


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 
(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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EXECUTIVE SUMMARY

Introduction

1. This is the 5th 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

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	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 3rd 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.

Table 1.1 Key Project Contacts

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

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 20th 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**.

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)				
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 License				
WT00004508-2009	07/09/2009	-	-	Valid

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	Observations and Recommendations	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 photo was received from The Contractor on 2 November 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.

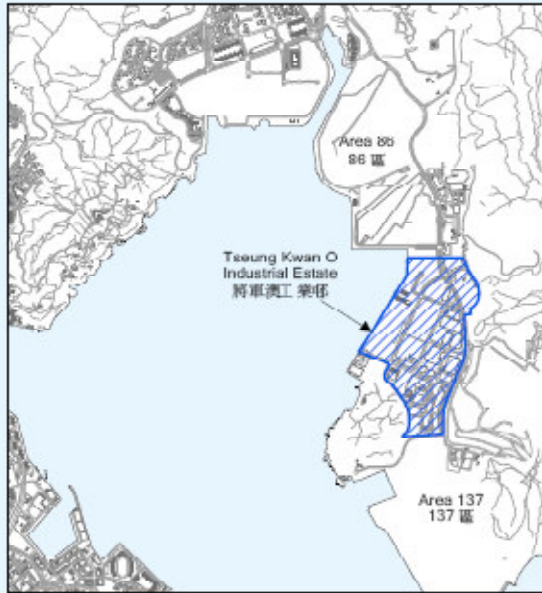
Noise Impact

- 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



Key 圖例

 Proposed Site



Meters 米

0 100 200 400



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

Site Layout Plan

Scale

N.T.S

Project

No.

MA9021

Date

Jun-09

Figure

1.1

CINOTECH

**APPENDIX A
SITE AUDIT SUMMARY**

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

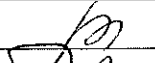

Monthly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	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	<p>A. Water Quality <u>Reminder</u></p> <ul style="list-style-type: none"> • Clear the accumulated stagnant water in drip tray and on chemical containers as chemical waste. 	B13
91020-R1	<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 <u>Reminder</u></p> <ul style="list-style-type: none"> • Clear the accumulated stagnant water in drip tray and on chemical containers as chemical waste. <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.:90916), all environmental deficiencies were improved/rectified by contractor. 	E8

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

**APPENDIX B
UPDATED ENVIRONMENTAL
MITIGATION IMPLEMENTATION
SCHEDULE**

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

Types of Impacts	Mitigation Measures	Status		
<p>Construction Dust</p>	<ul style="list-style-type: none"> • Dust control measures such as water spraying 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. 	<p>^</p> <p>N/A</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>		
		<p>Construction Noise</p>	<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. 	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</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.

Types of Impacts	Mitigation Measures	Status
Water Quality	<u>Piling Activities</u> <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. 	N/A
	<u>Construction Site Run-off and Drainage</u> <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. 	^ ^ ^ ^
	<u>General Construction Activities</u> <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="369 277 846 305"><u>Sewage generated from On-site Workforce</u></p> <ul data-bbox="415 342 1856 469" style="list-style-type: none"> <li data-bbox="415 342 1856 402">• 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="415 407 1856 469">• 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="1913 342 1969 370">N/A</p> <p data-bbox="1913 407 1948 435">^</p>
<p data-bbox="201 521 296 548">Ecology</p>	<ul data-bbox="415 505 1856 597" style="list-style-type: none"> <li data-bbox="415 505 1856 597">• 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="1913 521 1948 548">^</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**

