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 April 2010

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DC/2007/06 River improvement works in Upper Tai Po River Twentieth Monthly Report

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#### **Executive summary**

This is the twentieth 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 1<sup>st</sup> April 2010 to 30<sup>th</sup> April 2010. The major site activities in this reporting month were mainly construction of footbridges, retaining walls and gabion walls. Removal of noise barriers, site clearance and evacuation of site equipments were then followed.

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 arranged in 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 one non-compliance event recorded regarding pollution of river water due to mal-practice of site works on 19<sup>th</sup> April 2010. Details of findings, recommendation and outcome were shown in Section 6.2.

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

There was one formal complaint recorded on 22 April 2010 regarding muddy effluent discharge from site activities to 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. Although major construction activities will be ceased, site condition should be still maintained well to minimize environmental impacts to the vicinity of sensitive receivers.

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 twentieth 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 April 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 15<sup>th</sup> 2008 and anticipated to complete in April 2011.

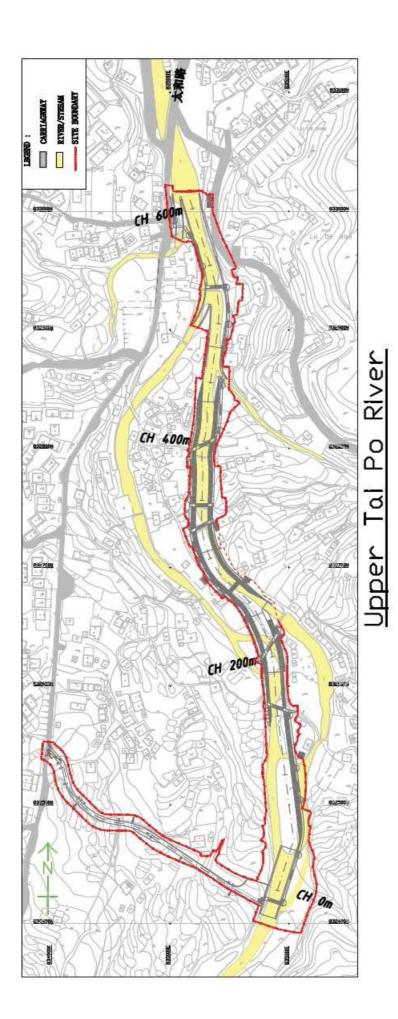
#### **2.3 Proposed construction sequences**

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
- 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

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# Fig 2.1 Layout of construction area



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#### 2.4 Construction activities for the reporting period

Major construction activities carried out by the contractor during the reporting month include:

- (1) Finishing works for footbridges
- (2) Construction of land-based retaining walls
- (3) Construction of land-based gabion walls
- (4) Removal of noise barriers
- (5) Site clearance and equipments evacuation

#### 2.5 Construction activities for the next reporting period

According to the contractual requirement excavation activity was not allowed to be carried out during wet season. Therefore, river-based construction activities were ceased and no major construction activities will be carried out.

#### 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 was one formal complaint recorded in this reporting month. A complaint regarding muddy effluent discharge from the project site was referred by EPD on 21<sup>st</sup> April 2010. ET was informed by the Resident Engineer (RE) on 22<sup>nd</sup> April 2010 about the complaint. Before the referral of the complaint a non-compliance event was identified on 19<sup>th</sup> April 2010 for mal-practice of site water discharge from the work site. As such, Contractor was requested to implement necessary corrective action and mitigation measures to stop further deterioration of river water quality.

To check the site condition and implementation of corrective actions and mitigation measures, three site investigations were conducted by ET on 21<sup>st</sup>, 23<sup>rd</sup> and 28<sup>th</sup> April 2010 respectively. The complaint investigation report and the complaint log with details of findings, recommendation and outcome were prepared and attached in Appendix J for information.

Totally, seven 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 and the upcoming 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.

| 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                              |

 TABLE 4.1 Description of Noise Sensitive Receivers

Noise monitoring was carried out by the Environmental Team on weekly basis for this reporting month on 1<sup>st</sup>, 9<sup>th</sup>, 16<sup>th</sup>, 23<sup>rd</sup>, 30<sup>th</sup> April 2010.

Measured  $L_{eq (30min)}$  results ranged from 47.0dB(A) to 74.0dB(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 7<sup>th</sup>, 14<sup>th</sup>, 19<sup>th</sup>, 21<sup>st</sup>, 23<sup>rd</sup> and 28<sup>th</sup> April 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 1<sup>st</sup>, 10<sup>th</sup>, 19<sup>th</sup> and 26<sup>th</sup> April 2010. Details of findings were summarized in Table 6.2.

| Table 6.1 Summary results of site inspections findings | Table 6.1 | Summary resp | ults of site | inspections | findings |
|--------------------------------------------------------|-----------|--------------|--------------|-------------|----------|
|--------------------------------------------------------|-----------|--------------|--------------|-------------|----------|

| Date        | Findings                      | Identification | Advice from ET                    | Action taken                    | Closing date | Remarks |
|-------------|-------------------------------|----------------|-----------------------------------|---------------------------------|--------------|---------|
| 03 & 17     | Surface of Haul access D      | Observation    | Contractor was requested to       | Contractor took the advice      | 07 Apr 2010  |         |
| Mar 2010    | was found stained with oil    |                | collect the contaminated soil     | and collect the contaminated    |              |         |
|             | leaked from idling roller     |                | and handled as chemical           | soil prior to the inspection on |              |         |
|             |                               |                | wastes for storage and disposal   | 07 Apr.                         |              |         |
| 31 Mar 2010 | Open stockpile of earth       | Observation    | Contractor was advised to         | As follow up action, the        | 28 Apr 2010  |         |
|             | material was observed at      |                | provide tarpaulin coverings to    | concerned earthy stockpile      |              |         |
|             | the haul access D             |                | the concerned stockpile as to     | was compacted prior to the      |              |         |
|             |                               |                | prevent erosion and dust          | inspection on 28 Apr            |              |         |
|             |                               |                | generation                        |                                 |              |         |
| 31 Mar 2010 | The new formed diversion      | Observation    | Contractor was advised to         | Prior to the inspection on 07   | 07 Apr 2010  |         |
|             | channel for river water at    |                | provide proper bund walls and     | Apr, the concerned diversion    |              |         |
|             | ch.50 was in unsatisfactory   |                | barriers at both sides of the     | channel has been reformed.      |              |         |
|             | condition                     |                | diversion channel to prevent      | No site water seepage and       |              |         |
|             |                               |                | surface runoff and erosion from   | runoff were observed at the     |              |         |
|             |                               |                | surround bare earth surface       | concerned area.                 |              |         |
| 7 & 14 Apr  | Earth material was found      | Observation    | Contractor was advised to         | The earth materials were        | 28 Apr 2010  |         |
| 2010        | stockpiled on the edge of     |                | relocate the concerned            | being removed from the          |              |         |
|             | haul access at approximate    |                | stockpile away from the river     | concerned site area as          |              |         |
|             | ch.300                        |                | channel to prevent grit and soil  | backfilling materials during    |              |         |
|             |                               |                | from runoff                       | inspection on 28 Apr.           |              |         |
| 19 & 21 Apr | As reported by RE,            | Non-compliance | Contractor was requested to       | Site water was diverted to      | 28 Apr 2010  |         |
| 2010        | Mal-practice of site water    |                | provide proper silt removal       | de-stilting then to the site    |              |         |
|             | discharge at site ch.165      |                | facilities for muddy water arisen | ground for soak-away.           |              |         |
|             | caused pollution to the river |                | from construction works. Proper   | Geo-textile coverings were      |              |         |
|             | channel consecutively since   |                | bund walls with geo-textile       | provided to the earth bunds,    |              |         |
|             | 17 Apr                        |                | coverings should be provided to   | temporary weir and junction     |              |         |
|             |                               |                | prevent site water seepage and    | that connecting with the river  |              |         |
|             |                               |                | runoff from entering into the     | channel. No further seepage     |              |         |
|             |                               |                | river channel.                    | and discharge of site water     |              |         |
|             |                               |                |                                   | were observed during            |              |         |
|             |                               |                |                                   | inspection on 28 Apr            |              |         |
| 28 Apr 2010 | No particular findings        | N/A            | N/A                               | N/A                             | N/A          |         |

| Table 6.2 | Summary results of ecological | site inspection findin | gs                       |         |
|-----------|-------------------------------|------------------------|--------------------------|---------|
| Date      | Observations                  | Advice from            | Action Taken             | Closing |
|           |                               | Ecologist              |                          | Date    |
| 01 Apr    | No Major findings for this    | No Advice is           | No Action is required to | N/A     |
| 2010      | inspection                    | required               | be taken                 |         |
| 10 Apr    | No Major findings for this    | No Advice is           | No Action is required to | N/A     |
| 2010      | inspection                    | required               | be taken                 |         |
| 19 Apr    | No Major findings for this    | No Advice is           | No Action is required to | N/A     |
| 2010      | inspection                    | required               | be taken                 |         |
| 26 Apr    | No Major findings for this    | No Advice is           | No Action is required to | N/A     |
| 2010      | inspection                    | required               | be taken                 |         |

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

#### 6.2 Non-compliance

A non-compliance regarding mal-practice of muddy effluent discharge was recorded on 19<sup>th</sup> April 2010.

RE formally informed ET about substantial amount of muddy water was leaked consecutively from Contractor's work site at approximate ch.165 of Upper Tai Po River since 17<sup>th</sup> April 2010. Site water leakage caused pollution to the downstream area and Contractor was requested to implement corrective actions immediately.

To further check the condition of the concerned site and effectiveness of mitigation measures implemented. ET conducted a site investigation on 21<sup>st</sup> April 2010 and findings showed excavation activities were being carried out at site ch.165. As corrective actions, site water was diverted to a de-silting tank then to the site ground for soak-away. The temporary weir structure formed by Contractor, which connecting with the river channel, was covered with geo-textile materials to prevent seepage of muddy water to the river channel. As the river water was still observed to be turbid. Contractor was advised to pay serious attention to the effectiveness of mitigation measures implemented.

As a follow up investigation, ET has conducted another investigations on 23<sup>rd</sup> and 28<sup>th</sup> April 2010 respectively. No further direct discharge or seepage of site water was observed from the excavated site at ch.165. As reported by contractor the site will be backfilled with earth material and therefore accumulation of site water would be minimized. Water quality of the river channel was improved comparing with those observed from previous investigation.

#### **6.3 Recommendations**

Site water control was the main environmental concern found during the reporting period. To meet relevant requirements from the Water Pollution Control Ordinance (WPCO) and wastewater discharge license applied for the project. Prior to discharge to designate discharge point site water should be well treated by proper treatment facilities. Proper bund walls should be provided for work site where excavation was proposed to be carried out. Contractor should also well manage the temporary drainage system on site for site water diversion as to avoid any runoff and muddy effluent from entering into the public drainage and river channel.

