Contract No. : DC/2007/06 River Improvement Works in Upper Lam Tsuen, She Shan River and Upper Tai Po River

ENVIRONMENTAL MONITORING AND AUDIT MONTHLY EM&A REPORT of UPPER TAI PO RIVER

for May 2010

Environmental Pioneers & Solutions Limited 8/F, Chaiwan Industrial Centre Building 20 Lee Chung Street, Chaiwan, Hong Kong

Tel: 28890569 Fax: 2856 2010

The Contents of this report have been

Certified by:

Signature:

Miss. Patricia Chung

(Environmental Team Leader)

Signature:

Dr. Mark Shea

(Ecologist)

14 Jane 20/0

and Verified by:

Signature

Mr. Marcus IP

(Independent Environment Checker)

Report submission and revision:

First submission on 8th June 2010

TABLE OF CONTENTS

TABLE OF CONTENTS	3
Executive summary	4
1.0 Introduction	6
2.0 Environmental status	6
2.1 Project area	6
2.2 Construction programme	6
2.3 Proposed construction sequences	7
2.4 Construction activities for the reporting period	9
2.5 Construction activities for the next reporting period	9
2.6 Non-compliance with the environmental performance limits	9
2.7 Summary of complaints	10
3.0 Ecological monitoring results	10
4.0 Noise monitoring results	11
5.0 Vibration monitoring results	12
6.0 Environmental issues and actions	12
6.1 Site inspections and key environmental issues	12
6.2 Non-compliance	14
6.3 Recommendations	14
6.4 Implementation status and effectiveness of the mitigation measures	15
7.0 Waste management status	15
8.0 Status of environmental licensing and permit	16
9.0 Future key issues	16
10.0 Conclusion	17
Appendix A: Event and action plan for ecology	18
Appendix B: Action and limit level for construction noise	21
Appendix C: Reference standards for vibration	23
Appendix D: Noise monitoring results, graphical plots and location plan	25
Appendix E: Monitoring schedule for the present and next reporting period	37
Appendix F: Cumulative complaint log	40
Appendix G: Implementation status of environmental protection and mitigation	
measures	41
Appendix H: Cumulative waste flow table	45
Appendix I: Construction programme	46
Appendix J: Complaint Investigation Report and Log	49

Executive summary

This is the twenty-first monthly Environmental Monitoring and Audit (EM&A) Report for the river improvement works at Upper Tai Po River under Drainage Services Department Contract No. DC/2007/06 entitled "River Improvement Works in Upper Lam Tsuen River, She Shan River and Tai Po River". This report concludes the impact monitoring for the activities undertaken during the period from 1st May 2010 to 31st May 2010. The major site activities in this reporting month were mainly construction of land-based gabion wall, backfilling works behind the constructed gabion wall and site clearance works.

The Environmental Team (ET) is responsible for the EM&A works required in the EM&A manual. Site inspections were carried out on weekly basis to investigate and audit the equipment and work methodologies with respect to pollution control and environmental mitigation. The weekly inspections records and photos taken were kept.

The last ecological impact monitoring was carried out in January 2010 and the next ecological impact monitoring was scheduled on 13th July 2010. The summary of ecological site inspection findings and implementation status of environmental protection and mitigation for ecology, prepared by the Ecologist, are provided in table 6.2 and Appendix G respectively.

Environmental Team had carried out construction noise monitoring on weekly basis and no exceedance was found. Noise monitoring records for the reporting month and the data is presented in Section 4. The location plan and the graphical plots presenting the data are provided in Appendix D.

Piling works were not scheduled for this month. Therefore, no vibration monitoring was conducted by ET during the reporting month.

There was no non-compliance recorded for this reporting month.

There was no breach of action and limit levels for this month.

There were two formal complaints recorded on 7th and 10th May 2010 respectively regarding observation of muddy water along the river channel. For further details of the complaint please refer to Section 2.7 and Appendix J.

There was no reporting change for this month.

In accordance with the contractual requirements, no excavation works in river is allowed to be carried out during the wet season. No major construction activity will be carried out in the upcoming month.

ET has reminded the contractor to provide environmental pollution control measures wherever necessary and to keep a good environmental management at site practice.

1.0 Introduction

This is the twenty-first monthly Environmental Monitoring and Audit (EM&A) Report for the river improvement works at Upper Tai Po River under Drainage Services Department Contract No. DC/2007/06 entitled "River Improvement Works in Upper Lam Tsuen River, She Shan River and Upper Tai Po River". The site layout plan is shown in Figure 2.1. The Environmental Team, Environmental Pioneers & Solutions Limited appointed by Chiu Hing Construction and Transportation Company Limited, prepares the report. The report is to be submitted to the Contractor, the Engineer and the IEC.

This report presents the results of the environmental monitoring of the project activities for Upper Tai Po River conducted during the month of May 2010. This included regular site inspections once per week for verification of implementation of the mitigation measures as recommended in the Environmental Permit (EP-223/2005/A) (EP), EM&A Manual and the Contractor's Environmental Management Plan (EMP).

2.0 Environmental status

2.1 Project area

The location of the project site – Upper Tai Po River starting from Ta Tit Yan of Yai Mo Shan, the Upper Tai Po River flows from southeast to northeast alongside Wilson Trail, turning northward before joining the Lam Tsuen River and then runs towards Tai Po Market. To the east of the river, there are active and abandoned cultivated lands. While the village settlements are mainly located on the west and northeast side of the river bank, where the San Uk Ka and Lai Chi Shan establishment also lie. The Project site is indicated in **Figure 2.1.**

2.2 Construction programme

Approximately 0.6km of Upper Tai Po River will be improved to enhance the hydraulic performance of the river. The improvement works comprise the following:

- (1) Re-profiling and realignment of the Channel;
- (2) Inclusion of gabions and retaining wall for bank protection whilst providing a natural channel bed; and
- (3) Re-provisioning of footbridges and footpaths along the channel

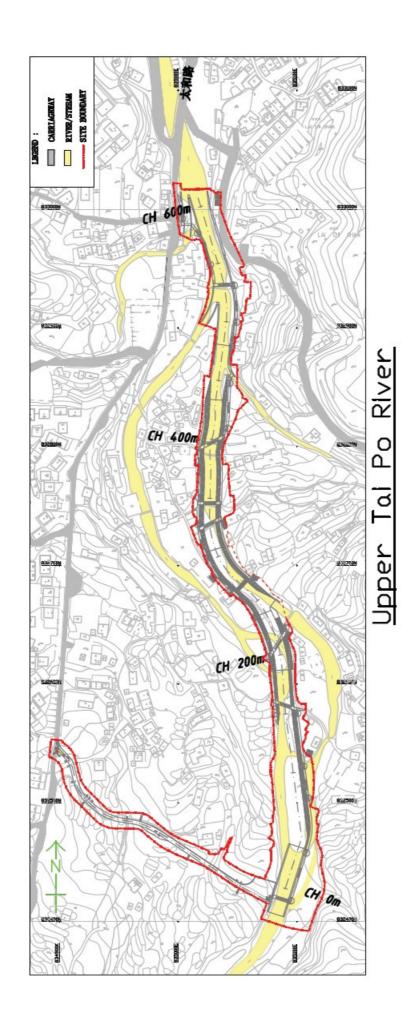
The construction of the proposed improvement works for Upper Tai Po River has been commenced on September 15th 2008 and anticipated to complete in April 2011.

2.3 Proposed construction sequences

The proposed construction sequence is shown in the following sequences:

- (1) Site clearance and preparation works
- (2) Construction of the maintenance access which involves the construction of retaining walls
- (3) River channel construction and excavation, involving the excavation works, construction of retaining walls and gabion walls
- (4) Re-provisioning of footbridges
- (5) Construction of footpaths
- (6) Landscaping works

Fig 2.1 Layout of construction area



2.4 Construction activities for the reporting period

Major construction activities carried out by the contractor during the reporting month was construction of the land-based retaining wall.

2.5 Construction activities for the next reporting period

Construction of land-based retaining wall will be continued in the next reporting month.

2.6 Non-compliance with the environmental performance limits

There was no non-compliance with the environmental performance limits for this reporting month. The event and action plan for Ecology is shown in Appendix A. The action and limit level for Noise is shown in Appendix B. The reference standards for vibration are shown in Appendix C.

2.7 Summary of complaints

There were two formal complaints recorded in this reporting month. Two complaints regarding observation of muddy water along the river channel were referred by EPD on 7th and 10th May 2010 respectively. ET was informed by the Resident Engineer (RE) on the same day of the complaints referred.

To check the site condition and implementation of corrective actions and mitigation measures, site investigations were conducted by ET on 7th and 12th May 2010 and recommendations to minimize water quality from site works were given to the Contractor. The complaint investigation reports and the complaint logs with details of findings, recommendation and outcome were prepared and attached in Appendix J for information.

Totally, nine complaints had been received since the commencement of this project. The cumulative complaint log is shown in the Appendix F.

3.0 Ecological monitoring results

There was no ecological impact monitoring or capture survey scheduled within this reporting month.

4.0 Noise monitoring results

In accordance with the EM&A Manual, monitoring locations were established at 11 N.S.R. locations. The description of all 11 N.S.R. are shown in Table 4.1.

TABLE 4.1 Description of Noise Sensitive Receivers

Sensitive Receiver	Location and Description
No.	
UTP1	54B, Sheung Wun Yiu
UTP2	Village House in Lai Chi Shan
UTP3	Village House near Upper Tai Po River
UTP4	Village House near Upper Tai Po River
UTP5	Village House near Upper Tai Po River
UTP6	Village House near Upper Tai Po River
UTP7	Village House near Upper Tai Po River
UTP8	Village House near Upper Tai Po River
UTP9	49A, Pun Shan Chau
UTP10	Village House near the proposed access road
UTP11	49G, San Uk Ka

Noise monitoring was carried out by the Environmental Team on weekly basis for this reporting month on 7th, 14th, 20th and 28th May 2010. Due to the adverse rainy weather, monitoring on 6th May 2010 was not conducted at five of the monitoring stations including UTP4, 7, 9, 10 and 11.

Measured $L_{eq~(30min)}$ results ranged from 47.3dB(A) to 68.2dB(A). And therefore, no exceedance was recorded within the reporting period.

For further details of the monitoring results, graphical plots and the location plan, please refer to the Appendix D.

5.0 Vibration monitoring results

There was no vibration monitoring results for this reporting month. Vibration monitoring will be started once the piling works start in Upper Tai Po River.

6.0 Environmental issues and actions

6.1 Site inspections and key environmental issues

Site inspections were undertaken routinely to inspect the construction activities in Upper Tai Po River to ensure that appropriate environmental protection and pollution control mitigation measures are properly implemented. Implementation status of environmental protection and mitigation measures is shown in Appendix G.

Within this reporting month, site inspections were conducted on 5th, 12th, 19th and 26th May 2010. A detailed checklist of each site inspection together with comments and relevant photos have been filed and kept. The findings from inspection were summarized in Table 6.1.

Ecological inspections by the Ecologist Dr. Mark Shea were carried out on 1st, 10th, 17th and 24th May 2010. Details of findings were summarized in Table 6.2.

Table 6.1 Summary results of site inspections findings

Date	Findings	Identification	Advice from ET	Action taken	Closing date	Remarks
19 & 21 Apr	As reported by RE,	Non-compliance	Contractor was requested to	As further follow up action, the	05 May 10	
2010	Mal-practice of site water		provide proper silt removal	excavated pit was backfilled		
	discharge at site ch.165		facilities for muddy water arisen	prior to the inspection on		
	caused pollution to the river		from construction works. Proper	05 May. During inspection		
	channel consecutively since		bund walls with geo-textile	accumulation of site water		
	17 Apr 10		coverings should be provided to	was not observed at the		
			prevent site water seepage and	concerned area.		
			runoff from entering into the			
			river channel.			
05 May 10	No particular findings	N/A	N/A	N/A	N/A	
12 & 19 May	Loosed earth surface of the	Observation	Contractor was advised to	As reported by Contractor,	20 May 10	
10	haul access was observed		implement protective measures	loosed haul access was		
	at ch.300 to ch.450		such as compaction by roller	compacted by roller while part		
			and/or hydro-seeding to	of the area that site equipment		
			minimize soil runoff to the river	cannot be reached was		
			stream	hydro-seeded instead		
26 May 10	A fuel drum without	Observation	Contractor was advised to	To be followed in the next	Ongoing	
	secondary containment was		provide proper drip pan to fuel	reporting period.		
	found at the haul access at		and chemical containers using			
	approximate ch.450		on site; idling chemicals or fuel			
			should be relocated to			
			designate chemical storage to			
			prevent spillage to the river			
			stream and surrounding area			

The summary of ecological inspection prepared by the Ecologist, Dr. Mark Shea is
shown in Table 6.2.

