectiveness of the proposed remedial measures; Supervise Implementation of remedial measures. 	<ul style="list-style-type: none"> Confirm receipt of notification of exceedance in writing; Notify Contractor and DSD; Ensure remedial measures properly implemented. 	<ul style="list-style-type: none"> Submit proposals for remedial actions to IEC within three working days of notification; Implement the agreed proposals; Amend proposal if appropriate.

Action Level/Limit Level	Environmental Team Leader (ETL)	Independent Environmental Checker (IEC)	Supervising Officer Representative (SOR)	Contractor
<i>Limit Level</i>				
Exceedance for one sample	<ul style="list-style-type: none"> Identify source, investigate the causes of exceedance and propose remedial measures; Inform IEC, SOR, DSD and EPD; Repeat measurement to confirm finding; Increase monitoring frequency to daily; Assess effectiveness of Contractor's remedial actions and keep IEC, EPD, DSD and SOR informed of the results. 	<ul style="list-style-type: none"> Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the SOR on the effectiveness of the proposed remedial measures; Supervise implementation of remedial measures. 	<ul style="list-style-type: none"> Confirm receipt of notification of exceedance in writing; Notify Contractor; Ensure remedial measures properly implemented. 	<ul style="list-style-type: none"> Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC within three working days of notification; Implement the agreed proposals; Amend proposal if appropriate.
Exceedance for two or more consecutive samples	<ul style="list-style-type: none"> Notify IEC, SOR, DSD and EPD; Identify source; Repeat measurement to confirm findings; Increase monitoring frequency to daily; Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; Arrange meeting with IEC and SOR to discuss the remedial actions to be taken; Assess effectiveness of Contractor's remedial actions and keep IEC, EPD, DSD and SOR informed of the results; If exceedance stops, cease additional monitoring. 	<ul style="list-style-type: none"> Discuss amongst SOR, ET, and Contractor on the potential remedial actions; Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the SOR accordingly; Supervise the implementation of remedial measures. 	<ul style="list-style-type: none"> Confirm receipt of notification of exceedance in writing; Notify Contractor; In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; Ensure remedial measures properly implemented; 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. 	<ul style="list-style-type: none"> Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC within three working days of notification; Implement the agreed proposals; Resubmit proposals if problem still not under control; Stop the relevant portion of works as determined by the SOR until the exceedance is abated.

Annex I

Implementation Schedule of Mitigation Measures

Annex I Summary of Mitigation Measures Implementation Schedule

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
<i>Summary of Environmental Mitigation Measures in the EIA and EM&A Manual</i>			
<i>Construction Phase</i>			
Air Quality	Dust mitigation measures stipulated in <i>the Air Pollution Control (Construction Dust) Regulation</i> shall be incorporated to control Post emission. Notice shall be given to authority prior to commencing of work.	Work sites / during construction period	Notice of works commencement was submitted to EPD on 3 August 2010.
Water Quality	The practices outlined in ProPECC PN 1/94 Construction Site Drainage should be adopted. It is recommended to install perimeter channels in the works areas to intercept runoff as site boundary prior to the commencement of any earthwork. To prevent storm runoff from washing across exposed soil surfaces, intercepting channels should be provided. Drainage channels are also required to convey site runoff to sand/silt traps and oil interceptors. Provision of regular cleaning and maintenance can ensure the normal operation of these facilities throughout the construction period. Any practical options for the diversion and re-alignment of drainage should comply with both engineering and environmental requirements in order to ensure adequate hydraulic capacity of all drains.	Work site/During the construction period	√
Water Quality	There is a need to apply to EPD for a discharge license under the WPCO for discharging effluent from the construction site. The discharge quality is required to meet the requirements specified in the discharge license. All the runoff and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. Reuse and recycling of the treated effluent can minimize water consumption and reduce the effluent discharge volume. The beneficial uses of the treated effluent may include dust suppression, wheel washing and general cleaning. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the WPCO license which is under the ambit of regional office (RO) of EPD.	Work site/During the construction period	√ Discharge licence was awarded by EPD on 7 December 2010.
Water Quality	The construction programme should be properly planned to minimize soil excavation, if any, in rainy seasons. This prevents soil erosion from	Work site/During the construction period	<>

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	<p>exposed soil surfaces. Any exposed soil surfaces should also be properly protected to minimize dust emission. In areas where a large amount of exposed soil exists, earth bunds or sand bags should be provided. Exposed stockpiles should be covered with tarpaulin or impervious sheets at all times. The stockpiles of materials should be placed at locations away from any stream course so as to avoid releasing materials into the water bodies. Final surfaces of earthworks should be compacted and protected by permanent work. It is suggested that haul roads should be paved with concrete and the temporary access roads protected using crushed stone or gravel, wherever practicable. Wheel washing facilities should be provided at all site exists to ensure that earth, mud and debris would not be carried out of the works areas by vehicles.</p>		
Water Quality	<p>Good sites practices should be adopted to clean the rubbish and litter on the construction sites so as to prevent the rubbish and litter from spreading from the site area. It is recommended to clean the construction sites on a regular basis.</p>	Work site/During the construction period	√
Water Quality	<p>The presence of construction workers generates sewage. It is recommended to provide sufficient chemical toilets in the works areas. The toilet facilities should be more than 30m from any watercourse. A licensed water collector should be deployed to clean the chemical toilets on a regular basis. The construction workers can also make use of the existing toilet facilities within the PPSTW as necessary.</p>	Work site/During the construction period	√
Water Quality	<p>Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the project. Regular environmental audit on the construction phase of the project. Regular environmental audit on the construction site can provide an effective control of any malpractices and can achieve continual improvement of environmental performance on site.</p>	Work site/During the construction period	√
Waste Management	<p>Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation</p>	Work site/During the construction period	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	should be observed and complied with for control of chemical wastes.		
Waste Management	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and stumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.	Work site/During the construction period	<>
Waste Management	<p>Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with the chemical wastes. General requirements are given as follows:</p> <ul style="list-style-type: none"> • Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. • Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. • Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area. 	Work site/During the construction period	√
Waste Management	<p><i>Good Site Practices</i> Recommendations for good site practices during the construction activities include:</p> <ul style="list-style-type: none"> • Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site • Training of site personnel in proper waste management and chemical handling procedures • Provision of sufficient waste disposal points and regular collection of waste • Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by 	Work site/During the construction period	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	transporting wastes in enclosed containers <ul style="list-style-type: none"> • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors. • Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Facility. 		
Waste Management	<i>Waste Reduction Measures</i> Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include: <ul style="list-style-type: none"> • Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal. • Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force • Proper storage and site practices to minimise the potential for damage or contamination of construction materials. • Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste. 	Work site / During planning & design stage, and construction stage	√
Waste Management	<i>General Refuse</i> General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.	Work site / During the construction period	√
Waste Management	<i>Construction and Demolition Material</i> In order to minimise the impact resulting from collection and transportation of C&D material for off-site disposal, the excavated	Work site / During design stage & construction period	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	<p>material generated from site formation works for the proposed new facilities and units at the STW should be reused on-site as far as practicable. The surplus excavated material should be disposed of at the designated public fill reception facility, as agreed with the Secretary of the Public Fill Committee, for other beneficial uses.</p>		
Waste Management	<p>Mitigation measures and good site practices should be followed to control potential environmental impact from handling and transportation of C&D material. The mitigation measures include:</p> <ul style="list-style-type: none"> • Where it is unavoidable to have transient stockpiles of C&D material pending collection for disposal, the transient stockpiles shall be located away from waterfront or storm drains as far as possible. • Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric. • Skip hoist for material transport should be totally enclosed by impervious sheeting. • Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site • 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. • The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle. • All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet. • The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading. 	Work site / During design stage & construction period	√
Waste Management	<p>When disposing C&D material at a public filling facility, it shall be noted that the material shall only consist of earth, building debris and broken rock and concrete. The material shall be free from marine mud, household refuse, plastic, metals, industrial and chemical waste, animal</p>	Work site/ During design stage & construction period	<>

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	<p>and vegetable matter, and other material considered to be unsuitable by the Filling Supervisor. In order to monitor the disposal of the surplus C&D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work with reference to the ETWB TCW No. 31/2004 "Trip Ticket System for Disposal of Construction and Demolition Materials" as attached in Appendix 7-1. An Independent Environmental Checker should be responsible for auditing the results of the system.</p>		
Waste Management	<p><i>Chemical Waste</i></p> <p>If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a Chemical Waste Producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.</p>	Work site / During the construction period	√
Landscape & Visual	<p><u>Temporary Tree Nurseries</u></p> <p>Temporary tree nurseries may be set up for the transplanted tree and proposed trees at an early stage to allow small trees to grow during the construction periods. By the time when planting area becomes available, trees mature and increase in trunk & spread size. They will require minimal pruning and suffer much less damage during transplanting when comparing the travel distance from an on-site nursery to an off-site nursery.</p> <p>Besides, these trees may also be positioned as visual mitigation during</p>	Work site/ During design stage & construction period	√. A tree nursery has been set up off-site near the site office.

