


ASB Biodiesel (Hong Kong) Limited

Development of a Biodiesel Plant at Tseung Kwan O Industrial Estate

Monthly EM&A Report

August 2013

(Version 1.0)

Certified By 
(Environmental Team Leader)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties

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<i>To:</i>	Cinotech	<i>Date:</i>	12 September 2013
<i>Attn:</i>	Ms. Ivy Tam / Ms. Betty Choi	<i>Fax:</i>	3107 1388
<i>From:</i>	Mr. Mark Cheung	<i>Ref:</i>	D1067/H03455
<i>Job No.</i>	D1067	<i>Total Pages:</i>	1

**Subject: Development of a Biodiesel Plant at Tseung Kwan O Industrial Estate
Monthly EM&A Summary Report for August 2013**

Dear Madam,

We refer to your submission of the Monthly EM&A Report for August 2013 via email dated 12 September 2013.

We write to advise that we have no comment on the captioned report.

Regards,



Mark Cheung
Independent Environmental Checker

KTC/gk

EXECUTIVE SUMMARY

Introduction

1. This is the 51st monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for Development of a Biodiesel Plant at Tseung Kwan O Industrial Estate”. This report documents the findings of EM&A Works conducted in August 2013.
2. The major site activities undertaken in the reporting month included:
 - General site cleaning and tidying
 - WWTP – Equipment installation work
 - Building Services – P&D work
 - Building Services – Fire Service work
 - Building Services – MVAC work
 - Building Services – Electrical work
 - Building Services – Testing Work
 - External Works – Boundary wall construction work
 - External Works – Draw Pit construction & Cable Ducts laying work

Environmental Monitoring and Audit Works

3. Environmental monitoring and audit works for the Project were performed regularly as stipulated in the EM&A Manual and the results were checked and reviewed. The implementation of the environmental mitigation measures and environmental complaint handling procedures were also checked.

Environmental Licenses and Permits

4. Licenses/Permits granted to the Project include the Environmental Permit (EP) for the Project. Environmental Permits No. EP-319/2009 and EP-319/2009/A were issued on 11 March 2009 and 7 April 2009 respectively. The Contractor has applied for the Registration of Chemical Waste Producer (WPN-5113-839-C1186-15), Construction Noise Permit (GW-RE0709-13), Wastewater Discharge License (WT00004508-2009), Notification of Works under APCO (337009) and Waste Discharge Account (7013917).

Key Information in the Reporting Month

5. Summary of key information in this reporting month is tabulated in **Table I**.

Table I Summary Table for Key Information in the Reporting Month

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---
Changes to the assumptions and key construction / operation activities recorded	0	---	N/A	N/A	---
Status of submissions under EP	1	Monthly EM&A Report for July 2013	Submitted to EPD on 14 August 2013	Verified by IEC	---
Notifications of any summons & prosecutions	0	---	N/A	N/A	---

Future Key Issues

6. Major site activities for the coming three months will include:
 - General site cleaning and tidying.
 - Building Services – Testing Work.

7. The future environmental concerns are air quality, water quality, waste management and surface runoff from construction works.

1 INTRODUCTION

Background

- 1.1 Development of a Biodiesel Plant at Tseung Kwan O Industrial Estate is a Designated Project (hereafter referred to as “the Project”) under the Environmental Impact Assessment Ordinance (Cap. 449). A study of environmental impact assessment (EIA) was undertaken to consider the key issues of air quality, noise, water quality, ecological and identify possible mitigation measures associated with the works. An EIA Report was approved by the Environmental Protection Department (EPD) on 26 February 2009.
- 1.2 The project is to construct and operate a 100,000 tonnes per annum biodiesel plant at Tseung Kwan O Industrial Estate. The plant will use a multi-feedstock which consists of waste cooking oil (WCO), oil and grease recovered from grease trap waste (GTW), Palm Fatty Acid Distillate (PFAD) and animal fats. The proposed biodiesel plant not only offers a convenient recycling outlet for GTW and WCO but also converts the oil and grease recovered from these wastes into useful products. The Project also offers a cleaner alternative to diesel fuel to the Hong Kong market. The main processes include the followings:-
 - Construction of feedstock reception and storage facilities, and offices;
 - Construction of a grease trap waste pre-treatment facility (with a designated treatment capacity of about 200,000 tonnes per annum);
 - Construction of a wastewater treatment plant (with a designed treatment capacity of about 170,000 m³ per annum);
 - Installation of biodiesel production and glycerine purification system;
 - Construction of product storage and ancillary facilities;
 - Pretreatment of grease trap waste;
 - Treatment of wastewater generated from feedstock pre-treatment and glycerine dewatering process, and filtrates from dewatering process of sludge treatment;
 - Transesterification of feedstock with alcohol-catalyst; and
 - Purification of biodiesel.
- 1.3 The general layout of the Project is shown in **Figure 1.1**.
- 1.4 Layout plan of tank farm **2A, 2B to 2E** is revised and a report is made by Environmental Resources Management (ERM) regarding such change. The report concluded that no deviation is found from the approved EIA report.
- 1.5 Environmental Permits (EP) No. EP-319/2009, EP-319/2009/A and EP-319/2009/B were issued on 11 March 2009, 7 April 2009 and 31 Jan 2013 respectively for Development of a Biodiesel Plant at Tseung Kwan O Industrial Estate to ASB Biodiesel (Hong Kong) Limited as the Permit Holder. A VEP was submitted and the latest EP No. EP-319/2009/C was issued by EPD on 5 Mar 2013.
- 1.6 Cinotech Consultants Limited was commissioned by the Contractor to undertake the Environmental Monitoring and Audit (EM&A) works for the Project. This is the 51st Monthly EM&A report summarizing the EM&A works for the Project in August 2013.

Project Organizations

1.7 Different parties with different levels of involvement in the project organization include:

- Project Proponent – ASB Biodiesel (Hong Kong) Limited
- Project Manager – AECOM
- Contractor – China Harbour Engineering Company Limited (CHEC)
- Environmental Team (ET) – Cinotech Consultants Limited
- Independent Environmental Checker (IEC) – Mannings (Asia) Consultants Ltd.

