

## EXECUTIVE SUMMARY

### Introduction

This is the tenth monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for the “Low Level Radioactive Waste Storage Facility at Siu A Chau” (the Project). This report documents the findings of Environmental Monitoring and Audit (EM&A) Works conducted in between 1<sup>st</sup> and 30<sup>th</sup> June 2004 inclusively.

The major site activities undertaken in the reporting month were:

- Construction of retaining wall;
- Construction of Superstructure (Main Building and Substation/Electric Rooms); and
- Construction of Permanent Jetty.

### Environmental Monitoring and Audit Works

Environmental monitoring for the Project was performed regularly as stipulated in the EM&A Manual and the results were checked and reviewed. A monthly site audit for this reporting month was conducted on 30<sup>th</sup> June 2004. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.

Summary of the non-compliance of the reporting month is tabulated in Table I.

### *Water Quality Monitoring*

Water quality monitoring was conducted as schedule in this reporting month.

#### Routine Water Quality Monitoring

A total of thirty-six events showing exceedances of Action/Limit Levels for suspended solids (SS) were recorded at the monitoring stations W1, W2 and W3 on 1<sup>st</sup>, 2<sup>nd</sup>, 4<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup>, 10<sup>th</sup>, 15<sup>th</sup>, 16<sup>th</sup>, 17<sup>th</sup>, 23<sup>rd</sup>, 24<sup>th</sup>, 25<sup>th</sup>, 28<sup>th</sup> and 30<sup>th</sup> in the reporting month.

A total of four event showings exceedances of Action/Limit Levels for turbidity were recorded at the monitoring stations W1, W2 and W3 on 1<sup>st</sup>, 15<sup>th</sup>, 16<sup>th</sup> and 23<sup>rd</sup> in the reporting month.

A total of twenty-one events showing exceedances of Action/Limit Levels for dissolved oxygen (DO) at the monitoring stations W1, W2 and W3 were recorded on 1<sup>st</sup>, 2<sup>nd</sup>, 4<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup>, 17<sup>th</sup> and 28<sup>th</sup> in the reporting month.

#### 12-hr Continuous Water Quality Monitoring

For the continuous water quality monitoring at Station WS, events showing exceedances of Action/Limit Levels for turbidity levels were recorded on 1<sup>st</sup>, 4<sup>th</sup>, 8<sup>th</sup>, 16<sup>th</sup>, 17<sup>th</sup>, 24<sup>th</sup> and 25<sup>th</sup> in the reporting month while events showing exceedances of Action Level for DO were recorded on 1<sup>st</sup>, 2<sup>nd</sup>, 4<sup>th</sup>, 17<sup>th</sup> and 29<sup>th</sup> in the reporting month.

According to the ET's investigation, no direct evidence demonstrating that the exceedances of Action/Limit levels for SS and turbidity on 1<sup>st</sup>, 2<sup>nd</sup>, 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> were caused by the Project was identified. The cause of exceedances might be due to the high natural background outside Sum Wan since no marine construction activities were in place and a silt curtain was installed around the effluent discharge point.

Thunderstorms were recorded by Hong Kong Observatory on 15<sup>th</sup>, 16<sup>th</sup> and 17<sup>th</sup> June so high surface runoff from the site was expected. However, the water quality control stations W2 and W3 revealed comparatively high SS and turbidity concentrations than those measured at W1, which was closer to the site. Moreover, a silt curtain was installed around the effluent discharge point. Therefore, the exceedances of Action/Limit levels of SS and turbidity were unlikely due to the Project.

Similarly, the exceedances of Action/Limit levels of SS and turbidity on 24<sup>th</sup> were due to the high natural background outside Sum Wan and not caused by the Project.

Besides, all the exceedances of Action/Limit levels for DO were unlikely due to the Project owing to the occasional high water temperature during the reporting month. It is understood that the concentration of DO will decrease with the increasing water temperature and there was no pollutant produced from the site affecting the DO.

According to the site photos taken on 4<sup>th</sup> June 2004, the temporary jetty was overtopped by the water wave during the flood tide. Debris and loose filling materials on the temporary jetty were flushed into the sea and a yellow plume of sediment was observed. Therefore, the exceedances of Limit levels for SS and turbidity were considered to be valid.

