

 土木工程拓展署
Civil Engineering and
Development Department

**Environmental Monitoring and Audit
for Contaminated Mud Pit at Sha
Chau (2009-2013) – Investigation
Agreement No. CE 4/2009(EP)**

**20th Monthly Progress Report for
Contaminated Mud Pits at Sha Chau –
February 2011**

Revision 0

1 April 2011

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Revision 0

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Summary: This document presents progress of monitoring works on contaminated mud pits at Sha Chau in February 2011 under Agreement No. CE 4/2009 (EP).		Date: 1 April 2011			
		Approved by:  Dr Robin Kennish Director			
0	20 th Monthly Progress Report for CMP – Revision 0	JT	CAR	RK	1/4/11
Revision	Description	By	Checked	Approved	Date
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Agreement No. CE 4/2009 (EP)
Environmental Monitoring and Audit
for Contaminated Mud Pit at Sha Chau (2009-2013) - Investigation

20th MONTHLY PROGRESS REPORT FOR CONTAMINATED MUD PITS
AT SHA CHAU - February 2011

1.1 BACKGROUND

Since 1992, the East of Sha Chau area has been the site of a series of dredged contaminated mud pits (CMPs) designed to provide confined marine disposal capacity for contaminated mud arising from the HKSAR's dredging and reclamation projects. CMP IVc is presently in operation for backfilling by contaminated mud and is anticipated to reach its capacity in 2011. A series of four newly constructed seabed pits at the East of Sha Chau area, CMP Va-d, will be provided for the disposal of contaminated mud after CMP IVc is full. Dredging operations were completed for the construction of CMP Va and are now taking place to construct CMP Vb. The environmental monitoring and audit (EM&A) programme for the CMPs at the East of Sha Chau area presently covers disposal and capping operations at CMP IV and dredging operations at CMP Vb.

1.2 REPORTING PERIOD

This *Monthly Progress Report* covers the monitoring period of February 2011.

1.3 DETAILS OF SAMPLING AND LABORATORY TESTING ACTIVITIES

The following monitoring activities have been undertaken for CMP IV and CMP V in February 2011:

CMP IV

- *Water Column Profiling* was conducted on 9 February;
- *Routine Water Quality Monitoring* was conducted on 10 February;
- *Water Quality Monitoring during Capping* was conducted on 11 February;
and
- *Demersal Trawling* was conducted on 16-17 February.

CMP V

- *Impact Water Quality Monitoring during Dredging Operations* was conducted on 15 February.

A summary of field activities are presented in *Annex A*.

1.4 *DETAILS OF OUTSTANDING SAMPLING AND / OR ANALYSIS*

No outstanding sampling and laboratory analysis remained from February 2011.

1.5 *BRIEF DISCUSSION OF THE MONITORING RESULTS*

Results of *Impact Water Quality Monitoring during Dredging Operations* for February 2011 are presented for CMP V. Detailed results will be discussed in the relevant *Quarterly Reports*.

1.5.1 *CMP V*

Impact Water Quality Monitoring during Dredging Operations of CMP V – February 2011

Impact Water Quality Monitoring during Dredging Operations of CMP V was conducted on 15 February 2011. On the survey day, sampling was conducted during both mid-ebb and mid-flood tides at two Reference (Upstream) stations upstream and five Impact (Downstream) stations downstream of the dredging operations at CMP V. Monitoring was also conducted at the Ma Wan station. At each station, *in-situ* measurements of water quality parameters as well as water samples were taken from three depths in the water column (ie surface: 1 m below sea surface, mid-depth and bottom: 1 m above the seabed).

Monitoring results are presented in *Table B1 of Annex B*. Levels of Dissolved Oxygen (DO), Turbidity and Total Suspended Solids (TSS) complied with the Action and Limit Levels set in the *Baseline Monitoring Report* ⁽¹⁾. Therefore, there appears to be no evidence of any unacceptable adverse water quality impacts arising from the dredging operations of CMP V at ESC.