1.8 The responsibilities of respective parties are detailed in Section 1.10 of the Final EM&A Manual of the Project.

1.9 The key contacts of the Project are shown in **Table 1.1**.

Table 1.1 Key Project Contacts

Party	Role	Name	Position	Phone No.	Fax No.
ASB	Project Proponent	Ms. Sylvia Har	Senior Plant Engineer	9479 0949	3741 1661
Cinotech	Environmental Team	Dr. HF Chan	ET Leader	2151 2088	3107 1388
		Ms. Ivy Tam	Project Coordinator	2151 2090	
		Ms. Betty Choi	Audit Team Leader	2151 2072	
Mannings	Independent Environmental Checker	Mr. Mark Cheung	Independent Environmental Checker	3168 2028	3168 2022
		Mr. Gavin Kwok	Assistant to Independent Environmental Checker	3168 2028	
AECOM	Project Manager	Mr. Matthew Lau	Construction Manager	9363 5586	N/A
CHEC	Contractor	Mr. Peter Chung	Project Manager	9471 2438	2623 9226
		Mr. Anson Wong	Safety and Environmental Officer	9656 3837	
		Mr. Simon Li	Environmental Supervisor (Ass. Planning Engineer)	6152 7867	

Construction Programme

- 1.10 The site activities undertaken in the reporting month were:
- General site cleaning and tidying
 - WWTP – Equipment installation work
 - Building Services – P&D work
 - Building Services – Fire Service work
 - Building Services – MVAC work
 - Building Services – Electrical work
 - Building Services – Testing Work
 - External Works – Boundary wall construction work
 - External Works – Draw Pit construction & Cable Ducts laying work

Summary of EM&A Requirements

- 1.11 The EM&A requirements are described in the following sections, including:
- Environmental mitigation measures, as recommended in the project EIA study final report; and
 - Environmental requirements in contract documents.
- 1.12 The advice on the implementation status of environmental protection and pollution control/ mitigation measures is summarized in Section 3 of this report.

2 ENVIRONMENTAL AUDIT

Site Audits

- 2.1 Site audits were carried out by ET on monthly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summary of the site audit in this reporting month is attached in **Appendix A**.
- 2.2 Site audit was conducted on 23rd August 2013 by ET in the reporting month. No non-compliance was observed during the site audits.

Status of Environmental Licensing and Permitting

- 2.3 All permits/licenses obtained for the Project are summarized in **Table 2.1**.

Status of Waste Management

- 2.4 The quantities of waste generated in this reporting month are summarized in **Appendix C**.

Implementation Status of Environmental Mitigation Measures

- 2.5 According to the EIA Study Report, Environmental Permit and the EM&A Manual of the Project, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. An updated summary of the EMIS is provided in **Appendix B**.

Table 2.1 Summary of Environmental Licensing and Permit Status

Permit / License No.	Valid Period		Details	Status
	From	To		
Environmental Permit (EP)				
EP-319/2009/A	07/04/2009	N/A	Construction and operation of (i) a biochemical plant with a storage capacity of more than 500 tonnes and in which substances are processed and produced; (ii) a storage, transfer and trans-shipment of oil facility with a storage capacity of not less than 1,000 tonnes; and (iii) a dangerous goods godown with a storage capacity exceeding 500 tonnes .	Valid
Registration of Chemical Waste Producer				
WPN-5113-839-C1186-15	12/06/2009	-	Spent Lubrication oil.	Valid
Construction Noise Permit (CNP)				
GW-RE0709-13	02/07/2013	19/01/2014	Use of Powered Mechanical Equipment during 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Valid
Wastewater Discharge License				
WT00004508-2009	07/09/2009	-	Discharge of wastewater from construction site including wheel washing water and chemical precipitation tank	Valid
Billing Account for Disposal of Construction Waste				
A/C No.: 7013917	-	-	-	Valid
Notification of Works under APCO				
Ref. no.: 337009	26/10/2011	-	-	Valid

- 2.6 During the site inspection in the reporting month, no non-conformance was identified. The observations and recommendations made during the audit session are summarized in **Table 2.2**.

Table 2.2 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
N/A	N/A	N/A	N/A

Summary of Complaint and Prosecution

- 2.7 No environmental related complaint, prosecution or notification of summons was received in the reporting month.
- 2.8 Since the Project commencement, there were a total of 5 project-related environmental complaints. No prosecution or notification of summons was received since the Project commencement. The Complaint Log is attached in **Appendix D**.

3 FUTURE KEY ISSUES

Key Issues for the Coming Month

3.1 Key issues to be considered in the coming month include:

- Effluent discharge generated from surface runoff;
- Dust generated from stockpile of dusty materials;
- Maintenance of de-silting facilities and drainage system, such as U-channels;
- Storage of chemicals/fuel and chemical waste/waste oil on site;
- Accumulation of stagnant water in the site areas;
- Accumulation of C&D waste and general waste on site.

Construction Program for the Next Months

3.2 A tentative construction programme is provided in **Appendix E**. The major construction activities in the coming three months will include:

- General site cleaning and tidying.
- Building Services – Testing Work.

4 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 4.1 Environmental audit works were conducted in the reporting month. Site inspections were conducted on monthly basis. The results were reviewed and checked.
- 4.2 No environmental complaint, prosecution or notification of summons was received.

