ATAL-Degrémont-China State Joint Venture

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

November 2010

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 (R078) - Christina Ip)

Date: 14 December 2010

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By Hand & By Fax (2833 9162)

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

Attn: Mr. Eddie S.K, LEUNG (T:2159 3413)

14 December 2010

Dear Sir,

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

First Monthly EM&A Report for November 2010

Reference is made to Environmental Team (ET)'s revised draft of the Monthly EM&A Report for November 2010 provided by email dated 14 December 2010. 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.

Should you have any queries, please feel free to contact the undersigned at 3105 8537.

For and on behalf of
AECOM Asia Co. Ltd.

Y T Tang
Independent Environmental Checker

c.c. AECOM – Mr. Tim Lee (Fax No. 2317 7609)
ERM – Ms. Winnie Ko (Fax No. 2723 5660)
ATAL–Degremont–China State JV – Mr. C.Y. Fong (Fax No. 2811 3321)

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EXECUTIVE SUMMARY

The construction works of ***DC/2008/03 of Design, Build and Operate Pillar Point Sewage Treatment Works (the Project)*** commenced on 13 November 2010. This is the first monthly Environmental Monitoring and Audit (EM&A) report presenting the EM&A works carried out during the period from 13 to 30 November 2010 in accordance with the EM&A Manual.

Summary of Construction Works undertaken during Reporting Month

Works undertaken in the reporting month include:

- Site clearance works in P2;
- Pipe piling in P2;
- Tree transplanting preparation work in P1 and P2;
- Felling of trees as approved by Supervising Officer Representative (SOR) in P2;
- Ground investigation in P2;
- Dewatering well installation in P2; and
- Condition survey in P2.

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)	3 sets
• 1-hour TSP Monitoring at each monitoring station (AM1 and AM2)	9 sets
• Joint Environmental Site Inspection	2 times
• Landscape & Visual Monitoring	1 time

Air Quality

Three sets of 24-hour TSP and nine 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). A total of 2,248 tonnes of public fill were delivered to the fill bank and 160 kg of metals and paper/cardboard were sent to recyclers in the reporting period. No general refuse and chemical waste was disposed of in the reporting period.

Environmental Site Inspection

Two weekly joint environmental site inspections were carried out by the representatives of the Contractor, the 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

Landscape and visual monitoring commenced in November 2010. 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:

- Site formation in P2;
- Pipe piling in P2;
- Tree transplant preparation work in P1 and P2;
- Tree felling preparation work in P2;
- Ground investigation in P2;
- Installation of dewatering wells in P2;
- Formation of site access in P2; and
- Interim operation of PPSTW in P1.

Potential environmental impacts arising from the above construction activities are mainly associated with dust, construction noise, site runoff, 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 an Environmental Team (ET) to undertake 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 first EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from **13** to **30 November 2010**.

1.2 STRUCTURE OF THE REPORT

The structure of the report is as follows:

Section 1 : **Introduction**
details the scope and structure of the report.

Section 2 : **Project Information**
summarises background and scope of the Project, site description, project organization, construction programme, the construction works undertaken and the status of Environmental Permits (EP)/licences over the construction phase of the Project.

Section 3 : **Environmental Monitoring Requirements**
summarises the environmental monitoring including monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring 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**
summarises the implementation of environmental protection measures during the reporting period.

Section 5 : **Monitoring Results**
summarises the monitoring results obtained in the reporting period.

Section 6 : **Environmental Site Inspection**
summarises the audit findings of the weekly site inspections undertaken within the reporting period.

Section 7 : **Environmental Non-conformance**
summarizes any exceedance of environmental performance standard, and environmental complaints and environmental summons received within the reporting period.

Section 8 : **Further Key Issues**
summarises the impact forecast and monitoring schedule for the next reporting month.

Section 9 : **Conclusions**

2 PROJECT INFORMATION

2.1 BACKGROUND

The existing Pillar Point Sewage Treatment Works (PPSTW) is located at the north of the Tuen Mun River Trade Terminal and bounded by Lung Mun Road at the north. It is a preliminary treatment works with screenings and grit removal processes and the treated effluent is discharged to the sea (North Western Water Control Zone) via the twin submarine outfalls. The *Review of the Tuen Mun and Tsing Yi Sewerage Master Plan* (RTMTYSMP) commissioned in February 1999, recommended to expand the sewage treatment capacity and upgrade the plant to chemically enhanced primary treatment (CEPT) with disinfection in order to cater for the projected ultimate population and planned developments in the Tuen Mun area, and to improve the effluent quality and hence to reduce the pollution loadings to the receiving water.

The upgrading to 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% for suspended solids (SS), biochemical oxygen demand (BOD) and *E.coli*, respectively;
- upgrading 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. Under the requirements of Condition 3.1 of EP-322/2008, 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 to be completed 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 this 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 3 months is presented in *Annex L*.

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

Construction Activities Undertaken
• Site clearance works in P2
• Pipe piling in P2
• Tree transplanting preparation work in P1 and P2
• Felling of trees as approved by Engineer in P2
• Ground investigation in P2
• Dewatering well installation in P2
• Condition survey in P2

2.4 PROJECT ORGANISATION AND MANAGEMENT STRUCTURE

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

2.5 STATUS OF ENVIRONMENTAL APPROVAL DOCUMENTS

A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project since November 2010 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	Throughout the Contract	Permit granted on 17 November 2008.
Notification of Construction Works under Air Pollution Control (Construction Dust) Regulation	Ref No. 308136	Throughout the Contract	-
Water Discharge License	Ref No. 323576	-	Wastewater discharge licence application submitted to EPD on 15 November 2010. Application is current under consideration by EPD.
Construction Noise	GW-RW0591-10	7 November	--

Permit/ Licences/ Notification	Reference	Validity Period	Remarks
Permit		2010 – 28 November 2010	
	GW-RW0588-10	1 December 2010 – 30 May 2011	-
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 listed 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 was conducted at the designated monitoring stations in accordance with the requirements stipulated in the EM&A Manual. The 1-hour and 24-hour TSP levels were monitored at the frequency and duration stated in *Table 3.2*. The construction phase TSP monitoring was conducted as per the schedule presented in *Annex E*.

Table 3.2 *Construction Phase Air Quality Monitoring Parameters and Frequency*

Parameter	Frequency
24-hour TSP	Once every day 6 days
1-hour 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 3.1 *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 were performed using High Volume Samplers (HVS) with appropriate sampling inlets installed, 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 3.2 ***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 9833620)
AM2	GMW GS-2310 (S/N 1247), CM-AIR-43 (S/N 9833620)

3.1.5 Monitoring Methodology

The setup locations of the HVSs at monitoring stations 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 andAM2;
- a minimum of 2m separation from walls, parapets and penthouses was required for rooftop samplers;
- no furnace or incinerator flues were nearby;
- airflow around the sampler was unrestricted; and
- permission was obtained to set up the samplers and to 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, implements 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 the 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;

- the 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;

- then the shelter lid was closed and secured with the aluminium strip;

- the HVSs were warmed-up for about 5 minutes to establish run-temperature conditions;

- a new flowrate record sheet was set into the flow recorder;

- the flow rates of the HVSs were checked and adjusted to between 1.22 - 1.37 m^3min^{-1} which were within the range specified in the EM&A Manual (ie 0.6 – 1.7 m^3min^{-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 folder in half length so that only surfaces with collected particulate matter were in contact;

- it was then 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, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply; and

- the flow rate of each HVS with mass flow controller were calibrated using an orifice calibrator. Initial calibrations of the dust monitoring equipments 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 G*.

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 F*.

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 were 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 relevant environmental mitigation measures listed in the EIA Report and the EM&A Manual as well as the specific environmental requirements stated in 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 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 three sets of 24-hour and nine sets of 1-hour TSP measurements were carried out at each of the monitoring stations (AM1 and AM2) during the reporting period. The monitoring data for 24-hour TSP and 1-hour TSP together with wind data and graphical presentations are presented in *Annex F*. The weather conditions during the monitoring period were sunny. 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 1-hr and 24-hr TSP was recorded during the reporting period.

Waste generated from this Project includes inert construction and demolition (C&D) materials (public fill) and non-inert C&D materials (construction waste). Construction waste comprises of 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 other public fill. Reference has been made on the Monthly Summary Waste Flow Table prepared by the Contractor (*Annex J*). With reference to 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 5.1*. The public fill and construction waste generated from the Project were disposed of at the Tuen Mun Area 38 Fill Bank and WENT Landfill, respectively. 100 kg of metals and 60 kg of paper/cardboard packaging were sent to recyclers for recycling during the reporting period.

Table 6.1 *Quantities of Waste Generated from the Project*

Month / Year	Quantity		
	C&D Materials Disposed of at Public Fill (inert) [a]	C&D Materials Disposed of at Landfill (Non-inert) (Construction waste) [b] [c]	Chemical Waste
November 2010	2,248 tonnes	0 kg	0 kg

Notes:

(a) Inert C&D materials (public fill) include bricks, concrete, building debris, rubble and excavated soil. No public fill was reused in this Project during the reporting period. The public fill were disposed of at the Tuen Mun Area 38 Fill Bank.

(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 are grouped into construction wastes as the materials were not disposed of with the public fill. Construction wastes other than metals and paper/cardboard packaging were disposed of at WENT Landfill. 60 kg of metals and 100 kg of paper/cardboard packaging were recovered and sent to recyclers for recycling during the reporting period.

(c) No general refuse was disposed at the WENT landfill in the reporting period.

7 ENVIRONMENTAL INSPECTIONS

7.1 WEEKLY SITE AUDITS

Joint site inspections were conducted by the representatives of the Contractor, SOR and the ET on 19 and 26 November 2010. The IEC was also present during the joint inspection on 26 November 2010. There was no non-compliance recorded during the site inspections.

Major findings observed during the reporting period were summarised as follows:

19 November 2010

- Oil stains were observed under 2 excavators on concrete floor on site. A breaker was also placed on the ground without spillage containment measures, and a small amount of oil spillage onto the ground was observed. The Contractor was recommended to clear the oil stains as soon as possible and dispose the collected wastes as chemical wastes via a licensed collector. The Contractor was also recommended to inspect and maintain site equipments to ensure only equipments free of oil leakages are deployed on site. Secondary spillage containment measures should also be implemented for temporary storage of oily equipment and during minor maintenance of equipments on site.
- Excavation works in the north-west corner of site was observed to be generating dust. The Contractor was recommended to implement dust suppression measures such as water spraying to minimise the amount of dust generated during dusty works.

26 November 2010

- The working site was observed to be dry and dusty. The Contractor was recommended to implement dust suppression measures, eg regular watering.
- Noise label was not observed at one of the air compressors near the excavation area. The Contractor was recommended to provide the noise labels for all air compressors on site.

Follow-up actions were undertaken as reported by the Contractor and observed in the next weekly 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. The monitoring has commenced since November 2010 during weekly site inspections. The monitoring procedures and criteria as described in the EM&A Manual were adopted. Site monitoring was conducted on 19 and 26 November 2010 and it is confirmed that the necessary landscape and visual mitigation measures as summarised in *Annex I* were implemented by the Contractor. Key landscape and visual mitigation measures implemented in the reporting period include:

- Set up of a temporary tree nursery;
- Control dust and erosion of exposed soil;
- Maintain existing tree record inventory; and,
- Re-use existing top soil for new planting areas.

8 ENVIRONMENTAL NON-CONFORMANCE

8.1.1 *Summary of Monitoring Exceedance*

No exceedances of Action and Limit Levels of 1-hr and 24-hr TSP were 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 summons/prosecution log is shown in *Annex K.*

8.1.4 *Summary of Environmental Summon and Successful Prosecution*

No summons 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 8.1.*

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

Work to be taken
• Site formation in P2
• Pipe piling in P2
• Tree transplant preparation work in P1 and P2
• Tree felling preparation work in P2
• Ground investigation in P2
• Installation of dewatering wells in P2
• Formation of site access in P2
• Interim operation of the PPSTW in P1

Potential environmental impacts arising from the above construction activities are mainly associated with dust, construction noise, site runoff, 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 as adequate to cater for the nature of works in progress.

9.1.3 *Construction Programme for the Next Three Months*

The most updated construction programme for the Project is presented in *Annex L.*

The EM&A Report presents the EM&A works undertaken during the period from 13 to 30 November 2010 in accordance with EM&A Manual and the requirements of EP (EP-321/2008).

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. It was confirmed that the landscape and visual mitigation measures recommended in the EIA Report were properly implemented by the Contractor.

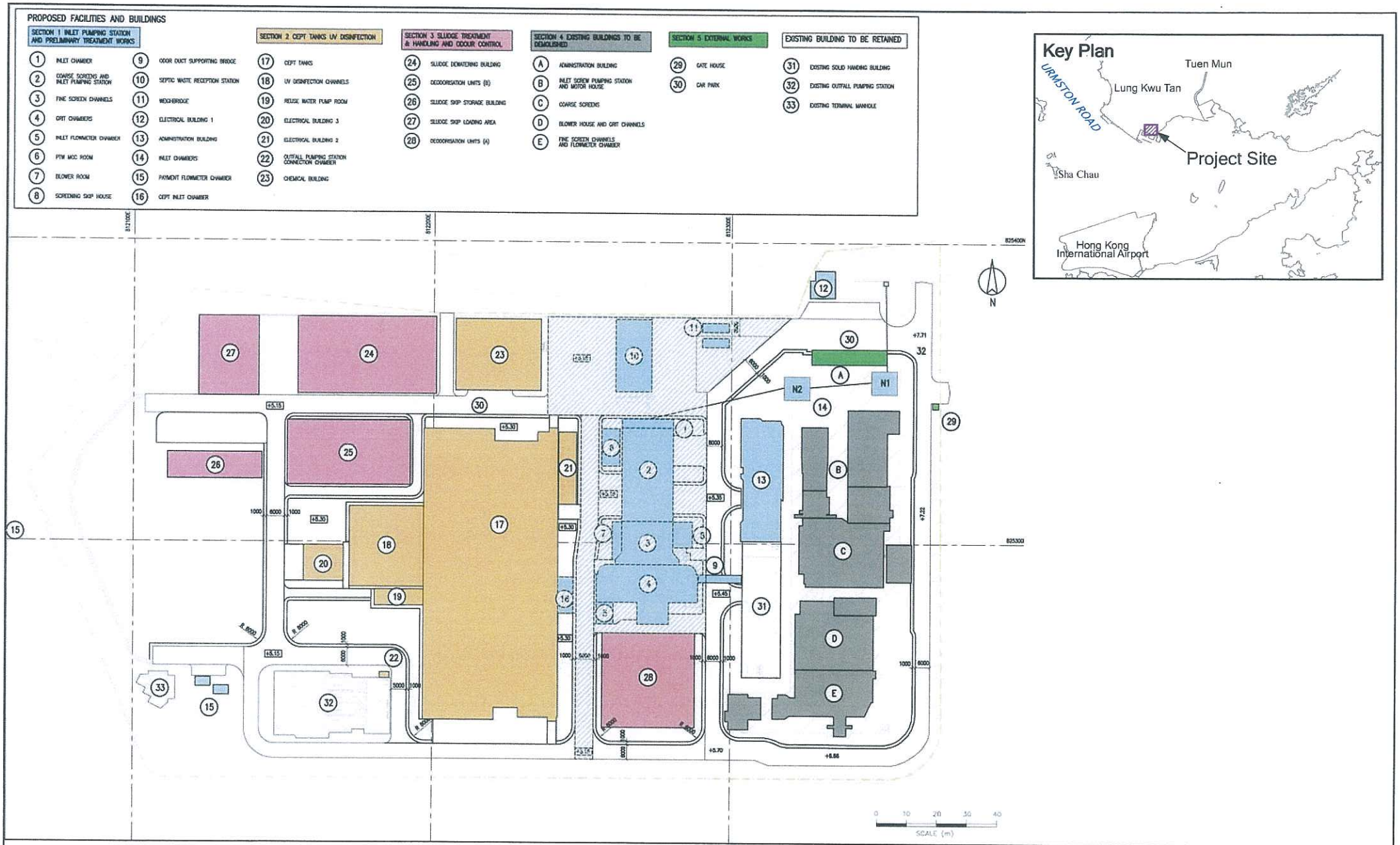
No non-compliance event was recorded during the reporting period.