1.6 *ACTIVITIES SCHEDULED FOR THE NEXT MONTH*

Impact Water Quality Monitoring during Dredging will be undertaken for CMP V in the next monitoring month.

The sampling schedule is presented in *Annex A*.

1.7 *STUDY PROGRAMME*

A summary of the Study programme is presented in *Annex C*.

(1) ERM (2009) Baseline Monitoring Report. Environmental Monitoring and Audit for Contaminated Mud Pit at Sha Chau (2009-2013) – Investigation. Agreement No. CE 4/2009(EP). Submitted to EPD in September 2009.

Annex A

Sampling Schedule

			2009												2010												2011													
			J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A																
Pit Specific Sediment Chemistry																																								
Active-Pit	NCA 1-8	3 times per year	*					*					*					*					*					*						*					*	
	NCB 1-8	3 times per year	*					*					*					*					*					*						*					*	
Pit-Edge	CPA 1-8	3 times per year	*					*					*					*					*					*						*					*	
	CPB 1-8	3 times per year	*					*					*					*					*					*						*					*	
Near-Pit	CNA 1-8	3 times per year	*					*					*					*					*					*						*					*	
	CNB 1-8	3 times per year	*					*					*					*					*					*						*					*	
Cumulative Impact Sediment Chemistry																																								
Near-field Stations	RNA 1-9	2 times per year	*					*									*						*					*						*					*	
	RNB 1-9	2 times per year	*					*									*						*					*						*					*	
Mid-field Stations	RMA 1-9	2 times per year	*					*									*						*					*						*					*	
	RMB 1-9	2 times per year	*					*									*						*					*						*					*	
Capped Pit Stations	RCA 1-9	2 times per year	*					*									*						*					*						*					*	
	RCB 1-9	2 times per year	*					*									*						*					*						*					*	
Far-Field Stations	RFA 1-9	2 times per year	*					*									*						*					*						*					*	
	RFB 1-9	2 times per year	*					*									*						*					*						*					*	
Sediment Toxicity Tests																																								
Near-Field Stations	TCA	2 times per year	3					3								3						3					3						3					3		
	TCB	2 times per year	3					3								3						3					3						3					3		
Reference Stations	TRA	2 times per year	3					3								3						3					3						3					3		
	TRB	2 times per year	3					3								3						3					3						3					3		
Tissue/ Whole Body Sampling																																								
Near-Pit Stations	INA	2 times per year	*					*								*						*					*						*					*		
	INB	2 times per year	*					*								*						*					*						*					*		
Reference North	TNA	2 times per year	*					*								*						*					*						*					*		
	TNB	2 times per year	*					*								*						*					*						*					*		
Reference South	TSA	2 times per year	*					*								*						*					*						*					*		
	TSB	2 times per year	*					*								*						*					*						*					*		
Demersal Trawling																																								
Near Pit Stations	INA 1-5	4 times per year	5	5				5	5					5	5						5	5					5	5					5	5					5	
	INB 1-5	4 times per year	5	5				5	5					5	5						5	5					5	5						5	5					5
