ATAL-Degrémont-China State Joint Venture

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

October 2013

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October 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)

Certified by:
(Registered Landscape Architect (R127) – Tai Kai Wai)

Date: 8 October 2013

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Drainage Services Department
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Harbour Area Treatment Scheme Division
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Attn: Mr. Kenley C.K. KWOK (T: 2159 3409)

8 October 2013

Dear Sir,

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

Monthly EM&A Report for September 2013

Reference is made to Environmental Team (ET)'s draft of the Monthly EM&A Report for September 2013 provided by email dated 3 and 7 October 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)
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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 35th monthly Environmental Monitoring and Audit (EM&A) report presenting the EM&A works carried out during the period from 1 to 30 September 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 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, 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 in Empty Sludge Skip Storage Area;
- Construct walls and roofs at Sludge Skip Storage Building; 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) — 6 sets
- 1-hour TSP Monitoring at each monitoring station (AM1 and AM2) — 18 sets
- Joint Environmental Site Inspection — 4 times
- Landscape & Visual Monitoring — Once

Air Quality

6 sets of 24-hour TSP and 18 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, 748.43 tonnes of inert C&D material were generated from the Project, of which 50 tonnes were reused in this Contract and the remaining 698.43 tonnes were disposed as public fill. 40.00 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

Four 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 27 September 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, Septic Waste Reception Station, Sludge Skip Storage Building, UV Building, Empty Sludge Skip Storage Area, PTW, CEPT, Reuse Water Pump Room, Existing Solid Handling Building and Chemical Building;
- Construct staircase and fins wall at Sludge Dewatering Building;
- Install E&M equipment at the Administration Building , Sludge Dewatering Building, PTW, CEPT, UV Building, Septic Waste Reception Station, Existing Solid Handling Building, Reuse Water Pump Room, Chemical Building, Sludge Skip Storage 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 E&M Duct laying at P2;
- Conduct preparation works for Payment Flow Meter at Payment Flow Meter Chamber;
- Construct structural works in 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 INRODUCTION

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 35th EM&A report which summarises the monitoring results and audit findings for the EM&A programme during the reporting period from **1** to **30 September 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
• 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 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, 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 in Empty Sludge Skip Storage Area;
• Construct walls and roofs at Sludge Skip Storage Building; 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)
24-hr and 1-hr TSP	
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 ± 3°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 $m^3 min^{-1}$ which were within the range specified in the EM&A Manual (ie 0.6 to 1.7 $m^3 min^{-1}$);
- 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*.

4 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 6 sets of 24-hour and 18 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
September 2013	748.43 tonnes	105.00 kg	41.28 tonnes	0 L

Notes:

(a) Inert C&D materials (public fill) include bricks, concrete, building debris, rubble and excavated spoil. In total, 748.43 tonnes of inert C&D waste were generated from the Project, of which 50.00 tonnes were reused in this Contract and the remaining 698.43 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) 40.00 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 6, 13, 17 and 27 September 2013. The IEC was also present at the joint inspection on 13 September 2013.

Major observations during the reporting period are summarised as follows:

6 September 2013

- Muddy water was observed in the U-channel next to the Sludge Dewatering Building. The Contractor was reminded to clean up the muddy water in the U-channel and provide sufficient sand bag barriers or earth bunds to properly direct the muddy water to such silt removal facilities.

13 September 2013

- Tree tag was observed missing for retained tree R24. The Contractor was reminded to provide a tree tag.

17 September 2013

- Tree tag was observed missing for the tree outside the Existing Administrative Building. The Contractor was reminded to provide a tree tag.

- Construction materials were observed storing under the retained tree 126. The Contractor was reminded to remove the construction material and fence off the protection zone.

- The Contractor was reminded to provide proper protection measures for the retained tree R33, R34 and R35, especially when operating machinery or equipment in close vicinity to the trees.

27 September 2013

- Please refer to *Section 7.2*.

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 27 September 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:

27 September 2013

- Wire was observed hanging on retained tree R36. The Contractor was reminded to remove the wire.

- Fungus was observed on retained tree 278. The Contractor was reminded to spray fungicide to inhibit the growth of the fungus.

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

Work to be undertaken
• Construct finishing works at the Administration Building, Sludge Dewatering Building, Septic Waste Reception Station, Sludge Skip Storage Building, UV Building, Empty Sludge Skip Storage Area, PTW, CEPT, Reuse Water Pump Room, Existing Solid Handling Building and Chemical Building;
• Construct staircase and fins wall at Sludge Dewatering Building;
• Install E&M equipment at the Administration Building , Sludge Dewatering Building, PTW, CEPT, UV Building, Septic Waste Reception Station, Existing Solid Handling Building, Reuse Water Pump Room, Chemical Building, Sludge Skip Storage 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 E&M Duct laying at P2;
• Conduct preparation works for Payment Flow Meter at Payment Flow Meter Chamber;
• Construct structural works in 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 REVIEW OF THE EM&A DATA AND EIA PREDICTIONS

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, μg m^{-3}	Measured 24-hour TSP Monitoring Results, μg m^{-3} (a) (b)	
		24 hour (a)	Average	Range
AM1	A1	260	73	66 - 84
AM2	A7	260	71	69 - 76

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	126,874.02	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	24,071.67	m^3
Amount of C&D Materials Sent to Fill Banks	46,563.00 m^3	59,600.00 m^3	99,638.14	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/m^3.

(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.

11 CONCLUSIONS

This EM&A Report presents the EM&A programme undertaken during the reporting period from 1 to 30 September 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

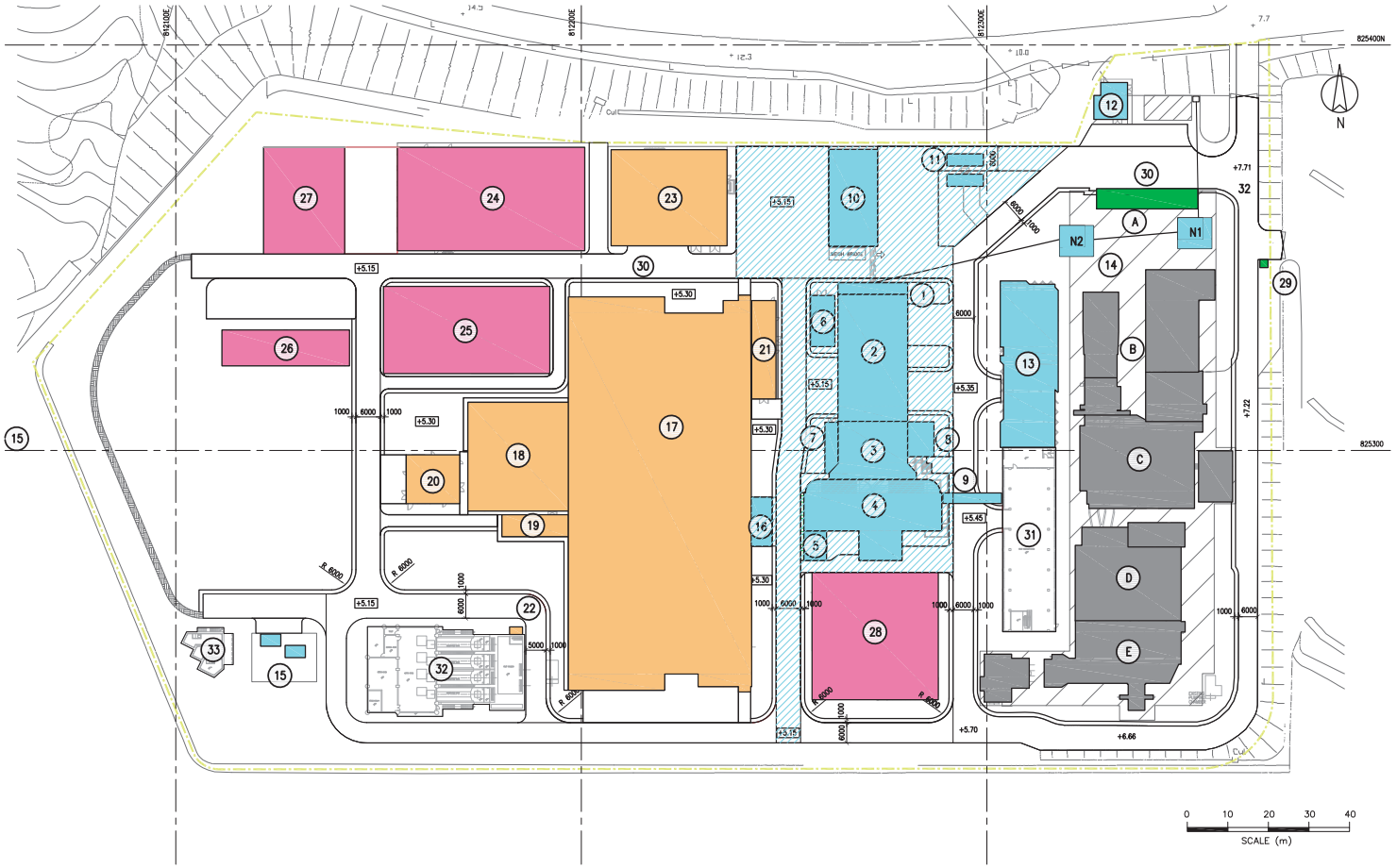
1. INLET CHAMBER
2. COARSE SCREENS AND INLET PUMPING STATION
3. FINE SCREEN CHANNELS
4. GRIT CHAMBERS
5. INLET FLOWMETER CHAMBER
6. PTW MCC ROOM
7. BLOWER ROOM
8. SCREENING SKIP HOUSE
9. ODOR DUCT SUPPORTING BRIDGE
10. SEPTIC WASTE RECEPTION STATION
11. WEIGHBRIDGE
12. ELECTRICAL BUILDING 1
13. ADMINISTRATION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

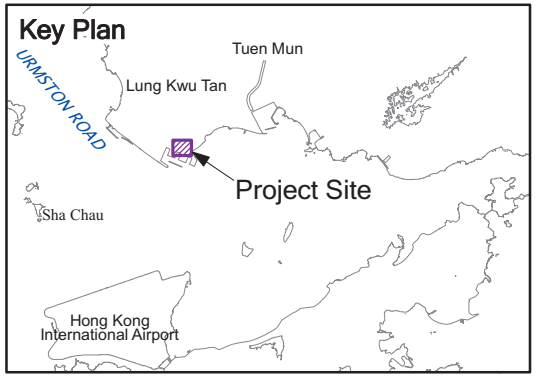
SECTION 2 CEPT TANKS UV DISINFECTION

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 DEWATERING 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

