Maeda - CREC - SELI Joint Venture







Contract No. DC/2007/12 – Design and Construction of Tsuen Wan Drainage Tunnel

Monthly EM&A Report

(December 2008)

January 2009

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Executive Summary

- Drainage Services Department (DSD) has awarded the contract for the Design and Construction of Tsuen Wan Drainage Tunnel (hereafter referred to as the "Project") to Maeda-CREC-SELI Joint Venture (MCSJV). MCSJV has appointed Hyder Consulting Limited (HCL) as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) works in accordance with the Environmental Monitoring and Audit Manual (EM&A Manual) and Environmental Permit (EP). Commencement of the construction work had been notified to the Environmental Protection Department (EPD) in January 2008. This Monthly EM&A Report summarises the EM&A works undertaken in December 2008.
- 2. According to the EM&A Manual, there are four designated air quality monitoring locations, five designated noise monitoring locations and four water quality monitoring locations during the construction phase: (i) Sik Sik Yuen Ho Fung College (ASR 1, NSR 1 and Intake I-1); (ii) Hong Hoi Chee Hong Temple (ASR 3, NSR 3 and Intake I-2); (iii) Squatters (NSR 6 and Intake I-3); (iv) Beach Tower (Long Beach Gardens) (ASR 8, NSR 8 and Outfall O-1); and (v) Greenview Terrace (Block 1) (ASR 9, NSR 9 and Outfall O-1).
- 3. During the non restricted hours, major construction activities undertaken by the Contractor at TWDT included Site clearance at I-1, I-2, I-3 and Outfall; hoarding & fencing erection at I-3 and Outfall; tree transplanting at I-1, I-3 and Outfall; slope stabilization at Outfall; soil nailing at I-3 and Outfall; pipe pile at I-1; relocation of verified boulder at Outfall; formation of access road at Outfall and pre-bore H-piling at I-3.
- 4. No exceedance has been recorded for air quality and noise monitoring during the reporting month. Detail interpretation of the result could be referred to Section 4.1 and 4.2 of this report.
- 5. Exceedances for water quality monitoring are summarized in the following table:

Parameter	Action Level Exceedance	Limit Level Exceedance
DO	Nil	Nil
Turbidity	Nil	Nil
SS	 Two recorded at I-1 on 5 and 8 December 	 One recorded at I-1 on 19 December
	 One recorded at I-3 on 29 December 	

- 6. These exceedances were considered not to be project-related as no direct disturbance was observed contributed by the project construction activities. Detail interpretation could be referred to Section 4.3 of this report.
- 7. The status of waste generation in the reporting month are:



- A total of 144.1 m³ C&D material was disposed of to public fill at Tuen Mun and 10 m³ inert C&D materials were reused in KDB 400, a line extension project of MTR Corportaion at Tai Kok Tsui;
- About 6.2m³ general waste was disposed of to NENT Landfill;
- Approximately 150 kg of paper/cardboard packaging was recycled;
- No plastic waste was disposed of in the reporting month;
- No chemical waste was disposed of in the reporting month; and
- Approximately 5 kg of metal was generated in the reporting month.
- 8. In this reporting month, two site inspections and one monthly site audit were carried out by ET and Independent Environmental Checker (IEC) respectively, to ensure proper implementation of environmental mitigation measures specified in the EM&A Manual and compliance with environmental legislation. All observations, which were recorded on the inspection checklists, were passed to the Contractor together with the ET's recommendations.
- 9. As advised by the Contractor and verified by ET:
 - No non-compliance was received in the reporting month;
 - No environmental complaint was received during the reporting month; and
 - No summons and prosecution was received in this reporting month.
- 10. The major construction works for the upcoming three months will be:
 - Site clearance at I-1, I-2, I-3 and Outfall;
 - Hoarding & fencing erection at I-3 and Outfall;
 - Tree transplanting at I-1, I-3 and Outfall;
 - Slope stabilization at Outfall;
 - Soil nailing at I-3 and Outfall;
 - Pipe pile at I-1;
 - Relocation of verified boulder at Outfall:
 - Formation of access road at Outfall:
 - Pre-bore H-piling at I-3;
 - RCD at I-2.



1 INTRODUCTION

- 1.1.1 The Drainage Services Department (DSD) proposes to construct a tunnel with an internal diameter of 6.5m and a length of 5.13km, with the purpose to alleviate the flooding risk in Tsuen Wan and Kwai Chung.
- 1.1.2 This project is a Designated Project under Schedule 2 Part I Category Q, of the Environmental Impact Assessment Ordinance (EIAO) as part of the proposed Tsuen Wan Drainage Tunnel (TWDT) passes underneath the existing Tai Mo Shan Country Park. An Environmental Impact Assessment (EIA) Study has therefore been undertaken to provide information on the nature and extent of environmental impacts arising from the construction and operation of the proposed designed project and related activities taking place concurrently. From the EIA the recommendations for monitoring contained herein, are made.
- 1.1.3 The Maeda CREC SELI Joint Venture (MCSJV) was awarded by DSD with the Contract Design and Construction of Tsuen Wan Drainage Tunnel.
- 1.1.4 Hyder was commissioned by the MCSJV as the Environmental Team (ET) to implement an EM&A program in accordance with the EM&A Manual. The proposed tunnel section flows from the junction of Shing Mun Road and Wo Yi Hop Road and discharges to south of Yau Kom Tau underneath Castle Peak Road as shown in Appendix A.
- 1.1.5 The construction works of the Project was commenced in January 2008. This is the ninth monthly EM&A report summarising the impact monitoring results and audit findings of the EM&A program in December 2008.

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2 PROJECT INFORMATION

2.1 Project Organization and Management Structure

2.1.1 The organization chart and lines of communication with respect to the on-site environmental management are shown in Appendix B.

2.2 Construction Progress

- 2.2.1 The overall project programme from the detail design to completion of all civil works shall take approximately 54 months. The construction programme is presented in Appendix C.
- 2.2.2 The major construction activities undertaken in the reporting month were:
 - Site clearance at I-1, I-2, I-3 and Outfall;
 - Hoarding & fencing erection I-3 and Outfall;
 - Tree transplanting at I-1, I-3 and Outfall;
 - Slope stabilization at Outfall;
 - Soil nailing I-3 and Outfall;
 - Pipe pile at I-1;
 - Relocation of verified boulder at Outfall;
 - Formation of access road at Outfall; and
 - Pre-bore H-piling at I-3
- 2.2.3 No construction activities were undertaken for TWDT during the restricted hours.

2.3 Mitigation Measures

2.3.1 The implemented environmental mitigation measures and their statuses are given in Appendix D.

2.4 Status of License and Permit

2.4.1 A summary of relevant permits and licences for the Project is given in Appendix E.



3 SUMMARY OF EM&A REQUIREMENT

3.1 Air Quality

Air Quality Parameters

3.1.1 1-hour Total Suspended Particulates (TSP) levels are measured at the designated air monitoring locations in accordance with the EM&A Manual. Information such as date of monitoring, duration, weather condition, equipment used and monitoring results were recorded on the field data sheet developed for the Project. The monitoring results are presented in Section 4.

Monitoring Methodology

- 3.1.2 1-hour TSP monitoring is carried out under typical weather conditions (with no adverse weather such as typhoon signal or rain storm warning) three times every six days using High Volume Air Samplers (HVASs). Monitoring should be conducted in accordance with the standard sampling method as set out in High Volume Method for Total Suspended Particulates, Part 50 Chapter 1 Appendix B, Title 40 of the Code of Federal Regulations of the USEPA.
- 3.1.3 After each sampling, the filter paper loaded with dust is kept in a clean and tightly sealed plastic bag. The filter paper is then re-conditioned in desiccators for 24 hours before obtaining the weight under laboratory conditions.
- 3.1.4 The average concentrations of the TSP are calculated based on the following information obtained from monitoring:
 - Flow rate;
 - Weight of the filter paper before and after sampling; and
 - Sampling period indicated by the elapsed-time meter.
- 3.1.5 All samples should be kept in good condition (i.e. stored in sealed plastic bags, with brief description of the monitoring dates and locations) for a period of 6 months before disposal. Sample analysis is carried out by ALS Technichem (HK) Pty Limited (HOKLAS Registration Number 066).

Monitoring Equipment and Calibration

- 3.1.6 High Volume Air Samplers (HVASs) are used for 1-hour TSP monitoring to comply with the USEPA specifications in Appendix B Part 5 Reference Method for the Determination of Suspended Particulate matter in the Atmosphere (High-Volume Method) of the Code of Federal Regulation dated June 1, 1991.
- 3.1.7 All HVASs are calibrated before commencement of monitoring using standard orifice 5-points calibration method with orifice calibrator to determine the actual flow rate of each HVAS. This shall be used for the calculation of the TSP level. Calibration Kit Model TE5025A is used for calibration of the HVAS. Recalibration of the HVAS shall be carried out after motor maintenance, at least once every six months, which is about the expected life of carbon brush. The air



quality monitoring equipment used during the reporting month is shown in Table 3-1 below. The calibration certificates are included in Appendix F.

Equipment Type	Model	Serial Number	Calibration Orifice Number	Location
HVAS	BM2000HX	4994	517N	ASR 1
HVAS	BM2000HX	5875	517N	ASR 3
HVAS	TE5005X	0390	517N	ASR 8
HVAS	TE5005X	0646	517N	ASR 9

Table 3-1 Air Quality Monitoring Equipment

Monitoring Location

3.1.8 Four designated air quality-monitoring locations were identified in the contract specific EM&A manual. They are listed in Table 3-2 below and shown in Appendix G.

Monitoring Station ID	Name of Premises	Floor Level
ASR1	Sik Sik Yuen Ho Fung College	G/F
ASR3	Hong Hoi Chee Hong Temple	Podium
ASR8	Beach Tower (Long Beach Gardens)	G/F
ASR9	Greenview Terrace (Block 1)	G/F

Table 3-2 Air Quality Monitoring Locations

Action and Limit Levels

3.1.9 The Action and Limit Levels for the 1-hour TSP monitoring is shown in Table 3-3. In case exceedances of Action and/or Limit levels for air quality occur, Event Contingency Plans (ECPs) would be implemented. The ECPs for Action and Limit levels exceedances are shown in Table 3-4.