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

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

Annex A

Location of Project



Annex A

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

FILE: 0119806c
DATE: 15/12/2010

Environmental Resources Management

ERM

Annex B

Works Location

Annex B

Location of Works Areas

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Date: 15/12/2010

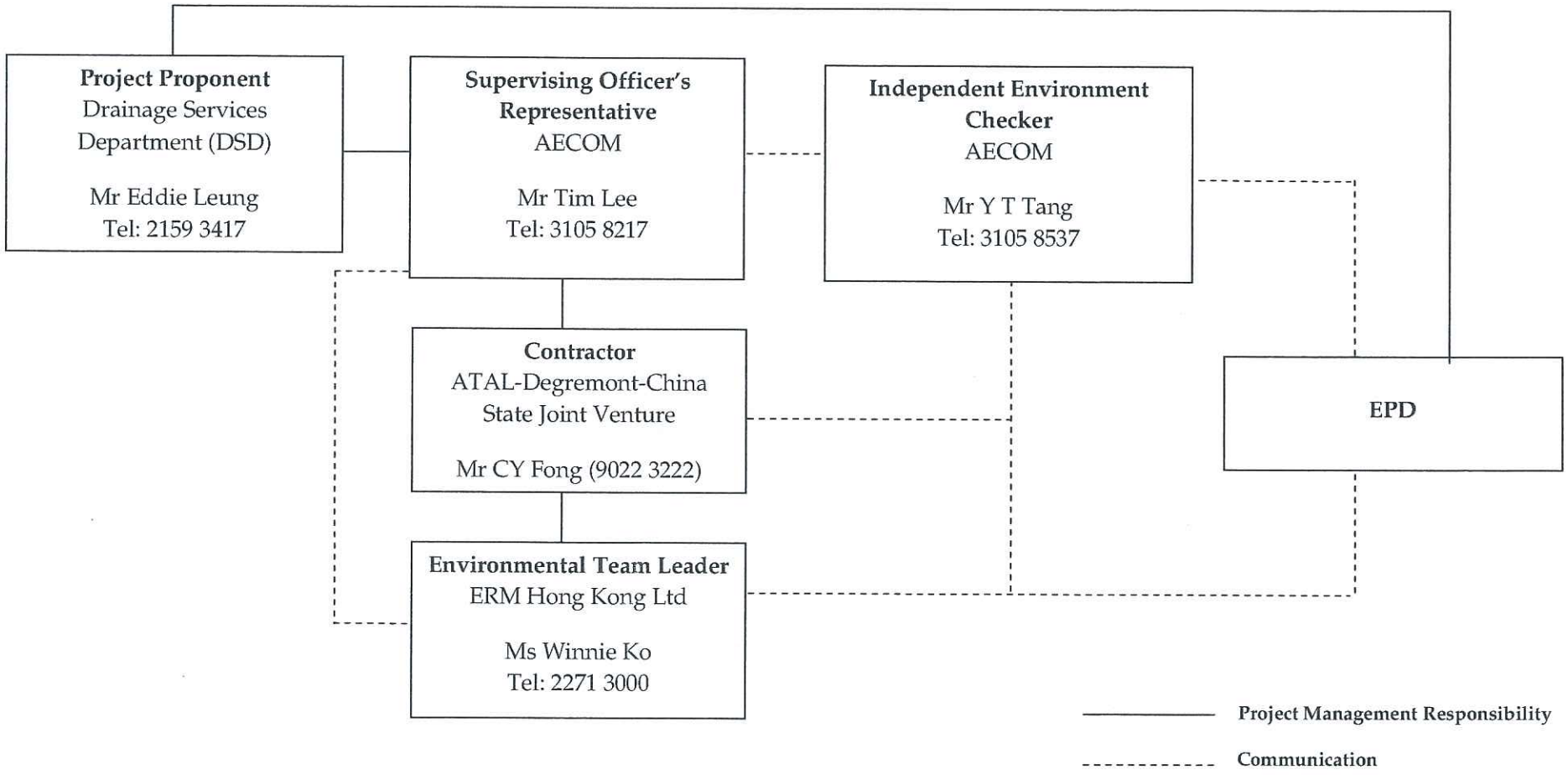
Environmental Resources Management

ERM

Annex C

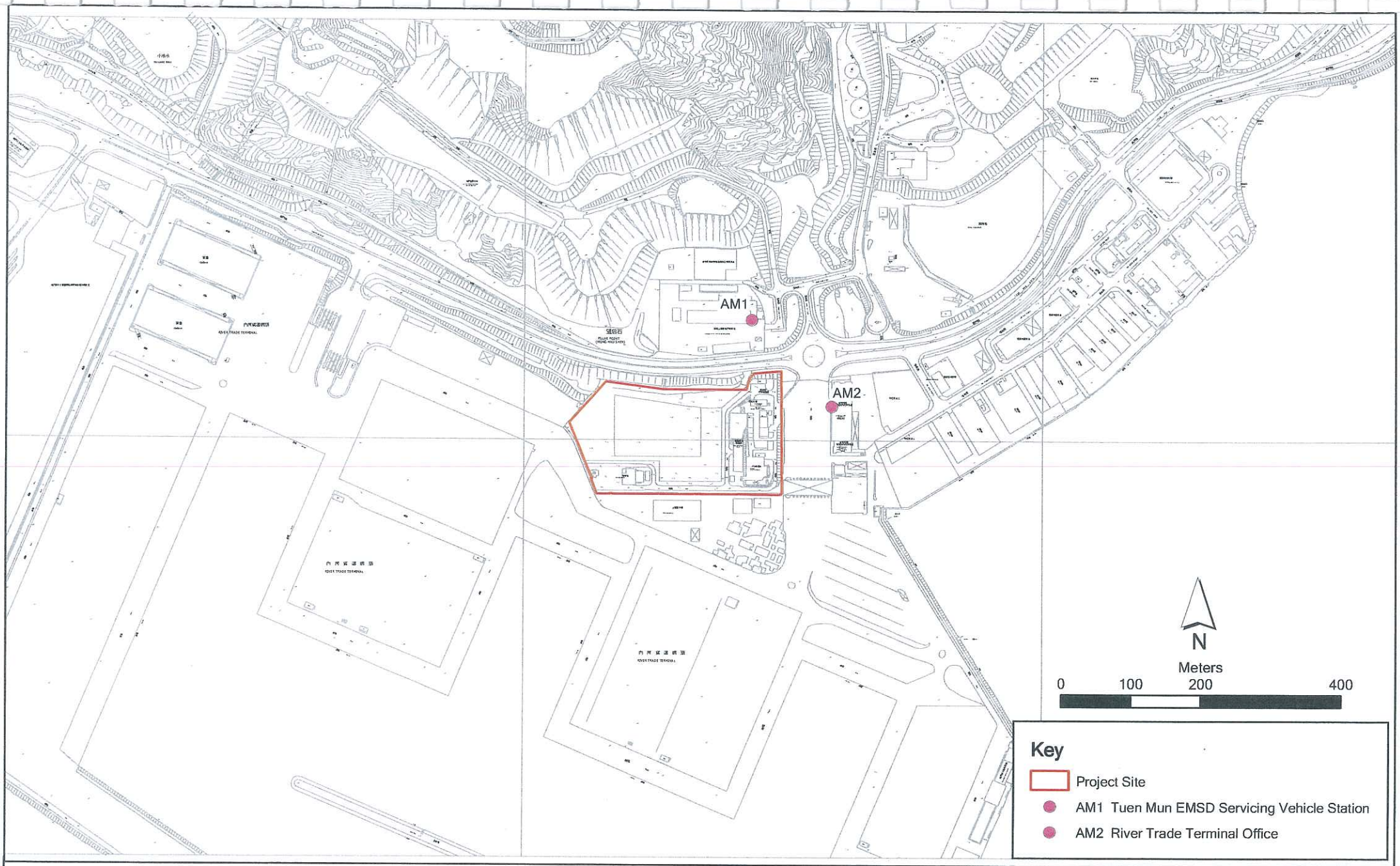
Project Organization Chart with Contact Details

Project Organization During Construction Phase (with contact details)



Annex D

Locations of Air Quality Monitoring Stations



Annex D

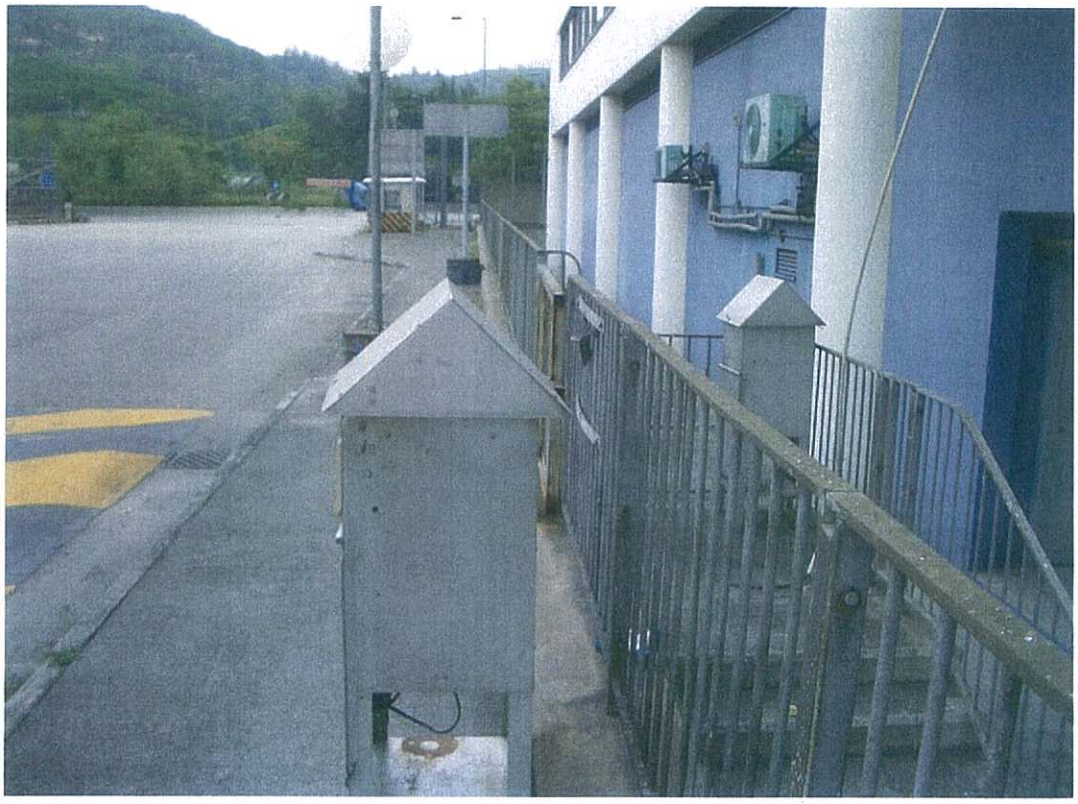
Contract No. DC/2008/03 Design, Build and Operate of Pillar Point Sewage Treatment Works

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)
November 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Nov	2-Nov	3-Nov	4-Nov	5-Nov	6-Nov
7-Nov	8-Nov	9-Nov	10-Nov	11-Nov	12-Nov	13-Nov
						3X1-hr & 1X 24-hr TSP
14-Nov	15-Nov	16-Nov	17-Nov	18-Nov	19-Nov	20-Nov
					3X1-hr & 1X 24-hr TSP	
21-Nov	22-Nov	23-Nov	24-Nov	25-Nov	26-Nov	27-Nov
				3X1-hr & 1X 24-hr TSP		
28-Nov	29-Nov	30-Nov				

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)
December 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Dec	2-Dec	3-Dec	4-Dec
			3X1-hr & 1X 24-hr TSP			
5-Dec	6-Dec	7-Dec	8-Dec	9-Dec	10-Dec	11-Dec
		3X1-hr & 1X 24-hr TSP				
12-Dec	13-Dec	14-Dec	15-Dec	16-Dec	17-Dec	18-Dec
	3X1-hr & 1X 24-hr TSP					3X1-hr & 1X 24-hr TSP
19-Dec	20-Dec	21-Dec	22-Dec	23-Dec	24-Dec	25-Dec
					3X1-hr & 1X 24-hr TSP	Christmas Holiday
26-Dec	27-Dec	28-Dec	29-Dec	30-Dec	31-Dec	
	Christmas Holiday			3X1-hr & 1X 24-hr TSP		

Annex F

24-hour and 1-hour TSP Monitoring Results

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

24-hour TSP Monitoring Results

Station AM1

Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m^3/min)			TSP Conc. ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)	Observations / Remarks	Sampler ID	Filter ID
Date	Time	Date	Time		Initial	Final	Initial	Final		Initial	Final	Average						
13-Nov-10	11:25	14-Nov-10	11:25	Sunny	2.8506	2.9758	10223.18	10247.18	24.00	1.19	1.19	1.19	73	183	260	Construction work in progress	7580	7559
19-Nov-10	11:10	20-Nov-10	11:10	Sunny	2.8333	2.9740	10250.18	10274.18	24.00	1.19	1.19	1.19	82	183	260	Construction work in progress	7580	7531
25-Nov-10	11:40	26-Nov-10	11:40	Sunny	2.8717	2.9971	10277.18	10301.18	24.00	1.19	1.19	1.19	73	183	260	Construction work in progress	7580	7576
												Min.	73					
												Max.	82					
												Average	76					

24-hour TSP Monitoring Results

Station AM2

Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m^3/min)			TSP Conc. ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)	Observations / Remarks	Sampler ID	Filter ID
Date	Time	Date	Time		Initial	Final	Initial	Final		Initial	Final	Average						
13-Nov-10	11:10	14-Nov-10	11:10	Sunny	2.8144	2.9886	18216.20	18240.20	24.00	1.19	1.19	1.19	102	192	260	Construction work in progress	1247	7555
19-Nov-10	11:10	20-Nov-10	11:10	Sunny	2.8800	3.0202	18243.20	18267.20	24.00	1.19	1.19	1.19	82	192	260	Construction work in progress	1247	7527
25-Nov-10	11:30	26-Nov-10	11:30	Sunny	2.8595	3.0010	18270.20	18294.20	24.00	1.19	1.19	1.19	83	192	260	Construction work in progress	1247	7572
												Min.	82					
												Max.	102					
												Average	89					

Annex F - 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 (°C)	Wind Speed * (m/s)	Sampler ID	Filter ID
13-Nov-10	8:25	9:25	Sunny	112	343	500	Construction work in progress	21	*	7580	7553
	9:25	10:25	Sunny	94	343	500	Construction work in progress	22	*	7580	7556
	10:25	11:25	Sunny	81	343	500	Construction work in progress	23	*	7580	7558
19-Nov-10	8:10	9:10	Sunny	122	343	500	Construction work in progress	22	*	7580	7528
	9:10	10:10	Sunny	120	343	500	Construction work in progress	23	*	7580	7529
	10:10	11:10	Sunny	115	343	500	Construction work in progress	24	*	7580	7530
25-Nov-10	8:40	9:40	Sunny	126	343	500	Construction work in progress	20	*	7580	7573
	9:40	10:40	Sunny	112	343	500	Construction work in progress	21	*	7580	7574
	10:40	11:40	Sunny	118	343	500	Construction work in progress	21	*	7580	7575
			Min.	**81**							
			Max.	**126**							
			Average	**111**							

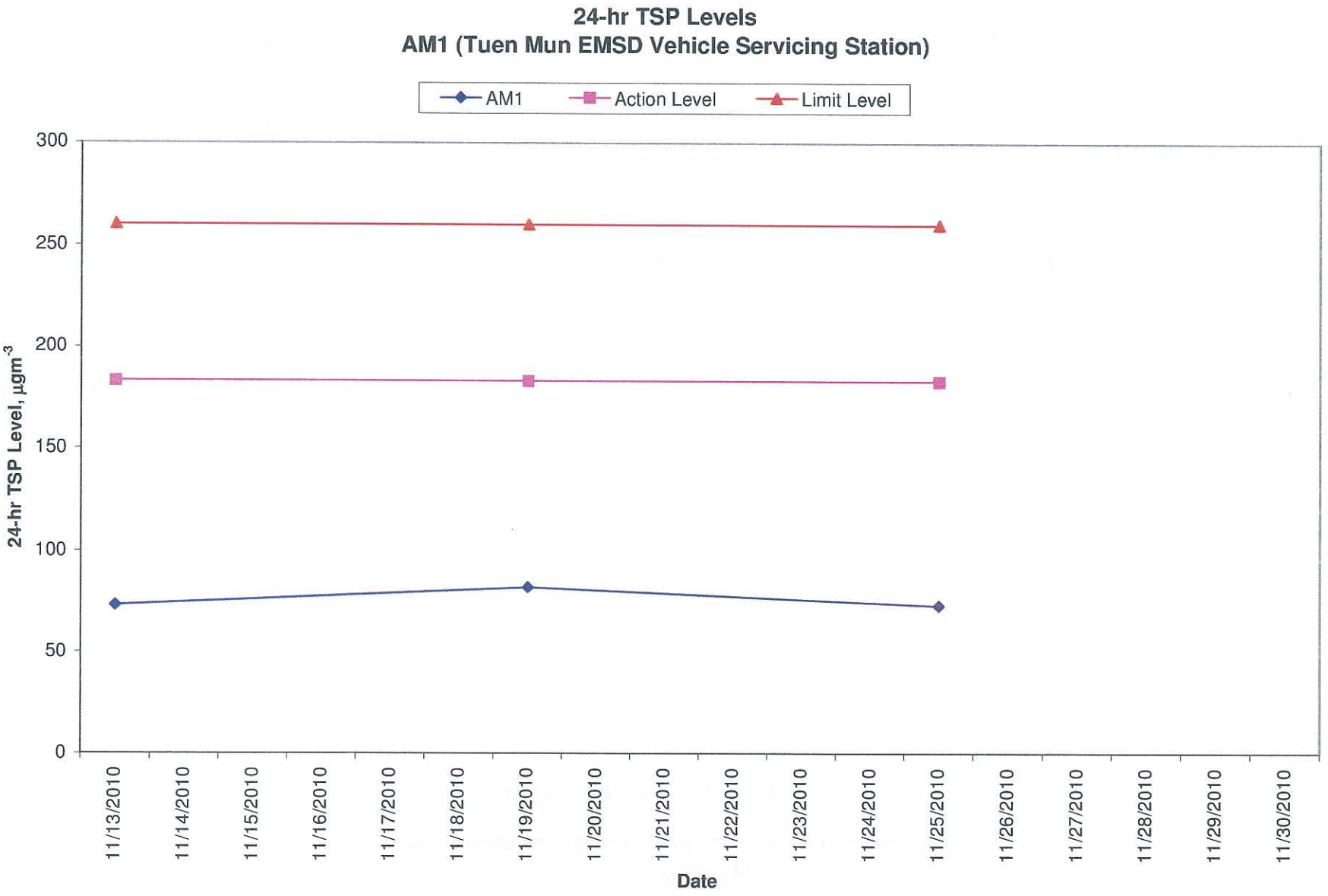
* Wind Speed data is presented in the Meteorological Data table

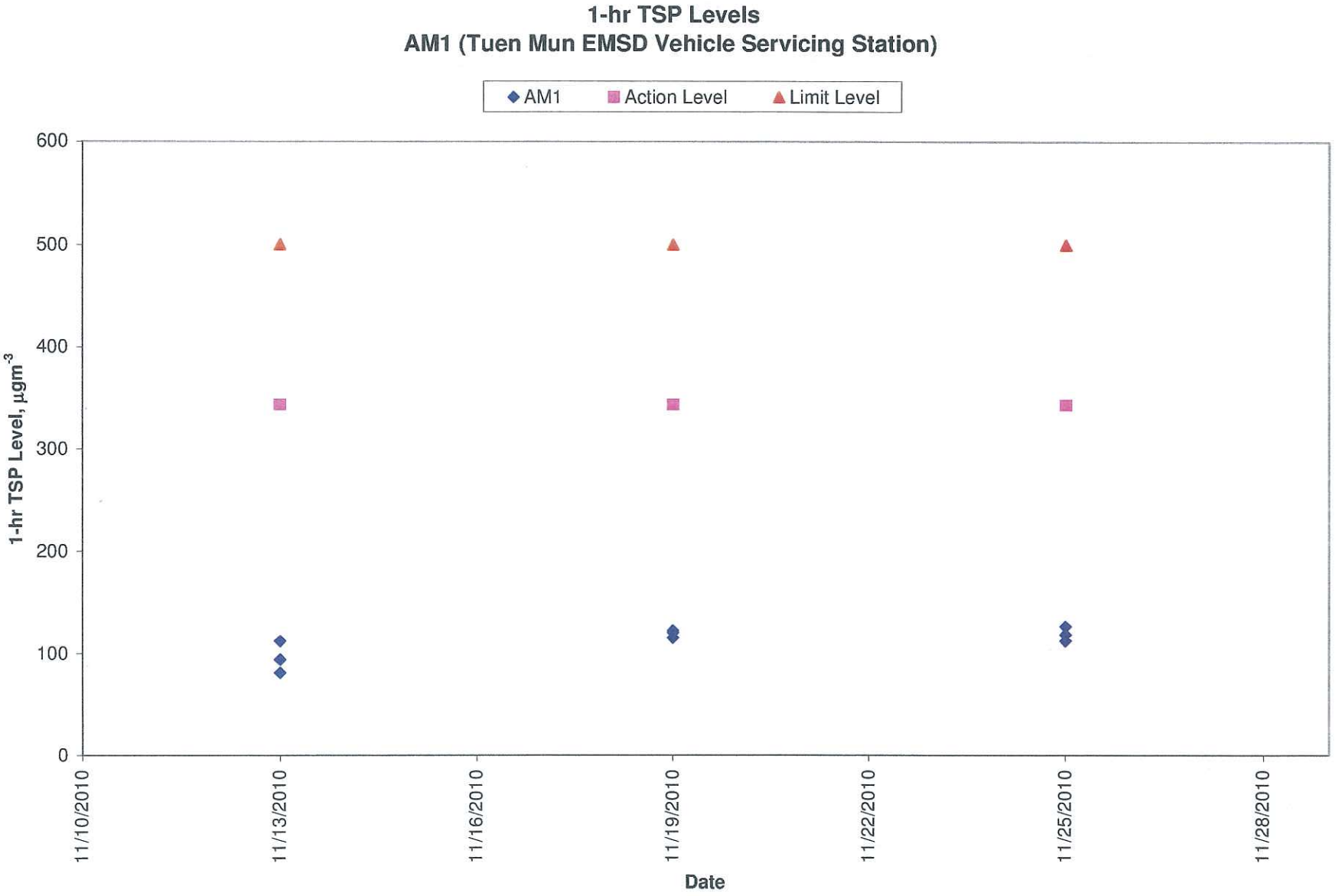
1-hour TSP Monitoring Results

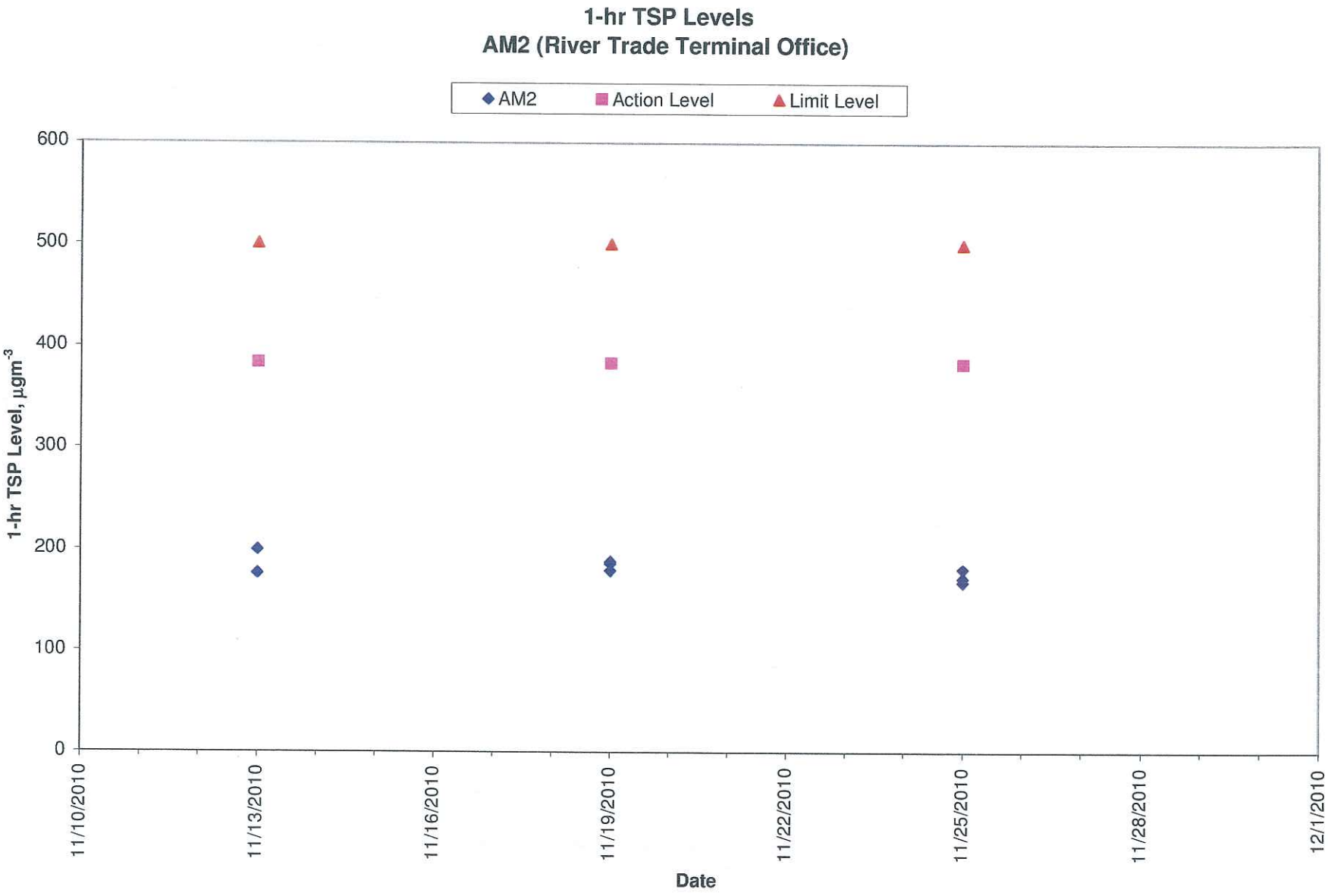
Station AM2

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 (°C)	Wind Speed * (m/s)	Sampler ID	Filter ID
13-Nov-10	8:10	9:10	Sunny	199	383	500	Construction work in progress	21	*	1247	7552
	9:10	10:10	Sunny	176	383	500	Construction work in progress	22	*	1247	7554
	10:10	11:10	Sunny	176	383	500	Construction work in progress	22	*	1247	7557
19-Nov-10	8:00	9:00	Sunny	186	383	500	Construction work in progress	22	*	1247	7524
	9:00	10:00	Sunny	179	383	500	Construction work in progress	23	*	1247	7525
	10:00	11:00	Sunny	188	383	500	Construction work in progress	24	*	1247	7526
25-Nov-10	8:30	9:30	Sunny	181	383	500	Construction work in progress	20	*	1247	7569
	9:30	10:30	Sunny	172	383	500	Construction work in progress	21	*	1247	7570
	10:30	11:30	Sunny	168	383	500	Construction work in progress	21	*	1247	7571
			Min.	**168**							
			Max.	**199**							
			Average	**181**							