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	the construction period.		
Landscape & Visual	<p><u>No-intrusion Zone</u></p> <p>To maximize protection to existing trees and ground vegetation, construction contracts may designate “No-intrusion Zone” to various areas within the site boundary with rigid and durable fencing for each individual no-intrusion zone. The contractor should close monitor and restrict the site working staff not to enter the “no-intrusion zone”, even for non-direct construction activities and storage of equipment.</p>	Work site/During design stage & construction period	√
Landscape & Visual	<p><u>Hoarding</u></p> <p>Hoarding or boundary fencing for construction shall be considered. It should be sensitively designed, subtle, camouflaged and more ‘permeable’ so that they fit into the existing environment when looking from outside.</p>	Work site/During design stage & construction period	√
Landscape & Visual	<p><u>Dust and Erosion Control for Exposed Soil</u></p> <p>Excavation works and demolition of existing building blocks and which will be highly visible form surrounding areas should be well planned and with precautions to suppress dust. Exposed soil shall be covered or ‘camouflaged’ and watered often. Areas that are expected to be left with bare soil for a long period of time after excavation shall be properly covered with suitable protective fabric. Silt and erosion shall be controlled by ground barriers around the slope cutting area..</p>	Work site/During design stage & construction period	√
Landscape & Visual	<p><u>Existing Tree Record Inventory</u></p> <p>All retained trees should be record photographically at the commencement of the Contract, and carefully protected during the construction period. Detailed tree protection specification shall be allowed and included in the Contract Specification, which specifying the tree protection requirement, submission and approval system, and the tree monitoring system.</p>	Work site/During design stage & construction period	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Landscape & Visual	<p><u>Construction Light</u></p> <p>All security floodlights for construction sites shall be equipped with adjustable shield, frosted diffusers and reflective covers, and be carefully controlled to minimize light pollution and night-time glare to nearby residences and GIC users. The Contractor shall consider other security measures which shall minimize the visual impacts.</p>	Work site / During design stage & construction period	√
Landscape & Visual	<p><u>Tree Transplanting</u></p> <p>Apart from the 18 numbers of "<i>Leucaena leucocephala</i>", which are proposed to be felled in accordance with ETWB TCW No. 3/2006, all the affected trees shall be transplanted. Where practicable, trees shall be directly transplanted to permanent on-site locations. The location of the transplanted tree is shown in Figure 8.9.1.</p>	Work site / During design stage & construction period	√.
Landscape & Visual	<p><u>Tree Compensation Ratio</u></p> <p>The total number of compensatory trees planted in the project area shall not be less than 1:1 ratios by new trees. Required numbers and locations of compensatory trees shall be determined and agreed with Government during the tree felling application process under ETWCTC 3/2006. Compensatory trees shall be at least heavy standard size to create "immediate" greening effect. 81 numbers of "<i>Cassia surattensis</i>" will be provided as the additional compensatory planting for loss of greenery in the area due to removal of the affected trees. The location of the additional compensatory planting is shown in Figure 8.9.1.</p>	Work site / During design stage & construction period	N/A
Landscape & Visual	<p><u>Re-use of Existing Soil and Advance formation of Planting Area</u></p> <p>Existing topsoil shall be re-used where possible for new planting areas within the project. Advance formation of planting area and early implementation of the plating works can minimize adverse impact on trees. The construction program shall consider using the soil removed from one phase for backfilling another. Suitable storage ground, gathering ground and mixing ground may be set up on-site as necessary.</p>	Work site / During design stage & construction period	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Landscape & Visual	<p><u>Establishment Period</u></p> <p>12 month establishment period for the soft landscape works will be allowed in the main contract. Most construction contracts in Hong Kong require the Contractor to carry out routine horticultural operations, including watering, pruning, weeding, pest control, replacement of dead plants etc. to ensure healthy establishment of new planting during a 12 month establishment period. This period also serves as a kind of warranty / guarantee on the quality of the plants supplied and installed by the Contractor. Monthly monitoring during the first year of establishment period is recommended.</p>	Work site/During operation period	N/A. To be implemented during operation phase of Project.
Landscape & Visual	<p><u>Re-instatement of excavated Area</u></p> <p>All excavated area and disturbed area for utilities diversion, temporary road diversion, and pipeline works will be reinstated to former conditions, subject to applicable Government Standards.</p>	Work site / During design stage & operation period	N/A. To be implemented during operation phase of Project.
Landscape & Visual	<p><u>Appearance and Greening for the proposed structures</u></p> <p>Compatible design, construction materials and surface finishes of the proposed structure should match with the nearby existing external appearance of PPSTW buildings for achieving visual uniformity. Finishing materials shall have due consideration to form, basic color, color/tone variation, micro-and macro-texture, and reflectivity/light absorbance to avoid glare. Planting, such as turf, low groundcovers and climbers, may also be planted on top of these elements to provide greening and aesthetic effect.</p>	Work site / During design stage & operation period	N/A. To be implemented during operation phase of Project.
<i>Summary of Key Environmental Mitigation Measures in Contract Requirements</i>			
Air Quality	Only Ultra-low-sulphur diesel (ULSD) should be used for all diesel-operated plants and equipments on site	Work sites / during construction period	√
Air Quality and Noise	Plants and equipments of good operation conditions should be used on site.	Work sites / during construction period	√
Noise	No diesel hammers should be used for piling works	Work sites / during construction period	√
Noise	Construction Noise Permits (CNP) should be applied for works conducted outside non-restricted hours.	Work sites / during construction period	√
Noise	Quiet construction equipments and the quietest practicable working	Work sites / during construction period	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	methodologies should be adopted for works whenever feasible. Noise labels should be provided for air compressors. Hoods and cover panels of generators and air compressors should be closed during operation. Noise labels should be provided for air compressors and hand-held percussive breakers.		
Waste Management	Temporary works construction on site should minimize the use of timber to reduce the quantity of C&D waste generated during works period.	Work sites / during construction period	√
Landscape and Visual	Retained or to-be-transplanted trees on site should be properly protected from physical damages and soil compacts with temporary fencing or hessian armouring whenever feasible.	Work sites / during construction period	<>

Remark:

- √ Compliance of Mitigation Measures
- <> Compliance of Mitigation but need improvement
- x Non-compliance of Mitigation Measures
- ▲ Non-compliance of Mitigation Measures but rectified by ATAL-Degrémont-China State JV
- Δ Deficiency of Mitigation Measures but rectified by ATAL-Degrémont-China State JV
- N/A Not Applicable in Reporting Period

Annex J

Waste Flow Table

**Contract No. : DC/2008/03 - Design, Build and Operate Pillar Point Sewage Treatment Works
Monthly Summary Waste Flow Table**

Month	Actual Quantities of Inert C&D Materials Generated (see Note 13)					Actual Quantities of Non-inert C&D Materials (Construction Waste) Generated (see Note 13)				
	Total Quantity Generated	Reused in the Contract	Reused in other Projects	Hard Rocks & Large Broken Concrete	Disposed as Public Fill	Metals (see Note 1)	Paper/ cardboard packaging (see Note 1)	Plastics (see Note 2)	Chemical Waste	Others, e.g. general refuse (see Note 3)
	tonne	tonne	tonne	tonne	tonne	kilogram	kilogram	kilogram	Litre	tonne
Nov 2010	2,248.00	0.00	0.00	55.00	2248.00	60.00	100.00	0.00	0.00	18.05 (see Note 4)
Dec 2010	11,314.00 (see Note 4)	0.00	0.00	225.00	11314.00	100.00	120.00	20.00	0.00	28.40 (see Note 4)
Jan 2011	58,383.00 (see Note 4)	0.00	0.00	3,000.00	58,382.90	250.00	280.00	60.00	0.00	4.59 (see Note 4)
Sub-total	71,945.00	0.00	0.00	3280.00	71944.90	410.00	500.00	80.00	0.00	51.04
Feb 2011	12,855.00	0.00	0.00	1,050.00	12,854.70	100.00	150.00	50.00	0.00	2.43 (see Note 4)
Mar 2011	22,859.00	0.00	0.00	1,500.00	22,858.70	150.00	180.00	55.00	0.00	9.02
Apr 2011	8,547.00 (see Note 7)	0.00	5,684.00(see Note 5, 7)	550.00	2,863.30	50.00	30.00	15.00	0.00	5.78
Sub-total	44,261.00	0.00	5684.00	3100.00	38576.70	300.00	360.00	120.00	0.00	17.23
May 2011	6,293.00 (see Note 7)	0.00	11.00 (see Note 5, 7)	425.00	6,282.00 (see Note 7)	45.00	25.00	10.00	360.00 (see Note 7)	8.83
Jun 2011	4,587.00 (see Note 7)	0.00	0.00 (see Note 7)	313.00	4,586.00 (see Note 7)	40.00	30.00	15.00	0.00	7.10
Jul 2011	523.00	0.00	0.00	25.00	522.90	15.00	5.00	10.00	0.00	7.20
Sub-total	11,403.00	0.00	11.00	763.00	11391.50	100.00	60.00	32.00	360.00	23.13
Aug 2011	571.00 (see Note 11)	0.00	0.00	50.00	571.00 (see Note 11)	0.00	0.00	15.00	450.00 (see Note 8)	6.12
Sept 2011	235.00	0.00	0.00	25.00	235	20.00	0.00	0.00	0.00	12.15 (see Note 9)
Oct 2011	5,705.00 (see Note 10)	0.00	0.00	650.00	5,705.00 (see Note 10)	100.00	0.00	0.00	0.00	2.98
Sub-total	6,511.00	0.00	0.00	725.00	6511.00	120.00	0.00	15.00	450.00	21.25
Nov 2011	6,294.00	0.00	0.00	775.00	6,294.00	50.00	0.00	0.00	0.00	44.84
Dec 2011	3,011.00	0.00	0.00	263.00	3,011.00	20.00	0.00	0.00	0.00	17.14
Jan 2012	349.00	64.00	0.00	25.00	284.60	20.00	150.00	0.00	0.00	49.01