#### 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.

 Table 7.1 Summary of Waste Disposal for the reporting month

| Type of waste | Inert Waste | Non-Inert Waste | Chemical Waste |
|---------------|-------------|-----------------|----------------|
| April 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.

| Description         | License / Permit No. | Date of Issue              | Date of Expiry             | Remarks    |
|---------------------|----------------------|----------------------------|----------------------------|------------|
| -                   | License / Permit No. |                            | 1 0                        |            |
| Environmental       | EP-223/2005          | 31 <sup>st</sup> Aug, 2005 | N/A                        | Superseded |
| Permit              |                      |                            |                            |            |
| Amended             | EP-223/2005/A        | 18 <sup>th</sup> Nov, 2008 | N/A                        | Issued     |
| Environmental       |                      |                            |                            |            |
| Permit              |                      |                            |                            |            |
| Construction Noise  | N/A                  | N/A                        | N/A                        | N/A        |
| Permit              |                      |                            |                            |            |
| Effluent Discharge  | 3678                 | 14 <sup>th</sup> Mar, 2008 | 31 <sup>st</sup> Mar, 2013 | Issued     |
| License             |                      |                            |                            |            |
| Registration as a   | 5213-724-C3251-03    | 19 <sup>th</sup> Dec, 2007 | Not applicable             | Issued     |
| Chemical Waste      |                      |                            |                            |            |
| Producer            |                      |                            |                            |            |
| Billing Account for | 7006101              | N/A                        | N/A                        | N/A        |
| Disposal of         |                      |                            |                            |            |
| Construction Waste  |                      |                            |                            |            |

 Table 8.1 Summary of Environmental Licensing and Permit Status

#### 9.0 Future key issues

Contractor proposed to cease major site activity during the upcoming wet season. But, contractor was still recommended to maintain good site condition as to minimize environmental impacts.

Bared soil surfaces should be avoided to prevent erosion and soil runoff from causing water quality impact. Hydroseeding and/or provisioning of tarpaulin coverings should be implemented as far as practicable.

#### **10.0 Conclusion**

Major site activities carried out by the Contractor in this reporting period included finishing works for footbridges, construction of land-based retaining walls and gabion wall and removal of noise barriers.

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.

A non-compliance regarding consecutive site water leakage was identified within the reporting. Corrective actions were taken by the Contractor as recommended. Contractor was advised to pay serious attention on not arising water quality impact to the river channel in the future.

A formal complaint regarding muddy effluent discharge from site was recorded on 21<sup>st</sup> April 2010. The complaint was logged and detailed complaint log as well as investigation report 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.

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.

| 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                   |    |                            |    |              |    |             |

#### APPENDIX TABLE 1 Event / Action plan table for Ecology

Appendix B: Action and limit level for construction 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

Appendix C: Reference standards for vibration

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,<br>increasing to 20 at 15 Hz,<br>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.

Appendix D: Noise monitoring results, graphical plots and location plan

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| Location | $L_{90}$ | $L_{10}$ | Leq   | Date     | Time        | Major Construction Noise                                                                                                                                                       | Other Noise source            | Weather | Location    |
|----------|----------|----------|-------|----------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------|-------------|
|          | 30min    | 30min    | 30min |          | Duration    |                                                                                                                                                                                |                               |         | description |
| UTP 1    | 54.1     | 71.5     | 68.0  | 1-Apr-10 | 15:20-15:50 | 15:20-15:50 Boulder breaking                                                                                                                                                   | Background noise from traffic | Sunny   | Façade      |
| UTP 2    | 54.3     | 70.1     | 66.9  | 1-Apr-10 | 15:57-16:27 | 15:57-16:27 Boulder breaking                                                                                                                                                   | Background noise from traffic | Sunny   | Façade      |
| UTP 3    | 56.6     | 78.8     | 74.0  | 1-Apr-10 | 14:42-15:12 | 14:42-15:12 Boulder breaking                                                                                                                                                   | N/A                           | Sunny   | Façade      |
| UTP 4    | 51.6     | 61.6     | 58.5  | 1-Apr-10 | 13:34-14:04 | 13:34-14:04 Boulder movement and excavation                                                                                                                                    | N/A                           | Sunny   | Façade      |
| UTP 5    | 57.1     | 76.4     | 73.2  | 1-Apr-10 | 13:00-13:30 | 13:00-13:30 Boulder movement and operation of backhoe                                                                                                                          | N/A                           | Sunny   | Façade      |
| UTP 6    | 49.8     | 62.2     | 59.2  | 1-Apr-10 | 14:08-14:38 | 14:08-14:38 Boulder movement and operation of backhoe                                                                                                                          | N/A                           | Sunny   | Façade      |
| UTP 7    | 43.7     | 61.3     | 57.4  | 1-Apr-10 | 11:17-11:47 | 11:17-11:47 Boulder movement and operation of backhoe                                                                                                                          | N/A                           | Sunny   | Façade      |
| UTP 8    | 44.5     | 60.5     | 58.7  | 1-Apr-10 | 10:44-11:14 | 10:44-11:14 Boulder movement and operation of backhoe                                                                                                                          | N/A                           | Sunny   | Façade      |
| UTP 9    | 41.4     | 55.7     | 54.4  | 1-Apr-10 | 10:09-10:39 | The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities | N/A                           | Sunny   | Façade      |
| UTP 10   | 42.2     | 53.4     | 51.8  | 1-Apr-10 | 09:31-10:01 | The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities | N/A                           | Sunny   | Façade      |
| UTP 11   | 43.7     | 55.7     | 55.2  | 1-Apr-10 | 08:58-09:28 | The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities | N/A                           | Sumy    | *Freefield  |

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| Location | L <sub>90</sub><br>30min | $L_{10}$ 30min | Leq<br>30min | Date     | Time        | Major Construction Noise                                                                                                                                                       | Other Noise source            | Weather | Location   |
|----------|--------------------------|----------------|--------------|----------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------|------------|
| UTP 1    | 53.4                     | 71.0           | 68.3         | 9-Apr-10 | 11:01-11:31 | 11:01-11:31 Boulder breaking                                                                                                                                                   | Background noise from traffic | Cloudy  | Façade     |
| UTP 2    | 51.3                     | 68.8           | 65.6         | 9-Apr-10 | 10:24-10:54 | 10:24-10:54 Boulder breaking                                                                                                                                                   | Background noise from traffic | Cloudy  | Façade     |
| UTP 3    | 59.1                     | 78.4           | 69.4         | 9-Apr-10 | 15:07-15:37 | 15:07-15:37 Boulder breaking                                                                                                                                                   | NIA                           | Cloudy  | Façade     |
| UTP 4    | 43.4                     | 57.0           | 55.2         | 9-Apr-10 | 15:44-16:14 | 15:44-16:14 Boulder movement                                                                                                                                                   | N\A                           | Cloudy  | Façade     |
| UTP 5    | 53.8                     | 65.7           | 63.0         | 9-Apr-10 | 14:05-14:35 | 14:05-14:35 Boulder movement                                                                                                                                                   | N\A                           | Cloudy  | Façade     |
| UTP 6    | 49.4                     | 63.8           | 61.4         | 9-Apr-10 | 13:32-14:02 | 13:32-14:02 Boulder movement                                                                                                                                                   | N\A                           | Cloudy  | Façade     |
| UTP 7    | 41.8                     | 54.0           | 53.4         | 9-Apr-10 | 16:19-16:39 | 16:19-16:39 Operation of backhoe                                                                                                                                               | N\A                           | Cloudy  | Façade     |
| UTP 8    | 49.0                     | 55.9           | 54.6         | 9-Apr-10 | 13:00-13:30 | 13:00-13:30 Operation of backhoe                                                                                                                                               | N\A                           | Cloudy  | Façade     |
| 6        | 42.5                     | 54.1           | 53.0         | 9-Apr-10 | 10:02-10:32 | 10:02-10:32 Operation of backhoe                                                                                                                                               | N\A                           | Cloudy  | Façade     |
| UTP 10   | 40.2                     | 54.7           | 54.3         | 9-Apr-10 | 09:25-09:55 | 09:25-09:55 Operation of backhoe                                                                                                                                               | NA                            | Cloudy  | Façade     |
| UTP 11   | 43.7                     | 54.7           | 54.6         | 9-Apr-10 | 08:50-09:20 | The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities | N\A                           | Cloudy  | *Freefield |

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| Location | $L_{90}$ | $L_{10}$ | Leq   | Date      | Time                  | Major Construction Noise                                                                                                                                                       | Other Noise source            | Weather | Location    |
|----------|----------|----------|-------|-----------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------|-------------|
|          | 30min    | 30min    | 30min |           | Duration              |                                                                                                                                                                                |                               |         | description |
| UTP 1    | 51.4     | 65.8     | 61.7  | 16-Apr-10 | 15:57-16:27           | The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities | Background noise from traffic | Cloudy  | Façade      |
| UTP 2    | 52.8     | 66.7     | 65.5  | 16-Apr-10 | 15:18-15:48           | The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities | Background noise from traffic | Cloudy  | Façade      |
| UTP 3    | 61.3     | 63.8     | 63.0  | 16-Apr-10 | 14:43-15:13           | The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities | N\A                           | Cloudy  | Façade      |
| UTP 4    | 45.5     | 58.3     | 56.9  | 16-Apr-10 | 11:15-11:45           | 11:15-11:45 Boulder movement and excavation                                                                                                                                    | NA                            | Cloudy  | Façade      |
| UTP 5    | 56.8     | 73.3     | 72.8  | 16-Apr-10 |                       | 14:08-14:38 Boulder movement and excavation                                                                                                                                    | N\A                           | Cloudy  | Façade      |
| UTP 6    | 50.7     | 66.9     | 63.5  | 16-Apr-10 | 13:35-14:05           | 13:35-14:05 Boulder movement and excavation                                                                                                                                    | NA                            | Cloudy  | Façade      |
| UTP 7    | 41.3     | 55.0     | 54.3  | 16-Apr-10 | 13:01-13:31           | 13:01-13:31 Boulder movement and excavation                                                                                                                                    | N\A                           | Cloudy  | Façade      |
| UTP 8    | 40.4     | 53.4     | 51.8  | 16-Apr-10 |                       | 10:40-11:10 Boulder movement and excavation                                                                                                                                    | NA                            | Cloudy  | Façade      |
| UTP 9    | 43.3     | 57.3     | 56.4  | 16-Apr-10 | 10:07-10:37           | The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities | NA                            | Cloudy  | Façade      |
| UTP 10   | 40.6     | 51.4     | 51.6  | 16-Apr-10 | 09:28-09:58           | The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities | N\A                           | Cloudy  | Façade      |
| UTP 11   | 44.7     | 56.2     | 56.2  | 16-Apr-10 | 16-Apr-10 08:54-09:24 | The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities | N\A                           | Cloudy  | *Freefield  |