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

SECTION 5 EXTERNAL WORKS

- 29 GATE HOUSE
- 30 CAR PARK

EXISTING BUILDING TO BE RETAINED

- 31 EXISTING SOLID HANDING BUILDING
- 32 EXISTING OUTFALL PUMPING STATION
- 33 EXISTING TERMINAL MANHOLE

Annex A

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

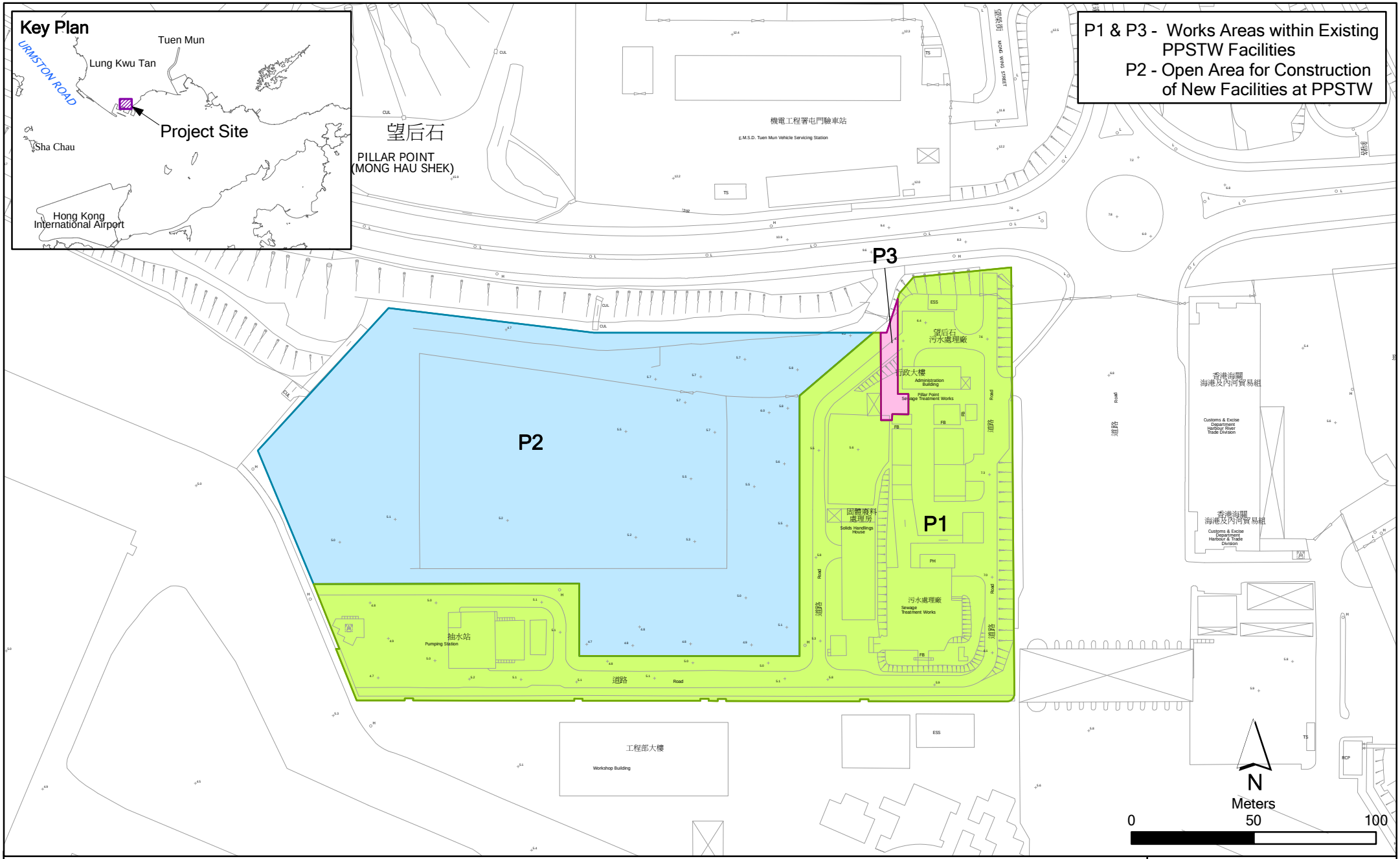
FILE: 0119806c
DATE: 20/12/2010

Environmental Resources Management

ERM

Annex B

Works Location



Annex B

Location of Works Areas

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

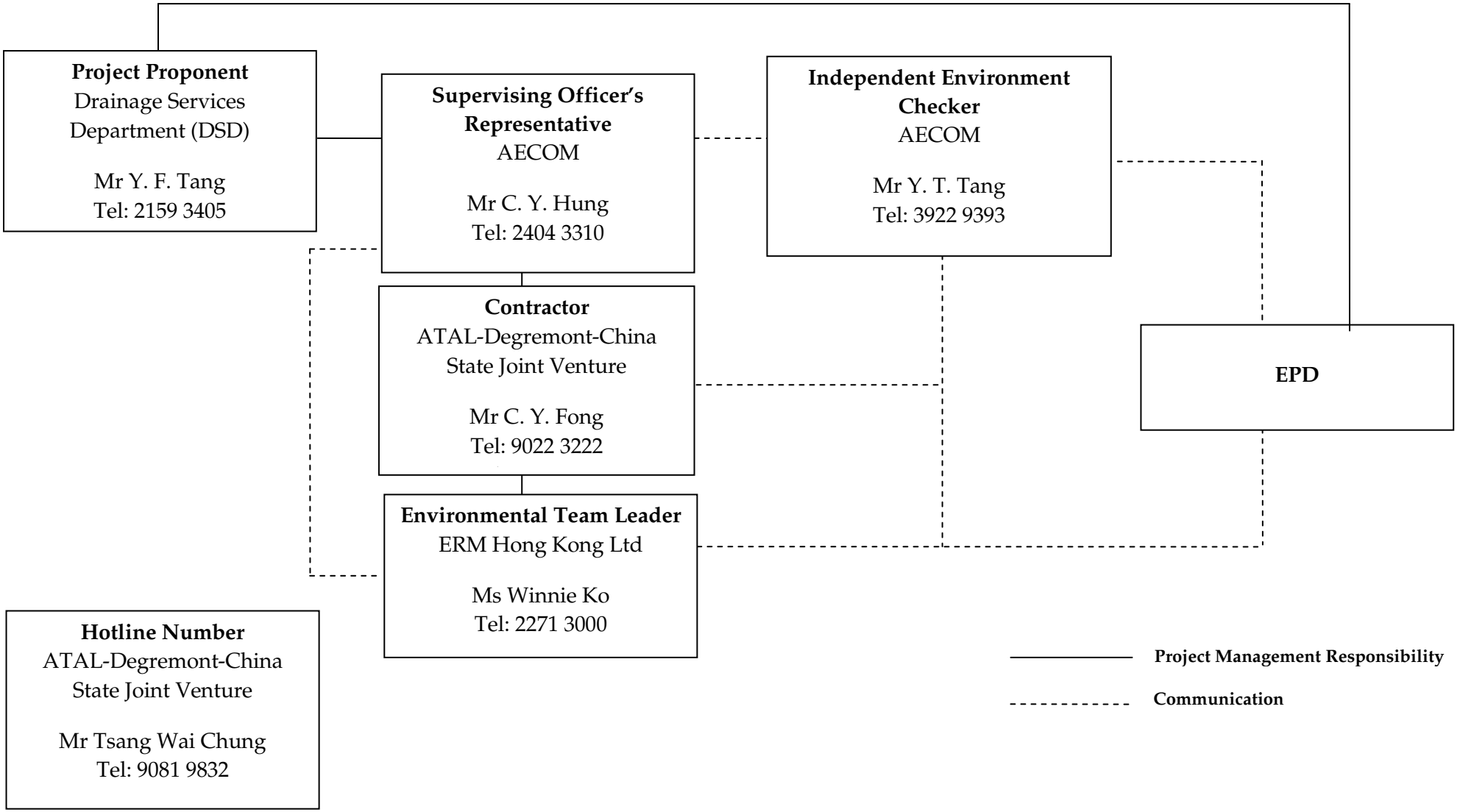
Environmental Resources Management

ERM

Annex C

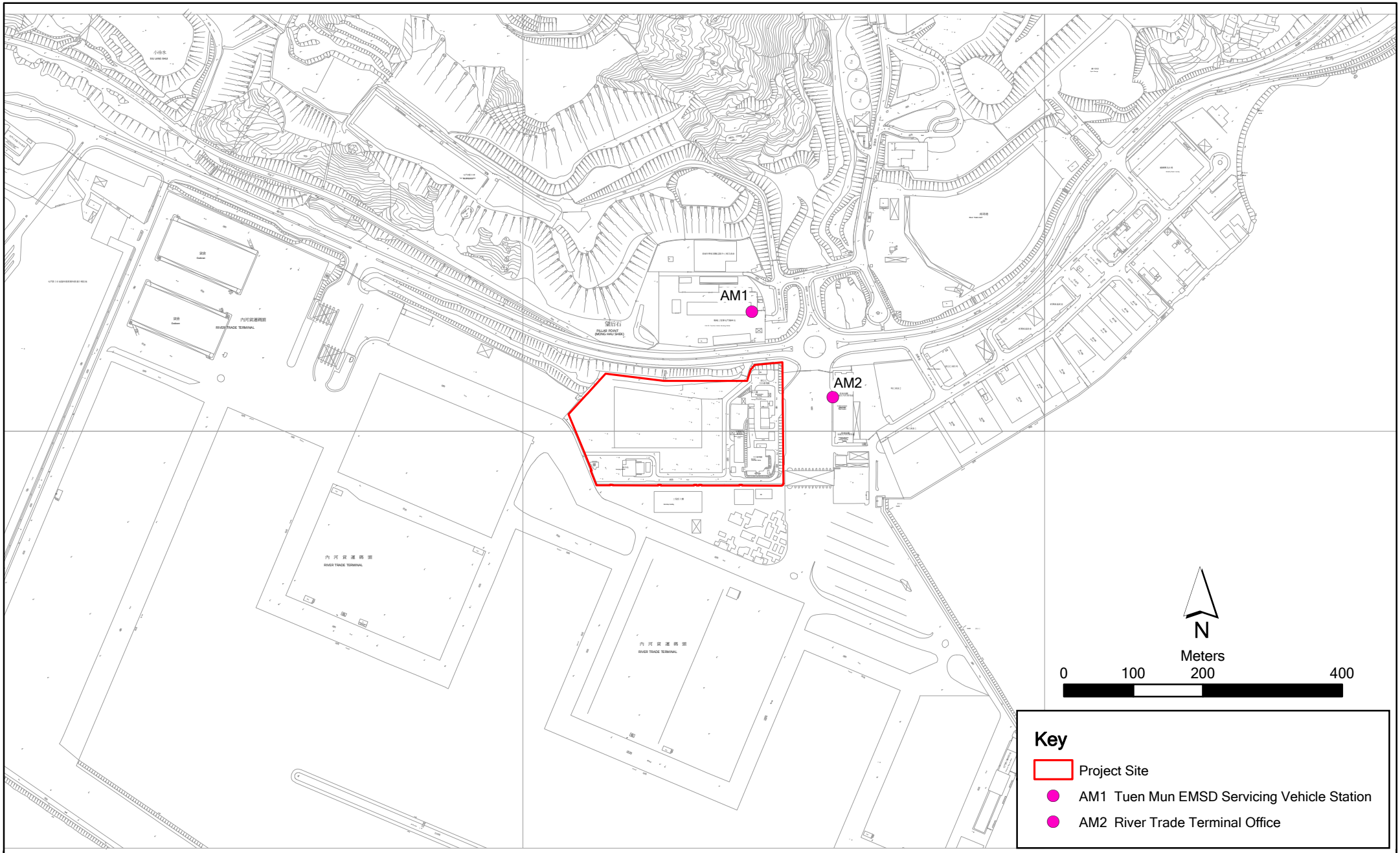
Project Organization Chart with Contact Details

Project Organization During Construction Phase (with contact details)



Annex D

Locations of Air Quality Monitoring Stations



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

ERM

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)

September 2013

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

Annex F

Calibration Reports for HVSs

TSP Monitoring Equipment

Monitoring Station ID	Location	Monitoring Equipment		Last Calibration Date	Next Calibration Date
24-hr and 1-hr TSP		**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 Orfice 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 Orfice 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 ENVIROMENTAL, INC.
145 SOUTH MIAMI AVE.
VILLAGE OF CLEVES, OH 45002
513.467.9000
877.263.7610 TOLL FREE
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)
0.9967	0.6902	1.4149
0.9925	0.9693	2.0010
0.9903	1.0858	2.2372
0.9893	1.1345	2.3464
0.9840	1.3666	2.8299

Qstd slope (m) = 2.09107
intercept (b) = -0.02838
coefficient (r) = 0.99996

y axis = SQRT[H2O(Pa/760)(298/Ta)]

Va	(x axis) Qa	(y axis)
0.9957	0.6896	0.8851
0.9915	0.9683	1.2517
0.9893	1.0847	1.3995
0.9883	1.1334	1.4678
0.9830	1.3652	1.7702

Qa slope (m) = 1.30939
intercept (b) = -0.01775
coefficient (r) = 0.99996

y 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 ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)	Site Conditions / Observations / Remarks	Temperature (℃)	Wind Speed * (m/s)	Sampler ID	Filter ID
03/09/2013	13:10	14:10	Cloudy	91	343	500	Construction work in progress	30.0	*	7580	8142
	14:10	15:10	Cloudy	95	343	500	Construction work in progress	30.0	*	7580	8143
	15:10	16:10	Cloudy	94	343	500	Construction work in progress	30.0	*	7580	8144
09/09/2013	13:10	14:10	Sunny	81	383	500	Construction work in progress	28.0	*	7580	8165
	14:10	15:10	Sunny	91	383	500	Construction work in progress	28.0	*	7580	8166
	15:10	16:10	Sunny	85	383	500	Construction work in progress	28.0	*	7580	8167
13/09/2013	13:10	14:10	Sunny	107	343	500	Construction work in progress	28.0	*	7580	8188
	14:10	15:10	Sunny	108	343	500	Construction work in progress	28.0	*	7580	8189
	15:10	16:10	Sunny	110	343	500	Construction work in progress	28.0	*	7580	8190
19/09/2013	13:10	14:10	Sunny	98	343	500	Construction work in progress	28.0	*	7580	8215
	14:10	15:10	Cloudy	95	343	500	Construction work in progress	28.0	*	7580	8216
	15:10	16:10	Cloudy	97	343	500	Construction work in progress	28.0	*	7580	8217
25/09/2013	13:10	14:10	Fine	102	343	500	Construction work in progress	28.0	*	7580	8238
	14:10	15:10	Fine	108	343	500	Construction work in progress	28.0	*	7580	8239
	15:10	16:10	Fine	104	343	500	Construction work in progress	28.0	*	7580	8240
30/09/2013	13:10	14:10	Cloudy	155	343	500	Construction work in progress	23.0	*	7580	8313
	14:10	15:10	Cloudy	160	343	500	Construction work in progress	23.0	*	7580	8314
	15:10	16:10	Cloudy	157	343	500	Construction work in progress	23.0	*	7580	8315
			Min.	**81**							
			Max.	**160**							
			Average	**108**							

* 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 ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)	Site Conditions / Observations / Remarks	Temperature (℃)	Wind Speed * (m/s)	Sampler ID	Filter ID
03/09/2013	13:00	14:00	Cloudy	113	383	500	Construction work in progress	30.0	*	1252	8138
	14:00	15:00	Cloudy	98	383	500	Construction work in progress	30.0	*	1252	8139
	15:00	16:00	Cloudy	98	383	500	Construction work in progress	30.0	*	1252	8140
09/09/2013	13:00	14:00	Sunny	98	383	500	Construction work in progress	28.0	*	1252	8161
	14:00	15:00	Sunny	93	383	500	Construction work in progress	28.0	*	1252	8162
	15:00	16:00	Sunny	94	383	500	Construction work in progress	28.0	*	1252	8163
13/09/2013	13:00	14:00	Sunny	110	383	500	Construction work in progress	28.0	*	1252	8184
	14:00	15:00	Sunny	109	383	500	Construction work in progress	28.0	*	1252	8185
	15:00	16:00	Sunny	122	383	500	Construction work in progress	28.0	*	1252	8186
19/09/2013	13:00	14:00	Sunny	101	383	500	Construction work in progress	28.0	*	1252	8211
	14:00	15:00	Cloudy	105	383	500	Construction work in progress	28.0	*	1252	8212
	15:00	16:00	Cloudy	86	383	500	Construction work in progress	28.0	*	1252	8213
25/09/2013	13:00	14:00	Fine	116	383	500	Construction work in progress	28.0	*	1252	8234
	14:00	15:00	Fine	103	383	500	Construction work in progress	28.0	*	1252	8235
	15:00	16:00	Fine	105	383	500	Construction work in progress	28.0	*	1252	8236
30/09/2013	13:00	14:00	Cloudy	147	383	500	Construction work in progress	23.0	*	1252	8309
	14:00	15:00	Cloudy	169	383	500	Construction work in progress	23.0	*	1252	8310
	15:00	16:00	Cloudy	167	383	500	Construction work in progress	23.0	*	1252	8311
			Min.	**86**							
			Max.	**169**							
			Average	**113**							

* 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	Flow Rate (m^3/min)			TSP Conc.	Action Level	Limit Level	Observations / Remarks	Sampler	Filter
Date	Time	Date	Time		Initial	Final	Initial	Final	(hrs)	Initial	Final	Average	(μg/m^3)	(μg/m^3)	(μg/m^3)		ID	ID
03-09-2013	16:10	04-09-2013	16:10	Cloudy	2.8042	2.9293	14978.18	15002.18	24	1.26	1.26	1.26	69	183	260	Construction work in progress	7580	8145
09-09-2013	16:10	10-09-2013	16:10	Sunny	2.7897	2.9090	15005.18	15029.18	24	1.26	1.26	1.26	66	183	260	Construction work in progress	7580	8168
13-09-2013	16:10	14-09-2013	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
19-09-2013	16:10	20-09-2013	16:10	Sunny	2.7949	2.9331	15059.18	15083.18	24	1.26	1.26	1.26	76	183	260	Construction work in progress	7580	8218
25-09-2013	16:10	26-09-2013	16:10	Fine	2.7967	2.9264	15086.18	15110.18	24	1.26	1.26	1.26	71	183	260	Construction work in progress	7580	8241
30-09-2013	16:10	01-10-2013	16:10	Cloudy	2.7975	2.9494	15113.18	15137.18	24	1.26	1.26	1.26	84	183	260	Construction work in progress	7580	8316
												Min.	**66**					
												Max.	**84**					
												Average	**73**					

24-hour TSP Monitoring Results

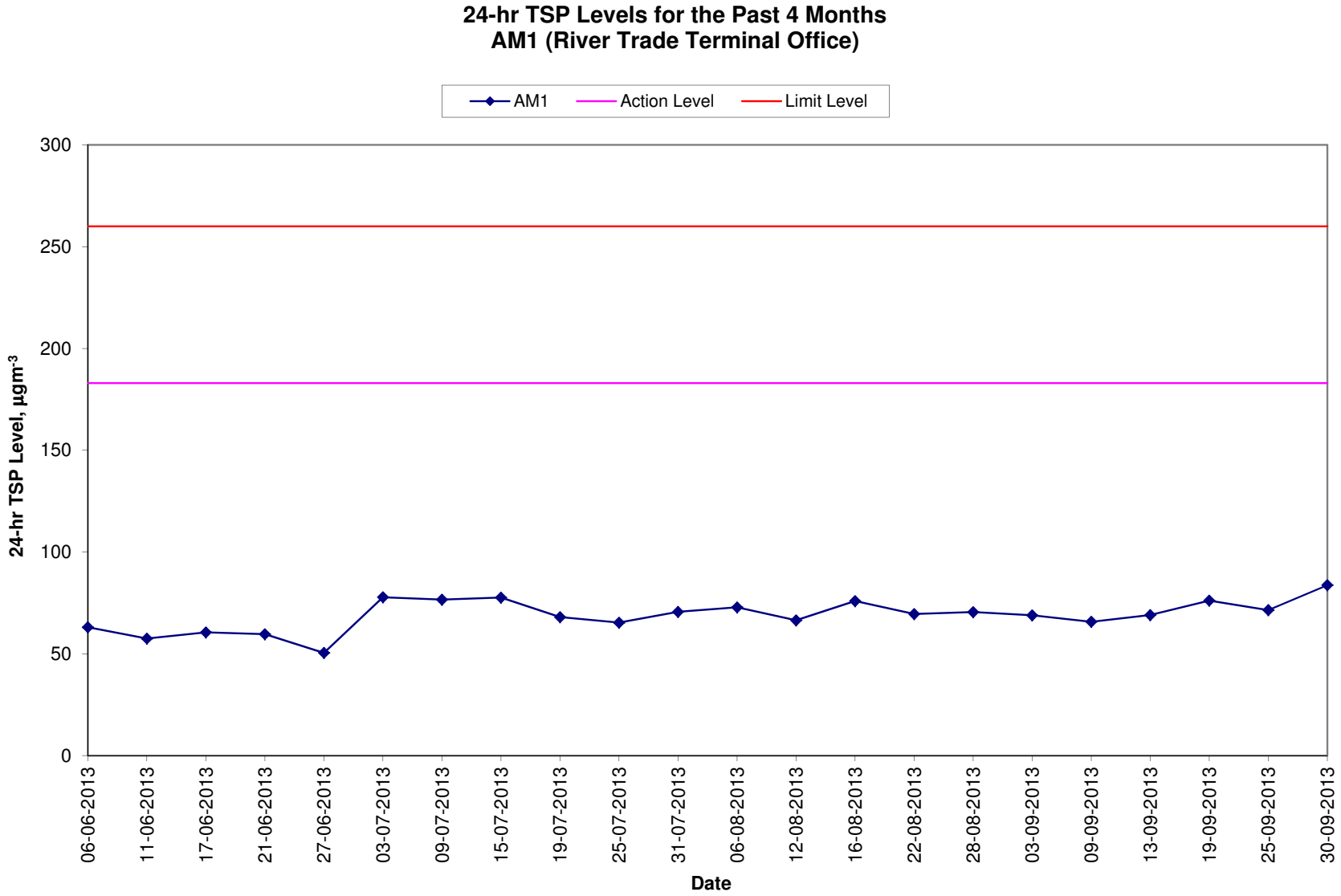
Station AM2

Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time	Flow Rate (m^3/min)			TSP Conc.	Action Level	Limit Level	Observations / Remarks	Sampler	Filter
Date	Time	Date	Time		Initial	Final	Initial	Final	(hrs)	Initial	Final	Average	(μg/m^3)	(μg/m^3)	(μg/m^3)		ID	ID
03-09-2013	16:00	04-09-2013	16:00	Cloudy	2.8112	2.9345	22996.20	23020.20	24	1.24	1.24	1.24	69	192	260	Construction work in progress	1252	8141
09-09-2013	16:00	10-09-2013	16:00	Sunny	2.7951	2.9179	23023.20	23047.20	24	1.24	1.24	1.24	69	192	260	Construction work in progress	1252	8164
13-09-2013	16:00	14-09-2013	16:00	Sunny	2.8244	2.9499	23050.20	23074.20	24	1.24	1.24	1.24	70	192	260	Construction work in progress	1252	8187
19-09-2013	16:00	20-09-2013	16:00	Sunny	2.7797	2.9103	23077.20	23101.20	24	1.24	1.24	1.24	73	192	260	Construction work in progress	1252	8214
25-09-2013	16:00	26-09-2013	16:00	Fine	2.7795	2.9160	23104.20	23128.20	24	1.24	1.24	1.24	76	192	260	Construction work in progress	1252	8237
30-09-2013	16:00	01-10-2013	16:00	Cloudy	2.8094	2.9346	23131.20	23155.20	24	1.24	1.24	1.24	70	192	260	Construction work in progress	1252	8312
												Min.	**69**					
												Max.	**76**					
												Average	**71**					