Month	Actual Quantities of Inert C&D Materials (Public Fill) Generated					Actual Quantities of Non-inert C&D Materials (Construction Waste) Generated				
	Total Quantity Generated	Reused in the Contract	Reused in other Projects	Hard Rocks & Large Broken Concrete	Disposed as Public Fill	Metals (see Note 1)	Paper/ cardboard packaging (see Note 1)	Plastics (see Note 2)	Chemical Waste	Others, e.g. general refuse (see Note 3)
	tonne	tonne	tonne	tonne	tonne	kilogram	kilogram	kilogram	Litre	tonne
Sub-total	9,654.00	64.00	0.00	1063.00	9589.60	90.00	150.00	0.00	0.00	110.99
Feb 2012	3,371.00	30.00	0.00	2,810.00	3,341.00	150.00	0.00	0.00	0.00	48.72
Mar 2012	6,460.00	3,000.00	0.00	625.00	3,459.70	30.00	0.00	0.00	0.00	41.10
Apr 2012	3,774.00	3,000.00	0.00	250.00	774.40	40.00	0.00	0.00	0.00	40.01
Sub-total	13,605.00	6,030.00	0.00	3685.00	7575.10	220.00	0.00	0.00	0.00	129.83
May 2012	7,936.00	5,600.00	0.00	750.00	2,336.20	40.00	0.00	10.00	0.00	75.19
Jun 2012	13,091.00	7,500.00	0.00	875.00	5,590.80	40.00	35.50	8.00	0.00	66.74
Jul 2012	11,972.00	8,600.00	0.00	825.00	3,372.50	40.00	36.40	5.00	0.00	100.50
Sub-total	32,999.00	21,700.00	0.00	2450.00	11299.50	120.00	70.90	23.00	0.00	242.43
Aug 2012	11,660.00	11,000.00	0.00	950.00	659.80	30.00	10.00	6.00	0.00	78.77
Sept 2012	3,055.00	1,500.00	0.00	920.00	1,555.38	30.00	40.00	5.00	0.00	118.80
Oct 2012	2,657.00	200.00	0.00	500.00	2,457.01	30.00	59.40	8.00	0.00	124.04
Sub-total	17,372.00	12,700.00	0.00	2370.00	4672.19	90.00	109.40	19.00	0.00	321.61
Nov 2012	2,691.00	250.00	0.00	750.00	2,441.01	50.00	25.00	10.00	0.00	128.08
Dec 2012	4,319.00	400.00	0.00	200.00	3,919.13	60.00	20.00	15.00	0.00	165.28
Jan 2013	4,442.00	100.00	0.00	200.00	4,341.56	200.00	40.00	20.00	0.00	111.23
Sub-total	11,452.00	750.00	0.00	1150.00	10701.70	310.00	85.00	45.00	0.00	404.59
Feb 2013	1,286.00	85.00	0.00	50.00	1,201.23	180.00	35.00	16.00	0.00	99.44
Mar 2013	900.00	900.00	0.00	120.00	0.00	120.00	45.00	10.00	0.00	97.43
Apr 2013	680.00	680.00	0.00	300.00	0.00	22.00	50.00	15.00	0.00	80.21
Sub-total	2866.00	1665.00	0.00	470.00	1201.23	322.00	130.00	41.00	0.00	277.08
May 2013	1443.37	100.00	0.00	1020.00	1343.37	40.00	43.00	9.00	0.00	46.88 (see Note 16)
June 2013	1993.06	50.00	0.00	850.00	1943.06	100.00	60.00	5.00	0.00	53.89

July 2013	1246.64	100.00	0.00	1100.00	1146.64	100.00	60.00	10.00	0.00	71.15
Sub-total	4683.07	250.00	0.00	2970.00	4433.07	240.00	163.00	24.00	0.00	171.92
August 2013	873.73	120.00	0.00	700.00	753.73	50.00	60.00	8.00	0.00	63.95
September 2013	748.43	50.00	0.00	650.00	698.43	40.00	60.00	5.00	0.00	41.28
October 2013	1701.99	45.00	0.00	1500.00	1656.99	20.00	60.00	5.00	0.00	34.79
Sub-total	3324.15	215.00	0.00	2850.00	3109.15	110.00	180.00	18.00	0.00	140.02
Total (see Note 17)	230075.22	43374.00	5695.00	24876.00	181005.64	2432.00	1808.30	420.00	810.00	1911.12

- Notes:
- (1) Metal and paper/cardboard packaging were collected by recycler for recycling.
 - (2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material collected by recycler for recycling.
 - (3) General refuse was disposed of at WENT by subcontractors.
 - (4) The waste flow data for November and December 2010, January and February 2011 was updated in March 2011 based on SOR's comments and has been confirmed by the Contractor.
 - (5) The inert C&D materials were reused in the Contract No. EP/SP/58/08 at Tuen Mun Tsang Tsui.
 - (6) Chemical waste was collected through the licensed chemical waste collector, Dunwell Ind. (Holdings) Ltd, with the waste collection licence number 7111-757-W0015-WC.
 - (7) The waste flow data for April, May and June 2011 was updated in August 2011 based on SOR's comments and has been confirmed by the Contractor.
 - (8) The waste flow data of chemical waste for August 2011 was updated in October 2011 based on Contractor's revised waste flow summary.
 - (9) The waste flow data of general refuse for September 2011 was updated in November 2011 based on Contractor's revised waste flow summary.
 - (10) The waste flow data of C&D material for October 2011 was updated in December 2011 based on Contractor's revised waste flow summary.
 - (11) The waste flow data of C&D material for August 2011 was updated in January 2012 based on SOR's comments and has been confirmed by the Contractor.
 - (12) The waste flow data of metal and paper/cardboard packaging for June 2011 was revised in August 2012.
 - (13) The quantity of inert and non-inert C&D material generated from May 2012 to December and imported fill material was updated by the Contractor on 6 November 2012.
 - (14) The quantity of Rocks & Broken Concrete from November 2010 to November 2012 was updated by the Contractor on 12 December 2012.
 - (15) The quantity of C&D material reused in this Contract in Oct, Nov and Dec 2012 were updated by the Contractor on 5 January 2013.
 - (16) The quantity of general refuse in this Contract for May 2013 was updated by the Contractor in June 2013.
 - (17) The quantity of total including which for last reporting period has been updated.

Annex K

Environmental Complaint,
Environmental Summons
and Persecution Log

Annex K Cumulative Complaint and Summons/Prosecutions Log

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
November 2010	0	0
December 2010	0	0
January 2011	0	0
February 2011	0	0
March 2011	0	0
April 2011	0	0
May 2011	0	0
June 2011	0	0
July 2011	0	0
August 2011	0	0
September 2011	0	0
October 2011	0	0
November 2011	0	0
December 2011	0	0
January 2012	0	0
February 2012	0	0
March 2012	0	0

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
April 2012	0	0
May 2012	0	0
June 2012	0	0
July 2012	0	0
August 2012	0	0
September 2012	0	0
October 2012	0	0
November 2012	0	0
December 2012	0	0
January 2013	0	0
February 2013	0	0
March 2013	0	0
April 2013	0	0
May 2013	0	0
June 2013	0	0
July 2013	0	0
August 2013	0	0
September 2013	0	0
October 2013	0	0

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
Overall Total	0	0

Annex L

Construction Programme of the Project

Activity ID	Description	Original Duration	Early Start	Early Finish	Late Start	Late Finish	2013							2014						
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
Key Date																				
Commencement and Completion of Works																				
Contract Dates																				
KMD000160	Original Contract Completion Date	0		25NOV2013		25NOV2013 *														
KMD000170	EOT granted for May 11 to Sept 2012 (98.5 days)	99	26NOV2013	04MAR2014	26NOV2013	04MAR2014														
Preliminaries																				
General Requirements																				
Contract Preliminaries																				
PLW005320	Operation Plan - Approval	10	07AUG2012	06NOV2013	07AUG2012	06NOV2013														
PLW006100	O&M Manual for the Upgrade Works	90	15JAN2013	25JAN2014	15JAN2013	01MAY2014														
PLW006200	As-built Drawing for Upgrade Works	90	06NOV2013	03FEB2014	01FEB2014	01MAY2014														
PLW007100	Submit Variation to Discharge Permit	500	01MAR2011	16NOV2013	01MAR2011	01JAN2014														
PLW007200	EPD Approval Variation to Discharge Permit	90	17NOV2013	14FEB2014	02JAN2014	01APR2014														
Design and Design Checking of Permanent Works																				
Submission and Consent																				
Submission and Approval																				
DPD081161	DDA9A-D: Elect. sys design- RtoC x2	28	24AUG2011	04NOV2013	24AUG2011	04NOV2013														
DPD081170	DDA9A-D: Elect. sys design- SO Consent Granted	0		04NOV2013		04NOV2013														
DPD090900	Dummy: Approve of Other DDA submission	0		04NOV2013		04NOV2013														
DPD090990	Dummy: Approve of all General DDA	0		04NOV2013		04NOV2013														
DPD513513	Chemical: PV sys SO Review	60	28MAY2012	07NOV2013	28MAY2012	07NOV2013														
DPD513515	Chemical: PV sys SO approved	0		07NOV2013		07NOV2013														
DPD613183	Sludge: Centrifuge panel SO Review	50	28JUL2012 A	04NOV2013	28JUL2012	04NOV2013														
DPD613185	Sludge: Centrifuge Panel SO approved	0		04NOV2013		04NOV2013														
DPD814123	All area: Fan SO Review	50	02JUL2012 A	09NOV2013	02JUL2012	09NOV2013														
DPD814125	All area: Fan SO approved	0		09NOV2013		09NOV2013														
DPD814213	All area: FS. panel SO Review	28	28JUL2012 A	13NOV2013	28JUL2012	13NOV2013														
DPD904180	Refurbish: DDA 25A-D E&M - SO Review	28	14JAN2013	30OCT2013	14JAN2013	30OCT2013														
DPD904181	Refurbish: DDA 25A-D E&M - RtoC x2	28	31OCT2013 *	09DEC2013	31OCT2013	09DEC2013														
DPD916316	Mis: DDA 28B1 MH & Pipe Works RtoC x2	28	25APR2012	04NOV2013	25APR2012	04NOV2013														
DPD923051	Mis: DDA 28E - N1N2 MH - RtoC x2	28	25APR2012	04NOV2013	25APR2012	04NOV2013														
DPD923650	Mis: DDA 28H Cable Duct & DP - SO Review	28	04OCT2012	30OCT2013	04OCT2012	30OCT2013														
DPD923651	Mis: DDA 28H Cable Duct & DP - RtoC x2	28	31OCT2013	27NOV2013	31OCT2013	27NOV2013														
DPD999910	Dummy: End of Design Stage	1	09DEC2013	09DEC2013	09DEC2013	09DEC2013														
Civil and Structural Works																				
Chemically Enhanced Primary Treatment System																				
Building and Structures																				