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| Location | L <sub>90</sub><br>20min | $L_{10}$ | Leq     | Date      | Time                  | Major Construction Noise                                                                                                                                                       | Other Noise source                                    | Weather | Location   |
|----------|--------------------------|----------|---------|-----------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|---------|------------|
|          | IIIIIIOC                 | IIIIIOC  | IIIIIOC |           | Durauon               |                                                                                                                                                                                |                                                       |         | nescribuon |
| UTP 1    | 55.4                     | 70.1     | 67.4    | 23-Apr-10 |                       | 15:57-16:27 Boulder breaking                                                                                                                                                   | N\A                                                   | Sunny   | Façade     |
| UTP 2    | 57.9                     | 80.4     | 74.0    | 23-Apr-10 |                       | 15:22-15:52 Boulder breaking                                                                                                                                                   | N\A                                                   | Sunny   | Façade     |
| UTP 3    | 58.8                     | 9.62     | 73.7    | 23-Apr-10 |                       | 14:44-15:14 Boulder breaking                                                                                                                                                   | NA                                                    | Sumy    | Façade     |
| UTP 4    | 44.6                     | 58.7     | 56.9    | 23-Apr-10 | 15:18-15:48           | The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities | N\A                                                   | Sunny   | Façade     |
| UTP 5    | 45.9                     | 59.2     | 56.7    | 23-Apr-10 | 23-Apr-10 14:07-14:37 | The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities | NA                                                    | Sunny   | Façade     |
| UTP 6    | 45.9                     | 59.9     | 57.0    | 23-Apr-10 | 13:32-14:04           | The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities | Innovation works from the village house<br>(Drilling) | Sunny   | Façade     |
| UTP 7    | 43.1                     | 56.3     | 53.7    | 23-Apr-10 | 10:49-11:19           | The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities | N\A                                                   | Sunny   | Façade     |
| UTP 8    | 50.2                     | 60.9     | 58.0    | 23-Apr-10 | 13:00-13:30           | 13:00-13:30 Excavation works by Backhoe                                                                                                                                        | NA                                                    | Sunny   | Façade     |
| UTP 9    | 51.1                     | 65.6     | 63.7    | 23-Apr-10 | 10:17-10:47           | 10:17-10:47 Excavation works by Backhoe                                                                                                                                        | NA                                                    | Sumy    | Façade     |
| UTP 10   | 42.0                     | 51.7     | 52.0    | 23-Apr-10 | 09:36-10:06           | The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities | NA                                                    | Sunny   | Façade     |
| UTP 11   | 43.3                     | 54.6     | 54.4    | 23-Apr-10 | 23-Apr-10 09:03-09:33 | The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities | N\A                                                   | Suuny   | *Freefield |

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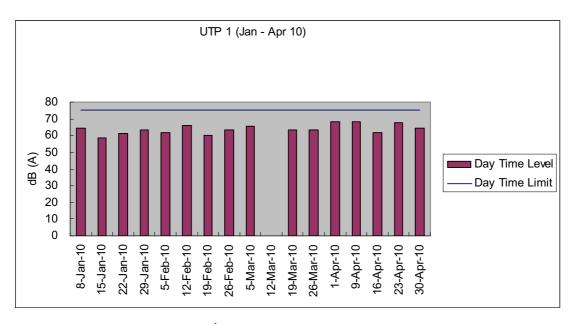
| Location | $L_{90}$ | $L_{10}$ | Leq   | Date      | Time                  | Major Construction Noise                                                                                                                                                       | Other Noise source            | Weather | Location    |
|----------|----------|----------|-------|-----------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------|-------------|
|          | 30min    | 30min    | 30min |           | Duration              |                                                                                                                                                                                |                               |         | description |
| UTP 1    | 53.6     | 66.0     | 64.6  | 30-Apr-10 | 30-Apr-10 14:07-14:37 | The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities | Background noise from traffic | Sunny   | Façade      |
| UTP 2    | 47.8     | 59.0     | 57.1  | 30-Apr-10 | 13:00-13:30           | The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities | Background noise from traffic | Sunny   | Façade      |
| UTP 3    | 64.0     | 65.4     | 64.6  | 30-Apr-10 |                       | 13:35-14:05 Operation of Backhoe                                                                                                                                               | N\A                           | Sunny   | Façade      |
| UTP 4    | 43.7     | 53.3     | 52.8  | 30-Apr-10 | 15:54-16:24           | The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities | N\A                           | Sunny   | Façade      |
| UTP 5    | 41.1     | 49.0     | 47.0  | 30-Apr-10 | 15:22-15:52           | Housekeeping works                                                                                                                                                             | N\A                           | Sunny   | Façade      |
| UTP 6    | 46.6     | 59.2     | 57.5  | 30-Apr-10 |                       | 11:15-11:45 Operation of Backhoe                                                                                                                                               | N\A                           | Sunny   | Façade      |
| UTP 7    | 48.2     | 55.6     | 53.5  | 30-Apr-10 |                       | 14:48-15:18 Operation of Backhoe                                                                                                                                               | N\A                           | Sunny   | Façade      |
| UTP 8    | 50.0     | 54.7     | 52.7  | 30-Apr-10 |                       | 10:43-11:13 No construction was being carried out during measurement                                                                                                           | N\A                           | Sunny   | Façade      |
| UTP 9    | 42.2     | 52.2     | 49.3  | 30-Apr-10 |                       | 10:10-10:40 Housekeeping works                                                                                                                                                 | N\A                           | Sunny   | Façade      |
| UTP 10   | 41.4     | 49.2     | 47.3  | 30-Apr-10 |                       | 09:32-10:02 No construction was being carried out during measurement                                                                                                           | N\A                           | Sunny   | Façade      |
| UTP 11   | 43.4     | 51.1     | 49.3  | 30-Apr-10 |                       | 08:58-09:29 No construction was being carried out during measurement                                                                                                           | N\A                           | Suuny   | *Freefield  |

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

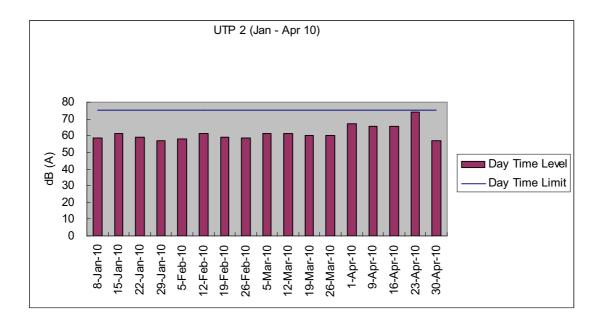
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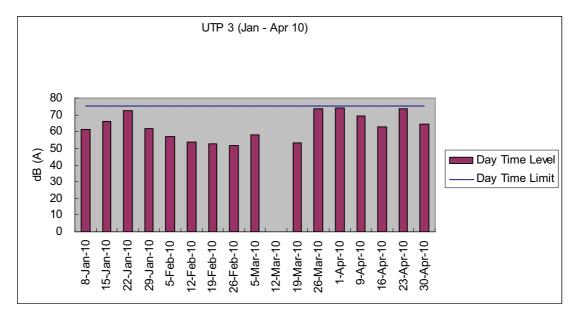
#### Graphical plot for noise measurements

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 January 2010 to April 2010.

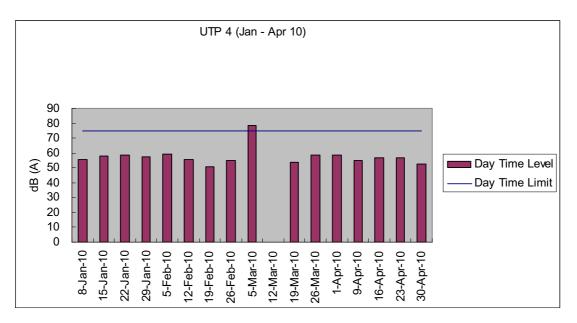


Noise monitoring for 12<sup>th</sup> March 2010 was cancelled due to heavy rain

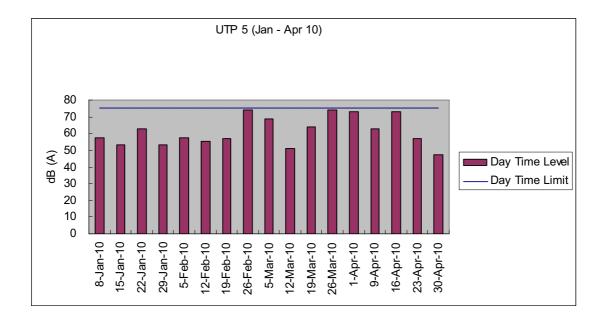


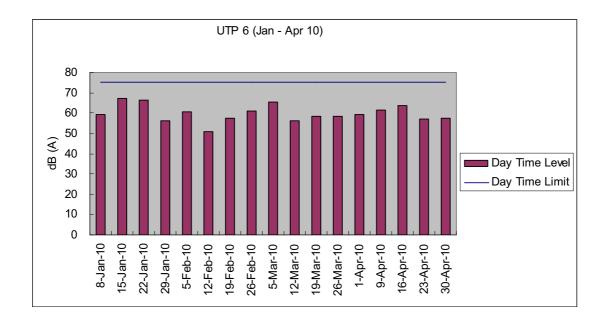


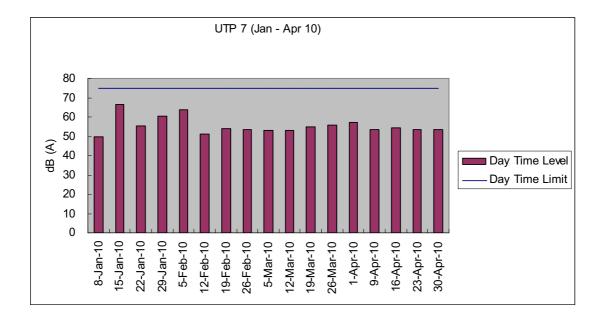
Noise monitoring for 12<sup>th</sup> March 2010 was cancelled due to heavy rain

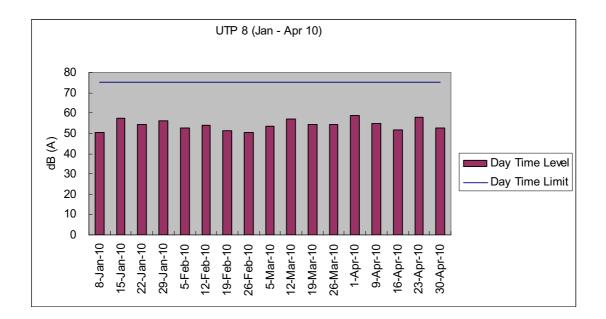


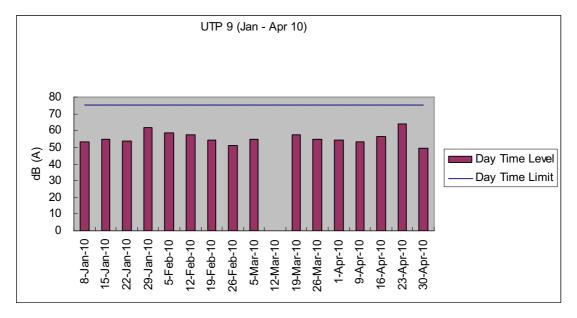
Noise monitoring for 12<sup>th</sup> March 2010 was cancelled due to heavy rain



