# ASB Biodiesel (Hong Kong) Limited

# Development of a Biodiesel Plant at Tseung Kwan O Industrial Estate

Monthly EM&A Report

(version 1.0)

October 2009

Approved By	Mha
	(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.

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## **EXECUTIVE SUMMARY**

#### Introduction

- 1. This is the 5<sup>th</sup> 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 October 2009.
- 2. The major site activities undertaken in the reporting month included:
  - Temporary drainage construction;
  - Piling works; and
  - Pile test.

#### **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, An Environmental Permit No. EP-319/2009 and EP-319/2009/A was 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 (PP-RE0037-09) and Wastewater Discharge License (WT00004508-2009).

#### 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
IUDICI	Summary fusic for hey information in the hepot ing informa-

Event	Event Details		Action Taken	States	Remark	
Event	Number	Nature	Action Taken	Status	Kelliark	
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	0		N/A	N/A		
Notifications of any summons & prosecutions	0		N/A	N/A		

## **Future Key Issues**

- 6. Major site activities for the coming month will include:
  - Temporary drainage construction;
  - Pile cap construction; and
  - Wetsep installation.
- 7. The future environmental concerns are air 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 An Environmental Permit (EP) No. EP-319/2009 and EP-319/2009/A was issued on 11 March 2009 and 7 April 2009 respectively for Development of a Biodiesel Plant at Tseung Kwan O Industrial Estate to ASB Biodiesel (Hong Kong) Limited as the Permit Holder.
  - 1.5 Cinotech Consultants Limited was commissioned by ASB Biodiesel (Hong Kong) Limited to undertake the Environmental Monitoring and Audit (EM&A) works for the Project. China Harbour Engineering Company Limited is the Managing Contractor of the Project. This is the 3<sup>rd</sup> Monthly EM&A report summarizing the EM&A works for the Project in October 2009.

## **Project Organizations**

- 1.6 Different parties with different levels of involvement in the project organization include:
  - Project Proponent ASB Biodiesel (Hong Kong) Limited
  - Contractor Zhen Hua Eng Co. Ltd. (ZHEC)
  - Environmental Team (ET) Cinotech Consultants Limited
  - Independent Environmental Checker (IEC) Mannings (Asia) Consultants Ltd.
- 1.7 The responsibilities of respective parties are detailed in Section 1.10 of the Final EM&A Manual of the Project.
- 1.8 The key contacts of the Project are shown in Table 1.1.

Party	Role	Name	Position	Phone No.	Fax No.
ASB	Permit Holder	Mr. Eddie Chung	Project Manager	9189 8118	37411661
		Dr. HF Chan	ET Leader	2151 2088	
Cinotech	Environmental Team	Ms. Ivy Tam	Project Coordinator	2151 2090	3107 1388
		Ms. Cara Heung	Audit Team Leader	2151 2078	
Independent		Mr. Mark Cheung	Independent Environmental Checker	3168 2028	3168 2022
	Environmental Checker Mr. Ga	Mr. Gavin Kwok	Assistant to Independent Environmental Checker	3168 2028	5108 2022
ZHEC	Contractor	Mr. Stephen Tse	Project Manager	8106 1848	2623 9226
ZHEC	Contractor	Mr. Fred Ho	Environmental Officer	9279 6226	2023 9220

### Table 1.1Key Project Contacts

## **Construction Programme**

- 1.9 The site activities undertaken in the reporting month were:
  - Temporary drainage construction;
  - Piling work; and
  - Pile test.

## Summary of EM&A Requirements

- 1.10 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.
- 1.11 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 audit was 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 summaries of site audits are attached in **Appendix A**.
- 2.2 Site audit was conducted on 20<sup>th</sup> October 2009 by ET in the reporting month. No non-compliance was observed during the site audits.
- 2.3 Wheel washing facilities were observed during the site inspection. As informed, silt removal facilities will be improved by installation of wetsep etc before end of November 2009 tentatively. The environmental conditions of the site will be continuously reviewed and monitored by ET and IEC.
- 2.4 Extra rectification photos were provided on 2-Nov-2009 by the Contractor regarding site inspection observation on 16-Sep-2009 (ref no.:90916-R02). The rectification photos show that the chemical containers were removed from the location. The photos will be presented in the coming site audit report (Nov 2009).
- 2.5 Temporary chemical waste storage area will be designated inside the site, the progress will be continuously reviewed and monitored by ET and IEC.