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Activity ID	Description	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Gantt Chart											
							2013			2014						UI		
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	UI			
Building and Structures																		
CCC321060B	RWPS: Colour gravel on roof	6	28OCT2013	02NOV2013	12DEC2013	17DEC2013												
CCC321070B	RWPS: Bonntile to external wall	12	03NOV2013	14NOV2013	18DEC2013	29DEC2013												
CCC500230	Chemical Bldg: ABWF at Tank Compound	60	28OCT2013 *	08JAN2014	28NOV2013	14FEB2014												
CCC500720B	Chem: FRP floor at polymer preparation room	6	01DEC2013 *	06DEC2013	24JAN2014	29JAN2014												
CCC500840B	Chem: FRP floor at tank compound	14	01DEC2013 *	14DEC2013	16JAN2014	29JAN2014												
CCC500950B	Chem: Photovoltaic glazing	14	28OCT2013	10NOV2013	28OCT2013	10NOV2013												
CCC500960B	Chem: Textured coating to external wall	28	11NOV2013	08DEC2013	11NOV2013	08DEC2013												
CCC800310	Admin Bldg: Remaining ABWF Works	75	28OCT2013	25JAN2014	30OCT2013	28JAN2014												
CCC910180	Elect Bldg 1: Remaining ABWF Work	60	13NOV2012	05NOV2013	13NOV2012	23JAN2014												
CCC910570B	EB1: Green roofing	7	02DEC2013 *	09DEC2013	22JAN2014	29JAN2014												
CCC930670B	EB3: Gravel on roof	6	28OCT2013	02NOV2013	28OCT2013	02NOV2013												
CCC970105	Gate House: Commencement of Construction	0	28OCT2013		14DEC2013													
CCC970110	Gate House: Excavation	6	02DEC2013 *	07DEC2013	14DEC2013	20DEC2013												
CCC970120	Gate House: Foundation	10	09DEC2013	19DEC2013	21DEC2013	04JAN2014												
CCC970130	Gate House: Backfilling Work	5	20DEC2013	27DEC2013	06JAN2014	10JAN2014												
CCC970140	Gate House: Superstructure	30	28DEC2013	07FEB2014	11JAN2014	20FEB2014												
Odour Control Facilities																		
Building and Structures																		
CCC712960B	DOUA: Bontile to external wall	12	05FEB2014 *	16FEB2014	20APR2014	01MAY2014												
Landscaping Wroks																		
Miscellaneous Works																		
CMT995350	Landscape Preparation Works	4	23JAN2014	27JAN2014	26MAR2014	29MAR2014												
CMT995360	Planting Works	7	28JAN2014	10FEB2014	31MAR2014	08APR2014												
CMT995410	Irrigation System	8	23JAN2014	06FEB2014	22APR2014	30APR2014												
Refurbishment and Renewal Works																		
Miscellaneous Works																		
CCM000110	Refurbishment of Existing Buildings / Structures	60	17JAN2014	02APR2014	15FEB2014	30APR2014												
CCM000160	SHB: External ABWF	70	06JAN2014 *	02APR2014	29JAN2014	30APR2014												
CCM001180B	SHB: Erect working platform for external wks	12	06JAN2014 *	18JAN2014	17JAN2014	05FEB2014												
CCM001190B	SHB: Remove existing finishes	12	20JAN2014	07FEB2014	06FEB2014	19FEB2014												
Miscellaneous Works																		
Miscellaneous Works																		
CCM104690B	EB4: Cement render to external wall	10	28OCT2013	06NOV2013	13FEB2014	22FEB2014												
CCM104700B	EB4: Coloured gravel	6	07NOV2013	12NOV2013	23FEB2014	28FEB2014												
External Works																		
Miscellaneous Works																		

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Activity ID	Description	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Gantt Chart											
							2013			2014								
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN			
CWM101063	Flowmeter: Diversion proposal and approval	10	17JUN2013	30OCT2013	17JUN2013	30OCT2013	Flowmeter: Diversion proposal and approval											
CWM101066	Flowmeter: Penstock modi & Divert sewage to bypa	50	28SEP2013	05DEC2013	28SEP2013	25OCT2013	Flowmeter: Penstock modi & Divert sewage to bypa											
CWM101070	Flowmeter: Temporary shut down of OPS	3	06DEC2013	08DEC2013	26OCT2013	28OCT2013	Flowmeter: Temporary shut down of OPS											
CWM101080	Flowmeter: Replace Pipeline 1	16	20DEC2013	04JAN2014	09NOV2013	24NOV2013	Flowmeter: Replace Pipeline 1											
CWM101090	Flowmeter: Const. Weir 1 at Extg Outfall Manhole	16	05JAN2014	20JAN2014	25NOV2013	10DEC2013	Flowmeter: Const. Weir 1 at Extg Outfall Manhole											
CWM101500	Boundary Wall: Provision of New U-channel	60	28OCT2013	08JAN2014	15FEB2014	30APR2014	Boundary Wall: Provision of New U-channel											
CWM101605	Formation of Access M012	12	26OCT2013	29OCT2013	26OCT2013	02NOV2013	Formation of Access M012											
CWM101610	Construction of Access M012	24	30OCT2013	26NOV2013	04NOV2013	30NOV2013	Construction of Access M012											
CWM101615	Formation of Access M003 (North of CEPT & DOUB)	18	23NOV2013	13DEC2013	23JAN2014	18FEB2014	Formation of Access M003 (North of CEPT & DOUB)											
CWM101620	Construction of Access M003 (N of CEPT & DOUB)	30	14DEC2013	21JAN2014	19FEB2014	25MAR2014	Construction of Access M003 (N of CEPT & DOUB)											
CWM101650	Formation of Access M002 0+00 to 0+80	14	21NOV2013	06DEC2013	12FEB2014	27FEB2014	Formation of Access M002 0+00 to 0+80											
CWM101655	Construction of Access M002 0+00 to 0+80	35	07DEC2013	20JAN2014	28FEB2014	10APR2014	Construction of Access M002 0+00 to 0+80											
CWM101660	Construction of Access M011	14	25OCT2013	07NOV2013	25OCT2013	04APR2014	Construction of Access M011											
CWM101670	Formation of Access M010	15	15NOV2013	02DEC2013	17OCT2013	02NOV2013	Formation of Access M010											
CWM101675	Construction of Access M010	30	03DEC2013	09JAN2014	04NOV2013	07DEC2013	Construction of Access M010											
CWM101680	Formation of Access M006 0+00 to 0+50	15	20DEC2013	09JAN2014	21NOV2013	07DEC2013	Formation of Access M006 0+00 to 0+50											
CWM101683	Construction of Access M006 0+00 to 0+50	30	10JAN2014	19FEB2014	09DEC2013	15JAN2014	Construction of Access M006 0+00 to 0+50											
CWM101695	Access around new PTW	80	21NOV2013	03MAR2014	03DEC2013	14MAR2014	Access around new PTW											
CWM101700	Construction of Access M005	35	12OCT2013	02DEC2013	12OCT2013	30NOV2013	Construction of Access M005											
CWM101720	Construction of Access M008	30	01NOV2013	05DEC2013	22NOV2013	28DEC2013	Construction of Access M008											
CWM101730	Formation of Access M008	12	26OCT2013	31OCT2013	26OCT2013	21NOV2013	Formation of Access M008											
CWM101770	FS: Construction of Access M004	35	16JAN2014	03MAR2014	30DEC2013	14FEB2014	FS: Construction of Access M004											
CWM101790	Construction of Weighbridge	40	17OCT2013	02DEC2013	17OCT2013	29NOV2013	Construction of Weighbridge											
CWM102040	Sewerage Overflow from CEPT to Extg manhole	260	21MAY2012	26NOV2013	21MAY2012	21MAR2014	Sewerage Overflow from CEPT to Extg manhole											
CWM102070	Connection to extg Pump Station	95	28OCT2013	24FEB2014	28OCT2013	24FEB2014	Connection to extg Pump Station											
CWM102100	Laying Pipe Ducts, Trenches and Utilities	360	05JUN2012	08NOV2013	05JUN2012	17DEC2013	Laying Pipe Ducts, Trenches and Utilities											
CWM102160	Laying LV cable duct	100	18FEB2013	03JAN2014	18FEB2013	23JAN2014	Laying LV cable duct											
CWM102170	Laying ELV cable duct	116	18FEB2013	03JAN2014	18FEB2013	03JAN2014	Laying ELV cable duct											
CWM102180	Sitewide Watermain	84	26APR2013	07DEC2013	26APR2013	31DEC2013	Sitewide Watermain											
CWM103100	Demolish E&M Work at Extg PTW	20	23JAN2014	11FEB2014	23JAN2014	11FEB2014	Demolish E&M Work at Extg PTW											
CWM103200	Commencement of Demolishing Extg PTW	0	23JAN2014		23JAN2014		Commencement of Demolishing Extg PTW											
CWM103210	Demolish Extg Structures of PTW	75	23JAN2014	13APR2014	23JAN2014	13APR2014	Demolish Extg Structures of PTW											
CWM200220B	Backfill and Remove Sheet Piling East	24	16APR2013	29OCT2013	16APR2013	29OCT2013	Backfill and Remove Sheet Piling East											
CWM200460B	Benching for overflow pipe inside N1	10	01NOV2013	10NOV2013	30SEP2013	09OCT2013	Benching for overflow pipe inside N1											
CWM200470B	Apply Poly-shield / touchup N1	5	21NOV2013	25NOV2013	19OCT2013	23OCT2013	Apply Poly-shield / touchup N1											
CWM200500B	Sealing of pipe connection opening	18	14OCT2013	31OCT2013	14OCT2013	29SEP2013	Sealing of pipe connection opening											
CWM200520B	Divert Flow in N1	2	26NOV2013	27NOV2013	24OCT2013	25OCT2013	Divert Flow in N1											