* Wind Speed data is presented in the Meteorological Data table


24-hr TSP Levels
AM1 (Tuen Mun EMSD Vehicle Servicing Station)
AM1
Action Level
Limit Level
300
250
200
150
100
50
0
24-hr TSP Level, µgm-3
11/13/2010
11/14/2010
11/15/2010
11/16/2010
11/17/2010
11/18/2010
11/19/2010
11/20/2010
11/21/2010
11/22/2010
11/23/2010
11/24/2010
11/25/2010
11/26/2010
11/27/2010
11/28/2010
11/29/2010
11/30/2010
Date


1-hr TSP Levels
AM1 (Tuen Mun EMSD Vehicle Servicing Station)
AM1
Action Level
Limit Level
600
500
400
300
200
100
0
1-hr TSP Level, µgm-3
11/10/2010
11/13/2010
11/16/2010
11/19/2010
11/22/2010
11/25/2010
11/28/2010
Date


1-hr TSP Levels
AM2 (River Trade Terminal Office)
AM2
Action Level
Limit Level
600
500
400
300
200
100
0
1-hr TSP Level, µgm-3
11/10/2010
11/13/2010
11/16/2010
11/19/2010
11/22/2010
11/25/2010
11/28/2010
12/1/2010
Date


24-hr TSP Levels
AM2 (River Trade Terminal Office)
AM2
Action Level
Limit Level
300
250
200
150
100
50
0
24-hr TSP Level, µgm-3
11/13/2010
11/14/2010
11/15/2010
11/16/2010
11/17/2010
11/18/2010
11/19/2010
11/20/2010
11/21/2010
11/22/2010
11/23/2010
11/24/2010
11/25/2010
11/26/2010
11/27/2010
11/28/2010
11/29/2010
11/30/2010
Date

Meteorological Data Extracted from the Hong Kong Observatory

		Tuen Mun Station				
Date	Weather	Average Air Temperature (°C)	Average Relative Humiditiy (%)	Total Rainfall (mm)	Average Wind Speed (km/h)	Wind Direction
11/13/2010	Fine	23.0	66	0.0	0.3 - 6.4	SE
11/14/2010	Fine	23.6	70	0.0	0.4 - 3.3	SE
11/19/2010	Fine	21.5	70	0.0	0.3 - 3.9	N
11/20/2010	Fine	21.2	67	0.0	0.6 - 3.1	N
11/26/2010	Fine	19.7	57	0.0	0 - 5	W
11/27/2010	Fine	20.3	65	0.0	0 - 5.2	SE

Annex G

Calibration Reports for HVSs

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 - May 10, 2010 Rootsmeter S/N 9833620 Ta (K) - 296
Operator Tisch Orifice I.D. - 1785 Pa (mm) - 750.57

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	1.3960	3.2	2.00
2	NA	NA	1.00	0.9840	6.4	4.00
3	NA	NA	1.00	0.8790	7.9	5.00
4	NA	NA	1.00	0.8390	8.7	5.50
5	NA	NA	1.00	0.6940	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9900	0.7092	1.4102		0.9957	0.7133	0.8881
0.9858	1.0018	1.9943		0.9915	1.0076	1.2560
0.9837	1.1191	2.2296		0.9894	1.1256	1.4042
0.9827	1.1713	2.3385		0.9884	1.1781	1.4728
0.9774	1.4084	2.8203		0.9830	1.4165	1.7762
Qstd slope (m) =		2.01637		Qa slope (m) =		1.26262
intercept (b) =		-0.02316		intercept (b) =		-0.01458
coefficient (r) =		0.99996		coefficient (r) =		0.99996
y axis = SQRT[H2O(Pa/760)(298/Ta)]				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}

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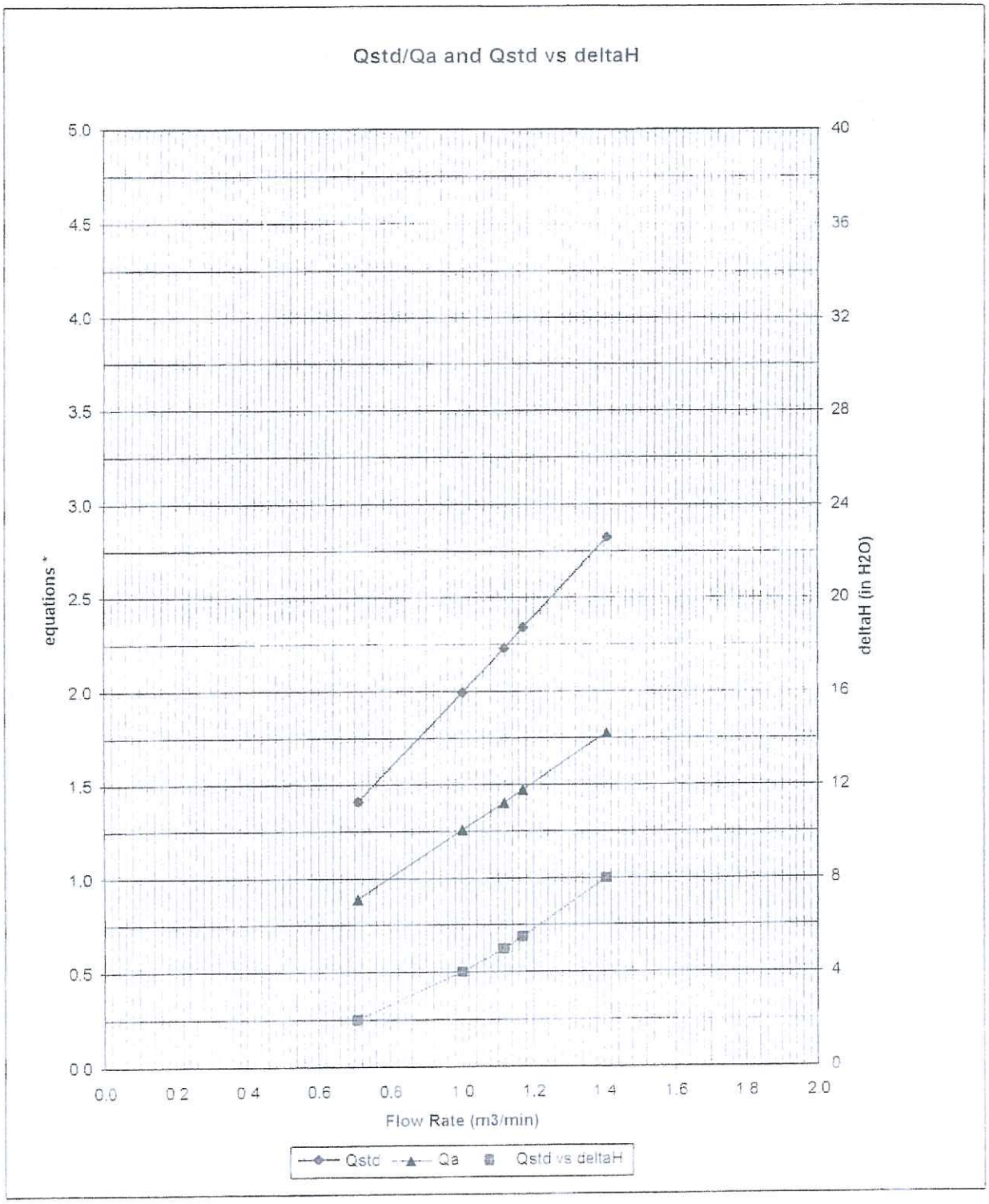
AIR POLLUTION MONITORING EQUIPMENT



* y-axis equations:

Qstd series: $\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$

Qa series: $\sqrt{(\Delta H\ (Ta\ /\ Pa))}$

#1785

High-Volume TSP Sampler
5-Point Calibration Record

Location	:	EMSD(24 hr TSP)
Calibrated by	:	P.F.Yeung
Date	:	29/09/2010

Sampler

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

Calibration Orfice and Standard Calibration Relationship

Serial Number	:	1785
Service Date	:	10 May 2010
Slope (m)	:	2.01637
Intercept (b)	:	-0.02316
Correlation Coefficient(r)	:	0.99996

Standard Condition

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

Calibration Condition

Pa (hpa)	:	1008
Ta(K)	:	303

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	11.0	3.281	1.639	52	51.4
2	13 holes	8.6	2.901	1.450	46	45.5
3	10 holes	6.5	2.522	1.262	39	38.6
4	7 holes	4.3	2.051	1.029	31	30.7
5	5 holes	2.5	1.564	0.787	23	22.8

Sampler Calibration Relationship

Slope(m):33.982 Intercept(b): -4.126 Correlation Coefficient(r): 0.9998

Checked by: Magnum Fan Date: 05/10/2010

High-Volume TSP Sampler
5-Point Calibration Record

Location	:	EMSD (1 hr TSP)
Calibrated by	:	P.F.Yeung
Date	:	29/09/2010

Sampler

Model	:	GMWS-2310 ACCU-VOL
Serial Number	:	S/N 1247

Calibration Orfice and Standard Calibration Relationship

Serial Number	:	1785
Service Date	:	10 May 2010
Slope (m)	:	2.01637
Intercept (b)	:	-0.02316
Correlation Coefficient(r)	:	0.99996

Standard Condition

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

Calibration Condition

Pa (hpa)	:	1008
Ta(K)	:	303

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	11.2	3.300	1.648	59	58.2
2	13 holes	8.4	2.858	1.429	51	50.3
3	10 holes	6.6	2.534	1.268	45	44.4
4	7 holes	4.2	2.021	1.014	36	35.5
5	5 holes	2.6	1.590	0.800	28	27.6

Sampler Calibration Relationship

Slope(m):35.952 Intercept(b): -1.092 Correlation Coefficient(r): 0.9999

Checked by: Magnum Fan Date: 05/10/2010

High-Volume TSP Sampler
5-Point Calibration Record

Location	:	EMSD(24 hr TSP)
Calibrated by	:	P.F.Yeung
Date	:	29/11/2010

Sampler

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

Calibration Orfice and Standard Calibration Relationship

Serial Number	:	1785
Service Date	:	10 May 2010
Slope (m)	:	2.01637
Intercept (b)	:	-0.02316
Correlation Coefficient(r)	:	0.99996

Standard Condition

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

Calibration Condition

Pa (hpa)	:	1011
Ta(K)	:	298

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	11.2	3.355	1.675	63	63.2
2	13 holes	9.8	3.138	1.568	58	58.1
3	10 holes	7.4	2.727	1.364	48	48.1
4	7 holes	5.2	2.286	1.145	38	38.1
5	5 holes	3.5	1.875	0.942	28	28.1

Sampler Calibration Relationship

Slope(m):47.735 Intercept(b): -16.789 Correlation Coefficient(r): 0.9999

Checked by: Magnum Fan Date: 03/12/2010

High-Volume TSP Sampler
5-Point Calibration Record

Location	:	River Trade
Calibrated by	:	K.T.Ho
Date	:	29/11/2010

Sampler

Model	:	GMWS-2310 ACCU-VOL
Serial Number	:	S/N 1247

Calibration Orfice and Standard Calibration Relationship

Serial Number	:	1785
Service Date	:	10 May 2010
Slope (m)	:	2.01637
Intercept (b)	:	-0.02316
Correlation Coefficient(r)	:	0.99996

Standard Condition

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

Calibration Condition

Pa (hpa)	:	1011
Ta(K)	:	298

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	11.4	3.384	1.690	61	61.1
2	13 holes	9.6	3.106	1.552	55	55.1
3	10 holes	7.6	2.764	1.382	48	48.1
4	7 holes	5.0	2.241	1.123	37	37.1
5	5 holes	3.2	1.793	0.901	28	28.1

Sampler Calibration Relationship

Slope(m):41.928 Intercept(b): 9.835 Correlation Coefficient(r): 0.9999

Checked by: Magnum Fan Date: 03/12/2010

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	Δ. 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	Δ. EPD is currently processing application of discharge licence from the Contractor.
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 transporting wastes in enclosed containers	Work site/During the construction period	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	• 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	√. Tree transplantation applications have been submitted by the Contractor.
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	Δ

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 (Public Fill) Generated					Actual Quantities of Non-inert C&D Materials (Construction Waste) Generated				
	Total Quantity Generated	Rocks & Broken Concrete	Reused in the Contract	Reused in other Projects	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
	tonne	tonne	tonne	tonne	tonne	kilogram	kilogram	kilogram	kilogram	kilogram
Nov 2010	2,248	0	0	0	2,248	60	100	0	0	0 (see Note 3)
Total	2,248	0	0	0	2,248	60	100	0	0	0

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) No general refuse was sent to landfill in the reporting month.

Annex K

Environmental Complaint, Environmental Summons and Persecution Log

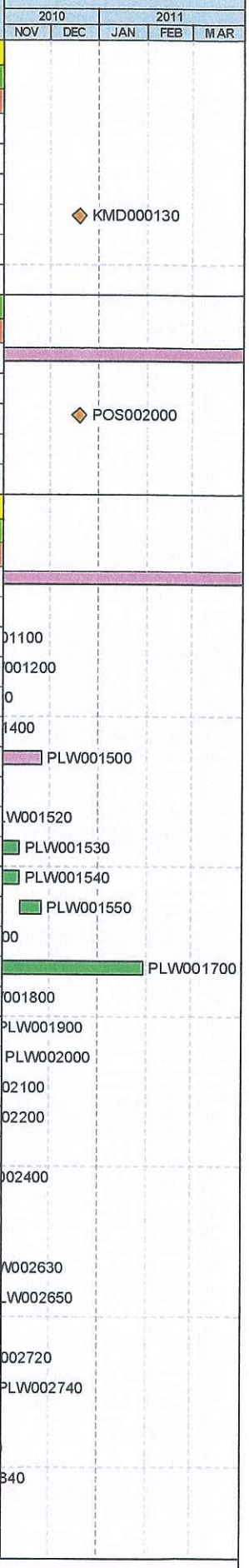
Annex K *Cumulative Complaint and Summons/Prosecutions Log*

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
November 2010	0	0
Overall Total	0	0

Annex L

Construction Programme of the Project

Activity ID	Description	Original Duration	Cal	Early Start	Early Finish	Total Float
Key Date						
Commencement and Completion of Works						
Contract Dates						
KMD000100	Letter of Acceptance	0	2	14JUL2010 A		
KMD000110	Commencement of the Design & Construction Works	0	2	28JUL2010 A		
KMD000120	Completion of Design and Construction Works	0	2		26NOV2013	0
KMD000130	Commence Interim Operation of Extg Facilities	0	2	20DEC2010		0
KMD000140	Completion of Interim Operation	0	2		25NOV2013	0
KMD000150	Commencement of Operation of Facilities	0	2	26NOV2013		0
Possession of Stie						
Contract Dates						
POS000000	Taking possession of Site	455 *	2	28JUL2010 A	25OCT2011	0
POS001000	Portion T1 and T2 (Latest 30 days)	0	2	28JUL2010 A		
POS002000	Portion P1 (145 days Latest 152 days)	0	2	20DEC2010		0
POS003000	Portion P2 (Latest 30 days)	0	2	28JUL2010 A		
POS004000	Portion P3 (Latest 455 days)	0	2	26OCT2011		0
Preliminaries						
General Requirements						
Contract Preliminaries						
PLW000000	Preliminaries Work	1217 *	2	28JUL2010 A	25NOV2013	0
PLW001000	Initial Site Survey / Identify Extg Utilities	35	2	28JUL2010 A	31AUG2010 A	
PLW001100	Project Sign Board at Portion T1 & T2	30	2	12SEP2010 A	30SEP2010	
PLW001200	Project Sign Board at Portion P2	30	2	12SEP2010 A	08OCT2010	23d
PLW001300	Site Establishment	30	2	13AUG2010 A	11SEP2010 A	
PLW001400	Fencing , Gate & Lighting	30	2	27AUG2010 A	25SEP2010 A	
PLW001500	Condition Survey of the Existing Facilities	112 *	2	07AUG2010 A	26NOV2010	23d
PLW001510	Condition Survey Plan - Submission	30	2	07AUG2010 A	05SEP2010 A	
PLW001520	Conditional Survey Plan - Approval	40	2	06SEP2010 A	19OCT2010	23d
PLW001530	Conditional Survey - Civil and Stru.	20	1	25OCT2010 A	12NOV2010	19d
PLW001540	Conditional Survey - E&M	20	1	25OCT2010 A	12NOV2010	19d
PLW001550	Conditional Survey - Report	14	2	13NOV2010	26NOV2010	23d
PLW001600	Gen Condition & Tree Survey	50	2	28JUL2010 A	15SEP2010 A	
PLW001700	Tree Transplant	95	2	28OCT2010	30JAN2011	4d
PLW001800	Supervising Officer's Accommodation at T2A	60	2	01SEP2010 A	08OCT2010	23d
PLW001900	Contractor's Works Area at T1 & T2B	60	2	01SEP2010 A	26OCT2010	5d
PLW002000	Provide Survey Equipment & Computer Facilities	0	2		26OCT2010	5d
PLW002100	Employee Compensation / Third Party Insurance	30	2	14JUL2010 A	02OCT2010	5d
PLW002200	Works Insurance	30	2	14JUL2010 A	02OCT2010	5d
PLW002300	Performance Security	30	2	14JUL2010 A	12AUG2010 A	
PLW002400	Professional Indemnity Insurance	60	2	14JUL2010 A	05OCT2010	26d
PLW002500	List of Staff of Management Team	14	2	14JUL2010 A	27JUL2010 A	
PLW002600	Draft Safety Plan	28	2	14JUL2010 A	10AUG2010 A	
PLW002630	Draft Safety Plan Approval	40	2	11AUG2010 A	14OCT2010 A	
PLW002650	Finalize Safety Plan	35	2	20SEP2010 A	20OCT2010	11d
PLW002700	Draft Environmental Management Plan	30	2	14JUL2010 A	12AUG2010 A	
PLW002720	Draft Environmental Management Plan Appr.	40	2	13AUG2010 A	07OCT2010	16d
PLW002740	Finalize Environmental Management Plan	35	2	22SEP2010 A	27OCT2010	16d
PLW002760	Establish Environmental Team	30	2	28JUL2010 A	26AUG2010 A	
PLW002800	Initial Works Programme	55	2	14JUL2010 A	06SEP2010 A	
PLW002840	Detail Programme	14	2	07SEP2010 A	20SEP2010 A	
PLW002860	First Three Month Programme	14	2	31JUL2010 A	13AUG2010 A	
PLW002900	Subcontractor Management Plan	36	2	14JUL2010 A	18AUG2010 A	