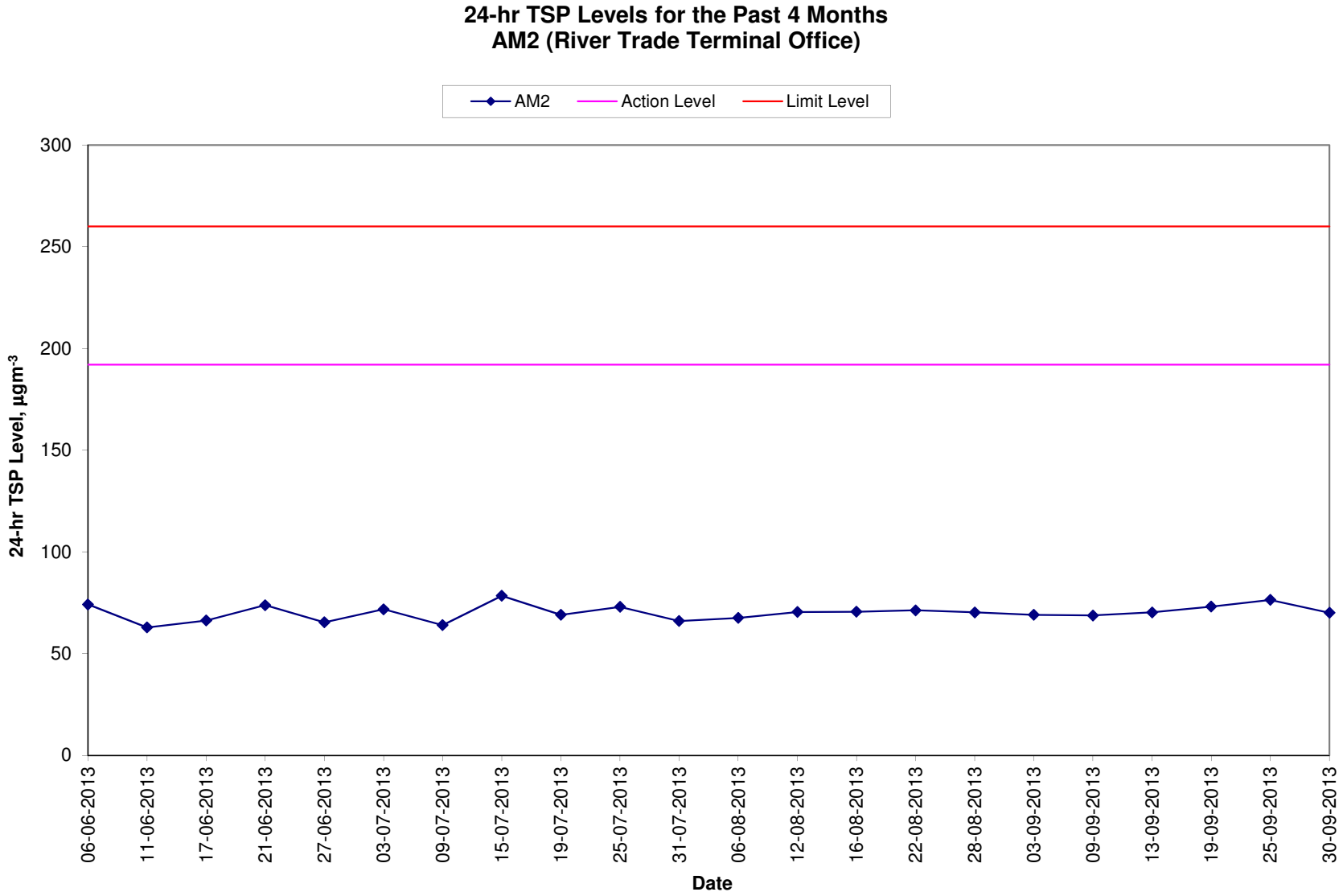
Meteorological Data Extracted from the Hong Kong Observatory

		Tuen Mun Station				
Date	Weather	Average Air Temperature (℃)	Average Relative Humiditiy (%)	Total Rainfall (mm)	Average Wind Speed (km/h)	Wind Direction
03-09-2013	Cloudy	26.5	82-98	5.0	8.0	W-SE
04-09-2013	Cloudy	23.0	90-99	88.9	9.0	SE
09-09-2013	Sunny	28.0	65-85	0.0	15.0	SE-E
10-09-2013	Sunny	28.0	66-88	0.0	12.0	N-E
13-09-2013	Sunny	28.0	72-87	0.2	12.0	S-N
14-09-2013	Rainy	28.0	68-88	0.0	12.0	W-SE
19-09-2013	Cloudy	28.0	62-86	0.0	18.0	SE
20-09-2013	Cloudy	29.0	58-87	0.0	9.0	NW-N
25-09-2013	Sunny	28.0	67-86	Trace	15.0	N-E
26-09-2013	Sunny	25.0	66-84	0.1	9.0	N-NE
30-09-2013	Sunny	23.0	84-97	10.0	9.0	N
01-10-2013	Sunny	27.0	71-88	0.0	8.0	SE-N

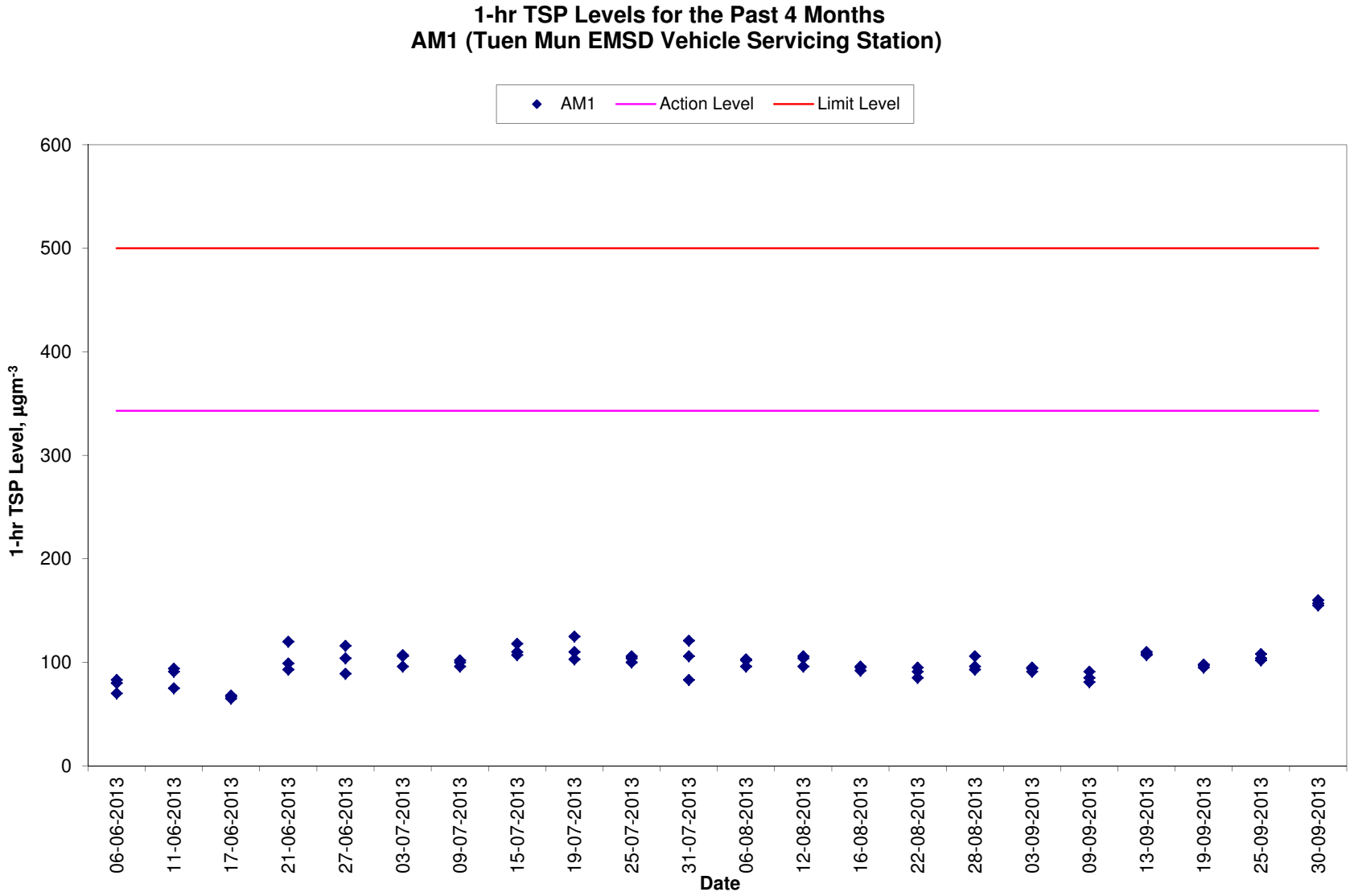
Annex G TSP Monitoring Results



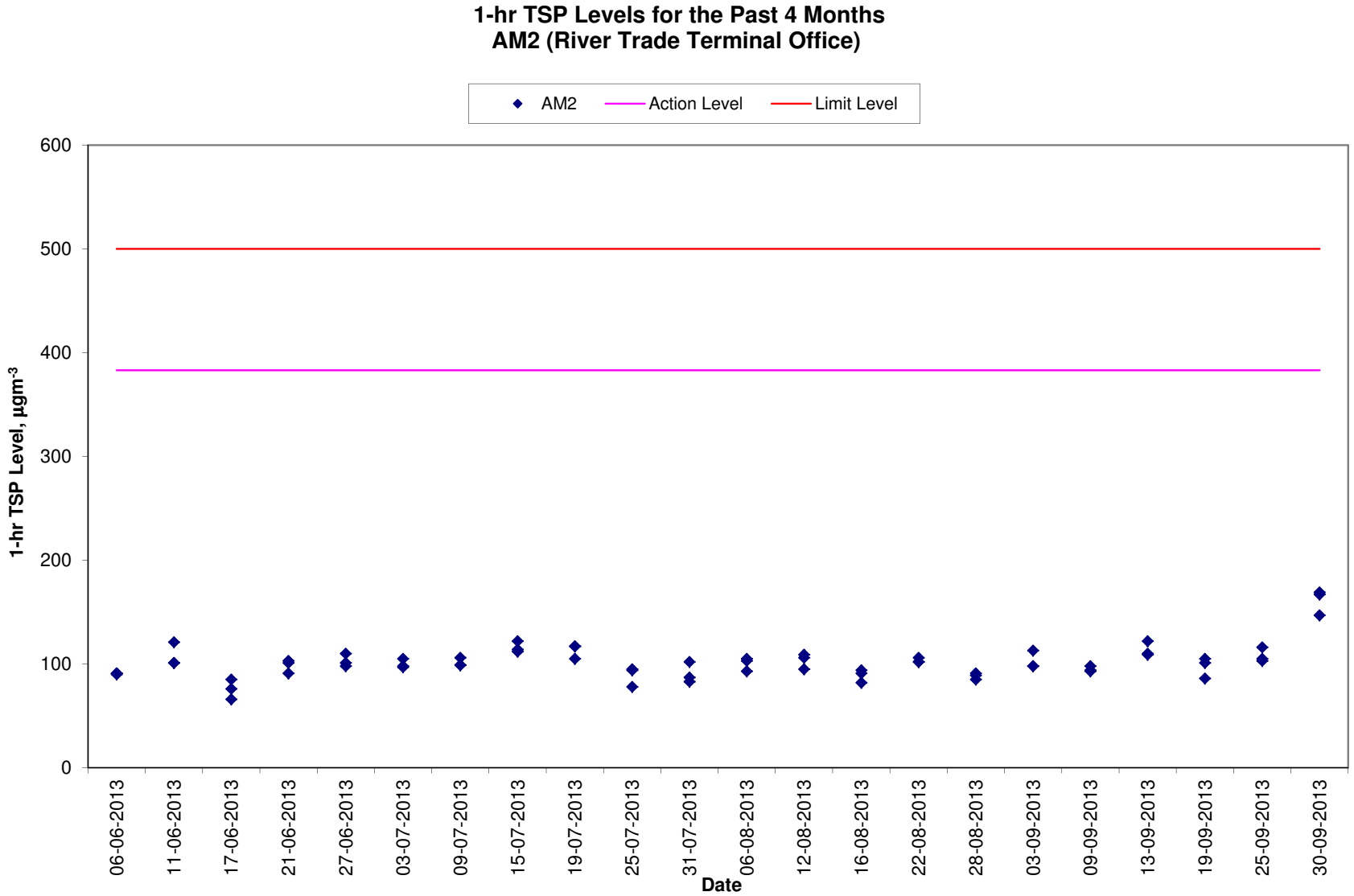
Annex G TSP Monitoring Results



Annex G TSP Monitoring Results



Annex G TSP Monitoring Results



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
Action Level				
Exceedance for one sample	• 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.	• Check monitoring data submitted by ET; • Check Contractor's working method.	• Notify Contractor and DSD.	• Rectify any unacceptable practice; • Amend working methods if appropriate.
Exceedance for two or more consecutive samples	• 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.	• Check monitoring data submitted by ET; • Check Contractor's working method; • Discuss with ET and Contractor on possible remedial measures; • Advise the ET on the effectiveness of the proposed remedial measures; • Supervise Implementation of remedial measures.	• Confirm receipt of notification of exceedance in writing; • Notify Contractor and DSD; • Ensure remedial measures properly implemented.	• Submit proposals for remedial actions to IEC within three working days of notification; • Implement the agreed proposals; • Amend proposal if appropriate.

Action Level/Limit Level	Environmental Team Leader (ETL)	Independent Environmental Checker (IEC)	Supervising Officer Representative (SOR)	Contractor
Limit Level				
Exceedance for one sample	• 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.	• 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.	• Confirm receipt of notification of exceedance in writing; • Notify Contractor; • Ensure remedial measures properly implemented.	• 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	• 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.	• 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.	• 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.	• 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
Summary of Environmental Mitigation Measures in the EIA and EM&A Manual			
Construction Phase			
Air Quality	Dust mitigation measures stipulated in *the Air Pollution Control (Construction Dust) Regulation* 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
	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 crashed 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.		
Water Quality	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.	Work site/During the construction period	√
Water Quality	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.	Work site/During the construction period	√
Water Quality	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.	Work site/During the construction period	√
Waste Management	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	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	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: • 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	*Good Site Practices* Recommendations for good site practices during the construction activities include: • 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 • 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	*Waste Reduction Measures* 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: • 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	*General Refuse* 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	*Construction and Demolition Material* 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
	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.		
Waste Management	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: • 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	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	Work site/During design stage & construction period	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	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.		
Waste Management	*Chemical Waste* 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.	Work site / During the construction period	√
Landscape & Visual	<u>Temporary Tree Nurseries</u> 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. Besides, these trees may also be positioned as visual mitigation during	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	No-intrusion Zone 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.	Work site/During design stage & construction period	√
Landscape & Visual	Hoarding 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.	Work site/During design stage & construction period	√
Landscape & Visual	Dust and Erosion Control for Exposed Soil 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..	Work site/During design stage & construction period	√
Landscape & Visual	Existing Tree Record Inventory 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.	Work site/During design stage & construction period	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Landscape & Visual	Construction Light 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.	Work site / During design stage & construction period	√
Landscape & Visual	Tree Transplanting Apart from the 18 numbers of "*Leucaena leucocephala*", 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**.	Work site / During design stage & construction period	√.
Landscape & Visual	Tree Compensation Ratio 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 "*Cassia surattensis*" 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**.	Work site / During design stage & construction period	N/A
Landscape & Visual	Re-use of Existing Soil and Advance formation of Planting Area 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.	Work site / During design stage & construction period	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Landscape & Visual	Establishment Period 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.	Work site/During operation period	N/A. To be implemented during operation phase of Project.
Landscape & Visual	Re-instatement of excavated Area All excavated area and disturbed area for utilities diversion, temporary road diversion, and pipeline woks will be reinstated to former conditions, subject to applicable Government Standards.	Work site / During design stage & operation period	N/A. To be implemented during operation phase of Project.
Landscape & Visual	Appearance and Greening for the proposed structures 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.	Work site / During design stage & operation period	N/A. To be implemented during operation phase of Project.
Summary of Key Environmental Mitigation Measures in Contract Requirements			
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	0	1100	1146.64	100	60	10	0	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	0	700	753.73	50	60	8	0	63.95
September 2013	748.43	50	0	650	698.43	40	60	5	0	41.28
Total (see Note 17)	228373.23	43329.00	5695.00	23376.00	179348.65	2412.00	1748.30	415.00	810.00	1876.33

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 2011based 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 though 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 2011 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 2012.
(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

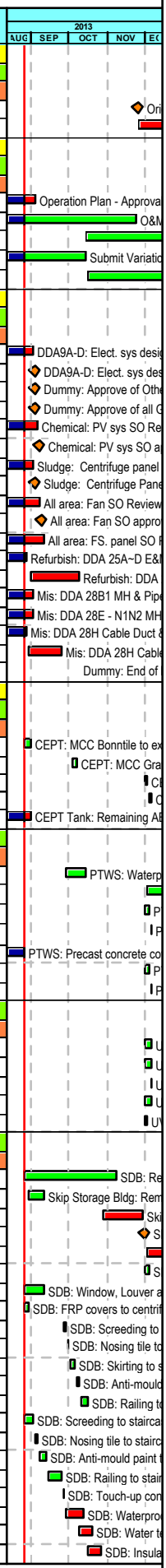
Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
November 2010	0	0
December 2010	0	0
January 2011	0	0
February 2011	0	0
March 2011	0	0
April 2011	0	0
May 2011	0	0
June 2011	0	0
July 2011	0	0
August 2011	0	0
September 2011	0	0
October 2011	0	0
November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

