

ATAL-BELGOPROCESS JOINT VENTURE

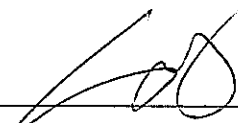
Contract No. EP/SP/40/02

**Low Level Radioactive Waste Storage
Facility at Siu A Chau**

**Environmental Monitoring and Audit
Monthly Report for July 2005
(Version 1.0)**

August 2005

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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EXECUTIVE SUMMARY

Introduction

This is the twenty-third 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 1st and 19th July 2005 inclusively. Since EPD issued a Certificate of Completion of the Works on 19th July 2005, no EM&A works were carried out after 19th July 2005 and this is the last monthly EM&A Report for the Project. In addition, the marine works for the Project were completed on 10th June 2005 and no water quality monitoring was carried out in the reporting month.

The major site activities undertaken in the reporting month were:

- Testing and commissioning
- Finishing works
- Landscaping works
- Site tidy up

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. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.

The marine works for the jetty were completed on 10th June 2005 and no further marine works would be expected to be carried out. Therefore, no water quality impact monitoring was conducted after 10th June 2005.

Water Quality Monitoring

No water quality monitoring was conducted in the reporting month.

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.

Complaints and Prosecutions

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

1. INTRODUCTION

Background

- 1.1 Various industrial, educational and medical facilities in Hong Kong have, for a number of years, used radioactive materials and generated radioactive waste. Most of the existing waste arisings are stored in disused air raid tunnels close to Queen's Road East in Wan Chai. Other arisings are stored temporarily (although in some cases for several years) at the point of use in educational institutions or hospitals.
- 1.2 The condition of the Queen's Road East tunnels has been found to be unsatisfactory and various parts of the tunnel system suffer from leakage and ingress of water. The condition of some of the waste packages has subsequently deteriorated and they are generally unsatisfactory for the safe long-term containment and storage of radioactive materials.
- 1.3 The existing facilities are unsatisfactory and in addition are located closed to a high density of population, which make access to, and management of, the waste more problematic. As well as existing waste, there is also a continuing need to use radioactive materials in Hong Kong and a continuing predictable amount of future waste arisings. Therefore, the Government has decided that storage of low-level radioactive waste in Hong Kong requires a dedicated, purpose-designed facility. After a thorough consultancy study in the "Environmental Impact and Safety Assessment Report, June 1995 (Stage 1 EISA)" and evaluation, the preferred site located on the island of Siu A Chau in the Soko Islands, adjacent to the small bay of Sum Wan on the eastern side of the island was selected.
- 1.4 Environmental Protection Department (EPD) commissioned the construction and operation of the Low-Level Radioactive Waste Storage Facility (LRWF) at Siu A Chau (hereinafter referred as the "Project") under Contract No. EP/SP/40/02 to ATAL-Belgoprocess Joint Venture Limited (hereinafter called "the Contractor") in July 2003. The Project site layout is shown in Figure 1.1 and the location of the environmental sensitive receiver is depicted in Figure 1.2.
- 1.5 An Environmental Permit (EP) (No. EP-131/2002) for the Project was issued on 11 April 2002 to the Special Waste Facilities Group, Environmental Protection Department as Permit Holder. Under the Tender Specification Clause 1.6.3.1, the Contractor is required to obtain a Further Environmental Permit (FEP) before he assumes the responsibility for relevant construction and operation. The FEP (No. FEP-01/131/2003) was successfully obtained from EPD on 30th July 2003 by the Contractor.
- 1.6 Cinotech Consultants Limited (hereinafter called the "ET") was commissioned by the contractor to undertake the Environmental Monitoring and Audit (EM&A) works for the Project. Mr. Jesse Yuen of Cinotech Consultants Limited was appointed as the ET Leader under Condition 2.1 of the FEP. Mr. Sam Tsoi of Ove Arup & Partners Hong Kong Limited was appointed as the IEC under Condition 2.2 of the EP and the FEP.

- 1.13 EPD has issued the Certificate of Completion of the Works dated 19th July 2005 so the Works for the Project was completed and this is the last Monthly EM&A Report.