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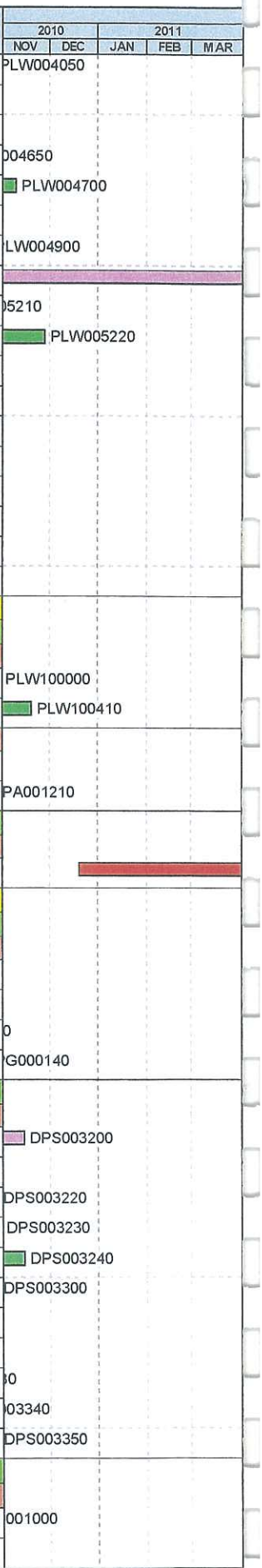
Activity ID	Description	Original Duration	Cal	Early Start	Early Finish	Total Float
PLW004050	Appoint Competent Person for Tree Works	100	2	14JUL2010 A	27OCT2010	4d
PLW004400	Submit Proposed Professional Photographer	21	2	30JUL2010 A	19AUG2010 A	
PLW004600	Nominate Contractor Labour Officer	7	2	28JUL2010 A	03AUG2010 A	
PLW004650	Submission of Storage Layout Plan	14	2	16SEP2010 A	06OCT2010	25d
PLW004700	Submit Method to Measure Incoming Raw Sewage	42	2	30SEP2010	10NOV2010	39d
PLW004800	Nomination of AP / Registered Struct Engineer	28	2	28JUL2010 A	24AUG2010 A	
PLW004900	Baseline monitoring	36	2	21SEP2010 A	24OCT2010	7d
PLW005200	Commissioning Plan	339 *	2	11SEP2010 A	15AUG2011	182d
PLW005210	Commissioning Plan - AIP Submission	60	2	11SEP2010 A	29SEP2010 A	
PLW005220	Commissioning Plan - AIP Check & Approval	60	2	30SEP2010	28NOV2010	182d
PLW005230	Commissioning Plan - Submission	60	2	17JUN2011	15AUG2011	182d
PLW005240	Commissioning Plan - Check & Approval	0	2	16AUG2011	15AUG2011	182d
PLW005260	Notice of Commissioning Test (14 day advance)	0	2	25NOV2012		0
PLW005300	Operation Plan	180 *	2	02SEP2011	28FEB2012	0
PLW005310	Operation Plan - Submision	60	2	02SEP2011	31OCT2011	0
PLW005320	Operation Plan - Approval	120	2	01NOV2011	28FEB2012	0
PLW006000	As-built Drawing for Upgrade Works	0	2		25NOV2013	1d
PLW006100	O&M Manual for the Upgrade Works	0	2		28AUG2013	90d
Interim Operation						
Submission and Consent						
Contract Preliminaries						
PLW100000	Interim Operation Plan	42	2	27AUG2010 A	31OCT2010	29d
PLW100410	Approval of Interim Operation Plan	28	2	25SEP2010 A	20NOV2010	29d
Temporary Weighbridge						
DPA001200	Propose Using Existing Weighbridge	7	1	12AUG2010 A	19AUG2010 A	
DPA001210	Consent Granted for Using Existing Weighbridge	60	1	20AUG2010 A	22OCT2010	48d
Interim Operation of Existing Plant						
Interim Operation of Plant						
IP0000060	Interim Operation of Existing Plant	1072	2	20DEC2010	25NOV2013	0
Design and Design Checking of Permanent Works						
Key Milestone						
Submission and Approval						
DPG000100	Appoint Person to Execute the Plan	0	2	28JUL2010 A		
DPG000120	Commencement of Design	0	2	28JUL2010 A		
DPG000130	Appointment of Design Checker	0	2		05SEP2010 A	
DPG000140	Submission of Executed Agreement & Warranty	14	2	04OCT2010	17OCT2010	14d
Survey						
Submission and Approval						
DPS003200	Existing Condition Survey	111 *	2	28JUL2010 A	15NOV2010	34d
DPS003210	Site Inspection / Review of Condition Reports	30	2	28JUL2010 A	26AUG2010 A	
DPS003220	Appraisal, Proposal and Asset Management Risk	30	2	30SEP2010	29OCT2010	29d
DPS003230	Asset Management Plan Interim Operation	15	2	12SEP2010 A	31OCT2010	29d
DPS003240	Asset Management Plan Final Operation	15	2	01NOV2010	15NOV2010	34d
DPS003300	Ground Investigation	94 *	2	28JUL2010 A	29OCT2010	5d
DPS003310	Mobilization	10	2	28JUL2010 A	06AUG2010 A	
DPS003320	Ground Investigation	24	2	07AUG2010 A	30AUG2010 A	
DPS003330	Draft Ground Investigation Report	15	2	31AUG2010 A	14SEP2010 A	
DPS003340	Final Ground Investigation Report	30	2	15SEP2010 A	05OCT2010	19d
DPS003350	Laboratory Test and Report	50	2	15SEP2010 A	29OCT2010	5d
Submission and Consent						
Submission and Approval						
DPD001000	Design Plan: Approval	88 *	2	14JUL2010 A	09OCT2010	42d
DPD001100	Preparation of Design Plan	38	2	14JUL2010 A	20AUG2010 A	



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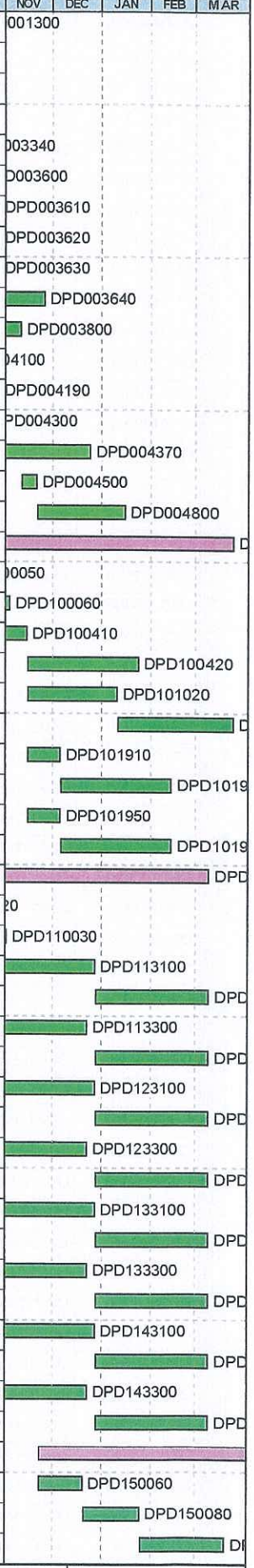
Activity ID	Description	Original Duration	Cal	Early Start	Early Finish	Total Float
DPD001300	Review and Approval of Design Plan	50	2	21AUG2010 A	09OCT2010	42d
DPD003310	AIP: Process Design Submission	30	2	08AUG2010 A	06SEP2010 A	
DPD003320	AIP: Hydraulic Design Submission	30	2	08AUG2010 A	06SEP2010 A	
DPD003330	AIP: Plant Layout Drawing Submission	30	2	08AUG2010 A	06SEP2010 A	
DPD003340	AIP: General Building Plan Submission	30	2	07SEP2010 A	06OCT2010 A	
DPD003600	AIP: Checker Review	30	2	07SEP2010 A	14OCT2010	28d
DPD003610	AIP/DDA: Process Design Checking and Approval	58	2	07SEP2010 A	28OCT2010	80d
DPD003620	AIP/DDA: Hydraulic Design Checking and Approval	58	2	07SEP2010 A	28OCT2010	80d
DPD003630	AIP: Plant Layout Drawing Checking and Approval	58	2	07SEP2010 A	28OCT2010	-1d
DPD003640	AIP: General Building Plan Checking and Approval	58	2	30SEP2010	26NOV2010	53d
DPD003800	AIP: SO Review	28	2	15OCT2010	11NOV2010	28d
DPD004100	DDA: HAZOP Study and Report	14	2	20SEP2010 A	30SEP2010	10d
DPD004190	DDA: HAZOP Checking and Approval	28	2	01OCT2010	28OCT2010	103d
DPD004300	DDA: P&ID Submission	30	2	20SEP2010 A	20OCT2010	10d
DPD004370	DDA: P&ID Checking and Approval	66	2	21OCT2010	25DEC2010	10d
DPD004500	DDA: P&ID Checker Review and Approval	10	2	12NOV2010	21NOV2010	28d
DPD004800	DDA: P&ID SO Review and Approval	56	2	22NOV2010	16JAN2011	28d
DPD100000	PTW: AIP and DDA	219 *	2	16AUG2010 A	22MAR2011	87d
DPD100050	PTW: AIP Civil GA Drg Submission	30	3	16AUG2010 A	30SEP2010 A	
DPD100060	PTW: AIP Civil Checking and Approval	36	2	30SEP2010 A	04NOV2010	97d
DPD100410	PTW: DDA Foundation Submission	34	3	30SEP2010 A	15NOV2010	13d
DPD100420	PTW: DDA Foundation Checking and Approval	70	2	16NOV2010	24JAN2011	17d
DPD101020	PTW: DDA Structural Submission	40	3	16NOV2010	11JAN2011	59d
DPD101030	PTW: DDA Structural Checking and Approval	70	2	12JAN2011	22MAR2011	87d
DPD101910	PTW: DDA Architectural Submission	15	3	16NOV2010	06DEC2010	63d
DPD101930	PTW: DDA Architectural Checking and Approval	70	2	07DEC2010	14FEB2011	123d
DPD101950	PTW: DDA Landscape Details	15	3	16NOV2010	06DEC2010	276d
DPD101960	PTW: DDA Landscape Checking and Approval	70	2	07DEC2010	14FEB2011	405d
DPD110000	PTW: E&M Submission and Approval	164 *	1	16AUG2010 A	08MAR2011	363d
DPD110020	PTW: AIP E&M GA Drg Submission	30	2	16AUG2010 A	14SEP2010 A	
DPD110030	PTW: AIP E&M Checking and Approval	42	2	15SEP2010 A	02NOV2010	28d
DPD113100	PTW: Coarse Screen: E&M Equipment Submission	90	2	30SEP2010	28DEC2010	19d
DPD113200	PTW: Coarse Screen: E&M Equipment Approval	70	2	29DEC2010	08MAR2011	19d
DPD113300	PTW:Coarse Screen: E&M Detail Drawing Submission	65	2	20OCT2010	23DEC2010	90d
DPD113400	PTW: Coarse Screen: E&M Detail Drg Approval	70	2	29DEC2010	08MAR2011	394d
DPD123100	PTW: Inlet Pump St: E&M Equipment Submission	90	2	30SEP2010	28DEC2010	42d
DPD123200	PTW: Inlet Pump St: E&M Equipment Approval	70	2	29DEC2010	08MAR2011	42d
DPD123300	PTW: Inlet Pump St: E&M Detail Drg Submission	65	2	20OCT2010	23DEC2010	90d
DPD123400	PTW: Inlet Pump St: E&M Detail Drg Approval	70	2	29DEC2010	08MAR2011	454d
DPD133100	PTW: Fine Screen: E&M Equipment Submission	90	2	30SEP2010	28DEC2010	52d
DPD133200	PTW: Fine Screen: E&M Equipment Approval	70	2	29DEC2010	08MAR2011	52d
DPD133300	PTW: Fine Screen: E&M Detail Drawing Submission	65	2	20OCT2010	23DEC2010	90d
DPD133400	PTW: Fine Screen: E&M Detail Drg Approval	70	2	29DEC2010	08MAR2011	454d
DPD143100	PTW: Grit Chamber: E&M Equipment Submission	90	2	30SEP2010	28DEC2010	52d
DPD143200	PTW: Grit Chamber: E&M Equipment Approval	70	2	29DEC2010	08MAR2011	52d
DPD143300	PTW: Grit Chamber: E&M Detail Drawing Submission	65	2	20OCT2010	23DEC2010	90d
DPD143400	PTW: Grit Chamber: E&M Detail Drg Approval	70	2	29DEC2010	08MAR2011	454d
DPD150000	Septic Waste Collection Facilities: AIP and DDA	186 *	2	23NOV2010	27MAY2011	342d
DPD150060	Septic: AIP Civil GA Drg Submission	20	3	23NOV2010	20DEC2010	102d
DPD150080	Septic: AIP Civil Checking and Approval	36	2	21DEC2010	25JAN2011	154d
DPD150740	Septic: DDA Fdn / Structural Submission	36	3	26JAN2011	18MAR2011	234d



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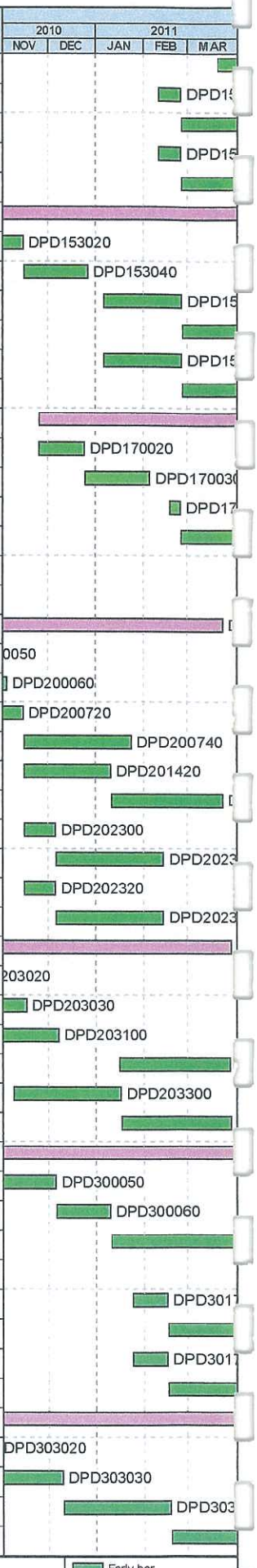
Activity ID	Description	Original Duration	Cal	Early Start	Early Finish	Total Float
DPD150780	Septic: DDA Fdn / Struct Checking and Approval	70	2	19MAR2011	27MAY2011	342d
DPD151740	Septic: DDA Architectural Submission	10	3	11FEB2011	24FEB2011	319d
DPD151750	Septic: DDA Architectural Check & Approval	70	2	25FEB2011	05MAY2011	461d
DPD151770	Septic: DDA Landscape Submission	10	3	11FEB2011	24FEB2011	319d
DPD151780	Septic: DDA Landscape Check & Approval	70	2	25FEB2011	05MAY2011	461d
DPD153000	Septic: E&M Submission and Approval	202 *	2	17OCT2010	06MAY2011	368d
DPD153020	Septic: AIP E&M GA Drg Submission	30	2	17OCT2010	15NOV2010	55d
DPD153040	Septic: AIP E&M Checking and Approval	42	2	16NOV2010	27DEC2010	55d
DPD153100	Septic: E&M Equipment Submission	50	2	07JAN2011	25FEB2011	55d
DPD153200	Septic: E&M Equipment Checking and Approval	70	2	26FEB2011	06MAY2011	78d
DPD153300	Septic: E&M Detail Arrangement Drawing	50	2	07JAN2011	25FEB2011	349d
DPD153400	Septic: E&M Detail Arrangement Drg Approval	70	2	26FEB2011	06MAY2011	368d
DPD170010	Permanent Weighbridge: AIP and DDA	150 *	3	26NOV2010	07JUL2011	105d
DPD170020	Weighbridge: AIP E&M GA Drg Submission	30	2	26NOV2010	25DEC2010	208d
DPD170030	Weighbridge: AIP E&M Checking and Approval	42	2	26DEC2010	05FEB2011	208d
DPD170050	Weighbridge : AIP Civil GA Drg Submission	5	3	18FEB2011	24FEB2011	103d
DPD170060	Weighbridge: AIP Civil Checking and Approval	35	2	25FEB2011	31MAR2011	154d
DPD170840	Weighbridge: DDA Fdn / Structural Submission	15	3	01APR2011	26APR2011	103d
DPD170880	Weighbridge: DDA Fdn/Struct Checking & Approval	72	2	27APR2011	07JUL2011	151d
DPD200000	CEPT Tank: AIP and DDA	219 *	2	16AUG2010 A	22MAR2011	208d
DPD200050	CEPT Tank: AIP Civil GA Drg Submission	30	3	16AUG2010 A	27SEP2010 A	
DPD200060	CEPT Tank: AIP Civil Checking and Approval	36	2	30SEP2010 A	04NOV2010	48d
DPD200720	CEPT Tank: DDA Foundation Submission	34	3	30SEP2010 A	15NOV2010	29d
DPD200740	CEPT Tank: DDA Foundation Checking and Approval	70	2	16NOV2010	24JAN2011	41d
DPD201420	CEPT Tank: DDA Structural Submission	57	2	16NOV2010	11JAN2011	208d
DPD201440	CEPT Tank: DDA Structural Checking and Approval	70	2	12JAN2011	22MAR2011	208d
DPD202300	CEPT Tank: DDA Architectural Submission	15	3	16NOV2010	06DEC2010	239d
DPD202310	CEPT Tank: DDA Architectural Checking / Approval	70	2	07DEC2010	14FEB2011	351d
DPD202320	CEPT Tank: DDA Landscape Submission	15	3	16NOV2010	06DEC2010	239d
DPD202330	CEPT Tank: DDA Landscape Checking and Approval	70	2	07DEC2010	14FEB2011	351d
DPD203000	CEPT: E&M Submission & Approval	203 *	2	07SEP2010 A	28MAR2011	437d
DPD203020	CEPT: AIP E&M GA Drg Submission	30	2	07SEP2010 A	06OCT2010	47d
DPD203030	CEPT: AIP E&M Checking and Approval	42	2	07OCT2010	17NOV2010	235d
DPD203100	CEPT: E&M Equipment Submission	70	2	30SEP2010	08DEC2010	67d
DPD203200	CEPT: E&M Equipment Checking and Approval	70	2	17JAN2011	27MAR2011	28d
DPD203300	CEPT: DDA E&M Detail Arrangement Drawing	70	2	09NOV2010	17JAN2011	437d
DPD203400	CEPT: DDA E&M Detail Arg't. Drg Check & Approval	70	2	18JAN2011	28MAR2011	437d
DPD300000	UV Channel: AIP and DDA	239 *	2	02NOV2010	28JUN2011	147d
DPD300050	UV : AIP Civil GA Drg Submission	25	3	02NOV2010	06DEC2010	102d
DPD300060	UV: AIP Civil Checking and Approval	35	2	07DEC2010	10JAN2011	153d
DPD300740	UV: DDA Fdn / Structural Submission	65	3	11JAN2011	18APR2011	101d
DPD300780	UV: DDA Fdn / Structural Checking and Approval	71	2	19APR2011	28JUN2011	147d
DPD301720	UV: DDA Architectural Submission	15	3	25JAN2011	16FEB2011	257d
DPD301740	UV: DDA Architectural Checking and Approval	70	2	17FEB2011	27APR2011	375d
DPD301760	UV: DDA Landscape Submission	15	3	25JAN2011	16FEB2011	257d
DPD301780	UV: DDA Landscape Checking and Approval	70	2	17FEB2011	27APR2011	375d
DPD303000	UV: E&M Submission & Approval	275 *	2	07SEP2010 A	08JUN2011	14d
DPD303020	UV: AIP E&M GA Drg Submission	30	2	07SEP2010 A	29OCT2010	14d
DPD303030	UV: AIP E&M Checking and Approval	42	2	30OCT2010	10DEC2010	14d
DPD303100	UV: E&M Equipment Submission	70	2	11DEC2010	18FEB2011	14d
DPD303200	UV: E&M Equipment Checking and Approval	70	2	19FEB2011	29APR2011	234d