Annex L

Construction Programme of the Project

Activity ID	Description	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Actual Start	Actual Finish
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	06SEP2013	07AUG2012	02AUG2013	07AUG2012	
PLW006100	O&M Manual for the Upgrade Works	90	15JAN2013	25NOV2013	15JAN2013	16APR2014	15JAN2013	
PLW006200	As-built Drawing for Upgrade Works	90	15OCT2013	12JAN2014	17JAN2014	16APR2014		
PLW007100	Submit Variation to Discharge Permit	500	01MAR2011	16OCT2013	01MAR2011	17DEC2013	01MAR2011	
PLW007200	EPD Approval Variation to Discharge Permit	90	17OCT2013	14JAN2014	18DEC2013	17MAR2014		
Design and Design Checking of Permanent Works								
Submission and Consent								
Submission and Approval								
DPD081161	DDA9A-D: Elect. sys design- RtoC x2	28	24AUG2011	04SEP2013	24AUG2011	04SEP2013	24AUG2011	
DPD081170	DDA9A-D: Elect. sys design- SO Consent Granted	0		04SEP2013		04SEP2013		
DPD090900	Dummy: Approve of Other DDA submission	0		04SEP2013		04SEP2013		
DPD090990	Dummy: Approve of all General DDA	0		04SEP2013		04SEP2013		
DPD513513	Chemical: PV sys SO Review	60	28MAY2012	07SEP2013	28MAY2012	07SEP2013	28MAY2012	
DPD513515	Chemical: PV sys SO approved	0		07SEP2013		07SEP2013		
DPD613183	Sludge: Centrifuge panel SO Review	50	28JUL2012 A	04SEP2013	28JUL2012 A	04SEP2013	28JUL2012	
DPD613185	Sludge: Centrifuge Panel SO approved	0		04SEP2013		04SEP2013		
DPD814123	All area: Fan SO Review	50	02JUL2012 A	10SEP2013	02JUL2012 A	10SEP2013	02JUL2012	
DPD814125	All area: Fan SO approved	0		10SEP2013		10SEP2013		
DPD814213	All area: FS. panel SO Review	28	28JUL2012 A	13SEP2013	28JUL2012 A	13SEP2013	28JUL2012	
DPD904180	Refurbish: DDA 25A~D E&M - SO Review	28	14JAN2013	30AUG2013	14JAN2013	30JUL2013	14JAN2013	
DPD904181	Refurbish: DDA 25A~D E&M - RtoC x2	28	02SEP2013 *	11OCT2013	31JUL2013	06SEP2013		
DPD916316	Mis: DDA 28B1 MH & Pipe Works RtoC x2	28	25APR2012	04SEP2013	25APR2012	28AUG2013	25APR2012	
DPD923051	Mis: DDA 28E - N1N2 MH - RtoC x2	28	25APR2012	04SEP2013	25APR2012	24AUG2013	25APR2012	
DPD923650	Mis: DDA 28H Cable Duct & DP - SO Review	28	04OCT2012	30AUG2013	04OCT2012	30AUG2013	04OCT2012	
DPD923651	Mis: DDA 28H Cable Duct & DP - Rtoc x2	28	31AUG2013	27SEP2013	31AUG2013	27SEP2013		
DPD999910	Dummy: End of Design Stage	1	11OCT2013	11OCT2013	07SEP2013	07SEP2013		
Civil and Structural Works								
Chemically Enhanced Primary Treatement System								
Building and Structures								
CCC156650B	CEPT: MCC Bonntile to external wall	7	28AUG2013	03SEP2013	18DEC2013	24DEC2013		
CCC156660B	CEPT: MCC Gravel on roof	6	04OCT2013	09OCT2013	24JAN2014	29JAN2014		
CCC157110B	CEPT: Screeding to north-west stair	3	01DEC2013 *	03DEC2013	12MAR2014	14MAR2014		
CCC157120B	CEPT: Nosing tile to north-west stair	3	04DEC2013	06DEC2013	15MAR2014	17MAR2014		
CCC200175	CEPT Tank: Remaining ABWF Work	84	18JAN2013	02SEP2013	18JAN2013	12AUG2013	18JAN2013	
New Preliminary Treatment Works								
Building and Structures								
CCC114460A	PTWS: Waterproofing & Screeding on Roof	12	30SEP2013 *	15OCT2013	23DEC2013	08JAN2014		
CCC150200	PTW: Remaining ABWF	90	02DEC2013 *	25MAR2014	23DEC2013	16APR2014		
CCC160982B	PTWN: Screeding to staircase	4	01DEC2013 *	04DEC2013	03APR2014	06APR2014		
CCC160984B	PTWN: Nosing Tile to staircase	2	05DEC2013	06DEC2013	07APR2014	08APR2014		
CCC162860B	PTWS: Precast concrete cover to channel	2	27MAY2013	28AUG2013	27MAY2013	21MAR2014	27MAY2013	
CCC162906B	PTWS: Washed grano to staircase	4	01DEC2013 *	04DEC2013	22MAR2014	25MAR2014		
CCC162907B	PTWS: Non-slip nosing tile to staircase	2	05DEC2013	06DEC2013	26MAR2014	27MAR2014		
Disinfection System								
Building and Structures								
CCC300970B	UV: Bonnite to columns	6	01DEC2013 *	06DEC2013	11JAN2014	16JAN2014		
CCC300975B	UV: FRP covers	6	01DEC2013	06DEC2013	11JAN2014	16JAN2014		
CCC301045B	UV: Precast concrete cover	2	05DEC2013	06DEC2013	15JAN2014	16JAN2014		
CCC301100B	UV: Gravel on roof	6	01DEC2013 *	06DEC2013	11JAN2014	16JAN2014		
CCC301110B	UV: Cat ladder	3	01DEC2013 *	03DEC2013	14JAN2014	16JAN2014		
Sludge Treatment Facilities								
Building and Structures								
CCC600510	SDB: Remaining ABWF Work	60	28AUG2013	08NOV2013	18NOV2013	29JAN2014		
CCC601450	Skip Storage Bldg: Remove Temp Support	18	31AUG2013	12SEP2013	31AUG2013	16SEP2013	31AUG2013	
CCC601460	Skip Storage Bldg: ABWF Work	30	28OCT2013	30NOV2013	17SEP2013	24OCT2013		
CCC601465	Skip Storage Bldg: Handover to E&M Works	0		30NOV2013		24OCT2013		
CCC601500	Skip Storage Bldg: Remaining ABWF Works	60	02DEC2013	18FEB2014	18NOV2013	29JAN2014		
CCC602590B	SDB: FRP cover at polymer area	4	01DEC2013 *	04DEC2013	13JAN2014	16JAN2014		
CCC602720B	SDB: Window, Louver and Door at G/F	16	28AUG2013	12SEP2013	08OCT2013	23OCT2013		
CCC602835B	SDB: FRP covers to centrifuge area	5	28AUG2013	01SEP2013	19OCT2013	23OCT2013		
CCC603040B	SDB: Screeding to staircase 3&4	4	27SEP2013	30SEP2013	24OCT2013	27OCT2013		
CCC603050B	SDB: Nosing tile to staircase 3&4	2	01OCT2013	02OCT2013	28OCT2013	29OCT2013		
CCC603060B	SDB: Skirting to staircase 3&4	4	03OCT2013	06OCT2013	30OCT2013	02NOV2013		
CCC603070B	SDB: Anti-mould paint to staircase 3&4	4	07OCT2013	10OCT2013	03NOV2013	06NOV2013		
CCC603075B	SDB: Railing to staircases 3&4	8	11OCT2013	18OCT2013	07NOV2013	14NOV2013		
CCC603080B	SDB: Screeding to staircase1&2	8	28AUG2013	04SEP2013	24SEP2013	01OCT2013		
CCC603090B	SDB: Nosing tile to staircases 1&2	4	05SEP2013	08SEP2013	02OCT2013	05OCT2013		
CCC603100B	SDB: Anti-mould paint to staircase 1&2	6	09SEP2013	14SEP2013	06OCT2013	11OCT2013		
CCC603105B	SDB: Railing to staircases 1&2	12	15SEP2013	26SEP2013	12OCT2013	23OCT2013		
CCC603110B	SDB: Touch-up concrete surface	3	27SEP2013	29SEP2013	23SEP2013	25SEP2013		
CCC603120B	SDB: Waterproofing membrane on roofs	14	30SEP2013	13OCT2013	26SEP2013	09OCT2013		
CCC603130B	SDB: Water test at roof	12	10OCT2013	21OCT2013	06OCT2013	17OCT2013		
CCC603140B	SDB: Insulation board on roof	12	16OCT2013	27OCT2013	12OCT2013	23OCT2013		



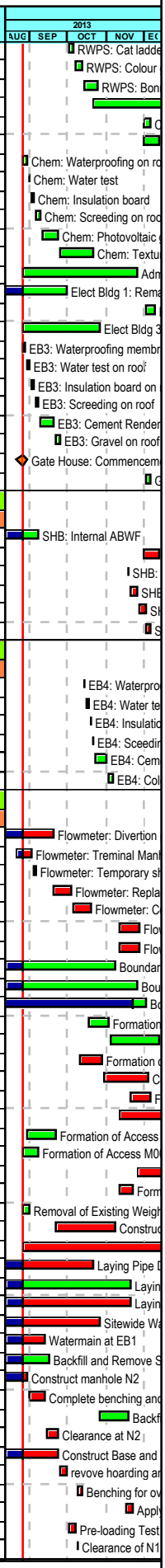
Start date	14JUL2010
Finish date	08JUN2014
Data date	28AUG2013
Run date	26SEP2013
Page number	1A
Project name	PR37
? Primavera Systems, Inc.	

PPSTW Programme R7A- Progress up to 28 Aug 13 - Three Months Rolling Programme

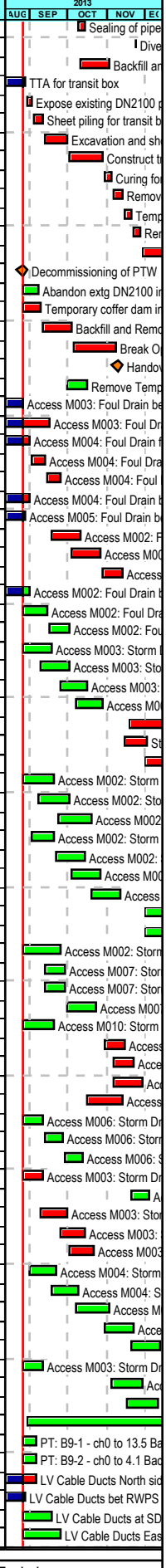
Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

Activity ID	Description	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Actual Start	Actual Finish
CCC603150B	SDB: Screeding on roof	14	22OCT2013	04NOV2013	18OCT2013	31OCT2013		
CCC603160B	SDB: Bonntile textured coating system	28	30SEP2013	27OCT2013	04OCT2013	31OCT2013		
CCC603170B	SDB: FRP stair and railing	21	29OCT2013	18NOV2013	25OCT2013	14NOV2013		
CCC603180B	SDB: Skylight	12	05NOV2013	16NOV2013	03NOV2013	14NOV2013		
CCC603190B	SDB: Cat ladder to roofs	14	05NOV2013	18NOV2013	01NOV2013	14NOV2013		
CCC603310B	Skip: Underground pipe work	12	28AUG2013	08SEP2013	22JUL2013	02AUG2013		
CCC603320B	Skip: Excavate to formation	4	09SEP2013	12SEP2013	03AUG2013	06AUG2013		
CCC603330B	Skip: Blinding to storage building	2	13SEP2013	14SEP2013	07AUG2013	08AUG2013		
CCC603340B	Skip: Formwork to raft at storage building	3	15SEP2013	17SEP2013	09AUG2013	11AUG2013		
CCC603350B	Skip: Steel fixing to raft at storage building	4	18SEP2013	21SEP2013	12AUG2013	15AUG2013		
CCC603360B	Skip: Kicker formwork to storage building	3	19SEP2013	21SEP2013	13AUG2013	15AUG2013		
CCC603370B	Skip: Concrete to raft at storage building	1	22SEP2013	22SEP2013	16AUG2013	16AUG2013		
CCC603380B	Skip: Remove formwork to raft	2	23SEP2013	24SEP2013	17AUG2013	18AUG2013		
CCC603390B	Skip: Erect scaffold support	4	25SEP2013	28SEP2013	19AUG2013	22AUG2013		
CCC603400B	Skip: Internal and soffit fwk to pump room	10	29SEP2013	08OCT2013	23AUG2013	01SEP2013		
CCC603410B	Skip: Steel fixing to wall and roof to pump room	5	04OCT2013	08OCT2013	28AUG2013	01SEP2013		
CCC603420B	Skip: Cast-in items to pump room	2	09OCT2013	10OCT2013	02SEP2013	03SEP2013		
CCC603430B	Skip: Checking and cleaning at pump room	1	11OCT2013	11OCT2013	04SEP2013	04SEP2013		
CCC603440B	Skip: Concrete to wall /roof at pump room	1	12OCT2013	12OCT2013	05SEP2013	05SEP2013		
CCC603450B	Skip: Curing at pump room	8	13OCT2013	20OCT2013	20SEP2013	27SEP2013		
CCC603460B	Skip: Remove scaffold & fwk at pump room	6	21OCT2013	26OCT2013	28SEP2013	03OCT2013		
CCC603470B	Skip: Watermeter cabinet	5	22OCT2013	26OCT2013	29SEP2013	03OCT2013		
CCC603550B	Skip: Internal / soffit fwk to storage building	7	13OCT2013	19OCT2013	06SEP2013	12SEP2013		
CCC603560B	Skip: Steel fixing to storage building	5	20OCT2013	24OCT2013	13SEP2013	17SEP2013		
CCC603570B	Skip: Cast-in items to storage building	2	25OCT2013	26OCT2013	18SEP2013	19SEP2013		
CCC603580B	Skip: External formwork to storage building	5	27OCT2013	31OCT2013	20SEP2013	24SEP2013		
CCC603590B	Skip: Checking and cleaning to storage building	1	01NOV2013	01NOV2013	25SEP2013	25SEP2013		
CCC603600B	Skip: Concrete wall / roof to storage building	1	02NOV2013	02NOV2013	26SEP2013	26SEP2013		
CCC603610B	Skip: Curing	8	03NOV2013	10NOV2013	27SEP2013	04OCT2013		
CCC603620B	Skip: Remove scaffold / fwk to storage building	5	11NOV2013	15NOV2013	05OCT2013	09OCT2013		
CCC603710B	Skip: Steel fixing to parapet	2	03NOV2013	04NOV2013	29SEP2013	30SEP2013		
CCC603720B	Skip: Formwork to parapet	3	05NOV2013	07NOV2013	01OCT2013	03OCT2013		
CCC603730B	Skip: Concrete to parapet	1	08NOV2013	08NOV2013	04OCT2013	04OCT2013		
CCC603810B	Skip: Touch-up concrete surface at pump room	6	10NOV2013	15NOV2013	04OCT2013	09OCT2013		
CCC603820B	Skip: Screeding to floor at pump room	5	10NOV2013	14NOV2013	07OCT2013	11OCT2013		
CCC603830B	Skip: Door and louver at pump room	3	15NOV2013	17NOV2013	12OCT2013	14OCT2013		
CCC603840B	Skip: Epoxy skirting to pump room	2	18NOV2013	19NOV2013	15OCT2013	16OCT2013		
CCC603850B	Skip: Anti-mould paint to wall at pump room	3	20NOV2013	22NOV2013	17OCT2013	19OCT2013		
CCC603860B	Skip: Touch-up concrete surface at storage bldg	3	23NOV2013	25NOV2013	20OCT2013	22OCT2013		
CCC603870B	Skip: Door and louver to storage building	5	26NOV2013	30NOV2013	23OCT2013	27OCT2013		
CCC603880B	Skip: Epoxy coating to floor at storage building	4	01DEC2013	04DEC2013	28OCT2013	31OCT2013		
CCC603890B	Skip: Epoxy skirting at storage building	3	05DEC2013	07DEC2013	01NOV2013	03NOV2013		
CCC603900B	Skip: Waterproofing membrane on roofs	3	10NOV2013	12NOV2013	04OCT2013	06OCT2013		
CCC603910B	Skip: Water test	3	10NOV2013	12NOV2013	04OCT2013	06OCT2013		
CCC603920B	Skip: Insulation board on roofs	2	13NOV2013	14NOV2013	07OCT2013	08OCT2013		
CCC603930B	Skip: Screeding on roofs	4	15NOV2013	18NOV2013	09OCT2013	12OCT2013		
CCC603940B	Skip: Skip light	6	19NOV2013	24NOV2013	13OCT2013	18OCT2013		
CCC603950B	Skip: Color gravel on roof	3	25NOV2013	27NOV2013	19OCT2013	21OCT2013		
CCC603960B	Skip: Render with Bonntile to external wall	6	28NOV2013	03DEC2013	22OCT2013	27OCT2013		
CCC603980B	Skip: Door for water meter cabinet	3	04DEC2013	06DEC2013	28OCT2013	30OCT2013		
Septic Waste Collection Facilities								
Building and Structures								
CCC150220	Septic: Remaining ABWF Works	40	28MAY2013	05OCT2013	28MAY2013	26OCT2013	28MAY2013	
CCC170740B	Septic: FRP frame for louver	1	28AUG2013	28AUG2013	28AUG2013	28AUG2013		
CCC170900B	Septic: Insulation board on roof	1	28AUG2013	28AUG2013	28AUG2013	28AUG2013		
CCC170910B	Septic: Cement sand screeding on roof	2	28AUG2013	28AUG2013	28AUG2013	28AUG2013		
CCC170920B	Septic : Gravel on roof	2	01DEC2013 *	02DEC2013	05APR2014	06APR2014		
CCC170940B	Septic: Bonntile to external wall and column	12	01DEC2013	12DEC2013	05APR2014	16APR2014		
CCC170950B	Septic: Door for watermeter cabinet /pillar box	2	28AUG2013	29AUG2013	20OCT2013	21OCT2013		
Auxiliary Building								
Building and Structures								
CCC320200	RWPS: Remaining ABWF	60	28AUG2013	08NOV2013	18NOV2013	29JAN2014		
CCC320535B	RWPS: Granular fill	2	28AUG2013	29AUG2013	28AUG2013	29AUG2013		
CCC320840B	RWPS: Remove scaffold and fwk	3	28AUG2013	30AUG2013	11SEP2013	13SEP2013		
CCC320845B	RWPS: Touch-up concrete surface	4	28AUG2013	31AUG2013	10SEP2013	13SEP2013		
CCC320850B	RWPS: Bund wall at polymer storage area	3	28AUG2013	30AUG2013	11SEP2013	13SEP2013		
CCC320870B	RWPS: Polymer membrane at retention tank	4	30AUG2013	02SEP2013	25SEP2013	28SEP2013		
CCC320880B	RWPS: Frame for Door, window and louver	6	01SEP2013	06SEP2013	23SEP2013	28SEP2013		
CCC320890B	RWPS: Epoxy skirting at polymer storage area	2	07SEP2013	08SEP2013	29SEP2013	30SEP2013		
CCC320910B	RWPS: Screeding to polymer storage area	4	29AUG2013	01SEP2013	11SEP2013	14SEP2013		
CCC320920B	RWPS: Anti-mould paint at polymer storage area	5	02SEP2013	06SEP2013	15SEP2013	19SEP2013		
CCC320930B	RWPS: Epoxy coating to polymer storge area	2	09SEP2013	10SEP2013	01OCT2013	02OCT2013		
CCC320940B	RWPS: Screeding to DAF1 &2	4	07SEP2013	10SEP2013	20SEP2013	23SEP2013		
CCC320950B	RWPS: Anti-mould paint to DAF1&2	5	11SEP2013	15SEP2013	24SEP2013	28SEP2013		
CCC320960B	RWPS: Epoxy coating to DAF1&2	2	16SEP2013	17SEP2013	29SEP2013	30SEP2013		
CCC320970B	RWPS: Epoxy skirting to DAF1&2	3	18SEP2013	20SEP2013	01OCT2013	03OCT2013		
CCC320980B	RWPS: FRP platform /rail in DAF room	4	21SEP2013	24SEP2013	04NOV2013	07NOV2013		
CCC321010B	RWPS: Waterproof membrane on roof	3	21SEP2013	23SEP2013	04OCT2013	06OCT2013		
CCC321020B	RWPS: Water test	3	24SEP2013	26SEP2013	07OCT2013	09OCT2013		
CCC321030B	RWPS: Insulation board	2	27SEP2013	28SEP2013	10OCT2013	11OCT2013		
CCC321040B	RWPS: Screeding on roof	3	29SEP2013	01OCT2013	12OCT2013	14OCT2013		