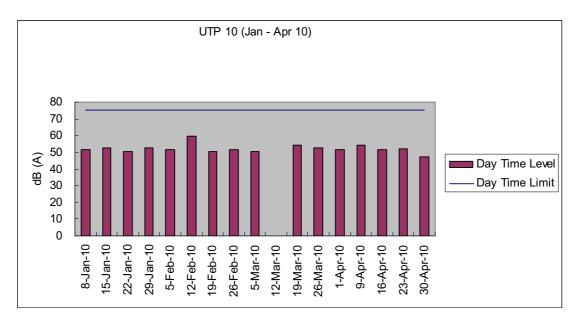




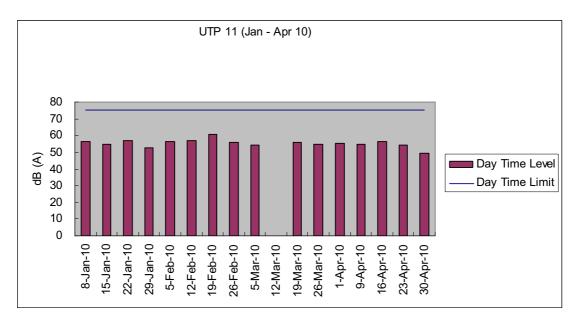




Noise monitoring for 12<sup>th</sup> March 2010 was cancelled due to heavy rain



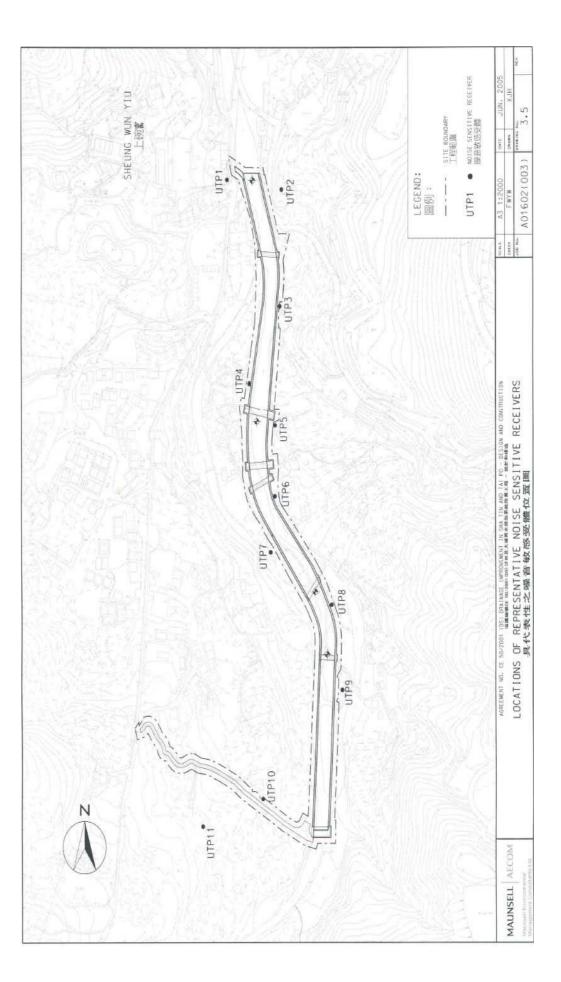
Noise monitoring for 12<sup>th</sup> March 2010 was cancelled due to heavy rain



Noise monitoring for 12<sup>th</sup> March 2010 was cancelled due to heavy rain

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Appendix E: Monitoring schedule for the present and next reporting period

### Master Schedule of EM&A works in April 2010

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

### 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    |
|        |        |         |                                      |                  |                  |          |

# Appendix F: Cumulative complaint log

| Environmental  | Cumulative no.         | No. of complaint | <b>Overall Total</b> |
|----------------|------------------------|------------------|----------------------|
| Parameters     | <b>Brought forward</b> | April 2010       |                      |
| Air/Dust       | 1                      | 0                | 1                    |
| Noise          | 2                      | 0                | 2                    |
| Water          | 3                      | 1                | 4                    |
| House Keeping  | 0                      | 0                | 0                    |
| Hygiene        |                        |                  |                      |
| Chemical waste | 0                      | 0                | 0                    |
| Total          | 6                      | 1                | 7                    |

\* ET received a public enquiry referred by EPD, regarding river water quality and loss of vegetation within construction site, on

3<sup>rd</sup> July 2009.

Appendix G: Implementation status of environmental protection and mitigation measures

| Environmental         | Protection / Mitigation Measures                                          | Implementation | Follow-up    |
|-----------------------|---------------------------------------------------------------------------|----------------|--------------|
| Aspect                |                                                                           | status         | action       |
| Construction<br>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 require  |
|                       | dewatered prior to excavation to minimize the impacts upon the            |                |              |
|                       | downstream of the Tai Po River                                            |                |              |
|                       |                                                                           |                |              |
|                       |                                                                           |                |              |