Summary of EM&A Requirements

- 1.14 The EM&A programme requires baseline monitoring for water quality and ecology; and construction phase monitoring for water quality and environmental site audit. The requirements for each parameter as stipulated in EM&A Manual are described in following sections, including:
- All monitoring parameters;
 - Action and Limit levels for all environmental parameters;
 - Event Action Plans;
 - Environmental mitigation measures, as recommended in the Stage 1 EISA Report for the Project;
 - Environmental requirements in contract documents.
- 1.15 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 3 of this report.
- 1.16 This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures for the required monitoring parameters [namely dissolved oxygen (DO), turbidity, temperature and suspended solids (SS)] and site audit works for the Project in the reporting month.

3. ENVIRONMENTAL AUDIT

Site Audits

- 3.1 Site audits were carried out on a monthly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site.
- 3.2 No monthly site audit for this reporting month was conducted at the end of this reporting month as EPD issued the Certificate of Completion of the Works dated 19th July 2005.

Status of Environmental Licensing and Permitting

- 3.3 All permits/licenses obtained are summarized in Table 3-1.

Table 3-1 Summary of Environmental Licensing and Permit Status

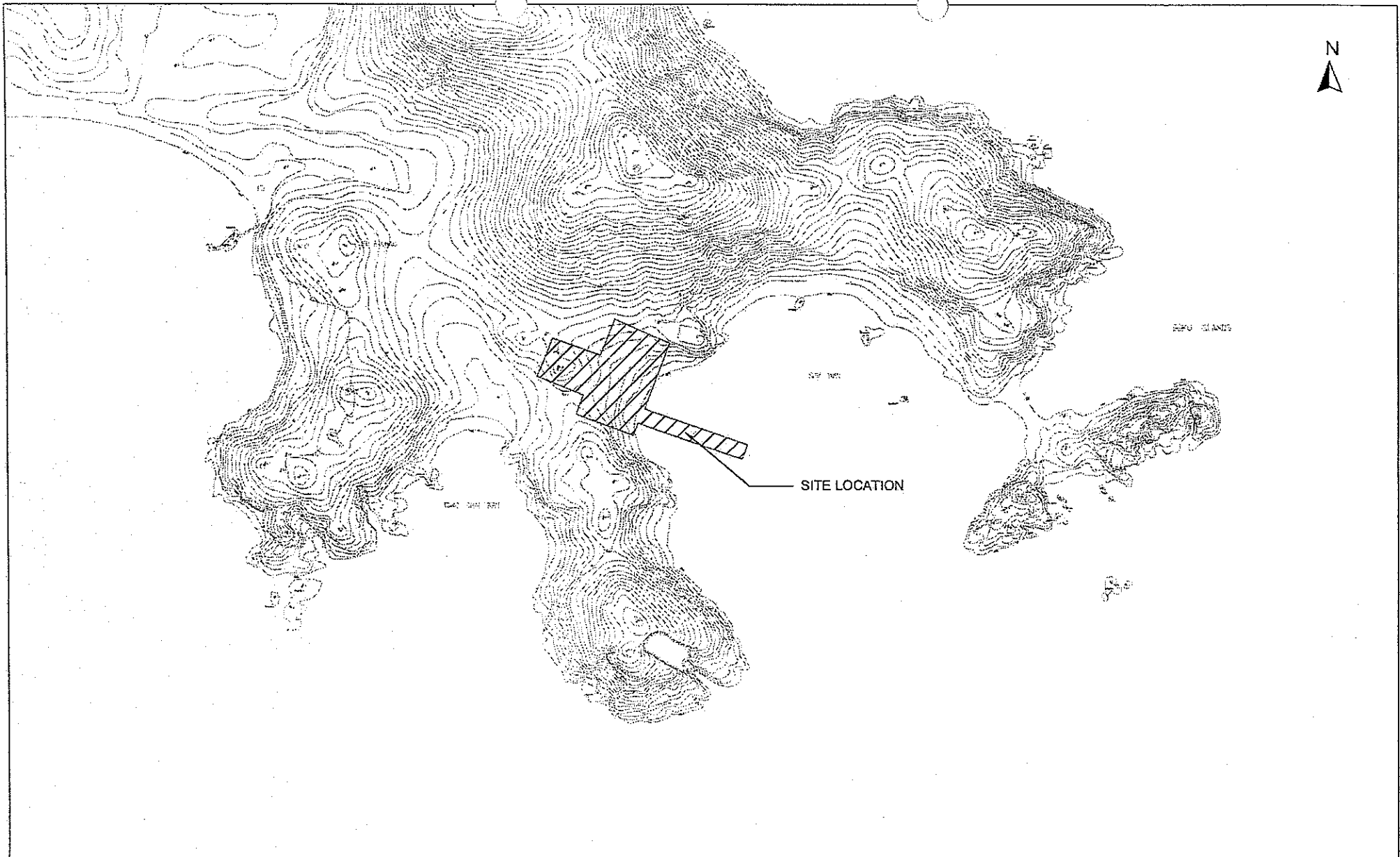
Permit No.	Valid Period		Section	Status
	From	To		
Environmental Permit				
EP-131/2002	11/04/02	N/A	Design, construct and operate a waste disposal facility for industrial or special waste. The site is of 0.6 ha constructed with a single storey building of approximately 44m x 24 m in size. Scope of the construction includes: (i) civil engineering works, (ii) building works including building services, and (iii) operation of the facility	The EP has not been surrendered.
FEP-01/131/2003 (a copy was attached in the first monthly report)	30/07/03	N/A		Valid
Construction Noise Permit				
GW-UW0313-04 (a copy is attached in the monthly report for January 2005)	06/01/05	01/07/05	The use of powered mechanical equipment for carrying out construction work at Sum Wan, Siu A Chau on general holiday (including Sunday) between 0700 and 0700 hours on next day and on any day not being a general holiday between 1900 and 0700 hours on next day.	Valid
Water Discharge License				
EP760/934/008541I (a copy was attached in the monthly report for December 2003)	22/12/03	31/12/08	Discharge of Industrial Trade Effluent arising from the construction activities (settlement facility) at the construction site for Low-Level Radioactive Waste Storage Facility at Sun Wan, Siu A Chau, Hong Kong.	Valid