Table 6.2	Table 6.2 Summary results of ecological site inspection findings					
Date	Observations	Advice from	Action Taken	Closing		
		Ecologist		Date		
01 May	No Major findings for this	No Advice is	No Action is required to	N/A		
2010	inspection	required	be taken			
10 May	No Major findings for this	No Advice is	No Action is required to	N/A		
2010	inspection	required	be taken			
17 May	No Major findings for this	No Advice is	No Action is required to	N/A		
2010	inspection	required	be taken			
24 May	No Major findings for this	No Advice is	No Action is required to	N/A		
2010	inspection	required	be taken			

6.2 Non-compliance

There was no non-compliance recorded for the month of May 2010.

In regard to the non-compliance event about mal-practice of muddy effluent discharge recorded on 19th April 2010 from the twentieth report, further follow up action was taken by Contractor and was inspected on 5th May 2010.

The excavated pit at ch.165, where site water seepage and discharge was concerned, was backfilled to prevent accumulation of site water. Construction activities at the concerned site area were ceased until the next dry season.

6.3 Recommendations

Contractor was advised to be cautious on the condition of haul access, soil slopes and earth stockpile and implement sufficient protective measures to prevent erosion and soil runoff causing water quality impact to the river stream. Exposed earth surface should be protected by means such as tarpaulin coverings, compaction and/or hydro-seeding. Also, excavated pit should be backfilled as far as practicable to prevent accumulated site water from overflowing into the river channel during rainy weather.

6.4 Implementation status and effectiveness of the mitigation measures

Refer the previous table 6.1, contractor has implemented mitigation measures to address those problems as advised by ER, IEC and ET. Some of the measures taken by the contractor were considered as effective to minimize negative impact to the environment. Ongoing investigation will be carried out to observe performance and effectiveness of those measures. Outstanding environmental items will be inspected in the follow month.

As there were some ongoing follow up practices, contractor was reminded to regularly review and rectify the discrepancy once found and maintain good site condition.

7.0 Waste management status

It is the contractor's responsibility to ensure that all wastes produced during construction phase for the drainage improvement works are handled, stored and disposed of in accordance with good waste management practices and EPD's regulation and requirement. Waste materials generated during construction activities such as construction and demolition(C&D) material, chemical wastes and general refuse, are recommended to be audited at regular intervals to ensure that proper storage, transportation and general reuse are recommended to be audited to ensure that proper storage, transportation and disposal practices are being implemented. **Table 7.1** is the Waste Disposal recorded by the Contractor in this month.

From the report of Contractor, C&D materials generated were all reused in the project and therefore no inert waste was disposed from the project.

Table 7.1 Summary of Waste Disposal for the reporting month

Type of waste	Inert Waste	Non-Inert Waste	Chemical Waste
May 2010	0	0	0

The cumulative waste flow table is shown in Appendix H.

8.0 Status of environmental licensing and permit

This project requires different permits and licenses to be run legally. **Table 8.1** is the summary of permits/ licenses for this project.

Table 8.1 Summary of Environmental Licensing and Permit Status

	•			
Description	License / Permit No.	Date of Issue	Date of Expiry	Remarks
Environmental	EP-223/2005	31 st Aug, 2005	N/A	Superseded
Permit				
Amended	EP-223/2005/A	18 th Nov, 2008	N/A	Issued
Environmental				
Permit				
Construction Noise	N/A	N/A	N/A	N/A
Permit				
Effluent Discharge	3678	14 th Mar, 2008	31 st Mar, 2013	Issued
License				
Registration as a	5213-724-C3251-03	19 th Dec, 2007	Not applicable	Issued
Chemical Waste				
Producer				
Billing Account for	7006101	N/A	N/A	N/A
Disposal of				
Construction Waste				

9.0 Future key issues

Site activity carried out within the river channel will be ceased during the upcoming wet season. No major construction activity will be carried out in the next reporting month. Although there will be no site activities contractor was still reminded to maintain good site condition and housekeeping practices.

10.0 Conclusion

Major site activities carried out by the Contractor in this reporting period included construction of land-based gabion wall, backfilling works behind the constructed gabion wall and site clearance works.

Regular site meetings and inspection audits led by the seniors for discussing environmental issues were held among project proponent, Contractor and the ET on weekly basis.

Environmental Team had carried out construction noise monitoring on weekly basis. All results obtained were within limit and therefore no exceedance was recorded in this reporting month.

Piling works were not scheduled for this month. Therefore, no vibration monitoring was conducted during the reporting month.

From the summary of ecological site inspection findings and implementation status of environmental protection and mitigation for ecology, prepared by the Ecologist Dr. Mark Shea, there is no abnormal finding observed in the reporting month. The ecologist has no further advice and no action suggested to the contractor.

There was no non-compliance event recorded within this reporting month.

Two formal complaints regarding observation of muddy water along the river channel were recorded on 7th and 10th May 2010 respectively. The complaints were logged and detailed complaint logs as well as investigation reports please refer to Appendix J

ET has reminded the contractor to provide environmental pollution control measures wherever necessary; and to keep a good environmental management at site practice.

The ET will continue to implement the environmental monitoring & audit programme in accordance with the EM&A Manual and Environmental Permit requirement.

Chiu Hing Construction & Transportation Co., Ltd	River improvement	DC/2007/06 works in Upper Tai Po Rive Twenty-first Monthly Repor
Appendix A: Event and action plan for ecology		

Event and action plan for ecology

In the event of non-compliance, the Event / Action plan prepared by the ecologist shall be followed. Detailed Event/ Action plan was shown in **Appendix Table 1** for reference.

It is not proposed to set population size of the three species (i.e. Three-lined Chinese Stream Catfish, Predaceous and the Hong Kong Newt) or other faunal species for the Action Level and Limit Level in the revised EM&A manual in considering the following reasons:

- I. The schedule capture surveys would let to decrease in the populations of the target species; and
- II. The planned drainage works would also temporally de-fauna the stream habitat.

It is considered logical and appropriate to audit non-compliance events in relation with ecological mitigation measures, which were specified in the EP and the PS of the project.

APPENDIX TABLE 1 Event / Action plan table for Ecology

Event				Action				
Event		ET		ER		IEC	(Contractor
Non-confor	1.	Identify Source	1.	Check report	1.	Ensure	1.	Amend
mity on one	2.	Inform the IEC and the	2.	Check the Contractor's		Remedial		working
occasion		ER		working method		measures are		methods
	3.	Discuss remedial actions	3.	Discuss with the ET and		properly	2.	Rectify
		with the IEC, the ER and		the Contractor on possible		implemented		damage and
		the Contractor		remedial measures,				undertake
	4.	Monitor remedial actions	4.	Advise the Contractor on				any
		until rectification has been		effectiveness of proposed				necessary
		completed		remedial measures				replacement
			5.	Check implementation of				
				remedial measures				
Repeated	1.	Identify Source	1.	Check monitoring report	1.	Ensure	1.	Amend
Non	2.	Inform the IEC and the	2.	Check the Contractor's		Remedial		working
conformity		ER		working method		measures		methods
	3.	Increase monitoring	3.	Discuss with the ET and		are properly	2.	Rectify
		frequency		the Contractor on possible		implemented		damage and
	4.	Discuss remedial		remedial measures				undertake
		actions with the IEC,	4.	Advise the Contractor on				any
		the ER and the		effectiveness of proposed				necessary
		Contractor		remedial measures				replacement
	5.	Monitor remedial	5.	Check implementation of				
		actions until rectification		remedial measures				
		has been completed						
	6.	If exceedance stops,						
		cease additional						
		monitoring						

River improvement	DC/2007/06 works in Upper Tai Po River Twenty-first Monthly Report
struction noise	

The Action and Limit levels for construction noise are defined in Appendix Table 2

Appendix Table 2: Action and Limit Levels for Construction Noise

Time Period	Action	Limit
0700 – 1900 hrs on normal weekdays	When one	75 dB(A)*
0700 – 2300hrs on holidays; and 1900 – 2300 hrs on all	documented	Subject to the control of
other days	complaint is	Noise Control
	received	Ordinance
2300 – 0700 hrs of next day		Subject to the control of
		Noise Control
		Ordinance

^{*}Limit level set in accordance with Particular Specification Section 26

Chiu Hing Construction & Transportation Co., Ltd	DC/2007/06 River improvement works in Upper Tai Po River Twenty-first Monthly Repor
Appendix C: Reference standards for vibrat	ion

Guidance regarding vibration limits is provided by the following British Standards (or their equivalent ISO standards):

BS 7385 - Measurement and evaluation of vibration in buildings. Part 2: Guide to damage levels from ground borne vibration.

BS 7385 suggests vibration levels, below which damage is unlikely to occur in 95% of buildings. For cosmetic damage, the level is 15 mm/s at 4 Hz, increasing to 20 mm/s at 15 Hz, increasing to 50 mm/s at 40 Hz and above. Minor structural damage is possible at vibration levels twice those given above, major damage at four times the levels given.

Appendix Table 3: Transient vibration guide values for cosmetic building damage (BS7385:Part 2 1993)

	Type of Building	Peak component particle velocity (mm/s) in
		frequency range of predominant pulse
1	Reinforced or framed structures	50 at 4 Hz and above
2	Un-reinforced or light framed structures	15 at 4 Hz,
		increasing to 20 at 15 Hz,
		increasing to 50 at 40 Hz and above.

The vibration magnitudes and frequencies refer to Peak Particle Velocities (PPV) occurring in any single direction, measured on the ground level of the building concerned.

Chiu Hing Construction & Transportation Co., Ltd	River improvement	DC/2007/06 works in Upper Tai Po River Twenty-first Monthly Report
	14 11	
Appendix D: Noise monitoring results, graphical	plots and loca	ition plan

DC/2007/06
River improvement works in Upper Tai Po River
Twenty-first Monthly Report

Location	Leq	\mathbf{L}_{10}	L ₉₀	Date	Time	Major Construction Noise	Other Noice course	Weather	Location
	30min	30min	30min	Cate	Duration	ividyi Collatticuoli ivolac	Office Ivorse source	Weather	description
UTP 1	64.6	65.8	54.2	7-May-10	13:53-14:23	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	Background noise from traffic	Cloudy	Façade
UTP 2	60.3	62.4	51.8	7-May-10	14:31-15:01	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	Background noise from traffic	Cloudy	Façade
UTP 3	62.2	64.3	59.7	7-May-10	15:08-15:38	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Cloudy	Façade
UTP 4				7-May-10		Monitoring was not carried out due to rainy weather	N/A	Rainy	Façade
UTP 5	48.2	50.0	43.2	7-May-10	14:28-14:58	14:28-14:58 Site clearance works	N/A	Cloudy	Façade
UTP 6	47.3	49.1	40.4	7-May-10	15:41-16:11	15:41-16:11 Site clearance works	N/A	Cloudy	Façade
UTP 7				7-May-10		Monitoring was not carried out due to rainy weather	N/A	Rainy	Façade
UTP 8	52.1	53.3	41.4	7-May-10	13:00-13:30	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Cloudy	Façade
UTP 9				7-May-10		Monitoring was not carried out due to rainy weather	N/A	Rainy	Façade
UTP 10				7-May-10		Monitoring was not carried out due to rainy weather	N/A	Rainy	Façade
UTP 11				7-May-10		Monitoring was not carried out due to rainy weather	N/A	Rainy	*Freefield

Note* An Additional of 3dB(A) had been added to the measurement result due to Free Field Correction

DC/2007/06 River improvement works in Upper Tai Po River Twenty-first Monthly Report

Location	Façade	*Freefield									
Weather des	Cloudy F	Cloudy	Cloudy F	Cloudy	Cloudy F	Cloudy *F					
We	Clc	Clc	CIC	CIC	Clc	CIC	Clc	CIC	CIc	Clc	Clo
Other Noise source	N/A	N/A									
Major Construction Noise	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate
Time	14:55-15:25	14:20-14:50	15:34-16:04	13:35-14:05	16:08-16:38	13:00-13:30	11:05-11:35	10:33-11:03	10:00-10:30	09:23-09:53	08:50-09:20
Date	14-May-10	14-May-10									
L ₉₀ 30min	52.3	50.8	58.4	43.1	45.7	41.7	44.8	42.7	43.4	41.3	43.3
L ₁₀ 30min	66.2	61.2	63.4	55.8	51.0	53.3	52.6	55.6	52.5	50.8	55.4
Leq 30min	63.4	59.7	61.3	55.4	50.4	52.6	51.9	55.2	52.0	50.8	54.7
Location	UTP 1	UTP 2	UTP 3	UTP 4	UTP 5	UTP 6	UTP 7	UTP 8	0 ALD	UTP 10	UTP 11