Implementation status of environmental protection and mitigation

| Provide silt trap and oil interceptor to remove the oil, lubricants, grease,<br>silt, grit and debris from the wastewater before pumped to the public<br>storm water drainage system         Improvement<br>required         Rectified           Varies         Provide site toilet facilities         Implemented         Not required           Waste         Recescavated 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           Variet         Implemented         Not required           Variation impacts to the replaced by bore-hole piling to minimize         Implemented         Not required           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         Not required         Not required           Vibration fing and measurement on the cracks of the external walf         Not Applicable at this         Not required           Reconstruction activities accordingly; and to review the work method and construction activities         Stage         Not required           Reconstruction activities accordingly; and to review the work method and construction activities         S | 1          | Γ                                                                            |                        |              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------------------------------------------------------------------------|------------------------|--------------|
| Note         Note         Note           istorm water drainage system         Implemented         Not required           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 compaction units         Implemented         Not required           Vibration         Percussive piling is to be replaced by bore-hole piling to minimize vibration impacts to the two identified Declared monuments         Not applicable at this stage         Not required           Carrying out of vibration monitoring to ensure that vibration associated with the construction prescheduled to reduce the impacts         Not applicable at this stage         Not required           Close monitoring and measurement on the cracks of the external wall of Fan Sin Temple during construction works will be carried out. Any changes on the cracks will be recorded for the contractor to solw down in the construction activities accordingly; and to review the work methods         Not Applicable at this stage                                                                                        |            | Provide silt trap and oil interceptor to remove the oil, lubricants, grease, | Improvement            | Rectified    |
| Provide site toilet facilitiesImplementedNot requiredWaste<br>ManagementReuse excavated material as far as possibleImplementedNot requiredRecycle scrap metals or abandoned equipmentImplementedNot requiredAdopt a trip ticket system for the disposal of C&D materialsImplementedNot requiredAll general refuse should be segregated and stored in enclosed bins or<br>compaction unitsImplementedNot requiredVibrationPercussive piling is to be replaced by bore-hole piling to minimize<br>vibration impacts to the two identified Declared monumentsNot applicable at this<br>stageNot requiredCarrying out of vibration monitoring to ensure that vibration associated<br>with the construction phase do not exceed the threshold limit otherwise<br>have to be slow down or rescheduled to reduce the impactsNot Applicable at this<br>stageNot requiredClose monitoring and measurement on the cracks of the external wall of<br>Fan Sin Temple during construction works will be carried out. Any<br>changes on the cracks will be recorded for the contractor to slow down<br>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            | silt, grit and debris from the wastewater before pumped to the public        | required               |              |
| Naste<br>ManagementReuse excavated material as far as possibleImplementedNot requiredWaste<br>ManagementReuse excavated material as far as possibleImplementedNot requiredRecycle scrap metals or abandoned equipmentImplementedNot requiredAdopt a trip ticket system for the disposal of C&D materialsImplementedNot requiredAll general refuse should be segregated and stored in enclosed bins or<br>compaction unitsImplementedNot requiredVibrationPercussive piling is to be replaced by bore-hole piling to minimize<br>vibration impacts to the two identified Declared monumentsNot applicable at this<br>stageNot requiredCarrying out of vibration monitoring to ensure that vibration associated<br>with the construction phase do not exceed the threshold limit otherwise<br>contractor have to review the work method and construction activities<br>have to be slow down or rescheduled to reduce the impactsNot Applicable at this<br>stageNot requiredClose monitoring and measurement on the cracks of the external wall of<br>changes on the cracks will be recorded for the contractor to slow down<br>the construction activities accordingly; and to review the work methodsNot Applicable at this<br>stageNot required                                                                                                                                                                                                                                                                                                        |            | storm water drainage system                                                  |                        |              |
| Management         Implemented         Not required           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<br>compaction units         Implemented         Not required           Vibration         Percussive piling is to be replaced by bore-hole piling to minimize<br>vibration impacts to the two identified Declared monuments         Not applicable at this<br>stage         Not required           Carrying out of vibration monitoring to ensure that vibration associated<br>with the construction phase do not exceed the threshold limit otherwise<br>contractor have to review the work method and construction activities<br>have to be slow down or rescheduled to reduce the impacts         Not Applicable at this<br>stage         Not required           Close monitoring and measurement on the cracks of the external wall of<br>hanges on the cracks will be recorded for the contractor to slow down<br>the construction activities accordingly; and to review the work methods         Not Applicable at this<br>stage         Not required                                                                                                                                                                                                                                         |            | Provide site toilet facilities                                               | Implemented            | Not required |
| Management         Implemented         Not required           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<br>compaction units         Implemented         Not required           Vibration         Percussive piling is to be replaced by bore-hole piling to minimize<br>vibration impacts to the two identified Declared monuments         Not applicable at this<br>stage         Not required           Carrying out of vibration monitoring to ensure that vibration associated<br>with the construction phase do not exceed the threshold limit otherwise<br>contractor have to review the work method and construction activities<br>have to be slow down or rescheduled to reduce the impacts         Not Applicable at this<br>stage         Not required           Close monitoring and measurement on the cracks of the external wall of<br>hanges on the cracks will be recorded for the contractor to slow down<br>the construction activities accordingly; and to review the work methods         Not Applicable at this<br>stage         Not required                                                                                                                                                                                                                                         |            |                                                                              |                        |              |
| Management         Implemented         Not required           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<br>compaction units         Implemented         Not required           Vibration         Percussive piling is to be replaced by bore-hole piling to minimize<br>vibration impacts to the two identified Declared monuments         Not applicable at this<br>stage         Not required           Carrying out of vibration monitoring to ensure that vibration associated<br>with the construction phase do not exceed the threshold limit otherwise<br>contractor have to review the work method and construction activities<br>have to be slow down or rescheduled to reduce the impacts         Not Applicable at this<br>stage         Not required           Close monitoring and measurement on the cracks of the external wall of<br>hanges on the cracks will be recorded for the contractor to slow down<br>the construction activities accordingly; and to review the work methods         Not Applicable at this<br>stage         Not required                                                                                                                                                                                                                                         |            |                                                                              |                        |              |
| Recycle scrap metals or abandoned equipmentImplementedNot requiredAdopt a trip ticket system for the disposal of C&D materialsImplementedNot requiredAll general refuse should be segregated and stored in enclosed bins or<br>compaction unitsImplementedNot requiredVibrationPercussive piling is to be replaced by bore-hole piling to minimize<br>vibration impacts to the two identified Declared monumentsNot applicable at this<br>stageNot requiredCarrying out of vibration monitoring to ensure that vibration associated<br>with the construction phase do not exceed the threshold limit otherwise<br>have to be slow down or rescheduled to reduce the impactsNot Applicable at this<br>stageNot requiredClose monitoring and measurement on the cracks of the external wall of<br>Fan Sin Temple during construction works will be carried out. Any<br>changes on the cracks will be recorded for the contractor to slow down<br>the construction activities accordingly; and to review the work methodsNot Applicable at this<br>stageNot required                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Waste      | Reuse excavated material as far as possible                                  | Implemented            | Not required |
| Adopt a trip ticket system for the disposal of C&D materialsImplementedNot requiredAll general refuse should be segregated and stored in enclosed bins or<br>compaction unitsImplementedNot requiredVibrationPercussive piling is to be replaced by bore-hole piling to minimize<br>vibration impacts to the two identified Declared monumentsNot applicable at this<br>stageNot requiredCarrying out of vibration monitoring to ensure that vibration associated<br>with the construction phase do not exceed the threshold limit otherwise<br>have to be slow down or rescheduled to reduce the impactsNot Applicable at this<br>stageNot requiredClose monitoring and measurement on the cracks of the external wall of<br>Fan Sin Temple during construction works will be carried out. Any<br>changes on the cracks will be recorded for the contractor to slow down<br>the construction activities accordingly; and to review the work methodsNot Applicable at this<br>stageNot required                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Management |                                                                              |                        |              |
| All general refuse should be segregated and stored in enclosed bins or<br>compaction unitsImplementedNot requiredVibrationPercussive piling is to be replaced by bore-hole piling to minimize<br>vibration impacts to the two identified Declared monumentsNot applicable at this<br>stageNot requiredCarrying out of vibration monitoring to ensure that vibration associated<br>with the construction phase do not exceed the threshold limit otherwise<br>have to be slow down or rescheduled to reduce the impactsNot Applicable at this<br>stageNot requiredClose monitoring and measurement on the cracks of the external wall of<br>Fan Sin Temple during construction works will be carried out. Any<br>the construction activities accordingly; and to review the work methodsNot Applicable at this<br>stageNot required                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            | Recycle scrap metals or abandoned equipment                                  | Implemented            | Not required |
| Image: Compaction unitsImage: Compaction unitsImage: Compaction unitsVibrationPercussive piling is to be replaced by bore-hole piling to minimize<br>vibration impacts to the two identified Declared monumentsNot applicable at this<br>stageNot requiredCarrying out of vibration monitoring to ensure that vibration associated<br>with the construction phase do not exceed the threshold limit otherwise<br>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            | Adopt a trip ticket system for the disposal of C&D materials                 | Implemented            | Not required |
| VibrationPercussive piling is to be replaced by bore-hole piling to minimize<br>vibration impacts to the two identified Declared monumentsNot applicable at this<br>stageNot requiredCarrying out of vibration monitoring to ensure that vibration associated<br>with the construction phase do not exceed the threshold limit otherwise<br>contractor have to review the work method and construction activities<br>have to be slow down or rescheduled to reduce the impactsNot Applicable at thisNot requiredClose monitoring and measurement on the cracks of the external wall of<br>Fan Sin Temple during construction works will be carried out. Any<br>changes on the cracks will be recorded for the contractor to slow down<br>the construction activities accordingly; and to review the work methodsNot applicable at thisNot required                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            | All general refuse should be segregated and stored in enclosed bins or       | Implemented            | Not required |
| vibration impacts to the two identified Declared monumentsstageCarrying out of vibration monitoring to ensure that vibration associated<br>with the construction phase do not exceed the threshold limit otherwise<br>contractor have to review the work method and construction activities<br>have to be slow down or rescheduled to reduce the impactsNot applicable at this<br>stageNot requiredClose monitoring and measurement on the cracks of the external wall of<br>Fan Sin Temple during construction works will be carried out. Any<br>changes on the cracks will be recorded for the contractor to slow down<br>the construction activities accordingly; and to review the work methodsNot Applicable at this<br>stageNot required                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            | compaction units                                                             |                        |              |
| Carrying out of vibration monitoring to ensure that vibration associated<br>with the construction phase do not exceed the threshold limit otherwise<br>contractor have to review the work method and construction activities<br>have to be slow down or rescheduled to reduce the impactsNot applicable at this<br>stageNot requiredClose monitoring and measurement on the cracks of the external wall of<br>Fan Sin Temple during construction works will be carried out. Any<br>changes on the cracks will be recorded for the contractor to slow down<br>the construction activities accordingly; and to review the work methodsNot applicable at this<br>stageNot required                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Vibration  | Percussive piling is to be replaced by bore-hole piling to minimize          | 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       stage         have to be slow down or rescheduled to reduce the impacts       Not Applicable at this         Close monitoring and measurement on the cracks of the external wall of       Not Applicable at this         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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            | vibration impacts to the two identified Declared monuments                   | 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         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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            | Carrying out of vibration monitoring to ensure that vibration associated     | Not applicable at this | Not required |
| have to be slow down or rescheduled to reduce the impactsNot Applicable at thisClose monitoring and measurement on the cracks of the external wall ofNot Applicable at thisFan Sin Temple during construction works will be carried out. Anystagechanges on the cracks will be recorded for the contractor to slow downthe construction activities accordingly; and to review the work methods                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            | with the construction phase do not exceed the threshold limit otherwise      | stage                  |              |
| Close monitoring and measurement on the cracks of the external wall of<br>Fan Sin Temple during construction works will be carried out. Any<br>changes on the cracks will be recorded for the contractor to slow down<br>the construction activities accordingly; and to review the work methodsNot Applicable at this<br>stageNot required                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            | contractor have to review the work method and construction activities        |                        |              |
| 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            | have to be slow down or rescheduled to reduce the impacts                    |                        |              |
| changes on the cracks will be recorded for the contractor to slow down<br>the construction activities accordingly; and to review the work methods                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            | Close monitoring and measurement on the cracks of the external wall of       | Not Applicable at this | Not required |
| the construction activities accordingly; and to review the work methods                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            | 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       |                        |              |
| and equipments immediately                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            | 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 <sup>th</sup> , 28 <sup>th</sup> 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

|                | w table since 15 Se | 1               | 1              |
|----------------|---------------------|-----------------|----------------|
| Type of waste  | Inert Waste         | Non-Inert Waste | Chemical Waste |
| September 2008 | 0                   | 0               | 0              |
| October 2008   | 0                   | 2 tonnes        | 0              |
| November 2008  | 36m <sup>3</sup>    | 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   | 0.9m <sup>3</sup>   | 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              |
| Total          | 36.9m <sup>3</sup>  | 2 tonnes        | 20kg           |