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							2013			2014								
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN			
SSF200420	FS: Inspection and re-inspection (1)	25	25JAN2014	28FEB2014	25JAN2014	28FEB2014											FS: Inspection and re-inspection (1)	
Plumbing - WSD																		
Building and Structures																		
SSP200510	Watermain (PW): Submit WW046 Part 4	1	28OCT2013	28OCT2013	28OCT2013	28OCT2013											Watermain (PW): Submit WW046 Part 4	
SSP200520	Watermain (PW): WSD Inspection and Re-inspection	25	21OCT2013	29NOV2013	21OCT2013	20DEC2013											Watermain (PW): WSD Inspection and Re-inspection	
SSP200530	Watermain(PW): WW046 Part 5	24	30NOV2013	30DEC2013	21DEC2013	21JAN2014											Watermain(PW): WW046 Part 5	
SSP201510	Watermain (FS1): Submit WW046 Part 4	1	07NOV2013	07NOV2013	07NOV2013	07NOV2013											Watermain (FS1): Submit WW046 Part 4	
SSP201520	Watermain(FS1): WSD Inspection and Re-inspection	25	21OCT2013	25NOV2013	21OCT2013	21NOV2013											Watermain(FS1): WSD Inspection and Re-inspection	
SSP201530	Watermain (FS1): WW046 Part 5	24	26NOV2013	23DEC2013	22NOV2013	19DEC2013											Watermain (FS1): WW046 Part 5	
SSP202510	Watermain (FS2): Submit WW046 Part 4	1	24DEC2013	24DEC2013	20DEC2013	20DEC2013											Watermain (FS2): Submit WW046 Part 4	
SSP202520	Watermain(FS2): WSD Inspection and Re-inspection	25	27DEC2013	25JAN2014	21DEC2013	22JAN2014											Watermain(FS2): WSD Inspection and Re-inspection	
SSP202530	Watermain (FS2): WW046 Part 5	24	27JAN2014	28FEB2014	23JAN2014	25FEB2014											Watermain (FS2): WW046 Part 5	
SSP203510	Watermain (FW): Submit WW046 Part 4	1	24DEC2013	24DEC2013	27FEB2014	27FEB2014											Watermain (FW): Submit WW046 Part 4	
SSP203520	Watermain (FW): WSD Inspection and Re-insp'	25	27DEC2013	25JAN2014	28FEB2014	28MAR2014											Watermain (FW): WSD Inspection and Re-insp'	
SSP203530	Watermain (FW): WW046 Part 5	24	27JAN2014	28FEB2014	29MAR2014	30APR2014											Watermain (FW): WW046 Part 5	
Telecommunication																		
Building and Structures																		
SST200610	Handover Plant Room and Cable Duct to Telecom Co	6	26NOV2013	02DEC2013	18DEC2013	24DEC2013											Handover Plant Room and Cable Duct to Telecom Co	
SST200620	Telecom Co to Install Cable and Equipment	30	03DEC2013	01JAN2014	25DEC2013	23JAN2014											Telecom Co to Install Cable and Equipment	
E&M Works																		
Procurement and Installation																		
Building and Structures																		
EMW001100	Penstocks for Manholes N2	26	02OCT2013	01NOV2013	02OCT2013	17OCT2013											Penstocks for Manholes N2	
EMW001100A	N2 Penstock Test	7	02NOV2013	09NOV2013	18OCT2013	25OCT2013											N2 Penstock Test	
EMW001110	Penstocks / Stoplog for Manholes N1 / bypass	25	15OCT2013	12NOV2013	15OCT2013	09OCT2013											Penstocks / Stoplog for Manholes N1 / bypass	
EMW001120	Penstocks N1 / bypass Test	7	13NOV2013	20NOV2013	10OCT2013	18OCT2013											Penstocks N1 / bypass Test	
EMW001200A	Penstock from UV to outfall PS Test	7	28OCT2013	04NOV2013	19OCT2013	26OCT2013											Penstock from UV to outfall PS Test	
EMW163000	Access Control System Installation	80	28OCT2013	06FEB2014	25OCT2013	29JAN2014											Access Control System Installation	
EMW164000	ALPR System Installation	80	28OCT2013	06FEB2014	25OCT2013	29JAN2014											ALPR System Installation	
EMW164500	WB: Civil Handover to E&M	0	03DEC2013		30NOV2013												WB: Civil Handover to E&M	
EMW165010	Weighbridge installation	14	03DEC2013	18DEC2013	30NOV2013	16DEC2013											Weighbridge installation	
EMW165020	Electrical & Control installation	14	19DEC2013	07JAN2014	17DEC2013	04JAN2014											Electrical & Control installation	
EMW165030	Access system installation	21	08JAN2014	06FEB2014	06JAN2014	29JAN2014											Access system installation	
EMW165110	Weighbridge installation	14	03DEC2013	18DEC2013	30NOV2013	16DEC2013											Weighbridge installation	
EMW165120	Electrical & Control installation	14	19DEC2013	07JAN2014	17DEC2013	04JAN2014											Electrical & Control installation	
EMW165130	Access system installation	21	08JAN2014	06FEB2014	06JAN2014	29JAN2014											Access system installation	
EMW181450	PTW: MVAC Installation AB	80	09MAR2013	28OCT2013	09MAR2013	28OCT2013											PTW: MVAC Installation AB	

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							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN						
EMW181550A	PTW: FS CS H/O Duct from Admin Bldg	0	20DEC2013		20DEC2013				◆	PTW: FS CS H/O Duct from Admin Bldg											
EMW181550B	PTW: FS Laying Signal Cable from Admin Bldg	30	20DEC2013	27JAN2014	20DEC2013	27JAN2014				■ PTW: FS Laying Signal Cable from Admin Bldg											
EMW185240	PTW: FRP Cover - FS	20	21JUN2013	12NOV2013	21JUN2013	12NOV2013				■ PTW: FRP Cover - FS											
EMW185250	PTW: FRP Cover - GC	20	26JUN2013	12NOV2013	26JUN2013	12NOV2013				■ PTW: FRP Cover - GC											
EMW185340	PTW: DO Duct Support - FS	20	21JUN2013	12NOV2013	21JUN2013	12NOV2013				■ PTW: DO Duct Support - FS											
EMW185350	PTW: DO Duct Support - GC	20	10JUL2013 A	12NOV2013	10JUL2013	28DEC2013				■ PTW: DO Duct Support - GC											
EMW185440	PTW: DO Duct - FS x	30	11JUL2013 A	16NOV2013	11JUL2013	20JAN2014				■ PTW: DO Duct - FS x											
EMW185450	PTW: DO Duct - GC x	30	13NOV2013	17DEC2013	30DEC2013	08FEB2014				■ PTW: DO Duct - GC x											
EMW191800	PTW: Duct Install in PT bet PTW, DOUA and CEPT	30	21JUN2013	04NOV2013	21JUN2013	04NOV2013				■ PTW: Duct Install in PT bet PTW, DOUA and CEPT											
EMW206114	CEPT: Tank 4 FRP DO covers Installation	15	29JUL2013 A	01NOV2013	29JUL2013	01NOV2013				■ CEPT: Tank 4 FRP DO covers Installation											
EMW206115	CEPT: Tank 5 FRP DO covers Installation	15	28OCT2013	13NOV2013	28OCT2013	13NOV2013				■ CEPT: Tank 5 FRP DO covers Installation											
EMW206200	CEPT: DO Duct Install PT CEPT/SDB/DOU B	20	10MAY2013	07NOV2013	10MAY2013	08OCT2013				■ CEPT: DO Duct Install PT CEPT/SDB/DOU B											
EMW208550A	CEPT: FS CS H/O Duct from Admin Bldg	0	15NOV2013		15NOV2013					◆ CEPT: FS CS H/O Duct from Admin Bldg											
EMW208550B	CEPT: FS Laying Signal Cable from Admin Bldg	30	04NOV2013	07DEC2013	04NOV2013	07DEC2013				■ CEPT: FS Laying Signal Cable from Admin Bldg											
EMW303350	UV: DO Cover Installation	30	06JUL2013 A	12NOV2013	06JUL2013	12NOV2013				■ UV: DO Cover Installation											
EMW309150	UV: DO Duct Installation	30	03AUG2013	12NOV2013	03AUG2013	12NOV2013				■ UV: DO Duct Installation											
EMW309170	UV: DO Cover Installation	15	14SEP2013	12NOV2013	14SEP2013	12NOV2013				■ UV: DO Cover Installation											
EMW312000	UV: Duct install in PT bet UV / DOU B and Skip	30	05JUN2013	04NOV2013	05JUN2013	26OCT2013				■ UV: Duct install in PT bet UV / DOU B and Skip											
EMW322400	RWPS: DAF Installation	60	27JUN2013	14NOV2013	27JUN2013	14NOV2013				■ RWPS: DAF Installation											
EMW322450	RWPS: Pump & Pipework Installation	55	27JUN2013	30OCT2013	27JUN2013	30OCT2013				■ RWPS: Pump & Pipework Installation											
EMW322573	RWPS: Cable Tray & support above G/F	33	14SEP2013	30OCT2013	14SEP2013	17OCT2013				■ RWPS: Cable Tray & support above G/F											
EMW322574	RWPS: RWPS Area Cable Tray & Support	40	29JUL2013 A	30OCT2013	29JUL2013	30OCT2013				■ RWPS: RWPS Area Cable Tray & Support											
EMW322600	RWPS: BS Installation	30	08AUG2013	31OCT2013	08AUG2013	31OCT2013				■ RWPS: BS Installation											
EMW322641	RWPS: MVAC Installation H/L	30	29JUL2013 A	30OCT2013	29JUL2013	30OCT2013				■ RWPS: MVAC Installation H/L											
EMW322645	RWPS: MVAC Installation LL	30	21SEP2013	01NOV2013	21SEP2013	26OCT2013				■ RWPS: MVAC Installation LL											
EMW322651	RWPS: FS Installation H/L	30	29JUL2013 A	31OCT2013	29JUL2013	31OCT2013				■ RWPS: FS Installation H/L											
EMW322655	RWPS: FS Installation LL	30	29JUL2013 A	01NOV2013	29JUL2013	21OCT2013				■ RWPS: FS Installation LL											
EMW322655A	RWPS: FS CS H/O Duct from Admin Bldg	0	28OCT2013		28OCT2013					◆ RWPS: FS CS H/O Duct from Admin Bldg											
EMW322655B	RWPS: FS Laying Signal Cable from Admin Bldg	30	28OCT2013	30NOV2013	28OCT2013	30NOV2013				■ RWPS: FS Laying Signal Cable from Admin Bldg											
EMW322661	RWPS: P&D Installation H/L	30	21SEP2013	01NOV2013	21SEP2013	01NOV2013				■ RWPS: P&D Installation H/L											
EMW322665	RWPS: P&D Installation L/L	30	21SEP2013	01NOV2013	21SEP2013	26OCT2013				■ RWPS: P&D Installation L/L											
EMW322671	RWPS: EL Installation H/L	35	28SEP2013	01NOV2013	28SEP2013	01NOV2013				■ RWPS: EL Installation H/L											
EMW322675	RWPS: EL Installation L/L	35	28SEP2013	20NOV2013	28SEP2013	13NOV2013				■ RWPS: EL Installation L/L											
EMW322700	RWPS: Control system Installation (ref)	60	16JUL2013 A	20NOV2013	16JUL2013	02DEC2013				■ RWPS: Control system Installation (ref)											
EMW322785	RWPS: MCC Control Cable Laying and Fixing	60	05AUG2013	28OCT2013	05AUG2013	17OCT2013				■ RWPS: MCC Control Cable Laying and Fixing											
EMW322787	RWPS: MCC Control Cable Termination	30	28AUG2013	28OCT2013	28AUG2013	17OCT2013				■ RWPS: MCC Control Cable Termination											
EMW323520	RWPS: RWMCC EB3 Power Cable Laying	40	30AUG2013	28OCT2013	30AUG2013	17OCT2013				■ RWPS: RWMCC EB3 Power Cable Laying											