Station	1-hr TSP Le	evel in µg/m³
Station	Action Level	Limit Level
ASR 1	307	500
ASR 3	327	500
ASR 8	337	500
ASR 9	329	500

Table 3-3 Action & Limit Levels for Air Quality



EVENT		ACT	TON	
EVENI	ET	IEC	SOR	CONTRACTOR
		ACTION LEVEL		
Exceedance for one sample	Identify source, investigate the causes of exceedance and propose remedial measures; Inform IEC and SOR; Repeat measurement to confirm finding; Increase monitoring frequency to daily.	 Check monitoring data submitted by ET; Check Contractor's working method. 	Notify Contractor.	 Rectify any unacceptable practice; Amend working methods if appropriate.
Exceedance for two or more consecutive samples	 Identify source; Inform IEC and SOR; Advise SOR on the effectiveness of the proposed remedial measures; Repeat measurements to confirm findings; Increase monitoring frequency to daily; Discuss with IEC and Contractor on remedial actions required; If exceedance continues, arrange meeting with IEC and SOR; If exceedance stops, cease additional 	 Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the ET on the effectiveness of the proposed remedial measures; Supervise Implementation of remedial measures. 	 Confirm receipt of notification of exceedance in writing; Notify Contractor; Ensure remedial measures properly implemented. 	 Submit proposals for remedial to SOR within 3 working days of notification; Implement the agreed proposals; Amend proposal if appropriate.
	monitoring.			
	- HEf	LIMIT LEVEL	0	Table Service B. C.
Exceedance for one sample	 Identify source, investigate the causes of exceedance and propose remedial measures; 	 Check monitoring data submitted by ET; Check Contractor's working method; 	 Confirm receipt of notification of exceedance in writing; Notify Contractor; 	 Take immediate action to avoid further exceedance; Submit proposals for remedial actions to



FVENT		ACT	ION	
EVENT	ET	IEC	SOR	CONTRACTOR
	 Inform IEC, SOR, Contractor and EPD; Repeat measurement to confirm finding; Increase monitoring frequency to daily; Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and SOR informed of the results. 	 Discuss with ET and Contractor on possible remedial measures; Advise SOR on the effectiveness of the proposed remedial measures; Supervise implementation of remedial measures. 	Ensure remedial measures properly implemented.	IEC within 3 working days of notification; Implement the agreed proposals; Amend proposal if appropriate.
Exceedance for two or more consecutive samples	 Notify IEC, SOR, Contractor and EPD; Identify source; Repeat measurement to confirm findings; Increase monitoring frequency to daily; Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; Arrange meeting with IEC and SOR to discuss the remedial actions to be taken; Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and SOR informed of the results; If exceedance stops, cease additional 	Discuss amongst SOR, ET, and Contractor on the potential remedial actions; Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise SOR accordingly; Supervise the implementation of remedial measures.	 Confirm receipt of notification of exceedance in writing; Notify Contractor; In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; Ensure remedial measures properly implemented; If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. 	 Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC within 3 working days of notification; Implement the agreed proposals; Resubmit proposals if problem still not under control; Stop the relevant portion of works as determined by SOR until the exceedance is abated.

Table 3-4 Event/Action Plan for Air Quality

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3.2 Noise

Noise Parameters

- 3.2.1 The construction noise level is measured in terms of equivalent A-weighted sound pressure level (L_{eq}) measured in decibels (dB(A)). Monitoring of $L_{eq(30 \text{ min})}$ is carried out at the noise monitoring locations on a weekly basis during normal construction working hours (0700-1900 hours from Monday to Saturday except public holidays). For all other time periods (i.e. restricted hours), $L_{eq(5 \text{ min})}$ would be employed for comparison with the Noise Control Ordinance (NCO) criteria if necessary.
- 3.2.2 The two statistical sound levels L₁₀ and L₉₀: the level exceeded for 10 and 90 percent of the time respectively, are also recorded during monitoring. Major noise sources observed, both on-site and off-site, are recorded on the field data sheet. All measurements are recorded to the nearest 0.1 dB(A) and presented in round numbers in this report. Results are presented in Section 4.

Monitoring Methodology

- 3.2.3 Sound level meters, which comply with the International Electrotechnical Commission Publication 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications as referred to the Technical Memorandum (TM) issued under the Noise Control Ordinance, are used. Noise levels for the A-weighted levels $L_{eq(30min)}$, L_{10} and L_{90} are measured throughout the impact monitoring. Average, by sound power, of six consecutive 5 minutes readings is used to provide $L_{eq(30min)}$ for non-restricted hours (07:00-19:00 hours from Monday to Saturday except public holidays). A facade correction of 3dB(A) is applied to the measurements that are carried out under free field conditions.
- 3.2.4 During the impact monitoring, parameters such as dates, weather condition, equipment used, measurement results and major noise sources are recorded on the field data record sheet. Monitoring would not be carried out in the presence of fog, rain or strong wind with a steady speed exceeding 5 m/s. In relation to the monitored noise levels, other noise sources such as road traffic might make a significant contribution to the overall noise environment. Therefore, noise monitoring activities would take into account such influencing factors, which were not present during the baseline monitoring period.

Monitoring Equipment and Calibration

- 3.2.5 Bruel & Kjaer (B&K) Precision Integrating Sound Level Meters of Type 2238 in compliance with the International Electrotechnical Commission Publication 651: 1979 (Type 1) and 804: 1985 (Type 1) Specifications, stated in the Technical Memorandum (TM) issued under the NCO, are used for noise monitoring.
- 3.2.6 Prior to and following each noise measurement, the accuracy of the sound level meter is checked using an acoustic calibrator (B&K Type 4231, (S/N 1770806) generating a known sound pressure level at a known frequency. Measurements are considered as valid only if the calibration levels from before and after the noise measurement agrees to within 1.0 dB(A). The sound level meters and the calibrator are calibrated annually to ensure they perform to the same level of



accuracy as stated in the manufacturer's specifications. The noise monitoring equipment used during the reporting month is shown in Table 3-5 below. The calibration certificates are included in Appendix F.

Equipment Type	Manufacturer	Type Number	Serial Number	Location
Sound Level Meter	Bruel & Kjaer	2238	2285726	NSR1, NSR3, NSR6, NSR8 and NSR9
Sound Level Calibrator	Bruel & Kjaer	4231	1770806	NSR1, NSR3, NSR6, NSR8 and NSR9

Table 3-5 Noise Monitoring Equipment

Monitoring Location

3.2.7 Five designated noise monitoring locations were identified in the contract specific EM&A manual. They are listed in Table 3-6 below and shown in Appendix G.

Monitoring Station ID	Name of Premises	Floor Level
NSR1	Sik Sik Yuen Ho Fung College	G/F
NSR3	Hong Hoi Chee Hong Temple	Podium
NSR6	Squatters	G/F
NSR8	Beach Tower (Long Beach Gardens)	G/F
NSR9	Greenview Terrace (Block 1)	G/F

Table 3-6 Noise Monitoring Locations

Construction Groundborne Noise

- 3.2.8 Prediction of construction groundborne noise indicates the criteria will be achieved at most NSRs except exceedances are predicted at Hong Hoi Chee Hong Temple (NSR3) and Squatters (NSR6). It is recommended to restrict the TBM operation in non-restricted period (i.e. 0700 1900) at these NSRs. In order to ensure proper control of groundborne noise is executed by the contractor, a monitoring requirement is recommended at the Hong Hoi Chee Hong Temple at Intake 2 and Squatters at Intake 3 for compliance checking. According to the monitoring schedule, TBM operation will be carried out for about 3 months in the vicinity of Hong Hoi Chee Hong Temple at Intake 2 and Squatters at Intake 3. If groundborne noise criterion is exceeded, the monitoring shall continue daily until acceptance has been restored against the criterion. Otherwise the monitoring can be discontinued.
- The criteria including Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites (TM-Places) under the NCO stipulates that noise transmitted primarily through the structural elements of building, or buildings, shall be 10 dB(A) less than the relevant ANLs. Daytime groundborne construction noise criterion of 60 dB(A) therefore applies with reference to TM-EIAO 70 dB(A) criterion for schools and taking account of the minus 10 dB(A) requirement under the NCO TM-Places. Following the same principle for groundborne noise criteria, groundborne construction noise levels inside domestic premises relying on opened window for



ventilation will be limited to 65 dB(A), with reference to the daytime airborne noise criterion of 75 dB(A) in accordance with TM-EIAO.

Action and Limit Levels

3.2.10 The Action and Limit levels for construction noise are defined in Table 3-7. If non-compliance of the criteria occurs, actions in accordance with the Action Plan in Table 3-8 would be carried out.

Time Period	Action	Limit
0700 – 1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A)*

For educational establishments the limit level shall be 70dB(A) and reduced to 65dB(A) during examination periods between 0700-1900 hrs on normal weekdays.

Table 3-7 Action & Limit Levels for Noise



Event	Action			
LVOIR	ET Leader	IEC	SOR	Contractor
Action Level	 Notify IEC and the Contractor. Carry out investigation. Report the results of investigation to IEC and the Contractor. Discuss with the Contractor and formulate remedial measures. Increase monitoring frequency to check mitigation measures. 	Review with analysed results submitted by ET. Review the proposed remedial measures by the Contractor and advise SOR accordingly. Supervise the implement of remedial measures.	Confirm receipt of notification of exceedance in writing. Notify the Contractor. Require the Contractor to propose remedial measures for the analysed noise problem. Ensure remedial measures are properly implemented.	Submit noise mitigation proposals to IEC. Implement noise mitigation proposals.
Limit Level	 Identify the source. Notify IEC, SOR, EPD and the Contractor. Repeat measurement to confirm findings. Increase monitoring frequency. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented. Inform IEC, SOR, and EPD the causes & actions taken for the exceedances. Assess effectiveness of the Contractor's remedial actions and keep IEC, EPD and SOR informed of the results. If exceedance stops, cease additional monitoring. 	 Discuss amongst SOR, ET Leader and the Contractor on the potential remedial actions. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise SOR accordingly. Supervise the implementation of remedial measures. 	 Confirm receipt of notification of exceedance in writing. Notify the Contractor. Require the Contractor to propose remedial measures for the analysed noise problem. Ensure remedial measures are properly implemented. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedance is abated. 	 Take immediate action to avoid further exceedance. Submit proposals for remedial actions to IEC within 3 working days of notification. Implement the agreed proposals. Resubmit proposals if problem still not under control. Stop the relevant activity of works as determined by the SOR until the exceedance is abated.

Table 3-8 Event/Action Plan for Noise



3.3 Water Quality

3.3.1 As there is no dredging or reclamation required for the project, the water quality impact would be insignificant with the protection measures recommended in Section 5.6 of the EIA report. However in view of the sensitive nature of the rivers/streams and bathing beaches in the Study Area, it is suggested that a programme of monitoring should be established to confirm the mitigation measures are protecting these water bodies.

Water Quality Parameters

- 3.3.2 Monitoring for Dissolved Oxygen (DO), temperature, turbidity, pH and suspended solids (SS) should be undertaken at designated monitoring locations. It should be noted that DO, temperature, turbidity and pH should be measured in-situ whereas SS is assayed in a laboratory.
- 3.3.3 In association with the water quality parameters, other relevant data should also be measured, such as monitoring location/position, time, weather conditions, and any special phenomena and description of work underway at the construction site etc.

Monitoring Methodology

- 3.3.4 In accordance with the EM&A Manual, the water quality monitoring for all specified parameters shall be measured at all designated monitoring locations including control points at an interval of 3 days per week. DO, temperature, turbidity, pH and SS shall be undertaken at designated monitoring locations.
- 3.3.5 It should be noted that water samples for all monitoring parameters should be collected, stored, preserved and analysis according to Standard Methods, APHA 17 ed. and/or methods agreed by the Director of Environmental Protection.
- 3.3.6 Each sample shall be analysed in accordance with the APHA Standard Methods for the Examination of Water and Wastewater, 18th edition, or an equivalent method approved by the EPD. If an in-house or non-standard method is proposed, details of the method verification may require to be submitted to the EPD. In any circumstance, the sample testing should comply with a comprehensive quality assurance and quality control programme. The laboratory should be prepared to demonstrate the quality programmes to the EPD when requested.