Note* An Additional of 3dB(A) had been added to the measurement result due to Free Field Correction

DC/2007/06 River improvement works in Upper Tai Po River Twenty-first Monthly Report

_ u											-
Location description	Façade	*Freefield									
Weather	Sunny	Suuny									
Other Noise source	Background noise from traffic	Background noise from traffic	N/A	N/A							
Major Construction Noise	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate
Time	15:21-15:51	14:46-15:16	15:57-16:27	14:08-14:38	13:32-14:02	13:00-13:30	11:25-11:55	10:51-11:21	10:13-10:43	09:36-10:06	09:03-09:33
Date	20-May-10	20-May-10									
L ₉₀ 30min	53.2	54.3	59.4	43.4	42.0	40.4	42.2	42.6	44.4	43.1	43.8
L ₁₀ 30min	70.2	8.99	64.7	55.3	54.6	52.2	53.1	56.1	57.0	54.7	54.4
Leq 30min	68.2	61.7	62.2	54.0	53.3	51.8	51.5	53.4	56.4	52.2	54.1
Location	UTP 1	UTP 2	UTP 3	UTP 4	UTP 5	UTP 6	UTP 7	UTP 8	UTP 9	UTP 10	UTP 11

Note* An Additional of 3dB(A) had been added to the measurement result due to Free Field Correction

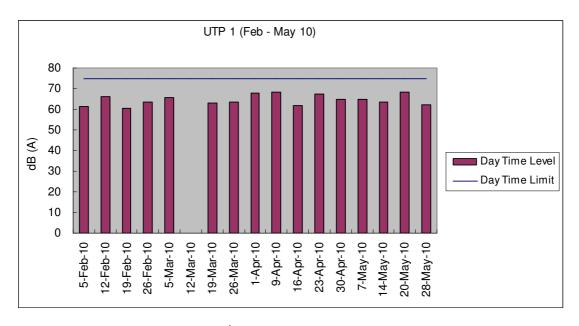
DC/2007/06 River improvement works in Upper Tai Po River Twenty-first Monthly Report

Location	Façade	*Freefield									
-											
Weather	Sunny	Suuny									
Other Noise source	Background noise from traffic	Background noise from traffic	N/A								
Major Construction Noise	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out
Time	11:26-11:56	10:53-11:23	15:43-16:13	14:35-15:05	15:08-15:38	14:03-14:22	13:31-14:01	13:00-13:30	10:10-10:40	09:34-10:04	06:60-00:60
Date	28-May-10										
L ₉₀ 30min	52.5	50.3	58.4	43.1	42.6	44.1	41.8	52.2	44.2	41.3	43.8
L ₁₀ 30min	64.3	61.6	64.8	57.0	54.3	53.4	54.2	59.2	55.2	50.8	54.5
Leq 30min	62.3	59.4	60.4	54.8	51.6	52.0	53.1	59.0	53.1	50.7	54.1
Location	UTP 1	UTP 2	UTP 3	UTP 4	UTP 5	UTP 6	UTP 7	UTP 8	UTP 9	UTP 10	UTP 11

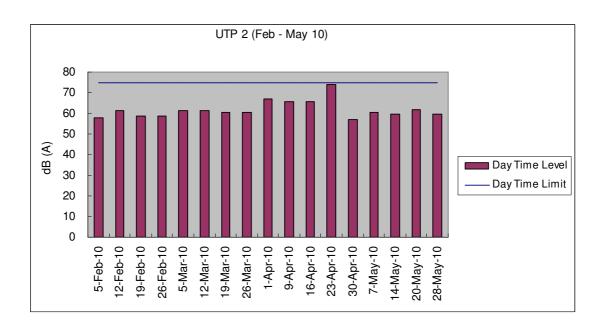
Note* An Additional of 3dB(A) had been added to the measurement result due to Free Field Correction

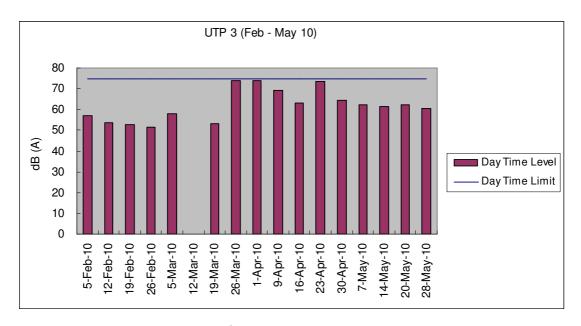
Graphical plot for noise measurements

The followings were the graphical plots for the 11 monitoring locations. Each plot showed the date of measurement taken, day time limit of 75 dB(A) as well as the measured daytime level for each location. The graphs contain the data recorded from February 2010 to May 2010.

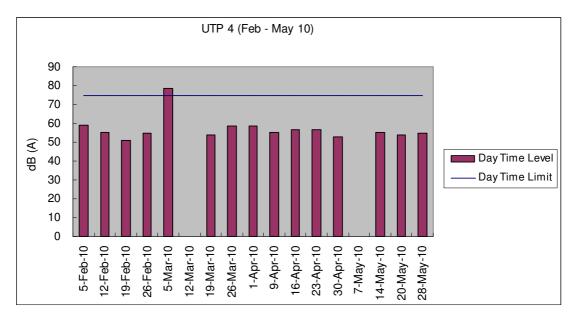


Noise monitoring for 12th March 2010 was cancelled due to heavy rain

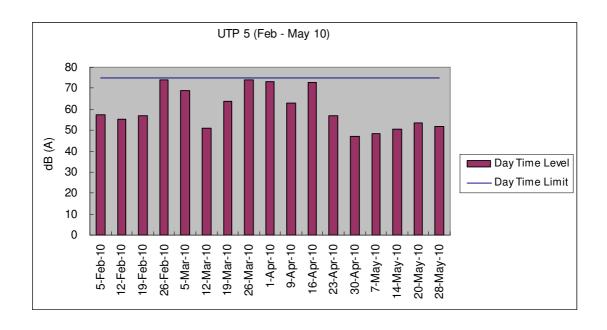


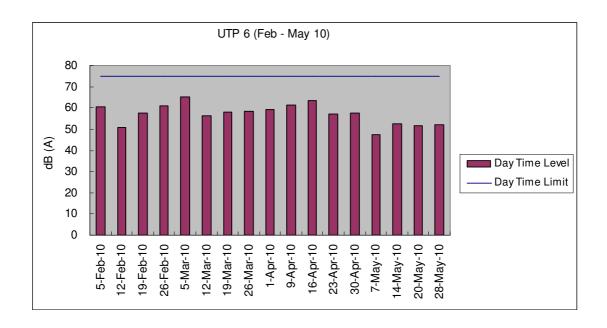


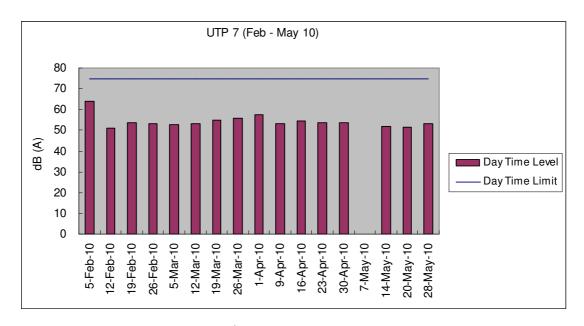
Noise monitoring for 12th March 2010 was cancelled due to heavy rain



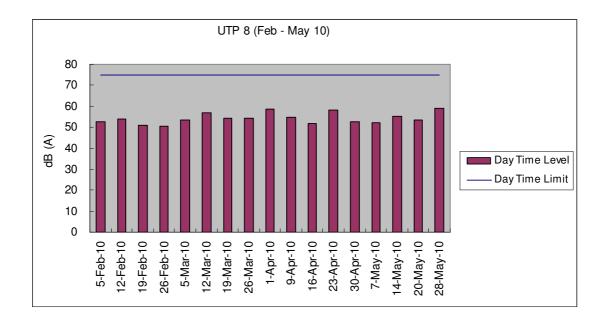
Noise monitoring for 12th March 2010 and 7th May 2010 were cancelled due to heavy rain

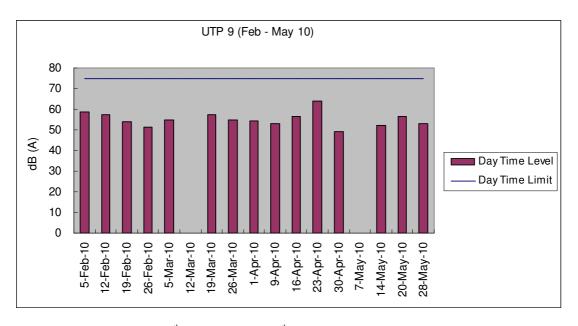




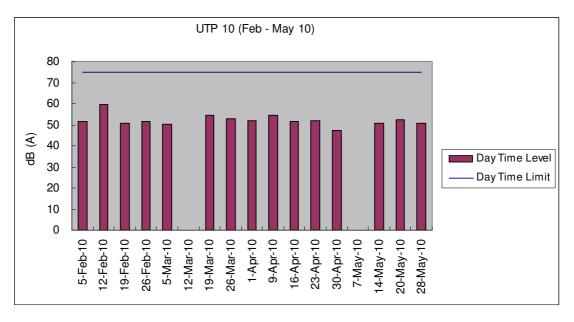


Noise monitoring for 7th May 2010 was cancelled due to heavy rain

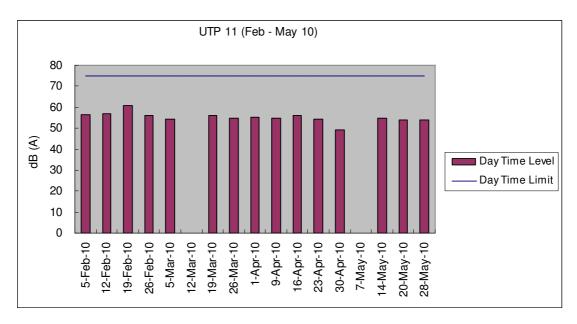




Noise monitoring for 12th March 2010 and 7th May 2010 were cancelled due to heavy rain

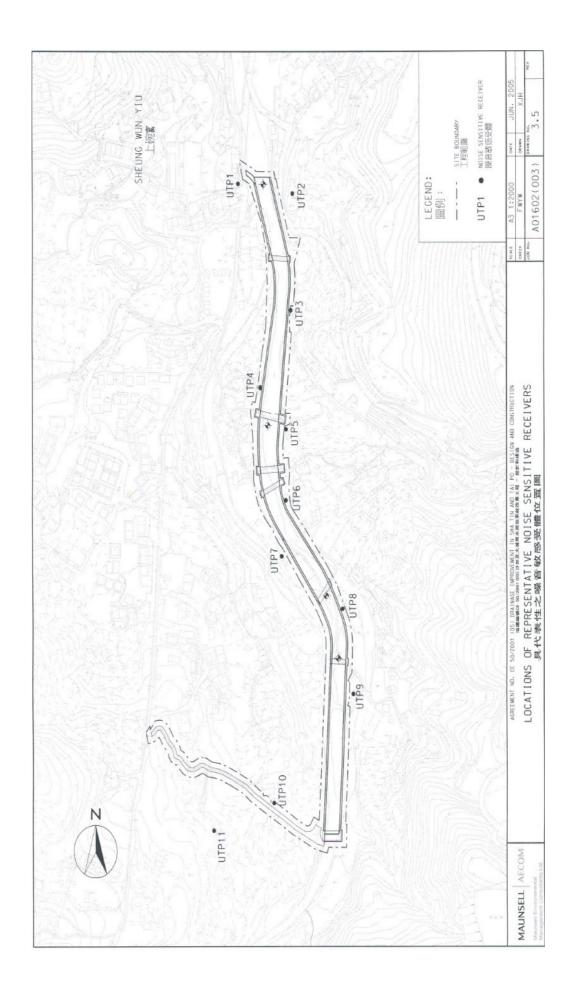


Noise monitoring for 12th March 2010 and 7th May 2010 were cancelled due to heavy rain