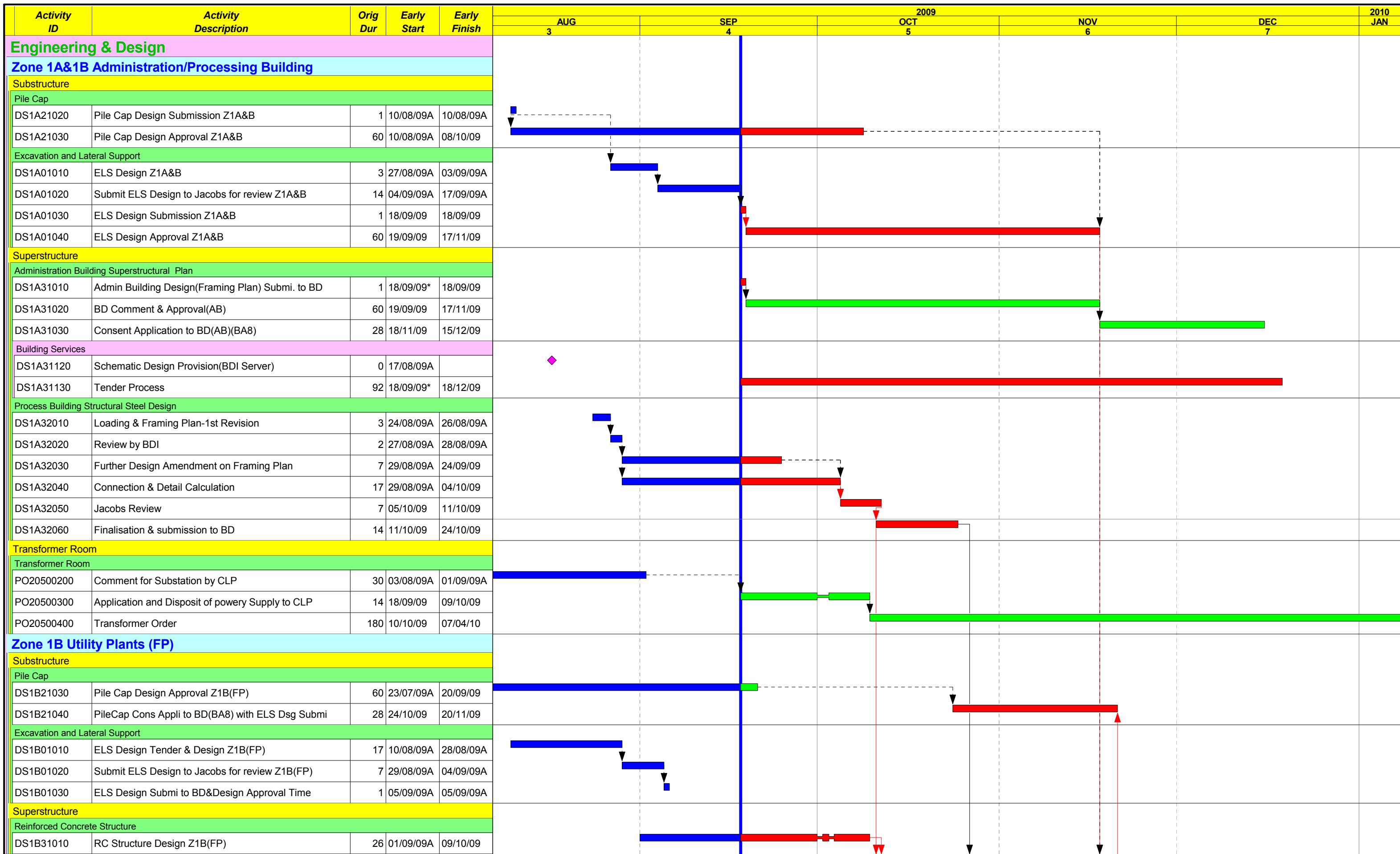
**APPENDIX D
COMPLAINT LOG**

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



Start Date 01/01/09
 Finish Date 30/05/11
 Data Date 18/09/09
 Run Date 06/10/09 08:52