It was reported that the construction works such as piling works for the permanent jetty was commenced in mid-June. With reference to the site photo taken on 29<sup>th</sup> June 2004 showing the muddy effluent arising from the jetty piling works running into the marine water and a yellow plume of sediment was observed around the jetty. The exceedances of Action/Limit levels for SS on 23<sup>rd</sup>, 25<sup>th</sup>, 28<sup>th</sup> and 30<sup>th</sup> were considered to be valid as the concentrations of SS at W1 were the highest among the three water quality monitoring station.

**Table I Summary Table for Non-compliance Recorded in the Reporting Month**

Parameter	No. of Events Exceeding		No. of Exceedances due to the Project	Action Taken
	Action Level	Limit Level		
<i>Station W1-W3</i>				
DO (mg/L)	10	11	0	N/A
Turbidity (NTU)	3	1	0	N/A

Parameter	No. of Events Exceeding		No. of Exceedances due to the Project	Action Taken
	Action Level	Limit Level		
SS (mg/L)	2	34	11 (on 4, 23, 25, 28 & 30 June)	ET Leader informed all relevant parties and identified the cause of exceedances. The Contractor was urged to avoid the direct discharge of effluent into the sea during piling works. Proper mitigation measures were recommended to the Contractor to improve the situation: <ul style="list-style-type: none"> <li>• surrounding the works area with sufficient clean sand bags to avoid direct runoff into the sea;</li> <li>• collecting and diverting the effluent to the sedimentation tank prior to discharge;</li> <li>• regularly remove the accumulated mud and debris on the jetty to avoid them from flushing into the sea due to flooding during high tide; and</li> <li>• clear the unnecessary materials and equipment on the jetty to provide sufficient space for carrying out the piling works.</li> </ul>
Parameter	No. of Days Exceeding Action/Limit Levels		No. of Exceedances due to the Project	Action Taken
<i>Station WS</i>				
DO (mg/L)	5		0	N/A
Turbidity (NTU)	7		67 (on 4 & 25 June)	ET Leader informed all relevant parties and identified the cause of exceedances. The Contractor was urged to avoid the direct discharge of effluent into the sea during piling works. Proper mitigation measures were recommended to the Contractor to improve the situation: <ul style="list-style-type: none"> <li>• surrounding the works area with sufficient clean sand bags to avoid direct runoff into the sea;</li> <li>• collecting and diverting the effluent to the sedimentation tank prior to discharge;</li> <li>• regularly remove the accumulated mud and debris on the jetty to avoid them from flushing into the sea due to flooding during high tide; and</li> <li>• clear the unnecessary materials and equipment on the jetty to provide sufficient space for carrying out the piling works.</li> </ul>

**Environmental Licensing and Permitting**

License/Permits granted to the Project include the Environmental Permit (EP), the Further Environmental Permit (FEP), the Water Discharge License (WDL) and Construction Noise Permit (CNP) for the Project. No new license/permit was issued to the Project in this reporting month.

**Complaints and Prosecutions**

No environmental complaint or prosecution was received in this reporting month.

**Status of Waste Management**

The Waste Management Plan (WMP) was accepted with conditions by EPD on 30<sup>th</sup> September 2003 and the Contractor resubmitted WMP (Rev. B) on 9<sup>th</sup> October 2003.

No C&D materials were generated was collected in the reporting month. The waste management should follow the procedures in the approved WMP.

**Key Information in the Reporting Month**

Summary of key information in this reporting month is tabulated in Table II.

**Table II 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 received	0	---	N/A	N/A	---
<p><b><u>Future Key Issues:</u></b></p> <p>Major site activities for the coming month include:</p> <ul style="list-style-type: none"> <li>• Permanent site formation;</li> <li>• Boulder stabilization works;</li> <li>• Construction of superstructure; and</li> <li>• Construction of permanent jetty.</li> </ul> <p>The anticipated environmental impacts will be mainly on dust and noise due to earthworks, and surface runoff during rainy days and the water quality associated with the marine construction activities.</p>					