Noise monitoring for 12th March 2010 and 7th May 2010 were cancelled due to heavy rain

DC/2007/06 River improvement works in Upper Tai Po River Twenty-first Monthly Report



niu Hing Construction & Transportation Co., Ltd	DC/2007/06 River improvement works in Upper Tai Po River Twenty-first Monthly Report
Appendix E: Monitoring schedule for the p	present and next reporting period

Chiu Hing Construction & Transportation Co., Ltd

Master Schedule of EM&A works in May 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
02/05	03/05	04/05	05/05	06/05	07/05	08/05
			Site inspection at afternoon		Noise monitoring	
09/05	10/05	11/05	12/05	13/05	14/05	15/05
			Site inspection at afternoon		Noise monitoring	
16/05	17/05	18/05	19/05	20/05	21/05	22/05
			Site inspection at afternoon	Noise monitoring		
23/05	24/05	25/05	26/05	27/05	28/05	29/05
			Site inspection and SSEMC at morning		Noise monitoring	
30/05	31/05					01/05

Master Schedule of EM&A works in June 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		01/06	02/06	03/06	04/06	05/06
			Site inspection at afternoon		Noise monitoring	
06/06	07/06	08/06	09/06	10/06	11/06	12/06
			Site inspection at afternoon		Noise monitoring	
13/06	14/06	15/06	16/06	17/06	18/06	19/06
		Site inspection at afternoon			Noise monitoring	
20/06	21/06	22/06	23/06	24/06	25/06	26/06
			Site inspection and SSEMC at morning		Noise monitoring	
27/06	28/06	29/06	30/06			
			Site inspection at afternoon		Noise monitoring	

Appendix F: Cumulative complaint log

Environmental	Cumulative no.	No. of complaint	Overall Total
Parameters	Brought forward	May 2010	
Air/Dust	1	0	1
Noise	2	0	2
Water	4	2	6
House Keeping	0	0	0
Hygiene			
Chemical waste	0	0	0
Total	7	2	9

			River improvement	Twenty-first Monthly Rep	ort
Appendix G: Implementation	status	of	environmenta	l protection and	
mitigation measures					

Chiu Hing Construction & Transportation Co., Ltd

DC/2007/06

Implementation status of environmental protection and mitigation

Environmental	Protection / Mitigation Measures	Implementation	Follow-up
Aspect		status	action
Construction Noise	No percussive piling shall be carried out	Implemented	Not required
	-Use well maintained construction plant	Implemented	Not required
	-Shut down plants between work periods	Implemented	Not required
	-Install silencers on construction equipment	Implemented	Not required
	-Locate mobile plant far away from NSRs	Implemented	Not required
	-Quiet plants should be used	Implemented	Not required
	-2m high temporary noise barriers, as stipulated in EP condition 2.9,	Implemented	Not required
	shall be installed		
Fugitive Dust	-Implement regular watering and vehicle washing facilities	Improvement	Rectified
Emission		required	
	-Cover excavated or stockpile of dusty material by impervious sheeting	Improvement	Ongoing
	or sprayed with water	required	
	-Use tarpaulin to cover dusty materials on vehicles	Implemented	Not required
Water Quality	Excavation works within the Tai Po River within the Project shall be	Non-compliance	Settled on
	carried out in stages and excavation area for each stage shall be limited	recorded on	28 Apr 10
	to section of half width of the channel and less than 100m long at any	19 Apr 10	
	one time in order to maintain water flow within the river during		
	construction stage		
	Land-based plant shall be employed and site run-off shall be directed	Implemented	Not required
	towards regularly cleaned and maintained silt traps and oil / grease		
	separators to minimize leakage and loss of sediments during excavation		
	Large boulders removed from the Tai Po River within the Project during	Implemented	Not required
	excavation shall be re-instated upon completion of works A section of		
	150m long natural riverbank on the western side of the river channel		
	(Ch0 –Ch150) shall be retained		
	The excavation area shall be enclosed with bunds or barriers and	Implemented	Not required
	dewatered prior to excavation to minimize the impacts upon the		
	downstream of the Tai Po River		

	Provide silt trap and oil interceptor to remove the oil, lubricants, grease,	Improvement	Rectified
	silt, grit and debris from the wastewater before pumped to the public	required	
	storm water drainage system		
	Provide site toilet facilities	Implemented	Not required
Waste	Reuse excavated material as far as possible	Implemented	Not required
Management			
	Recycle scrap metals or abandoned equipment	Implemented	Not required
	Adopt a trip ticket system for the disposal of C&D materials	Implemented	Not required
	All general refuse should be segregated and stored in enclosed bins or	Implemented	Not required
	compaction units		
Vibration	Percussive piling is to be replaced by bore-hole piling to minimize	Not applicable at this	Not required
	vibration impacts to the two identified Declared monuments	stage	
	Carrying out of vibration monitoring to ensure that vibration associated	Not applicable at this	Not required
	with the construction phase do not exceed the threshold limit otherwise	stage	
	contractor have to review the work method and construction activities		
	have to be slow down or rescheduled to reduce the impacts		
	Close monitoring and measurement on the cracks of the external wall of	Not Applicable at this	Not required
	Fan Sin Temple during construction works will be carried out. Any	stage	
	changes on the cracks will be recorded for the contractor to slow down		
	the construction activities accordingly; and to review the work methods		
	and equipments immediately		

Implementation status of environmental protection and mitigation for ecology, prepared by the Ecologist, Dr. Mark Shea.

Environmental	Protection / Mitigation Measures	Implementation status	Follow-up
Aspect			action
Ecology	Large boulders will be returned to the riverbed	Not applicable	Not
	following the excavation works.		required
	Construction works from Ch. 0.0m - Ch. 150m would	Not applicable	Not
	be along one side of the river only		required
	Approximately 150m of the existing natural riverbank	Implemented	Not
	on the western side of the river would be retained.		required
	Excavation works within the river channel should be	Implemented	Not
	restricted to an enclosed dewater section of the river,		required
	and would be limited to sections 50-100m long at any		
	one time.		
	Flows to the area downstream shall be maintained at all	Implemented	Not
	times during the construction phase		required
	Capture survey shall be conducted within the Tai Po	Capture surveys had been conducted at the	Not
	River before commencement of works. The captured	beginning of the Contract, during the wet	required
	target species shall be relocated to areas of the	season July/August 2008, 4th November	
	watercourse upstream of the watercourse upstream of	2008 and 27 th , 28 th October 2009	
	the Tai Po River		
	Temporary noise barriers should be constructed to	Implemented	Not
	control noise impacts to habitats and associated		required
	wildlife within and adjacent to the proposed works area		
	Excavation works shall be carried out by land based	Implemented	Not
	plant within enclosed dry section of river channel.		required
	Compensatory planting of trees and other vegetation	Not applicable	Not
	along the banks of the newly improved drainage		required
	channel should be provided to compensate for the loss		
	of riparian vegetation.		
	Operation phase activities in the improved drainage	Not applicable	Not
	channel would be limited to periodic channel		required
	maintenance such as de-silting.		

Appendix H: Cumulative waste flow table

Cumulative waste flow table since 15th September 2008

Type of waste	Inert Waste	Non-Inert Waste	Chemical Waste
September 2008	0	0	0
October 2008	0	2 tonnes	0
November 2008	36m ³	0	0
December 2008	0	0	0
January 2009	0	0	0
February 2009	0	0	0
March 2009	0	0	0
April 2009	0	0	0
May 2009	0	0	20kg*
June 2009	0	0	0
July 2009	0	0	0
August 2009	0	0	0
September 2009	0	0	0
October 2009	0.9 m 3	0	0
November 2009	0	0	0
December 2009	0	0	0
January 2010	0	0	0
February 2010	0	0	0
March 2010	0	0	0
April 2010	0	0	0
May 2010	0	0	0
Total	36.9m ³	2 tonnes	20kg

Remark*: Chemical wastes generated from the project sites including Upper Tai Po River, Lam Tsuen River and She Shan River were centralized for disposal.

Chiu Hing Construction & Transportation Co., Ltd	l
--	---

DC/2007/06 River improvement works in Upper Tai Po River Twenty-first Monthly Report

Appendix I: Construction programme

1	Pack Numa		4	-		- 1	Master Programme of Upper Tal Po River (version 9)
	, Indiac		Duration	Start	Finish	Predecessors	2010
l Prog	Programme of Upper Tai Po River	Victoria de la constanta de la	840 days	2	31/3/2012		AND THE THE TANK AND TANK AND THE TANK AND THE TANK AND THE THE THE TANK AND THE TANK AND THE TANK AND THE TANK
N (*)	Site Clearance and Havi Road Maintenance Water Diversion	92	700 days	6/1/2010	31/3/2012		
	Area L (Acess D- Ch110)		657 days		31/3/2012		
	Footpath and Dwarf Wall (Ch 0-110)	: : : (0	52 days		31/3/2012		
17	Vehicular Access D		125 days	1/11/2011	31757012		Control of the Contro
20	River Bed formation (Ch 45-110)		52 days		31/3/2012		A CONTRACTOR OF THE CONTRACTOR
22	Pootbridge TB01 (boulder trap, bay 3)	33	6 days				
36	Retaining wall at Access D (Boulder Trap) Peterning Well (Buc)	er Irap)	84 days		31/7/2010		
4	Retaining Wall (CHS)		2/ days	10/6/2010	30/6/2010		
62	Drain-off pipe at Boulder Trap (Ch 45)	(45)	30 days		31/3/2010		
95 3	Tree Transplant	· ·	12 days		10/4/2010		P
20	Vabion wall at boulder Irap Engrance (Uh -25) Fillips Work at Boulder Tran (RHS of downstream)	ince (Ch -23) S of downstream)	9 days	22/3/2010	31/3/2010		
72	Box Culvert TB03 (Ch 45)		49 days				
73	Construction of Base Slab		20 days				
T	Construction of Wall Stem and Top Slab	f Top Slab	29 days	_			Commands.
70	Alea F (Cd 110- Cn 250) River Red formation (Ch 110-030)		622 days	7/4/2010	31/3/2012		
50	Footpath and Dwarf Wall (Ch 110-230)	230)	78 days		31/3/2012		
ŝ	Ch 110 - 150		574 days				
ŝ	Maintainence Staircase (Ch 130 RHS)	10 RHS)	6 days				
26	Gabion (Ch 140-150 LHS) TG4	·	41 days	7	18/11/2010		Dames and
6	Footbridge TB02 (Ch 150)		574 days		4/2/2012		
106	Construction of Abutment R	W.	27 days	0102/5/8	8/6/2010		
=	Construction of Decking		38 days		14		
119	Lighting at Footbridge TB02	302	45 days	_	472/2012		
123	Ch 150 - 230		459 days				
97 56	Gabion Wall (Ch 150-190 LHS) TG4	S) TG4	30 days				
152	Gabion Wall (Ch. 186-185 RHS) 102	S) 102	8 days	0/11/2010	15/11/2010		and the second s
155	Gabion Wall (Ch 185-210 RHS) TG1	S) TGI	19 days		24/10/2011		Branch D
138	Gabion Wall (Ch 210-225 RHS) TGI	S) TGI	42 days		12/12/2011		
143	Step 1 (Ch 180) Maintaineace Vairnase (Ch 180 I HS)		30 days	15/2/2012	20/3/2012		
IA7	Lighting CH 175-250	(data)	85 days	Ė			
851	Footbridge TB03 (Ch 210)		423 days				And the state of t
£ 3	Construction of Abutment B	e	26 days		1/11/2010		O
172	Laghting at Pootbridge TB03	303	40 days	17/17/2011	102/21/01		
<u>.</u>	Area N (Ch230-Ch615)		654 days		31/3/2012		
2	River Bed formation (Ch 230-450)		52 days		31/3/2012		Диничностипа
187	Lighting at CH 250-320	(CI0	157 days, 45 days	1/10/2011	31/3/2012		
193	Ch 230-330		596 days		20/3/2012		
5	Step 2 (Ch 260)		30 days		20/3/2012		
£ 8	Cascade (Cn 2/3) Gabion Wall (Ch 230-270 LHS) TGZ	S) TG2	45 days	1/11/2011	22/12/2011		Commence of the Commence of th
201	Gabion Wall (Ch. 260-270 RHS) TG1	S) TG1	25 days.		30/10/2010		
ж,	Retaining Wall (Ch 270-315 LHS) TR1 (replaced by AD1)	HS) TR1 (replaced by AD1)	37 days.		13/12/2010		Assessment
208	Retaining Wall (Ch 270-315 RHS) TR1 (replaced by AD1)		37 days	26/4/2010			
214	Maintainence Staircase (Ch 315 LHS)	S LHS)	31 days	-	20/12/2010		
21.7	Gabion Wall (Ch 315-330 LHS) TG2	S) TG2	25 days.		30/10/2010		
270	Gabion Wall (Ch 320-330 RHS) TG2	S) TG2	25 days		30/10/2010		A. Carrier of the Car
777	Construction of Abutment A	A	28 days	2/10/2010	3/11/2010		
252	Construction of Abutment B	82	28 days		6/12/2010		
240	Construction of decking	WALLE AND AUTHORITIES THE STREET	41 days	7/12/2010	22/1/2011		
Print Date: 3 Revised Dat	Print Date: 30/3/2010 Task Revised Date: 29/3/2010 Solit		Progress Videotom		Summary Project St	Summing	External Tasks (www.memoremens) Deutline &
							UNIVERSITY BUTTON
							Page 1 nl 2