Cumulative waste flow table since 15<sup>th</sup> September 2008

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

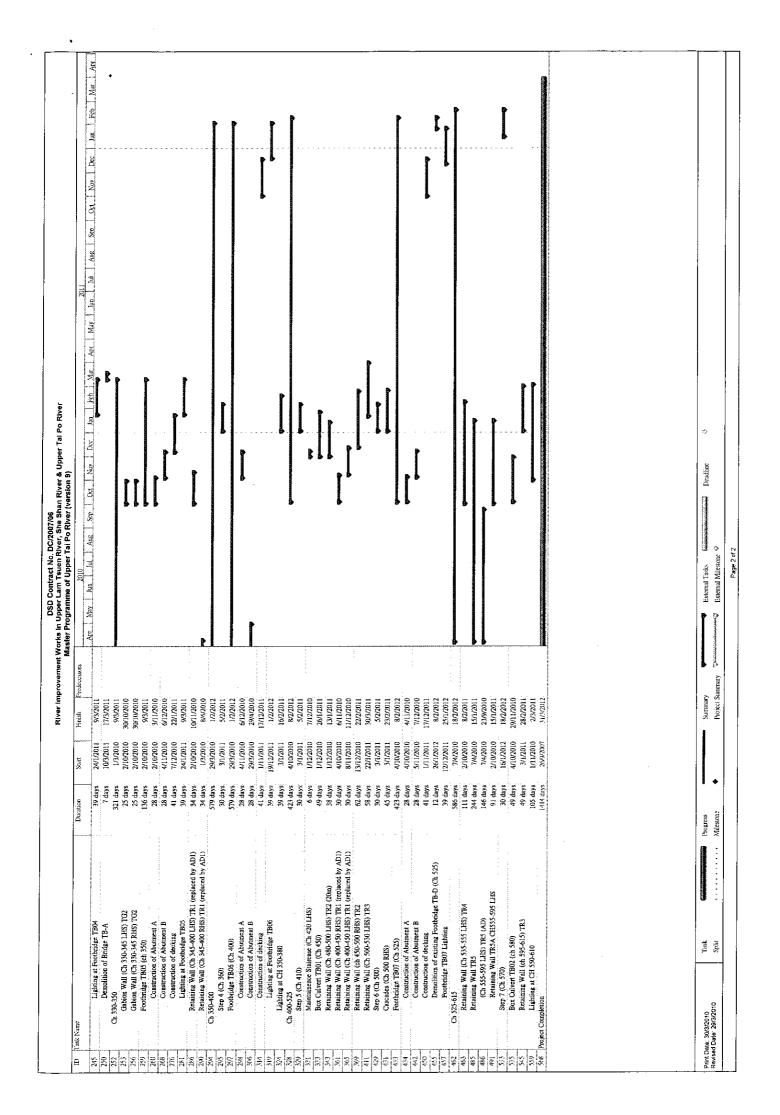
**Appendix I: Construction programme** 

| mate         observation         31/30/11         Act         Mat                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | hautemato                                                            |          | Start     | Finish Prede    | Predecessors  | 010                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|----------|-----------|-----------------|---------------|-----------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | hainte nance                                                         | _        |           |                 |               | Way Dam Jul Aug Sco Cat New Dec Jan Feb Mar And May Dan Jul Aug Sco Cat New Dec Lan Feb |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                      |          | 17/1/2009 | 31/3/2012       |               |                                                                                         |
| Ch (10)         Ch (10) <t< td=""><td></td><td></td><td>0/02/1/0</td><td>31/3/2012</td><td>E<b>IR</b>E</td><td></td></t<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                      |          | 0/02/1/0  | 31/3/2012       | E <b>IR</b> E |                                                                                         |
| Marken         State         10001         50001         10001         50001           Aftern         State         20001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         50001         5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                      |          | 5/2/2010  | 31/3/2012       | 8J            |                                                                                         |
| Active D         Control         Contro         Control         Control <t< td=""><td>Wall (Ch 0-110)</td><td></td><td>1/2/2012</td><td>31/3/2012</td><td></td><td></td></t<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Wall (Ch 0-110)                                                      |          | 1/2/2012  | 31/3/2012       |               |                                                                                         |
| Network (K, II)         Network (K, III)         Network (K, IIII)         Network (K, IIIII)         Network (K, IIIIII)         Network (K, IIIIII)         Network (K, IIIIIII)         Network (K, IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                      |          | 11/2011   | 24/3/2012       |               |                                                                                         |
| mid         mid <thmid< th=""> <thmid< th=""> <thmid< th=""></thmid<></thmid<></thmid<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | V chicular Access U Diver Bad formation rol 45 1100                  | 78 days  | 2/1/2012  | 31/3/2012       |               |                                                                                         |
| Weil and finite finit                                                                                                                                                                                                                          | Revended TROI (cut to to to 1)<br>Revended TROI (coulder teen her 2) | 52 days  | 7107/7/1  | 31/2/2/2/2      |               |                                                                                         |
| matrix         constraint         constraint<                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Retaining Wall at Access D (Boulder Trap)                            |          | 0102/6/9  | 0102/5/61       |               |                                                                                         |
| auto Nucl. (13)         cisical information         cisical information <thcisical inform<="" th="">         cisical inform         cis</thcisical>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Retaining Wall (RHS)                                                 |          | 6/4/2010  | 30/6/2010       |               |                                                                                         |
| Table of head "The (A 4)         Solids                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Retaining Wall (LHS)                                                 |          |           | 31/7/2010       |               |                                                                                         |
| Control         Color         <                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Drain-off pipe at Boulder Trap (Ch 45)                               |          |           | 31/3/2010       |               | •                                                                                       |
| With a flowed (Tr. 5)         State         State<                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                      |          | 9/3/2010  | 10/4/2010       |               |                                                                                         |
| Art         Description         Descripro <thdescription< th=""> <thdescr< td=""><td></td><td></td><td>2/3/2010</td><td>31/3/2010</td><td></td><td></td></thdescr<></thdescription<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                      |          | 2/3/2010  | 31/3/2010       |               |                                                                                         |
| Mathematical State         Orient         Section         Sectin         Section         Section                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                      |          | 1/4/2010  | 23/4/2010       |               |                                                                                         |
| Mathematical State         2040         XXXXIII         XXXIIII         XXXIIII         XXXIIIII         XXXIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                      |          | 24/4/2010 | 19/6/2010       |               |                                                                                         |
| Machine of Yall Shar and Yas Sharb         2004         950210         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         950201         95020                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                      |          | 34/4/2010 | 17/5/2010       |               |                                                                                         |
| Memory and Control (10) (30)         Memory (30)         Memor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Wall Stem and Top Slab                                               |          | 8/5/2010  | 19/6/2010       |               |                                                                                         |
| Mathematic Al (1) (1)(3)         Constrained (1) (1)(3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                      | 522 days | 7/4/2010  | 31/3/2012       | -             |                                                                                         |
| 1:0         0.445         2/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013         1/2013                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                      | 52 days  | 1/2/2012  | 31/3/2012       |               |                                                                                         |
| 1-10         51/40         7/4201         2/2013         7/4204         2/2013           oncer 100 (c) Li85 (rd)         51/40         2/0010         6/1/2010         6/1/2010         6/1/2010           oncer 100 (c) Li85 (rd)         51/40         2/0010         6/1/2010         6/1/2010         6/1/2010           oncer 100 (c) Li85 (rd)         51/40         2/0010         6/1/2010         6/1/2010         6/1/2010           Contraction of Alternet A         2/40         2/0001         8/2010         8/2010         8/2010           Contraction of Alternet A         2/40         8/2010         8/2010         8/2010         8/2010           Contraction of Alternet A         2/40         8/2010         8/2010         8/2010         8/2010           Contraction of Alternet A         2/400         8/2010         8/2010         8/2010         8/2010           Contraction of Alternet A         2/400         8/2010         8/2010         8/2010         8/2010           Contraction of Alternet A         2/400         8/2010         8/2010         8/2010         8/2010           Contraction of Alternet A         2/2010         8/2010         8/2010         8/2010         8/2010           Contractin of Alternet A         2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                      | 78 days  | 2/1/2012  | 31/3/2012       |               |                                                                                         |
| antimer Strates (CI 1) (S1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                      | 574 days | 7/4/2010  | 4/2/2012        | -             |                                                                                         |
| Control         Control <t< td=""><td></td><td></td><td>1/9/2010</td><td>7/9/2010</td><td></td><td>B</td></t<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                      |          | 1/9/2010  | 7/9/2010        |               | B                                                                                       |
| Contract TOD (C.D. 19)         CH days         CAUDIC         Contract TOD (C.D. 19)         CAUDIC         CONTINUE         CAUDIC         CONTINUE         CAUDIC         CONTINUE         CAUDIC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                      |          |           | 8/11/2010       |               |                                                                                         |
| Contraction of Alberner IA         Z140         S-0010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                      |          |           | 4/2/2012        |               |                                                                                         |
| Contraction of Almaner 15         Statisty         74/20101         65/2010         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20101         65/20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                      |          | 8/5/2010  | 8/6/2010        |               |                                                                                         |
| Commention of Declar         Science 1/2001         S                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                      |          | 7/4/2010  | 8/5/2010        |               |                                                                                         |
| Lugular         A biology         Size                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                      |          |           | 4/12/2011       |               |                                                                                         |
| 2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40         2.40 <th< td=""><td></td><td></td><td></td><td>00007</td><td></td><td></td></th<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                      |          |           | 00007           |               |                                                                                         |
| av Nall (C1 156-160 (135) (75)<br>ev Nall (C1 156) (60 (135) (75)<br>ev Nall (C1 155) (60 (135) (75)<br>ev Nall (C2 155) (60 (135) (75) (75) (75) (75) (75) (75) (75) (7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                      | •        | 1102010   | 2102206         |               |                                                                                         |
| av Wil (G. 15) 160 R157 73<br>av Wil (G. 15) 160 R157 74<br>av Wil (G. 152-10 R157 74)<br>av Wil (G. 120-11 R17 74)<br>av Wil (G. 120-11 R17 74)<br>av Wil (G. 120-11 R17 74)<br>av Wil (G. 120-11 R187 74)<br>av Wil (G. 220-270 L187 74)<br>av Wil (G. 220-270                                                      | Vall (Ch 150-190 LHS) TGA                                            |          |           | 2102/02         | -             |                                                                                         |
| Mark Hill (C). 168: 188: 173         Mark Hill (C). 168: 188: 174         Mark Hill (C). 168: 188: 173         Mark Hill (C). 168: 188: 173         Mark Hill (C). 188: 188: 173         Mark Hill (C). 172: 189: 189: 173         Mark Hill (C). 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 189: 172: 199: 189: 172: 199: 189: 172: 199: 189: 172: 199: 189: 172: 199: 189: 172: 199: 189: 172: 199: 189: 172: 199: 189: 172: 199: 189: 172: 199: 189: 172: 199: 189: 172: 199: 189: 172: 199: 189: 172: 199: 189: 170: 189: 189: 189: 189: 189: 189: 189: 189                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                      |          |           | 2/11/2010       |               |                                                                                         |
| an wai (C. 152-10 (R.15) (T. 10)<br>anisee Sharee (J. 180 (HS) (T. 10)<br>and (T. 17-201) (T. 10)<br>and (T. 17-201) (T. 10)<br>and (T. 120 (HS) (HS) (HS) (T. 10)<br>and Derivation (T. 20-450) (T. 10)<br>and Derivation (T. 20-450) (T. 20-450) (T. 10)<br>and Derivation (T. 20-450) (T. 20-450) (T. 20-450) (T. 20-250)<br>and Derivation (T. 20-450) (T. 20-450) (T. 20-251)                                                                                                                                                         |                                                                      |          | ÷         | 0107/11/0       |               |                                                                                         |
| and Mail (C) 210-258 RHS) TG1         C abs         S5106201         T2122011         T2122011           1 (C) (D) (D) (D) (D) (D) (D) (D) (D) (D) (D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                      |          |           | 4/10/2011       |               |                                                                                         |
| Ol (G.) 180,         Constrained Services (CI 180 LHS)         Cons                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | _                                                                    |          |           | 2/12/2011       |               |                                                                                         |
| advancers Satravas (Cl 180 LIS) (5 012010 0112010 0112010 0112010 0112010 0112010 0112010 0112010 0112010 0112010 0112010 0112010 0104 0115 (5 04) 21002010 1112010 0104 0115 (5 04) 21002010 1112010 0104 0104 0104 0104 01                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                      |          |           | 202/2012        |               |                                                                                         |
| Marker TB3 (G. 210)         Sdays         I//1/2001         7/2/201         7/2/201           Construction of Namueation (A) (A) (A)         Construction of Namueation (A) (A)         Construction of Namueation (A) (A)         Construction of Namueation (A) (A)           Construction of Namueation (A) (A) (A)         Construction of Namueation (A) (A)         Construction of Namueation (A) (A)         Person           Construction of Namueation (A) (A) (A)         Construction (A) (A) (A)         Construction (A) (A)         Construction (A) (A)         Construction (A) (A)           Construction of Namueation (A) (A) (A)         Construction (A) (A)         Construction (A) (A)         Construction (A) (A)         Construction (A) (A)           Construction (A) (A) (A)         Construction (A) (A)         Construction (A) (A)         Construction (A) (A)         Construction (A) (A)           Construction (A) (A) (A)         Construction (A) (A)         Construction (A) (A)         Construction (A) (A)         Construction (A) (A)           Construction (A) (A) (A)         Construction (A) (A)         Construction (A) (A)         Construction (A) (A)         Construction (A) (A)           Construction (A) (A) (A)         Construction (A) (A)         Construction (A) (A)         Construction (A) (A)         Construction (A) (A)           Static (A)         Construction (A) (A)         Construction (A) (A)         Construction (A) (A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                      |          | /11/2010  | 6/11/2010       | -             | B                                                                                       |
| Andree TBO3 (Ch 210)         (Ch 210)         (Ch 210)         (Ch 2201)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                      | 1        | /11/2010  | 112/2011        |               |                                                                                         |