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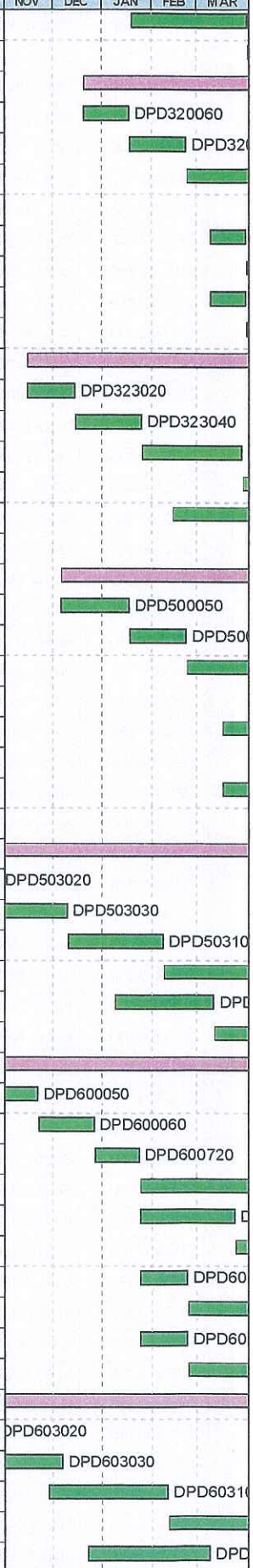
Activity ID	Description	Original Duration	Cal	Early Start	Early Finish	Total Float
DPD303300	UV: DDA E&M Detail Arrangement Drawing	70	2	20JAN2011	30MAR2011	14d
DPD303400	UV: DDA E&M Detail Arrang't Drg Check & Approval	70	2	31MAR2011	08JUN2011	14d
DPD320010	Reuse Water Pump Station: AIP and DDA	204 *	2	21DEC2010	12JUL2011	339d
DPD320060	RWPS: AIP Civil GA Drg Submission	20	3	21DEC2010	18JAN2011	232d
DPD320080	RWPS: AIP Civil Checking and Approval	35	2	19JAN2011	22FEB2011	342d
DPD320740	RWPS: DDA Fdn / Structural Submission	45	3	23FEB2011	29APR2011	234d
DPD320780	RWPS: DDA Fdn/Struct Checking and Approval	74	2	30APR2011	12JUL2011	339d
DPD321740	RWPS: DDA Architectural Submission	15	3	09MAR2011	29MAR2011	339d
DPD321750	RWPS: DDA Architectural Check & Approval	70	2	30MAR2011	07JUN2011	489d
DPD321760	RWPS: DDA Landscape Submission	15	3	09MAR2011	29MAR2011	339d
DPD321780	RWPS: DDA Landscape Check & Approval	70	2	30MAR2011	07JUN2011	489d
DPD323000	RWPS: E&M Submission & Approval	221 *	2	16NOV2010	24JUN2011	172d
DPD323020	RWPS: AIP E&M GA Drg Submission	30	2	16NOV2010	15DEC2010	55d
DPD323040	RWPS: AIP E&M Checking and Approval	42	2	16DEC2010	26JAN2011	55d
DPD323100	RWPS: E&M Equipment Submission	60	2	27JAN2011	27MAR2011	55d
DPD323200	RWPS: E&M Equipment Checking and Approval	70	2	28MAR2011	05JUN2011	55d
DPD323300	RWPS: DDA E&M Detail Arrangement Drawing	60	2	15FEB2011	15APR2011	172d
DPD323400	RWPS: DDA E&M Detail Arrangement Drg Approval	70	2	16APR2011	24JUN2011	172d
DPD500000	Chemical Building: AIP and DDA	218 *	2	07DEC2010	12JUL2011	246d
DPD500050	Chemical : AIP Civil GA Drg Submission	30	3	07DEC2010	18JAN2011	123d
DPD500060	Chemical: AIP Civil Checking and Approval	35	2	19JAN2011	22FEB2011	247d
DPD500740	Chemical: DDA Fdn / Structural Submission	45	3	23FEB2011	29APR2011	168d
DPD500780	Chemical: DDA Fdn/Structural Checking & Approval	74	2	30APR2011	12JUL2011	246d
DPD501720	Chemical: DDA Architectural Submission	15	3	16MAR2011	06APR2011	228d
DPD501740	Chemical: DDA Architectural Checking & Approval	70	2	07APR2011	15JUN2011	333d
DPD501750	Chemical: DDA Landscape Submission	15	3	16MAR2011	06APR2011	228d
DPD501780	Chemical: DDA Landscape Checking and Approval	70	2	07APR2011	15JUN2011	333d
DPD503000	Chemical: E&M Submission & Approval	235 *	2	27SEP2010 A	19MAY2011	44d
DPD503020	Chemical: AIP E&M GA Drg Submission	30	2	27SEP2010 A	29OCT2010	44d
DPD503030	Chemical: AIP E&M Checking and Approval	42	2	30OCT2010	10DEC2010	44d
DPD503100	Chemical: E&M Equipment Submission	60	2	11DEC2010	08FEB2011	44d
DPD503200	Chemical: E&M Equipment Checking and Approval	70	2	09FEB2011	19APR2011	224d
DPD503300	Chemical: DDA E&M Detail Arrangement Drawing	60	2	10JAN2011	10MAR2011	44d
DPD503400	Chemical: DDA E&M Detail Arrang't Drg Approval	70	2	11MAR2011	19MAY2011	44d
DPD600000	Sludge Facilities: AIP and DDA	249 *	2	27SEP2010 A	02JUN2011	139d
DPD600050	Sludge : AIP Civil GA Drg Submission	40	3	27SEP2010 A	22NOV2010	94d
DPD600060	Sludge: AIP Civil Checking and Approval	35	2	23NOV2010	27DEC2010	139d
DPD600720	Sludge: DDA Foundation Submission	20	3	28DEC2010	24JAN2011	92d
DPD600740	Sludge: DDA Foundation Checking and Approval	72	2	25JAN2011	06APR2011	196d
DPD600960	Sludge: DDA Structural Submission	40	3	25JAN2011	23MAR2011	92d
DPD600980	Sludge: DDA Structural Checking and Approval	71	2	24MAR2011	02JUN2011	139d
DPD601720	Sludge: DDA Architectural Submission	20	3	25JAN2011	23FEB2011	291d
DPD601740	Sludge: DDA Architectural Checking and Approval	70	2	24FEB2011	04MAY2011	421d
DPD601760	Sludge: DDA Landscape Submission	20	3	25JAN2011	23FEB2011	332d
DPD601780	Sludge: DDA Landscape Checking and Approval	70	2	24FEB2011	04MAY2011	478d
DPD603000	Sludge: AIP E&M GA Drg Submission	248 *	2	12SEP2010 A	17MAY2011	344d
DPD603020	Sludge: AIP E&M GA Drg Submission	30	2	12SEP2010 A	26OCT2010	135d
DPD603030	Sludge: AIP E&M Checking and Approval	42	2	27OCT2010	07DEC2010	135d
DPD603100	Sludge: E&M Equipment Submission	75	2	29NOV2010	11FEB2011	39d
DPD603200	Sludge: E&M Equipment Checking and Approval	70	2	12FEB2011	22APR2011	39d
DPD603300	Sludge: E&M Detail Arrangement Drawing	75	2	24DEC2010	08MAR2011	141d



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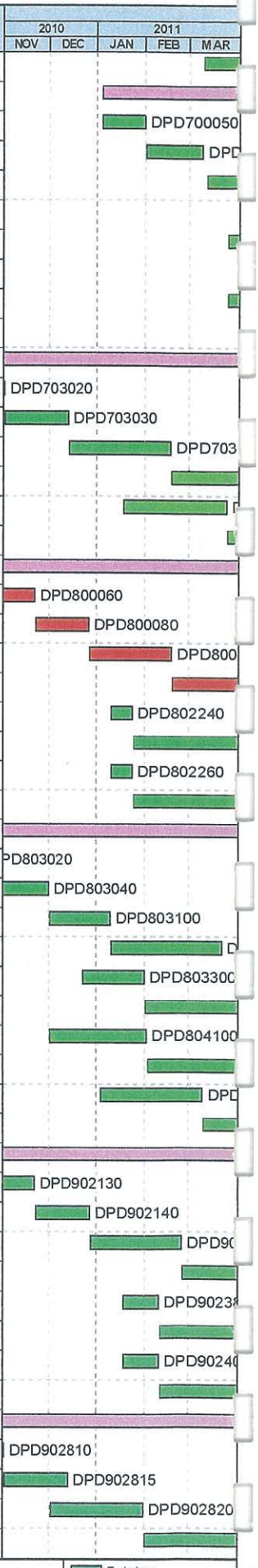
DPD603400	Sludge: E&M Detail Arrangement Drawing	70	2	09MAR2011	17MAY2011	344d
DPD700010	Deodourisation Facilities: AIP and DDA	191 *	2	05JAN2011	14JUL2011	199d
DPD700050	DOU : AIP Civil GA Drg Submission	20	3	05JAN2011	01FEB2011	123d
DPD700060	DOU: AIP Civil Checking and Approval	35	2	02FEB2011	08MAR2011	205d
DPD700740	DOU: DDA Fdn / Structural Submission	35	3	11MAR2011	04MAY2011	137d
DPD700780	DOU: DDA Fdn / Structural Checking and Approval	71	2	05MAY2011	14JUL2011	199d
DPD701720	DOU: DDA Architectural Submission	15	3	25MAR2011	19APR2011	239d
DPD701740	DOU: DDA Architectural Checking & Approval	70	2	20APR2011	28JUN2011	344d
DPD701750	DOU: DDA Landscape Submission	15	3	25MAR2011	19APR2011	263d
DPD701780	DOU: DDA Landscape Checking and Approval	70	2	20APR2011	28JUN2011	378d
DPD703000	DOU: E&M Submission & Approval	239 *	2	07OCT2010 A	02JUN2011	322d
DPD703020	DOU: AIP E&M GA Drg Submission	30	2	07OCT2010 A	02NOV2010	31d
DPD703030	DOU: AIP E&M Checking and Approval	42	2	03NOV2010	14DEC2010	31d
DPD703100	DOU: E&M Equipment Submission	65	2	15DEC2010	17FEB2011	31d
DPD703200	DOU: E&M Equipment Checking and Approval	70	2	18FEB2011	28APR2011	31d
DPD703300	DOU: DDA E&M Detail Arrangement Drawing	65	2	19JAN2011	24MAR2011	225d
DPD703400	DOU: DDA E&M Detail Arrang't Drg Approval	70	2	25MAR2011	02JUN2011	322d
DPD800000	New Administration Building: AIP and DDA	186 *	2	26OCT2010	29APR2011	0
DPD800060	Admin Bldg: AIP Civil GA Drg Submission	20	3	26OCT2010	22NOV2010	0
DPD800080	Admin Bldg: AIP Civil Checking and Approval	35	2	23NOV2010	27DEC2010	0
DPD800740	Admin Bldg: DDA Fdn / Structural Submission	37	3	28DEC2010	18FEB2011	0
DPD800750	Admin Bldg: DDA Fdn/Struct Checking and Approval	70	2	19FEB2011	29APR2011	0
DPD802240	Admin Bldg: DDA Architectural Submission	10	3	11JAN2011	24JAN2011	92d
DPD802250	Admin Bldg: DDA Architectural Check & Approval	70	2	25JAN2011	04APR2011	140d
DPD802260	Admin Bldg: DDA Landscape Submission	10	3	11JAN2011	24JAN2011	193d
DPD802270	Admin Bldg: DDA Architectural Check & Approval	70	2	25JAN2011	04APR2011	284d
DPD803000	Admin Bldg: E&M Submission & Approval	234 *	2	27SEP2010 A	18MAY2011	324d
DPD803020	Admin Bldg: AIP E&M GA Drg Submission	30	2	27SEP2010 A	20OCT2010	26d
DPD803040	Admin Bldg: AIP E&M Checking and Approval	42	2	21OCT2010	01DEC2010	26d
DPD803100	Admin Bldg: E&M Equipment Submission	40	2	02DEC2010	10JAN2011	48d
DPD803200	Admin Bldg: E&M Equipment Approval	70	2	11JAN2011	21MAR2011	48d
DPD803300	Admin Bldg: DDA E&M Detail Arrangement Drawing	40	2	24DEC2010	01FEB2011	382d
DPD803400	Admin Bldg: DDA E&M Detail Drg Check & Approval	70	2	02FEB2011	12APR2011	382d
DPD804100	Admin Bldg: DDA Building Services Submission	63	2	02DEC2010	02FEB2011	324d
DPD804200	Admin Bldg: DDA Building Services Check&Approval	70	2	03FEB2011	13APR2011	381d
DPD804300	Admin Bldg: DDA Building Services Drg Submission	65	2	04JAN2011	09MAR2011	324d
DPD804400	Admin Bldg: DDA Building Services Drg Check App	70	2	10MAR2011	18MAY2011	324d
DPD902000	Electrical Building No. 1: AIP and DDA	192 *	2	26OCT2010	05MAY2011	70d
DPD902130	Elect Bldg 1: AIP Civil GA Drg Submission	20	3	26OCT2010	22NOV2010	48d
DPD902140	Elect Bldg 1: AIP Civil Checking and Approval	36	2	23NOV2010	28DEC2010	68d
DPD902250	Elect Bldg 1: DDA Fdn / Structural Submission	40	3	29DEC2010	24FEB2011	46d
DPD902260	Elect Bldg 1: DDA Fdn/Struct Checking & Approval	70	2	25FEB2011	05MAY2011	70d
DPD902380	Elect Bldg 1: DDA Architectural Submission	15	3	19JAN2011	10FEB2011	215d
DPD902390	Elect Bldg 1: DDA Architectural Check & Approval	70	2	11FEB2011	21APR2011	314d
DPD902400	Elect Bldg 1: DDA Landscape Submission	15	3	19JAN2011	10FEB2011	215d
DPD902410	Elect Bldg 1: DDA Landscape Check & Approval	70	2	11FEB2011	21APR2011	314d
DPD902800	Elect Bldg 1: E&M Submission & Approval	187 *	2	07OCT2010 A	11APR2011	180d
DPD902810	Elect Bldg 1: AIP E&M GA Drg Submission	30	2	07OCT2010 A	02NOV2010	60d
DPD902815	Elect Bldg 1: AIP E&M Checking and Approval	42	2	03NOV2010	14DEC2010	82d
DPD902820	Elect Bldg 1: E&M Equipment Submission	60	2	03DEC2010	31JAN2011	60d
DPD902830	Elect Bldg 1: E&M Equipment Checking & Approval	70	2	01FEB2011	11APR2011	60d



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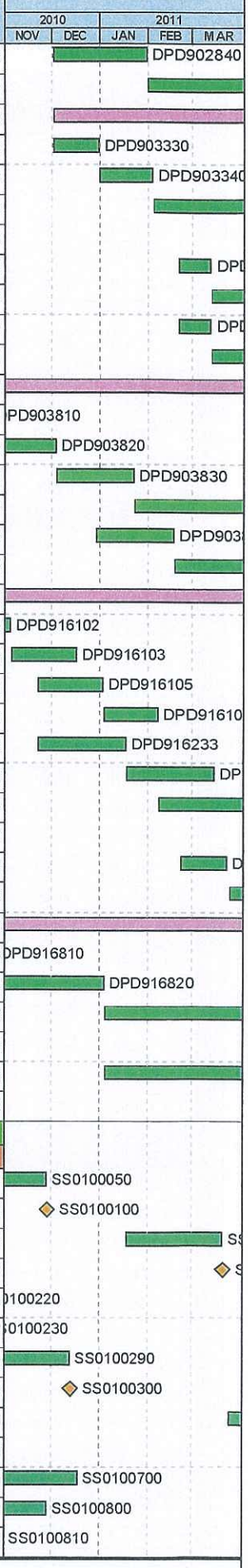
DPD902840	Elect Bldg 1: E&M Detail Arrangement Drawing	60	2	03DEC2010	31JAN2011	79d
DPD902850	Elect Bldg 1: E&M Detail Arrang't Drg Approval	70	2	01FEB2011	11APR2011	180d
DPD903305	Electrical Building No. 2/3: AIP and DDA	195 *	2	03DEC2010	15JUN2011	378d
DPD903330	Elect Bldg 2/3: AIP Civil GA Drg Submission	20	3	03DEC2010	31DEC2010	20d
DPD903340	Elect Bldg 2/3: AIP Civil Check and Approval	35	2	01JAN2011	04FEB2011	29d
DPD903450	Elect Bldg 2/3: DDA Fdn / Structural Submission	56	2	05FEB2011	01APR2011	29d
DPD903460	Elect Bldg 2/3: DDA Fdn/Struct Checking&Approval	75	2	02APR2011	15JUN2011	29d
DPD903570	Elect Bldg 2/3: DDA Architectural Submission	15	3	21FEB2011	11MAR2011	204d
DPD903580	Elect Bldg 2/3: DDA Architect' Check & Approval	70	2	12MAR2011	20MAY2011	300d
DPD903590	Elect Bldg 2/3: DDA Landscape Submission	15	3	21FEB2011	11MAR2011	204d
DPD903600	Elect Bldg 2/3: DDA Landscape Check & Approval	70	2	12MAR2011	20MAY2011	300d
DPD903800	Elect Bldg 2/3: E&M Submission & Approval	214 *	2	27SEP2010 A	28APR2011	426d
DPD903810	Elect Bldg 2/3: AIP E&M GA Drg Submission	30	2	27SEP2010 A	23OCT2010	31d
DPD903820	Elect Bldg 2/3: AIP E&M Checking and Approval	42	2	24OCT2010	04DEC2010	31d
DPD903830	Elect Bldg 2/3: E&M Equipment Submission	50	2	05DEC2010	23JAN2011	31d
DPD903840	Elect Bldg 2/3: E&M Equip't Checking & Appr	70	2	24JAN2011	03APR2011	31d
DPD903850	Elect Bldg 2/3: DDA E&M Detail Arrangement Drg	50	2	30DEC2010	17FEB2011	62d
DPD903860	Elect Bldg 2/3: DDA E&M Detail Drg Approval	70	2	18FEB2011	28APR2011	426d
DPD916100	Miscellaneous Works: AIP and DDA	253 *	2	07OCT2010	16JUN2011	27d
DPD916102	Mis: AIP E&M GA Drg Submission	30	2	07OCT2010	05NOV2010	82d
DPD916103	Mis: AIP E&M Checking and Approval	42	2	06NOV2010	17DEC2010	123d
DPD916105	Mis: AIP Civil GA Drg Submission	42	2	23NOV2010	03JAN2011	48d
DPD916106	Mis: AIP Civil Checking and Approval	35	2	04JAN2011	07FEB2011	48d
DPD916233	Mis: AIP Aesthetic&Landscape Design	40	3	23NOV2010	18JAN2011	100d
DPD916234	Mis: AIP Aesthetic&Landscape Approval	54	2	19JAN2011	13MAR2011	150d
DPD916236	Mis: DDA Civil Works Submission	40	3	08FEB2011	04APR2011	34d
DPD916238	Mis: DDA Civil Works Checking & Approval	73	2	05APR2011	16JUN2011	53d
DPD916365	Mis: DDA Landscape Submission	20	3	22FEB2011	21MAR2011	101d
DPD916368	Mis: DDA Landscape Checking & Approval	70	2	23MAR2011	31MAY2011	150d
DPD916800	Mis: E&M Submission & Approval	260 *	2	27SEP2010 A	13JUN2011	399d
DPD916810	Mis: AIP &M Submission	30	2	27SEP2010 A	26OCT2010	29d
DPD916820	Mis: AIP E&M Checking and Approval	70	2	27OCT2010	04JAN2011	29d
DPD916830	Mis: E&M Equipment Submission	90	2	05JAN2011	04APR2011	29d
DPD916840	Mis: E&M Equipment Checking and Approval	70	2	05APR2011	13JUN2011	329d
DPD916850	Mis: E&M Detail Arrangement Drg Submission	90	2	05JAN2011	04APR2011	29d
DPD916860	Mis: E&M Detail Arrang't Drg Check /Approval	70	2	05APR2011	13JUN2011	399d
Statutory Submission						
Submission and Approval						
SS0100050	DSD &ASD - GBP Submission and Approval	60	2	30SEP2010	28NOV2010	434d
SS0100100	DSD &ASD - Approve Architectural Design & Finish	0	2		28NOV2010	434d
SS0100190	DSD, AFCD & ASD - Landscape Submission /Approval	60	2	19JAN2011	19MAR2011	863d
SS0100200	DSD, AFCD& ASD - Approval for Landscaping Design	0	2		19MAR2011	863d
SS0100220	DSD, Lands - Tree Transplant Submit /Approval	28	2	11SEP2010 A	13OCT2010	8d
SS0100230	DSD, LCSD & Lands - Approval for Tree Transplant	0	2		13OCT2010	8d
SS0100290	GEO - Geotechnical Submission and Approval	60	2	15OCT2010	13DEC2010	59d
SS0100300	GEO - Approval for Geotechnical Matters	0	2		13DEC2010	59d
SS0100400	EPD - Sewage Discharge License Approval	90	2	23MAR2011	20JUN2011	343d
SS0100410	EPD - Approval for Sewage Discharge	0	2		20JUN2011	648d
SS0100700	WSD & ASD- Approve Water Supply /Plumbing issue	60	2	20OCT2010	18DEC2010	771d
SS0100800	FSD - Approve Fire Safety / Services Aspects	60	2	30SEP2010	28NOV2010	127d
SS0100810	EPD - Register of Changes under Environ. Permit	35	1	13SEP2010 A	01NOV2010	99d