Recommendations

- 4.3 According to the environmental audit performed in the reporting month, the following recommendations were made:

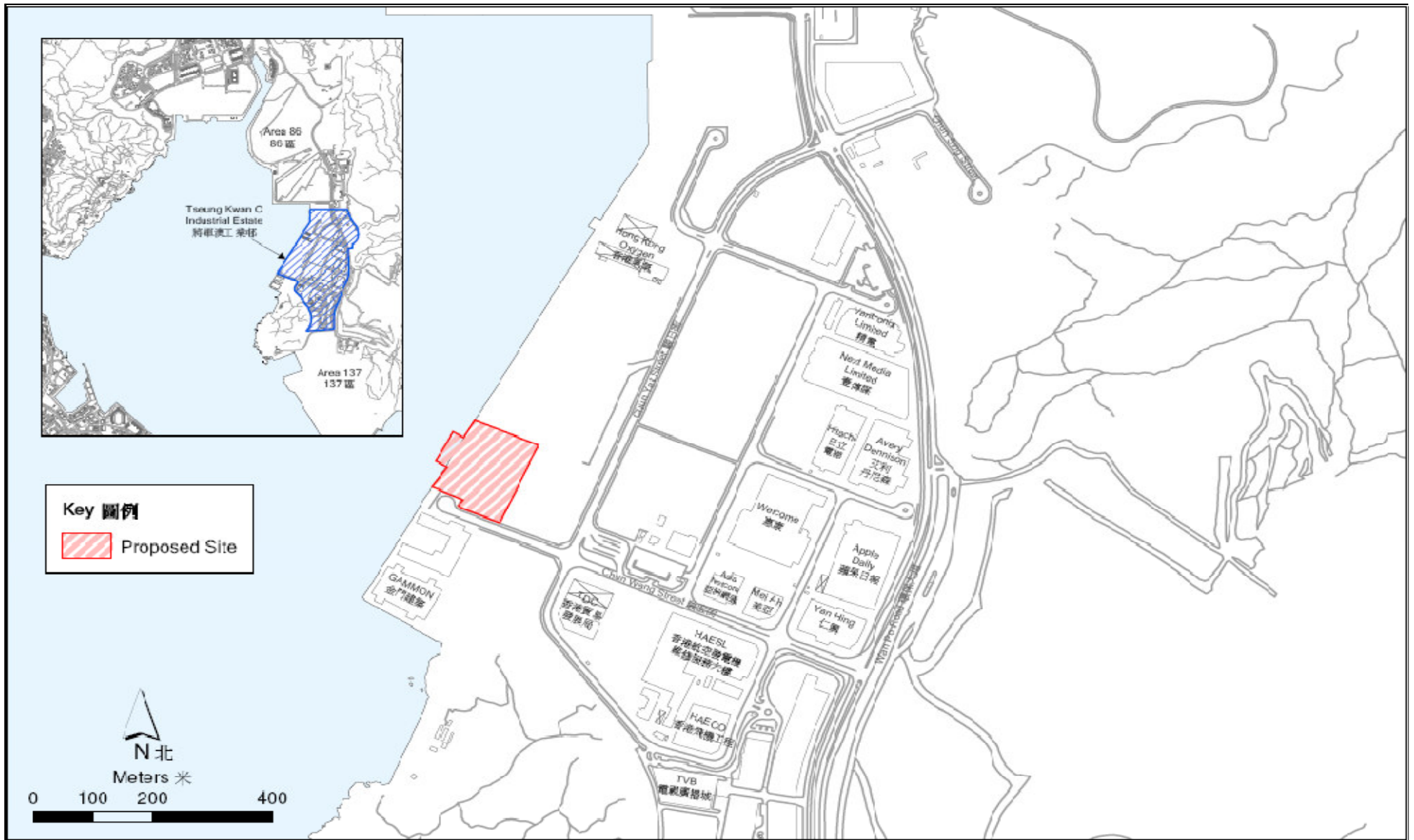
Dust Impact

- To remove fugitive dusty material on the haul road periodically.
- Stockpile of dusty materials should be covered by impervious sheeting, or sprayed with water so as to maintain entire surface wet.

Waste / Chemical Management

- To provide proper rubbish bins / skips for waste collection.
- To provide proper storage area for oil container on site.
- To avoid and check for any accumulation of waste materials or rubbish on site.
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the equipment.

FIGURES



Title	Development of a Biodiesel Plant at Tseung Kwan O Industrial Estate		Scale	N.T.S	Project No.	MA9021
	Site Layout Plan		Date	Jun-09	Figure	1.1



**APPENDIX A
SITE AUDIT SUMMARY**

Development of a Biodiesel Plant at Tseung Kwan O Industrial Estate

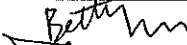
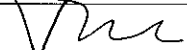
Monthly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	130823
Date	23 August 2013 (Friday)
Time	16:30 – 17:00

Ref. No.	Non-Compliance	Related Item No.
-	None	-

Ref. No.	Remarks/Observations	Related Item No.
	<p>A. Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during site inspection. <p>B. Air Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during site inspection. <p>C. Noise</p> <ul style="list-style-type: none"> No environmental deficiency was identified during site inspection. <p>D. Waste / Chemical Management</p> <ul style="list-style-type: none"> No environmental deficiency was identified during site inspection. <p>E. Permit / Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during site inspection. <p>F. Reminders</p> <ul style="list-style-type: none"> No environmental deficiency was identified during site inspection. <p>G. Others</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.:130719): All environmental deficiencies were improved/rectified by contractor. 	

	Name	Signature	Date
Recorded by	Betty Choi		28 August 2013
Checked by	Dr. HF Chan		28 August 2013

**APPENDIX B
UPDATED ENVIRONMENTAL
MITIGATION IMPLEMENTATION
SCHEDULE**

Appendix B - Summary of Environmental Mitigation Implementation Schedule (Construction Phase)

Types of Impacts	Mitigation Measures	Status
Construction Dust	<ul style="list-style-type: none"> • Dust control measures such as water spaying on roads and dusty areas, covering of lorries by impervious sheets and controlling of the falling height of fill materials will be implemented; • Effective dust screens, sheeting or netting will be provided to enclose the scaffolding from the ground level of the facility during the building construction; • All debris and materials will be covered or stored in a sheltered debris collection area; • Hoarding from ground level will be provided along the entire length of the site boundary except for a site entrance or exit; • Every stockpile of dusty materials will be covered entirely by impermeable sheeting or placed in an area sheltered on the top and the 3 sides; • Regular maintenance and checking of the diesel powered mechanical equipment will be adopted to avoid any black smoke emissions and to minimize gaseous emissions. • Monthly site audits will be conducted to ensure the implementation of suitable dust control measures and good site practices. 	^ ^ ^ ^ ^ ^ ^
Construction Noise	<ul style="list-style-type: none"> • Only well-maintained plant will be operated on-site and plant will be serviced regularly during the construction program; • Silencers or mufflers on construction equipment will be utilized and will be properly maintained during the construction program; • Mobile plant, if any, will be sited as far from NSRs as possible; • Machines and plant (such as trucks) that may be in intermittent use will be shut down between work periods or will be throttled down to a minimum; • Plant known to emit noise strongly in one direction will, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and • Material stockpiles and other structures will be effectively utilised, wherever practicable, in screening noise from onsite construction activities. 	^ ^ ^ ^ ^ ^

Remarks: ^ Compliance of mitigation measure; X Non-compliance of mitigation measure;
 N/A Not Applicable at this stage; • Non-compliance but rectified by the contractor;
 * Recommendation was made during site audit but improved/rectified by the contractor;
 # Non-compliance but rectified/improved by the contractor and awaiting IEC's further comment.