#### **Status of Environmental Licensing and Permitting**

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

#### **Status of Waste Management**

2.7 No Construction and Demolition (C&D) materials and chemical waste disposed to public fill in the reporting month. The quantities of waste generated in this reporting month are summarized in **Appendix C**.

#### **Implementation Status of Environmental Mitigation Measures**

2.8 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**.

Permit / License No.	Valid Period		Details	64-4	
Fermit / License No.	From	То	Details	Status	
<b>Environmental Permit (EP</b>	<b>'</b> )				
EP-319/2009/A	07/04/2009	N/A	Construction and operation of	Valid	
			(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 tran- 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		
Registration of Chemical Was	ste Producer				
WPN-5113-839-C1186-15	12/06/2009	-	Spent Lubrication oil.	Valid	
Construction Noise Permit (C	(NP)				
PP-RE0037-09	11/08/2009	28/12/2009	To carry out percussive piling for the construction site during 0700- 1900 hours on all days except general holidays.	Valid	
Wastewater Discharge Licens	se				
WT00004508-2009	07/09/2009	-	-	Valid	

Table 2.1Summary of Environmental Licensing and Permit Status

2.9 During site inspections in the reporting month, no non-conformance was identified. The observations and recommendations made during the audit sessions are summarized in Table 2.2.

 Table 2.2
 Observations and Recommendations of Site Audit

Parameters	Date	<b>Observations and Recommendations</b>	Follow-up
Water Quality	20-10-09	<u>Reminder</u> Clear the accumulated stagnant water in drip tray and on chemical containers as chemical waste.	Rectification photowasreceivedfromTheContractoron2November 2009.
Waste/Chemical Management	20-10-09	<u>Reminder</u> Clear the accumulated stagnant water in drip tray and on chemical containers as chemical waste.	Rectification photo was received from The Contractor on 2 November 2009.

### **Summary of Complaint and Prosecution**

2.10 No environmental related complaint, prosecution or notification of summons was

received in the reporting month.

2.11 There was no environmental complaint, prosecution or notification of summons 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:
  - Noise from operation of the equipment and machinery on-site;
  - Effluent discharge generated from surface runoff;
  - Dust generated from excavation works and 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; and
  - Accumulation of C&D waste and general waste on site.

### **Construction Program for the Next Month**

- 3.2 A tentative construction programme is provided in **Appendix E**. The major construction activities in the coming month will include:
  - Temporary drainage construction;
  - Pile cap construction; and
  - Wetsep installation.

## 4 CONCLUSIONS AND RECOMMENDATIONS

#### Conclusions

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

#### Recommendations

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

#### Water Impact

- To identify any wastewater discharges from site.
- To ensure properly maintenance for de-silting facilities.
- To clear the silt and sediment in the sedimentation tanks.
- To review the capacity of de-silting facilities for discharge.
- To divert all the water generated from construction site to de-silting facilities with enough handling capacity before discharge.
- To avoid accumulation of stagnant and ponding water on site.