Monitoring Equipment and Calibration

3.3.7 All the water samples collected should be transferred to clearly labelled and precleaned sample containers with necessary preservatives immediately after collection. The sample containers should be provided by a HOKLAS accredited laboratory. Sufficient quantity of samples should be collected for all laboratory analyses. Following sampling, samples should be stored in a cool box at temperature of between 0 and 4°C, and transported to the laboratory within the sample retention time as advised by the laboratory under proper chain-of-custody system. The water quality monitoring equipment used during the reporting month is shown in Table 3-9 below.



Equipment Type	Manufacturer	Model	Quantity	
pH / DO / Temperature Meter	WTW	PH/Oxi 340i	1	
Tuibidimeter	EUTECH	TN-100	1	

Table 3-9 Water Quality Monitoring Equipment

3.3.8 All pH meters, DO meters and turbidimeters shall be checked and calibrated prior to use. DO meters and turbidimeters shall be calibrated by a laboratory accredited under HOKLAS or any other international accreditation scheme, and subsequently re-calibrated at 3 monthly intervals throughout all stages of the water quality monitoring. Responses of sensors and electrodes shall be checked with certified standard solutions before each use. Wet bulb calibrations for all DO meters shall be carried out before measurement at each monitoring location. For the on site calibration of field equipment, BS 127:1993, "Guide to field and on-site test methods for the analysis of waters" should be observed. The calibration certificates are included in Appendix F.

Monitoring Location

3.3.9 Four designated monitoring locations were identified in the contract specific EM&A Manual for water quality monitoring. While the construction of the outfall does not require dredging or reclamation, monitoring of water quality is only required during which the rip rap is placed. These four monitoring stations are listed in Table 3-10 below and shown in Appendix G.

Monitoring Station ID	Name of Premises
I-1	Intake I-1
I-1-C	Control of Intake I-1
I-2	Intake I-2
I-2-C	Control of Intake I-2
I-3	Intake I-3
I-3-C	Control of Intake I-3
O-1 (FT)	Outfall 1During Flood Tide
O-1 (ET)	Outfall 1During Ebb Tide
O-1-C (FT)	Control of Outfall O-1 During Flood Tide
O-1-C (ET)	Control of Outfall O-1 During Ebb Tide

Table 3-10 Water Quality Monitoring Locations

3.3.10 Note that there are two control stations for Outfall O-1, one for sampling during flood tide and one for sampling during ebb tide. Only one of those control stations for Outfall O-1 shall be sampled during each sampling. Control station to be sampled will be determined based on the tidal information provided by the Hong Kong Observatory.



Action and Limit Levels

3.3.11 The Action and Limit levels for water quality monitoring parameters are defined in Table 3-11. In case of any exceedance, appropriate actions will be undertaken in accordance with the Event and Action Plan as described in Table 3-12.

Parameters	Action	Limit
DO in mg/l (Surface, Middle & Bottom)	Surface & Middle 5%-ile of baseline data for surface and middle layer. Bottom 5%-ile of baseline data for bottom layer.	Surface & Middle 4mg/l except 5mg/l for FCZ or 1%-ile of baseline data for surface and middle layer Bottom
		2mg/l or 1%-ile of baseline data for bottom layer
SS in mg/l (depth-averaged)	95%-ile of baseline data or 120% of upstream control station's SS at the same tide of the same day	99%-ile of baseline or 130% of upstream control station's SS at the same tide of the same day and specific sensitive receiver water quality requirements (e.g. required suspended solids levels for concerned sea water intakes)
Turbidity (Tby) in NTU (depth-averaged)	95%-ile of baseline data or 120% of upstream control station's Tby at the same tide of the same day	99%-ile of baseline or 130% of upstream control station's Tby at the same tide of the same day

Notes:

- For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
- For SS and Tby, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
- All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered as necessary.

Table 3-11 Action/Limit Levels for Water Quality

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



Event		ET Leader		IEC		SOR		Contractor
Limit Level being exceeded by one sampling day	 2. 3. 4. 7. 	Repeat in-situ measurement to confirm finding; Identify source(s) of impact; Inform IEC, Contractor and EPD; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC, SOR and Contractor; Ensure mitigation measures are implemented; and Increase the monitoring frequency to daily until no exceedance of Limit level.	1. 2. 3.	Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the SOR accordingly; and Assess the effectiveness of the implemented mitigation measures.	 2. 4. 	Discuss with IEC, ET and Contractor on the proposed mitigation measures; and Request Contractor to critically review the working methods; Make agreement on the mitigation measures to be implemented; and Assess the effectiveness of the implemented mitigation measures.	 2. 3. 5. 6. 	Inform the Engineer and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET and IEC and SOR and propose mitigation measures to IEC and SOR within 3 working days; and Implement the agreed mitigation measures.
Limit Level being exceeded by more than one consecutive sampling day	 2. 3. 4. 7. 	Repeat in-situ measurement to confirm finding; Identify source(s) of impact; Inform IEC, Contractor and EPD; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC, SOR and Contractor; Ensure mitigation measures are implemented; and Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days.	 2. 3. 	Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the SOR accordingly; and Assess the effectiveness of the implemented mitigation measures.		Discuss with IEC, ET and Contractor on the proposed mitigation measures; and Request Contractor to critically review the working methods; Make agreement on the mitigation measures to be implemented; Assess the effectiveness of the implemented mitigation measures; and Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit Level.	3.4.5.6.	Inform the SOR and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET and IEC and SOR and propose mitigation measures to IEC and SOR within 3 working days; Implement the agreed mitigation measures; and As directed by the Engineer, to slow down or to stop all or part of the marine work or construction activities.

Table 3-12 Event/Action Plan for Water Quality



4 MONITORING RESULT

4.1 Air Quality

4.1.1 The air quality monitoring schedule of the reporting period is given in Appendix H.

1-hr TSP Monitoring

4.1.2 Results of 1-hours TSP level are shown in Table 4-1. All measurements were recorded to the nearest $0.1 \mu g/m^3$ and presented in round numbers in this report. Detail results including weather conditions, and graphical presentations are presented in Appendix I.

Station	Monitoring Date	Monitoring Result (μg/m³)	Action/Limit Levels (μg/m³)
		30.2	
	03-Dec-08	23.9	
		18.9	
		10.1	
	09-Dec-08	45.3	
		67.9	
		150.8	
	15-Dec-08	139.8	
ASR 1		245.3	307/500
ASK I		60.1	
	20-Dec-08	80.9	
		35.6	
		47.8	
	23-Dec-08	144.7	
		150.8	
		63.8	
	29-Dec-08	55.2	
		80.9	
ASR 3		32.0	327/500
	03-Dec-08	48.7	
		52.5	
		67.9	
	09-Dec-08	61.5	
		85.9	
		94.4	
	15-Dec-08	99.2	
		104.0	
		68.1	
	20-Dec-08	135.0	
		77.7	
	23-Dec-08	69.3	
		47.8	



Station	Monitoring Date	Monitoring Result (μg/m³)	Action/Limit Levels (μg/m³)
		57.4	
	_	19.1	
	29-Dec-08	29.9	
		23.9	
	_	37.2	
	03-Dec-08	57.8	
		50.1	
		72.8	
	09-Dec-08	92.3	
		114.2	
		90.3	
	15-Dec-08	59.8	
ASR 8		54.9	337/500
ASK 0		54.9	
	20-Dec-08	20.8	
		118.4	
		89.1	
	23-Dec-08	79.4	
		90.3	
	_	105.0	
	29-Dec-08	81.8	
		80.6	
		31.8	
	03-Dec-08	103.3	
		67.5	
		203.9	
	09-Dec-08	140.4	
		156.2	
		165.2	
	15-Dec-08	74.0	
ASR 9		78.0	329/500
ASIX 9		76.6	
	20-Dec-08	68.7	
		51.5	
	25.5	81.9	
	23-Dec-08	83.2	
		109.7	
		76.6	
	29-Dec-08	87.2	
		39.6	

Note: *Italic* indicates the occurrence of exceedance of *Action level* **Bold** indicates the occurrence of exceedance of **Limit Level**

Table 4-1 Air Quality Monitoring Results



- 4.1.3 No project related exceedance was recorded in the reporting month.
- 4.1.4 During the reporting month, all monitoring results were below Action and Limit Levels. Dust suppression measures were effective. Details of the investigation can be referred to the notifications of exceedances as enclosed in Appendix J.

4.2 Noise

The noise monitoring schedule of the reporting period is given in Appendix H. Results of measured noise level, in terms of Leq (30min), during the construction are shown in Table 4-2. All measurements including L10 and L90 are recorded to the nearest 0.1 dB(A) and presented in round numbers in this report. Detail results including weather conditions and graphical presentation are presented in Appendix I.

Station	Monitoring Date	Leq (30 min) dB(A)	Limit Levels dB(A)
	3-Dec-08	62	70
	9-Dec-08	64	65 ⁽¹⁾
NSR 1	15-Dec-08	64	65 ⁽¹⁾
	23-Dec-08	67	70
	29-Dec-08	65	
	3-Dec-08	60	
	9-Dec-08	62	
NSR 3	15-Dec-08	66	
	23-Dec-08	61	
	29-Dec-08	62	
	3-Dec-08	61	
	9-Dec-08	60	
NSR 6	15-Dec-08	61	
	23-Dec-08	61	
	29-Dec-08	62	75
	3-Dec-08	61	75
	9-Dec-08	62	
NSR 8	15-Dec-08	64	
	23-Dec-08	64	
	29-Dec-08	63	
	3-Dec-08	62	
	9-Dec-08	63	
NSR 9	15-Dec-08	62	
	23-Dec-08	63	
	29-Dec-08	65	

⁽¹⁾ Noise limit level at NSR 1 reduces from 70dB(A) to 65 dB(A) during examination period from 4 to 18 December 2008.

Table 4-2 Noise Monitoring Results

4.2.1 No exceedances of Action / Limit Level were recorded during the reporting month.



4.3 Water Quality Monitoring

4.3.1 The water quality monitoring schedule of the reporting period is given in Appendix H. In accordance with the monitoring results, four exceedances were identified. Summaries of exceedances for water quality monitoring are provided in Tables 4-3 to 4-5.

Parameter	Action Level Exceedance	Limit Level Exceedance
DO	Nil	Nil
Turbidity	Nil	Nil
SS	Two recorded on 5 and 8 December	One recorded on 19 December
Total	Two	One

Table 4-3 Summary of Exceedances for I-1

Parameter	Action Level Exceedance	Limit Level Exceedance
DO	Nil	Nil
Turbidity	Nil	Nil
SS	Nil	Nil
Total	Nil	Nil

Table 4-4 Summary of Exceedances for I-2

Parameter	Action Level Exceedance	Limit Level Exceedance
DO	Nil	Nil
Turbidity	Nil	Nil
SS	One recorded on 29 December	Nil
Total	One	Nil

Table 4-5 Summary of Exceedances for I-3

- 4.3.2 Results of measured water quality parameters during the reporting month are shown in Table 4-6 and detailed results including weather conditions and graphical presentations are enclosed in Appendix I.
- 4.3.3 The exceedance of Control Action Level of SS (120% higher than I-1-C) recorded at I-1 on 5 December was below both baseline Action and Limit Levels and was within the range of baseline SS concentration. Pipe piling and levelling of concrete platform were undertaken during the measurement and no direct disturbance was observed.