Types of Impacts	Mitigation Measures	Status
Water Quality	<p><u>Piling Activities</u></p> <ul style="list-style-type: none"> Silt curtain will be installed around the marine piling area to contain any suspended mud and sediments generated during the piling works. Silt removal facilities such as silt traps or sedimentation facilities will be provided to remove silt particles from groundwater (if pumping is required) to meet the requirements of the TM standard under the WPCO. The design of silt removal facilities will be based on the guidelines provided in ProPECC PN 1/94. All drainage facilities and erosion and sediment control structures will be inspected monthly and maintained to ensure proper and efficient operation at all times and particularly during rainstorms. 	^
	<p><u>Construction Site Run-off and Drainage</u></p> <ul style="list-style-type: none"> Silt removal facilities such as silt traps or sedimentation facilities will be provided to remove silt particles from runoff to meet the requirements of the TM standard under the WPCO. The design of silt removal facilities will be based on the guidelines provided in ProPECC PN 1/94. All drainage facilities and erosion and sediment control structures will be inspected monthly and maintained to ensure proper and efficient operation at all times and particularly during rainstorms. Careful programming of the works to minimise surface excavations for the construction works during the wet season. If excavation of soil cannot be avoided during the wet season, exposed slope surfaces will be covered by a tarpaulin or other means. Other measures that need to be implemented before, during, and after rainstorms are summarised in ProPECC PN 1/94. Exposed soil surfaces will be protected by paving or fill material as soon as possible to reduce the potential of soil erosion. Open stockpiles of construction materials or construction wastes on-site of more than 50m³ will be covered with tarpaulin or similar fabric during rainstorms. These materials will not be placed near the seawall area. 	^ ^ ^ ^
	<p><u>General Construction Activities</u></p> <ul style="list-style-type: none"> Debris and refuse generated on-site will be collected, handled and disposed of properly to avoid entering the nearby water sensitive receivers (WSRs). Stockpiles of cement and other construction materials will be kept covered when not being used. Oils and fuels will only be used and stored in designated areas which have pollution prevention facilities. All fuel tanks and storage areas will be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. The bund will be drained of rainwater after a rain event. 	^ ^

Remarks: ^ Compliance of mitigation measure; X Non-compliance of mitigation measure;
N/A Not Applicable at this stage; • Non-compliance but rectified by the contractor;
* Recommendation was made during site audit but improved/rectified by the contractor;
Non-compliance but rectified/improved by the contractor and awaiting IEC's further comment.

Types of Impacts	Mitigation Measures	Status
	<p data-bbox="394 225 902 252"><u>Sewage generated from On-site Workforce</u></p> <ul data-bbox="443 296 1980 427" style="list-style-type: none"> <li data-bbox="443 296 1980 360">• Temporary sanitary facilities, such as portable chemical toilets, will be provided on-site. A specialised contractor will be responsible for regular collection and appropriate disposal of the sewage and maintenance of these facilities. <li data-bbox="443 363 1980 427">• Monthly site inspections will be carried out during construction to ensure that the mitigation measures listed above are properly implemented. The site audit frequency will be increased to weekly intervals during the piling works. 	<p data-bbox="2056 296 2078 316">^</p> <p data-bbox="2056 363 2078 383">^</p>
<p data-bbox="215 488 315 515">Ecology</p>	<ul data-bbox="443 472 1980 563" style="list-style-type: none"> <li data-bbox="443 472 1980 563">• Mitigation measures for minimising water quality impacts are presented in detail above. These measures will be properly implemented and good construction practices will be adopted to minimise potential adverse impacts to marine ecological resources. 	<p data-bbox="2056 488 2078 507">^</p>

Remarks: ^ Compliance of mitigation measure; X Non-compliance of mitigation measure;
N/A Not Applicable at this stage; • Non-compliance but rectified by the contractor;
* Recommendation was made during site audit but improved/rectified by the contractor;
Non-compliance but rectified/improved by the contractor and awaiting IEC's further comment.

**APPENDIX C
WASTE GENERATION IN THE
REPORTING MONTH**

**APPENDIX D
COMPLAINT LOG**

APPENDIX D – COMPLAINT LOG**Reporting Month:** August 2013

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2012-08-001	Jetty Area	28-08-2012	A resident in Lohas Park complained about noise nuisance from the site.	Investigation by EPD identified the source to be chiselling work at the jetty area. Although the chisel machines were covered by valid CNP, the Contractor decided to suspend the corresponding work during restricted hours. The machine was later covered by sound proof canvas to minimize noise transmission. Subsequent inspection and noise measurement by the EPD on 3 rd September 2012 concluded that the noise reduction measure was effective and acceptable at Lohas Park.	Closed
COM-2012-09-002	Jetty Area	07-09-2012	A resident in Lohas Park complained about noise nuisance from the site.	Investigation by EPD identified the source to be chiselling work at the jetty area. Only one chisel machine was operated on the day of complain and it was screened by sound proof canvas. Although the machine was covered by valid CNP, the Contractor decided to suspend the corresponding work during restricted hours during investigation period. Subsequent inspection and noise measurement (daytime at site, night time at Lohas Park) by the EPD on 12 th September 2012 concluded that the noise levels were acceptable at Lohas Park.	Closed
COM-2012-09-003	Jetty Area	27-09-2012	A resident in Lohas Park complained about noise nuisance from the site.	The chisel machine used at JP3 of the jetty area was identified as the noise source. According to the Contractor, the machine was screened by sound proof canvas. Although the machine was covered by valid CNP, the Contractor decided to carry out the corresponding work during normal operation hours only. This was agreed with the complainant in Lohas Park.	Closed
COM-2012-09-004	Not Specified	04-10-2012	A resident in Lohas Park complained about noise nuisance from the site at	According to the Contractor, According to the Contractor, only one drilling machine and chiselling machine were in use, which were covered by valid CNP. We advised the Contractor to communicate with the residents in Lohas	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			11:18pm.	Park given consistent noise complains. The Contractor explained to the complainant that chiselling work will stop at 11pm every day and start after 10am during weekends to minimize noise nuisance. Further in November, a noise enclosure was erected to cover the noisy part of the chiselling machine.	
Com-2012-11-005	Jetty Area	23-11-2012	A resident in Lohas Park complained about noise nuisance from the site at around 3:00 am	The chisel machine used of the jetty area was identified as the noise source. According to the Contractor, the machine was screened by enclosure. Although the machine was covered by valid CNP, the Contractor decided to carry out the corresponding work during 7:00 – 23:00. Contractor explained to the complainant that the bored piling will be completed in early December.	Closed