#### **Dust Impact**

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

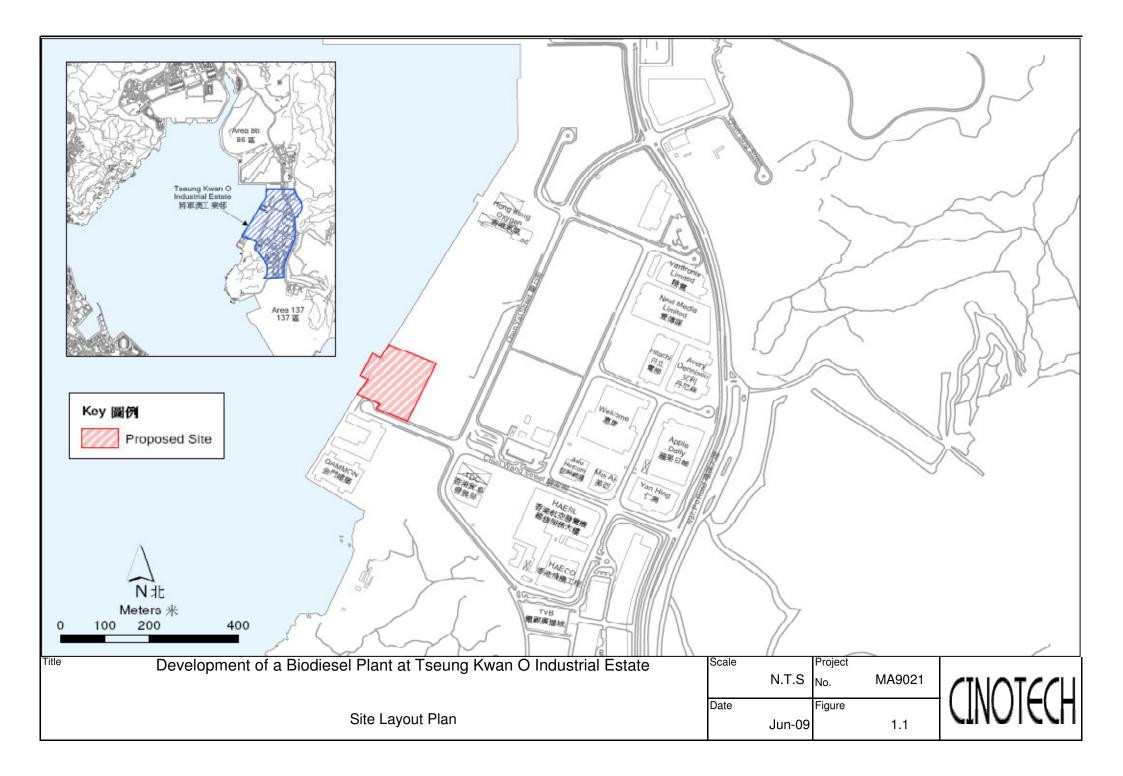
#### Noise Impact

- To space out noisy equipment and position as far away as possible from sensitive receivers.
- To inspect the noise sources inside the site.

#### 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



APPENDIX A SITE AUDIT SUMMARY

### Monthly Site Inspection Record Summary

#### Inspection Information

Inspection information		
Checklist Reference Number	91020	
Date	20 October 2009 (Tuesday)	
Time	15:00 - 16:00	

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

Ref. No.	Remarks/Observations	Related Item No.
91020-R1	<ul> <li>A. Water Quality <ul> <li><u>Reminder</u></li> </ul> </li> <li>Clear the accumulated stagnant water in drip tray and on chemical containers as chemical waste.</li> </ul>	B13
	<ul><li>B. Air Quality</li><li>No environmental deficiency was identified during site inspection.</li></ul>	
	<ul><li>C. Noise</li><li>No environmental deficiency was identified during site inspection.</li></ul>	
91020-R1	<ul> <li>D. Waste / Chemical Management <u>Reminder</u></li> <li>Clear the accumulated stagnant water in drip tray and on chemical containers as chemical waste.</li> </ul>	E8
	<ul><li><i>E. Permit / Licenses</i></li><li>No environmental deficiency was identified during site inspection.</li></ul>	
	<ul><li><i>F. Reminders</i></li><li>No environmental deficiency was identified during site inspection.</li></ul>	
	<ul> <li>G. Others</li> <li>Follow-up on previous audit section (Ref. No.:90916), all environmental deficiencies were improved/rectified by contractor.</li> </ul>	

	Name	Signature	Date
Recorded by	Cara Heung		21 October 2009
Checked by	Dr. HF Chan	M	21 October 2009

APPENDIX B UPDATED ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE

Types of Impacts	Mitigation Measures	Status
Construction Dust	<ul> <li>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;</li> <li>Effective dust screens, sheeting or netting will be provided to enclose the scaffolding from the ground level of the facility during the building construction;</li> <li>All debris and materials will be covered or stored in a sheltered debris collection area;</li> <li>Hoarding from ground level will be provided along the entire length of the site boundary except for a site entrance or exit;</li> <li>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;</li> <li>Regular maintenance and checking of the diesel powered mechanical equipment will be adopted to avoid any black smoke emissions and to minimize gaseous emissions.</li> <li>Monthly site audits will be conducted to ensure the implementation of suitable dust control measures and good site practices.</li> </ul>	^ N/A ^ ^
Construction Noise	<ul> <li>Only well-maintained plant will be operated on-site and plant will be serviced regularly during the construction program;</li> <li>Silencers or mufflers on construction equipment will be utilized and will be properly maintained during the construction program;</li> <li>Mobile plant, if any, will be sited as far from NSRs as possible;</li> <li>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;</li> <li>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</li> <li>Material stockpiles and other structures will be effectively utilised, wherever practicable, in screening noise from onsite construction activities.</li> </ul>	

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

Compliance of mitigation measure; Remarks: ^

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;
Mon-compliance but rectified/improved by the contractor and awaiting IEC's further comment.