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							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
EMW323530	RWPS: ALL Cable Test and Termination	30	09SEP2013	28OCT2013	09SEP2013	17OCT2013	RWPS: ALL Cable Test and Termination											
EMW323700	RWPS: RWMCC at EB3 Energization	3	31OCT2013	02NOV2013	18OCT2013	21OCT2013	RWPS: RWMCC at EB3 Energization											
EMW323800	RWPS: Duct install in PT between RWPS/OPS	30	28AUG2013	13NOV2013	28AUG2013	26OCT2013	RWPS: Duct install in PT between RWPS/OPS											
EMW506550A	Chemical: FS CS H/O Duct from Admin Bldg	0	28OCT2013		28OCT2013		Chemical: FS CS H/O Duct from Admin Bldg											
EMW506550B	Chemical: FS Laying Signal Cable from Admin Bldg	30	28OCT2013	30NOV2013	28OCT2013	30NOV2013	Chemical: FS Laying Signal Cable from Admin Bldg											
EMW506910	Chemical: PV structure Installation	20	02OCT2013	13NOV2013	02OCT2013	13NOV2013	Chemical: PV structure Installation											
EMW506920	Chemical: PV panel Installation	30	14NOV2013	18DEC2013	14NOV2013	18DEC2013	Chemical: PV panel Installation											
EMW506930	Chemical: PV Inverter Installation	20	25SEP2013	28OCT2013	25SEP2013	28OCT2013	Chemical: PV Inverter Installation											
EMW506940	Chemical: PV panel cabling Installation	20	02OCT2013	04NOV2013	02OCT2013	16NOV2013	Chemical: PV panel cabling Installation											
EMW608440	Sludge: MVAC Installation R/L	10	21JUN2013	28OCT2013	21JUN2013	28OCT2013	Sludge: MVAC Installation R/L											
EMW608550B	Sludge: FS Laying Signal Cable from Admin Bldg	30	01OCT2013	19NOV2013	01OCT2013	19NOV2013	Sludge: FS Laying Signal Cable from Admin Bldg											
EMW608640	Sludge: P&D Installation R/L	25	19JUN2013	29OCT2013	19JUN2013	29OCT2013	Sludge: P&D Installation R/L											
EMW608650	Sludge: P&D Installation SSH	25	15AUG2013	29OCT2013	15AUG2013	29OCT2013	Sludge: P&D Installation SSH											
EMW608950	Sludge: DO Duct Installation G/L	25	29JUN2013	12NOV2013	29JUN2013	12NOV2013	Sludge: DO Duct Installation G/L											
EMW608960	Sludge: DO Duct Installation B/L	25	08JUL2013 A	12NOV2013	08JUL2013	12NOV2013	Sludge: DO Duct Installation B/L											
EMW611950	Sludge SkipHS: DO Duct Installation	15	29JUL2013 A	12NOV2013	29JUL2013	12NOV2013	Sludge SkipHS: DO Duct Installation											
EMW613000	Sludge: DO Duct install in PT CEPT/SDB/DOU B I	30	29JUL2013 A	12NOV2013	29JUL2013	12NOV2013	Sludge: DO Duct install in PT CEPT/SDB/DOU B I											
EMW613500	Skip Storage Bldg.: E&M Installation works	30	28OCT2013	28NOV2013	10OCT2013	12NOV2013	Skip Storage Bldg.: E&M Installation works											
EMW717100	DOU A: SCADA System Installation	50	15JUL2013 A	09NOV2013	15JUL2013	11NOV2013	DOU A: SCADA System Installation											
EMW718550A	DOU A: FS CS H/O Duct from Admin Bldg	0	28OCT2013		28OCT2013		DOU A: FS CS H/O Duct from Admin Bldg											
EMW718550B	DOU A: FS Laying Signal Cable from Admin Bldg	30	28OCT2013	30NOV2013	28OCT2013	30NOV2013	DOU A: FS Laying Signal Cable from Admin Bldg											
EMW723500	DOU B: Odour Duct connection	70	21AUG2013	31OCT2013	21AUG2013	25NOV2013	DOU B: Odour Duct connection											
EMW725100	DOU B: Control & Cable Installation (MCC to Eq)	60	27MAY2013	02NOV2013	27MAY2013	09NOV2013	DOU B: Control & Cable Installation (MCC to Eq)											
EMW727100	DOU B: SCADA System Installation	50	09AUG2013	02NOV2013	09AUG2013	17OCT2013	DOU B: SCADA System Installation											
EMW728550A	DOU B: FS CS H/O Duct from Admin Bldg	0	28OCT2013		28OCT2013		DOU B: FS CS H/O Duct from Admin Bldg											
EMW728550B	DOU B: FS Laying Signal Cable from Admin Bldg	30	28OCT2013	30NOV2013	28OCT2013	30NOV2013	DOU B: FS Laying Signal Cable from Admin Bldg											
EMW728610	DOU B: P&D Installation Plant	20	07AUG2013	02NOV2013	07AUG2013	02NOV2013	DOU B: P&D Installation Plant											
EMW728650	DOU B: P&D Installation MCC	15	23AUG2013	28OCT2013	23AUG2013	28OCT2013	DOU B: P&D Installation MCC											
EMW729520	DOU B: DOUB MCC Cable Laying from EB4	30	09OCT2013	29OCT2013	09OCT2013	12OCT2013	DOU B: DOUB MCC Cable Laying from EB4											
EMW729530	DOU B: DOUB MCC Cable Test and Termination	15	11OCT2013	29OCT2013	11OCT2013	12OCT2013	DOU B: DOUB MCC Cable Test and Termination											
EMW729700	DOU B: DOUB MCC Energization	3	30OCT2013	01NOV2013	15OCT2013	17OCT2013	DOU B: DOUB MCC Energization											
EMW730000	DOU B: DO Duct install in PT CEPT/SDB/DOU B J	30	10MAY2013	06NOV2013	10MAY2013	17OCT2013	DOU B: DO Duct install in PT CEPT/SDB/DOU B J											
EMW802215	All Area: SCADA SI Assembly PLC LCPs*	60	28OCT2013	28OCT2013	28OCT2013	28OCT2013	All Area: SCADA SI Assembly PLC LCPs*											
EMW802268	All Area: SCADA Install PLC LCP OFPS	65	04SEP2013	19NOV2013	04SEP2013	19NOV2013	All Area: SCADA Install PLC LCP OFPS											
EMW808010	Decommission Control of PTW at Extg Admin Bldg	6	08JAN2014	14JAN2014	22JAN2014	28JAN2014	Decommission Control of PTW at Extg Admin Bldg											
EMW808020	Remove E&M Equipment at Extg Admin Bldg	12	15JAN2014	28JAN2014	29JAN2014	17FEB2014	Remove E&M Equipment at Extg Admin Bldg											
EMW808030	Disconnect Utilities at Extg Admin Bldg	12	15JAN2014	28JAN2014	29JAN2014	17FEB2014	Disconnect Utilities at Extg Admin Bldg											