Activity ID	Description	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Actual Start	Actual Finish
CCC321050B	RWPS: Cat ladder and railing on roof	6	02OCT2013	07OCT2013	15OCT2013	20OCT2013		
CCC321060B	RWPS: Colour gravel on roof	6	08OCT2013	13OCT2013	21OCT2013	26OCT2013		
CCC321070B	RWPS: Bonntile to external wall	12	14OCT2013	25OCT2013	27OCT2013	07NOV2013		
CCC500230	Chemical Bldg: ABWF at Tank Compound	60	21OCT2013	31DEC2013	18NOV2013	29JAN2014		
CCC500720B	Chem: FRP floor at polymer preparation room	6	01DEC2013 *	06DEC2013	11JAN2014	16JAN2014		
CCC500840B	Chem: FRP floor at tank compound	14	01DEC2013 *	14DEC2013	03JAN2014	16JAN2014		
CCC500910B	Chem: Waterproofing on roof	4	28AUG2013	31AUG2013	18SEP2013	21SEP2013		
CCC500920B	Chem: Water test	3	01SEP2013	03SEP2013	22SEP2013	24SEP2013		
CCC500930B	Chem: Insulation board	3	04SEP2013	06SEP2013	25SEP2013	27SEP2013		
CCC500940B	Chem: Screeding on roof	5	07SEP2013	11SEP2013	28SEP2013	02OCT2013		
CCC500950B	Chem: Photovoltaic glazing	14	12SEP2013	25SEP2013	03OCT2013	16OCT2013		
CCC500960B	Chem: Textured coating to external wall	28	26SEP2013	23OCT2013	17OCT2013	13NOV2013		
CCC800310	Admin Bldg: Remaining ABWF Works	75	28AUG2013	26NOV2013	19OCT2013	17JAN2014		
CCC910180	Elect Bldg 1: Remaining ABWF Work	60	13NOV2012	02OCT2013	13NOV2012	19DEC2013	13NOV2012	
CCC910570B	EB1: Green roofing	7	02DEC2013 *	09DEC2013	09JAN2014	16JAN2014		
CCC930180	Elect Bldg 3: Remaining ABWF Work	50	28AUG2013	28OCT2013	24SEP2013	22NOV2013		
CCC930620B	EB3: Waterproofing membrane on roof	3	28AUG2013	30AUG2013	23OCT2013	25OCT2013		
CCC930630B	EB3: Water test on roof	3	31AUG2013	02SEP2013	26OCT2013	28OCT2013		
CCC930640B	EB3: Insulation board on roof	3	03SEP2013	05SEP2013	29OCT2013	31OCT2013		
CCC930650B	EB3: Screeding on roof	4	06SEP2013	09SEP2013	01NOV2013	04NOV2013		
CCC930660B	EB3: Cement Render to external wall	12	10SEP2013	21SEP2013	05NOV2013	16NOV2013		
CCC930670B	EB3: Gravel on roof	6	22SEP2013	27SEP2013	17NOV2013	22NOV2013		
CCC970105	Gate House: Commencement of Construction	0	28AUG2013		04DEC2013			
CCC970110	Gate House: Excavation	6	02DEC2013 *	07DEC2013	04DEC2013	10DEC2013		
Refurbishment and Renewal Works								
Miscellaneous Works								
CCM000150	SHB: Internal ABWF	24	12JUL2013 A	10SEP2013	12JUL2013 A	05NOV2013	12JUL2013	
CCM001180B	SHB: Erect working platform for external wks	12	30NOV2013	13DEC2013	30OCT2013	12NOV2013		
CCM001240B	SHB: Erect working platform for plastering wks	2	18NOV2013	19NOV2013	17OCT2013	18OCT2013		
CCM001250B	SHB: Plastering to Genset and DG rooms	6	20NOV2013	26NOV2013	19OCT2013	25OCT2013		
CCM001260B	SHB: Door and louver to Genset and DG rooms	6	27NOV2013	03DEC2013	26OCT2013	01NOV2013		
CCM001270B	SHB: Painting to Genset and DG rooms	6	02DEC2013	07DEC2013	31OCT2013	06NOV2013		
Miscellaneous Works								
Miscellaneous Works								
CCM104650B	EB4: Waterproofing membrane on roof	2	15OCT2013	16OCT2013	16DEC2013	17DEC2013		
CCM104660B	EB4: Water test	3	17OCT2013	19OCT2013	18DEC2013	20DEC2013		
CCM104670B	EB4: Insulation board	1	20OCT2013	20OCT2013	21DEC2013	21DEC2013		
CCM104680B	EB4: Sceeding on roof	2	21OCT2013	22OCT2013	22DEC2013	23DEC2013		
CCM104690B	EB4: Cement render to external wall	10	23OCT2013	01NOV2013	24DEC2013	02JAN2014		
CCM104700B	EB4: Coloured gravel	6	02NOV2013	07NOV2013	03JAN2014	08JAN2014		
External Works								
Miscellaneous Works								
CWM101063	Flowmeter: Divertion proposal and approval	10	17JUN2013	22SEP2013	17JUN2013	22SEP2013	17JUN2013	
CWM101065	Flowmeter: Treminal Manhole modification	20	23AUG2013	04SEP2013	23AUG2013	18AUG2013	23AUG2013	
CWM101070	Flowmeter: Temporary shut down of OPS	3	05SEP2013	07SEP2013	19AUG2013	21AUG2013		
CWM101080	Flowmeter: Replace Pipeline 1	16	20SEP2013	05OCT2013	03SEP2013	18SEP2013		
CWM101090	Flowmeter: Const. Weir 1 at Extg Outfall Manhole	16	06OCT2013	21OCT2013	19SEP2013	04OCT2013		
CWM101100	Flowmeter: Replace Pipeline 2	16	12NOV2013	27NOV2013	28OCT2013	12NOV2013		
CWM101110	Flowmeter: Const. Weir 2 at Extg Outfall Manhole	16	12NOV2013	27NOV2013	28OCT2013	12NOV2013		
CWM101220	Boundary Wall: Excavation	90	10DEC2012	08NOV2013	10DEC2012	22NOV2013	10DEC2012	
CWM101300	Boundary Wall: Footing	90	14JAN2013	26NOV2013	14JAN2013	06DEC2013	14JAN2013	
CWM101350	Boundary Wall: Wall Stem	90	29JAN2013	02DEC2013	29JAN2013	12DEC2013	29JAN2013	
CWM101650	Formation of Access M002 0+00 to 0+80	14	19OCT2013	04NOV2013	14DEC2013	02JAN2014		
CWM101655	Construction of Access M002 0+00 to 0+80	35	05NOV2013	14DEC2013	03JAN2014	18FEB2014		
CWM101670	Formation of Access M010	15	12OCT2013	30OCT2013	05OCT2013	23OCT2013		
CWM101675	Construction of Access M010	30	31OCT2013	04DEC2013	24OCT2013	27NOV2013		
CWM101680	Formation of Access M006 0+00 to 0+50	15	20NOV2013	06DEC2013	11NOV2013	27NOV2013		
CWM101700	Construction of Access M005	50	11NOV2013	10JAN2014	04OCT2013	02DEC2013		
CWM101710	Formation of Access M005	20	30AUG2013	23SEP2013	09SEP2013	03OCT2013		
CWM101730	Formation of Access M008	12	28AUG2013	10SEP2013	18NOV2013	30NOV2013		
CWM101740	Construction of Access M003 (PTWN)	30	25NOV2013	31DEC2013	28OCT2013	30NOV2013		
CWM101750	Formation of Access M003 (PTWN)	12	11NOV2013	23NOV2013	12OCT2013	26OCT2013		
CWM101760	Removal of Existing Weighbridge	6	28AUG2013	03SEP2013	08OCT2013	15OCT2013		
CWM101790	Construction of Weighbridge	40	23SEP2013	09NOV2013	16AUG2013	03OCT2013		
CWM102070	Connection to extg Pump Station	95	28AUG2013	19DEC2013	28AUG2013	19DEC2013		
CWM102100	Laying Pipe Ducts, Trenches and Utilities	360	05JUN2012	22OCT2013	05JUN2012	14SEP2013	05JUN2012	
CWM102160	Laying LV cable duct	100	18FEB2013	20NOV2013	18FEB2013	19DEC2013	18FEB2013	
CWM102170	Laying ELV cable duct	116	18FEB2013	20NOV2013	18FEB2013	20NOV2013	18FEB2013	
CWM102180	Sitewide Watermain	84	26APR2013	28OCT2013	26APR2013	28SEP2013	26APR2013	
CWM200175B	Watermain at EB1	20	26APR2013	15SEP2013	26APR2013	15SEP2013	26APR2013	
CWM200220B	Backfill and Remove Sheet Piling East	24	16APR2013	18SEP2013	16APR2013	11DEC2013	16APR2013	
CWM200240B	Construct manhole N2	40	26APR2013	31AUG2013	26APR2013	04AUG2013	26APR2013	
CWM200250B	Complete benching and platform in N2	14	01SEP2013	14SEP2013	05AUG2013	18AUG2013		
CWM200260B	Backfill and remove sheet pile at N2	24	27OCT2013	19NOV2013	06JAN2014	29JAN2014		
CWM200270B	Clearance at N2	10	15SEP2013	24SEP2013	19AUG2013	28AUG2013		
CWM200450B	Construct Base and Chamber Wall of N1	37	26APR2013	25SEP2013	26APR2013	08AUG2013	26APR2013	
CWM200455B	revove hoarding and cleance inside N1	7	26SEP2013	02OCT2013	09AUG2013	15AUG2013		
CWM200460B	Benching for overflow pipe inside N1	5	10OCT2013	14OCT2013	18SEP2013	22SEP2013		
CWM200470B	Apply Poly-shield / touchup	6	17NOV2013	22NOV2013	01OCT2013	06OCT2013		
CWM200475B	Pre-loading Test	7	03OCT2013	09OCT2013	16AUG2013	22AUG2013		
CWM200480B	Clearance of N1 Chamber	2	10OCT2013	11OCT2013	23AUG2013	24AUG2013		