Types of Impacts	Mitigation Measures	Status
	<ul> <li><u>Piling Activities</u></li> <li>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.</li> <li><u>Construction Site Run-off and Drainage</u></li> </ul>	N/A
Water Quality	<ul> <li>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.</li> <li>Careful programming of the works to minimise surface excavations for the construction works during the wet season. If</li> </ul>	^
	<ul> <li>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.</li> <li>Exposed soil surfaces will be protected by paving or fill material as soon as possible to reduce the potential of soil erosion.</li> <li>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.</li> </ul>	^ ^
	<ul> <li>similar fabric during rainstorms. These materials will not be placed near the seawall area.</li> <li><u>General Construction Activities</u></li> <li>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.</li> <li>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.</li> </ul>	^

Remarks: ^

Compliance of mitigation measure;
 N/A Not Applicable at this stage;
 Non-compliance of mitigation measure;
 Non-compliance but rectified by the contractor;
 Non-compliance but rectified/improved by the contractor and awaiting IEC's further comment.

Types of Impacts	Mitigation Measures	Status
	Sewage generated from On-site Workforce	
	<ul> <li>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> <li>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.</li> </ul>	N/A
Ecology	<ul> <li>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.</li> </ul>	۸

Remarks: ^

Compliance of mitigation measure;
 N/A Not Applicable at this stage;
 Non-compliance of mitigation measure;
 Non-compliance but 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

	Actu	al Quantities of Ine	Actual Quantities of Other C&D Materials / Wastes Generated				rated				
Month	Total Quantities Generated [a+b+c+d]	Broken Concrete (including rock for recycling into aggregates) ( a )	Reused in the Contract (b)	Reused in Other Projects ( c )	Disposed as Public Fill ( d )	Imported C&D Material	Metal (in '000 kg)	Paper/ cardboard packaging (in '000kg)	Plastics (bottles/containers, plastic sheets/ foams from package material) (in '000kg)	Chemical Waste (in '000kg)	Others (e.g. General Refuse etc.) (in '000m3)
January							<u> </u>				
February											
March											
April											
May											
June											
Half-year Total											
July	2.9	0	2.9	0	0	0	0	0	0	0.04	0.01
August	0.2	0	0.2	0	0	0.2	0	0.05	0.01	0.02	0.02
September	0	0	0	0	0	0	0	0.05	0.01	0.02	0.02
October	0	0	0	0	0	0	0	0.05	0.01	0.02	0.02
November											
December											
Yearly Total											