Reference North	TNA 1-5	4 times per year	5	5				5	5					5	5						5	5					5	5						5	5					5
	TNB 1-5	4 times per year	5	5				5	5					5	5						5	5					5	5						5	5					5
Reference South	TSA 1-5	4 times per year	5	5				5	5					5	5						5	5					5	5						5	5					5
	TSB 1-5	4 times per year	5	5				5	5					5	5						5	5					5	5						5	5					5
Capping																																								
<i>Ebb Tide</i>																																								
Impact Station Downcurrent	IPE1	4 times per year	3	3				3	3					3	3						3	3					3	3					3	3					3	
	IPE2	4 times per year	3	3				3	3					3	3						3	3					3	3						3	3					3
	IPE3	4 times per year	3	3				3	3					3	3						3	3					3	3						3	3					3
	IPE4	4 times per year	3	3				3	3					3	3						3	3					3	3						3	3					3
	IPC1	4 times per year	3	3				3	3					3	3						3	3					3	3						3	3					3
Intermediate Station Downcurrent	INE1	4 times per year	3	3				3	3					3	3						3	3					3	3						3	3					3
	INE2	4 times per year	3	3				3	3					3	3						3	3					3	3						3	3					3
	INE3	4 times per year	3	3				3	3					3	3						3	3					3	3						3	3					3
	INE4	4 times per year	3	3				3	3					3	3						3	3					3	3						3	3					3
	INE5	4 times per year	3	3				3	3					3	3						3	3					3	3						3	3					3
Reference Station Upcurrent	RFE1	4 times per year	3	3				3	3					3	3						3	3					3	3						3	3					3
	RFE2	4 times per year	3	3				3	3					3	3						3	3					3	3						3	3					3
	RFE3	4 times per year	3	3				3	3					3	3						3	3					3	3						3	3					3
	RFE4	4 times per year	3	3				3	3					3	3						3	3					3	3						3	3					3
	RFE5	4 times per year	3	3				3	3					3	3						3	3					3	3						3	3					3
<i>Flood Tide</i>																																								
Impact Station Downcurrent	INF1	4 times per year	3	3				3	3					3	3						3	3					3	3						3	3					3
	IPC2	4 times per year	3	3				3	3					3	3						3	3					3	3						3	3					3
	INF3	4 times per year	3	3				3	3					3	3						3	3					3	3						3	3					3
Intermediate Station Downcurrent	IPF1	4 times per year	3	3				3	3					3	3						3	3					3	3						3	3					3
	IPF2	4 times per year	3	3				3	3					3	3						3	3					3	3						3	3					3
	IPF3	4 times per year	3	3				3	3					3	3						3	3					3	3						3	3					3
Reference Station Upcurrent	RFF1	4 times per year	3	3				3	3					3	3						3	3					3	3						3	3					3
	RFF2	4 times per year	3	3				3	3					3	3						3	3					3	3						3	3					3
	RFF3	4 times per year	3	3				3	3					3	3						3	3					3	3						3	3					3
Routine Water Quality Monitoring																																								
<i>Ebb Tide</i>																																								
Impact Station Downcurrent	IPE1	2 times per year	*											*								*					*						*					*		
	IPE2	2 times per year	*											*								*					*						*					*		
	IPE3	2 times per year	*											*								*					*						*					*		
	IPE4	2 times per year	*											*								*					*						*					*		
	IPE5	2 times per year	*											*								*					*						*					*		
Intermediate Station Downcurrent	INE1	2 times per year	*											*								*					*													