The exceedance considered to be contributed by natural variation and no action was therefore required.

- 4.3.4 The exceedance of Control Action Level of SS (120% higher than I-1-C) recorded at I-1 on 8 December was below both baseline Action and Limit Levels and was within the range of baseline SS concentration. Pipe piling and delivery of concrete block were undertaken during the measurement and no direct disturbance was observed. Thus, the exceedance is considered to be contributed by natural variation and no action should be required.
- 4.3.5 The exceedance of Limit Level of SS recorded at I-1 on 19 December was over Baseline Action and Limit Levels, but was below both 120% and 130% of the measured level at Control Station. No direct disturbance was observed contributed by project construction activities including site tidiness and drilling temporary pipe pile. There is no evidence to show the exceedance is project-related. Thus, no action is required. No exceedance was recorded in the consecutive monitoring on 22 December.
- 4.3.6 The exceedance of Action Level of SS recorded at I-3 on 29 December was over Baseline Action Level, but the measured SS level was well below both 120% and 130% of the measured level at Control Station. No direct disturbance was observed contributed by project construction activities including site tidiness during the day of sampling. There is no evidence to show the exceedance is project-related. Thus, no action is required.
- 4.3.7 Details of the above mentioned investigations could be referred to the notifications of exceedances as enclosed in Appendix J, which have been provided to the IEC for review.



Station	Date	Temperature	DO (mg/L)	Action/Limit Level for DO (mg/L)	рН	Turbidity (NTU)	Action/Limit Level for Turbidity (NTU)	SS (mg/L)	Action/Limit Level for SS (mg/L)
l-1	1-Dec-08	17.60	4.79	3.42 / 3.34	7.59	3.37	9.75 / 12.47	2.0	8.85 / 10.17
	3-Dec-08	17.70	4.65		8.22	5.34		8.5	
	5-Dec-08	18.20	4.91		7.29	4.88		6.9	
	8-Dec-08	17.20	4.81		7.78	3.34		4.8	
	10-Dec-08	17.20	4.47		7.73	5.23		5.4	
	12-Dec-08	17.40	4.73		7.73	4.30		3.7	
	15-Dec-08	17.60	4.88		8.00	4.26		2.0	
	17-Dec-08	19.05	4.74		8.00	4.14		3.8	
	19-Dec-08	18.30	4.79		8.11	5.13		11.1	
	22-Dec-08	17.30	4.72		8.45	4.15		2.0	
	24-Dec-08	17.30	5.33		7.73	3.54		2.0	
	27-Dec-08	16.50	4.63		7.77	5.20]	2.9	
	29-Dec-08	20.50	4.91		7.56	6.35]	7.5	
	31-Dec-08	18.5	4.69		7.70	4.39]	2.0	



Station	Date	Temperature	DO (mg/L)	Action/Limit Level for DO (mg/L)	рН	Turbidity (NTU)	Action/Limit Level for Turbidity (NTU)	SS (mg/L)	Action/Limit Level for SS (mg/L)
I-1-C	1-Dec-08	17.60	4.82	-/-	8.37	3.43	-/-	2.0	-/-
	3-Dec-08	17.40	4.43		8.21	5.56		7.8	
	5-Dec-08	18.05	4.86		7.62	5.05		5.7	
	8-Dec-08	17.40	4.98		7.78	3.46		3.9	
	10-Dec-08	17.20	4.83		7.76	5.35		4.9	
	12-Dec-08	17.20	4.67		7.73	4.67		4.1	
	15-Dec-08	17.40	4.92		8.01	4.37		2.0	
	17-Dec-08	18.70	4.51		8.15	4.15		4.3	
	19-Dec-08	18.40	4.75		8.06	5.22		11.0	
	22-Dec-08	17.40	4.77		8.32	4.39		2.0	
	24-Dec-08	17.30	5.12		7.77	5.12		2.0	
	27-Dec-08	16.70	4.64		7.83	5.23		3.0	
	29-Dec-08	20.70	4.91		7.77	6.45		7.7	
	31-Dec-08	18.20	4.61		7.71	4.48		2.0	



Station	Date	Temperature	DO (mg/L)	Action/Limit Level for DO (mg/L)	рН	Turbidity (NTU)	Action/Limit Level for Turbidity (NTU)	SS (mg/L)	Action/Limit Level for SS (mg/L)
I-2	1-Dec-08	17.60	4.86	3.66 / 3.63	7.66	3.50	6.63 / 6.99	2.0	7.68 / 8.34
	3-Dec-08	16.20	4.64		8.42	3.49		2.0	
	5-Dec-08	18.00	4.62		7.72	4.74		2.0	
	8-Dec-08	17.50	4.74		7.74	3.21		2.0	
	10-Dec-08	17.80	4.58		8.13	3.32		2.0	
	12-Dec-08	17.50	4.72		7.61	4.26		2.0	
	15-Dec-08	17.50	4.80		8.12	4.22		2.0	
	17-Dec-08	19.70	4.58		7.56	4.24		2.0	
	19-Dec-08	17.50	4.47		7.66	3.19		2.0	
	22-Dec-08	17.80	4.63		7.58	3.75		2.0	
	24-Dec-08	17.00	4.85		7.51	4.28]	2.0	
	27-Dec-08	16.30	4.85		7.98	4.32		2.3	
	29-Dec-08	21.30	3.67		7.80	4.21		6.4	
	31-Dec-08	18.10	4.79		7.73	4.31		2.0	



Station	Date	Temperature	DO (mg/L)	Action/Limit Level for DO (mg/L)	рН	Turbidity (NTU)	Action/Limit Level for Turbidity (NTU)	SS (mg/L)	Action/Limit Level for SS (mg/L)
I-2-C	1-Dec-08	17.70	4.77	- / -	7.64	3.59	-/-	2.0	-/-
	3-Dec-08	16.30	4.76		8.32	3.54		2.0	
	5-Dec-08	18.20	4.68		7.71	4.85		2.0	
	8-Dec-08	17.50	4.85		7.77	3.34		2.0	
	10-Dec-08	17.80	4.81		8.14	3.40		2.0	
	12-Dec-08	17.50	4.73		7.63	4.35		2.0	
	15-Dec-08	17.80	4.75		8.05	4.43		2.0	
	17-Dec-08	19.20	4.45		7.62	4.39		2.0	
	19-Dec-08	17.25	4.43		7.64	3.22		2.0	
	22-Dec-08	17.60	4.52		7.61	4.02		2.0	
	24-Dec-08	17.10	4.67		7.53	4.34		2.0]
	27-Dec-08	16.50	5.05		7.99	4.39		2.7	
	29-Dec-08	21.10	4.02		7.83	4.38		6.2	
	31-Dec-08	18.00	4.74		7.69	4.37		2.0	



Station	Date	Temperature	DO (mg/L)	Action/Limit Level for DO (mg/L)	рН	Turbidity (NTU)	Action/Limit Level for Turbidity (NTU)	SS (mg/L)	Action/Limit Level for SS (mg/L)
I-3	1-Dec-08	17.60	4.96	3.65 / 3.51	7.67	3.23	3.99 / 4.18	2.0	6.13 / 7.23
	3-Dec-08	17.70	5.16		8.43	3.49]	2.0	
	5-Dec-08	18.70	5.91		7.82	3.22		2.0	
	8-Dec-08	17.40	4.96		7.77	3.39]	2.0	
	10-Dec-08	17.70	4.50		7.75	3.19]	2.0	
	12-Dec-08	17.50	4.76		7.20	3.22		2.0	
	15-Dec-08	17.30	5.05		8.12	3.54		2.0	
	17-Dec-08	18.60	5.01		8.33	3.19		2.0	
	19-Dec-08	17.25	4.72		8.12	3.19		2.0	
	22-Dec-08	16.90	4.39		7.64	3.76		2.0	
	24-Dec-08	17.95	4.99		8.73	3.44		2.0	
	27-Dec-08	14.40	4.52		7.60	3.47		2.2	
	29-Dec-08	20.20	4.59		7.73	3.20		6.6	
	31-Dec-08	18.50	4.99		7.44	3.43]	2.0	



Station	Date	Temperature	DO (mg/L)	Action/Limit Level for DO (mg/L)	рН	Turbidity (NTU)	Action/Limit Level for Turbidity (NTU)	SS (mg/L)	Action/Limit Level for SS (mg/L)
I-3-C	1-Dec-08	17.60	4.91	-/-	7.62	3.25	-/-	2.0	-/-
	3-Dec-08	17.50	4.52		8.32	3.56]	2.0	
	5-Dec-08	18.80	4.77		7.77	3.40]	2.0	
	8-Dec-08	17.40	4.79		7.72	3.43]	2.0	
	10-Dec-08	17.70	4.86		7.76	3.12		2.0	
	12-Dec-08	17.80	4.80		7.25	3.42		2.0	
	15-Dec-08	17.50	5.18		8.11	3.21		2.0	
	17-Dec-08	18.50	4.62		8.35	3.25		2.0	
	19-Dec-08	17.50	4.81		8.00	3.24		2.0	
	22-Dec-08	17.00	4.38		7.61	3.64		2.0	
	24-Dec-08	17.80	4.91		8.71	3.48		2.0	
	27-Dec-08	14.50	4.38		7.62	3.52		2.0	
	29-Dec-08	20.40	4.54		7.60	3.25		7.2	
	31-Dec-08	18.70	4.81		7.44	3.53		2.0	

Note: *Italic* indicates the occurrence of exceedance of *Action level*.

Bold indicates the occurrence of exceedance of **Limit level**.

Table 4-6 Water Quality Monitoring Results



4.4 Summary of Project-Related Exceedances

4.4.1 Table 4-7 summarises the project-related exceedance results recorded in December 2008. Note that exceedances that are considered not related to the construction activities are not included in this table.

Environmental Monitoring	Total No. of Measurement	Action Level Exceedance	% of Action Level Exceedance	Limit Level Exceedance	% of Limit Level Exceedance
Air Quality	72	0	0	0	0
Noise	25	0	0	0	0
Water	72	0	0	0	0

Note: Exceedances that are considered not related to the construction activities are not included in this table.

Table 4-7 Summary of Project-Related Exceedances

5 WASTE MANAGEMENT

5.1.1 The status of waste management is summarized in Table 5-1 below.

Status of waste management	Quantity
Inert C&D Material Disposed of to Public Fill at Tuen Mun (m³)	144.1
Inert C&D Material Reused in other Contracts (m³)	10
Metals Generated (kg)	5
Paper / Cardboard Packaging (kg)	150
Plastics (kg)	Nil
Chemical Waste (kg)	Nil
General Waste Disposed of to NENT Landfill (m ³)	6.2

Table 5-1 Waste Generated in December 2008

6 NON-COMPLIANCE AND DEFICIENCY

6.1 Site Audit by ET

6.1.1 ET has carried out two site inspections in the reporting month. All observations together with the appropriate recommended mitigation measures where necessary were recorded in the audit checklists that were passed to the Contractor. Major environmental deficiencies observed during site inspection/audits and recommendation, which were made by the ET, are summarised in Table 6-1 below. No non-compliance was observed.