APPENDIX D COMPLAINT LOG

## **APPENDIX D – COMPLAINT LOG**

## Reporting Month: October 2009

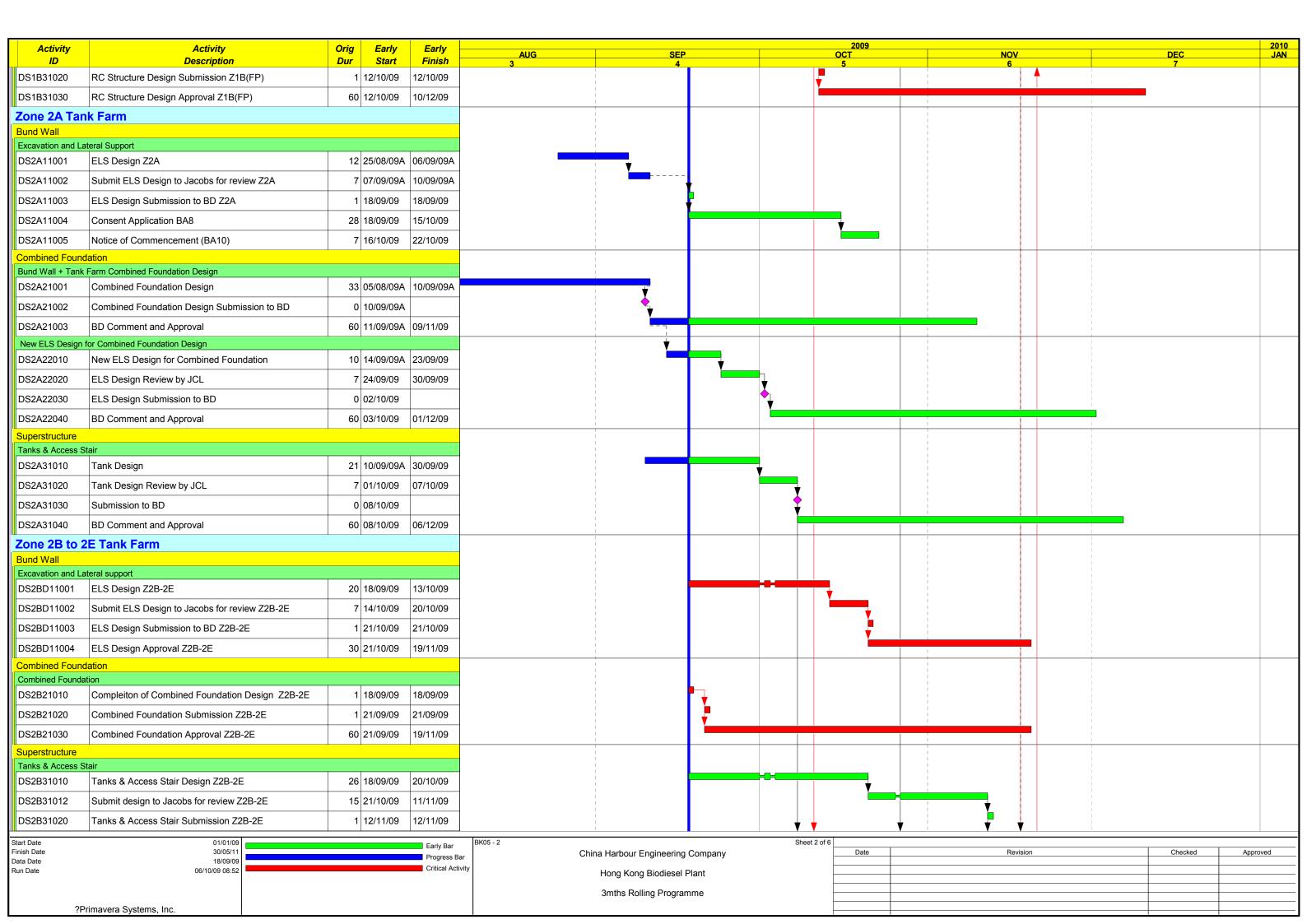
Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
N/A	N/A	N/A	N/A	N/A	N/A

Remarks: No environmental complaint was received in the reporting month.

APPENDIX E CONSTRUCTION PROGRAMME

Activity	Activity	Orig Early	Early	AUG	SEP		2009 OCT		
	Description	Dur Start	Finish	3	4		5		
	ng & Design								
Zone 1A&1	B Administration/Processing Building								
Pile Cap									
DS1A21020	Pile Cap Design Submission Z1A&B	1 10/08/09A	10/08/09A						
DS1A21030	Pile Cap Design Approval Z1A&B	60 10/08/09A	08/10/09						
Excavation and L	ateral Support			¥				1	
DS1A01010	ELS Design Z1A&B	3 27/08/09A	03/09/09A	· · ·				1	
DS1A01020	Submit ELS Design to Jacobs for review Z1A&B	14 04/09/09A	17/09/09A		1			1	
DS1A01030	ELS Design Submission Z1A&B	1 18/09/09	18/09/09					1	
DS1A01040	ELS Design Approval Z1A&B	60 19/09/09	17/11/09						
Superstructure								I	
Administration Bu DS1A31010	uilding Superstructural Plan Admin Building Design(Framing Plan) Submi. to BD	1 18/09/09*	18/09/09					1	
			17/11/09			V			
DS1A31020	BD Comment & Approval(AB)	60 19/09/09							
DS1A31030	Consent Application to BD(AB)(BA8)	28 18/11/09	15/12/09						
Building Services	Schematic Design Provision(BDI Server)	0 17/08/09A		◆					
DS1A31130	Tender Process	92 18/09/09*	18/12/09						
	Structural Steel Design	02 10/00/00	10/12/03						
DS1A32010	Loading & Framing Plan-1st Revision	3 24/08/09A	26/08/09A	<b>—</b>					
DS1A32020	Review by BDI	2 27/08/09A	28/08/09A	•••••					
DS1A32030	Further Design Amendment on Framing Plan	7 29/08/09A	24/09/09	-					
DS1A32040	Connection & Detail Calculation	17 29/08/09A	04/10/09	Y					
DS1A32050	Jacobs Review	7 05/10/09	11/10/09						
DS1A32060	Finalisation & submission to BD	14 11/10/09	24/10/09						
Transformer Ro			2 11 10/00						
Transformer Roo									
PO20500200	Comment for Substation by CLP	30 03/08/09A	01/09/09A						
PO20500300	Application and Disposit of powery Supply to CLP	14 18/09/09	09/10/09						
PO20500400	Transformer Order	180 10/10/09	07/04/10						
	ility Plants (FP)								
Substructure									
Pile Cap DS1B21030	Pile Cap Design Approval Z1B(FP)	60 23/07/09A	20/09/09						
DS1B21000	PileCap Cons Appli to BD(BA8) with ELS Dsg Submi	28 24/10/09	20/11/09				Y A		
Excavation and L									
DS1B01010	ELS Design Tender & Design Z1B(FP)	17 10/08/09A	28/08/09A	<b></b>					
DS1B01020	Submit ELS Design to Jacobs for review Z1B(FP)	7 29/08/09A	04/09/09A						
DS1B01030	ELS Design Submi to BD&Design Approval Time	1 05/09/09A	05/09/09A	<b>L</b>					
Superstructure									
Reinforced Concr									
DS1B31010	RC Structure Design Z1B(FP)	26 01/09/09A	09/10/09			W		V	
Start Date	01/01/09		Early Bar	BK05 - 2		Sheet 1 of 6			
Finish Date Data Date	30/05/11 18/09/09		Progress Bar		ineering	Company	Date		
Run Date	06/10/09 08:52		Critical Activi	Hong Kong Bio	odiesel F	Plant			
				3mths Rolling	Progran	nme			
?!	Primavera Systems, Inc.					-			