4. FUTURE KEY ISSUES

Key Issues for the Coming Month

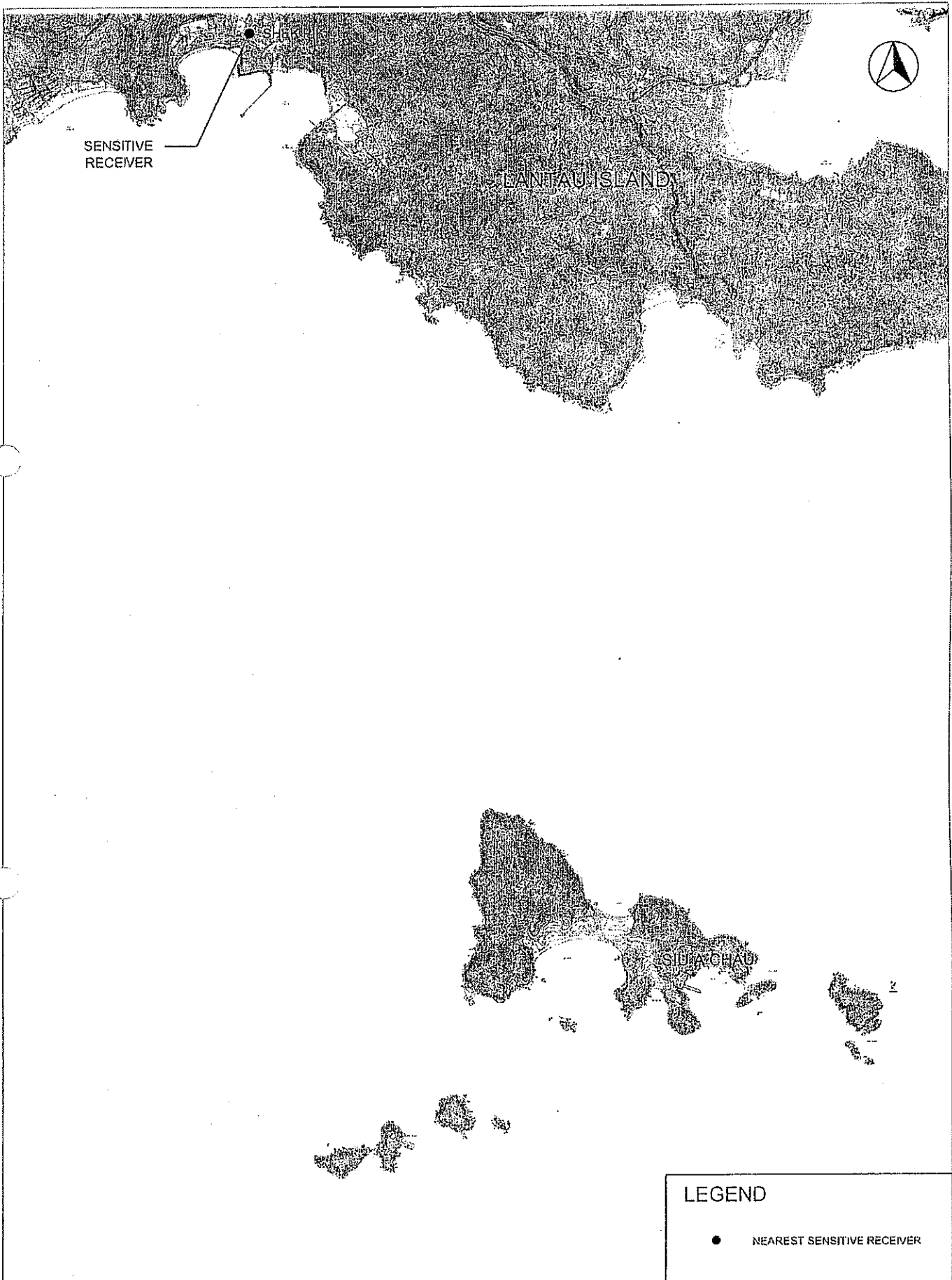
- 4.1 EPD issued the Certificate of Completion of the Works dated 19th July 2005. No more construction works will be expected in the coming month and no environmental impact due to construction works is anticipated.