Remarks: N/A

APPENDIX E
CONSTRUCTION PROGRAMME

Activity ID	Activity Name	Current Start	Current Finish	Current Duration	BL Start	BL Finish	% Complete	Delay from Initial	Total Float	2013		
										Aug	Sep	Oct
C270MC-3M-Rolling Programme Ver.2.0 (310713)		21-Jul-12 A	18-Dec-13	516	03-Aug-12	18-Dec-13		0	173			
Key Dates		27-Sep-13	27-Sep-13	0	27-Sep-13	27-Sep-13		0	-110			▼ 27-Sep-13, Key Dates
Contract Period		27-Sep-13	27-Sep-13	0	27-Sep-13	27-Sep-13		0	-288			▼ 27-Sep-13, Contract Period
A15900	Date of Completion of the Works		27-Sep-13*	0		27-Sep-13	0%	0	-288			◆ Date of Completion of the Works
Maintenance Period		27-Sep-13	27-Sep-13	0	27-Sep-13	27-Sep-13		0	-110			▼ 27-Sep-13, Maintenance Period
A16490	Commencement of Maintenance Period	27-Sep-13		0	27-Sep-13		0%	0	-110			◆ Commencement of Maintenance Period
Milestones		31-Aug-13	31-Aug-13	0	31-Aug-13	31-Aug-13		0	-122			▼ 31-Aug-13, Milestones
Remaining Construction Works		21-Jul-12 A	14-Dec-13	512	03-Aug-12	14-Dec-13		0	176			
1A - Administration Building		21-Sep-12 A	13-Sep-13	358	28-Sep-12	23-Mar-13		-174	-197			▼ 13-Sep-13, 1A - Administration Building
AB-Electrical		13-Oct-12 A	16-Aug-13 A	307	28-Dec-12	26-Feb-13		-171				▼ 16-Aug-13 A, AB-Electrical
A17610	AB-BS Electrical Testing	13-Oct-12 A	16-Aug-13 A	307	28-Dec-12	26-Feb-13	100%	-171				AB-BS Electrical Testing
AB-Fire Services		22-Dec-12 A	13-Sep-13	266	23-Jan-13	23-Mar-13		-174	-275			▼ 13-Sep-13, AB-Fire Services
A17800	AB-BS Fire Service Testing	22-Dec-12 A	13-Sep-13	266	23-Jan-13	23-Mar-13	88.33%	-174	-275			AB-BS Fire Service Testing
AB-Plumbing and Drainage		21-Sep-12 A	02-Sep-13	346	28-Sep-12	22-Feb-13		-191	-185			▼ 02-Sep-13, AB-Plumbing and Drainage
A17125	AB-BS Wiring and Control (P&D)	21-Sep-12 A	02-Sep-13	346	28-Sep-12	11-Nov-12	95%	-294	-185			AB-BS Wiring and Control (P&D)
A17700	AB-BS Plumbing and Drainage Testing	13-Oct-12 A	23-Aug-13 A	314	25-Dec-12	22-Feb-13	100%	-181				AB-BS Plumbing and Drainage Testing
AB-MVAC		10-Nov-12 A	22-Aug-13 A	285	24-Dec-12	22-Feb-13		-181				▼ 22-Aug-13 A, AB-MVAC
A17220	AB-BS MVAC Testing	10-Nov-12 A	22-Aug-13 A	92	24-Dec-12	22-Feb-13	100%	-181				AB-BS MVAC Testing
1B - Process Building		17-Dec-12 A	28-Nov-13	347	05-Feb-13	28-Nov-13		0	-273			▼ 22-Aug-13 A, PB-Plumbing and Drainage
PB-Plumbing and Drainage		01-Aug-13 A	22-Aug-13 A	21	31-Aug-13	29-Oct-13		69				▼ 22-Aug-13 A, PB-Plumbing and Drainage
A18300	PB-BS Plumbing and Drainage Testing	01-Aug-13 A	22-Aug-13 A	21	31-Aug-13	29-Oct-13	100%	69				
PB-Electrical		17-Dec-12 A	29-Aug-13 A	255	05-Feb-13	28-Aug-13		-1				▼ 29-Aug-13 A, PB-Electrical
A18040	PB-BS Cable laying works(Electrical) 2nd stage	19-Jan-13 A	09-Aug-13 A	202	05-Feb-13	22-Mar-13	100%	-140				PB-BS Cable laying works(Electrical) 2nd stage
A18050	PB-BS Lighting installation works	17-Dec-12 A	13-Aug-13 A	239	27-Mar-13	26-Apr-13	100%	-109				PB-BS Lighting installation works
A18055	PB-BS Electrical Testing	08-Jun-13 A	29-Aug-13 A	82	29-Jun-13	28-Aug-13	100%	-1				PB-BS Electrical Testing
PB-MVAC		20-May-13 A	20-Aug-13 A	92	24-May-13	22-Jul-13		-28				▼ 20-Aug-13 A, PB-MVAC
A18065	PB BS MVAC Testing	20-May-13 A	20-Aug-13 A	92	24-May-13	22-Jul-13	100%	-28				PB BS MVAC Testing
PB-Fire Services		22-Dec-12 A	15-Sep-13	268	04-Mar-13	12-May-13		-126	-277			▼ 15-Sep-13, PB-Fire Services
A18082	PB-BS Final connection works	18-Mar-13 A	16-Aug-13 A	151	29-Mar-13	12-May-13	100%	-95				PB-BS Final connection works
A18400	PB-Fire Service Testing	22-Dec-12 A	15-Sep-13	268	04-Mar-13	03-May-13	85%	-136	-277			PB-Fire Service Testing
PB-Processing Works		31-Aug-13	28-Nov-13	90	31-Aug-13	28-Nov-13		0	-363			▼ 25-Oct-13, PB-Processing Works
A17900	PB-BDI Pipe insulation, Process Electrical & Instrumentation Works	31-Aug-13	28-Nov-13	90	31-Aug-13	28-Nov-13	0%	0	-363			
1B - Fat Preparation Building		21-Jun-13 A	25-Oct-13	127	27-Jun-13	25-Oct-13		0	90			▼ 25-Oct-13, 1B - Fat Preparation Building
FP-Plumbing and Drainage		02-Aug-13 A	06-Aug-13 A	4	31-Aug-13	09-Oct-13		65				▼ 06-Aug-13 A, FP-Plumbing and Drainage
A19200	FP-BS Plumbing and Drainage Testing	02-Aug-13 A	06-Aug-13 A	4	31-Aug-13	09-Oct-13	100%	65				FP-BS Plumbing and Drainage Testing
FP-Electrical		21-Jun-13 A	22-Aug-13 A	62	27-Jun-13	06-Aug-13		-15				▼ 22-Aug-13 A, FP-Electrical
A19090	FP-BS Electrical Testing	21-Jun-13 A	22-Aug-13 A	62	27-Jun-13	06-Aug-13	100%	-15				FP-BS Electrical Testing
FP-Fire Services		06-Sep-13	13-Sep-13	7	06-Sep-13	16-Oct-13		33	-275			▼ 13-Sep-13, FP-Fire Services
A19300	FP-Fire Service Testing	06-Sep-13	13-Sep-13	7	06-Sep-13	16-Oct-13	0%	33	-275			FP-Fire Service Testing
FP-Processing Works		31-Aug-13	25-Oct-13	56	31-Aug-13	25-Oct-13		0	90			▼ 25-Oct-13, FP-Processing Works
A18900	FP-BDI Pipe insulation, Process Electrical & Instrumentation Works	31-Aug-13	25-Oct-13	56	31-Aug-13	25-Oct-13	0%	0	90			
1B - Boiler Room		06-Sep-12 A	25-Oct-13	415	25-Dec-12	05-Nov-13		11	226			▼ 25-Oct-13, 1B - Boiler Room
BR-Plumbing and Drainage		09-Aug-13 A	15-Aug-13 A	6	31-Aug-13	20-Sep-13		37				▼ 15-Aug-13 A, BR-Plumbing and Drainage
A20200	BR-BS Plumbing and Drainage Testing	09-Aug-13 A	15-Aug-13 A	6	31-Aug-13	20-Sep-13	100%	37				BR-BS Plumbing and Drainage Testing
BR-Electrical		22-Jun-13 A	07-Oct-13	108	22-Aug-13	21-Oct-13		14	-190			▼ 07-Oct-13, BR-Electrical
A20040	BR-BS Cable laying works(Electrical) 2nd	22-Jun-13 A	06-Sep-13	77	22-Aug-13	21-Sep-13	76.67%	15	-218			BR-BS Cable laying works(Electrical) 2nd