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Activity ID	Activity Description	Orig Dur	Early Start	Early Finish
	anks & Access Stair Approval Z2B-2E		12/11/09	10/01/10
	Water Treatment Plant		<u> </u>	I
Process & General I				
DS3000100 D	Design Submission	1	18/09/09	18/09/09
DS3000200 A	Approval by EPD	60	18/09/09	16/11/09
DS3000210 S	Submit to BD consent	1	17/11/09	17/11/09
DS3000220 B	3D Consent	28	17/11/09	14/12/09
Footing				1
DS3011002 C	Confirmation of layout Z3	0	18/09/09	17/09/09
DS3011010 C	Completion of Footing Design Z3	1	18/09/09	18/09/09
DS3011020 F	ooting Submission Z3	1	21/09/09	21/09/09
DS3011030 F	Footing Approval Z3	60	22/09/09	20/11/09
Excavation and Latera	al Support			
DS3001001 E	ELS Design Z3	21	18/09/09	14/10/09
DS3001002 S	Submit ELS Design to Jacobs for review Z3	6	15/10/09	20/10/09
DS3001003 E	LS Design Submission to BD Z3	1	21/10/09	21/10/09
DS3001004 E	ELS Design Approval Z3	30	22/10/09	20/11/09
Superstructure				
Reinforced Concrete			10/00/00	
	RC Structure Design Z3		18/09/09	21/09/09
	RC Structure Submission Z3		22/09/09	22/09/09
	RC Structure Approval Z3	60	22/09/09	20/11/09
Steel Structure	Need Ole share Desire 70		4.0.100.100	4.0.100.100
	Steel Structure Design Z3		18/09/09	18/09/09
	Steel Structure Submission Z3		21/09/09	21/09/09
	Steel Structure Approval Z3	60	21/09/09	19/11/09
Zone 4A Jetty				
<sup>D</sup> iling Piling				
	Aarine & Land Piling Submission Z4A	1	18/09/09	18/09/09
DS4A11030 M	Iarine & Land Piling Approval Z4A	60	18/09/09	16/11/09
Superstructure				
Reinforced Concrete				
DS4A21010 R	RC Structure Design Z4A	30	19/09/09	27/10/09
DS4A21020 R	RC Structure Submission Z4A	1	28/10/09	28/10/09
DS4A21030 R	RC Structure Approval Z4A	60	28/10/09	26/12/09
Seawater Intake Pum				
DS4A31010 S	Seawater Intake Pump Station Design Z4A	60	19/09/09	01/12/09
	ing/Unloading Station			
Foundation				
	ooting Design Z4B	12	18/09/09	02/10/09
	<b>3 1 1</b>			
art Date nish Date	01/01/09			Early Bar