Start date	14JUL2010
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Early bar
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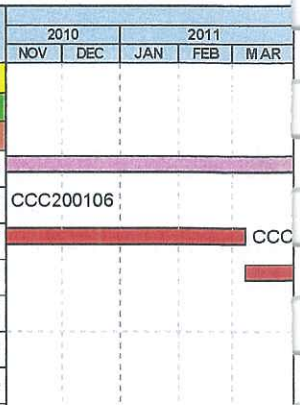
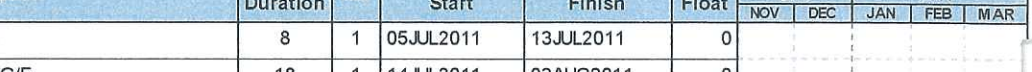
Activity ID	Description	Original Duration	Cal	Early Start	Early Finish	Total Float
Civil and Structural Works						
Chemically Enhanced Primary Treatement System						
Building and Structures						
CCC200100	Structural Works for CEPT Tanks	494 *	1	01NOV2010	10JUL2012	1d
CCC200106	CEPT Tank: Mobilization	6	1	25OCT2010	01NOV2010	0
CCC200110	CEPT Tank: Temporary Earth Lateral Support	100	1	01NOV2010	07MAR2011	0
CCC200120	CEPT Tank: Mini-pile and Testing	85	1	07MAR2011	22JUN2011	0
CCC200130	CEPT Tank: Excavation	48	1	22JUN2011	18AUG2011	0
CCC200140	CEPT Tank: Raft Foundation	48	1	18AUG2011	17OCT2011	0
CCC200150	CEPT Tank: Substructure - Walls	84	1	17OCT2011	01FEB2012	0
CCC200160	CEPT Tank: Superstructure-Grd Floor Slab	56	1	01FEB2012	07APR2012	0
CCC200170	CEPT Tank: ABWF Work	40	1	11APR2012	04JUN2012	1d
CCC200175	CEPT Tank: Remaining ABWF Work	30	1	04JUN2012	10JUL2012	1d
CCC200180	CEPT Tank: Backfilling	43	1	07APR2012	04JUN2012	1d
CCC200835	CEPT: Water test	58	2	07APR2012	04JUN2012	0
New Preliminary Treatment Works						
Building and Structures						
CCC100100	Structural Work for New Prelim Treatment Work	546 *	1	01NOV2010	08SEP2012	60d
CCC100110	PTW : Temporary Earth Lateral Support	80	1	01NOV2010	11FEB2011	0
CCC100120	PTW: Mini-pile Construction and Testing	54	1	11FEB2011	20APR2011	0
CCC110130	PTW: Excavation (Phase A)	48	1	20APR2011	18JUN2011	0
CCC110140	PTW: Raft foundation - 1000 ~ 1500mm thk.	48	1	18JUN2011	15AUG2011	0
CCC110150	PTW: Substructure - Walls and Columns	48	1	15AUG2011	13OCT2011	0
CCC110155	PTW: Backfilling	30	1	13OCT2011	17NOV2011	0
CCC110160	PTW: Roof Slab & Beams	50	1	17NOV2011	18JAN2012	22d
CCC110170	PTW: ABWF Work	48	1	18JAN2012	20MAR2012	22d
CCC110180	PTW: Water Tightness Test (Phase A)	35	1	19APR2012	02JUN2012	0
CCC130190	PTW: Excavation (Phase B)	30	2	13OCT2011	12NOV2011	0
CCC130200	PTW: Raft foundation	35	1	12NOV2011	23DEC2011	0
CCC130210	PTW: Substructure - Walls and Columns	36	1	23DEC2011	13FEB2012	0
CCC130220	PTW: Roof Slab & Beams	36	1	13FEB2012	26MAR2012	0
CCC130230	PTW: ABWF Work	50	1	26MAR2012	31MAY2012	0
CCC130240	PTW: Backfilling	24	1	26MAR2012	27APR2012	46d
CCC130250	PTW: Water Tightness Test (Phase B)	31	2	02MAY2012	02JUN2012	0
CCC160300	PTW: Flowmeter Chamber & Pipe works	75	1	12JUN2012	08SEP2012	60d
CCC160560	PTW: MCC Room	120	1	18JAN2012	20JUN2012	120d
CCC160580	PTW: Steel Structure for Pipe Bridge	90	1	27APR2012	15AUG2012	60d
Disinfection System						
Building and Structures						
CCC300110	Structural Works for Disinfection System	451 *	1	11FEB2011	22AUG2012	5d
CCC300120	UV:Temporary Earth Lateral Support	80	1	11FEB2011	23MAY2011	153d
CCC300130	UV: Excavation	36	1	17NOV2011	31DEC2011	5d
CCC300140	UV: Raft Foundation 900mm thk	48	1	31DEC2011	03MAR2012	5d
CCC300150	UV: Substructure - Walls & Columns	45	1	03MAR2012	30APR2012	5d
CCC300160	UV: Superstructure - Roof & Beam	48	1	30APR2012	28JUN2012	5d
CCC300170	UV: ABWF Work	40	1	28JUN2012	15AUG2012	5d
CCC300180	UV: Backfilling	20	1	30JUL2012	22AUG2012	5d
CCC300190	UV: Water Tightness Test	30	2	23JUL2012	22AUG2012	6d
Sludge Treatment Facilities						
Building and Structures						
CCC600200	Sludge Dewatering Bldg &Sludge Skip Loading Area	286 *	1	19OCT2011	07OCT2012	0
CCC600210	SDB: Temporary Earth Lateral Support	42	1	19OCT2011	07DEC2011	1d



Activity ID	Description	Original Duration	Cal	Early Start	Early Finish	Total Float
CCC600220	SDB: Excavation - Stage 1	24	1	07DEC2011	07JAN2012	1d
CCC600230	SDB: Raft Foundation - 1500mm thk	48	1	07JAN2012	09MAR2012	1d
CCC600240	SDB: Excavation - Stage 2	36	1	09MAR2012	25APR2012	1d
CCC600250	SDB: Substructure - Walls and Columns	28	1	25APR2012	31MAY2012	1d
CCC600260	SDB: Beams & Slab at G/F	12	1	31MAY2012	14JUN2012	1d
CCC600270	SDB: Backfilling Work	12	1	14JUN2012	28JUN2012	1d
CCC600280	SDB: Walls & Columns - G/F to 1/F	24	1	28JUN2012	27JUL2012	1d
CCC600290	SDB: Beams & Slabs at 1/F	12	1	27JUL2012	10AUG2012	1d
CCC600300	SDB: Walls & Columns - 1/F to R/F	12	1	10AUG2012	24AUG2012	1d
CCC600310	SDB: Beams & Slab at R/F	12	1	24AUG2012	07SEP2012	1d
CCC600315	SDB: Water Tightness Test	30	2	07SEP2012	07OCT2012	1d
CCC600320	SDB: ABWF Work	48	1	03AUG2012	28SEP2012	4d
CCC600400	Sludge Skip Storage Building	77 *	1	28JUN2012	27SEP2012	5d
CCC600410	Skip Storage Bldg: Excavation	10	1	28JUN2012	11JUL2012	5d
CCC600420	Skip Storage Bldg: Raft Foundation - 700mm thk	12	1	11JUL2012	25JUL2012	5d
CCC600430	Skip Storage Bldg: Columns - G/G to 1/F	12	1	25JUL2012	08AUG2012	5d
CCC600440	Skip Storage Bldg: Roof Slab & Beams	18	1	08AUG2012	29AUG2012	5d
CCC600450	Skip Storage Bldg: ABWF Work	25	1	29AUG2012	27SEP2012	5d
Septic Waste Collection Facilities						
Building and Structures						
CCC150100	Structure for Septic Waste Collection Facilities	148 *	1	10APR2012	10OCT2012	18d
CCC150110	Septic: Temp Earth Lateral Support	24	1	10APR2012	12MAY2012	17d
CCC150120	Septic: Excavation	8	1	12MAY2012	22MAY2012	17d
CCC150130	Septic: Underground Pipe Trench	14	1	22MAY2012	09JUN2012	17d
CCC150140	Septic: Backfilling Work	12	1	09JUN2012	23JUN2012	17d
CCC150150	Septic: Raft Foundation - 800mm thk	8	1	23JUN2012	04JUL2012	17d
CCC150160	Septic: Wall & Column - Footing to Roof	14	1	04JUL2012	20JUL2012	17d
CCC150170	Septic: Roof Slab & Beams	14	1	20JUL2012	06AUG2012	17d
CCC150180	Septic: ABWF Work	30	1	06AUG2012	10SEP2012	17d
CCC150190	Septic: Water Tightness Test	30	2	10SEP2012	10OCT2012	21d
Auxiliary Building						
Building and Structures						
CCC320100	Structural Works for Reuse water Pump Station	135 *	1	04JUN2012	12NOV2012	11d
CCC320110	RWPS: Temp Earth Lateral Support	22	1	04JUN2012	29JUN2012	11d
CCC320120	RWPS: Excavation	12	1	29JUN2012	14JUL2012	11d
CCC320130	RWPS: Foundation	22	1	14JUL2012	09AUG2012	11d
CCC320140	RWPS: Backfilling Work	15	1	09AUG2012	27AUG2012	11d
CCC320150	RWPS: Substructure - Columns & Walls	24	1	27AUG2012	24SEP2012	11d
CCC320160	RWPS: Roof Slab & Beams	20	1	24SEP2012	19OCT2012	11d
CCC320170	RWPS: ABWF Works	20	1	19OCT2012	12NOV2012	11d
CCC500100	Structural Works for Chemical Building	111 *	1	09MAR2012	26JUL2012	5d
CCC500110	Chemical Bldg: Excavation	12	1	09MAR2012	23MAR2012	5d
CCC500120	Chemical Bldg: Raft Fdn - 750 thk, On-Grade Slab	14	1	23MAR2012	10APR2012	5d
CCC500130	Chemical Bldg: Walls & Columns	20	1	10APR2012	08MAY2012	5d
CCC500140	Chemical Bldg: Roof Slab & Beam	30	1	08MAY2012	14JUN2012	5d
CCC500150	Chemical Bldg: ABWF Works	35	1	14JUN2012	26JUL2012	5d
CCC800100	Structural Works for New Administration Building	275 *	1	30APR2011	02APR2012	0
CCC800110	Admin Bldg: Excavation	10	1	30APR2011	13MAY2011	0
CCC800120	Admin Bldg: Raft Foundation - 800mm thk	12	1	14MAY2011	27MAY2011	0
CCC800130	Admin Bldg: Substructure - Walls & Columns	12	1	28MAY2011	11JUN2011	0
CCC800140	Admin Bldg: Underground Drainage Work	18	1	13JUN2011	04JUL2011	0

Activity ID	Description	Original Duration	Cal	Early Start	Early Finish	Total Float
CCC800150	Admin Bldg: Backfilling Works	8	1	05JUL2011	13JUL2011	0
CCC800160	Admin Bldg: Beams & Slab at G/F	18	1	14JUL2011	03AUG2011	0
CCC800180	Admin Bldg: Water Tank - Base Slab	8	1	04AUG2011	12AUG2011	0
CCC800190	Admin Bldg: Water Tank - Walls	8	1	13AUG2011	22AUG2011	0
CCC800200	Admin Bldg: Water Tank - Roof Slab & Beams	12	1	23AUG2011	05SEP2011	0
CCC800210	Admin Bldg: Water Tank - Watertightness Test	12	1	06SEP2011	20SEP2011	0
CCC800220	Admin Bldg: Walls & Columns - G/F to 1/F	20	1	21SEP2011	15OCT2011	0
CCC800230	Admin Bldg: Beams & Slab at 1/F	20	1	17OCT2011	08NOV2011	0
CCC800240	Admin Bldg: Walls & Columns - 1/F to R/F	20	1	09NOV2011	01DEC2011	0
CCC800250	Admin Bldg: Beams & Slab at R/F	20	1	02DEC2011	27DEC2011	0
CCC800260	Admin Bldg: Walls & Columns - R/F to TRF	14	1	28DEC2011	13JAN2012	0
CCC800270	Admin Bldg: Beams & Slab at TR/F	14	1	14JAN2012	04FEB2012	0
CCC800280	Admin Bldg: ABWF Works	49	1	06FEB2012	02APR2012	0
CCC910100	Structural Works for Electrical Building 1	246 *	1	16JUN2011	12APR2012	24d
CCC910110	Elect Bldg 1: Excavation	60	1	16JUN2011	25AUG2011	24d
CCC910120	Elect Bldg 1: Fdn-Cable Trench &On-Grade Slab	60	1	26AUG2011	07NOV2011	24d
CCC910130	Elect Bldg 1: Walls - G/F to R/F	26	1	08NOV2011	07DEC2011	24d
CCC910140	Elect Bldg 1: Roof Slab	40	1	08DEC2011	01FEB2012	24d
CCC910150	Elect Bldg 1: ABWF Work	60	1	02FEB2012	12APR2012	24d
CCC920100	Structural Works for Electrical Building 2	108 *	1	08MAR2012	21JUL2012	13d
CCC920110	Elect Bldg 2: Excavation	6	1	08MAR2012	15MAR2012	13d
CCC920120	Elect Bldg 2: Fdn-Cable Trench &On-Grade Slab	18	1	15MAR2012	06APR2012	13d
CCC920130	Elect Bldg 2: Walls - G/F to R/F	12	1	06APR2012	24APR2012	13d
CCC920140	Elect Bldg 2: Roof Slab	24	1	24APR2012	24MAY2012	13d
CCC920150	Elect Bldg 2: ABWF Work	48	1	24MAY2012	21JUL2012	13d
CCC930100	Structural Works for Electrical Building 3	114 *	1	31DEC2011	26MAY2012	23d
CCC930110	Elect Bldg 3: Excavation	6	1	31DEC2011	09JAN2012	23d
CCC930120	Elect Bldg 3: Fdn-Cable Trench &On-Grade Slab	18	1	09JAN2012	04FEB2012	23d
CCC930130	Elect Bldg 3: Walls - G/F to R/F	12	1	04FEB2012	18FEB2012	23d
CCC930140	Elect Bldg 3: Roof Slab	30	1	18FEB2012	24MAR2012	23d
CCC930150	Elect Bldg 3: ABWF Work	48	1	24MAR2012	26MAY2012	23d
CCC970100	Structural Works for Gate House	79 *	1	06FEB2012	12MAY2012	287d
CCC970110	Gate House: Excavation	6	1	06FEB2012	11FEB2012	288d
CCC970120	Gate House: Foundation	10	1	13FEB2012	23FEB2012	288d
CCC970130	Gate House: Backfilling Work	5	1	24FEB2012	29FEB2012	288d
CCC970140	Gate House: Superstructure	36	1	01MAR2012	12APR2012	288d
CCC970150	Gate House: ABWF Works	30	2	13APR2012	12MAY2012	356d
Odour Control Facilities						
Building and Structures						
CCC710100	Structure for Odour Control Facilities-Portion A	95 *	1	17NOV2011	16MAR2012	107d
CCC710110	DOU A: Excavation	14	1	17NOV2011	03DEC2011	107d
CCC710120	DOU A: 3000(W) x 3000(D) PipeTrench	28	1	03DEC2011	09JAN2012	107d
CCC710130	DOU A: Backfilling Work	10	1	09JAN2012	20JAN2012	107d
CCC710140	DOU A: On-Grade Slab	14	1	20JAN2012	11FEB2012	107d
CCC710150	DOU A: Conc Plinth / Walls / Roof Slab & Beam	14	1	11FEB2012	28FEB2012	107d
CCC710160	DOU A: ABWF Work	15	1	28FEB2012	16MAR2012	107d
CCC720100	Structure for Odour Control Facilities-Portion B	91 *	1	28JUN2012	16OCT2012	10d
CCC720110	DOU B: Excavation	14	1	28JUN2012	16JUL2012	10d
CCC720120	DOU B: 3000(W) x 3000(D) PipeTrench	24	1	16JUL2012	13AUG2012	10d
CCC720130	DOU B: Backfilling Work	10	1	13AUG2012	24AUG2012	10d
CCC720140	DOU B: On-Grade Slab	14	1	24AUG2012	10SEP2012	10d