FIGURES



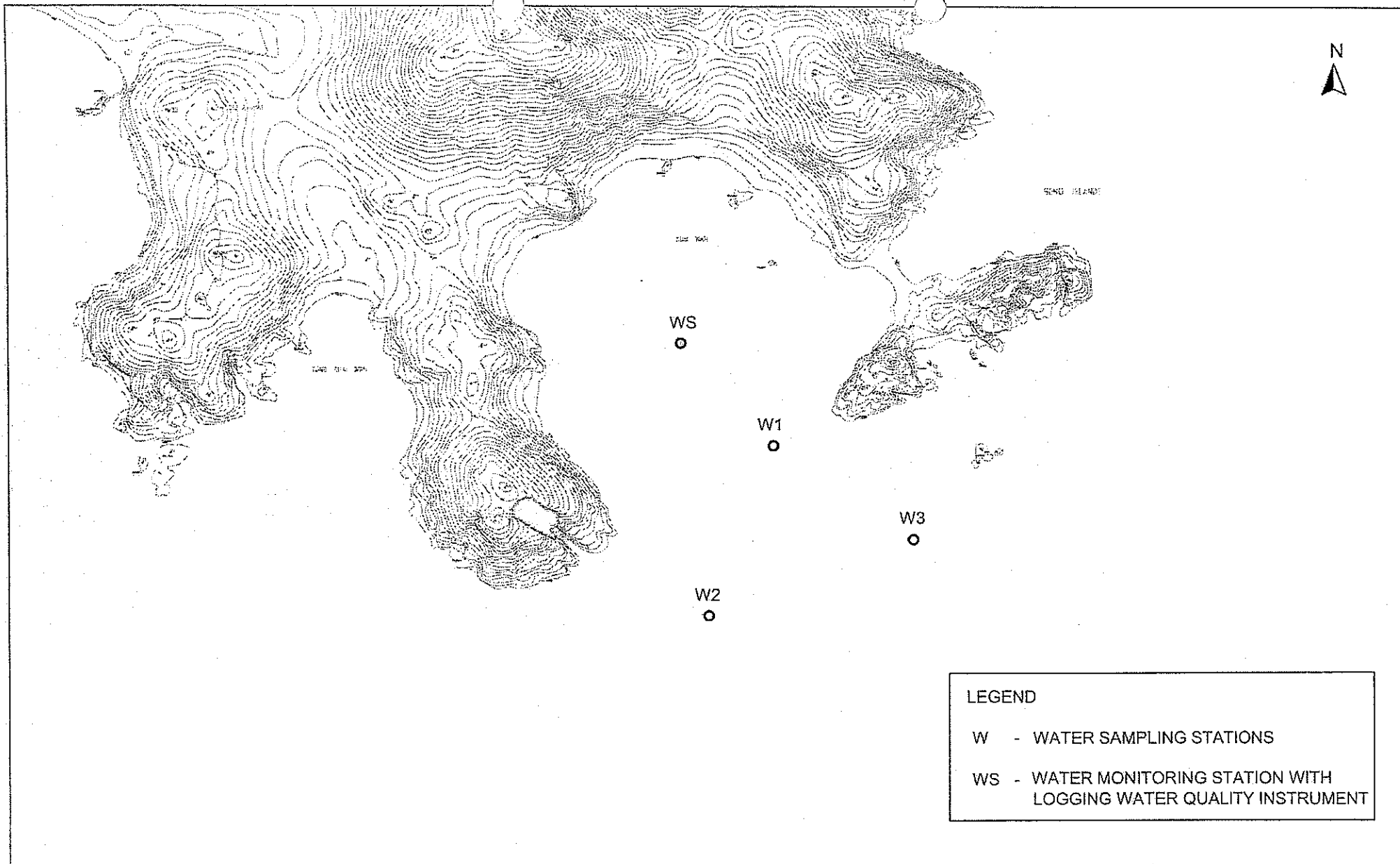
Title	CONTRACT NO. EP/SP/40/02		Scale	Project No.
	LOW LEVEL RADIDACTIVE WASTE STORAGE FACILITY AT SIU A CHAU		1 : 4000 A4	HW3025
	SITE LAYOUT PLAN		Date	Figure No.
			2004	1.1