Start Date	01/01/09	Early Bar	BK05 - 2 Sheet 3 of 6		
Finish Date	30/05/11		China Harbour Engineering Company	Date	
Data Date	18/09/09				
Run Date	06/10/09 08:52	Critical Activity	Hong Kong Biodiesel Plant		
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			3mths Rolling Programme		
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Activity ID	Activity Description	Orig Early Dur Start	Early Finish	AUG SEP			2009 OCT		
DS4B11020	Footing Submission Z4B	1 05/10/09	05/10/09	<u> </u>			<b>ວ</b>		
DS4B11030	Footing Approval Z4B	60 05/10/09	03/12/09		· · · · · · · · · · · · · · · · · · ·				
Excavation and La	ateral Support						<b>V</b>		
DS4B11001	ELS Design Z4B	21 19/09/09	15/10/09				•		
DS4B11002	Submit ELS Design to Jacobs for review Z4B	6 16/10/09	21/10/09						
DS4B11003	ELS Design Submission to BD Z4B	1 22/10/09	22/10/09						
DS4B11004	ELS Design Approval Z4B	30 22/10/09	20/11/09						
Pipe Bridge	Works							1	
Substructure									
Footing									
DSPB11010	Footing Design	30 01/08/09A							
DSPB11020	Footing Submission	1 27/10/09	27/10/09					T	
DSPB11030	Footing Approval	60 27/10/09	25/12/09						
Excavation and La		21 10/10/00*	12/11/09						t
	ELS Design	21 19/10/09*							, the second sec
DSPB21020	Submit ELS Design to Jacobs for review	6 13/11/09	18/11/09						
Drainage Wo									
DSDW11030	BD Comment and Approval	60 23/07/09A	27/09/09						
DSDW12010	ELS Design	11 27/08/09A							
DSDW12010	Review and Comment by JCL	7 29/09/09	05/10/09						
	· · · · · · · · · · · · · · · · · · ·								
DSDW12030	Submission to BD for ELS Design	1 06/10/09	06/10/09			<b>V</b>			
DSDW12040	BD Comment Approval	60 07/10/09	05/12/09						
Road Works	3								
DSRW11010	Roadworks Design	30 18/09/09	24/10/09						
DSRW11020	Roadworks Submission	1 27/10/09	27/10/09						
DSRW11030	Roadworks Approval	60 27/10/09	25/12/09						
Miscellaneo									
Boundary Wall									
DSMW11010	Boundary Wall Design	12 01/08/09A	14/08/09A						
DSMW11020	Boundary Wall Submission	1 17/08/09A	17/08/09A	T T T T T T T T T T T T T T T T T T T					
DSMW11030	Boundary Wall Approval	60 17/08/09A	22/10/09						
DSMW12010	BA8 Boundary Wall Consent Application	1 23/10/09	23/10/09						
DSMW12020	BA8 Boundary Wall Approval	28 23/10/09	19/11/09						
Procureme	ent, Manufacture & Delivery								
	ss and Equipment								
PO10100120	Manufacturing & Delivery	190 27/04/09A	08/12/09						
Utilities	1	<u> </u>							
Processing Utiliti	ies								
PO20100110	Detail Engineering	180 01/09/08A	07/08/09A	▼					
PO20100120	Tendering and Purchasing	29 10/08/09A	24/09/09		━• ↓	↓ ↓		<b>V</b>	
Start Date Finish Date	01/01/09 30/05/11		Early Bar	BK05 - 2		Sheet 4 of 6	Data		
Data Date	18/09/09		Progress Bar Critical Activi	China Harbour Engineering Comp		-	Date		
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Activity	Activity	Orig Early	Early
	Description	Dur Start	Finish
PO20100130	Manufacturing and Delivery	120 25/09/09	22/01/10
Lift System			<b>a-</b> (1 - 1 - 1
PO20301100	Prepare Lift Support System shop drawing	30 27/10/09	07/12/09
PO20302100	Prepare Lift shop drawing	30 27/10/09	07/12/09
Tankfarm an	nd Loading/unloading Stations	1 1	
PO30100300	Manufacturing & Delivery	151 28/04/09A	05/01/10
<b>Structures</b>	Construction		
General			
Z0003100	Temporary Culvert Diversion	30 02/10/09*	07/11/09
Zone 1 Adm	inistration/Processing Building		
Zone 1A & Zone			
1A&1B Piling		54 00/07/00A	00/00/00 0
Z1001030	Pile Works Z1A&1B(BP)	51 02/07/09A	
Z1001040	Preparation of Pile Report Z1A&1B(BP)	1 18/09/09	18/09/09
Z1001050	Submit to BD for Piles Selection Z1A&1B(BP)	1 21/09/09	21/09/09
Z1001060	Selection of Piles by BD Z1A&1B(BP)	14 22/09/09	05/10/09
Z1001070	Preparation for Loading Test Z1A&1B(BP)	8 06/10/09	14/10/09
Z1001080	Loading Test Z1A&1B(BP)	6 15/10/09	20/10/09
Substructure for A	AB&PB		
Z1002010	Submit to BD for ELS & Substr Consent BA8 Z1A&1B	1 18/11/09	18/11/09
Z1002020	Consent of ELS & Substr. by BD BA8 Z1A&1B(BP)	28 18/11/09	15/12/09
1B-Processing E	Buildings (BP)		
Superstructure			
Z1BB3040	Superstructure submission to BD by JCL	0 11/10/09	
Z1BB3050	BD Comment and Approval(PB)	60 12/10/09	10/12/09
1B - Processing	Building (FP)		
Foundation DS1B11050	BA8 Piling Consent Approval Z1B(FP)	15 24/07/09A	07/08/09A
Z1BF0010	Pre-drilling +Report Z1B(FP)	17 08/08/09A	
Z1BF0020	Prepara of Piling Wks(Monitoring&Defect Report)	9 20/08/09A	
Z1BF0030	Pile Works Z1B(FP)	30 31/08/09A	
Z1BF0040	Submit BA14 to BD+Select Pile for Loading Test	15 13/10/09	27/10/09
Z1BF0050	Loading Test & Site Clear(Submit report to BD)	15 28/10/09	11/11/09
Z1BF0060	Approval of BA14	7 12/11/09	20/11/09
	Boiler Room(Structure Steel Wks)	· ·	- -
Z1BF5010	Structure Steel Wks Design with BDI Review	1 30/09/09*	30/09/09
Z1BF5030	JCL Review & Construction	7 01/10/09	07/10/09
Z1BF5040	Structure Steel Design Submission to BD	0 08/10/09	
Z1BF5050	BD Comment and Approval	60 08/10/09	06/12/09
Z1BF5070	Procurement of Steel Mat	60 07/11/09	05/01/10