Activity ID	Description	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Actual Start	Actual Finish
CWM200500B	Sealing of pipe connection openning	6	10OCT2013	15OCT2013	17SEP2013	22SEP2013		
CWM200520B	Divert Flow in N1	2	23NOV2013	25NOV2013	07OCT2013	08OCT2013		
CWM200610B	Backfill and Remove Sheet Piling N2 to N1	24	12OCT2013	04NOV2013	07OCT2013	30OCT2013		
CWM202040B	TTA for transit box	9	22NOV2012	30AUG2013	22NOV2012	30AUG2013	22NOV2012	
CWM202050B	Expose existing DN2100 pipe line	5	31AUG2013	04SEP2013	31AUG2013	04SEP2013		
CWM202060B	Sheet piling for transit box	9	05SEP2013	13SEP2013	05SEP2013	13SEP2013		
CWM202070B	Excavation and shoring for transit box	18	14SEP2013	01OCT2013	14SEP2013	01OCT2013		
CWM202080B	Construct transit box	28	02OCT2013	29OCT2013	02OCT2013	29OCT2013		
CWM202090B	Curing for transit box	8	30OCT2013	06NOV2013	30OCT2013	06NOV2013		
CWM202100B	Remove scaffold for transit box	7	07NOV2013	13NOV2013	07NOV2013	13NOV2013		
CWM202110B	Temporay wall at DN2100 from CEPT	7	14NOV2013	20NOV2013	14NOV2013	20NOV2013		
CWM202120B	Remove extg pipe inside transit box	7	21NOV2013	27NOV2013	21NOV2013	27NOV2013		
CWM202130B	Backfill and Reinstatement	24	28NOV2013	21DEC2013	28NOV2013	21DEC2013		
CWM202350B	Decommissioning of PTW	0	28AUG2013		07DEC2013			
CWM202360B	Abandon extg DN2100 in transit box	14	28AUG2013	10SEP2013	07DEC2013	20DEC2013		
CWM202540B	Temporary coffer dam in OPS	15	28AUG2013	11SEP2013	28AUG2013	11SEP2013		
CWM202550B	Backfill and Remove sheet pile	24	12SEP2013	05OCT2013	12SEP2013	05OCT2013		
CWM202560B	Break Opening at OPS	35	06OCT2013	09NOV2013	06OCT2013	09NOV2013		
CWM202570	Handover Connection Manhole to OPS for E&M	0		09NOV2013		09NOV2013		
CWM202580B	Remove Temp Coffer Dam at PS	18	01OCT2013	18OCT2013	12JAN2014	29JAN2014		
CWM202655B	Access M003: Foul Drain bet F3 to F2 / DOU B	24	06JUN2013	28AUG2013	06JUN2013	28AUG2013	06JUN2013	
CWM202660B	Access M003: Foul Drain bet F2 to F2B	24	10JUN2013	18SEP2013	10JUN2013	17SEP2013	10JUN2013	
CWM202720B	Access M004: Foul Drain from Admin to F11	12	01APR2013	02SEP2013	01APR2013	02SEP2013	01APR2013	
CWM202730B	Access M004: Foul Drain from Admin to Extg A10	12	03SEP2013	14SEP2013	03SEP2013	14SEP2013		
CWM202735B	Access M004: Foul Drain bet Extg A10 to F10	12	15SEP2013	26SEP2013	15SEP2013	26SEP2013		
CWM202738B	Access M004: Foul Drain bet F10 to F9	12	22JUN2013	02SEP2013	22JUN2013	02SEP2013	22JUN2013	
CWM203050B	Access M005: Foul Drain bet F5C to F5D / DOU A	21	19JUN2013	29AUG2013	19JUN2013	29AUG2013	19JUN2013	
CWM203170B	Access M002: Foul Drain bet F2B to F1/ Skip	24	19SEP2013	12OCT2013	18SEP2013	11OCT2013		
CWM203180B	Access M002: Foul Drain bet F2B to F15 / Skip	24	04OCT2013	27OCT2013	03OCT2013	26OCT2013		
CWM203190B	Access M002: Foul Drain bet SDB/F2B to F2A / SDB	18	28OCT2013	14NOV2013	27OCT2013	13NOV2013		
CWM203220B	Access M002: Foul Drain bet F14 to F13	24	16MAY2013	03SEP2013	16MAY2013	13DEC2013	16MAY2013	
CWM203230B	Access M002: Foul Drain bet F13 to F12	20	28AUG2013	16SEP2013	30AUG2013	18SEP2013		
CWM203240B	Access M002: Foul Drain bet F12 to OPS	18	17SEP2013	04OCT2013	19SEP2013	06OCT2013		
CWM213820B	Access M003: Storm Drain bet S3 to S2	24	28AUG2013	20SEP2013	11SEP2013	04OCT2013		
CWM213830B	Access M003: Storm Drain bet S2 to S1	24	11SEP2013	04OCT2013	25SEP2013	18OCT2013		
CWM213920B	Access M003: Storm Drain bet S11C to S11B	24	25SEP2013	18OCT2013	09OCT2013	01NOV2013		
CWM213930B	Access M003: Storm Drain bet S11B to CP11A	24	07OCT2013	30OCT2013	21OCT2013	13NOV2013		
CWM214010B	Access M003: Storm Drain bet S14 to S15	35	19NOV2013	23DEC2013	15NOV2013	19DEC2013		
CWM214110B	Storm Drain bet CP11A to S11	18	15NOV2013	02DEC2013	14NOV2013	01DEC2013		
CWM214120B	Storm Drain bet S11 to S12A	18	30NOV2013	17DEC2013	29NOV2013	16DEC2013		
CWM215020B	Access M002: Storm Drain bet S17 to S16	25	28AUG2013	21SEP2013	23OCT2013	16NOV2013		
CWM215030B	Access M002: Storm Drain bet S16 / CP16A to S16A	25	09SEP2013	03OCT2013	04NOV2013	28NOV2013		
CWM215040B	Access M002: Storm Drain bet S16A to S16B	28	24SEP2013	21OCT2013	19NOV2013	16DEC2013		
CWM215050B	Access M002: Storm Drain bet S17 to S18	20	03SEP2013	22SEP2013	31OCT2013	19NOV2013		
CWM215060B	Access M002: Storm Drain bet S18 to S19	24	23SEP2013	16OCT2013	20NOV2013	13DEC2013		
CWM215070B	Access M002: Storm Drain bet S19 to CP19	24	05OCT2013	28OCT2013	02DEC2013	25DEC2013		
CWM215080B	Access M002: Storm Drain bet CP19 to CP19A	24	20OCT2013	12NOV2013	08JAN2014	06FEB2014		
CWM215110B	Stockpile Area: Storm Drain bet S19 /CP20 to S20	51	01DEC2013	20JAN2014	23DEC2013	17FEB2014		
CWM215145B	Stockpile Area: Storm Drain bet S25 to S22	30	01DEC2013	30DEC2013	26DEC2013	24JAN2014		
CWM215170B	Access M002: Storm Drain bet S24 to S25	30	28AUG2013	26SEP2013	14NOV2013	13DEC2013		
CWM215210B	Access M007: Storm Drain bet CP11 / CP13A to S12	18	13SEP2013	30SEP2013	15FEB2014	04MAR2014		
CWM215220B	Access M007: Storm Drain bet S12 to S13	18	13SEP2013	30SEP2013	15FEB2014	04MAR2014		
CWM215230B	Access M007: Storm Drain bet S13 to S23A	24	01OCT2013	24OCT2013	05MAR2014	28MAR2014		
CWM215300B	Access M010: Storm Drain bet S25A to S25	25	28AUG2013	21SEP2013	10SEP2013	04OCT2013		
CWM215410B	Access M006: Storm Drain bet CP21 to extg S8	18	30OCT2013	16NOV2013	21OCT2013	07NOV2013		
CWM215420B	Access M006: Storm Drain bet S8 to S7	18	06NOV2013	23NOV2013	28OCT2013	14NOV2013		
CWM215430B	Access M006: Storm Drain bet S7 to S28	24	06NOV2013	29NOV2013	28OCT2013	20NOV2013		
CWM215440B	Access M006: Storm Drain bet S28 to S17	30	16OCT2013	14NOV2013	07OCT2013	05NOV2013		
CWM215610B	Access M006: Storm Drain bet EB4 to CP12A	16	28AUG2013	12SEP2013	10SEP2013	25SEP2013		
CWM215620B	Access M006: Storm Drain bet CP12A to CP12	16	13SEP2013	28SEP2013	26SEP2013	11OCT2013		
CWM215630B	Access M006: Storm Drain bet CP12A to Extg S16	16	29SEP2013	14OCT2013	12OCT2013	27OCT2013		
CWM215710B	Access M003: Storm Drain bet S27 to S2 upstream	16	28AUG2013	12SEP2013	17AUG2013	01SEP2013		
CWM215720B	Access M003:Storm Drain bet S27 to S2 downstream	16	20NOV2013	05DEC2013	12DEC2013	27DEC2013		
CWM215730B	Access M003: Storm Drain bet S26 to S27	21	11SEP2013	01OCT2013	31AUG2013	20SEP2013		
CWM215740B	Access M003: Storm Drain (Gullies to S26)	21	25SEP2013	15OCT2013	21SEP2013	11OCT2013		
CWM215750B	Access M003: Storm Drain (Gullies to S27)	21	02OCT2013	22OCT2013	21SEP2013	11OCT2013		
CWM216010B	Access M004: Storm Drain bet Extg MH to R2	23	01SEP2013	23SEP2013	23SEP2013	15OCT2013		
CWM216020B	Access M004: Storm Drain bet R2 to R1	24	18SEP2013	11OCT2013	10OCT2013	02NOV2013		
CWM216030B	Access M004: Storm Drain bet R1 to S3	28	07OCT2013	03NOV2013	29OCT2013	25NOV2013		
CWM216040B	Access M004: Storm Drain bet S3 to S2B	24	30OCT2013	22NOV2013	21NOV2013	14DEC2013		
CWM216050B	Access M004: Storm Drain bet S2B to S2	24	20NOV2013	13DEC2013	12DEC2013	04JAN2014		
CWM216110B	Access M003: Storm Drain bet S2 to S2A	16	28AUG2013	12SEP2013	21DEC2013	05JAN2014		
CWM216120B	Access M003: Storm Drain bet S2A to CP2A / CP2B	25	05NOV2013	29NOV2013	06JAN2014	05FEB2014		
CWM216130B	Access M003: Storm Drain bet S2A to CP2E / CP2D	25	17NOV2013	11DEC2013	18JAN2014	17FEB2014		
CWM217000B	U channel	125	30AUG2013	01JAN2014	07DEC2013	16APR2014		
CWM221930B	PT: B9-1 - ch0 to 13.5 Backfill	12	28AUG2013	08SEP2013	28JAN2014	14FEB2014		
CWM221970B	PT: B9-2 - ch0 to 4.1 Backfill	12	28AUG2013	08SEP2013	28JAN2014	14FEB2014		
CWM224800B	LV Cable Ducts North side of CEPT to DOU B	16	20JUL2013 A	07SEP2013	20JUL2013 A	20AUG2013	20JUL2013	
CWM225000B	LV Cable Ducts bet RWPS to OPS	16	20MAY2013	29AUG2013	20MAY2013	29AUG2013	20MAY2013	
CWM225100B	LV Cable Ducts at SDB and Stockpile area	24	28AUG2013	20SEP2013	02SEP2013	25SEP2013		
CWM225200B	LV Cable Ducts East of Extg PTW	30	28AUG2013	26SEP2013	02SEP2013	01OCT2013		

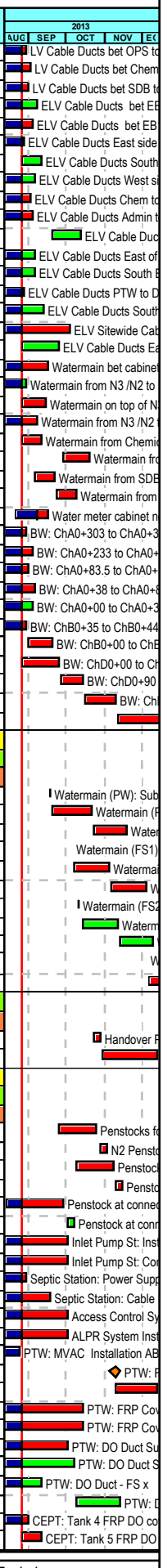


Start date	14JUL2010
Finish date	08JUN2014
Data date	28AUG2013
Run date	26SEP2013
Page number	4A
Project name	PR37

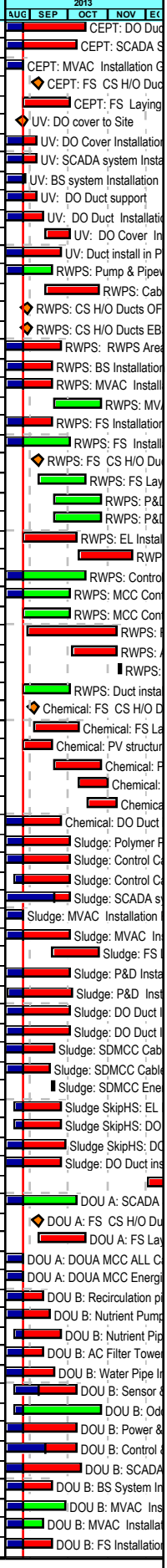
PPSTW Programme R7A- Progress up to 28 Aug 13 - Three Months Rolling Programme

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

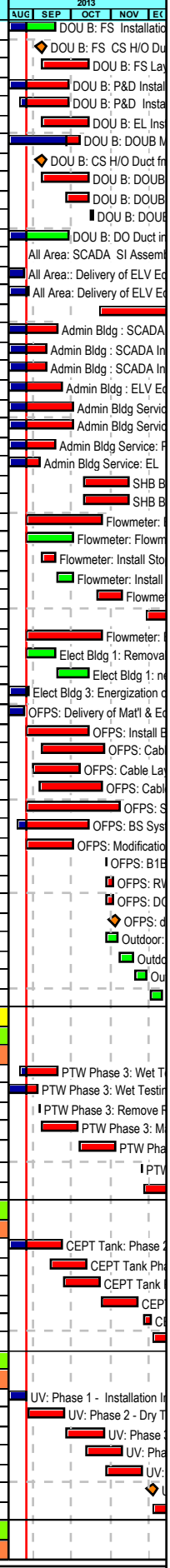
Activity ID	Description	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Actual Start	Actual Finish
CWM225220B	LV Cable Ducts bet OPS to DOUB	30	24APR2013	01SEP2013	24APR2013	29JUL2013	24APR2013	
CWM225240B	LV Cable Ducts bet Chem to EB3	20	27MAY2013	04SEP2013	27MAY2013	04SEP2013	27MAY2013	
CWM225250B	LV Cable Ducts bet SDB to EB3	20	16MAY2013	02SEP2013	16MAY2013	02SEP2013	16MAY2013	
CWM225600B	ELV Cable Ducts bet EB1 to PTW	21	21MAY2013	09SEP2013	21MAY2013	08NOV2013	21MAY2013	
CWM225800B	ELV Cable Ducts bet EB1 to Admin Building	18	25MAY2013	05SEP2013	25MAY2013	05SEP2013	25MAY2013	
CWM225900B	ELV Cable Ducts East side of CEPT	24	16MAY2013	29AUG2013	16MAY2013	08SEP2013	16MAY2013	
CWM226000B	ELV Cable Ducts South side of CEPT	16	28AUG2013	12SEP2013	28OCT2013	12NOV2013		
CWM226100B	ELV Cable Ducts West side of CEPT to EB3	16	06JUL2013 A	08SEP2013	06JUL2013 A	04OCT2013	06JUL2013	
CWM226120B	ELV Cable Ducts Chem to East of CEPT	16	06JUL2013 A	04SEP2013	06JUL2013 A	04SEP2013	06JUL2013	
CWM226200B	ELV Cable Ducts Admin to DOU B	16	14JUL2013 A	06SEP2013	14JUL2013 A	26AUG2013	14JUL2013	
CWM226300B	ELV Cable Ducts around stockpile area	24	21SEP2013	14OCT2013	28DEC2013	20JAN2014		
CWM226400B	ELV Cable Ducts East of PTW	18	14JUL2013 A	07SEP2013	14JUL2013 A	08SEP2013	14JUL2013	
CWM226500B	ELV Cable Ducts South East side of DOU A	18	14JUL2013 A	07SEP2013	14JUL2013 A	08SEP2013	14JUL2013	
CWM226510B	ELV Cable Ducts PTW to DOU A	18	10MAY2013	29AUG2013	10MAY2013	08SEP2013	10MAY2013	
CWM226520B	ELV Cable Ducts South side of DOU A	18	14JUL2013 A	14SEP2013	14JUL2013 A	08NOV2013	14JUL2013	
CWM226530B	ELV Sitewide Cable Ducts for PCCW	95	01MAR2013	05OCT2013	01MAR2013	15SEP2013	01MAR2013	
CWM226600B	ELV Cable Ducts East of Extg PTW	30	28AUG2013	26SEP2013	02SEP2013	01OCT2013		
CWM227100B	Watermain bet cabinet near EB1to Admin Building	27	14AUG2013	18SEP2013	14AUG2013	20AUG2013	14AUG2013	
CWM227200B	Watermain from N3 /N2 to DOU A	20	23MAY2013	31AUG2013	23MAY2013	22SEP2013	23MAY2013	
CWM227300B	Watermain on top of N3 to N2	20	28AUG2013	16SEP2013	28AUG2013	16SEP2013		
CWM227400B	Watermain from N3 /N2 to PTW	18	23MAY2013	10SEP2013	23MAY2013	10SEP2013	23MAY2013	
CWM227600B	Watermain from Chemical Building to SDB	16	28AUG2013	12SEP2013	05AUG2013	20AUG2013		
CWM227700B	Watermain from PTW to South of CEPT/DOU B	21	30SEP2013	20OCT2013	30SEP2013	20OCT2013		
CWM227800B	Watermain from SDB to DOUB/ UV	18	06SEP2013	23SEP2013	30AUG2013	16SEP2013		
CWM227900B	Watermain from DOUB to RWPS	18	24SEP2013	11OCT2013	17SEP2013	04OCT2013		
CWM228000B	Water meter cabinet near EB1	14	22AUG2013	18SEP2013	22AUG2013	20AUG2013	22AUG2013	
CWM228570	BW: ChA0+303 to ChA0+315 Type A4	24	11MAY2013	01SEP2013	11MAY2013	01SEP2013	11MAY2013	
CWM228580	BW: ChA0+233 to ChA0+246 (Weighbridge)	36	25FEB2013	05SEP2013	25FEB2013	05SEP2013	25FEB2013	
CWM228670	BW: ChA0+83.5 to ChA0+104	30	07MAY2013	02SEP2013	07MAY2013	02SEP2013	07MAY2013	
CWM228680	BW: ChA0+38 to ChA0+83.5	60	13APR2013	08SEP2013	13APR2013	08SEP2013	13APR2013	
CWM228700	BW: ChA0+00 to ChA0+38	45	26APR2013	05SEP2013	26APR2013	29JAN2014	26APR2013	
CWM228830	BW: ChB0+35 to ChB0+44.8 Type A4	24	10MAY2013	01SEP2013	10MAY2013	26JUL2013	10MAY2013	
CWM228840	BW: ChB0+00 to ChB0+30 Type B	20	02SEP2013	21SEP2013	27JUL2013	15AUG2013		
CWM229420	BW: ChD0+00 to ChD0+90 Type B	30	28AUG2013	26SEP2013	22AUG2013	20SEP2013		
CWM229430	BW: ChD0+90 to ChD0+150 Type B	20	27SEP2013	16OCT2013	21SEP2013	10OCT2013		
CWM229440	BW: ChD0+150 to ChD0+200 Type B	25	17OCT2013	10NOV2013	11OCT2013	04NOV2013		
CWM229450	BW: ChD0+200 to ChD0+407.89 Type B	60	11NOV2013	09JAN2014	05NOV2013	03JAN2014		
Statutory Works								
Plumbing - WSD								
Building and Structures								
SSP200510	Watermain (PW): Submit WW046 Part 4	1	19SEP2013	19SEP2013	21AUG2013	21AUG2013		
SSP200520	Watermain (PW): WSD Inspection and Re-inspection	25	21SEP2013	22OCT2013	22AUG2013	19SEP2013		
SSP200530	Watermain(PW): WW046 Part 5	24	23OCT2013	19NOV2013	21SEP2013	21OCT2013		
SSP201510	Watermain (FS1): Submit WW046 Part 4	1	07OCT2013	07OCT2013	07OCT2013	07OCT2013		
SSP201520	Watermain(FS1): WSD Inspection and Re-inspection	25	08OCT2013	06NOV2013	08OCT2013	06NOV2013		
SSP201530	Watermain (FS1): WW046 Part 5	24	07NOV2013	04DEC2013	07NOV2013	04DEC2013		
SSP202510	Watermain (FS2): Submit WW046 Part 4	1	12OCT2013	12OCT2013	10DEC2013	10DEC2013		
SSP202520	Watermain(FS2): WSD Inspection and Re-inspection	25	15OCT2013	12NOV2013	11DEC2013	11JAN2014		
SSP202530	Watermain (FS2): WW046 Part 5	24	13NOV2013	10DEC2013	13JAN2014	14FEB2014		
SSP203510	Watermain (FW): Submit WW046 Part 4	1	05DEC2013	05DEC2013	05DEC2013	05DEC2013		
SSP203520	Watermain (FW): WSD Inspection and Re-insp'	25	06DEC2013	07JAN2014	06DEC2013	07JAN2014		
Telecommunication								
Building and Structures								
SST200610	Handover Plant Room and Cable Duct to Telecom Co	6	23OCT2013	29OCT2013	16SEP2013	23SEP2013		
SST200620	Telecom Co to Install Cable and Equipment	45	30OCT2013	13DEC2013	24SEP2013	07NOV2013		
E&M Works								
Procurement and Installation								
Building and Structures								
EMW001100	Penstocks for Manholes N2	26	25SEP2013	26OCT2013	29AUG2013	28SEP2013		
EMW001100A	N2 Penstock Test	7	28OCT2013	04NOV2013	30SEP2013	08OCT2013		
EMW001110	Penstocks / Stoplog for Manholes N1 / bypass	25	10OCT2013	08NOV2013	23AUG2013	21SEP2013		
EMW001120	Penstocks N1 / bypass Test	7	09NOV2013	16NOV2013	23SEP2013	30SEP2013		
EMW001200	Penstock at connection to outfall PS	22	15AUG2013	30SEP2013	15AUG2013	11SEP2013	15AUG2013	
EMW001200A	Penstock at connection to outfall PS Test	7	02OCT2013	09OCT2013	04OCT2013	11OCT2013		
EMW120270	Inlet Pump St: Install Pump x 4	20	27MAY2013	03OCT2013	27MAY2013	03OCT2013	27MAY2013	
EMW120280	Inlet Pump St: Connect Pump cable to JB x 4	20	28MAR2013	03OCT2013	28MAR2013	03OCT2013	28MAR2013	
EMW153270	Septic Station: Power Supply System Installation	75	15MAY2013	31AUG2013	15MAY2013	31AUG2013	15MAY2013	
EMW153272A	Septic Station: Cable Installation & Termination	10	17JUN2013	19SEP2013	17JUN2013	07AUG2013	17JUN2013	
EMW163000	Access Control System Installation	80	06JUN2013	03OCT2013	06JUN2013	21SEP2013	06JUN2013	
EMW164000	ALPR System Installation	80	06JUN2013	03OCT2013	06JUN2013	21SEP2013	06JUN2013	
EMW181450	PTW: MVAC Installation AB	80	09MAR2013	28AUG2013	09MAR2013	28AUG2013	09MAR2013	
EMW181550A	PTW: FS CS H/O Duct from Admin Bldg	0	09NOV2013		09NOV2013			
EMW181550B	PTW: FS Laying Signal Cable from Admin Bldg	30	09NOV2013	13DEC2013	09NOV2013	13DEC2013		
EMW185240	PTW: FRP Cover - FS	20	21JUN2013	16OCT2013	21JUN2013	16OCT2013	21JUN2013	
EMW185250	PTW: FRP Cover - GC	20	26JUN2013	16OCT2013	26JUN2013	16OCT2013	26JUN2013	
EMW185340	PTW: DO Duct Support - FS	20	21JUN2013	03OCT2013	21JUN2013	03OCT2013	21JUN2013	
EMW185350	PTW: DO Duct Support - GC	20	10JUL2013 A	09OCT2013	10JUL2013 A	16DEC2013	10JUL2013	
EMW185440	PTW: DO Duct - FS x	30	11JUL2013 A	13SEP2013	11JUL2013 A	06JAN2014	11JUL2013	
EMW185450	PTW: DO Duct - GC x	30	10OCT2013	14NOV2013	17DEC2013	23JAN2014		
EMW206114	CEPT: Tank 4 FRP DO covers Installation	15	29JUL2013 A	02SEP2013	29JUL2013 A	22JUL2013	29JUL2013	
EMW206115	CEPT: Tank 5 FRP DO covers Installation	15	28AUG2013	13SEP2013	17JUL2013	02AUG2013		