| Construction of Abuttant B         26 days         21(02010         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)         11/12(010)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                      |          | V10/2010  | 7/2/2012        |               |                                                                                         |
| Construction of Deckua         Construction of Deckua         Oddys         V/1/2001         6/22/2011           Lighting at Proberidies TBO3         5 days         1//22/2011         7/22/021         7/22/021           Lighting at Proberidies TBO3         5 days         1//22/011         7/22/021         7/22/021           af Oraclion Ch 320-503         5 days         1//12/011         2/12/2010         2/12/2010           af Oraclion Ch 230-503         5 days         1//12/011         2/12/2010         2/12/2010           af Oraclion Ch 230-703         5/3 days         1//12/011         2/12/2010         2/12/2010           af Oraclion Ch 230-703         5/3 days         1//12/011         2/12/2010         2/12/2010           af Oraclion Ch 230-703         5/4 days         1//12/2010         2/12/2010         2/12/2010           af Oraclion Ch 230-703         5/4 days         1//12/2010         2/12/2010         2/12/2010           af Oraclion Ch 230-703         5/1 days         1/1/2010         2/12/2010         2/12/2010           af Oraclion Ch 230-703         5/1 days         1/1/2010         2/12/2010         2/12/2010           af Oraclion Ch 230-703         5/1 days         1/1/2010         2/12/2010         2/12/2010           af Orach 230-703                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | tent B                                                               |          | 0100/01/0 | 0102/11/1       |               |                                                                                         |
| Lighting at Production: TB()         Lighting at Production: TB()         T/12/2011         T/12/2011         T/12/2011         T/12/2011         T/12/2011         T/12/2011         T/12/2011         T/12/2012         State                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1                                                                    |          |           | 11007011        |               |                                                                                         |
| October         Contract of a construction of the cons                                                                                                                                                                                                                                   | <b>D</b> (1)                                                         | •        | 1         | 1107/71/0       |               |                                                                                         |
| Mathematical (A: 230-450)         State (A: 230-250)         State (A: 230-250) <ths< td=""><td>LUUUUUU</td><td></td><td>1107/71/</td><td>112/2012</td><td></td><td></td></ths<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | LUUUUUU                                                              |          | 1107/71/  | 112/2012        |               |                                                                                         |
| and Dwarf Wai (G1 230-15) [57 days 1/1/2010 23/12/2010 2039/2012 3/32/2012 3/32/2012 3/32/2012 23/12/2010 2039/2012 23/12/2010 2039/2012 23/12/2010 2039/2012 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2011 23/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2011 31/12/10 0 13/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2010 03/12/2                                                                                                                                                                                                   | ret, 330.4600                                                        | er days  | 0102/01   | 7107/6/16       |               |                                                                                         |
| All Chi Schötzing         Statistic         1/12/001         2/12/2011         2/12/2012           20 (Chi Schötzing         20 days         5/ days         1/12/2011         2/12/2011         2/12/2011           20 (Chi Schötzing         20 days         5/ days         1/12/2011         2/12/2011         2/12/2011           20 (Chi Schötzing         20 days         5/ days         1/12/2011         2/12/2011         2/12/2011           20 days         5/ days         1/12/2011         2/12/2011         2/12/2011         2/12/2011           20 days         5/ days         1/12/2010         3/11/2/2010         3/12/2010         3/12/2010           20 days         5/ days         1/12/2010         3/12/2010         3/12/2010         3/12/2010           21 days         2/10/2010         3/12/2010         3/12/2010         3/12/2010         3/12/2010           20 days         2/10/2010         3/12/2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                      |          | 7107/7/1  | 51/5/2012       |               |                                                                                         |
| Alt         Ch. 26(-)         Solution         27/12/2010         27/12/2010           300         0.10(-0.27/2010)         27/12/2011         27/12/2011         27/12/2011           and Nail (C. 270-31)         15/12/2011         27/12/2011         27/12/2011         27/12/2011           and Nail (C. 270-315 LHS) TG1         26/42/010         27/12/2011         27/12/2011         27/12/2011           and Nail (C. 270-315 LHS) TG1         26/42/2010         37/43/9         27/12/2010         37/12/2010           anite Wall (C. 270-315 LHS) TG1         27/02/2010         37/12/2010         37/12/2010         37/12/2010           anite Wall (C. 270-315 LHS) TG1         27/02/2010         37/12/2010         37/12/2010         37/12/2010           anite Wall (C. 270-315 LHS) TG2         26/43/9         27/12/2010         37/12/2010         37/12/2010           anite Wall (C. 270-315 LHS) TG2         26/43/9         27/12/2010         37/12/2010         37/12/2010           anite Wall (C. 270-315 LHS) TG2         26/43/9         27/12/2010         37/12/2010         37/12/2010           anite Wall (C. 270-315 LHS) TG2         25/43/9         27/12/2010         37/12/2010         37/12/2010           anite Wall (C. 370-300 RHS) TG2         26/43/9         27/12/2010         37/12/2010         <                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                      |          |           | 31/3/2012       |               |                                                                                         |
| Solution         Solution         203/2012         203/2012         203/2012           and CA 273         and CA 273         56 days         1/1/2011         22/1/2011         2/1/2011           and CA 273         and CA 273         56 days         1/1/2011         2/1/2011         2/1/2011           and Wal (CA 270-315 RHS) TG1         57 days         1/1/2011         2/1/2011         2/1/2010           and Wal (CA 270-315 RHS) TG1         77 days         2/1/2010         9/1/2010         9/1/2010           and Wal (CA 270-315 RHS) TG1         77 days         2/1/2010         9/1/2010         9/1/2010           and Wal (CA 270-315 RHS) TG1         7/1/2010         9/1/2010         9/1/2010         9/1/2010           and Wal (CA 270-315 RHS) TG1         7/1/2010         9/1/2010         9/1/2010         9/1/2010           and Wal (CA 270-315 RHS) TG2         2/1/2010         9/1/2010         9/1/2010         9/1/2010           and Wal (CA 270-315 RHS) TG2         2/1/2010         9/1/2010         9/1/2010         9/1/2010           and Wal (CA 270-315 RHS) TG2         2/1/2010         9/1/2010         9/1/2010         9/1/2010           and Wal (CA 270-315 RHS) TG2         2/1/2010         9/1/2010         9/1/202010         9/1/2010           <                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                      |          | •         | 2/12/2010       |               |                                                                                         |
| All         Ch (A)         Oldys         15/2/201         205/201         205/201           and Wall (Ch 27)         and Wall (Ch 270-31)         25/4 wr         1/11/2011         2/12/2011         2/12/2011           and Wall (Ch 270-31) EHS) TR1 (replaced by AD1)         27/4 wr         1/12/2011         2/12/2010         2/12/2010           and Wall (Ch 270-315) EHS) TR1 (replaced by AD1)         27/4 wr         1/12/2010         2/12/2010         2/12/2010           and Wall (Ch 270-315) EHS) TR1 (replaced by AD1)         2/14/2010         2/14/2010         1/12/2010         2/11/2/2010           2 (GA 310)         2/14/2012         2/14/2010         1/12/2010         2/11/2/2010         2/11/2/2010           2 (GA 310)         2/14/2012         2/11/2/2010         2/11/2/2010         2/11/2/2010         2/11/2/2010           and Wall (Ch 270-313)         2/13/2010         2/12/2010         2/12/2010         2/12/2010         2/12/2010           and Wall (Ch 270-310)         2/10/2010         2/11/2010         2/11/2010         2/11/2010         2/11/2010           and Wall (Ch 270-310)         2/10/2010         2/11/2010         2/11/2010         2/11/2010         2/11/2010           and Wall (Ch 270-2010         2/10/2010         2/11/2010         2/11/2010         2/11/2010 <td></td> <td></td> <td>26/4/2010</td> <td>20/3/2012</td> <td></td> <td></td>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                      |          | 26/4/2010 | 20/3/2012       |               |                                                                                         |
| ana Wai (G. 250-270 HS) TG2<br>ana Wai (G. 250-270 HS) TG1<br>aniar Wai (G. 250-370 HS) TG1<br>aniar Wai (G. 270-315 HS) TR1 (replaced by AD1)<br>2 (G. 210)<br>aniar Wai (G. 270-315 HS) TR1 (replaced by AD1)<br>2 (G. 210)<br>and Wai (G. 270-315 HS) TR1 (replaced by AD1)<br>2 (G. 210)<br>and Wai (G. 270-315 HS) TR1 (replaced by AD1)<br>2 (G. 210)<br>and Wai (G. 270-315 HS) TR1 (replaced by AD1)<br>2 (G. 210)<br>and Wai (G. 270-315 HS) TR1 (replaced by AD1)<br>2 (G. 210)<br>and Wai (G. 270-315 HS) TR1 (replaced by AD1)<br>2 (G. 210)<br>and Wai (G. 270-315 HS) TR1 (replaced by AD1)<br>2 (G. 210)<br>and Wai (G. 270-315 HS) TR1 (replaced by AD1)<br>2 (G. 210)<br>and Wai (G. 270-315 HS) TG2<br>2 (days 2 (1/22010<br>and Wai (G. 200-315 HS) TG2<br>2 (days 2 (1/22010<br>and (G. 2110)<br>and (G. 200-315 HS) TG2<br>2 (days 2 (1/22010<br>and (G. 2110)<br>and (G. 200-315 HS) TG2<br>2 (days 2 (1/22010<br>and (G. 200-310<br>and (G. 200-310<br>and (G. 200-315 HS) TG2<br>2 (days 2 (1/22010<br>and (G. 200-310<br>and (G. 200 |                                                                      | -        |           | 20/3/2012       |               |                                                                                         |
| ation Wail (Ch. 270-315 LHS) TRI (replaced by AD1) 23 days 210/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/2010 13/12/201                                                                                                                                                                                                   |                                                                      |          |           | 1107/21/2       |               |                                                                                         |
| amia wil (G. 270-315 HS) TRI (replaced by AD1) 2 days 171/2010 501/22010<br>amia will (G. 270-315 HS) TRI (replaced by AD1) 27 days 264/2010 176/2010<br>a) 2 (G. 310) 2 (G. 310) 2 (G. 270-315 HS) TRI (replaced by AD1) 27 days 216/2010 166/2010 166/2010<br>a) 2 (G. 310) 3 (G. 315-330 HS) TC2 2 days 21/0/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010 201/2010                                                                                                                                                                                           |                                                                      |          |           | 1107/6/47       |               |                                                                                         |
| amares Wal (G. 270-315 EHS) TRI (Grebaced by AD1) 37 days 1/11/2010 15/12/2010<br>p3 (G. 210-315 EHS) TRI (Grebaced by AD1) 37 days 1/1/2010 15/12/2010<br>minimeres Suivese (G. 315 HHS) 20 12/2010 17/2010 17/2010 17/2010<br>minimeres Suivese (G. 315 HHS) 20 12/2010 17/2010 17/2010 17/2010<br>minimeres Suivese (G. 315 HHS) 20 12/2010 27/12/2010 27/12/2010 27/12/2010<br>minimeres Suivese (G. 310) 14/3 days 27/12/2010 27/12/2010 27/12/2010 14/3 days 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/12/2010 27/1                                                                                                                                                                                    |                                                                      | 1        |           | 0/10/2010       |               | Ĩ                                                                                       |
| ating Wall (Ci 270-315 RHS) TRI (replaced by AD1) 27 days 264/2010 766/2010 766/2010 27/2011 51/2011 51/2011 51/2011 51/2011 51/2011 51/2011 51/2011 51/2011 51/2011 51/2011 51/2011 51/2010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/01 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/010 201/02/01 201/02/010 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/010 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/01 201/02/0                                                                                                                                                                                                   | :                                                                    |          |           | 3/12/2010       |               |                                                                                         |
| 5 (Gh 310)     5 (Gh 310)     30 days     21/22011     51/22012       initiatience S(h 315.HS)     31 days     21/122010     20/122010       initiatience S(h 315.HS)     31 days     21/122010     20/122010       ion Wall (Ch 320.330) RHS) TO2     23 days     21/122010     20/122010       ion Wall (Ch 320.330) RHS) TO2     23 days     21/02/100     30/102/100       ion Wall (Ch 320.330) RHS) TO2     23 days     21/02/2010     1773/2011       obstruction of Abutment A     28 days     21/02/2010     31/12/2010       Construction of Abutment B     38 days     71/12/2010     20/12/2010       Construction of Abutment A     13 days     71/12/2010     21/12/2010       Construction of Abutment B     14 days     71/12/2010     20/12/2010       Construction of define     11 days     71/12/2010     20/12/2010       Construction of define     10 days     21/12/2010     20/12/2010       Construction of define     10 days     71/12/2010     20/12/2010       Construction of define     10 days     21/12/2010     20/12/2010       Construction of define     10 days     10 days     10 days       Construction of define     10 days     20/12/2010     20/12/2010       Construction of define     10 days     10 days                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                      | -        | 26/4/2010 | 1/6/2010        |               |                                                                                         |
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| Indiate         TBM (ch 330)         143 days         210/2010         173/2011           Construction of Aburnert A         28 days         210/2010         311/2010         911/2010           Construction of Aburnert B         28 days         71/2/2010         511/2010         91/2/2010           Construction of decking         1 days         71/2/2010         22/1/2011         91/2/2010           Construction of decking         1 days         71/2/2010         52/1/2011         91/2/2010           Link         Examination of decking         Postes         Sannary         Examination         Evaluation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                      |          |           | 0/10/2010       |               |                                                                                         |
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| Solit Maloritano Maloritano Interiore Commencessististististististististististististis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Task                                                                 | 1        |           | Summury         |               | Extornal Tasks Commencements Deadline                                                   |
| aput External Milestone External Milestone                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | d Date: 29/3/2010 Split Split                                        | ٠        |           | Project Summary | ury 🖓 💴       | ېروندېنوک Hittare اولاددومه چې                                                          |