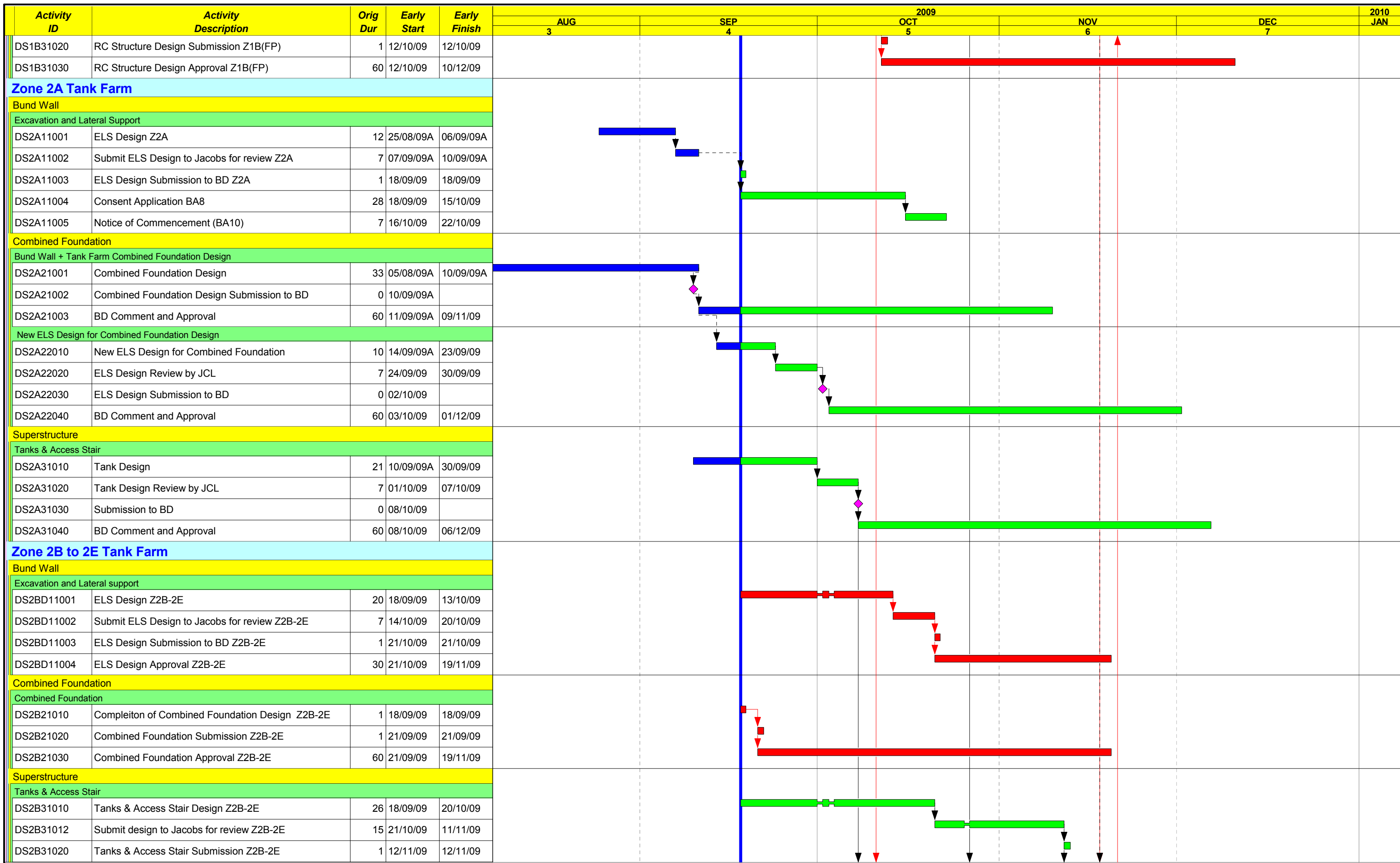
Early Bar
 Progress Bar
 Critical Activity

BK05 - 2

China Harbour Engineering Company
 Hong Kong Biodiesel Plant
 3mths Rolling Programme