Libra of Fortiging 1984 20 20 20 20 20 20 20 2	Libera of Position	Particle	The control of the	Pack Numo				ľ		
James of Frontier 1996 **A Control of Part 1997 **A Control of Part	The state of the PLA (1970) (1	The content of the	The content December Decemb			Duranon	2006		lecessors	May Int Ann See Oct Naw Dec Int See May Res
Parallel of State Parallel	Examples of Bridge TAA 1 days 100/2011 17/20211 Action of Bridge TAA 21 days 100/2011 17/20211 of Wall (CS 25-504 ES 19) TGZ 22 days 11/20201 30/10/2010 of Wall (CS 25-504 ES 19) TGZ 22 days 21/20200 30/10/2010 of Wall (CS 25-504 ES 19) TGZ 22 days 21/20200 30/10/2010 of State of Admirated IV 23 days 21/20200 22/20201 of State of Admirated IV 32 days 21/20200 22/20201 of State of Admirated IV 32 days 21/20200 22/20201 of State of Admirated IV 32 days 22/20201 22/20201 of State of Admirated IV 32 days 22/20201 22/20201 of State of Admirated IV 32 days 22/20201 22/20201 of State of Admirated IV 32 days 22/20201 22/20201 of State of Admirated IV 32 days 22/20201 22/20201 of State of Admirated IV 32 days 22/20201 22/20201 of State of Admirated IV 32 days 22/20201<	Contracted of Author	Commonwed Comm	Lighting at Footbridge TBO4		39 days	24/1/2011	9/3/2011		
and Mill Chi Stays Listy Trail 25 also principal (1992) 2	we all Co. Stars St. Stars 21002010 SW002001 SW0	Act	Accordance Acc	Demolition of Bridge TB-A In 330-350	* *	7 days	10/3/2011	17/3/2011		•
right (in 3.95 st Ris) TGZ 5 st right) (in 3.95 st Ris) TGZ 5 st Ris) TGZ 5 st Ris TGZ 5 st R	right (10, 35)-45 (RS) TGZ 25 days 100000 30 in 10000 right (10, 35)-45 (RS) TGZ 15 days 110000 30 in 10000 right (10, 35)-40 (LS) TR (replaced by AD) 35 days 210000 210000 chairs at Policida (TS) Ad-60 (LS) TR (replaced by AD) 34 days 210000 210000 chairs at Policida (TS) Ad-60 (LS) TR (replaced by AD) 34 days 210000 210000 chairs at Policida (TS) Ad-60 (LS) TR (replaced by AD) 34 days 210000 210000 right (10, 34-400 (LS) TR (replaced by AD) 34 days 210000 370000 right (10, 34-400 (LS) TR (replaced by AD) 34 days 210000 370000 right (10, 34-400 (LS) TR (replaced by AD) 34 days 2100000 370000 right (10, 34-400 (LS) TR (replaced by AD) 35 days 3710000 370000 right (10, 34-400 (LS) TR (replaced by AD) 35 days 3710000 371000 3710000 right (10, 34-400 (LS) TR (replaced by AD) 35 days 3710000 3710000 3710000 3710000 right (10, 34-400 (LS) TR (replaced by AD) 36 days 3710000	15 strain 15 s	15 style="blocked: 150; 150; 150; 150; 150; 150; 150; 150;	Gabion Wall (Ch 330-345 LHS) TG2		25 days	2/10/2010	30/10/2010		December of the Control of the Contr
The control of Advanced A	The contraction of Adument A	Controlled of Authors 1. Controlled of Authors 2. Controlled of Authors 3. Controlled of Autho	Contracted of Administry A	Gabion Wall (Ch 330-345 RHS) TG2		25 days	2/10/2010	30/10/2010) Demands
American of Alement A. 28 skys. 21(4700) 61(1200	A contraction of Admirect A 28 days 21(1200) 21(1201) 21(Controlled of Authors 1. 20 above 17/1000 (17/2	Communical divisiones 1, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20	Footbridge TB05 (ch 350)	. :	136 days	2/10/2010	9/3/2011		D. C.
Activation of Activation Ac	Activation of Activation Ac	Committee of Augustee 1 Committee 1 Committee 2 Committee 2 Committee 3 Co	Contracted of Abstract 1 Act	Construction of Abutment A		28 days	2/10/2010	3/11/2010		Account
A days 1/1/2001	A chain at Notobiale T155 and A chain at Notobial T155 and A chain at Noto	Manual Residency 19 sept 10,000	Act	Construction of Abutment B		28 days	4/11/2010	6/12/2010		- Dominanto
ing Wall (Ch 342-400 LHS) TRI (replaced by ADI) 6 days 197200 6 days 197200 6 days 197200 6 days 197200 7 days 297200 8 days 197200 9	ing Wall (Ch 342-400 LHS) TR1 (replaced by AD1) 19 days 1/2000 10 days (Ch 340) 10 days 1/2000 10 days 1/2	1,000,000,000,000,000,000,000,000,000,0	A	Construction of decigning Lighting at Footbridge TROS		41 days	7/12/2010	22/1/2011		
Comparison of Astronomy State Comparison of Astronomy Comparis	ang Wall (5) 345-400 SHS) TR1 (replaced by AD)	Control of Action Cont	Control of All All Control of All	Retaining Wall (Ch 345,400 LHO) TR 1 (re-	enlaced by AD1)	9A days	0100011	11027676		
Control Cont	Control of Abuneur Control	1,000,000 3,000	1,000,000,000,000,000,000,000,000,000,0	Retaining Wall (Ch 345-400 RHS) TR1 (re-	eplaced by AD1)	34 days	1/3/2010	8/4/2010		
10,000,000,000,000,000,000,000,000,000,	(LD 560) 50 days 3/1/2011 5/2/2011 cide (LD 560) 50 days 3/1/2011 5/2/2011 Charaction of Adminent B 28 days 29/3/2010 6/1/2010 Destruction of Adminent B 28 days 29/3/2010 6/1/2010 Destruction of Adminent B 28 days 19/1/2011 1/1/2001 Spinite at Eventridge TB06 59 days 19/1/2011 1/1/2001 3 days 1/1/2001 1/1/2001 1/1/2001 4 days 1/1/2001 1/1/2001 1/1/2001 3 days 1/1/2001 1/1/2001 1/1/2001 3 days 1/1/2001 1/1/2001 1/1/2001 4 da	1,000,000 20 days 20/2001 1,000,000 1,000,00	April Apri	350-400		579 days	29/3/2010	1/2/2012		
construction of Abrumant A substitution of Abrumant A substitution of Abrumant A substitution of Abrumant B substitution of Abrumant	right (25, 400) 579 days 297/2010 17/2010 17/2010 contraction of Abrumant A Destroyers (24, 24, 24, 24, 24, 24, 24, 24, 24, 24,	April 1970 170201	April 1997 Coloration of Apparent Colora	Step 4 (Ch 360)		30 days.	3/1/2011	5/2/2011		
Descriptation of declarate A 28 days 4/1/2010 61/2010	Section of Abutment A	Contention of Numerical Activities 25 days 2012/2010 6172/2010 6172/2010 6172/2010 6172/2010 6172/2011 6172/	Contention of Numerical A 22 days 211/2010 617/			579 days	29/3/2010	172/2012		
Substitution of Abunneral B 28 days 29/202010 29/402010	Substitution of decking 2 days 19/12/2011 17/12/2011 17/12/2011 5 days 19/12/2011 17/12/2011 17/12/2011 5 days 19/12/2011 17/12/2011 17/12/2011 5 (Ch. 410) 2 days 19/12/2011 17/12/2010 17/12/2010 3 days 19/12/2011 17/12/2010 3 days 19/12/2010 17/12/2010 3 days 19/12/2011 17/12/2011 4 days 19/12/2011 4 days 19/1	Continued of Markers St. days 107201 1720111 1720111 172011 1720111 1720111 172011 172011 172011 172011	Continuence of Montree 18 dept. 20/2010 24/4010			28 days	4/11/2010	6/12/2010		A. C.
April 17/12/2011 17/12/20	Section of officients (2.5 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	Contention of Contention Co	1,000 1,00	Construction of Abutment B		28 days	29/3/2010	29/4/2010		
State Stat	17.00 17.0	State 17,000 15	To the control of th	Construction of decking		41 days	1/11/2011	17/12/2011		Demands
Color Colo	State Stat	1,000 1,00	1,000 1,00	Lighting at CH 350-380		30 days	30.0011	102777		
S(CH 410) 90 days 31/2011 5/2011 statione Stations (CH 420 LHS) 6 days 1/12/2010 7/12/2010 water (CH 420 LHS) 6 days 1/12/2010 26/17/2011 may Well (CH 450) 40 days 1/12/2010 26/17/2011 may Well (CH 450) 40 days 1/12/2010 26/17/2011 may Well (CH 460) 40 days 1/12/2010 26/17/2011 may Well (CH 460) 40 days 1/12/2010 26/17/2011 may Well (CH 460) 40 days 1/12/2010 26/12/2011 may Well (CH 460) 40 days 1/12/2010 26/12/2011 may Well (CH 460) 40 days 1/12/2010 30/12/2011 may Well (CH 500-530 LHS) TR3 45 days 31/2011 30/2011 des (CH 500) 41/2010 41/20201 41/20201 des (CH 500) 41/20201 41/20201 41/20201 des (CH 500) 41/20201 41/20201 41/20201 des (CH 500) 41/20201 41/20201 41/20201 des days (CH 500) 41/	S(Ch 410) 90 days 31/2011 5/2011 station of Sulfaces (Ch 420 LHS) 6 days 1/12/2010 3/12/2011 water Tool (Ch 450) 460 - 500 LHS) TRZ (Chon) 38 days 1/12/2010 26/17/2011 water Tool (Ch 460) 460 - 500 LHS) TRZ (Chon) 38 days 1/12/2010 26/17/2011 ning Wall (Ch 460-500 LHS) TRZ (Chon) 38 days 1/12/2010 26/17/2011 ning Wall (Ch 460-500 LHS) TRZ (Chon) 30 days 4/10/2010 1/12/2010 ning Wall (Ch 50-500 LHS) TRZ 30 days 3/12/2011 5/2/2011 ning Wall (Ch 50-500 LHS) TRZ 40 days 3/12/2011 3/12/2011 ning Wall (Ch 50-500 LHS) TRZ 40 days 3/12/2011 3/12/2011 des (Ch 500) 40 days 3/12/2011 3/12/2011 des (Ch 500 LHS) TRZ 40 days 3/12/2011 3/12/2011 des (Ch 500 LHS) 40 days 3/12/2011 3/12/2011 des (Ch 500 LHS) 40 days 3/12/2011 3/12/2011 des (Ch 500 LHS) 40 days 3/12/2011 3/12/2011 <	Section Sect	Section Sect	400-525		23 days	4/10/2010	10/2/2/01		
aitence Statience (Ch 470 LHS) Juvert TF01 (Ch 450) Juvert TF01	aitance Staticase (Ch. 420 LHS) Labort TBOI (Ch. 460) Labort TBOI	Charter TBM (CA 50)	Cherr T80 (14.50) 49 days 1/12/2010 56/2011 11/20200 56/2020 11/12/201	Step 5 (Ch 410)		30 days	3/1/2011	5/2/2011		Contracted)
1,000,000,000,000,000,000,000,000,000,0	10,000 1	Control (Control (April Column Co	Maintainence Staircase (Ch 420 LHS)		6 days	1/12/2010	7/12/2010		
10 10 10 10 10 10 10 10	10	aniar Well Ch 269 St 101 TH 2000 6 11/2000 6	and well (CA 600 540 Bis) TRI (Capacida by ADI) 80 days 10/20010<	Box Culvert TB01 (Ch 450)		49 days	1/12/2010	26/1/2011		
ania Wall (Ch. 400.450 RHS) TR1 (replaced by AD1) 30 days #1102010 11/122010	ania Wall (Ch. 400-450 RHS) TR1 (replaced by AD1) 30 days 4102010 61112010 ania Wall (Ch. 400-450 RHS) TR1 (replaced by AD1) 30 days 81112010 13712010 13712010 ania Wall (ch. 604-650 LHS) TR3 (replaced by AD1) 50 days 81112011 22722011 ania Wall (Ch. 604-650 LHS) TR3 (replaced by AD1) 50 days 221172011 30/32011 ania Wall (Ch. 604-650 LHS) TR3 (replaced by AD1) 51 days 21172011 30/32011 ania Wall (Ch. 604-650 LHS) TR3 (replaced by AD1) 51 days 31/12011 32/32011 ania Wall (Ch. 604-650 LHS) TR4 (replaced by AD1) 51 days 31/12011 31/12011 ania Wall (Ch. 604-650 LHS) TR4 (replaced by AD1) 51 days 31/12011 31/12011 ania Wall (Ch. 604-650 LHS) TR4 (replaced by AD1) 51 days 31/12011 31/12011 ania Wall (Ch. 604-650 LHS) TR4 (replaced by AD1) 51 days 31/12011	minar Well (CA 800-50) III) TRI (regiment by AD)) 30 days 1470200 40 da	aniar Well (CA 60.50 RB) 30 days \$11/2010 17/12010 2022011 aniar Well (CA 60.50 RB) Til Ceplaced by AD) 30 days \$11/2010 17/12010 2022011 aniar Well (CA 60.50 RB) Til Ceplaced by AD) 30 days \$17/12010 2022011 2022011 aniar Well (CA 60.50 RB) Til Ceplaced by AD) 42 days \$17/12010 2022011 2022011 aniar Well (CA 60.50 RB) Til Ceplaced by AD) 42 days \$17/10010 \$202011 2022011 Additional Well (CA 50.50 RB) 42 days \$17/10010 \$17/10010 \$202011 Conscrições of Adament B 2.6 days \$17/10010 \$17/10010 \$17/10010 Production of Adament B 2.6 days \$17/10010 \$17/10010 \$17/10010 Production of Adament B 4.6 days \$17/10010 \$17/10010 \$17/10010 Production of Adament B 4.6 days \$17/10010 \$17/10010 \$17/10010 Adament B 4.6 days \$17/10010 \$17/10010 \$17/10010 Adament B 4.6 days \$17/10010 \$17/10010 \$17/10010	Retaining Wall (Ch 480-500 LHS) TR2 (20	(0m)	38 days	1/12/2010	13/1/2011		
ania Wali (Ch. 400-450 LHS) TR1 (replaced by AD1) 30 days 81112010 11/122010 11/122010 11/122010 11/122010 11/122010 11/122010 11/122011	ania Wali (Ch. 600-450 LHS) TR1 (replaced by AD1) 30 days 811/2010 11/1/2010 11/1/2010 11/1/2010 11/1/2010 11/1/2010 11/1/2010 11/1/2010 11/1/2010 11/1/2010 11/1/2010 11/1/2010 11/1/2010 11/1/2010 11/1/2011	Second Communication Commu	man will (ch 640-00 BES) TSI (ch 640-00 BES) T	Retaining Wall (Ch 400-450 RHS) TR1 (re-	eplaced by AD1)	30 days	4/10/2010	6/11/2010		
Act	Act	animar Well Cr. 500 EMB 722 56 days 13122010 13022011 1	Section Sect	Retaining Wall (Ch 400-450 LHS) TR1 (re	eplaced by AD1)	30 days	8/11/2010	11/12/2010		
State Stat	### 100 CH 500-530 LHS) TR3	Section Sect	Section Sect	Retaining Wall (ch 450-500 RHS) TR2		62 days	13/12/2010	22/2/2011		Activities and Activi