Annex B

Monitoring Results

Table B1 *Summary Table of DO, Turbidity and TSS Levels recorded in February 2011*

Sampling Date	Tidal Period	Station	Average DO Levels (mg/L)		Average Turbidity Level (NTU)	Average TSS Level (mg/L)
			Bottom	Surface and Mid Depth		
2011/02/15	ME	DS1	8.25	8.12	5.11	6.50
		DS2	8.34	8.14	3.89	3.83
		DS3	8.31	8.14	4.15	4.33
		DS4	8.20	8.12	7.56	8.33
		DS5	8.51	8.12	4.05	3.83
		MW1	8.12	8.14	4.07	4.00
	MF	US1	8.23	8.20	4.66	5.67
		US2	8.31	8.28	4.82	4.83
		DS1	8.18	8.14	6.43	7.83
		DS2	8.42	8.37	4.22	3.50
		DS3	8.62	8.47	7.72	10.00
		DS4	8.50	8.40	8.16	10.00
		DS5	8.49	8.41	11.12	14.33
		MW1	8.07	8.08	3.00	5.83
		US1	8.27	8.08	6.15	7.33
		US2	8.33	8.11	4.81	4.83

Annex C

Study Programme

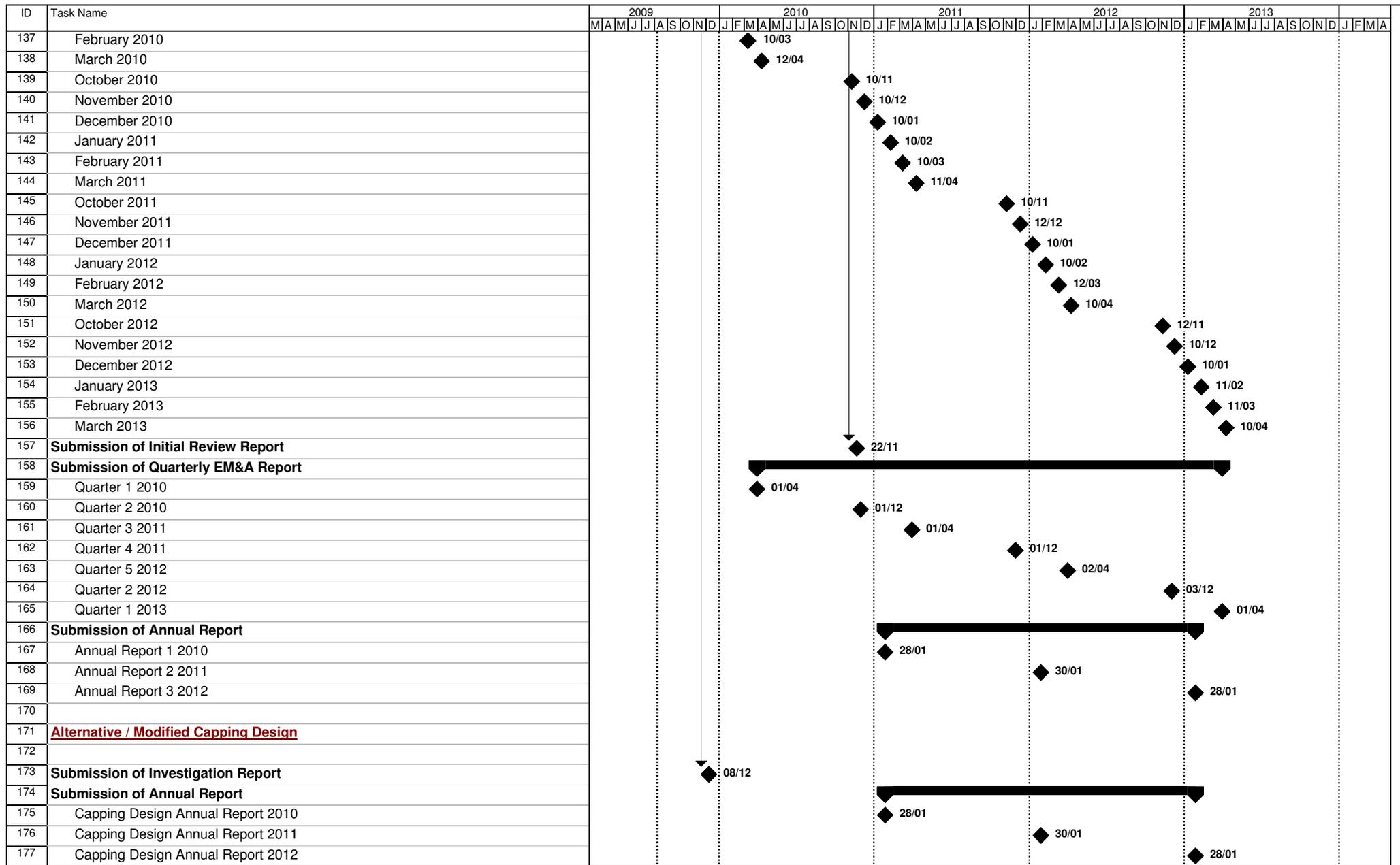


Figure 4.1 - Study Programme