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EMW821110	Flowmeter: E&M Installation (Ref.)	48	28OCT2013	21DEC2013	04JAN2014	06MAR2014	Flowmeter: E&M Installation (Ref.)											
EMW821130	Flowmeter: Flowmeter Installation (Ref.)	30	09DEC2013	15JAN2014	25JAN2014	06MAR2014	Flowmeter: Flowmeter Installation (Ref.)											
EMW821180	Flowmeter: Install Stoplog Extg Pipeline 1 OPS	10	09DEC2013	19DEC2013	29OCT2013	08NOV2013	Flowmeter: Install Stoplog Extg Pipeline 1 OPS											
EMW821190	Flowmeter: Install Stoplog Extg Pipeline 2 OPS	10	20DEC2013	03JAN2014	20DEC2013	03JAN2014	Flowmeter: Install Stoplog Extg Pipeline 2 OPS											
EMW821200	Flowmeter: Install Meter 1 & Pipeline in Chamber	18	21JAN2014	15FEB2014	11DEC2013	03JAN2014	Flowmeter: Install Meter 1 & Pipeline in Chamr											
EMW821210	Flowmeter: E&M Aux. Installation (Ref)	48	28OCT2013	21DEC2013	28OCT2013	21DEC2013	Flowmeter: E&M Aux. Installation (Ref)											
EMW941730	Elect Bldg 1: Removal of existing LVSB A1	20	28OCT2013	19NOV2013	26NOV2013	18DEC2013	Elect Bldg 1: Removal of existing LVSB A1											
EMW941740	Elect Bldg 1: new LVSB A1 reinstate and testing	20	20NOV2013	12DEC2013	19DEC2013	14JAN2014	Elect Bldg 1: new LVSB A1 reinstate and testing											
EMW941750	Elect Bldg 1: Divert LVSB A1 to PTW MCC1	7	15JAN2014	22JAN2014	15JAN2014	22JAN2014	Elect Bldg 1: Divert LVSB A1 to PTW MCC1											
EMW943730	Elect Bldg 3: Energization of DOUB SWRS	7	26JUL2013 A	29OCT2013	26JUL2013	17OCT2013	Elect Bldg 3: Energization of DOUB SWRS											
EMW944200	OFPS: Delivery of Mat'l & Equipment	30	28FEB2013	28OCT2013	28FEB2013	28OCT2013	OFPS: Delivery of Mat'l & Equipment											
EMW944400	OFPS: Install B1B2 panel	20	28OCT2013	19NOV2013	28OCT2013	19NOV2013	OFPS: Install B1B2 panel											
EMW944510	OFPS: Cable Containment Installation	20	08NOV2013	29NOV2013	08NOV2013	29NOV2013	OFPS: Cable Containment Installation											
EMW944520	OFPS: Cable Laying	15	17OCT2013	02NOV2013	17OCT2013	02NOV2013	OFPS: Cable Laying											
EMW944530	OFPS: Cable Test and Termination	20	12OCT2013	02NOV2013	12OCT2013	15OCT2013	OFPS: Cable Test and Termination											
EMW944610	OFPS: BS System Installation	50	20AUG2013	08NOV2013	20AUG2013	08NOV2013	OFPS: BS System Installation											
EMW944620	OFPS: Modification of LV Switchboard B	30	28SEP2013	05NOV2013	28SEP2013	15OCT2013	OFPS: Modification of LV Switchboard B											
EMW944700	OFPS: B1B2 Energization	2	06NOV2013	07NOV2013	16OCT2013	17OCT2013	OFPS: B1B2 Energization											
EMW944710	OFPS: RWMCC2 Panel Energization	2	06NOV2013	07NOV2013	16OCT2013	17OCT2013	OFPS: RWMCC2 Panel Energization											
EMW944720	OFPS: DOU B MCC 2 Panel Energization	2	06NOV2013	07NOV2013	16OCT2013	17OCT2013	OFPS: DOU B MCC 2 Panel Energization											
EMW944730	OFPS: divert control from LVSB-B to new SCADA sy	15	08NOV2013	25NOV2013	12DEC2013	31DEC2013	OFPS: divert control from LVSB-B to new SCADA sy											
EMW951020	Outdoor: Lighting East of PTW Area	10	12DEC2013	23DEC2013	25NOV2013	05DEC2013	Outdoor: Lighting East of PTW Area											
EMW951030	Outdoor: Lighting South of CEPT Area	10	24DEC2013	07JAN2014	06DEC2013	17DEC2013	Outdoor: Lighting South of CEPT Area											
EMW951040	Outdoor: Lighting near existing OFPS	10	08JAN2014	18JAN2014	18DEC2013	31DEC2013	Outdoor: Lighting near existing OFPS											
EMW951050	Outdoor: Lighting West of Skip Hse Area	10	20JAN2014	05FEB2014	02JAN2014	13JAN2014	Outdoor: Lighting West of Skip Hse Area											
Testing and Commissioning																		
PTW Testing and Commissioning																		
Building and Structures																		
EMT 101220	PTW T&C Phase 1: Site Test - Inlet Pump System	40	02JUN2013	29OCT2013	02JUN2013	29OCT2013	PTW T&C Phase 1: Site Test - Inlet Pump System											
EMT 102320	PTW Phase 2: Dry Testing of Inlet Pump System	25	28JUL2013 A	28OCT2013	28JUL2013	28OCT2013	PTW Phase 2: Dry Testing of Inlet Pump System											
EMT 103410	PTW Phase 3: Wet Testing of PTW CS FS & GC	30	23AUG2013	05NOV2013	23AUG2013	25OCT2013	PTW Phase 3: Wet Testing of PTW CS FS & GC											
EMT 103412	PTW Phase 3: Wet Testing Inlet Pump	30	09AUG2013	05NOV2013	09AUG2013	05NOV2013	PTW Phase 3: Wet Testing Inlet Pump											
EMT 103415	PTW Phase 3: Remove Recirculation System	1	06NOV2013	06NOV2013	06NOV2013	06NOV2013	PTW Phase 3: Remove Recirculation System											
EMT 103420	PTW Phase 3: Manual Testing of PTW-system	30	08SEP2013	05NOV2013	08SEP2013	05NOV2013	PTW Phase 3: Manual Testing of PTW-system											
EMT 103430	PTW Phase 3: Automatic Testing of Sub-system	30	23SEP2013	13NOV2013	23SEP2013	25OCT2013	PTW Phase 3: Automatic Testing of Sub-system											
EMT 104100	PTW Phase 4: Introduce Process Fluid (Sewage)	1	26NOV2013	26NOV2013	26OCT2013	26OCT2013	PTW Phase 4: Introduce Process Fluid (Sewage)											
EMT 104150	PTW Phase 4: Introduce Process Fluid (Start Test	1	28NOV2013	28NOV2013	26OCT2013	26OCT2013	PTW Phase 4: Introduce Process Fluid (Start Test											

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EMT104200	PTW Phase 4: Auto and Process Commissioning	30	29NOV2013	28DEC2013	01NOV2013	30NOV2013												
EMT104300	PTW Phase 4: Verification	25	29DEC2013	22JAN2014	01DEC2013	25DEC2013												
EMT104400	Flow Diversion from exist PTW to CEPT	7	23JAN2014	29JAN2014	26DEC2013	01JAN2014												
CEPT Testing and Commissioning																		
Building and Structures																		
EMT203100	CEPT Tank Phase 3: Wet Testing of Individual Eq't	30	28AUG2013	28OCT2013	28AUG2013	31JAN2014												
EMT203200	CEPT Tank Phase 3: Manual Test Sub-system	30	28AUG2013	02NOV2013	28AUG2013	02NOV2013												
EMT203300	CEPT Tank Phase 3: Automatic Test Sub-system	30	19OCT2013	14NOV2013	19OCT2013	26OCT2013												
EMT204100	CEPT Tank Phase 4: Introduce Process Sewage	7	29NOV2013	05DEC2013	27OCT2013	02NOV2013												
EMT204200	CEPT: Phase 4 Auto Testing Process Commissioning	35	06DEC2013	09JAN2014	14NOV2013	18DEC2013												
EMT204300	CEPT Tank Phase 4: Verification	14	10JAN2014	23JAN2014	19DEC2013	01JAN2014												
UV Disinfection Facilities																		
Building and Structures																		
EMT301100	UV: Phase 1 - Installation Inspection	50	22JUL2013 A	28OCT2013	22JUL2013	28OCT2013												
EMT302100	UV: Phase 2 - Dry Test of Individual Eq't	30	29AUG2013	28OCT2013	29AUG2013	28OCT2013												
EMT303100	UV: Phase 3 - Wet Test of Individual Eq't	30	16SEP2013	02NOV2013	16SEP2013	02NOV2013												
EMT303200	UV: Phase 3 -Manual Testing of Sub-system	30	08OCT2013	17NOV2013	08OCT2013	17NOV2013												
EMT303300	UV: Phase 3 - Auto Testing of Sub-system	30	23OCT2013	19NOV2013	23OCT2013	02NOV2013												
EMT304100	UV: Phase 4 - Introduce Process Sewage	0	06DEC2013		03NOV2013													
EMT304200	UV: Phase 4 Auto Testing Process Commissioning	30	06DEC2013	04JAN2014	03NOV2013	02DEC2013												
EMT304300	UV: Phase 4 - Verification	30	05JAN2014	03FEB2014	03DEC2013	01JAN2014												
Reuse Water Pumping Station																		
Building and Structures																		
EMT321100	RWPS: Phase 1 - Installation Inspection	20	10OCT2013	09NOV2013	10OCT2013	21OCT2013												
EMT322100	RWPS: Phase 2 - Dry Test of Individual Eq't	30	10NOV2013	09DEC2013	22OCT2013	20NOV2013												
EMT323100	RWPS: Phase 3 - Wet Test of RWP Sys' (exclu DAF)	20	15NOV2013	04DEC2013	27OCT2013	15NOV2013												
EMT323200	RWPS: Phase 3 -Wet & Manual Testing of DAF	30	22NOV2013	21DEC2013	03NOV2013	02DEC2013												
EMT323210	RWPS: Phase 3 Auto Test of Reuse water pump	12	23NOV2013	04DEC2013	13NOV2013	24NOV2013												
EMT323300	RWPS: Phase 3 - Auto Testing of DAF	30	12DEC2013	10JAN2014	03DEC2013	01JAN2014												
EMT324100	RWPS: Phase 4 - Introduce Process Sewage	1	05DEC2013	05DEC2013	25NOV2013	25NOV2013												
EMT324200	RWPS: Phase 4 Auto Test Process RWP Sys Excl DAF	7	06DEC2013	12DEC2013	26NOV2013	02DEC2013												
EMT324300	RWPS Phase 4 - Verification	30	22DEC2013	20JAN2014	03DEC2013	01JAN2014												
Chemical Building																		
Building and Structures																		
EMT503100	Chemical: Phase 3 - Wet Test of Individual Eq't	30	28AUG2013	02NOV2013	28AUG2013	02NOV2013												
EMT503200	Chemical: Phase 3 -Manual Testing of Sub-system	30	28AUG2013	04NOV2013	28AUG2013	16NOV2013												
EMT503300	Chemical: Phase 3 - Auto Testing of Sub-system	30	16SEP2013	14NOV2013	16SEP2013	26OCT2013												