Ver Dec Ver Dec	90 days 91/2011 5/220211 dates (CA 500 RHS) 45 days 91/2011 2/320211 dates (CA 5125) 42 days 91/2011 2/320211 dates (CA 5125) 42 days 91/2011 2/320211 Ousstruction of Abument A 28 days 4/10/2010 4/1/2010 Ousstruction of Abument B 28 days 91/2010 1/1/2010 Ousstruction of Abument B 1/1/2011 1/1/2011 1/1/2011 Ousstruction of Abument B 1/1/2011 1/1/2011 Ousstruction of Abument B 28 days 91/2010 1/1/2011 Ousstruction of Abument B 1/1/2011 1/1/2011 Ousstruction of Abument B 28 days 91/2010 1/1/2011 Output PALIT S 2010/2010 1/1/2011 1/1/2011 Output PALIT S 2010/2011 1/1/2011 1/1/2011 1/1/2011	Constraint Con	Construction of Abutment B	Retaining Wall (Ch 500-530 LHS) TR3		58 days	22/1/2011	30/3/2011		С ууулан уушын май
45 days 3/1/2011 3/3/2011 1/3/2011	A 5 days 3/1/2011 3/3/2011 (170.016.) (170.0	Construction of Actions	Construction of Authors Author Au	Step 6 (Ch 500)		30 days	3/1/2011	5/2/2011		Desix many design of the second of the secon
Construction of Abument A	12 days 17/10/2010 17/10/	Construction of Admirment A 22 days 1/1/2010 1/	Construction of Nationary 22 days 1/10/2010 1/12/2010 1	Cascades (Ch 500 KHS)	:	45 days	3/1/2011	23/2/2011		<u> </u>
Accordance Acc	28 days 4710/2010 4711/2	Construction of Abstinate A case	Construction of Administral Processing Construction of Construction of Administral Processing Construction of Constructio	Country I Day (CB 223)		423 days	4/10/2010	8/2/2012		
Construction of decking Construction of Construc	Construction of deciding Construction of Con	Construction of declarate	Construction of decking Construction of	Construction of Authors B		26 days	4/10/2010	0102/11/2	:	
Demolition of existing Footbridge TB-D (Ch 525) 12 days 2671/2012 87/2012 5004/2012 50	12 days 26/1/2012 8/1/2012 8/1/2012 9/	Demolition of estiting Footbridge TB-D (Ch 525) 11 Lays 201021 12 Lays 12/17/201 12/17/2012 13 days 12/17/201 12/17/2012 14 days 12/17/201 12/17/2012 14 days 12/17/201 12/17/2011 15 Ch 555-595 LES) TRe5 (AD) 14 days 12/17/201 12/17/2011 15 Ch 57/2012 16 days 11/17/201 12/17/2011 16 days 11/17/2010 17 days 11/17/2010 17 days 11/17/2010 18 days 11/17/2	Demonstrictor of custriant Feotbridge TB-D (Ch 52.5) 12 days 260/2012 25/2012	Construction of decking	•	41 days	1/11/2011	17/12/2011		LE PRINCIPAL DE LA CAMPANIA DE LA CA
Section Sect	100 100	Proberidge T807 Lighting 251/2021 251/	Properties	Demolition of existing Footbridge TB-	3-D (Ch 525)	12 days	26/1/2012	8/2/2012		
See days 714/2010 18/22012	Sec days 714/2010 18/22012	Single Wall (Ch. 525.55 LHS) TR4	Sign days 744/0010 8822011 Sign days 744/0010 8822011 Sign days 744/0010 8722012 Sign days 744/0010 Sign days 741/0010 Sign days 7	Footbridge TB07 Lighting		39 days	12/12/2011	25/1/2012		
ning Wall (TAS 555 5155 LHS) TR4 111 days 2/10/2010 8/2/2011 and wall (TAS 555 5455 LHS) TR5 4 days 2/10/2010 15/1/2011 days 2/1/2011 2/1/2011 days 2/1/2011 2/1/2011 days 3/1/2011 days 3/1/2011 2/1/2011 days 2/1/2011 days 2/1/2011 days 3/1/2011 days 2/1/2011 days	wing Wall (TAS 555 S.55 LHS) TR4 111 days 27002010 8/2/2011 ning Wall TR5 144 days 7/4/2010 15/1/2011 14/2010 Ch 555-595 LHS) TR5 (AD) 146 days 7/4/2010 15/1/2011 1/4/2010 Actaining Wall TR5A CH555-595 LHS 91 days 2/10/2010 15/1/2011 1/4/2010 7 (CL 570) 30 days 16/1/2012 18/1/2012 1/4/2010 2 days 4/10/2010 29/1/1/2010 1/4/2010 29/1/1/2010 2 days 1/11/2010 29/1/1/2010 1/1/2010 2/2/2011 3 days 1/11/2010 2/2/2011 1/1/2010 2/2/2011	Classes State	Second Comparison Compari			586 days	7/4/2010	18/2/2012		•
mine Wall TRS 149,2010 15/1/2011 7.0.555-505 LHS) TRS (AD) 166 days 7/4/2010 239,2010 Setaining Wall TRSA CHSS5-595 LHS 91 days 2/10/2010 15/1/2011 Setaining Wall TRSA CHSS5-595 LHS 90 days 1/10/2010 15/1/2011 7 (Ch 570) 30 days 16/1/2012 18/1/2012 July Ch 780 49 days 3/1/2011 28/2/2011 INB Wall (ch 595-615) TR3 49 days 3/1/2011 28/2/2011 INB Wall (ch 595-610) TR3 40 days 1/1/1/2010 28/2/2011	ting PALITY 244 days 14/2010 15/12011 Ch 555-505 LHS1 TRC (AD) 146 days 7/4/2010 15/12011 Ch 555-505 LHS1 TRC (HS55-595 LHS 91 days 7/4/2010 23/9/2010 7 (CL 570) 90 days 16/1/2012 18/1/2011 1 (AD) 40 days 4/10/2012 29/1/1/2011 1 (AD) 40 days 4/10/2012 29/1/1/2010 1 (AD) 40 days 4/10/2012 29/1/1/2010 1 (AD) 40 days 4/10/2010 29/1/1/2010 1 (AD) 40 days 1/11/2010 2/1/2011	Second S	15/12/01 15/12/01			111 days	2/10/2010	8/2/2011		
A 55-555 LEIS TRS (AD) 146 days 14/2010 15/2010 15/2010 15/2010 15/2010 15/2010 16/201	A 555-555 LEIS TRS (AD) 146 days 146 days 1472010 151-2010 170 days 161/2012 181/2012 181/2012 181/2012 181/2012 181/2012 181/2012 181/2012 181/2012 181/2012 181/2011 181/2012 181/2011 181/2011 181/2011 181/2012 181/2011	Retaining Wall TESA CHESTS - 555 Like 146 days 14/12010 15/1/2011 15/1/2011 15/1/2011 15/1/2011 15/1/2011 16/2012 16/2012 16/2012 16/2012 16/2012 16/2012 16/2011 16/2012 16	Retaining Wall TRSA CHISTS-555 LINE 146 days 174/2010 23/20201	Retaining Wall TR5		244 days	7/4/2010	15/1/2011		
Actioning Wall IX5A CH253-595 LAIS 91 days 2/10/2010 15/1/2011 7 (CB 570) 30 days 161/2012 18/2/2012 2 (Lays) 161/2012 18/2/2012 3 (Lays) 4/10/2010 29/1/2010 4 (Lays) 3/1/2011 28/2/2011 1 (Lays) 1/1/2010 2/1/2011 1 (Lays) 1/1/2010 2/1/2011	CG 570 CG 5	Culver TBO2 (ch. 580)	7 (Ch 570) 7 (Ch 570) 7 (Ch 570) 9 (days 161/2012 182/2012 182/2012 182/2012 182/2012 182/2012 182/2012 182/2012 182/2012 182/2011 182/201	(Ch 555-595 LHS) TR5 (AD)		146 days	7/4/2010	23/9/2010		Annual Control of the
Calver T902 (ch. 580) 49 days 4702010 29/11/2010 ming Wall (ch. 595-615) TR3 49 days 31/1/2011 28/2/2011 ing at CH 550-610 105 days 1/11/2010 28/2/2011	Colored TBOX (ch. 580) 49 days 47 (2021) 29/1/2010 ming Wall (ch. 580-615) TR3 49 days 31/2011 28/2/2011 ing at CH 550-610 105 days 1/1/2010 2/5/2011 1/1/ days 2/5/2012 1/1/2010 2/5/2011	10	Columning Wall (ch. 595-615) TR3 49 days 31/2011 28/22011 Into days 31/2011 28/22011 Into days 31/2011 28/22011 Into days 21/2011 28/22011 Into days 31/2011 28/22011 Into days 31/2011 28/22011 Into days 31/2011 28/22011 Into days 21/2011 28/22011 Into days 31/2011 28/22011 Into days 21/2011 28/22011 Into days 31/2011 28/22011 Into days 21/2011 28/22011 Into days 31/2011	Ster 7 (Ch 570)	2	30 days	0102017	1107/1/01		
ming well (ch. 595-615) TR3 49 days 5/172011 28/22011 ing at CH 550-615 TR3 100 days 1/1/2011 28/22011	10 days 171201 2872011 105 days 1717201 2872011 105 days 17172010 27572011 101 days 2697207 3472012	sinne Will (ch. 595-615) TR3	sinne Will (ch. 593-615) TR3 105 days 1/1/2010 1/1/2	Ror Culvert TR02 (ch 580)		AG days	0100/01/4	2077700		The second secon
ing at CH 550-610 267-611	ing at CH 550-610 105 days 1/11/2010 2/2/2011	10 days 1/175010 2372011 1/14 days 1/175010 2372011 1/14 days 2569/2507 34/57012 1/14 days 2569/2507 2469/2507	10 days 1/17/2010 2/3/2011 1/10 days 1/17/2010 2/3/2011 1/10 days 1/17/2010 2/3/2011 1/10 days 2/3/2012 2/3	Retaining Wall (ch 595-615) TR3		40 days	311/2011	2802011		LEGISTIC MATERIAL PROPERTY AND ADMINISTRATION OF THE PROPERTY ADMINISTRATION OF THE PROPERTY AND ADMINISTRATION OF THE PROPERTY AND ADMINISTRATION OF THE PROPERTY AND ADMINISTRATION OF THE PR
IND GRAD IN TAXABLE IN THE CONTROL OF TAXABLE IN THE CONTROL OF TAXABLE IN TA	140 days 11112010 2/302012	Took Sphir	110 days 269/2017 31/5/2012	Lighting at CH 550-610		105 days	0102/17/	1107777		
1414 days 269/20012		Test External Tasks Games Summary Theorems Styling Continued Milestons ** Tree Styling Continued Miles	Thak Summary Summary Summary Statemal Tracks (Management Statemal Tracks (Management Statemal Malestons Statemal Malestons Proper Summary Statemal Malestons Proper Statemal M	reletion		105 days	2697000	31/3/2017		
IA IA GAYS ZASAIZAKY 31,5201.2.		Tiesk Samuary Stylis - External Tasks Samuary Percentage - Propert Summary Treatment Stylis - Propert Stylis -	Trick Summary Summary Summary Condine Propers Summary Parameters (Microscondenses) Deadline Proper Summary Proper Summary Parameters (Microscondenses) Deadline Proper Parameters (Microscondenses) Deadline Proper Proper Parameters (Microscondenses) Deadline Proper Proper Proper Proper Proper Prope	Project Completion	Military and the second	1414 days	269/2007	31/292012		
		Tesk Commence Sommany Sommany Continue Develored Spring Continue Spring Continue Carternal Mileston Continue Spring Continue Carternal Mileston Carternal Mileston Carternal Mileston Carternal Mileston Carternal Mileston Continue Carternal Mileston Carternal Mil	Trok Sumrary Summary Propers Summary Propers Proper Summary Propers Summary Propers Summary Passession & External Materians Property Passession Styling Stylin							
		Test External Tasks Games Progress Summary Three External Milestone ** Sphit Progress Progress Progress Progress Progress Progress Summary Three Progress Summary Three Progress Progr	The Sylic Trees Summary Symmary Sylic Management Property Sylic Trees Summary Property Trees Summary Property Trees Sylic Tree							
		Tiesk External Tasks Summary Stylis Stylis Stylis Propers Propert Summary Theorem Developer Produce Stylis	Track Communication Progress Summary External Tracks Summary Project Summa							
		Tiesk Summary Street External Tacks Galling Prediction of Property Summary Prediction of Property Street Mileston Control of Property Stre	Trok Sumrary Summary Propers Summary Propers Summary Propers Summary Propers Summary Propers Summary Passessessessessessessessessessessessesse							
		Tesk External Tasks Games Dendine Sprin	The Summary Summary Summary State Management Predicts Management Predicts Management Predicts Summary Spirit Freeze Summary Statemal Milestons Prediction Progress Summary Spirit Prediction Predictio							
		Tiesk formation Progress Surmary Stylic External Tasks formation Develore Stylic Propert Surmary Township External Milestone Stylic Propert Surmary Township Develore Stylic Propert Surmary Township Develore Stylic Develore Sty	Track Communication							
		Tiest Summary External Tarks Summary Propers Summary Propers Synin ' Mileston Propers Propert Summary Parameters Synin Syn	Trock Communication Progress Summary External Track Gallerine Project Summary Project Summ							
		Tiesk Communication Progress Summary External Tarks Gammary Deadline Sphir Sphir	Trock Communication Progress Summary External Track Condition Dendline Stylis Stylis Summary Proper Summary Proper Summary Proper Summary Proper 2 of 2							
		Tiesk Communication Progress Summary External Tarks Summary External Mileson Project Summary External Mileson Project Summary External Mileson Project Summary Project Sum	Tosk formations Progress Sunnary External Tasks formations Druding Split Split Progress Progres							
		Tesk Summary External Tacks Summary Propers Project Summary Promonous Annual Mileson: Project Summary Propers Sylvin	Trok Sumrary Summary Propers Summary Propers Proper Summary Propers Summary Parameters of Summary Parameters o							
		Tosk Communication Progress Surmany Symmetric External Tasks Communication Project Summany Symmetric External Mileston Project Summany Symmetric Communication Project Symmetr	Trask Company Paramonical Parks (Management Parks) Paramonical Parks (Management Parks) Paramonical Parks (Management Parks) Paral Maleston: Proper Summary (Parks) Maleston: Proper Summary (Page 2 of 2							
		Tesk Summany Treates Summany Treates Summany Deadline Deadline Split	Tosk Summary Summary Summary Statemal Maleston: Progress Summary Productional Summary Production Summary Production Summary Production Summary Production Summary Production Summary Page 2 of 2							
		Popul Populariary Valendaria (Vigeri Minimary Vigeri Minimary	spon valesson: Models of Likelia	Task				Summany		External Tasks бинжимимимимимимимимимимимимимимимимимими
Tiest General Tarks Management Progress Summary Cont.	Tick (Suppress Summary Freemal Tarks (Suppress Summary Freemal		Page 2 of 2	unde				TOKEL SUI	mary *	Externa