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3 Month Rolling Programme

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Date	Revision	Checked	Approved
31-Aug-13	3 Month Rolling Programme		

Activity ID	Activity Name	Current Start	Current Finish	Current Duration	BL Start	BL Finish	% Complete	Delay from Initial	Total Float	2013			
										Aug	Sep	Oct	
A20050	BR-Lighting installation works	31-Aug-13	28-Sep-13	29	31-Aug-13	29-Sep-13	0%	2	-240				
A20061	BR-BS Final connection works(Electrical)	23-Sep-13	30-Sep-13	7	23-Sep-13	14-Oct-13	0%	14	-214				
A20090	BR-BS Electrical Testing	30-Sep-13	07-Oct-13	7	30-Sep-13	21-Oct-13	0%	14	-190				
BR-Fire Services													
A20070	BR-BS Piping installation works(Fire Services)	06-Sep-12 A	13-Sep-13	373	25-Dec-12	05-Nov-13		53	-166				
A20080	BR-BS Detector installation works(Fire Services)	08-Aug-13 A	12-Aug-13 A	4	31-Aug-13	29-Sep-13	100%	49					
A20100	BR-BS Cable laying works (Fire Services)	14-Aug-13 A	23-Aug-13 A	9	27-Sep-13	26-Oct-13	100%	65					
A20150	BR-BS Final connection works (Fire Services)	20-Aug-13 A	29-Aug-13 A	9	31-Aug-13	29-Sep-13	100%	32					
A20300	BR-Fire Service Testing	06-Sep-13	13-Sep-13	7	06-Sep-13	05-Nov-13	0%	53	-166				
BR-Processing Works													
A19700	BR-BDI Pipe insulation, Process Electrical & Instrumentation Works	31-Aug-13	25-Oct-13	56	31-Aug-13	25-Oct-13	0%	0	226				
2A - Tank Farm													
2A-Plumbing and Drainage													
A20900	2A-BS Plumbing and Drainage Testing	18-Mar-13 A	16-Aug-13 A	151	06-May-13	19-May-13	100%	-88					
2A-Electrical													
A20840	2A-BS Cable laying works stage 2 (Electrical)	27-May-13 A	22-Aug-13 A	87	07-Jun-13	08-Jul-13	100%	-44					
A20870	2A-BS Electrical Testing	31-Aug-13	06-Sep-13	7	31-Aug-13	13-Sep-13	0%	7	-268				
2A-Fire Services													
A21000	2A-Fire Service Testing (excluding FSD Inspection)	08-Jun-13 A	24-Sep-13	108	27-Jun-13	18-Jul-13	16%	-68	-285				
2A-Processing Works													
A20700	2A-BDI Pipe insulation, Process Electrical & Instrumentation Works	11-Sep-13	14-Dec-13	94	11-Sep-13	14-Dec-13	0%	0	-289				
2A - GTW Separation Room													
GTWSR-Plumbing and Drainage													
A22200	GTWSR-BS Plumbing and Drainage Testing	23-Aug-13 A	30-Aug-13 A	7	31-Aug-13	13-Sep-13	100%	15					
GTWSR-Electrical													
A21980	GTWSR-BS Electrical Testing	16-Aug-13 A	29-Aug-13 A	13	06-Sep-13	20-Sep-13	100%	23					
GTWSR-Fire Services													
A22300	GTWSR-Fire Service Testing	16-May-13 A	13-Sep-13	121	30-May-13	13-Jun-13	50%	-92	-275				
GTWSR-Processing Works													
A21800	GTWSR-BDI Piping, Electrical, Insulation & Instrumentation Works	31-Aug-13	14-Oct-13	45	31-Aug-13	14-Oct-13	0%	0	101				
2B-E Tank Farm													
Tank Farm 2B-2E-Electrical													
A22870	2BE-BS Electrical Testing	20-Aug-13 A	27-Aug-13 A	7	31-Aug-13	30-Sep-13	100%	35					
Tank Farm 2B-2E-Fire Services													
A22880	2BE-BS Cable laying works(Fire Services)	04-May-13 A	07-Aug-13 A	95	10-May-13	23-May-13	100%	-75					
A22890	2BE-BS Final connection works(Fire Services)	07-Aug-13 A	09-Aug-13 A	2	02-Sep-13	16-Sep-13	100%	39					
A23000	2BE-Fire Service Testing	31-Aug-13	06-Sep-13	7	31-Aug-13	12-Oct-13	0%	36	-159				
Tank Farm 2B-2E-Processing Works													
A22700	2BE-BDI Pipe Insulation, Process Electrical & Instrumentation Works	31-Aug-13	01-Nov-13	63	31-Aug-13	01-Nov-13	0%	0	-246				
3 - Waste Water Treatment Plant													
WWTP-Plumbing and Drainage													
A23610	WWTP-BS piping works(Plumbing)	20-Sep-12 A	08-Aug-13 A	322	27-Oct-12	26-Nov-12	100%	-254					
A23620	WWTP-BS piping works(Drainage)	20-Sep-12 A	14-Aug-13 A	328	27-Oct-12	26-Nov-12	100%	-260					
A23655	WWTP-BS Installation of sanitary fittings	15-Apr-13 A	21-Aug-13 A	128	11-May-13	01-Jun-13	100%	-80					
A23800	WWTP-BS Plumbing and Drainage Testing	22-Aug-13 A	29-Aug-13 A	7	21-Sep-13	21-Oct-13	100%	54					
WWTP-Electrical													
A23680	WWTP-BS Electrical Testing	14-Aug-13 A	23-Aug-13 A	9	31-Aug-13	21-Sep-13	100%	30					

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31-Aug-13	3 Month Rolling Programme		