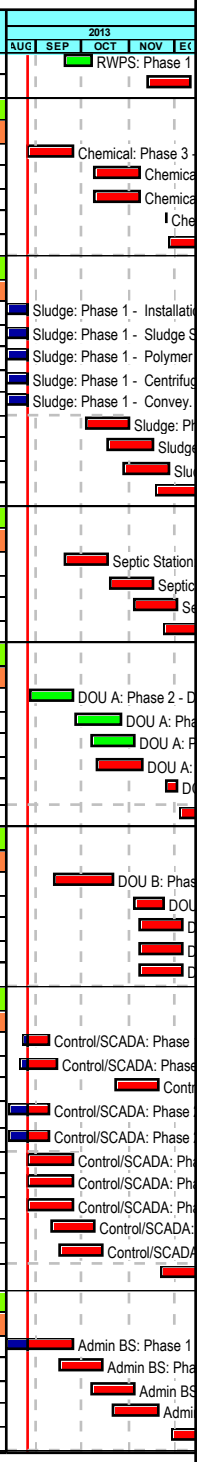
Activity ID	Description	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Actual Start	Actual Finish
EMW206200	CEPT: DO Duct Install PT CEPT/SDB/DOU B	20	10MAY2013	16OCT2013	10MAY2013	23SEP2013	10MAY2013	
EMW207100	CEPT: SCADA System Installation	70	27MAR2013	09OCT2013	27MAR2013	09OCT2013	27MAR2013	
EMW208450	CEPT: MVAC Installation G/F	30	26MAY2013	28AUG2013	26MAY2013	28AUG2013	26MAY2013	
EMW208550A	CEPT: FS CS H/O Duct from Admin Bldg	0	09SEP2013		09SEP2013			
EMW208550B	CEPT: FS Laying Signal Cable from Admin Bldg	30	28AUG2013	03OCT2013	28AUG2013	03OCT2013		
EMW302175	UV: DO cover to Site	0	28AUG2013		28AUG2013			
EMW303350	UV: DO Cover Installation	30	06JUL2013 A	07SEP2013	06JUL2013 A	19AUG2013	06JUL2013	
EMW307100	UV: SCADA system Installation	60	24JUN2013	07SEP2013	24JUN2013	19AUG2013	24JUN2013	
EMW308100	UV: BS system Installation	60	25MAY2013	29AUG2013	25MAY2013	29AUG2013	25MAY2013	
EMW309120	UV: DO Duct support	20	11JUL2013 A	07SEP2013	11JUL2013 A	07SEP2013	11JUL2013	
EMW309150	UV: DO Duct Installation	30	03AUG2013	13SEP2013	03AUG2013	13SEP2013	03AUG2013	
EMW309170	UV: DO Cover Installation	15	14SEP2013	03OCT2013	14SEP2013	03OCT2013		
EMW312000	UV: Duct install in PT bet UV / DOU B and Skip	30	05JUN2013	26SEP2013	05JUN2013	19AUG2013	05JUN2013	
EMW322450	RWPS: Pump & Pipework Installation	55	27JUN2013	19SEP2013	27JUN2013	21SEP2013	27JUN2013	
EMW322573	RWPS: Cable Tray & support above G/F	33	14SEP2013	25OCT2013	29AUG2013	08OCT2013		
EMW322573A	RWPS: CS H/O Ducts OFPS,LVSb-B to EB3-RWMCC	0	30AUG2013		30AUG2013			
EMW322573B	RWPS: CS H/O Ducts EB3-RWMCC to RWPS Equipment	0	30AUG2013		30AUG2013			
EMW322574	RWPS: RWPS Area Cable Tray & Support	40	29JUL2013 A	26SEP2013	29JUL2013 A	26SEP2013	29JUL2013	
EMW322600	RWPS: BS Installation	30	08AUG2013	19SEP2013	08AUG2013	19SEP2013	08AUG2013	
EMW322641	RWPS: MVAC Installation H/L	30	29JUL2013 A	19SEP2013	29JUL2013 A	09SEP2013	29JUL2013	
EMW322645	RWPS: MVAC Installation LL	30	21SEP2013	28OCT2013	12OCT2013	16NOV2013		
EMW322651	RWPS: FS Installation H/L	30	29JUL2013 A	19SEP2013	29JUL2013 A	09SEP2013	29JUL2013	
EMW322655	RWPS: FS Installation LL	30	29JUL2013 A	03OCT2013	29JUL2013 A	11OCT2013	29JUL2013	
EMW322655A	RWPS: FS CS H/O Duct from Admin Bldg	0	09SEP2013		05OCT2013			
EMW322655B	RWPS: FS Laying Signal Cable from Admin Bldg	30	09SEP2013	16OCT2013	05OCT2013	09NOV2013		
EMW322661	RWPS: P&D Installation H/L	30	21SEP2013	28OCT2013	05OCT2013	09NOV2013		
EMW322665	RWPS: P&D Installation L/L	30	21SEP2013	28OCT2013	05OCT2013	09NOV2013		
EMW322671	RWPS: EL Installation H/L	35	28AUG2013	09OCT2013	17AUG2013	27SEP2013		
EMW322675	RWPS: EL Installation L/L	35	10OCT2013	20NOV2013	28SEP2013	09NOV2013		
EMW322700	RWPS: Control system Installation (ref)	60	16JUL2013 A	16OCT2013	16JUL2013 A	17DEC2013	16JUL2013	
EMW322785	RWPS: MCC Control Cable Laying and Fixing	60	05AUG2013	03OCT2013	05AUG2013	08OCT2013	05AUG2013	
EMW322787	RWPS: MCC Control Cable Termination	30	28AUG2013	03OCT2013	02SEP2013	08OCT2013		
EMW323520	RWPS: RWMCC EB3 Power Cable Laying	60	30AUG2013	08NOV2013	30AUG2013	08OCT2013	30AUG2013	
EMW323530	RWPS: ALL Cable Test and Termination	30	04OCT2013	08NOV2013	02SEP2013	08OCT2013		
EMW323700	RWPS: RWMCC at EB3 Energization	3	09NOV2013	12NOV2013	09OCT2013	11OCT2013		
EMW323800	RWPS: Duct install in PT between RWPS/OPS	30	28AUG2013	03OCT2013	05OCT2013	09NOV2013		
EMW506550A	Chemical: FS CS H/O Duct from Admin Bldg	0	05SEP2013		05SEP2013			
EMW506550B	Chemical: FS Laying Signal Cable from Admin Bldg	30	05SEP2013	11OCT2013	05SEP2013	11OCT2013		
EMW506910	Chemical: PV structure Installation	20	28AUG2013	19SEP2013	21AUG2013	12SEP2013		
EMW506920	Chemical: PV panel Installation	30	21SEP2013	28OCT2013	13SEP2013	21OCT2013		
EMW506930	Chemical: PV Inverter Installation	20	10OCT2013	02NOV2013	03OCT2013	26OCT2013		
EMW506940	Chemical: PV panel cabling Installation	20	17OCT2013	08NOV2013	09OCT2013	01NOV2013		
EMW513000	Chemical: DO Duct install in PT CEPT/SDB/DOU B	30	10MAY2013	26SEP2013	10MAY2013	26SEP2013	10MAY2013	
EMW603540	Sludge: Polymer Pipeline Installation	20	03JUN2013	03OCT2013	03JUN2013	03OCT2013	03JUN2013	
EMW605140	Sludge: Control Cabling & termination R/L	15	03AUG2013	03OCT2013	03AUG2013	03OCT2013	03AUG2013	
EMW605150	Sludge: Control Cabling & termination SSH	15	20AUG2013	03OCT2013	20AUG2013	05SEP2013	20AUG2013	
EMW607100	Sludge: SCADA system Installation	100	05JUN2013	03OCT2013	05JUN2013	25SEP2013	05JUN2013	
EMW608440	Sludge: MVAC Installation R/L	10	21JUN2013	28AUG2013	21JUN2013	28AUG2013	21JUN2013	
EMW608450	Sludge: MVAC Installation SSH	30	04JUL2013 A	03OCT2013	04JUL2013 A	10AUG2013	04JUL2013	
EMW608550B	Sludge: FS Laying Signal Cable from Admin Bldg	30	18SEP2013	25OCT2013	18SEP2013	25OCT2013		
EMW608640	Sludge: P&D Installation R/L	25	19JUN2013	03OCT2013	19JUN2013	03OCT2013	19JUN2013	
EMW608650	Sludge: P&D Installation SSH	25	15AUG2013	05OCT2013	15AUG2013	17SEP2013	15AUG2013	
EMW608950	Sludge: DO Duct Installation G/L	25	29JUN2013	03OCT2013	29JUN2013	03OCT2013	29JUN2013	
EMW608960	Sludge: DO Duct Installation B/L	25	08JUL2013 A	03OCT2013	08JUL2013 A	28SEP2013	08JUL2013	
EMW609520	Sludge: SDMCC Cable Laying from EB2	30	14JUL2013 A	21SEP2013	14JUL2013 A	21SEP2013	14JUL2013	
EMW609530	Sludge: SDMCC Cable Test and Termination	30	15JUL2013 A	17SEP2013	15JUL2013 A	07AUG2013	15JUL2013	
EMW609700	Sludge: SDMCC Energization	3	18SEP2013	21SEP2013	08AUG2013	10AUG2013		
EMW611720	Sludge SkipHS: EL Installation	25	21AUG2013	26SEP2013	21AUG2013	26SEP2013	21AUG2013	
EMW611913	Sludge SkipHS: DO Duct Support	10	21AUG2013	26SEP2013	21AUG2013	26SEP2013	21AUG2013	
EMW611950	Sludge SkipHS: DO Duct Installation	15	29JUL2013 A	30SEP2013	29JUL2013 A	30SEP2013	29JUL2013	
EMW613000	Sludge: DO Duct install in PT CEPT/SDB/DOU B I	30	29JUL2013 A	26SEP2013	29JUL2013 A	06SEP2013	29JUL2013	
EMW613500	Skip Storage Bldg.: E&M Installation works	30	02DEC2013	08JAN2014	25OCT2013	28NOV2013		
EMW717100	DOU A: SCADA System Installation	50	15JUL2013 A	09OCT2013	15JUL2013 A	11OCT2013	15JUL2013	
EMW718550A	DOU A: FS CS H/O Duct from Admin Bldg	0	09SEP2013		09SEP2013			
EMW718550B	DOU A: FS Laying Signal Cable from Admin Bldg	30	09SEP2013	16OCT2013	09SEP2013	16OCT2013		
EMW719530	DOU A: DOUA MCC ALL Cables Test and Termination	30	29JUL2013 A	28AUG2013	29JUL2013 A	25SEP2013	29JUL2013	
EMW719700	DOU A: DOUA MCC Energization	3	26JUL2013 A	28AUG2013	26JUL2013 A	31AUG2013	26JUL2013	
EMW723220	DOU B: Recirculation pipeworks Installation	20	02MAY2013	12SEP2013	02MAY2013	20AUG2013	02MAY2013	
EMW723230	DOU B: Nutrient Pump Installation	20	29JUL2013 A	17SEP2013	29JUL2013 A	17SEP2013	29JUL2013	
EMW723240	DOU B: Nutrient Pipework Installation	10	21AUG2013	26SEP2013	21AUG2013	26SEP2013	21AUG2013	
EMW723312	DOU B: AC Filter Tower 2 Installation	20	29JUL2013 A	13SEP2013	29JUL2013 A	13SEP2013	29JUL2013	
EMW723320	DOU B: Water Pipe Installation	30	23JUL2013 A	21SEP2013	23JUL2013 A	21SEP2013	23JUL2013	
EMW723330	DOU B: Sensor & pipeworks Installation	30	21AUG2013	09OCT2013	21AUG2013	09OCT2013	21AUG2013	
EMW723500	DOU B: Odour Duct connection	70	21AUG2013	28OCT2013	21AUG2013	09NOV2013	21AUG2013	
EMW724100	DOU B: Power & Cable Installation (MCC to Eqt)	70	27MAY2013	09OCT2013	27MAY2013	25SEP2013	27MAY2013	
EMW725100	DOU B: Control & Cable Installation (MCC to Eqt)	60	27MAY2013	09OCT2013	27MAY2013	25SEP2013	27MAY2013	
EMW727100	DOU B: SCADA System Installation	50	09AUG2013	12OCT2013	09AUG2013	02OCT2013	09AUG2013	
EMW728100	DOU B: BS System Installation	50	22MAY2013	19SEP2013	22MAY2013	19SEP2013	22MAY2013	
EMW728410	DOU B: MVAC Installation Plant	44	09JUL2013 A	30SEP2013	09JUL2013 A	12OCT2013	09JUL2013	
EMW728450	DOU B: MVAC Installation MCC	30	24JUL2013 A	13SEP2013	24JUL2013 A	28SEP2013	24JUL2013	
EMW728510	DOU B: FS Installation Plant	30	07AUG2013	19SEP2013	07AUG2013	19SEP2013	07AUG2013	