Inspection Date	Observation	Recommendation	Status	
5 December	At Intake I-3, tarpaulin that used for the grouting plant was not properly placed.	The Contractor was requested to maintain the tarpaulin properly.	During site inspection on 19 December, tarpaulin was maintained properly. (Closed)	
2008	At Intake 2, insufficient site cleaning and tidying were observed.	The Contractor was requested to maintain the site cleaning and tidying.	Proper site cleaning and tidying was observed on 19 December. (Closed)	
19 December 2008	A pile of exposed debris was observed at the Intake I-3.	The Contractor was requested to either dispose debris off regularly or cover it with tarpaulin.	The outstanding observation would be followed up in next month site inspection. (Outstanding)	

Table 6-1 Site Inspection by ET

7 COMPLAINT

- 7.1.1 A complaint hotline at <u>9850 3241</u> of the Contractor has been established for the Project.
- 7.1.2 No complaints were received during the reporting month. Cumulative statistics of environmental complaints are shown in Table 7-1.

Complaints Received in the Reporting Month	Cumulative Number of Complaints		
0	0		

Table 7-1 Cumulative Statistic of Environmental Complaint

8 SUMMARY OF NOTIFICATION OF SUMMONS, SUCCESSFUL PROSECUTIONS AND CORRECTIVE ACTIONS

- 8.1.1 No summons and successful prosecution was received during the reporting month.
- 8.1.2 Cumulative statistics of Notification of Summons, Successful Prosecutions and Convictions are shown in Table 8-1.

Notificatio	n of Summons	Successful Prosecution			
December 08 Cumulative		December 08	Cumulative		
0	0	0	0		

Table 8-1 Cumulative Statistics of Notification of Summons and Successful Prosecutions



9 FUTURE KEY ISSUE

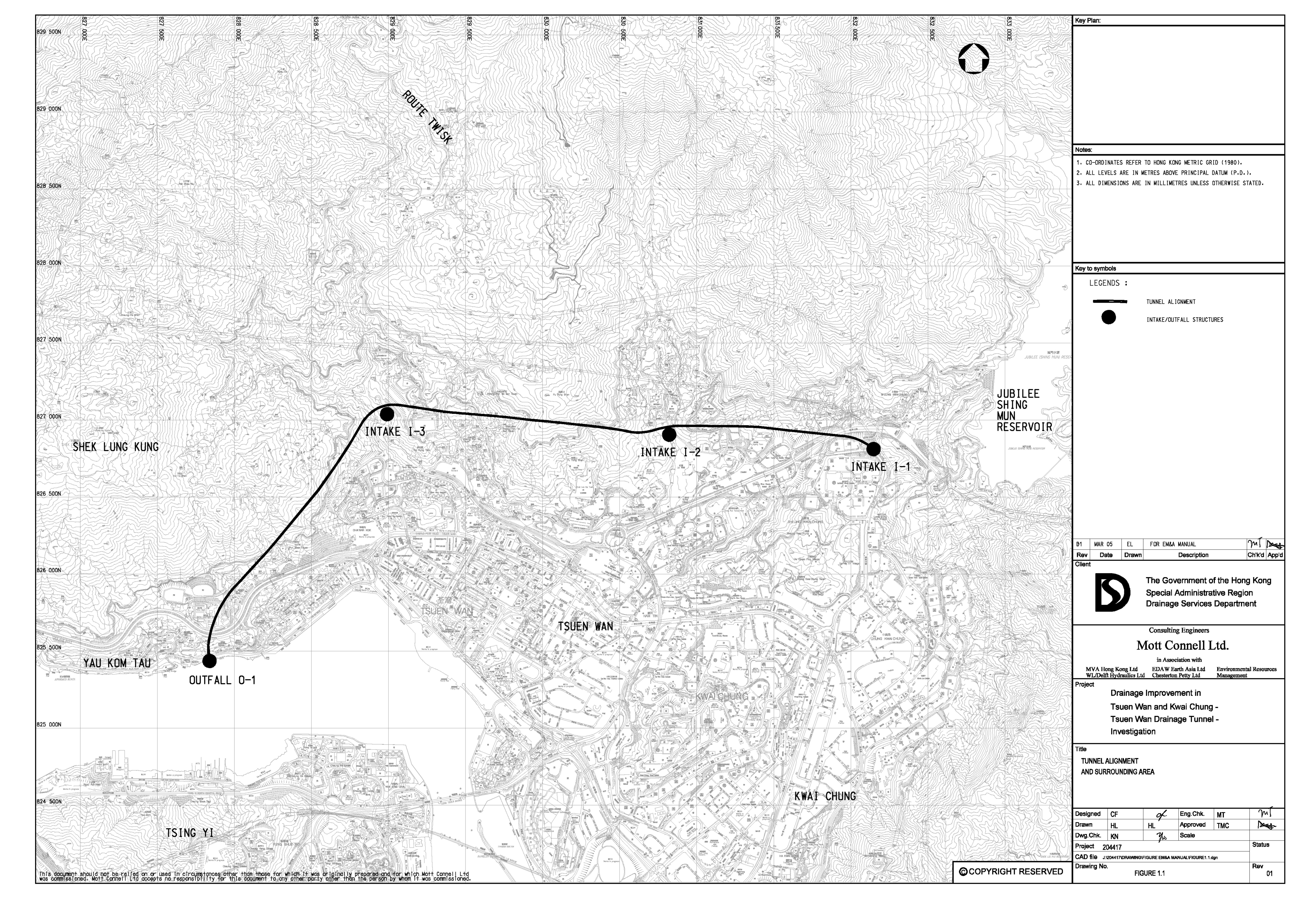
- 9.1.1 The forecast of construction works for the upcoming three months are:
 - Site clearance at I-1, I-2, I-3 and Outfall;
 - Hoarding & fencing erection at I-3 and Outfall;
 - Tree transplanting at I-1, I-3 and Outfall;
 - Slope stabilization at Outfall;
 - Soil nailing at I-3 and Outfall;
 - Pipe pile at I-1;
 - Relocation of verified boulder at Outfall;
 - Formation of access road at Outfall;
 - Pre-bore H-piling at I-3;
 - RCD at I-2.



Appendix A

Site Map and Works Area

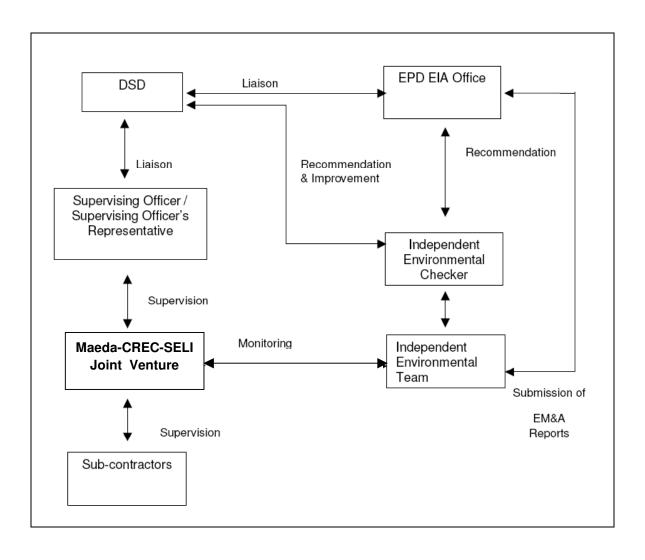
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Appendix B

Organization Chart





Appendix C

Construction Programme

Preliminaries	Start, Finish (D. Front Da	FM AMBOLA (SOUND STEM AN AN ASSOCIATION DATE MANAGEMENT OF THE MAIN OF THE MAI
01R0000002 Tender Issue Date 0 01R0000004 Tender Closing Date 0 01R0000006 Letter of Acceptance Issued Date 0 01R0000008 Contract Commencement Date 0	0	
Completion of Section 1 of the Works Completion of Section 2 of the Works Completion of Section 3 of the Works	27JUL11* 2 0 714 27JUL11* 2 0 27JUL11* 2 0	days after LOA 1308 days from DOC including DOC◆ 1308 days from DOC including DOC◆ 1308 days from DOC including DOC◆
01R0000016 Completion of Section 4 of the Works 0 01R0000018 Completion of Section 5 of the Works 0 01R0000020 Completion of Section 6 of the Works 0 01R0000022 Completion of Section 7 of the Works 0	0 0 0 0	including including including
<u> </u>	26MAR08 2 0	n.
	26MAR08 2 0 26MAR08 2 0 26MAR08 2 11 26MAR08 2 0 28DEC07 2 0	
01R00E0102 Possession of Portion E - 650d of DOC 0 01R00E0102 Possession of Portion E - 650d of DOC 0 01R00E0104 Handover of Portion E 0 01R00F0102 Possession of Portion F on DOC 0 01R00F0104 Handover of Portion G 0 01R00G0104 Handover of Portion G 0	4 4 61 70	
01R0010102 Possession of Portion I on DOC 0 01R0010104 Handover of Portion I 0 01R00J0102 Possession of Portion J 0 01R00J0104 Handover of Portion J 0 01R00H10102 Possession of Portion H1 on DOC 0	2 2 2 2 2	The exact date to be agreed with WSD WSD Tunnel ShutdownER 4.2.10 (6) allows 50 days from the date of
Start Date 24SEP12 Finish Date 24SEP12 Data Date 14DEC07 Recommended Bar 14DEC	TWD1 Maeda-CREC-SELI JV CONTRACT NO. DC/2007/12 Design and Construction of Tsuen Wan Drainage Tunnel Draft Works Programme	Sheet 1 of 42 Sheet 1 of 42 13FE038 Revision 1 Revision Checked Approved not