Activity ID	Activity Name	Current Start	Current Finish	Current Duration	BL Start	BL Finish	% Complete	Delay from Initial	Total Float	2013		
										Aug	Sep	Oct
WWTP-Fire Services												
A23730	WWTP-BS Final connection works(Final Services)	07-Feb-13 A	10-Sep-13	216	02-Mar-13	16-Jul-13	100%	-56	-163	10-Sep-13, WWTP-Fire Services		
A23900	WWTP-Fire Service Testing	20-May-13 A	10-Sep-13	114	17-Jun-13	16-Jul-13	30%	-56	-163	WWTP-BS Final connection works(Final Services)		
WWTP-Processing Works												
A23500	WWTP-Treatment Equipment Installation Works	24-Sep-12 A	19-Sep-13	361	19-Nov-12	09-Oct-13	80%	-204	-313	WWTP-Fire Service Testing		
A23700	WWTP-Treatment Installation Testing	09-Sep-13	19-Sep-13	10	09-Sep-13	09-Oct-13	0%	20	-293	19-Sep-13, WWTP-Processing Works		
4A - Jetty												
Jetty Structural and Builder's Work												
A24500	4A-Jetty Furniture, Lighting Works	15-Apr-13 A	29-Aug-13 A	136	26-Apr-13	09-Jun-13	100%	-80		09-Sep-13, 4A - Jetty		
Jetty-Plumbing and Drainage												
A24510	4A-BS Piping works(Plumbing)	08-Aug-13 A	19-Aug-13 A	11	31-Aug-13	14-Oct-13	100%	57		29-Aug-13 A, Jetty Structural and Builder's Work		
Jetty-Electrical												
A24560	4A-BS Final connection works(Electrical)	20-May-13 A	23-Aug-13 A	95	24-May-13	07-Jul-13	100%	-46		19-Aug-13 A, Jetty-Plumbing and Drainage		
Jetty-Fire Services												
A24530	4A-BS Piping installation works(Fire Services)	10-Apr-13 A	02-Sep-13	146	12-Apr-13	11-May-13	90%	-114	-214	23-Aug-13 A, Jetty-Electrical		
A24580	4A-BS Cable laying works(Fire Services)	02-May-13 A	23-Aug-13 A	113	13-May-13	26-May-13	100%	-88		4A-BS Final connection works(Electrical)		
A24600	4A-Jetty E&M and FS testing	30-Jul-13 A	09-Sep-13	42	20-Aug-13	09-Sep-13	66.67%	0	-193	09-Sep-13, Jetty-Fire Services		
External Works												
External Drainage Works												
Storm water manhole and pipe works												
A25250	Storm water manhole works 5th stage	11-Dec-12 A	31-Jul-13 A	232	04-Jan-13	22-Feb-13	100%	-158		31-Aug-13 A, External Drainage Works		
A25260	Storm water manhole works 6th stage	17-Apr-13 A	30-Aug-13 A	135	17-Apr-13	05-Jun-13	100%	-85		30-Aug-13 A, Storm water manhole and pipe works		
Foul water manhole and pipe works												
A25320	Foul Water manhole and the pipe works between the manholes with the associated t	18-Feb-13 A	31-Aug-13 A	194	29-Mar-13	27-May-13	100%	-95		31-Aug-13 A, Foul water manhole and pipe works		
External Pumping Works												
Fresh water main installation works												
A25560	Installation of external fresh watermain 6th stage	20-Jul-13 A	30-Aug-13 A	41	31-Jul-13	28-Sep-13	100%	30		30-Aug-13 A, External Pumping Works		
Road Works												
A25660	Road Works with associated surface channels and catch pits 6th stage	15-Apr-13 A	31-Aug-13 A	138	09-May-13	07-Jul-13	100%	-54		31-Aug-13 A, Road Works		
Boundary Wall Construction Works												
A25520	Boundary Wall-structural concreting works 2nd stage	21-Jul-12 A	13-Sep-13 A	230	03-Aug-12	01-Sep-12	100%	-377		27-Sep-13, Boundary Wall Constru		
A25530	Boundary Wall-ABWF works	13-May-13 A	27-Sep-13	137	24-May-13	01-Jul-13	30%	-87	-391	Boundary Wall-ABWF works		
Water Supply Works												
A25800	WSD inspection and installation of portable watermeter (WWO46)	08-Aug-13 A	20-Sep-13	44	06-Sep-13	06-Oct-13	53.33%	16	-173	02-Oct-13, Water Supply Wo		