Sheet 1 of 6

Date	Revision	Checked	Approved



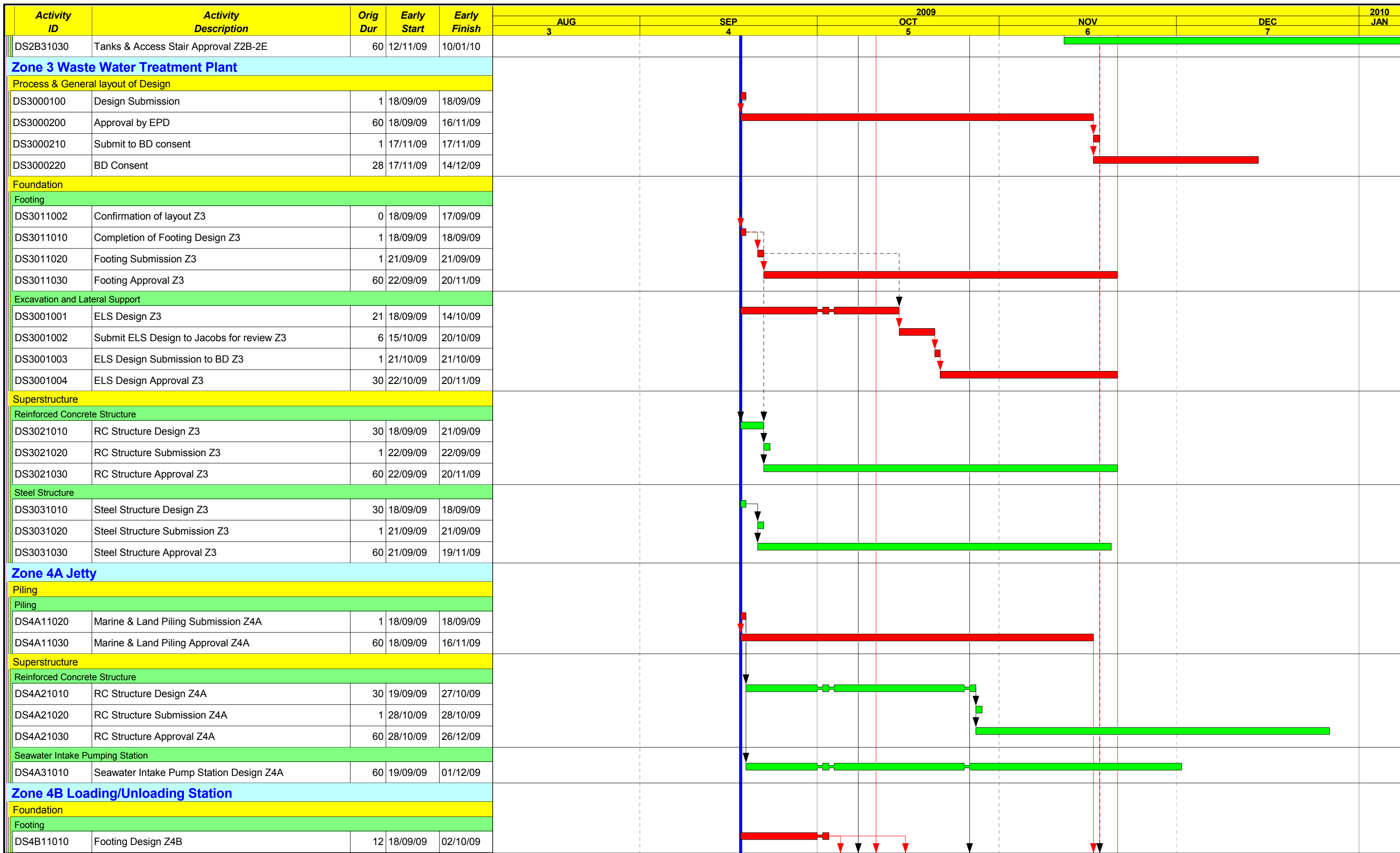
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 Finish Date 30/05/11
 Data Date 18/09/09
 Run Date 06/10/09 08:52

█ Early Bar
█ Progress Bar
█ Critical Activity

BK05 - 2
 China Harbour Engineering Company
 Hong Kong Biodiesel Plant
 3mths Rolling Programme