Appendix J: Complaint Investigation Report and Log

	·
DSD Project – River Improvement Works in Upper Lam T	suen River, She Shan River and Upper Tai Po River
Report for Complaint/ Concern Ref: DC0706-CL-100507(EPD)R1 EPD Complaint Ref: EP3/N05/RN/00008938-10 Sheet: <u>1</u> of <u>3</u>	
RECIPIENT	
Name: Chiu Hing Construction & Transportation Co., Ltd,	
Details: EPD formally informed Drainage Services Department	ent on 7th May 2010 regarding a complaint on
observation of muddy water at section of Upper Tai P	
	Received Time:
Teodoriva Date. 1 May 2010	xeceived Time.
COMPLAINANT / Concern	
Name: N/A	Tel: N/A
Address: N/A	ICI. IV/A
COMPLAINT	MP 4
COMPLAINI	
□Noise □Air quality/Dust ☑Water □Odour □Safety □Others	□Environment □Traffic/Pedestrian
Event Date and Time: 7th May 2010	
Location: Section of UTPR near Sheung Wun Yiu	

INVESTIGATION RESULTS & MITIGATION MEASURES

- 1. A complaint on 7th May 2010 was recorded that consecutive site water discharge was observed in the site area at the upper stream area of UTPR near Sheung Wun Yiu. Environmental Team (ET) was informed by Engineer Representative (ER) on the same day.
- 2. As per the EM&A Manual section 9.3, ET arranged a site investigation with the representatives from Contractor, on 7th May 2010 to resolve the above complaint.
- 3. During the investigation river water was observed to be slightly turbid (Fig.3.1~3.3). Major construction activities were ceased as river-based excavation works were restricted according to contractual requirements. Only site clearance activities of removal of noise barriers were being carried out during the investigation and no generation of muddy effluent was observed from such activities. As reported by Contractor, immediate follow up action was taken on the same day to minimize surface runoff from causing water quality impact.
- 4. The condition of turbid river water was believed to be attributed by adverse weather condition in the morning on 7th May 2010 (i.e.: amber rainstorm warning signal was hoisted in the morning), which caused soil runoff and disturbance of sediment along the UTPR.
- 5. Contractor was advised to pay serious attention to the weather condition and provide necessary protective measures to prevent erosion and runoff from deteriorating the river water quality. Bared soil surface and earthy stockpiles on site should be properly covered. Excavated pit should be backfilled as far as practicable.
- 6. As a follow up investigation, inspection was carried out by ET on 12th May 2010 to check the conditions of project site as well as water quality of UTPR. River water was observed to be clear (Fig.6.1 to 6.3) and no major construction activities were being carried out during investigation.

- 7. To prevent potential flooding along the project site, haul access from site ch.300 to 450 has been reformed and therefore the haul access was barely exposed (Fig.7.1 & 7.2). To prevent erosion and potential runoff, contractor was advised to implement improvement works to the exposed bare earth surface. Bared haul access should be compacted and/or hydro-seeded as soon as possible. As major construction activities were ceased, temporary stockpiling of earth material should be prevented on site.
- 8. As reported by Contractor, compaction by roller to the loosed earth surface of the haul access is scheduled in the forthcoming week to upgrade the protective measures to the water stream at UTPR. Hydro-seeding would be also considered as an alternative measure to site area where roller cannot be reached.
- 9. ET has reminded the Contractor again to be cautious on not arising muddy water in the future construction works along the river.

RECOMMENDATIONS

- To meet relevant environmental ordinance such as Environmental Impact Assessment Ordinance (EIAO) and Water Pollution Control Ordinance (WPCO), Contractor was seriously reminded that direct discharge of site water is not allowed and site water seepage to the river should be prevented.
- 2. Prior to the excavation and de-watering activities, mitigation measures including provision of site water treatment facilities, bund walls and barriers should be implemented on site. Underground water and muddy effluent drained from excavated pit should be diverted to proper silt removal facilities before discharge.
- 3. Contractor should well manage the temporary drainage system on site to avoid surface runoff and muddy effluent from entering into the public drainage and river channel.
- 4. The contractor shall always check the performance of bunds and barriers provided in order to minimize site water seepage and surface runoff from site.
- 5. Should no construction works will be carried out, temporary stockpiling of earth materials should be prevented on site as to avoid soil erosion and runoff from causing water quality impact. Also, excavated pits should be backfilled as far as practicable to prevent erosion and generation of muddy water.
- 6. Contractor should regularly provide training/ toolbox talk on environmental topics, especially about protection of river water quality to their site staffs and sub-contractors.
- 7. Contractor should also provide detailed briefing to frontline staffs and sub-contractors before commencement of site activities in order to fulfill with planning of construction method statement.
- 8. Contractor should keep good site practice on regularly checking the environmental performance on sites, especially paying serious attention on any sudden changes of river water quality.
- 9. Contractor is reminded again to take serious notice on the complaint and always keep good environmental management at site.