LEGEND	
●	NEAREST SENSITIVE RECEIVER

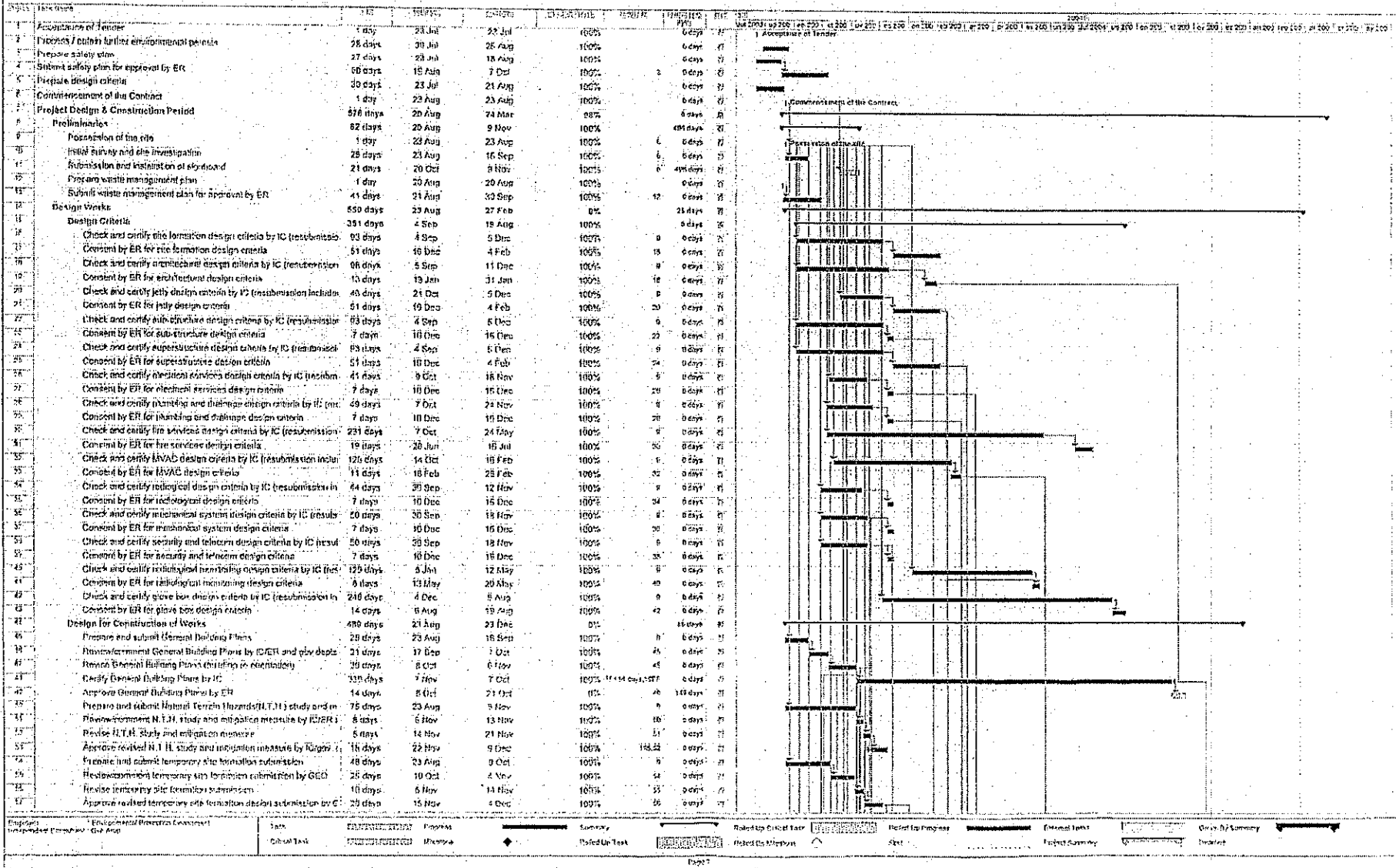
Title CONTRACT NO. EP/SP/40/02 LOW LEVEL RADIOACTIVE WASTE STORAGE FACILITY AT SIU A CHAU LOCATION OF ENVIRONMENTAL SENSITIVE RECEIVER	Scale 1 : 25 000 (A4)	Project No. HW3025	
	Date 2004	Figure No. 1.2	