Sheet 2 of 6

Date	Revision	Checked	Approved



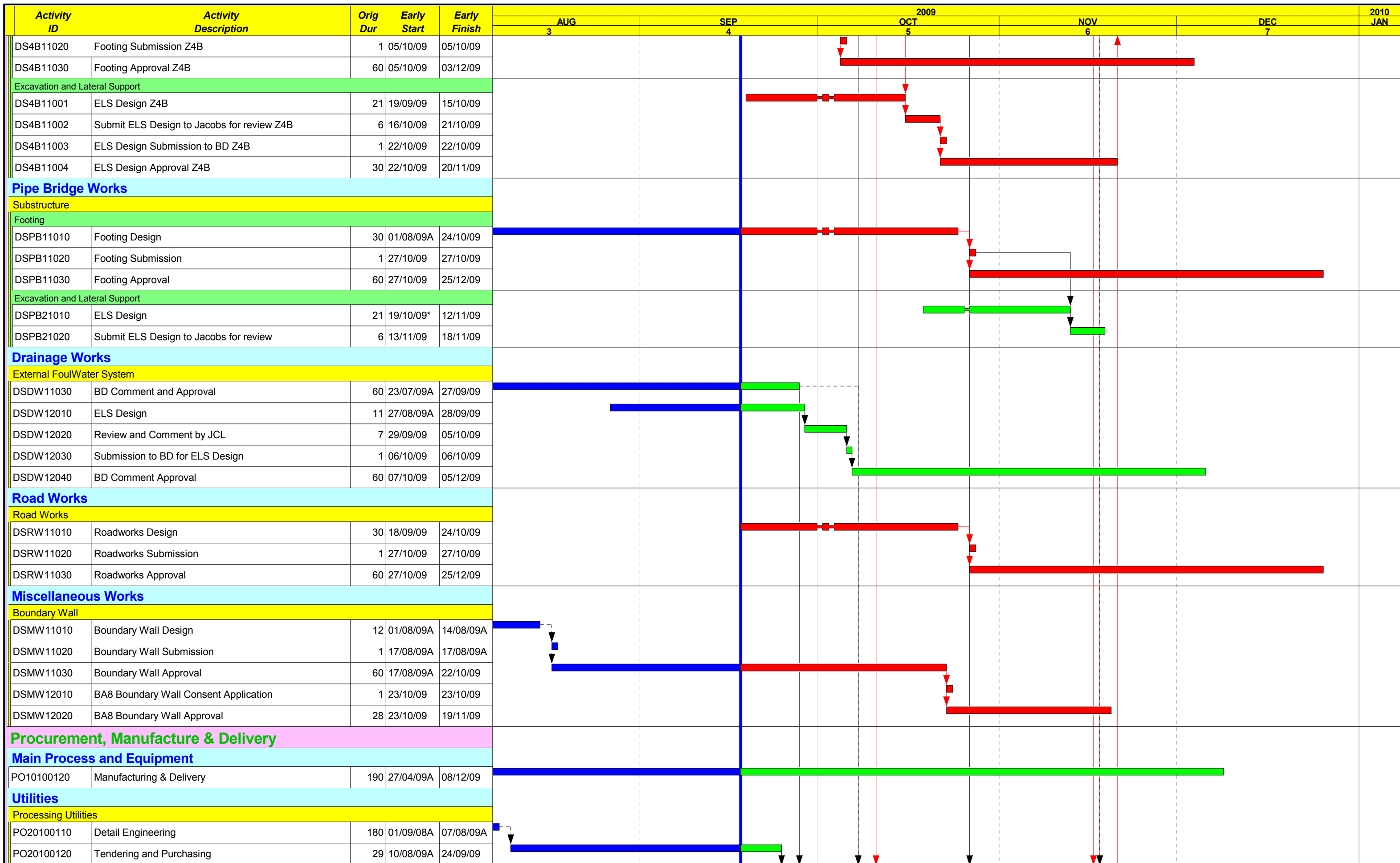
Start Date 01/01/09
 Finish Date 30/05/11
 Data Date 18/09/09
 Run Date 06/10/09 08:52

█ Early Bar
█ Progress Bar
█ Critical Activity

BK05 - 2
 China Harbour Engineering Company
 Hong Kong Biodiesel Plant
 3mths Rolling Programme

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Date	Revision	Checked	Approved