Approved by: Patricia Chung Chi Ping
(Environmental Team Leader)

Signature:

Date: 17-05-2010

Fig.3.1 – Water discharged from approximate ch.200



Fig.3.3 – River channel near site ch.400



Fig.6.1 – River water at approximate ch.50



Fig.3.2 - River water at down stream area



Fig.3.4 – River water at down stream area



Fig.6.2 – River water at approximate ch.150



Fig.6.3 – River water at downstream area



Fig.7.1 – reformed haul access at approximate ch.300



Fig.7.2 – reformed haul access at approximate ch.450



COMPLAINT / CONCERN LOG

\mathbf{z}
\sim
∺
ef: DC07
\Box
\mathbf{C}
\circ
\preceq
706-CL-
Ţ`
\mathbf{C}
<u>.</u>
100507
ō
Ğν
9
\approx
7(EPD)
T
\Box
≟
双

	Contractor was advised to pay serious attention to the weather condition and provide necessary protective measures	5)			
· .	The condition of turbid river water was believed to be attributed by adverse weather condition in the morning on 7 th May 2010 (i.e.: amber rainstorm warning signal was hoisted in the morning), which caused soil runoff and disturbance of sediment along the UTPR.	4)			
	During the investigation river water was observed to be slightly turbid. Major construction activities were ceased as river-based excavation works were restricted according to contractual requirements. Only site clearance activities of removal of noise barriers were being carried out during the investigation and no generation of muddy effluent was observed from such activities. As reported by Contractor, immediate follow up action was taken on the same day to minimize surface runoff from causing water quality impact.	3)			
	As per the EM&A Manual section 9.3, ET arranged a site investigation with the representatives from Contractor, on 7 th May 2010 to resolve the above complaint.	2)		Tai Po River near Sheung Wun Yiu	complaint Ref: EP3/N05//RN/ 00007763-10
	A complaint on 7th May 2010 was recorded that consecutive site water discharge was observed in the site area at the upper stream area of UTPR near Sheung Wun Yiu. Environmental Team (ET) was informed by Engineer Representative (ER) on the same day.	Complaint on Muddy water arisen by drainage improvement works of the project at Upper Tai Po River (UTPR)	A complaint C received via EPD won 7th May 2010 th	7th May 2010, A complaint was recorded for the observation of muddy water at the section of Times.	Our Ref: DC0706-CL- 100507(EPD) R1
File Closed	Investigation/Mitigation Action	Details of Complaint	Complainant/ Date of Contact	Event Date/Location	Log Ref

9)	8)	7)	9
ET has reminded the Contractor again to be cautious on not arising muddy water in the future construction works along the river.	As reported by Contractor, compaction by roller to the loosed earth surface of the haul access is scheduled in the forthcoming week to upgrade the protective measures to the water stream at UTPR. Hydro-seeding would be also considered as an alternative measure to site area where roller cannot be reached.	To prevent potential flooding along the project site, haul access from site ch.300 to 450 has been reformed and therefore the haul access was barely exposed. To prevent erosion and potential runoff, contractor was advised to implement improvement works to the exposed bare earth surface. Bared haul access should be compacted and/or hydroseeded as soon as possible. As major construction activities were ceased, temporary stockpiling of earth material should be prevented on site.	water quality. Bared soil surface and earthy stockpiles on site should be properly covered. Excavated pit should be backfilled as far as practicable. As a follow up investigation, inspection was carried out by ET on 12 th May 2010 to check the conditions of project site as well as water quality of UTPR. River water was observed to be clear and no major construction activities were being carried out during investigation.

of site water is not allowed and site water seepage to the river should be prevented. Prior to the excavation and de-watering activities, mitigation measures including provision of site water treatment facilities, bund walls and barriers should be implemented on site. Underground water and muddy effluent drained from excavated pit should be diverted to proper silt removal facilities before discharge. Contractor should well manage the temporary drainage system on site to avoid surface runoff and muddy effluent from entering into the public drainage and river channel. The contractor shall always check the performance of bunds and barriers provided in order to minimize site water seepage and surface runoff from site. Should no construction works will be carried out, temporary stockpiling of earth materials should be prevented on site as to avoid soil crosion and runoff from causing water quality impact. Also, excavated pits should			
To meet relevant environmental ordinance such as Environmental Impact Assessment Ordinance (EIAO) and Water Pollution Control Ordinance (WPCO), Contractor was seriously reminded that direct discharge			

management at site.	the complaint and always keep good environmental	- Contractor is reminded again to take serious notice on	changes of river water quality.	especially paying serious attention on any sudden	checking the environmental performance on sites,	- Contractor should keep good site practice on regularly	planning of construction method statement.	commencement of site activities in order to fulfill with	frontline staffs and sub-contractors before	- Contractor should also provide detailed briefing to	sub-contractors.	of river water quality to their site staffs and	talk on environmental topics, especially about protection	- Contractor should regularly provide training/ toolbox	generation of muddy water.

Prepared by Environmental Team Leader: Ms. Patricia Chung

Date: 17th May 2010

DSD Project - River Improvement Works in Upper Lam Tsuc	en River, She Shan River and Upper Tai Po River
Report for Complaint/ Concern	
Ref: DC0706-CL-100510(EPD)	
EPD Complaint Ref: EP3/N05/RN/00009177-10	
Sheet: <u>1</u> of <u>3</u>	
RECIPIENT	
Name: Chiu Hing Construction & Transportation Co., Ltd,	
Details: EPD formally informed Drainage Services Department	on 10th May 2010 regarding a complaint on
observation of muddy water at section of Upper Tai Po I	·
Received Date: 10 th May 2010 R	eceived Time:
COMPLAINANT / Concern	
Name: N/A	Tel: N/A
Address: N/A	
COMPLAINT	
□Noise □Air quality/Dust ☑Water □Odour □ □Safety □Others	□Environment □Traffic/Pedestrian
Event Date and Time: 10 th May 2010 Location: Section of UTPR near Sheung Wun Yiu	

INVESTIGATION RESULTS & MITIGATION MEASURES

- 1. A complaint on 10th May 2010 was recorded for observation of muddy water along the river stream of UTPR at section near Sheung Wun Yiu. Environmental Team (ET) was informed by Engineer Representative (ER) on the same day.
- 2. As per the EM&A Manual section 9.3, ET arranged a site investigation with the representatives from Contractor on 12th May 2010 to resolve the above complaint.
- 3. During the investigation, river water was observed to be clear (Fig. 3.1 to 3.4). Major construction activities were ceased as river-based excavation works were restricted during wet season according to contractual requirements. According to the observation and reporting of Contractor, activities of site clearance, removal of noise barriers and reformation of partial haul access had been carried out as measures to prevent surrounding area from flooding during wet season.
- 4. Contractor was reminded to pay serious attention to the site condition and provide necessary protective measures to prevent erosion and runoff from deteriorating the river water quality. Loosed earth surface of the reformed haul access at ch.300 to 450 should be protected (Fig.4.1 & 4.2). As major construction activities were ceased, temporary stockpiling of earth material should be prevented on site.
- 5. Contractor took the advice given by ET and scheduled to upgrade the protective measures to the water stream at UTPR. Compaction by roller to the loosed earth surface of haul access at ch.300 to 450 was scheduled to be carried out in the forthcoming week. Hydro-seeding would be also considered as an alternative measure to site area where roller cannot be reached.
- 6. ET has reminded the Contractor again to be cautious on not arising muddy water in the future construction works along the river.

RECOMMENDATIONS

- To meet relevant environmental ordinance such as Environmental Impact Assessment Ordinance (EIAO) and Water Pollution Control Ordinance (WPCO), Contractor was seriously reminded that direct discharge of site water is not allowed and site water seepage to the river should be prevented.
- 2. Prior to the excavation and de-watering activities, mitigation measures including provision of site water treatment facilities, bund walls and barriers should be implemented on site. Underground water and muddy effluent drained from excavated pit should be diverted to proper silt removal facilities before discharge.
- 3. Contractor should well manage the temporary drainage system on site to avoid surface runoff and muddy effluent from entering into the public drainage and river channel.
- 4. The contractor shall always check the performance of bunds and barriers provided in order to minimize site water seepage and surface runoff from site.
- 5. Should no construction works will be carried out, temporary stockpiling of earth materials should be prevented on site as to avoid soil erosion and runoff from causing water quality impact. Also, excavated pits should be backfilled as far as practicable to prevent erosion and generation of muddy water.
- 6. Exposed earth surface should be protected by means of geo-textile covering and/or hydro-seeding as far as it is practicable.
- 7. Contractor should regularly provide training/ toolbox talk on environmental topics, especially about protection of river water quality to their site staffs and sub-contractors.
- 8. Contractor should also provide detailed briefing to frontline staffs and sub-contractors before commencement of site activities in order to fulfill with planning of construction method statement.
- Contractor should keep good site practice on regularly checking the environmental performance on sites, especially paying serious attention on any sudden changes of river water quality.
- 10. Contractor is reminded again to take serious notice on the complaint and always keep good environmental management at site.

Approved by: Patricia Chung Chi Ping
(Environmental Team Leader)

Signature:

Date: 18-05-2010

Fig.3.1 – Water Quality at approximate ch.50



Fig.3.3 – Water Quality at downstream area of the site



Fig.4.1 – Reformed haul access at approximate ch.300



Fig.3.2 – Water Quality at approximate ch.100



Fig.3.4 – Water Quality at approximate ch.600



Fig.4.2 – Reformed haul access at approximate ch.450



COMPLAINT / CONCERN LOG

(DI)	ਰ					· "
0510(E	File					
Ref: DC0706-CL-100510(EPD)	Investigation/Mitigation Action	A complaint on 10 th May 2010 was recorded for observation of muddy water along the river stream of UTPR at section near Sheung Wun Yiu. Environmental Team (ET) was informed by Engineer Representative (ER) on the same day.	As per the EM&A Manual section 9.3, ET arranged a site investigation with the representatives from Contractor, on 12 th May 2010 to resolve the above complaint.	During the investigation, river water was observed to be clear. Major construction activities were ceased as river-based excavation works were restricted during wet season according to contractual requirements. According to the observation and reporting of Contractor, activities of site clearance, removal of noise barriers and reformation of partial haul access had been carried out as measures to prevent surrounding area from flooding during wet season.	Contractor was reminded to pay serious attention to the site condition and provide necessary protective measures to prevent erosion and runoff from deteriorating the river water quality. Loosed earth surface of the reformed haul access at ch.300 to 450 should be protected. As major construction activities were ceased, temporary stockpiling of earth material should be prevented on site.	Contractor took the advice given by ET and scheduled to upgrade the protective measures to the water stream at UTPR. Compaction by roller to the loosed earth surface of haul access at ch.300 to 450 was scheduled to be carried out in the forthcoming week.
		=	7	3)	4	5
	Details of Complaint	Complaint on Muddy water arisen by drainage improvement works	of the project at Upper Tai Po River (UTPR)			
	Complainant/ Date of Contact	A complaint received via EPD on 10 th May 2010				
	Event Date/Location	A complaint was recorded for the observation of muddy water at the	section of Upper Tai Po River near Sheung Wun Yiu			
	Log Ref	Our Ref: DC0706-CL- 100510(EPD)	complaint Ref: EP3/N05//RN/ 00009177-10			

Hydro-seeding would be also considered as an alternative measure to site area where roller cannot be reached.	6) ET has reminded the Contractor again to be cautious on not arising muddy water in the future construction works along the river.	7) Suggestions were given to the Contractor including:	- 10 meet relevant environmental ordinance such as Environmental Impact Assessment Ordinance (EIAO) and Water	Pollution Control Ordinance (WPCO), Contractor was seriously	reminded that direct discharge of site water is not allowed and	site water seepage to the river should be prevented.	- Prior to the excavation and de-watering activities, mitigation	measures including provision of site water treatment facilities,	bund walls and barriers should be implemented on site.	Underground water and muddy effluent drained from excavated	pit should be diverted to proper silt removal facilities before	discharge.	- Contractor should well manage the temporary drainage system	on site to avoid surface runoff and muddy effluent from entering	into the public drainage and river channel.	- The contractor shall always check the performance of bunds and	barriers provided in order to minimize site water seepage and	surface runoff from site.	- Should no construction works will be carried out, temporary	stockpiling of earth materials should be prevented on site as to	avoid soil erosion and runoff from causing water quality impact.
		-											-			_					
						 .															

Γ

														- -			
Also, excavated pits should be backfilled as far as practicable to	prevent erosion and generation of muddy water.	- Exposed earth surface should be protected by means of	geo-textile covering and/or hydro-seeding as far as it is	practicable.	- Contractor should regularly provide training/ toolbox talk on	environmental topics, especially about protection of river water	quality to their site staffs and sub-contractors.	- Contractor should also provide detailed briefing to frontline	staffs and sub-contractors before commencement of site	activities in order to fulfill with planning of construction method	statement.	- Contractor should keep good site practice on regularly checking	the environmental performance on sites, especially paying	serious attention on any sudden changes of river water quality.	- Contractor is reminded again to take serious notice on the	complaint and always keep good environmental management at	site.

Date: 18th May 2010

Prepared by Environmental Team Leader:

Ms. Particia Chung