	2 0	24SEP12	26AUG12	30	Demolish & removal of Contractor's main office	01R0001408
	- 0	2541612	154 PRO8	4 504	Maintain & Service the Contractor's office	01 10001404
. 3		├	28DEC07	30		01R0001402
		1				
	2 0	24SEP12	26AUG12	30	Demolish & removal of Principle Office	01R0000320
	2 0		1	1,673	- 1	01R0000319
	2 0	25A		1,688	!	01R0000318
	2 0	25AI		1,585	1	01R0000316
	2 0	25AUG12	<u> </u>	1,594	. Į	01R0000314
Eswithin 1 month of DOC	2 0			30	Provide survey equipments as per App. ER,M	01R0000311
ER 12.4; 3 nos. vehicles within 14 days of DOC2 nos. vehicles after 3 months of DOC	2 0	26MAR08	28DEC07	06	Provide transport for the SO as per App. ER,M	01R0000310
Extension more than 2 months after the instruction	2 0	16MAY08	14MAR08	94	Provide secondary offices, directed by SO	01 R00000308
Fermily the satisfaction of the SO	1	14APR08	28JAN08	8	Erect SO's principle office in Portion H1/H2	01R0000306
<u>.</u>	1	11MAR08	28JAN08	35	5 Erect Hoarding/Signboard/Gate/Fencing	01R0000305
To the satisfaction of SOsubmit detailed proposal within 3 weeks of LOA	2	26JAN08	28DEC07	8	Design the SO's principle office	01R0000304
to the satisfaction of the SO ER 12.3.1 refers	2 1	03JAN08	28DEC07	7	Provide temporary accommodation	01R0000302
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	, 2 , 0	25AUG12	27JUL12	30	3 S7-Maintenance Period (30 days)	01R7000228
Variable of the second	2 0	: 26JUL12	,673 28DEC07	1,673	S7-Ladscape softworks & establishment works	01R7000226
Command control of the control of th	2 0	25JUL12	27JUL11	365	4 S6-Maintenance Period (365 days)	01R60G0224
Control of the Contro	2 0	26JUL11	26NOV09	909	2 S6-Works within Portion G	01R60G0222
Comparation of the Comparation o	2 0	26JUL12	28JUL11	365	0 S5-Maintenance Period (365 days)	01R50D0220
	2	27JUL11	1,308 28DEC07	1,308	8 S5-Slope Stabilization works within Portion D	01R50D0218
The control of the co		25JUL12		365	6 S4-Maintenance Period (365 days)	01R40C0216
	2 0	26JUL11	26MAR08	1,218	4 S4-Slope Stabilization works within Portion C	01R40C0214
The Control of the Co	ļ	25.		365	2 S3-Maintenance Period (365 days)	01R30B0212
	2 0	26JUL11	26MAR08	1,218	0 S3-Stope Stabilization works within Portion B	01R30B0210
	2	25	27JUL11	365		01R20A0208
	<u> </u> 	26	1,218 26MAR08	1,218	6 S2-Slope Stabilization works within Portion A	01R20A0206
	ļ	26JUL12	28JUL11	365	4 S1-Maintenance Period (365 days)	01R1000204
	2 0	27JUL11	28DEC07	1,308	S1-Works in Portions A to F except works in S2-7	01R1000202
	2 0	24SEP12		0	4 Handover of Portion H2	01R0H20104
	2 0		22OCT08	0		0130H20102
A CHARLES OF THE STATE OF THE S	2	24SEP12		0	Handover of Portion H1	01R0H10104
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Safety Plan as par 500 thin		Commence of the Commence of th
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	14 14DEC07 27DEC07 2	
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17/H0000602 Fulfill all relevant safety obligation	1,703 28DEC07 25AUG12 2 0 Company of the company of	
101 HOUDO/04 SUbmit documents for all insurances are effected	3d 21 14DEC07 03JAN08 2 0 Pas per SCC9 SCC10 8 SCC45	
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T	14 28DEC07 10JAN08 2 0 as per SCC 74 withfin 14 days of DOC	
	28 14DEC07 10JAN08 2	
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01R0000808 Maintain & update Quality System	0	dy themselves to describe
EnViloument		
01R0000902 Nominate Environmental Officer	14 14PEC07 97PEC07 0 PEC B 1 CL	
	140EC07 03 IANDS 2	
01R0000904 Submit draft EMP	14DEC07 03.IAN08 2 0	
01R0000906 Revise draft EMP within 7 days of SO's notice	04JAN08 17JAN08 2	
01R0000908 Submit final version of EMP	14DEC07 27JAN08 2 0 Mas ne	
01R0000910 Review/update/submit EMP monthly	2 28JAN08 26JUL12 2 0	
	03JAN08 2	Owner control or and a second
01R0000914 Submit Baseline Monitoring Plan	28DEC07 17JAN08 2 0	•
01R0000915 Seek for EPD's Agreement on WQML & schedule	21 18JAN08 07FEB08 2 0 F	
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	20 27FEB08 17MAR08 2 0 Efer approval of the SO	: 1
- 1	1,592 18MAR08 26JUL12 2 0	
17R0000902 Fulfill all relevant environmental obligation	1,673 28DEC07 26JUL12 2 0	

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	7 14DEC07 20DEC07 2 0 as per SCC83; within 7 days of LOAlternet Interface Utility Management System	•
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01R0001014 Process XP Application by HYD & others	20FEB08 2	
01R0001016 Issue of XP	20FEB08 2 22 ◆	
Preconstruction Sondition Survey		
018000102 Amoint a Analiting Standard Emission	COLUMN TO THE PROPERTY OF THE	
	28DEC07 26JAN08 2 4	
į.	28DEC07 26JAN08 2	
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01R0001108 Prepare/submit reports for pre-construction C.S.	72 05FEB08 07MAY08 1	
TRATIL		
01R0001202 Appoint Traffic Consultant/Traffic Engineer	14 14DEC07 27DEC07 2 7 8	
01R0001204 Eng's Approval of Traffic Consultant	03JA	
01R0001206 Prepare/submit TTA Schemes (ingress & egress)	14 04JAN08 17JAN08	
ļ.,,	21	
01R0001234 Approval of TTA schemes by the Authorities	28 08FEB08 06MAR08 2 7 EHVD & Police ER.B(1.15(9) refers	
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Of BOOM 304 Submit Outback the Industrate SMB		
100	72AU	S Jedanson
1 (30)		
01R0001502 Appoint Landscape Specialist Contractor	14 14DEC07 27DEC07 2 83	
01R0001504 SO's Approval of Landscape Contractor	7 28DEC07 03JAN08 2 83	
01R0001506 Nominate competent person to oversee tree works	45 14DEC07 27JAN08 2 59 THER 26.02A; within 45 dyas of LOA	•
ļ	90 28DEC07 26MAR08 2 0	
01R0001512 Remove / Transplant Trees start	2 0 DER 1.5.3(2) within 3 months from DOC	
A CANAGE		
01R0001602 Appoint Surveyors	14 28DECO7 101ANOR 2 177 2	
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7	100/19/00 CZT CDUO 11 11 4 4 4 4 ERSPENDENCE CONTROL OF	•
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01R0002402 Propose the design of web page	30 28DEC07	7 26JAN08 2 0	Ewithin 1 month from DOC
01R0002404 Produce the web page for approval of SO	30 27JAN08	1 25FEB08 2 0	within 2 months from DOC
	30 26FEB08	3 26MAR08 2 0	
01R0002408 Submit updated web pages monthly	1,613 27MAR08	3 25AUG12 2 0	
รางเรื่องและเป็นสะเจกเลยเก็กสะเก็บการสามารถให้			
01R0002501 1R 1; On provision of SO's Accommodation	0	14APR08 2 1.624	• accommodation for accupation as per App FR M
01-70002502 1R 2; On providing documents of effected CWI	0		♦ care
Ī 7	0	03JAN08 2 1,726	_ <u>`</u>
	0	03JAN08 2 1,726	_
Ţ	0	26MAR08 : 2 1,643	eland transpoert delivered for use of the SO
	О	14APR08 2 1,624	Computer facilities for use of the SO
- 1	0	25SEP09 2 1,095	Adetailed CRA incl. pre-cqndition survey
- 1	0	12MAR08 2 11,657	◆physical model completed as per ER 4.4.8
01R0002509 ;1R 9; On acceptance of 3-D Animation Model	0	12MAR08 2 1,657	◆3.D animation model completed as per ER 4.4.9
01R0002510 1R 10; On satisf. operation of CCTV for 3 mth	0	31JUL08 2 1,516	◆for 3 mit is of the remote CCTV intalled in Portions A B C & D as per ER 4.4 10.
01R0002511 1R 11; On acceptance of O&MM	0	300CT11 2 330	O&MM completed as per ER 4.4.11◆
	0	250CT11 2 335	built drwgs. completed as per ER 4.4.12
	0	26AUG11 2 395	tunnel report & vedeo & brother submitted as per ER 4.4.13
	0	27MAR08 2 1,582	of all obligations by this C.S. 3-mths from DOC
İ	0		of all obligations by this CS 6 riths from DOC
Ť	0	25SEP08 2 1,400	◆of all obligations by this CS 9 mths from DOC
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- " 	0	26DEC10 2 578	of all obligations by this CS 36 mths frm DQC
	0	27MAR11 2 487	of all obligations by this CS 39 mths frm DOC♣
	0	26JUN11 2 396	of all obligations by this CS 42 mths frm DOC.
1	0	25SEP11 2 305	of all obligations by this CS 45 mths frm DOC.
	0	13AUG11 2 408	of completion except Section 7.◆
	0	26OCT11 2 334	of all obligations 3 mths frm DOM excl. Sec. 7.
	0	25JAN12 2 243	of all obligations 6 mths frm DOM excl. Sec. 7
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	14 17JAN08 30JAN08 2 2 8
02L1DD0104 Design certification by the Design Checker	14 01FEB08 14FEB08 2 1 8
02L1DD0106 Design submission for the SO's approval	1 15FEB08 15FEB08 1
02L1DD0108 Design review by the SO	28 16FEB08 14MAR08 2 2 E
02L1DD0110 Obtain design approval from the SO	0 14MARO8 2 2 +
Boulder Assessment & Design for Stabili. Measure	
02L1DD0302 Design preparation for the AIP submission	15 31JAN08 14FEB08 2 3 B
02L1DD0304 Design (AIP) certification by the Design Checker	14 15FEB08 28FEB08 2 19 %
02L:1DD0306 Design (AIP) submission for the SO's approval	1 29FEB08 1 16
02L1DD0308 Design (AIP) review by the SO	14 01MAR08 14MAR08 2 19 E
02L1DD0310 Obtain design (AIP) approval from the SO	0 14WAR08 2 19
02L1DD0312 AIP submission for rel. authorities' approval	1 15MAR08 15MAR08 1 13
02L1DD0314 Design (AIP) review by the rel. authorities	28 16MAR08 12APR08 2 20 🖾
02L1DD0316 Obtain ref. authorities's approval for AIP	1 14APR08 14APR08 1 16
02L1DD0318 Obtain SO's consent for design (AIP)	
02L1DD0320 Design preparation for the DDA submission	30 24MAR08 22APR08 2 20 INT.
02L1DD0322 Design (DDA) certification by the Design Checker	2
02L1DD0324 Design (DDA) submission for the SO's approval	
02L1DD0326 Design (DDA) review by the SO	14 08MAY08 21MAY08 2 20
1	. 21MAY08 2
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02L1DD0336 Obtain SO's consent for design (DDA)	0 21JUN08 2 20
Site Formation Design; +69mPD to +40mPD	
02L1DD0402 Design preparation for the AIP submission	14 17JAN08 30JAN08 2 2 F
02L1DD0404 Design (AIP) certification by the Design Checker	14 27JAN08 09FEB08 2 2 PM
02L1DD0406 Design (AIP) submission for the SO's approval	1 11FEB08 1 1
02L1DD0408 Design (AIP) review by the SO	14 12FEB08 25FEB08 2 1
02L1DD0410 Obtain design (AIP) approval from the SO	0 25FEB08 2 1
02L1DD0412 AIP submission for rel. authorities' approval	1 26FEB08 26FEB08 1 1 1
02L1DD0414 Design (AIP) review by the rel. authorities	12 27FEB08 09MAR08 2 1 H
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02L1DD0424 Design (DDA) submission for the SO's approval	1 26MAR08 26MAR08 1 1
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102L1DD0428 Obtain design (DDA) approval from the SO	0 09APR08 2 1