A25810	WSD inspection and installation of FS watermeter (WWO46)	03-Sep-13	02-Oct-13	30	03-Sep-13	02-Oct-13	0%	0	153	WSD inspection and installat		
Works for CLP Energization												
A17210	AB-Installation of Generators, Day Tanks and associated equipment & pipe works	21-Sep-12 A	06-Sep-13	351	24-Oct-12	08-Dec-12	85%	-272	-285	06-Sep-13, Works for CLP Energization		
A18075	PB-BS Electrical Energization to Sub-main		31-Aug-13	0		31-Aug-13	0%	0	-270	AB-Installation of Generators, Day Tanks and associated e		
A19100	FP-BS Electrical Energization to Sub-main		31-Aug-13	0		31-Aug-13	0%	0	-268	PB-BS Electrical Energization to Sub-main		
A20060	BR-BS installation of switch board and cable termination works in Switch Rooms	31-Aug-13	06-Sep-13	7	31-Aug-13	29-Sep-13	0%	23	-218	FP-BS Electrical Energization to Sub-main		
A20160	BR-BS Electrical Energization to Sub-main		31-Aug-13	0		31-Aug-13	0%	0	-166	BR-BS installation of switch board		
A20910	2A-BS Electrical Energization to Sub-main		31-Aug-13	0		31-Aug-13	0%	0	-279	BR-BS Electrical Energization to Sub-main		
A21990	GTWSR-BS Electrical Energization to Sub-main		31-Aug-13	0		31-Aug-13	0%	0	-268	2A-BS Electrical Energization to Sub-main		
A22910	2BE-BS Electrical Energization to Sub-main		31-Aug-13	0		31-Aug-13	0%	0	-183	GTWSR-BS Electrical Energization to Sub-main		
A23740	WWTP-BS Electrical Energization to Sub-main		31-Aug-13	0		31-Aug-13	0%	0	-261	2BE-BS Electrical Energization to Sub-main		
A24610	4A-BS Electrical Energization to Sub-main		31-Aug-13	0		31-Aug-13	0%	0	-190	WWTP-BS Electrical Energization to Sub-main		
										4A-BS Electrical Energization to Sub-main		

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										Aug	Sep	Oct
Maintenance Period												
FS & OP Inspection												
A25900	Notification to FSD	27-Sep-13	25-Oct-13	28	27-Sep-13	25-Oct-13	0%	0	-288			
A25910	FS Inspection	24-Oct-13	25-Oct-13	1	24-Oct-13	25-Oct-13	0%	0	83			
A25920	Rectification to FSD Comments	25-Oct-13	08-Nov-13	14	25-Oct-13	08-Nov-13	0%	0	83			
A25930	Notification to FSD for 2nd Inspection	08-Nov-13	06-Dec-13	28	08-Nov-13	06-Dec-13	0%	0	83			
A26000	Notification for OP Inspection	27-Sep-13	25-Oct-13	28	27-Sep-13	25-Oct-13	0%	0	-288			
A26010	OP Inspection	13-Oct-13	14-Oct-13	1	13-Oct-13	14-Oct-13	0%	0	136			
Works By Other Contractors												
Works By BDI												
BDI Processing Pipe Installation Works												
P3230	BDI - PB Pipe installation works	30-Sep-12 A	19-Oct-13	384	12-Oct-12	08-Feb-13	59%	-252	-335			
P3240	BDI - FAT Pipe installation works	25-Dec-12 A	17-Sep-13	267	04-Jan-13	03-Apr-13	80%	-167	-289			
P3250	BDI - Boiler Room Building Pipe installation works	25-Dec-12 A	22-Sep-13	272	12-Jan-13	12-Apr-13	75%	-163	-274			
P3260	BDI - Tank Farm 2A Pipe installation works	21-Jan-13 A	14-Dec-13	328	01-Feb-13	31-May-13	12%	-197	-289			
P3270	BDI - Tank Farm 2B-E Pipe installation works	11-Mar-13 A	10-Dec-13	275	29-Mar-13	26-Jul-13	15%	-137	-246			
P3280	BDI - Pipe Bridges Pipe installation works	31-Aug-13	28-Nov-13	90	31-Aug-13	29-Oct-13	0%	-30	56			
BDI Testing and Commissioning												
A22100	GTWSR-Testing for Ventilation System (odour test)	13-Sep-13	13-Oct-13	30	13-Sep-13	13-Oct-13	0%	0	136			
A23710	WWTP-Testing and Commissioning	19-Sep-13	18-Dec-13	90	19-Sep-13	18-Dec-13	0%	0	173			

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