Activity ID	Description	Original Duration	Cal	Early Start	Early Finish	Total Float
CCC720150	DOU B: Conc Plinth / Walls / Roof Slab & Beam	14	1	10SEP2012	26SEP2012	10d
CCC720160	DOU B: ABWF Work	15	1	26SEP2012	16OCT2012	10d
Landscaping Wroks						
Miscellaneous Works						
CCL000100	Landscaping	48 *	1	28SEP2013	26NOV2013	0
CCL000110	Landscape Preparation Works	8	1	28SEP2013	09OCT2013	0
CCL000120	Planting Works	8	1	09OCT2013	19OCT2013	0
CCL000130	Establishment Works	8	1	19OCT2013	29OCT2013	0
CCL000140	Landscape Softworks and Establishment Works	8	1	29OCT2013	07NOV2013	0
CCL000150	Tree Transplantation	8	1	07NOV2013	16NOV2013	0
CCL000160	Preservation and Protection of Trees	8	1	16NOV2013	26NOV2013	0
CCL000170	Irrigation System	8	1	28SEP2013	09OCT2013	0
Refurbishment and Renewal Works						
Miscellaneous Works						
CCM000100	Refurbishment and Renewal Works	320 *	1	17JUN2011	17JUL2012	104d
CCM000110	Refurbishment of Existing Buildings / Structures	320	1	17JUN2011	17JUL2012	104d
CCM000500	Replacement of Existing E&M Equipment	320	1	17JUN2011	17JUL2012	104d
Miscellaneous Works						
Miscellaneous Works						
CCM101000	Structural Works for Payment Flowmeter Chamber	163 *	1	23AUG2011	12MAR2012	263d
CCM101010	Payment FM Chamber: Temp Earth Lateral Support	20	1	23AUG2011	15SEP2011	263d
CCM101020	Payment FM Chamber: Excavation	21	1	16SEP2011	12OCT2011	263d
CCM101030	Payment FM Chamber: Base Slab	20	1	13OCT2011	04NOV2011	263d
CCM101040	Payment FM Chamber: Walls	21	1	05NOV2011	29NOV2011	263d
CCM101050	Payment FM Chamber: Roof Slab	21	1	30NOV2011	23DEC2011	263d
CCM101060	Payment FM Chamber: Installation of Flowmeter	60	1	27DEC2011	12MAR2012	263d
CCM101200	Structural Works for Boundary Wall	267 *	1	17JUN2011	12MAY2012	287d
CCM101210	Boundary Wall: Removal of Extg U-channel	90	1	17JUN2011	03OCT2011	324d
CCM101220	Boundary Wall: Excavation	90	1	12JUL2011	27OCT2011	324d
CCM101300	Boundary Wall: Footing	90	1	04AUG2011	19NOV2011	324d
CCM101350	Boundary Wall: Wall Stem	90	1	27AUG2011	13DEC2011	324d
CCM101400	Boundary Wall: Backfilling	45	1	15NOV2011	09JAN2012	324d
CCM101500	Boundary Wall: Provision of New U-channel	60	1	28FEB2012	12MAY2012	287d
CCM101600	Construction of Sitewide Roadworks	150	1	21MAR2013	23SEP2013	33d
CCM101700	Construction of EVA Roadwork	50	1	08FEB2013	18APR2013	33d
CCM101800	Installation of Sitewide Drainage	510	1	17JUN2011	07MAR2013	44d
CCM102000	Installation of Sitewide Sewerage	510	1	17JUN2011	07MAR2013	44d
CCM102030	Sewerage from PTW to CEPT	54	1	04JUN2012	07AUG2012	17d
CCM102040	Sewerage Overflow from CEPT to Extg manhole	60	1	07AUG2012	18OCT2012	17d
CCM102060	Sewerage bet UV Channel to extg Pump Station	72	1	28JUN2012	21SEP2012	131d
CCM102100	Laying Pipe Ducts, Trenches and Utilities	500	2	17JUN2011	28OCT2012	27d
CCM102110	Divert existing LV Cable at Fdn of Admin Bldg	32	1	10MAR2011	20APR2011	8d
CCM102120	Laying cable duct Elect. Bldg.1 for CLP and LV	60	1	08NOV2011	19JAN2012	190d
CCM102130	Laying cable duct Elect. Bldg.2 for CLP and LV	60	1	06APR2012	22JUN2012	97d
CCM102140	Laying cable duct Elect. Bldg.3 for CLP and LV	60	1	04FEB2012	19APR2012	177d
CCM102400	Demolition of Existing Admin Building & PTW	120 *	2	31MAY2013	28SEP2013	0
CCM102410	Demolish E&M Work at Extg Admin Bldg & PTW	30	2	31MAY2013	30JUN2013	0
CCM102510	Demolish Extg Structures of Admin Bldg & PTW	90	2	30JUN2013	28SEP2013	0
CCM102520	Backfill and Remove Sheet Pile	30	2	29AUG2013	28SEP2013	0
CCM102530	Construction of Car Park	28	2	28SEP2013	26OCT2013	31d
Statutory Works						
Electrical Supply and Energization - CLP						

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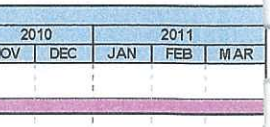
Activity ID	Description	Original Duration	Cal	Early Start	Early Finish	Total Float
Building and Structures						
SSE200000	CLP Works	896 *	2	28JUL2010 A	09JAN2013	28d
SSE200110	Electrical Building 1 and PTW Area	242 *	2	13APR2012	10DEC2012	31d
SSE200115	Application of Electricity to CLP	14	2	28JUL2010 A	10AUG2010 A	
SSE200120	Handover of Elec Bldg 1/ Trans Rm to CLP - Civil	30	2	13APR2012	12MAY2012	110d
SSE200130	Building Services Installation in Transformer Rm	40	2	13MAY2012	21JUN2012	110d
SSE200140	Handover Building Services Installation to CLP	30	2	22JUN2012	21JUL2012	110d
SSE200150	CLP to Install Transformer	60	2	22JUL2012	19SEP2012	110d
SSE200160	Handover Associated Cable Duct to CLP	30	2	30AUG2012	28SEP2012	71d
SSE200170	CLP to Install HV Cables	30	2	29SEP2012	28OCT2012	71d
SSE200180	Submit WRI to CLP and CLP Inspection	7	2	01DEC2012	07DEC2012	31d
SSE200190	CLP Install Energy Meter / Energize Power	3	2	08DEC2012	10DEC2012	31d
SSE200200	Electrical Building 2	164 *	2	21JUL2012	01JAN2013	21d
SSE200210	Handover of Elec Bldg 2 Tx Rm to CLP - Civil	30	2	21JUL2012	20AUG2012	22d
SSE200220	Building Services Installation in Transformer Rm	40	2	20AUG2012	29SEP2012	22d
SSE200230	Handover Building Services Installation to CLP	30	2	29SEP2012	29OCT2012	22d
SSE200240	CLP to Install Transformer	60	2	29OCT2012	28DEC2012	22d
SSE200250	Handover Associated Cable Duct to CLP	30	2	21JUL2012	20AUG2012	115d
SSE200260	CLP to Install HV Cables	30	2	20AUG2012	19SEP2012	115d
SSE200270	Submit WRI to CLP and CLP Inspection	7	2	22DEC2012	29DEC2012	21d
SSE200280	CLP Install Energy Meter / Energize Power	3	2	29DEC2012	01JAN2013	21d
SSE200300	Electrical Building 3	228 *	2	26MAY2012	09JAN2013	28d
SSE200310	Handover of Elec Bldg 3 Tx Rm to CLP - Civil	30	2	26MAY2012	25JUN2012	28d
SSE200320	Building Services Installation in Transformer Rm	40	2	25JUN2012	04AUG2012	28d
SSE200330	Handover Building Services Installation to CLP	30	2	04AUG2012	03SEP2012	28d
SSE200340	CLP to Install Transformer	60	2	03SEP2012	02NOV2012	28d
SSE200350	Handover Associated Cable Duct to CLP	30	2	02NOV2012	02DEC2012	28d
SSE200360	CLP to Install HV Cables	30	2	02DEC2012	01JAN2013	28d
SSE200370	Submit WRI to CLP and CLP Inspection	7	2	01JAN2013	08JAN2013	28d
SSE200380	CLP Install Energy Meter / Energize Power	1	2	08JAN2013	09JAN2013	28d
Fire Services - FSD						
Building and Structures						
SSF200400	Fire Services - FSD	61 *	2	18APR2013	18JUN2013	41d
SSF200410	Submit Form FS314 & FS501	1	2	18APR2013	19APR2013	41d
SSF200420	FS Inspection and re-inspection	30	2	19APR2013	19MAY2013	41d
SSF200430	FS Approval Certificate	30	2	19MAY2013	18JUN2013	41d
Plumbing - WSD						
Building and Structures						
SSP200500	Plumbing - WSD	61 *	2	22JAN2013	23MAR2013	6d
SSP200510	Submit WW046 Part 4 Request for Inspection	1	2	22JAN2013	22JAN2013	6d
SSP200520	WSD Inspection and Re-inspection	30	2	23JAN2013	21FEB2013	6d
SSP200530	WW046 Part 5	30	2	22FEB2013	23MAR2013	6d
Telecommunication						
Building and Structures						
SST200600	Telecommunication	67 *	2	29OCT2012	03JAN2013	60d
SST200610	Handover Plant Room and Cable Duct to Telecom Co	7	2	29OCT2012	04NOV2012	60d
SST200620	Telecom Co to Install Cable and Equipment	60	2	05NOV2012	03JAN2013	60d
E&M Works						
Procurement and Installation						
Building and Structures						
EMW001100	Penstocks to sewerage N1	26	1	08OCT2012	06NOV2012	0
EMW001200	Penstock at connection to outfall PS	22	1	21SEP2012	19OCT2012	131d
EMW110000	Coarse Screen System	438 *	1	06AUG2011	26JAN2013	2d



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Early bar
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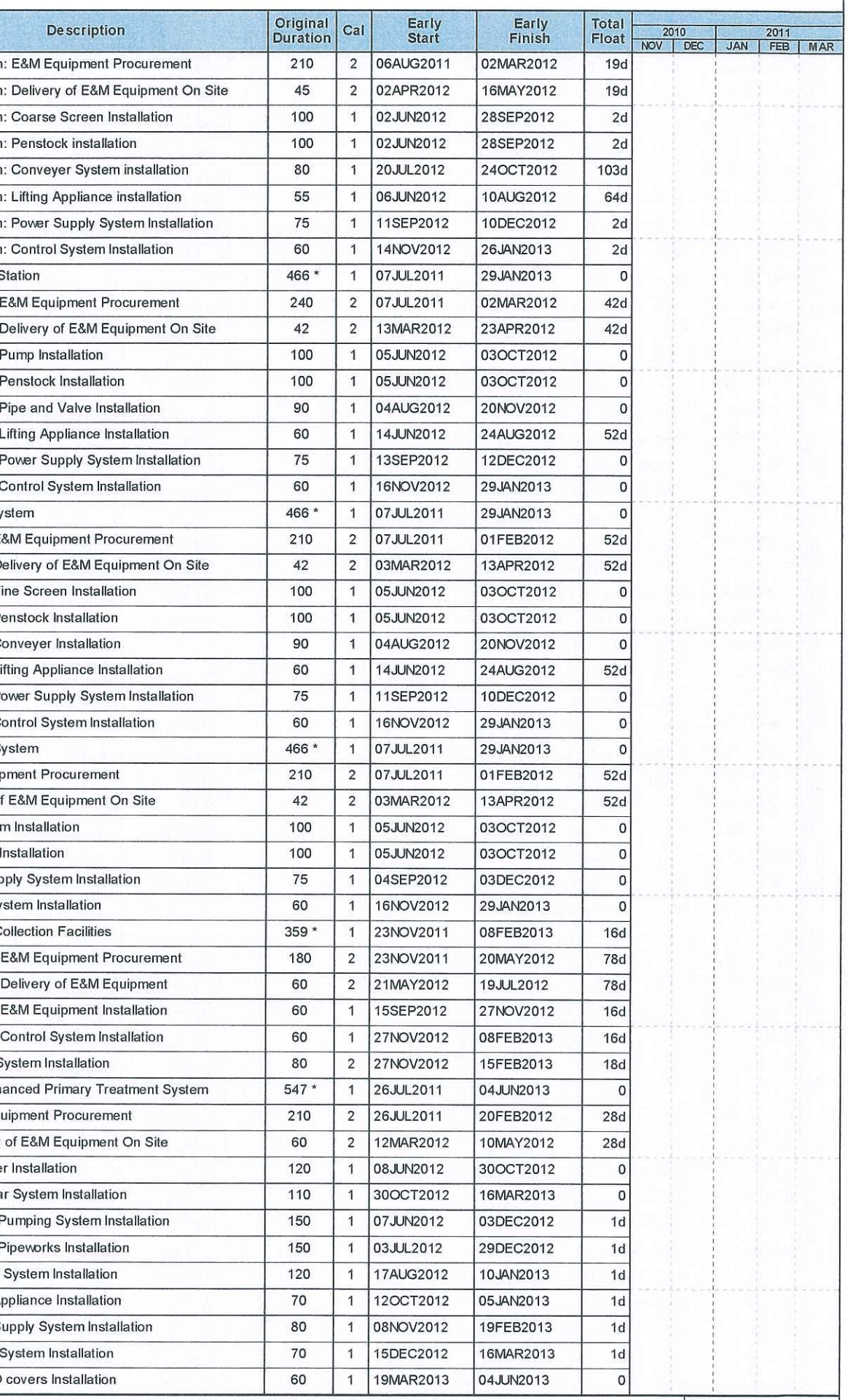
Summary bar
Start milestone point
Finish milestone point

Activity ID	Description	Original Duration	Cal	Early Start	Early Finish	Total Float
EMW110110	Coarse Screen: E&M Equipment Procurement	210	2	06AUG2011	02MAR2012	19d
EMW110120	Coarse Screen: Delivery of E&M Equipment On Site	45	2	02APR2012	16MAY2012	19d
EMW110130	Coarse Screen: Coarse Screen Installation	100	1	02JUN2012	28SEP2012	2d
EMW110140	Coarse Screen: Penstock installation	100	1	02JUN2012	28SEP2012	2d
EMW110150	Coarse Screen: Conveyer System installation	80	1	20JUL2012	24OCT2012	103d
EMW110160	Coarse Screen: Lifting Appliance installation	55	1	06JUN2012	10AUG2012	64d
EMW110170	Coarse Screen: Power Supply System Installation	75	1	11SEP2012	10DEC2012	2d
EMW110180	Coarse Screen: Control System Installation	60	1	14NOV2012	26JAN2013	2d
EMW120000	Inlet Pumping Station	466 *	1	07JUL2011	29JAN2013	0
EMW120210	Inlet Pump St: E&M Equipment Procurement	240	2	07JUL2011	02MAR2012	42d
EMW120220	Inlet Pump St: Delivery of E&M Equipment On Site	42	2	13MAR2012	23APR2012	42d
EMW120230	Inlet Pump St: Pump Installation	100	1	05JUN2012	03OCT2012	0
EMW120240	Inlet Pump St: Penstock Installation	100	1	05JUN2012	03OCT2012	0
EMW120250	Inlet Pump St: Pipe and Valve Installation	90	1	04AUG2012	20NOV2012	0
EMW120260	Inlet Pump St: Lifting Appliance Installation	60	1	14JUN2012	24AUG2012	52d
EMW120270	Inlet Pump St: Power Supply System Installation	75	1	13SEP2012	12DEC2012	0
EMW120280	Inlet Pump St: Control System Installation	60	1	16NOV2012	29JAN2013	0
EMW130000	Fine Screen System	466 *	1	07JUL2011	29JAN2013	0
EMW130310	Fine Screen: E&M Equipment Procurement	210	2	07JUL2011	01FEB2012	52d
EMW130320	Fine Screen: Delivery of E&M Equipment On Site	42	2	03MAR2012	13APR2012	52d
EMW130330	Fine Screen: Fine Screen Installation	100	1	05JUN2012	03OCT2012	0
EMW130340	Fine Screen: Penstock Installation	100	1	05JUN2012	03OCT2012	0
EMW130350	Fine Screen: Conveyer Installation	90	1	04AUG2012	20NOV2012	0
EMW130360	Fine Screen: Lifting Appliance Installation	60	1	14JUN2012	24AUG2012	52d
EMW130370	Fine Screen: Power Supply System Installation	75	1	11SEP2012	10DEC2012	0
EMW130380	Fine Screen: Control System Installation	60	1	16NOV2012	29JAN2013	0
EMW140000	Grit Removal System	466 *	1	07JUL2011	29JAN2013	0
EMW140410	Grit: E&M Equipment Procurement	210	2	07JUL2011	01FEB2012	52d
EMW140420	Grit: Delivery of E&M Equipment On Site	42	2	03MAR2012	13APR2012	52d
EMW140430	Grit: Grit System Installation	100	1	05JUN2012	03OCT2012	0
EMW140440	Grit: Penstock Installation	100	1	05JUN2012	03OCT2012	0
EMW140470	Grit: Power Supply System Installation	75	1	04SEP2012	03DEC2012	0
EMW140480	Grit: Control System Installation	60	1	16NOV2012	29JAN2013	0
EMW150000	Septic Waste Collection Facilities	359 *	1	23NOV2011	08FEB2013	16d
EMW151100	Septic Station: E&M Equipment Procurement	180	2	23NOV2011	20MAY2012	78d
EMW152100	Septic Station: Delivery of E&M Equipment	60	2	21MAY2012	19JUL2012	78d
EMW153100	Septic Station: E&M Equipment Installation	60	1	15SEP2012	27NOV2012	16d
EMW155100	Septic Station: Control System Installation	60	1	27NOV2012	08FEB2013	16d
EMW171500	PTW: SCADA System Installation	80	2	27NOV2012	15FEB2013	18d
EMW200000	Chemically Enhanced Primary Treatment System	547 *	1	26JUL2011	04JUN2013	0
EMW200100	CEPT: E&M Equipment Procurement	210	2	26JUL2011	20FEB2012	28d
EMW200200	CEPT: Delivery of E&M Equipment On Site	60	2	12MAR2012	10MAY2012	28d
EMW201000	CEPT: Scrapper Installation	120	1	08JUN2012	30OCT2012	0
EMW201100	CEPT: Larmellar System Installation	110	1	30OCT2012	16MAR2013	0
EMW201300	CEPT: Sludge Pumping System Installation	150	1	07JUN2012	03DEC2012	1d
EMW201500	CEPT: Sludge Pipeworks Installation	150	1	03JUL2012	29DEC2012	1d
EMW201600	CEPT: Reactor System Installation	120	1	17AUG2012	10JAN2013	1d
EMW202100	CEPT: Lifting Appliance Installation	70	1	12OCT2012	05JAN2013	1d
EMW204100	CEPT: Power Supply System Installation	80	1	08NOV2012	19FEB2013	1d
EMW205100	CEPT: Control System Installation	70	1	15DEC2012	16MAR2013	1d
EMW206100	CEPT: FRP DO covers Installation	60	1	19MAR2013	04JUN2013	0



Start date 14JUL2010
Finish date 26NOV2013
Data date 30SEP2010
Run date 02DEC2010
Page number 13A
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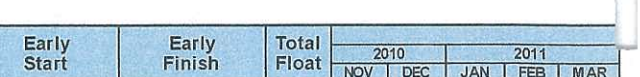
Activity ID	Description	Original Duration	Cal	Early Start	Early Finish	Total Float	2010 NOV	2010 DEC	2011 JAN	2011 FEB	2011 MAR
EMW207500	CEPT: SCADA System Installation	70	1	01FEB2013	06MAY2013	1d					
EMW300000	UV Disinfection System	402 *	1	06DEC2011	23APR2013	5d					
EMW301100	UV: E&M Equipment Procurement	210	2	06DEC2011	02JUL2012	14d					
EMW302100	UV: Delivery of E&M Equipment	42	2	03JUL2012	13AUG2012	14d					
EMW303100	UV: UV module Installation	100	1	22AUG2012	19DEC2012	5d					
EMW304100	UV: Power Supply System Installation	75	1	02NOV2012	01FEB2013	5d					
EMW305100	UV: Control System Installation	60	1	03JAN2013	20MAR2013	16d					
EMW307500	UV: SCADA system Installation	60	1	01FEB2013	23APR2013	5d					
EMW320000	Reuse Water PS	320 *	1	23DEC2011	24JAN2013	11d					
EMW322200	RWPS: E&M Equipment Procurement	240	2	23DEC2011	18AUG2012	55d					
EMW322300	RWPS: Delivery of E&M Equipment	42	2	19AUG2012	29SEP2012	55d					
EMW322400	RWPS: E&M Installation	60	1	12NOV2012	24JAN2013	11d					
EMW500000	Chemical Storage, Batching and Dosing Facilities	457 *	1	17OCT2011	08MAY2013	5d					
EMW501000	Chemical: E&M Equipment Procurement	210	2	17OCT2011	13MAY2012	44d					
EMW502000	Chemical: Delivery of E&M Equipment	35	2	14MAY2012	17JUN2012	44d					
EMW503100	Chemical: Polymer System Installation	120	1	26JUL2012	15DEC2012	5d					
EMW503300	Chemical: Ferric Chloride System Installation	120	1	26JUL2012	15DEC2012	5d					
EMW504100	Chemical: Power Supply System Installation	90	1	30OCT2012	21FEB2013	5d					
EMW505100	Chemical: Control System Installation	60	1	29DEC2012	16MAR2013	5d					
EMW507100	Chemical: SCADA System Installation	60	1	21FEB2013	08MAY2013	5d					
EMW600000	Sludge Treatment Facilities	423 *	1	19NOV2011	02MAY2013	4d					
EMW601000	Sludge: E&M Equipment Procurement	240	2	19NOV2011	15JUL2012	39d					
EMW602000	Sludge: Delivery of E&M Equipment	42	2	16JUL2012	26AUG2012	39d					
EMW603100	Sludge: Centrifuge Installation	80	1	28SEP2012	05JAN2013	4d					
EMW603200	Sludge: Sludge Conveyer E&M Installation	80	1	16NOV2012	27FEB2013	14d					
EMW603500	Sludge: Polymer System Installation	80	1	28SEP2012	05JAN2013	4d					
EMW604100	Sludge: Power Supply System Installation	60	1	28NOV2012	15FEB2013	4d					
EMW605100	Sludge: Control system Installation	60	1	05JAN2013	22MAR2013	4d					
EMW607100	Sludge: SCADA system Installation	60	1	15FEB2013	02MAY2013	4d					
EMW710000	Odour Control Facilities - DOU Portion A	385 *	1	26OCT2011	15FEB2013	42d					
EMW711100	DOU A: E&M Equipment Procurement	180	2	26OCT2011	22APR2012	31d					
EMW712100	DOU A: Delivery of E&M Equipment on Site	35	2	23APR2012	27MAY2012	31d					
EMW713100	DOU A: Scrubber Installation	80	1	27JUN2012	28SEP2012	26d					
EMW713500	DOU A: Odour Duct connection	70	1	16OCT2012	09JAN2013	17d					
EMW714100	DOU A: Power Supply System Installation	90	1	06SEP2012	21DEC2012	26d					
EMW715100	DOU A: Control System Installation	60	1	06NOV2012	17JAN2013	33d					
EMW717100	DOU A: SCADA System Installation	50	1	11DEC2012	15FEB2013	42d					
EMW720000	Odour Control Facilities - DOU Portion B	332 *	1	23FEB2012	08APR2013	22d					
EMW721100	DOU B: E&M Equipment Procurement	180	2	23FEB2012	20AUG2012	32d					
EMW722100	DOU B: Delivery of E&M Equipment on Site	35	2	21AUG2012	24SEP2012	32d					
EMW723100	DOU B: Scrubber Equipment Installation	70	1	16OCT2012	09JAN2013	10d					
EMW723500	DOU B: Odour Duct connection	70	1	09JAN2013	08APR2013	22d					
EMW724100	DOU B: Power Supply System Installation	70	1	01DEC2012	02MAR2013	10d					
EMW725100	DOU B: Control System Installation	60	1	09JAN2013	26MAR2013	10d					
EMW727100	DOU B: SCADA System Installation	50	1	21JAN2013	26MAR2013	10d					
EMW800000	Admin Building E&M System	334 *	1	19AUG2011	05OCT2012	67d					
EMW801100	Admin Bldg : E&M Equipment Procurement	120	2	19AUG2011	16DEC2011	134d					
EMW801200	Admin Bldg : Delivery of E&M Eq. On site	60	2	17DEC2011	14FEB2012	134d					
EMW801300	Admin Bldg : E&M Equipment Installation	150	1	03APR2012	05OCT2012	67d					
EMW802000	Admin Building SCADA/ELV System	304 *	1	19AUG2011	29AUG2012	0					
EMW802100	Admin Bldg : SCADA/ELV Eq. Procurement	120	2	19AUG2011	16DEC2011	48d					