Activity ID	Description	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Actual Start	Actual Finish
EMW728550	DOU B: FS Installation MCC	30	07AUG2013	19SEP2013	07AUG2013	28SEP2013	07AUG2013	
EMW728550A	DOU B: FS CS H/O Duct from Admin Bldg	0	09SEP2013		27AUG2013			
EMW728550B	DOU B: FS Laying Signal Cable from Admin Bldg	30	09SEP2013	16OCT2013	27AUG2013	02OCT2013		
EMW728610	DOU B: P&D Installation Plant	20	07AUG2013	30SEP2013	07AUG2013	30SEP2013	07AUG2013	
EMW728650	DOU B: P&D Installation MCC	15	23AUG2013	30SEP2013	23AUG2013	28SEP2013	23AUG2013	
EMW728710	DOU B: EL Installation Plant	30	09SEP2013	16OCT2013	09SEP2013	16OCT2013		
EMW729510	DOU B: DOUB MCC Cable Containment Installation	24	02MAY2013	09OCT2013	02MAY2013	25SEP2013	02MAY2013	
EMW729510A	DOU B: CS H/O Duct fm. Outfall/EB4 to MCC (Main)	0	09SEP2013		21AUG2013			
EMW729520	DOU B: DOUB MCC Cable Laying from EB4	30	09SEP2013	16OCT2013	21AUG2013	25SEP2013		
EMW729530	DOU B: DOUB MCC Cable Test and Termination	15	27SEP2013	16OCT2013	07SEP2013	25SEP2013		
EMW729700	DOU B: DOUB MCC Energization	3	17OCT2013	19OCT2013	26SEP2013	28SEP2013		
EMW730000	DOU B: DO Duct install in PT CEPT/SDB/DOU B J	30	10MAY2013	30SEP2013	10MAY2013	02OCT2013	10MAY2013	
EMW802215	All Area: SCADA SI Assembly PLC LCPs*	60	28AUG2013	28AUG2013	28AUG2013	28AUG2013		
EMW802250	All Area:: Delivery of ELV Eq. On site	30	15NOV2012	28AUG2013	15NOV2012	28AUG2013	15NOV2012	
EMW802250A	All Area: Delivery of ELV Eq. On site (non crit)	20	28MAY2013	29AUG2013	28MAY2013	07SEP2013	28MAY2013	
EMW802268	All Area: SCADA Install PLC LCP OFPS	65	23OCT2013	09JAN2014	19OCT2013	06JAN2014		
EMW802300	Admin Bldg : SCADA Equipment Installation	75	29APR2013	21SEP2013	29APR2013	07SEP2013	29APR2013	
EMW802304	Admin Bldg : SCADA Installation - Workstation	25	01APR2013	13SEP2013	01APR2013	13SEP2013	01APR2013	
EMW802306	Admin Bldg : SCADA Installation - Wiring & Connc	24	27JUN2013	13SEP2013	27JUN2013	13SEP2013	27JUN2013	
EMW802350	Admin Bldg : ELV Equipment Installation	90	15APR2013	25SEP2013	15APR2013	25SEP2013	15APR2013	
EMW803610	Admin Bldg Service: P&D Installation G/F N	33	01APR2013	03OCT2013	01APR2013	03OCT2013	01APR2013	
EMW803620	Admin Bldg Service: P&D Installation G/F S	33	20APR2013	03OCT2013	20APR2013	03OCT2013	20APR2013	
EMW803650	Admin Bldg Service: P&D Installation R/F	33	19APR2013	19SEP2013	19APR2013	19SEP2013	19APR2013	
EMW803750	Admin Bldg Service: EL Installation R/F	40	28MAY2013	07SEP2013	28MAY2013	29AUG2013	28MAY2013	
EMW811300	SHB Bldg: E&M Equipment Installation	30	12OCT2013	16NOV2013	09SEP2013	16OCT2013		
EMW811300A	SHB Bldg: Genset Installation	30	12OCT2013	16NOV2013	09SEP2013	16OCT2013		
EMW821110	Flowmeter: E&M Installation (Ref.)	48	28AUG2013	25OCT2013	15AUG2013	11OCT2013		
EMW821130	Flowmeter: Flowmeter Installation (Ref.)	30	28AUG2013	03OCT2013	01NOV2013	05DEC2013		
EMW821180	Flowmeter: Install Stoplog Extg Pipeline 1 OPS	10	09SEP2013	19SEP2013	22AUG2013	02SEP2013		
EMW821190	Flowmeter: Install Stoplog Extg Pipeline 2 OPS	10	21SEP2013	03OCT2013	16OCT2013	26OCT2013		
EMW821200	Flowmeter: Install Meter 1 & Pipeline in Chamber	18	22OCT2013	11NOV2013	05OCT2013	26OCT2013		
EMW821205	Flowmeter: Install Meter 2 & Pipeline in Chamber	18	28NOV2013	18DEC2013	13NOV2013	03DEC2013		
EMW821210	Flowmeter: E&M Aux. Installation (Ref)	48	28AUG2013	25OCT2013	15AUG2013	11OCT2013		
EMW941730	Elect Bldg 1: Removal of existing LVSBA1	20	28AUG2013	19SEP2013	23NOV2013	16DEC2013		
EMW941740	Elect Bldg 1: new LVSBA1 reinstate and testing	20	21SEP2013	16OCT2013	17DEC2013	11JAN2014		
EMW943730	Elect Bldg 3: Energization of DOUB SWRS	7	26JUL2013 A	29AUG2013	26JUL2013 A	28SEP2013	26JUL2013	
EMW944200	OFPS: Delivery of Mat'l & Equipment	30	28FEB2013	28AUG2013	28FEB2013	28AUG2013	28FEB2013	
EMW944400	OFPS: Install B1B2 panel	40	28AUG2013	16OCT2013	24AUG2013	11OCT2013		
EMW944510	OFPS: Cable Containment Installation	40	09SEP2013	28OCT2013	05SEP2013	24OCT2013		
EMW944520	OFPS: Cable Laying	30	02SEP2013	08OCT2013	30JUL2013	02SEP2013		
EMW944530	OFPS: Cable Test and Termination	40	07SEP2013	26OCT2013	05AUG2013	19SEP2013		
EMW944600	OFPS: SCADA System Installation	60	28AUG2013	08NOV2013	28AUG2013	08NOV2013		
EMW944610	OFPS: BS System Installation	50	20AUG2013	16OCT2013	20AUG2013	19SEP2013	20AUG2013	
EMW944620	OFPS: Modification of LV Switchboard B	30	28AUG2013	03OCT2013	16AUG2013	19SEP2013		
EMW944700	OFPS: B1B2 Energization	3	28OCT2013	30OCT2013	21SEP2013	24SEP2013		
EMW944710	OFPS: RWMCC2 Panel Energization	7	28OCT2013	04NOV2013	21SEP2013	28SEP2013		
EMW944720	OFPS: DOUB MCC 2 Panel Energization	7	28OCT2013	04NOV2013	21SEP2013	28SEP2013		
EMW944730	OFPS: divert control from B1B2 to new SCADA sys	0		04NOV2013		28SEP2013		
EMW951020	Outdoor: Lighting East of PTW Area	10	28OCT2013	07NOV2013	01NOV2013	12NOV2013		
EMW951030	Outdoor: Lighting South of CEPT Area	10	08NOV2013	19NOV2013	13NOV2013	23NOV2013		
EMW951040	Outdoor: Lighting near existing OFPS	10	20NOV2013	30NOV2013	25NOV2013	05DEC2013		
EMW951050	Outdoor: Lighting West of Skip Hse Area	10	02DEC2013	12DEC2013	06DEC2013	17DEC2013		
Testing and Commissioning								
PTW Testing and Commissioning								
Building and Structures								
EMT103410	PTW Phase 3: Wet Testing of PTW CS FS & GC	30	23AUG2013	21SEP2013	23AUG2013	03SEP2013	23AUG2013	
EMT103412	PTW Phase 3: Wet Testing Inlet Pump	30	09AUG2013	06SEP2013	09AUG2013	08AUG2013	09AUG2013	
EMT103415	PTW Phase 3: Remove Recirculation System	1	07SEP2013	07SEP2013	09AUG2013	09AUG2013		
EMT103420	PTW Phase 3: Manual Testing of PTW-system	30	08SEP2013	07OCT2013	10AUG2013	08SEP2013		
EMT103430	PTW Phase 3: Automatic Testing of Sub-system	30	08OCT2013	06NOV2013	09SEP2013	08OCT2013		
EMT104100	PTW Phase 4: Introduce Process Fluid (Sewage)	1	26NOV2013	26NOV2013	09OCT2013	09OCT2013		
EMT104200	PTW Phase 4: Auto and Process Commissioning	30	27NOV2013	26DEC2013	17OCT2013	15NOV2013		
CEPT Testing and Commissioning								
Building and Structures								
EMT202100	CEPT Tank: Phase 2 - Dry Test of Individual Eq't	30	22JUL2013 A	24SEP2013	22JUL2013 A	12AUG2013	22JUL2013	
EMT203100	CEPT Tank Phase 3: Wet Testing of Individual Eqt	30	15SEP2013	14OCT2013	03AUG2013	01SEP2013		
EMT203200	CEPT Tank Phase 3: Manual Test Sub-system	30	25SEP2013	24OCT2013	13AUG2013	11SEP2013		
EMT203300	CEPT Tank Phase 3: Automatic Test Sub-system	30	25OCT2013	23NOV2013	12SEP2013	11OCT2013		
EMT204100	CEPT Tank Phase 4: Introduce Process Sewage	7	27NOV2013	03DEC2013	12OCT2013	18OCT2013		
EMT204200	CEPT: Phase 4 Auto Testing Process Commissioning	35	04DEC2013	07JAN2014	30OCT2013	03DEC2013		
UV Disinfection Facilities								
Building and Structures								
EMT301100	UV: Phase 1 - Installation Inspection	50	22JUL2013 A	28AUG2013	22JUL2013 A	20JUL2013	22JUL2013	
EMT302100	UV: Phase 2 - Dry Test of Individual Eq't	30	29AUG2013	27SEP2013	21JUL2013	19AUG2013		
EMT303100	UV: Phase 3 - Wet Test of Individual Eq't	30	28SEP2013	27OCT2013	20AUG2013	18SEP2013		
EMT303200	UV: Phase 3 -Manual Testing of Sub-system	30	13OCT2013	11NOV2013	04SEP2013	03OCT2013		
EMT303300	UV: Phase 3 - Auto Testing of Sub-system	30	28OCT2013	26NOV2013	19SEP2013	18OCT2013		
EMT304100	UV: Phase 4 - Introduce Process Sewage	0	04DEC2013		19OCT2013			
EMT304200	UV: Phase 4 Auto Testing Process Commissioning	30	04DEC2013	02JAN2014	19OCT2013	17NOV2013		
Reuse Water Pumping Station								
Building and Structures								



Activity ID	Description	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Actual Start	Actual Finish
EMT321100	RWPS: Phase 1 - Installation Inspection	20	20SEP2013	09OCT2013	22SEP2013	11OCT2013		
EMT322100	RWPS: Phase 2 - Dry Test of Individual Eq't	30	13NOV2013	12DEC2013	12OCT2013	10NOV2013		
Chemical Building								
Building and Structures								
EMT503100	Chemical: Phase 3 - Wet Test of Individual Eq't	30	28AUG2013	26SEP2013	28AUG2013	11SEP2013	28AUG2013	
EMT503200	Chemical: Phase 3 -Manual Testing of Sub-system	30	10OCT2013	08NOV2013	03OCT2013	01NOV2013		
EMT503300	Chemical: Phase 3 - Auto Testing of Sub-system	30	10OCT2013	08NOV2013	12SEP2013	11OCT2013		
EMT504100	Chemical: Phase 4 - Introduce Chemical Dosing	1	26NOV2013	26NOV2013	02NOV2013	02NOV2013		
EMT504200	Chemical: Phase 4 Auto TestProcess Commissioning	20	27NOV2013	16DEC2013	03NOV2013	22NOV2013		
Sludge Dewatering and Skip Storage								
Building and Structures								
EMT601100	Sludge: Phase 1 - Installation Inspection	30	28JUL2013 A	28AUG2013	28JUL2013 A	11AUG2013	28JUL2013	
EMT601110	Sludge: Phase 1 - Sludge System Insp.	30	28JUL2013 A	28AUG2013	28JUL2013 A	11AUG2013	28JUL2013	
EMT601120	Sludge: Phase 1 - Polymer System Insp.	30	28JUL2013 A	28AUG2013	28JUL2013 A	11AUG2013	28JUL2013	
EMT601130	Sludge: Phase 1 - Centrifuge Inspection	30	28JUL2013 A	28AUG2013	28JUL2013 A	11AUG2013	28JUL2013	
EMT601140	Sludge: Phase 1 - Convey. sys. Inspection	30	28JUL2013 A	28AUG2013	28JUL2013 A	11AUG2013	28JUL2013	
EMT602100	Sludge: Phase 2 - Dry Test of Individual Eq't	30	04OCT2013	02NOV2013	12AUG2013	10SEP2013		
EMT603100	Sludge: Phase 3 - Wet Test of Individual Eq't	30	19OCT2013	17NOV2013	27AUG2013	25SEP2013		
EMT603200	Sludge: Phase 3 -Manual Testing of Sub-system	30	29OCT2013	27NOV2013	06SEP2013	05OCT2013		
EMT603300	Sludge: Phase 3 - Auto Testing of Sub-system	30	18NOV2013	17DEC2013	26SEP2013	25OCT2013		
Septic Waste Collection facilities								
Building and Structures								
EMT152100	Septic Station: Phase 2 - Dry Test Indiv Eq't	30	20SEP2013	19OCT2013	08AUG2013	06SEP2013		
EMT153100	Septic Station: Phase 3 - Wet Test of Indiv Eq't	30	20OCT2013	18NOV2013	07SEP2013	06OCT2013		
EMT153200	Septic Station: Phase 3 - Manual Test Sub-system	30	04NOV2013	03DEC2013	22SEP2013	21OCT2013		
EMT153300	Septic Station: Phase 3 - Auto Test Sub-system	30	24NOV2013	23DEC2013	12OCT2013	10NOV2013		
DOU A								
Building and Structures								
EMT712100	DOU A: Phase 2 - Dry Test of Individual Eq't	30	29AUG2013	27SEP2013	02SEP2013	01OCT2013		
EMT713100	DOU A: Phase 3 - Wet Test of Individual Eq't	30	28SEP2013	27OCT2013	02OCT2013	31OCT2013		
EMT713200	DOU A: Phase 3 -Manual Testing of Sub-system	30	08OCT2013	06NOV2013	12OCT2013	10NOV2013		
EMT713300	DOU A: Phase 3 - Auto Testing of Sub-system	30	12OCT2013	10NOV2013	12OCT2013	10NOV2013		
EMT714100	DOU A: Phase 4 - Introduce Foul Air	7	26NOV2013	02DEC2013	11NOV2013	17NOV2013		
EMT714200	DOU A: Phase 4 Auto Test/Process Commissioning	30	03DEC2013	01JAN2014	18NOV2013	17DEC2013		
DOU B								
Building and Structures								
EMT720220	DOU B: Phase 1 - Installation Inspection	40	13SEP2013	22OCT2013	21AUG2013	29SEP2013		
EMT722100	DOU B: Phase 2 - Dry Test of Individual Eq't	20	05NOV2013	24NOV2013	30SEP2013	19OCT2013		
EMT723100	DOU B: Phase 3 - Wet Test of Individual Eq't	30	08NOV2013	07DEC2013	03OCT2013	01NOV2013		
EMT723200	DOU B: Phase 3 - Manual Testing of Sub-system	30	08NOV2013	07DEC2013	03OCT2013	01NOV2013		
EMT723300	DOU B: Phase 3 - Auto Testing of Sub-system	30	08NOV2013	07DEC2013	03OCT2013	01NOV2013		
Control System								
Building and Structures								
EMT811117	Control/SCADA: Phase 1 - Insp PLC LCP DOUA	30	24AUG2013	11SEP2013	24AUG2013	11SEP2013	24AUG2013	
EMT811118	Control/SCADA: Phase 1 - Insp PLC LCP DOUB	30	23AUG2013	16SEP2013	23AUG2013	02SEP2013	23AUG2013	
EMT811119	Control/SCADA: Phase 1 - Insp PLC LCP OFPS	30	23OCT2013	21NOV2013	19OCT2013	17NOV2013		
EMT812122	Control/SCADA: Phase 2 - PLC LCP PTW	30	16AUG2013	11SEP2013	16AUG2013	08SEP2013	16AUG2013	
EMT812123	Control/SCADA: Phase 2 - PLC LCP CEPT	30	16AUG2013	11SEP2013	16AUG2013	11SEP2013	16AUG2013	
EMT812124	Control/SCADA: Phase 2 - PLC LCP UV RW	30	28AUG2013	26SEP2013	20AUG2013	18SEP2013		
EMT812125	Control/SCADA: Phase 2 - PLC LCP CHEM	30	28AUG2013	26SEP2013	13AUG2013	11SEP2013		
EMT812126	Control/SCADA: Phase 2 - PLC LCP SDW	30	28AUG2013	26SEP2013	27AUG2013	25SEP2013		
EMT812127	Control/SCADA: Phase 2 - PLC LCP DOUA	30	12SEP2013	11OCT2013	12SEP2013	11OCT2013		
EMT812128	Control/SCADA: Phase 2 - PLC LCP DOUB	30	17SEP2013	16OCT2013	03SEP2013	02OCT2013		
EMT812129	Control/SCADA: Phase 2 - PLC LCP OFPS	30	22NOV2013	21DEC2013	18NOV2013	17DEC2013		
Building Services								
Building and Structures								
EMT831000	Admin BS: Phase 1 - Installation Inspection	30	20JUL2013 A	26SEP2013	20JUL2013 A	08SEP2013	20JUL2013	
EMT832000	Admin BS: Phase 2 - Dry Test of Individual Eq't	30	17SEP2013	16OCT2013	30AUG2013	28SEP2013		
EMT833000	Admin BS: Phase 3 - Wet Test of Individual Eq't	30	07OCT2013	05NOV2013	19SEP2013	18OCT2013		
EMT835000	Admin BS: Phase 3 -Manual Testing of Sub-system	30	22OCT2013	20NOV2013	04OCT2013	02NOV2013		
EMT836000	Admin BS: Phase 3 - Auto Testing of Sub-system	30	29NOV2013	28DEC2013	24OCT2013	22NOV2013		



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Finish date	08JUN2014
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Project name	PR37
? Primavera Systems, Inc.	

PPSTW Programme R7A- Progress up to 28 Aug 13 - Three Months Rolling Programme

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point