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02L1DD0436 Obtain SO's consent for design (DDA)	0	24APR08 2	-	The second secon
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02L1DD0506 Design (AIP) submission for the SO's approval	-	14MAR08 14MAR08 1	2	
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02L1DD0512 AIP submission for rel. authorities' approval	-	29MAR08 29MAR08 1	Ŋ	
02L1DD0514 Design (AIP) review by the rel. authorities	24	30MAR08 19APR08 2	ļ	11:
	-	21APR08 21APR08 1	2	
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02L1DD0520 Design preparation for the DDA submission	44	16APR08 29APR08 2	CI	136
02L1DD0522 Design (DDA) certification by the Design Checker	14	30APR08 13MAY08 2	2	
02L1DD0524 Design (DDA) submission for the SO's approval	-	14MAY08 14MAY08 1	2	
02L1DD0526 Design (DDA) review by the SO	14	15MAY08 28MAY08 2	2	
02L1DD0528 Obtain design (DDA) approval from the SO	0	28MAY08 2	Ŋ	•
02L1DD0530 DDA submission for rel. authorities' approval	T-	29MAY08 29MAY08 1	CO1	
02L1DD0532 Design (DDA) review by the rel. authorities	21	30MAY08 19JUN08 2	ო	
02L1DD0534 Obtain rel. authorities's approval for DDA	-	20JUN08 20JUN08 1	Ŋ	
02L1DD0536 Obtain SO's consent for design (DDA)	0	21JUN08 2	(m	•
Site Formation Design; +24mPD to 14mPD		**************************************		
02L1DD0602 Design preparation for the AIP submission	14	29FEB08 13MAR08 2	52	
	14	14MAR08 27MAR08 2	52	225
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02L1DD0616 Obtain rel. authorities's approval for AIP		13MAY08 : 13MAY08 1	20	
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02L1DD0620 Design preparation for the DDA submission	14	08MAY08 21MAY08 2	ន	153
02L1DD0622 Design (DDA) certification by the Design Checker	14	22MAY08 : 04JUN08 2	ន	652
02L1DD0624 Design (DDA) submission for the SO's approval	-	05JUN08 05JUN08 1	<u>6</u>	
02L1DD0626 Design (DDA) review by the SO	4	06JUN08 19JUN08 2	24	
02L1DD0628 Obtain design (DDA) approval from the SO	0	19JUN08 2	24	
02L1DD0630 DDA submission for ref. authorities' approval	-	20JUN08 20JUN08 1	19	
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TBM Launching Chamber Design		849505152533455585758598061626364658
02L1DD0702 Design preparation for the AIP submission	15 14MAR08 28MAR08 2 36 B	P1 to ABOU
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02L1DD0716 Obtain ref. authorities's approval for AiP	1 13JUN08 13JUN08 1 29	
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02L1DD0736 Obtain SO's consent for design (DDA)	0 06SEP08 2 36	
Hopper Foundation Design		
02L1DD0802 Design preparation by the Designer	ļ	
3 1	15 12JUN08 26JUN08 2 77	
02L1DD0806 Design submission for the SO's approval	١.,	
02L1DD0808 Design review by the SO	30 28JUN08 27JUJ.08 2 77	
02L1DD0810 Obtain design approval from the SO	27JUL.08	
Steel Platform & Hopper Design		
- 1	30 12JUN08 11JUL08 2 47	
	26JUL08	
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	29JUL08 27AUG08 2	
02L1DD0910 Obtain design approval from the SO	0 :27AUG08 2 46	
Overhead Gantry Support & Noise Enclosure Design		
	30 28APR08 27MAY08 2 47	·
- 1	11JUN08 2	
1	1 12JUN08 1 50	
02L1DD1008 Design review by the SO	30 13JUN08 12JUL08 2 60 🖾	
	0 12JUL08 2 60	
02L1DD1012 Design submission for rel. authorities' approval	1 14JUL08 14JUL08 1 51	
	28 15JUL08 11AUG08 2 59 E	
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02L1DD1018 Obtain SO's consent for design	0 13AUG08 2 60	

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ELS Design for Spiral Ramp & Vehicular Access		10. 11. 41. 51. 14. 15. 15. 15. 15. 15. 15. 15. 15. 15. 15
02L1DD1102 Design preparation for the AIP submission	30 29MAR08 27APR08 2 47	
02L1DD1104 Design (AIP) certification by the Design Checker	21 28APH08 18MAY08 2 130	
02L1DD1106 Design (AIP) submission for the SO's approval	1 19MAY08 19MAY08 1 109	
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02L1DD1112 AIP submission for rel, authorities' approval	1 19JUL08 19JUL08 1 108	
02L1DD1114 Design (AIP) review by the rel. authorities	21 20JUL08 09AUG08 2 130	
02L1DD1116 Obtain rel. authorities's approval for AIP	1 11AUG08 11AUG08 1 108	
02L1DD1118 Obtain SO's consent for design (AIP)	0 12AUG08 2 129	•
02L1DD1120 Design preparation for the DDA submission	30 21JUL08 19AUG08 2 129	
02L1DD1122 Design (DDA) certification by the Design Checker	28 20AUG08 16SEP08 2 129	
02L1DD1124 Design (DDA) submission for the SO's approval	1 17SEP08 17SEP08 1 106	
02L1DD1126 Design (DDA) review by the SO	60 18SEP08 16NOV08 2 130	
02L1DD1128 Obtain design (DDA) approval from the SO	0 16NOV08 2 130	
02L1DD1130 DDA submission for rel. authorities' approval	17NOV08 17NOV08 1 106	
02L1DD1132 Design (DDA) review by the rel. authorities	28 18NOV08 15DEC08 2 130	
02L1DD1134 Obtain rel. authorities's approval for DDA	-	
02L1DD1136 Obtain SO's consent for design (DDA)	17DEC08 2	
ELS Design for Box Culvert & Open Channel		The state of the s
021.10D1202 Design preparation for the AIP submission	30 12JUL08 10AUG08 2 262	
02L1DD1204 Design (AIP) certification by the Design Checker	09SEP08 2	
02L1DD1206 Design (AIP) submission for the SO's approval	1 10SEP08 10SEP08 1 209	
02L1DD1208 Design (AIP) review by the SO	60 11SEP08 09NOV08 2 263	
02L1DD1210 Obtain design (AIP) approval from the SO	0 09NOV08 2 263	
02L1DD1212 AIP submission for rel. authorities' approval	1 10NOV08 10NOV08 1 212	
02L1DD1214 Design (AIP) review by the rel. authorities	28 11NOV08 08DEC08 2 263	
02L1DD1216 Obtain rel. authorities's approval for AIP	1 09DEC08 09DEC08 1 212	
02L1DD1218 Obtain SO's consent for design (AIP)	0 10DEC08 2 264	
02L1DD1220 Design preparation for the DDA submission	30 18NOV08 17DEC08 2 264	
02L1DD1222 Design (DDA) certification by the Design Checker	30 18DEC08 16JAN09 2 264	2
02L1DD1224 Design (DDA) submission for the SO's approval	1 17JAN09 17JAN09 1 213	
02L1DD1226 Design (DDA) review by the SO	. 60 18JAN09 18MAR09 2 264	
02L1DD1228 Obtain design (DDA) approval from the SO	0 18MAR09 2 264	
02L1DD1230 DDA submission for rel. authorities' approval	1 19MAR09 19MAR09 1 215	
02L1DD1232 Design (DDA) review by the rel. authorities	28 20MAR09 16APR09 2 264	£
02L1DD1234 Obtain rel. authorities's approval for DDA	1 17APR09 17APR09 1 216	
02L1DD1236 Obtain SO's consent for design (DDA)	0 18APR09 2 264	
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02L1FF0330 DDA submission for rel. authorities' approval	1 27AUG08 27AUG08 1 3	
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02L1FF0336 Obtain SO's consent for design (DDA)	0 26SEP08 2 5	
Impact Assessment on KCRC West Rail Tunnel		
02L1FF0402 Design preparation for the AIP submission	30 08APR08 07MAY08 2 190	
02L1FF0404 Design (AIP) certification by the Design Checker	AY08	
02L1FF0406 Design (AIP) submission for the SO's approval	1 23MAY08 23MAY08 1 158	
02L1FF0408 Design (AIP) review by the SO	60 24MAY08 22JUL08 2 191	
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02L1FF0414 Design (AIP) review by the rel. authorities	28 24JUL08 20AUG08 2 191	
02L1FF0416 Obtain rel. authorities's approval for AIP	21 AUG08	
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02L1FF0420 Design preparation for the DDA submission	30 31JUL08 29AUG08 2 192	
02L1FF0422 Design (DDA) certification by the Design Checker	15 30AUG08 13SEP08 2 192	5
02L1FF0424 Design (DDA) submission for the SO's approval	1 16SEP08 16SEP08 1 155	
102L1FF0426 Design (DDA) review by the SO	60 17SEP08 15NOV08 2 190	
102L1FF0428 Obtain design (DDA) approval from the SO	0 15NOV08 2 190	
02L1FF0430 DDA submission for rel. authorities' approval	1 17NOV08 17NOV08 1 150	
02L1FF0432 Design (DDA) review by the rel. authorities	28 18NOV08 15DEC08 2 189	
02L1FF0434 Obtain rel. authorities's approval for DDA	1 16DEC08 16DEC08 1 149	
02L1FF0436 Obtain SO's consent for design (DDA)	0 17DEC08 2 189	
Impact Assessment on WSD Tsuen Wan Reservoir G.		
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02L1FF0510 Obtain design (AIP) approval from the SO	0 22AUG08 2 250	
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02L1FF0514 Design (AIP) review by the rel. authorities	28 24AUG08 20SEP08 2 251	
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02L1FF0520 Design preparation for the DDA submission	30 i 01SEP08 30SEP08 2 251	

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02L1FF0526 Design (DDA) review by the SO	60 17OCT08 15DEC08 2 251	
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02L1AA0110 Obtain design approval from the SO	0 04APR08 2 29	
ELS Design for Spiral Ramp/Cascade/Box Culvert		
02L1AA0202 Design preparation for the AIP submission	15 22FEB08 07MAR08 2 22 8	
02L1AA0204 Design (AIP) certification by the Design Checker	15 08MAR08 222	
02L1AA0206 Design (AIP) submission for the SO's approval		
02L1AA0208 Design (AIP) review by the SO	21 26MAR08 15APR08 2 20 🕮	
02L1AA0210 Obtain design (AIP) approval from the SO	0 15APP08 2 20	
02L1AA0212 AIP submission for rel. authorities' approval	-	
02L1AA0214 Design (AIP) review by the rel. authorities	21 17APR08 07MAY08 2 20	
02L1AA0216 Obtain rel. authorities's approval for AIP	1 08MAY08 08MAY08 1 16	
02L1AA0218 Obtain SO's consent for design (AIP)	0 09MAY08 2 20	
02L1AA0220 Design preparation for the DDA submission	30 17APR08 16MAY08 2 20 1 🖾	
02L1AA0222 Design (DDA) certification by the Design Checker	15 17MAY08 31MAY08 2 20 H	
02L1AA0226 Design (DDA) submission for the SO's approval	1 02JUN08 02JUN08 1 16	
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02L1AA0238 Obtain SO's consent for design (DDA)	0 17JUL08 2 20 🔷	
Temp. Platform Design for H-Piling		
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02L1AA0306 Design submission for the SO's approval	1 25MAR08 25MAR08 1 1,312	
02L1AA0308 Design review by the SO	28 26MAR08 22APR08 2 1,616 部	
Cascade & Box Culver Design for Portion A		
021.1AA0402 Design preparation for the AIP submission	30 08MAR08 06APR08 2 627 图	