Title CONTRACT NO. EP/SP/40/02 LOW LEVEL RADIOACTIVE WASTE STORAGE FACILITY AT SIU A CHAU LOCATIONS OF BASELINE WATER QUALITY MONITORING STATIONS	Scale N.T.S	Project No. HW3025	
	Date 2004	Figure No. 2.1	

**APPENDIX A
CONSTRUCTION PROGRAMME FOR
CIVIL WORKS**

ATAL BELGUPROCESS JOINT VENTURE
EP/SP/40/02 LOW LEVEL RADIOACTIVE WASTE STORAGE FACILITY AT U A CHAU
Design and the Works Programme
(Rev. G)



**APPENDIX B
ACTION AND LIMIT LEVELS FOR
WATER QUALITY**

Appendix B - Action and Limit Levels

(1) Action and Limit Levels for Water Quality at Stations W1 to W3

Parameter		Action	Limit
<i>Mid-Ebb</i>			
DO, mg/L	Surface and Middle	6.3	4 except 5 for Fish Culture Zone or 6.1 (1%-ile of baseline data)
	Bottom	6.1	2 or 5.9 (1%-ile of baseline data)
Turbidity, NTU		13.4	14.8
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
SS, mg/L		9.9	10.5
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day and specific sensitive receiver water quality requirements
<i>Mid-Flood</i>			
DO, mg/L	Surface and Middle	6.4	4 except 5 for Fish Culture Zone or 6.3 (1%-ile of baseline data)
	Bottom	4.1	2 or 3.6 (1%-ile of baseline data)
Turbidity, NTU		22.7	25.1
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
SS, mg/L		17.7	20.1
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day and specific sensitive receiver water quality requirements

(2) Action and Limit Levels for Water Quality at Station WS

Parameter	Action	Limit
DO, mg/L	5.9	4 or 5.5 (1%-ile of baseline data)
Turbidity, NTU	8.0	9.2

**APPENDIX C
SUMMARY OF AMOUNT OF WASTE
GENERATED**

ATAL Belgoprocess Joint Venture Limited



ATAL Engineering Limited



Belgoprocess

Our Ref.: ABJV/SP/768/0508004/CL

4 August 2005

Environmental Protection Department
Waste Facilities Business Unit
88 Victoria Road
Kennedy Town
Western District Hong Kong

Via Fax then By Mail
(2591 6662)

Attn. : Mr. Alex Y.W. Ng - P(SL)

Dear Sir,

Contract No. EP/SP/40/02
Low-Level Radioactive Waste Storage Facility at Siu A Chau
Monthly C&D Report - July 2005

We are pleased to submit herewith the completed and duly signed Monthly C&D Report for the month of July 2005 for your information and record.