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							2013			2014								
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN			
EMT504100	Chemical: Phase 4 - Introduce Chemical Dosing	1	29NOV2013	29NOV2013	17NOV2013	17NOV2013	Chemical: Phase 4 - Introduce Chemical Dosing											
EMT504200	Chemical: Phase 4 Auto Test/Process Commissioning	20	30NOV2013	19DEC2013	18NOV2013	07DEC2013	Chemical: Phase 4 Auto Test/Process Commissioning											
EMT504300	Chemical: Phase 4 - Verification	25	20DEC2013	13JAN2014	08DEC2013	01JAN2014	Chemical: Phase 4 - Verification											
Sludge Dewatering and Skip Storage																		
Building and Structures																		
EMT601100	Sludge: Phase 1 - Installation Inspection	30	28JUL2013 A	28OCT2013	28JUL2013	28OCT2013	Sludge: Phase 1 - Installation Inspection											
EMT601110	Sludge: Phase 1 - Sludge System Insp.	30	28JUL2013 A	28OCT2013	28JUL2013	28OCT2013	Sludge: Phase 1 - Sludge System Insp.											
EMT601120	Sludge: Phase 1 - Polymer System Insp.	30	28JUL2013 A	28OCT2013	28JUL2013	28OCT2013	Sludge: Phase 1 - Polymer System Insp.											
EMT601130	Sludge: Phase 1 - Centrifuge Inspection	30	28JUL2013 A	28OCT2013	28JUL2013	28OCT2013	Sludge: Phase 1 - Centrifuge Inspection											
EMT601140	Sludge: Phase 1 - Convey. sys. Inspection	30	28JUL2013 A	28OCT2013	28JUL2013	28OCT2013	Sludge: Phase 1 - Convey. sys. Inspection											
EMT602100	Sludge: Phase 2 - Dry Test of Individual Eq't	30	26SEP2013	18NOV2013	26SEP2013	18NOV2013	Sludge: Phase 2 - Dry Test of Individual Eq't											
EMT603100	Sludge: Phase 3 - Wet Test of Individual Eq't	30	08OCT2013	18NOV2013	08OCT2013	18NOV2013	Sludge: Phase 3 - Wet Test of Individual Eq't											
EMT603200	Sludge: Phase 3 -Manual Testing of Sub-system	30	24OCT2013	18NOV2013	24OCT2013	18NOV2013	Sludge: Phase 3 -Manual Testing of Sub-system											
EMT603300	Sludge: Phase 3 - Auto Testing of Sub-system	30	24OCT2013	21NOV2013	24OCT2013	09NOV2013	Sludge: Phase 3 - Auto Testing of Sub-system											
EMT604100	Sludge: Phase 4 - Introduce Process	3	06DEC2013	08DEC2013	10NOV2013	12NOV2013	Sludge: Phase 4 - Introduce Process											
EMT604200	Sludge: Phase 4 Auto Test/Process Commissioning	20	09DEC2013	28DEC2013	13NOV2013	02DEC2013	Sludge: Phase 4 Auto Test/Process Commissioning											
EMT604300	Sludge: Phase 4 - Verification	30	29DEC2013	27JAN2014	03DEC2013	01JAN2014	Sludge: Phase 4 - Verification											
Septic Waste Collection facilities																		
Building and Structures																		
EMT151100	Septic Station: Phase 1- Installation Inspection	30	15JUL2013 A	03NOV2013	15JUL2013	16OCT2013	Septic Station: Phase 1- Installation Inspection											
EMT152100	Septic Station: Phase 2 - Dry Test Indiv Eq't	25	04NOV2013	28NOV2013	17OCT2013	10NOV2013	Septic Station: Phase 2 - Dry Test Indiv Eq't											
EMT153100	Septic Station: Phase 3 - Wet Test of Indiv Eq't	25	04NOV2013	28NOV2013	17OCT2013	10NOV2013	Septic Station: Phase 3 - Wet Test of Indiv Eq't											
EMT153200	Septic Station: Phase 3 - Manual Test Sub-system	25	09NOV2013	03DEC2013	22OCT2013	15NOV2013	Septic Station: Phase 3 - Manual Test Sub-system											
EMT153300	Septic Station: Phase 3 - Auto Test Sub-system	25	09NOV2013	03DEC2013	22OCT2013	15NOV2013	Septic Station: Phase 3 - Auto Test Sub-system											
EMT154100	Septic Station: Phase 4-Introduce Process Sewage	7	28NOV2013	04DEC2013	07NOV2013	13NOV2013	Septic Station: Phase 4-Introduce Process Sewage											
EMT154200	Septic: Phase 4 Auto Test Process Commissioning	30	05DEC2013	03JAN2014	03DEC2013	01JAN2014	Septic: Phase 4 Auto Test Process Commissioning											
EMT154300	Septic Station: Phase 4 - Verification	30	04JAN2014	02FEB2014	02JAN2014	31JAN2014	Septic Station: Phase 4 - Verification											
DOU A																		
Building and Structures																		
EMT712100	DOU A: Phase 2 - Dry Test of Individual Eq't	30	28SEP2013	10NOV2013	28SEP2013	10NOV2013	DOU A: Phase 2 - Dry Test of Individual Eq't											
EMT713100	DOU A: Phase 3 - Wet Test of Individual Eq't	30	12OCT2013	26NOV2013	12OCT2013	25NOV2013	DOU A: Phase 3 - Wet Test of Individual Eq't											
EMT713200	DOU A: Phase 3 -Manual Testing of Sub-system	30	02NOV2013	01DEC2013	03NOV2013	02DEC2013	DOU A: Phase 3 -Manual Testing of Sub-system											
EMT713300	DOU A: Phase 3 - Auto Testing of Sub-system	30	04NOV2013	03DEC2013	03NOV2013	02DEC2013	DOU A: Phase 3 - Auto Testing of Sub-system											
EMT714100	DOU A: Phase 4 - Introduce Foul Air	7	27NOV2013	03DEC2013	26NOV2013	02DEC2013	DOU A: Phase 4 - Introduce Foul Air											
EMT714200	DOU A: Phase 4 Auto Test/Process Commissioning	30	04DEC2013	02JAN2014	03DEC2013	01JAN2014	DOU A: Phase 4 Auto Test/Process Commissioning											
EMT714300	DOU A: Phase 4 - Verification	30	03JAN2014	01FEB2014	01FEB2014	02MAR2014	DOU A: Phase 4 - Verification											
DOU B																		

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Activity ID	Description	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Gantt Chart											
							2013			2014						UI		
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	UI			
Building and Structures																		
EMT720220	DOU B: Phase 1 - Installation Inspection	30	30SEP2013	08NOV2013	30SEP2013	17OCT2013	DOU B: Phase 1 - Installation Inspection											
EMT722100	DOU B: Phase 2 - Dry Test of Individual Eq't	30	09NOV2013	08DEC2013	18OCT2013	16NOV2013	DOU B: Phase 2 - Dry Test of Individual Eq't											
EMT723100	DOU B: Phase 3 - Wet Test of Individual Eq't	30	09NOV2013	08DEC2013	18OCT2013	16NOV2013	DOU B: Phase 3 - Wet Test of Individual Eq't											
EMT723200	DOU B: Phase 3 - Manual Testing of Sub-system	30	09NOV2013	08DEC2013	18OCT2013	16NOV2013	DOU B: Phase 3 - Manual Testing of Sub-system											
EMT723300	DOU B: Phase 3 - Auto Testing of Sub-system	30	09NOV2013	08DEC2013	18OCT2013	16NOV2013	DOU B: Phase 3 - Auto Testing of Sub-system											
EMT724100	DOU B: Phase 4 - Introduce Foul Air	7	09DEC2013	15DEC2013	17NOV2013	23NOV2013	DOU B: Phase 4 - Introduce Foul Air											
EMT724200	DOU B: Phase 4 Auto Test/Process Commissioning	30	16DEC2013	14JAN2014	03DEC2013	01JAN2014	DOU B: Phase 4 Auto Test/Process Commissioning											
EMT724300	DOU B: Phase 4 - Verification	30	15JAN2014	13FEB2014	01FEB2014	02MAR2014	DOU B: Phase 4 - Verification											
Control System																		
Building and Structures																		
EMT811118	Control/SCADA: Phase 1 - Insp PLC LCP DOUB	30	23AUG2013	31OCT2013	23AUG2013	31OCT2013	Control/SCADA: Phase 1 - Insp PLC LCP DOUB											
EMT811119	Control/SCADA: Phase 1 - Insp PLC LCP OFPS	30	29AUG2013	16NOV2013	29AUG2013	02DEC2013	Control/SCADA: Phase 1 - Insp PLC LCP OFPS											
EMT812121	Control/SCADA: Phase 2- SCADA Admin	30	25SEP2013	16NOV2013	25SEP2013	16NOV2013	Control/SCADA: Phase 2- SCADA Admin											
EMT812126	Control/SCADA: Phase 2 - PLC LCP SDW	30	27OCT2013	11NOV2013	27OCT2013	09NOV2013	Control/SCADA: Phase 2 - PLC LCP SDW											
EMT812127	Control/SCADA: Phase 2 - PLC LCP DOUA	30	28OCT2013	26NOV2013	27OCT2013	25NOV2013	Control/SCADA: Phase 2 - PLC LCP DOUA											
EMT812128	Control/SCADA: Phase 2 - PLC LCP DOUB	30	01NOV2013	30NOV2013	01NOV2013	30NOV2013	Control/SCADA: Phase 2 - PLC LCP DOUB											
EMT812129	Control/SCADA: Phase 2 - PLC LCP OFPS	30	17NOV2013	16DEC2013	03DEC2013	01JAN2014	Control/SCADA: Phase 2 - PLC LCP OFPS											
EMT814210	Control/SCADA: Phase 4 Start	0	26NOV2013		03NOV2013		Control/SCADA: Phase 4 Start											
EMT814250	Control/SCADA: Phase 4 Auto Test/Process Comm.	30	26NOV2013	25DEC2013	03NOV2013	02DEC2013	Control/SCADA: Phase 4 Auto Test/Process Comm.											
EMT814290	Control/SCADA: Phase 4 Finish	0		25DEC2013		02DEC2013	Control/SCADA: Phase 4 Finish											
EMT814310	Control/SCADA: Phase 4 Start	0	26NOV2013		03NOV2013		Control/SCADA: Phase 4 Start											
EMT814350	Control/SCADA: Phase 4 - Verification	60	26NOV2013	24JAN2014	03NOV2013	01JAN2014	Control/SCADA: Phase 4 - Verification											
EMT814390	Control/SCADA: Phase 4 verif. Finish	0		24JAN2014		01JAN2014	Control/SCADA: Phase 4 verif. Finish											
Building Services																		
Building and Structures																		
EMT832000	Admin BS: Funtional Test of Installation	30	08OCT2013	06NOV2013	08OCT2013	06NOV2013	Admin BS: Funtional Test of Installation											
EMT833000	Admin BS: Funtional Test of Individual Eq't	30	08OCT2013	14NOV2013	08OCT2013	14NOV2013	Admin BS: Funtional Test of Individual Eq't											
EMT835000	Admin BS: Funtional Testing of Sub-system	30	15OCT2013	24NOV2013	15OCT2013	24NOV2013	Admin BS: Funtional Testing of Sub-system											
EMT836000	Admin BS: Performance Testing of Sub-system	30	04NOV2013	03DEC2013	04NOV2013	03DEC2013	Admin BS: Performance Testing of Sub-system											
EMT837000	Admin BS: Government Inspection	18	04DEC2013	21DEC2013	04DEC2013	21DEC2013	Admin BS: Government Inspection											
EMT837100	Admin BS: Government Re-inspection	30	22DEC2013	20JAN2014	22DEC2013	20JAN2014	Admin BS: Government Re-inspection											
EMT838000	Admin BS: Government Issue Certificate	14	21JAN2014	03FEB2014	21JAN2014	03FEB2014	Admin BS: Government Issue Certificate											
Optimisation and Proving Test for All E&M Works																		
Building and Structures																		
EMT995000	CEPT Phase 5 Optimisation period	30	04FEB2014	05MAR2014	02JAN2014	31JAN2014	CEPT Phase 5 Optimisation period											

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