Start Date	01/01/09	Early Bar	BK05 - 2 Sheet 5 of 6		
Finish Date	30/05/11	· · · · · · · · · · · · · · · · · · ·	China Harbour Engineering Company	Date	
Data Date	18/09/09	Progress Bar			
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ID	Description	Dur	Start	Finish	3	3 4	<u>3</u> 4	<u>3</u> 4 5
Zone 2 Tank								
2A - Tank Farms	s							
Tank Farms Z2A01020	Internal Review of Procurement	20	08/10/09	04/11/09				
					_			
Z2A01030	Procurement of Materials	90	05/11/09	02/02/10				
	ding & Unloading Facilities							
4A-Jetty								
Piling			47/44/00	47/44/00				
DS4A12010	Submit to BD for Marine Piling Consent BA8 Z4A	1	17/11/09	17/11/09				
DS4A12020	Consent of Marine Piling by BD BD8 Z4A	28	17/11/09	14/12/09				
DS4A12030	Marine Notice to Commencement of Works	1	10/10/09	10/10/09				
Z4A01010	Excavation for Existing Seawall Z4A	30	10/11/09	14/12/09				
Utilities								
Drainage Works	S							
DW000100	Apply Excavation Permit of Drainage HyD	0	28/09/09*				▲ · · · · · · · · · · · · · · · · · · ·	
Water Supply								
WM000100	Apply Excavation Permit of Water Main HyD	0	18/09/09*					
Fire Services								
FW000100	Apply Excavation Permit of Fire Services HyD	0	18/09/09*					
Sewerage Works	(S							
SW000100	Apply Excavation Permit of Fire Services HyD	0	18/09/09*				•	
Power Supply								
PS000100	Apply Electrical Power to CLP	0	18/09/09*					
Communication S								
CS000100	Apply Excavation Permit of Tel Services HyD	0	18/09/09*				▲	

Start Date	01/01/09	Early Bar	BK05 - 2 Sheet 6 of 6		
Finish Date	30/05/11	-	China Harbour Engineering Company	Date	
Data Date	18/09/09	Progress Bar			
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			3mths Rolling Programme		
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