Yours faithfully,
For and on behalf of
ATAL-Belgoprocess Joint Venture Limited

Barry Lee
Project Manager

BL/R^{cl}Y/CL/wfh

Encl. (1 copy, as-stated)

c.c. OAP	- Mr. Sam Tsoi	w/encl. (By Fax: 2268 3975 only)
CINOTECH	- Mr. Jesse Yuen	w/encl. (By Fax: 3107 1388 only)

Contract No. : EP/SP/40/02Month / Year : Jul-05

Quantities of C&D Materials Generated Monthly

Inert non-metallic C&D Materials						Non-inert C&D Materials				Total C&D Materials (inert) reused / recycled	Total C&D Materials to public fill	Total C&D waste to land fill		Chemical Waste	Others e.g. general refuse	
Non-contaminated hard inert materials suitable for recycling (e.g. concrete, rubble, bricks)			Other insert materials (e.g. soil)			Metal reused / recycled	Timber reused / recycled	Paper / cardboard packaging reused / recycled	Plastics (e.g. plastic bottles / containers plastic sheets / foam from packaging material/reuse/recycle d)			(L)*(3)	(M)*(4)			(N)*(5)
Reused in the Contract	To off-site outlets* (2) for reuse / recycled	To public fill	Reused in the Contract	To off-site outlets* (2) for reuse / recycled	To public fill											
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)*(3)	(M)*(4)	(N)*(5)	(O)	(P)	
m ³	m ³	m ³	m ³	m ³	m ³	kg	kg	kg	kg	m ³	m ³	tonne	m ³	m ³	m ³	
0	0	0	0	0	830	0	0	0	0	=(A)+(B)+(D)+(E)	=(C)+(F)	0	0	0	20	
													equivalent quantity of (M) in m ³			

*Remarks

- * (1) All quantities shall be rounded off to 2 decimal places.
- * (2) off-site outlets' include other construction sites but excludes public fill and land fill.
- * (3) Quantity of total C&D Materials to public **【column (L)】** shall match the data recorded in the trip-tickets concerned.
- * (4) Quantity of total C&D Materials to land fill **【column (M)】** shall match the data recorded in the trip-tickets concerned.
- * (5) Quantity of column (N) could be worked out by the assumption of '5m³ per truck load' registered under the trip-ticket system.

**APPENDIX D
EVENT ACTION PLAN FOR WATER
QUALITY**

Appendix D Event and Action Plan for Water Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
Action level being exceeded by one sampling day	1. Repeat in-situ measurement to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, Contractor and ER; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC and Contractor; 6. Repeat measurement on next day of exceedance.	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with IEC on the proposed mitigation measures; 2. Make agreement on the mitigation measures to be implemented.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with ET and IEC and propose mitigation measures to IEC and ER; 6. Implement the agreed mitigation measures.
Action level being exceeded by two or more consecutive sampling days	1. Repeat in-situ measurement to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, Contractor and ER; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, Contractor and ER; 6. Ensure mitigation measures are implemented; 7. Prepare to increase the monitoring frequency to daily; 8. Repeat measurement on next day of exceedance.	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with IEC on the proposed mitigation measures; 2. Make agreement on the mitigation measures to be implemented; 3. Assess the effectiveness of the implemented mitigation measures.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with ET and IEC and propose mitigation measures to IEC and ER within 3 working days; 6. Implement the agreed mitigation measures.

Remarks: ET = Environmental Team
 IEC = Independent Environmental Checker
 ER = Employer's Representative

APPENDIX E
COMPLAINT LOG

Appendix E - Complaint Log

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50111	Site boundary and area	11 January 2005	The following items were concerned in the complaint: <ul style="list-style-type: none"> • muddy water discharge from construction site • dust emission from construction site • placing construction material beyond site boundary • no provision of chemical toilets for workers 	Based on the site investigation, no environmental deficiency on the concerned items was observed on site. However, the Contractor was recommended to tighten up the environmental control measures in order to uphold and enhance the environmental performance. The following measures includes: <ul style="list-style-type: none"> • No water discharge into the sea; • Installation and maintenance of the silt curtains; • Enhancement of dust control measures such covering the sand and aggregates and regular spraying for exposed dusty areas; • No construction materials or works outside the site boundary; and • Maintenance of the toilet facility. The investigation report has been submitted on 28 January 2005.	Closed