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Appendix J: Complaint Investigation Report and Log

| DSD Proj          | ject – River Improvement Works in Upper Lam Tsuen River, She Shan River and Upper Tai Po River                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ref: DC           | for Complaint/ Concern<br>20706-CL-100507(EPD)R1<br>mplaint Ref: EP3/N05/RN/00008938-10<br>of <u>3</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| RECIPII           | ENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Details:          | Chiu Hing Construction & Transportation Co., Ltd,<br>EPD formally informed Drainage Services Department on 7 <sup>th</sup> May 2010 regarding a complaint on<br>observation of muddy water at section of Upper Tai Po River (UTPR) near Wun Yiu.<br>d Date: <u>7<sup>th</sup> May 2010</u>                                                                                                                                                                                                                                                               |
| COMPL             | AINANT / Concern                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Name:             | N/A Tel: <u>N/A</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Address<br>COMPL  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| □Noise<br>□Safety | □Air quality/Dust ☑Water □Odour □Environment □Traffic/Pedestrian                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                   | ate and Time: 7 <sup>th</sup> May 2010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Location          | 1: Section of UTPR near Sheung Wun Yiu                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| INVEST            | IGATION RESULTS & MITIGATION MEASURES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1.                | A complaint on 7 <sup>th</sup> 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 7 <sup>th</sup> 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 7 <sup>th</sup> 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 12 <sup>th</sup> 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.3.2 - River water at down stream area



Fig.3.3 – River channel near site ch.400



Fig.3.4 - River water at down stream area



Fig.6.1 – River water at approximate ch.50



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

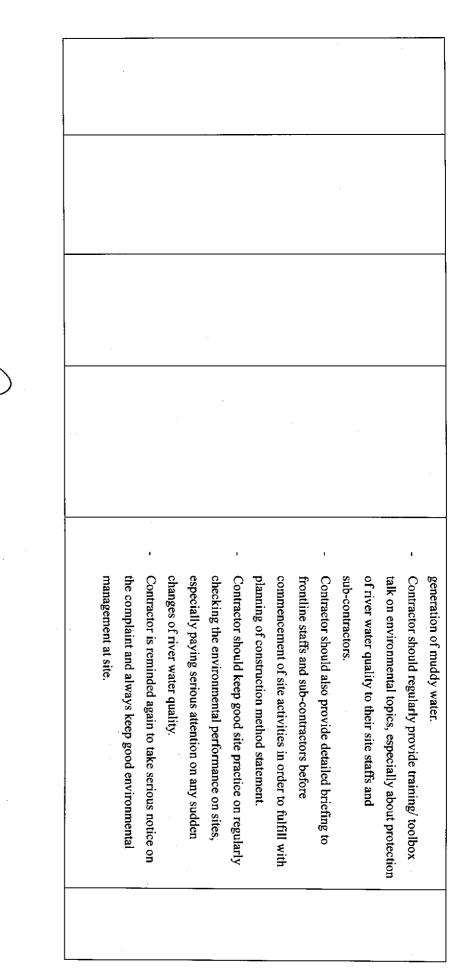


|                | Contractor was advised to pay serious attention to the weather condition and provide necessary protective measures                                                                                                                                                                                         | 5)       |                                                |                                 |                                                                              |                                               |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------------------------------------|---------------------------------|------------------------------------------------------------------------------|-----------------------------------------------|
| · .            | The condition of turbid river water was believed to be attributed by adverse weather condition in the morning on 7 <sup>th</sup> May 2010 (i.e.: amber rainstorm warning signal was hoisted in the morning), which caused soil runoff and disturbance of sediment along the UTPR.                          | <b>4</b> |                                                |                                 |                                                                              |                                               |
|                | removal of noise barriers were being carried out during the<br>investigation and no generation of muddy effluent was<br>observed from such activities. As reported by Contractor,<br>immediate follow up action was taken on the same day to<br>minimize surface runoff from causing water quality impact. |          |                                                |                                 |                                                                              |                                               |
|                | During the investigation river water was observed to be<br>slightly turbid. Major construction activities were ceased as<br>river-based excavation works were restricted according to<br>contractual requirements. Only site clearance activities of                                                       | 3)       |                                                |                                 |                                                                              |                                               |
|                | As per the EM&A Manual section 9.3, ET arranged a site investigation with the representatives from Contractor, on 7 <sup>th</sup> May 2010 to resolve the above complaint.                                                                                                                                 | 2)       |                                                |                                 | Tai Po River near<br>Sheung Wun Yiu                                          | complaint Ref:<br>EP3/N05//RN/<br>00007763-10 |
| ·<br>·         | upper stream area of UTPR near Sheung Wun Yiu.<br>Environmental Team (ET) was informed by Engineer<br>Representative (ER) on the same day.                                                                                                                                                                 |          | the project at Upper Tai<br>Po River (UTPR)    | on<br>7 <sup>th</sup> May 2010  | recorded for the<br>observation of<br>muddy water at the<br>section of Upper | 100507(EPD)<br>R1<br>EPD                      |
|                | A complaint on 7 <sup>th</sup> May 2010 was recorded that consecutive site water discharge was observed in the site area at the                                                                                                                                                                            | :        | Complaint on Muddy<br>water arisen by drainage | A complaint<br>received via EPD | 7 <sup>th</sup> May 2010,<br>A complaint was                                 | Our Ref:<br>DC0706-CL-                        |
| File<br>Closed | Investigation/Mitigation Action                                                                                                                                                                                                                                                                            |          | Details of Complaint                           | Complainant/<br>Date of Contact | Event<br>Date/Location                                                       | Log Ref                                       |
| 07(EPD)R1      | Ref: DC0706-CL-100507(EPD)R1                                                                                                                                                                                                                                                                               |          |                                                |                                 |                                                                              |                                               |

COMPLAINT / CONCERN LOG

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

| 10) Suggestions were given to the Contractor including: <ul> <li>To meet relevant environmental and outnance such as Environmental Impact Assessment Ordinance (ELAO) and Water Pollution Control Ordinance (WPCO).</li> <li>Contractor was seriously reminded that direct discharge of site water is not allowed and site water seepage to the river should be prevented.</li> <li>Prior to the exavation and de-watering activities, mitigation mesaures including provision of site water treatment facilities, bund walls and betriers should be implemented on site. Underground water and muddy effluent drained from excavated pit should be diverted to proper silt removal facilities before discharge.</li> <li>Contractor should well manage the temporary drainage system on site to avoid sufface runoff from stee.</li> <li>The construction work sufface runoff from stee.</li> <li>Should no construction work will be carried out, temporary stockpiling of earth materials should be prevented on site as to avoid soil envision and runoff from causing water guality impact. Also, excervated pits should be prevent erosion and be backfilled as far as practicable to prevent erosion and</li> </ul>                                                                                              |                                                            |                                                           |                                                            |                                                    |                                                     |                                             |                                                       |                                                        |          |                                                           |                                                  |                                                        | -                                                |                                                           |                                                  |                                                         |                                                       |                                                       |                            |                                                            |                                                         |                                               |                                                  |                                                    |                                                         |     |  |
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| <ul> <li>10) Suggestions were given to the Contractor including:</li> <li>To meet relevant environmental ordinance (EIAO) and Water Pollution Control Ordinance (WPCO), Contractor was seriously reminded that direct discharge of site water is not allowed and site water scepage to the river should be prevented.</li> <li>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.</li> <li>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.</li> <li>The contractor shall always check the performance of bunds and barriers provided in order to minimize site water scepage and surface runoff from site.</li> <li>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</li> </ul> |                                                            |                                                           |                                                            |                                                    |                                                     |                                             |                                                       | · · ·                                                  |          |                                                           |                                                  |                                                        |                                                  |                                                           |                                                  |                                                         |                                                       |                                                       |                            |                                                            |                                                         |                                               |                                                  |                                                    |                                                         |     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | be backfilled as far as practicable to prevent erosion and | causing water quality impact. Also, excavated pits should | prevented on site as to avoid soil erosion and runoff from | temporary stockpiling of earth materials should be | - Should no construction works will be carried out, | water seepage and surface runoff from site. | bunds and barriers provided in order to minimize site | - The contractor shall always check the performance of | channel. | effluent from entering into the public drainage and river | system on site to avoid surface runoff and muddy | - Contractor should well manage the temporary drainage | proper silt removal facilities before discharge. | effluent drained from excavated pit should be diverted to | implemented on site. Underground water and muddy | treatment facilities, bund walls and barriers should be | mitigation measures including provision of site water | - Prior to the excavation and de-watering activities, | river should be prevented. | of site water is not allowed and site water seepage to the | Contractor was seriously reminded that direct discharge | and Water Pollution Control Ordinance (WPCO), | Environmental Impact Assessment Ordinance (EIAO) | - To meet relevant environmental ordinance such as | 10) Suggestions were given to the Contractor including: | · · |  |



Date: 17<sup>th</sup> May 2010

Prepared by Environmental Team Leader: Ms. Patricia Chung