Activity ID	Description	Original Duration	Cal	Early Start	Early Finish	Total Float
EMW802200	Admin Bldg : Delivery of SCADA/ELV Eq. On site	60	2	17DEC2011	14FEB2012	48d
EMW802300	Admin Bldg : SCADA/ELV Equipment Installation	120	1	03APR2012	29AUG2012	0
EMW803000	Admin Building Services System	464 *	1	19AUG2011	15MAR2013	3d
EMW803100	Admin Bldg Service: BS Equipment Procurement	120	2	19AUG2011	16DEC2011	52d
EMW803200	Admin Bldg Service: Delivery of BS Eq. On site	60	2	17DEC2011	14FEB2012	52d
EMW803400	Admin Bldg Service: MVAC Installation	200	1	03APR2012	03DEC2012	3d
EMW803500	Admin Bldg Service: FS Installation	200	1	03APR2012	03DEC2012	17d
EMW803600	Admin Bldg Service: P&D Installation	200	1	26MAY2012	22JAN2013	5d
EMW803700	Admin Bldg Service: Elect Installation	200	1	14JUL2012	15MAR2013	3d
EMW941000	Elect Bldg No.1	429 *	1	10AUG2011	18JAN2013	3d
EMW941100	Elect Bldg 1: Mat'l & Equipment Procurement	180	2	10AUG2011	05FEB2012	60d
EMW941200	Elect Bldg 1 : Delivery of Mat'l & Equipment	40	2	06FEB2012	16MAR2012	60d
EMW941340	Elect Bldg 1: Install LV & Local Control Panel	40	1	17APR2012	05JUN2012	24d
EMW941510	Elect Bldg 1: Cable Containment Installation	60	1	06JUN2012	15AUG2012	24d
EMW941520	Elect Bldg 1: Cable Laying	40	1	16AUG2012	03OCT2012	24d
EMW941530	Elect Bldg 1: Cable Test and Termination	50	1	04OCT2012	30NOV2012	24d
EMW941700	Elect Bldg 1: Main Panel Energization	3	1	11DEC2012	13DEC2012	24d
EMW941710	Elect Bldg 1: PTW MCC Energization	7	1	21NOV2012	28NOV2012	25d
EMW941720	Elect Bldg 1: Admin DB Energization	7	1	11JAN2013	18JAN2013	3d
EMW942000	Elect Bldg No.2	380 *	1	21OCT2011	31JAN2013	28d
EMW942100	Elect Bldg 2: Mat'l & Equipment Procurement	180	2	21OCT2011	17APR2012	70d
EMW942200	Elect Bldg 2 : Delivery of Mat'l & Equipment	40	2	18APR2012	27MAY2012	70d
EMW942400	Elect Bldg 2: Install LV & Local Control Panel	50	1	21JUL2012	18SEP2012	13d
EMW942510	Elect Bldg 2: Cable Containment Installation	60	1	21JUL2012	02OCT2012	13d
EMW942520	Elect Bldg 2: Cable Laying	40	1	02OCT2012	17NOV2012	13d
EMW942530	Elect Bldg 2: Cable Test and Termination	50	1	06NOV2012	07JAN2013	13d
EMW942700	Elect Bldg 2: Main Panel Energization	3	1	07JAN2013	10JAN2013	13d
EMW942710	Elect Bldg 2: CEPT MCC Energization	7	1	21JAN2013	29JAN2013	21d
EMW942720	Elect Bldg 2: Chemical MCC Energization	7	1	23JAN2013	31JAN2013	28d
EMW942730	Elect Bldg 2: Sludge MCC Energization	7	1	17JAN2013	25JAN2013	27d
EMW942740	Elect Bldg 2: DOUA MCC Energization	7	1	10JAN2013	18JAN2013	13d
EMW943000	Elect Bldg No.3	388 *	1	21OCT2011	15FEB2013	14d
EMW943100	Elect Bldg 3: Mat'l & Equipment Procurement	180	2	21OCT2011	17APR2012	31d
EMW943200	Elect Bldg 3 : Delivery of Mat'l & Equipment	40	2	18APR2012	27MAY2012	31d
EMW943400	Elect Bldg 3: Install LV & Local Control Panel	60	1	29MAY2012	07AUG2012	26d
EMW943510	Elect Bldg 3: Cable Containment Installation	60	1	08AUG2012	18OCT2012	26d
EMW943520	Elect Bldg 3: Cable Laying	40	1	19OCT2012	04DEC2012	26d
EMW943530	Elect Bldg 3: Cable Test and Termination	50	1	06NOV2012	05JAN2013	26d
EMW943700	Elect Bldg 3: Main Panel Energization	3	1	09JAN2013	12JAN2013	24d
EMW943710	Elect Bldg 3: UV MCC Panel Energization	7	1	12JAN2013	21JAN2013	24d
EMW943720	Elect Bldg 3: DOUB MCC Panel Energization	7	1	01FEB2013	15FEB2013	14d
Testing and Commissioning						
PTW Testing and Commissioning						
Building and Structures						
EMT100000	PTW Commissioning	192 *	2	20NOV2012	31MAY2013	0
EMT101210	PTW T&C Phase 1: Site Test -Coarse Screen System	40	2	20NOV2012	29DEC2012	0
EMT101220	PTW T&C Phase 1: Site Test - Inlet Pump System	40	2	20NOV2012	30DEC2012	0
EMT101230	PTW T&C Phase 1: Site Test - Fine Screen System	40	2	20NOV2012	30DEC2012	0
EMT101240	PTW T&C Phase 1: Site Test - Grit System	40	2	20NOV2012	30DEC2012	0
EMT102310	PTW Phase 2: Dry Test of Coarse Screen System	30	2	30DEC2012	28JAN2013	0
EMT102320	PTW Phase 2: Dry Testing of Inlet Pump System	30	2	30DEC2012	29JAN2013	0

Activity ID	Description	Original Duration	Cal	Early Start	Early Finish	Total Float
EMT102330	PTW Phase 2: Dry Testing of Fine Screen System	30	2	30DEC2012	29JAN2013	0
EMT102340	PTW Phase 2: Dry Testing of Grit System	30	2	30DEC2012	29JAN2013	0
EMT103410	PTW Phase 3: Wet Testing of Individual Equipment	30	2	29JAN2013	28FEB2013	0
EMT103420	PTW Phase 3: Manual Testing of Sub-system	30	2	13FEB2013	15MAR2013	0
EMT103430	PTW Phase 3: Automatic Testing of Sub-system	30	2	05MAR2013	04APR2013	0
EMT104100	PTW Phase 4: Introduce Process Fluid (Sewage)	7	2	04APR2013	11APR2013	0
EMT104200	PTW Phase 4: Auto and Process Commissioning	30	2	11APR2013	11MAY2013	0
EMT104300	PTW Phase 4: Verification	30	2	01MAY2013	31MAY2013	0
CEPT Testing and Commissioning						
Building and Structures						
EMT200000	CEPT Tank Testing and Commissioning	261 *	2	10NOV2012	29JUL2013	0
EMT201100	CEPT Tank Phase 1: Installation Inspection	110	2	10NOV2012	28FEB2013	0
EMT202100	CEPT Tank: Phase 2 - Dry Test of Individual Eq't	30	2	28FEB2013	30MAR2013	0
EMT203100	CEPT Tank Phase 3: Wet Testing of Individual Eqt	30	2	30MAR2013	29APR2013	0
EMT203200	CEPT Tank Phase 3: Manual Test Sub-system	30	2	14APR2013	14MAY2013	0
EMT203300	CEPT Tank Phase 3: Automatic Test Sub-system	30	2	05MAY2013	04JUN2013	0
EMT204100	CEPT Tank Phase 4: Introduce Process Sewage	6	2	04JUN2013	10JUN2013	0
EMT204200	CEPT: Final Auto Testing / Process Commissioning	35	2	10JUN2013	15JUL2013	0
EMT204300	CEPT Tank Phase 4: Verification	14	2	15JUL2013	29JUL2013	0
UV Disinfection Facilities						
Building and Structures						
EMT300000	UV: Testing and Commissioning	216 *	2	19DEC2012	23JUL2013	6d
EMT301100	UV: Phase 1 - Installation Inspection	50	2	19DEC2012	07FEB2013	16d
EMT302100	UV: Phase 2 - Dry Test of Individual Eq't	30	2	07FEB2013	09MAR2013	16d
EMT303100	UV: Phase 3 - Wet Test of Individual Eq't	30	2	09MAR2013	08APR2013	16d
EMT303200	UV: Phase 3 -Manual Testing of Sub-system	30	2	24MAR2013	23APR2013	16d
EMT303300	UV: Phase 3 - Auto Testing of Sub-system	30	2	23APR2013	23MAY2013	6d
EMT304100	UV: Phase 4 - Introduce Process Sewage	1	2	23MAY2013	24MAY2013	6d
EMT304200	UV: Final Auto Test/Process Commissioning	30	2	24MAY2013	23JUN2013	6d
EMT304300	UV: Phase 4 - Verification	30	2	23JUN2013	23JUL2013	6d
Reuse Water Pumping Station						
Building and Structures						
EMT320000	RWPS: Testing and Commissioning	173 *	2	24JAN2013	16JUL2013	13d
EMT321100	RWPS: Phase 1 - Installation Inspection	40	2	24JAN2013	05MAR2013	13d
EMT322100	RWPS: Phase 2 - Dry Test of Individual Eq't	30	2	05MAR2013	04APR2013	13d
EMT323100	RWPS: Phase 3 - Wet Test of Individual Eq't	30	2	04APR2013	04MAY2013	13d
EMT323200	RWPS: Phase 3 -Manual Testing of Sub-system	30	2	19APR2013	19MAY2013	13d
EMT323300	RWPS: Phase 3 - Auto Testing of Sub-system	30	2	09MAY2013	08JUN2013	13d
EMT324100	RWPS: Phase 4 - Introduce Process Sewage	1	2	08JUN2013	09JUN2013	13d
EMT324200	RWPS: Final Auto Test/Process Commissioning	7	2	09JUN2013	16JUN2013	13d
EMT324300	RWPS Phase 4 - Verification	30	2	16JUN2013	16JUL2013	13d
Chemical Building						
Building and Structures						
EMT500000	Chemical: Testing and Commissioning	220 *	2	15DEC2012	23JUL2013	6d
EMT501100	Chemical: Phase 1 - Installation Inspection	50	2	15DEC2012	03FEB2013	35d
EMT502100	Chemical: Phase 2 - Dry Test of Individual Eq't	30	2	21FEB2013	23MAR2013	17d
EMT503100	Chemical: Phase 3 - Wet Test of Individual Eq't	30	2	23MAR2013	22APR2013	17d
EMT503200	Chemical: Phase 3 -Manual Testing of Sub-system	30	2	07APR2013	07MAY2013	17d
EMT503300	Chemical: Phase 3 - Auto Testing of Sub-system	30	2	08MAY2013	07JUN2013	6d
EMT504100	Chemical: Phase 4 - Introduce Process Sewage	1	2	07JUN2013	08JUN2013	6d
EMT504200	Chemical: Final Auto Test/Process Commissioning	20	2	08JUN2013	28JUN2013	6d
EMT504300	Chemical: Phase 4 - Verification	25	2	28JUN2013	23JUL2013	6d



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Summary bar
Start milestone point
Finish milestone point

Activity ID	Description	Original Duration	Cal	Early Start	Early Finish	Total Float
Sludge Dewatering and Skip Storage						
Building and Structures						
EMT600000	Sludge: Testing and Commissioning	200 *	2	05JAN2013	24JUL2013	5d
EMT601100	Sludge: Phase 1 - Installation Inspection	40	2	05JAN2013	14FEB2013	17d
EMT602100	Sludge: Phase 2 - Dry Test of Individual Eq't	30	2	15FEB2013	17MAR2013	16d
EMT603100	Sludge: Phase 3 - Wet Test of Individual Eq't	30	2	17MAR2013	16APR2013	16d
EMT603200	Sludge: Phase 3 -Manual Testing of Sub-system	30	2	01APR2013	01MAY2013	16d
EMT603300	Sludge: Phase 3 - Auto Testing of Sub-system	30	2	02MAY2013	01JUN2013	5d
EMT604100	Sludge: Phase 4 - Introduce Process Sewage	3	2	01JUN2013	04JUN2013	5d
EMT604200	Sludge: Final Auto Test/Process Commissioning	20	2	04JUN2013	24JUN2013	5d
EMT604300	Sludge: Phase 4 - Verification	30	2	24JUN2013	24JUL2013	5d
Septic Waste Collection facilities						
Building and Structures						
EMT150000	Septic Station: Testing and Commissioning	192 *	2	27NOV2012	07JUN2013	52d
EMT151100	Septic Station: Phase 1- Installation Inspection	30	2	27NOV2012	27DEC2012	52d
EMT152100	Septic Station: Phase 2 - Dry Test Indiv Eq't	30	2	27DEC2012	26JAN2013	52d
EMT153100	Septic Station: Phase 3 - Wet Test of Indiv Eq't	30	2	26JAN2013	25FEB2013	52d
EMT153200	Septic Station: Phase 3 - Manual Test Sub-system	30	2	10FEB2013	12MAR2013	52d
EMT153300	Septic Station: Phase 3 - Auto Test Sub-system	30	2	02MAR2013	01APR2013	52d
EMT154100	Septic Station: Phase 4-Introduce Process Sewage	7	2	01APR2013	08APR2013	52d
EMT154200	Septic St: Final Auto Test/Process Commissioning	30	2	08APR2013	08MAY2013	52d
EMT154300	Septic Station: Phase 4 - Verification	30	2	08MAY2013	07JUN2013	52d
DOU A						
Building and Structures						
EMT710000	DOU A: Testing and Commissioning	252 *	2	06NOV2012	16JUL2013	13d
EMT711100	DOU A: Phase 1 - Installation Inspection	40	2	06NOV2012	15DEC2012	48d
EMT712100	DOU A: Phase 2 - Dry Test of Individual Eq't	30	2	18JAN2013	17FEB2013	15d
EMT713100	DOU A: Phase 3 - Wet Test of Individual Eq't	30	2	17FEB2013	19MAR2013	15d
EMT713200	DOU A: Phase 3 -Manual Testing of Sub-system	30	2	04MAR2013	03APR2013	15d
EMT713300	DOU A: Phase 3 - Auto Testing of Sub-system	30	2	26MAR2013	25APR2013	13d
EMT714100	DOU A: Phase 4 - Introduce Foul Air	7	2	25APR2013	02MAY2013	13d
EMT714200	DOU A: Final Auto Test/Process Commissioning	30	2	02MAY2013	01JUN2013	13d
EMT714300	DOU A: Phase 4 - Verification	45	2	01JUN2013	16JUL2013	13d
DOU B						
Building and Structures						
EMT720200	DOU B: Testing and Commissioning	187 *	2	09JAN2013	15JUL2013	14d
EMT720220	DOU B: Phase 1 - Installation Inspection	40	2	09JAN2013	18FEB2013	14d
EMT722100	DOU B: Phase 2 - Dry Test of Individual Eq't	20	2	18FEB2013	10MAR2013	14d
EMT723100	DOU B: Phase 3 - Wet Test of Individual Eq't	30	2	10MAR2013	09APR2013	14d
EMT723200	DOU B: Phase 3 - Manual Testing of Sub-system	30	2	25MAR2013	24APR2013	14d
EMT723300	DOU B: Phase 3 - Auto Testing of Sub-system	30	2	09APR2013	09MAY2013	14d
EMT724100	DOU B: Phase 4 - Introduce Foul Air	7	2	09MAY2013	16MAY2013	14d
EMT724200	DOU B: Final Auto Test/Process Commissioning	30	2	16MAY2013	15JUN2013	14d
EMT724300	DOU B: Phase 4 - Verification	30	2	15JUN2013	15JUL2013	14d
Control System						
Building and Structures						
EMT810000	Control/SCADA: Testing and Commissioning	333 *	2	30AUG2012	29JUL2013	0
EMT811100	Control/SCADA: Phase 1 - Installation Insp.	90	2	30AUG2012	27NOV2012	0
EMT812100	Control/SCADA: Phase 2 - Dry Test of Indi. Eq't	90	2	28NOV2012	25FEB2013	0
EMT813100	Control/SCADA: Phase 3 - Auto Testing Sub-sys	90	2	26FEB2013	26MAY2013	0
EMT814200	Control/SCADA: Final Auto Test/Process Comm.	60	2	30APR2013	28JUN2013	0
EMT814300	Control: Phase 4 - Verification	30	2	29JUN2013	29JUL2013	0
Building Services						

Start date	14JUL2010
Finish date	26NOV2013
Data date	30SEP2010
Run date	02DEC2010
Page number	17A
Project name	WP01
c Primavera Systems, Inc.	

PPSTW Works Programme Rev.01

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

Activity ID	Description	Original Duration	Cal	Early Start	Early Finish	Total Float
Building and Structures						
EMT830600	BS: Testing and Commissioning	233 *	2	04DEC2012	24JUL2013	4d
EMT830620	BS: Phase 1 - Installation Inspection	30	2	04DEC2012	02JAN2013	20d
EMT830650	BS: Phase 2 - Dry Test of Individual Eq't	60	2	19JAN2013	19MAR2013	4d
EMT830670	BS: Phase 3 - Wet Test of Individual Eq't	30	2	20MAR2013	18APR2013	4d
EMT830680	BS: Phase 3 -Manual Testing of Sub-system	30	2	04APR2013	03MAY2013	4d
EMT830690	BS: Phase 3 - Auto Testing of Sub-system	30	2	24APR2013	23MAY2013	4d
EMT830710	BS: Government Inspection	18	2	24MAY2013	10JUN2013	4d
EMT830720	BS: Government Re-inspection	30	2	11JUN2013	10JUL2013	4d
EMT830730	BS: Government Issue Certificate	14	2	11JUL2013	24JUL2013	4d
Optimisation and Proving Test for All E&M Works						
Building and Structures						
EMT990000	Phase 5 Optimisation and Proving Period	120 *	2	29JUL2013	26NOV2013	0
EMT995000	CEPT Phase 5 Optimisation period	30	2	29JUL2013	28AUG2013	0
EMT995300	CEPT Phase 5 Proving Period	90	2	28AUG2013	26NOV2013	0