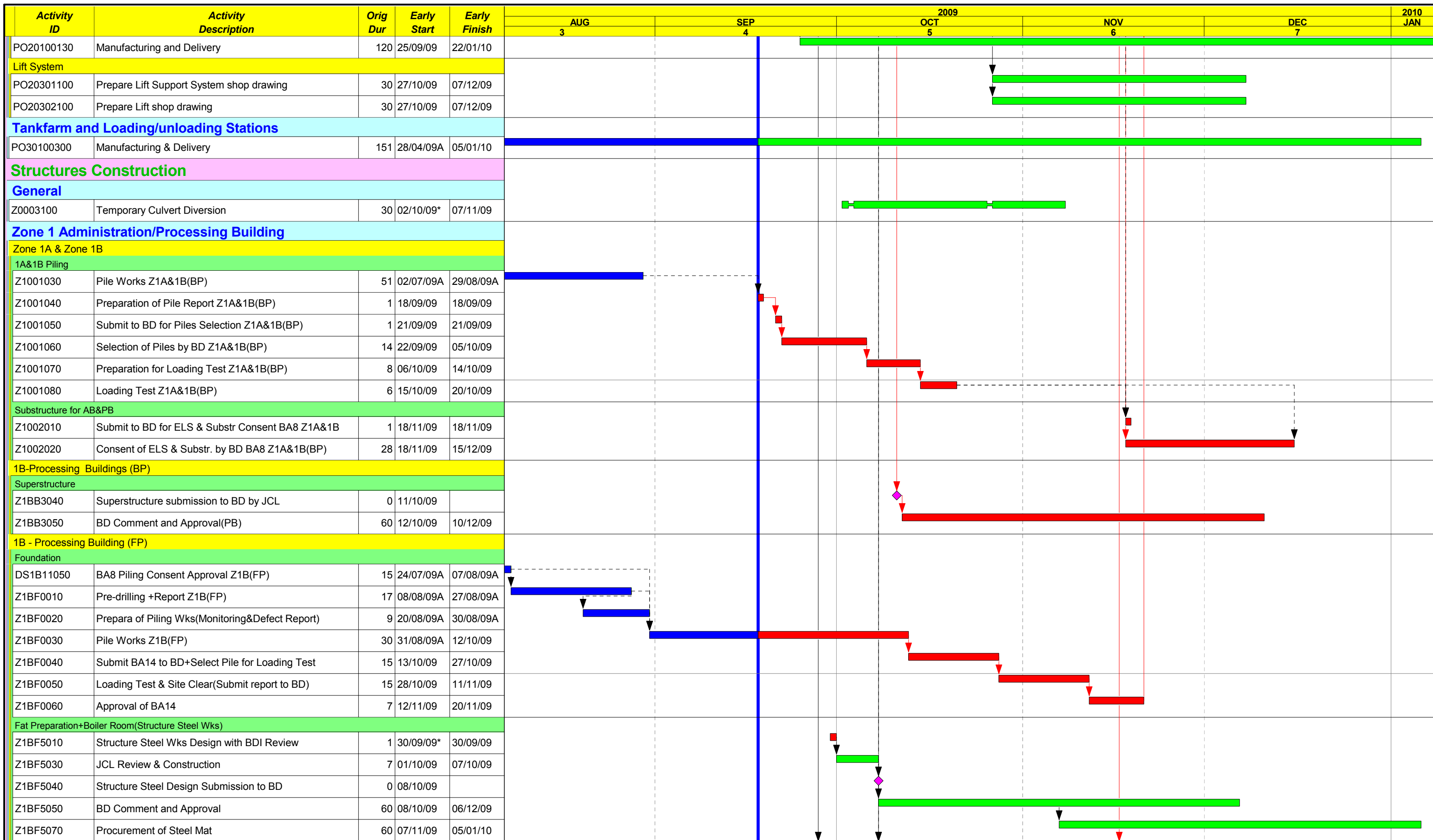
Start Date 01/01/09
 Finish Date 30/05/11
 Data Date 18/09/09
 Run Date 06/10/09 08:52

█ Early Bar
█ Progress Bar
█ Critical Activity

BK05 - 2
 China Harbour Engineering Company
 Hong Kong Biodiesel Plant
 3mths Rolling Programme

Sheet 4 of 6

Date	Revision	Checked	Approved



Start Date 01/01/09
 Finish Date 30/05/11
 Data Date 18/09/09
 Run Date 06/10/09 08:52

[Green Bar] Early Bar
 [Blue Bar] Progress Bar
 [Red Bar] Critical Activity

BK05 - 2




China Harbour Engineering Company
 Hong Kong Biodiesel Plant
 3mths Rolling Programme

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Date	Revision	Checked	Approved

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	2009							2010
					AUG 3	SEP 4	OCT 5	NOV 6	DEC 7	JAN		
Zone 2 Tank Farms												
2A - Tank Farms												
Tank Farms												
Z2A01020	Internal Review of Procurement	28	08/10/09	04/11/09								
Z2A01030	Procurement of Materials	90	05/11/09	02/02/10								
Zone 4 Loading & Unloading Facilities												
4A-Jetty												
Piling												
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												
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												
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 System												
CS000100	Apply Excavation Permit of Tel Services HyD	0	18/09/09*									

Start Date 01/01/09
 Finish Date 30/05/11
 Data Date 18/09/09
 Run Date 06/10/09 08:52

 Early Bar
 Progress Bar
 Critical Activity

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China Harbour Engineering Company
 Hong Kong Biodiesel Plant
 3mths Rolling Programme

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Date	Revision	Checked	Approved