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02L1BB0736 Obtain SO's consent for design (DDA)	0	14JAN09 2	729		
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02L1BB0816 Obtain rel. authorities's approval for AIP	1 20OCT08	20OCT08 1	429		
02L1BB0818 Obtain SO's consent for design (AIP)	0	210CT08 2	531		
02L1BB0820 Design preparation for the DDA submission	30 29SEP08	-	531		
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02L1BB0828 Obtain design (DDA) approval from the SO	0	12JAN09 2	531	•	
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02L1BB0836 Obtain SO's consent for design (DDA)	0	12FEB09 2	531	•	
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i	1 06MAY08	06MAY08 1	41		
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02L1BB0912 AIP submission for rel. authorities' approval	1 28MAY08 28MAY08	ļ.,			
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02L18B0924 Design (DDA) submission for the SO's approval	1 21JUL08	21JUL08 1	42		

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02L1BB0936 Obtain SO's consent for design (DDA)	0 11SEP08 2 50	
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ELS Design for Intake Structure Construction		
02L1CC0102 Design preparation by the Designer	15 08FEB08 22FEB08 2 30 E	.
02L1CC0104 Design certification by the Design Checker	1	
02L1CC0106 Design submission for the SO's approval	10MAR08 : 10MAR08 1 21	
02L1CC0108 Design review by the SO	- -	
02L1CC0110 Obtain design approval from the SO	07APR08 2	-
Temp. Support Design for MAA/MAS/VDS/DC/AVS		
02L1CC0302 Design preparation for the AIP submission	30 09MAR08 07APR08 2 262	
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02L1CC0332 Design (DDA) review by the rel. authorities	28 03OCT08 30OCT08 2 263	
02L1CC0334 Obtain rel. authorities's approval for DDA	1 310CT08 310CT08 1 211	
02L1CC0336 Obtain SO's consent for design (DDA)	0 01NOV08 2 263	
Temp. Support Design for MA and MA/MT Connection		
	30 08MAY08 06JUN08 2 395 EM	
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02L1CC0406 Design (AIP) submission for the SO's approval	8 1	
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02L1CC0418 Obtain SO's consent for design (AIP)	0 093EP08 2 394 �	
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02L1CC0436 Obtain SO's consent for design (DDA)	0 02JAN09 2 394
	30 08APR08 07MAY08 2 285
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02L1CC0506 Design (AIP) submission for the SO's approval	1 23MAY08 23MAY08 1 233 I
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02L1CC0514 Design (AIP) review by the rel. authorities	15 24JUL08 07AUG08 2 285 R
02L1CC0516 Obtain rel. authorities's approval for AIP	1 08AUG08 08AUG08 1 229
02L1CC0518 Obtain SO's consent for design (AIP)	09AUG08
02L1CC0520 Design preparation for the DDA submission	30 18JUL08 16AUG08 2 285 8
02L1CC0522 Design (DDA) certification by the Design Checker	31AUG08
02L1CC0524 Design (DDA) submission for the SO's approval	1 01SEP08 01SEP08 1 229
02L1CC0526 Design (DDA) review by the SO	60 02SEP08 31OCT08 2 286
02L1CC0528 Obtain design (DDA) approval from the SO	31OCT08
02L1CC0530 DDA submission for rel. authorities' approval	1 01NOV08 01NOV08 1 231
021.1CC0532 Design (DDA) review by the rel. authorities	28 02NOV08 29NOV08 2 286 E
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02L1CC0536 Obtain SO's consent for design (DDA)	0 02DEC08 2 286
Permanent Design for MA and MA/MT Connection	
- 1	07JUN08
1	15 07JUL08 21JUL08 2 414 B
1	1 22JUL08 22JUL08 1 338
02L1CC0608 Design (AIP) review by the SO	60 23JUL08 20SEP08 2 414
	0 20SEP08 2 414
02L1CC0612 AIP submission for rel. authorities' approval	1 22SEP08 22SEP08 1 335
02L1CC0614 Design (AIP) review by the rel. authorities	15 23SEP08 07OCT08 2 413
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	28 11MAR09 07APR09 2 323	02L1GG0132 Design (DDA) review by the rel. authorities
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	1 15DEC08 15DEC08 1 260	02L1GG0116 Obtain rel. authorities's approval for AIP
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•	0 28NOV08 2 322	02L1GG0110 Obtain design (AIP) approval from the SO
	60 30SEP08 28NOV08 2 322	02L1GG0108 Design (AIP) review by the SO
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132	15 14SEP08 28SEP08 2 322	02L1GG0104 Design (AIP) certification by the Design Checker
4	30 15AUG08 13SEP08 2 322	02L1GG0102 Design preparation for the AIP submission
		Drainage Impact Assessment
		Designipatorages to Worls in Portion C
•	0 14AUG08 2 322	02L1CC0736 Obtain SO's consent for design (DDA)
	1 13AUG08 13AUG08 1 259	
	28 16JUL08 12AUG08 2 321	02L1CC0732 Design (DDA) review by the rel. authorities
	1 15JUL08 15JUL08 1 259	02L1CC0730 DDA submission for rel. authorities' approval
•	0 14JUL08 2 321	02L1CC0728 Obtain design (DDA) approval from the SO
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	1 16JUN08 16JUN08 1 259	02L1CC0724 Design (DDA) submission for the SO's approval
200	15 31MAY08 14JUN08 2 319	02L1CC0722 Design (DDA) certification by the Design Checker
	30 01MAY08 30MAY08 2 319	02L1CC0720 Design preparation for the DDA submission
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	28 26MAR08 22APR08 2 318	02L1CC0708 Design (AIP) review by the SO
	1 25MAR08 25MAR08 1 259	02L1CC0706 Design (AIP) submission for the SO's approval
622	15 09MAR08 23MAR08 2 319	02L1CC0704 Design (AIP) certification by the Design Checker
	15 23FEB08 08MAR08 2 262	02L1CC0702 Design preparation for the AIP submission
		Boulder Assessment & Design for Stabili. Measure
•	0 02FEB09 2 413	02L1CC0636 Obtain SO's consent for design (DDA)
	1 31JAN09 31JAN09 1 337	02L1CC0634 Obtain rel. authorities's approval for DDA
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	1 31JUL08 31JUL08 1 379	02L1FE0106 Design (AIP) submission for the SO's approval
22	15 16JUL08 30JUL08 2 466	02L1FE0104 Design (AIP) certification by the Design Checker
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		Design for Communication System
		Design Replace for Evil Works
•	0 07FEB09 2 631	02L1GG0328 Obtain design (DDA) approval from the SO
	28 11JAN09 07FEB09 2 631	02L1GG0326 Design (DDA) review by the SO
	1 10JAN09 10JAN09 1 510	021.1GG0324 Design (DDA) submission for the SO's approval
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	1 13NOV08 13NOV08 1 509	02L1GG0306 Design (AIP) submission for the SO's approval
	2	02L1GG0304 Design (AIP) certification by the Design Checker
	15 14OCT08 28OCT08 . 2 630	02L1GG0302 Design preparation for the AIP submission
		ELS Design for Pipe Jacking at Portion G
•	0 24JAN09 2 438	02L1GG0228 Obtain design (DDA) approval from the SO
	28 28DEC08 24JAN09 2 438	02L1GG0226 Design (DDA) review by the SO
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	30 14SEP08 13OCT08 2 439	02L1GG0202 Design preparation for the AIP submission
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		2 464	601		0	02L1FE0136 Obtain SO's consent for design (DDA)
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3AL1FT0618 Verify method statement	24APR09 26APR09 2	3233343536373839404.142434445
3AL1FT0620 Monitoring of geotechnical insturmentation	. 27APR09 10JUN09	CH4460-4250 MCConcurrent with TBM advances. WCh T2/DB
3AL1FT0622 Subsequent Inspection/ repair damages (if any)	2 11JUN09 12JUN09 2 0	
3AL1FT0624 WSD Tunnel starts operation	0 13JUN09 2 0	•
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3AL1FT0700 Carry out grouting trials from the surface at F1	30 26MAY08 30JUN08 1 109	WEER B27/27 73/5) Within & months of DOC for the decire of the commercial and the commercial at the co
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3AL1FT0714 TBM advances; P7 CH5033-5005	7 19JAN09 29JAN09 1 0	#Fault P7; CH5033-5005
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3AL1FT0719 TBM advances; WSDYKWTW/F6c CH5000-4963	9 02FEB09 11FEB09 1 0	CH5000-49538WSD Yau Kom Water Treatment Works & Fault F6c
	10 12FEB09 23FEB09 1 0	265
3AL1FT0722 Install noise enclosure	20 12FEB09 06MAR09 1 0	80
Waif Tunner Works, Bay & Night Work		
3AL1FT0802 Apply to EPD for CNP for 24 firs. tunnel work	14 23OCT08 05NOV08 2 76	
3AL1FT0804 EPD process/approve CNP application	2	
3AL1FT0806 TBM advances; WSD YKTWTW/F6c CH4963-4830	16 07WAR09 25WAR09 1 0	More-excavation grouting @20m/1.5dayexdayation/pea-grayel/lining @21m/day
3AL1FT0808 TBM advances; CH4830-4760	3 26MAR09 28MAR09 1 0	(@ 21m/day
3AL1FT0810 TBM advances; F6b CH4760-4740	3 30MAR09 01APR09 1 0	Ipre-excavation grouting @ 20m/1.5day
3AL1FT0812 TBM advances; CH4740-4555	9 02APR09 16APR09 1 0	
3AL1FT0814 :TBM advances; F6a CH4555-4510	6 17APR09 23APR09 1 0	Fault F6a; CH4555-4510pre-excavation grouting @ 20m/1.5day
3AL.1FT0816 TBM advances; CH4510-4460	2 24APR09 25APR09 1 0	i@ 21m/day
3AL1FT0818 TBM advances; WSD T3/P6 CH4460-4250	36 27APR09 10JUN09 1 0	Fault P6& WBD Tapre-excavation grouting @ 20m/1.5day
	4 11JUN09 · 15JUN09 1 8	Fault P6; CH4250-4220pre-excavation grouting @ 20m/1,5day
	18 16JUN09 : 07JUL09 1 8	配@ 21m/day
-	3 08JUL09 10JUL09 1 8	Fault P5; CH3840-3820pre-expandition grouting @ 20rd/1.5day
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3AL1FT0828 TBM advances; P4 CH3575-3525	6 25JUL09 31JUL09 1 8 dre-excavat	excavation grouting @ 20m/1.5daylFault P4.
3AL1FT0830 TBM advances; CH3525-3308	10 01AUG09 12AUG09 1 8	®@ 21m/day
	13 13AUG09 27AUG09 1 8	TBM advance (ate 10.5m/day≅TBM operates 0700 to 1900
	6 28AUG09 03SEP09 1 8	TBM advance rate 10.5m/day/TBM operates 0700 to 1900
- 1	pre-ex	cavation grouting @ 2dm/1.5day/Fault PB; CH3175-3125
	7 07SEP09 14SEP09 1 8	€@ 21rh/day
3AL1FT0840 TBM advances; WSD WS Reservior CH2970-2865	13 15SEP09 29SEP09 1 8 pre-exca	pre-excavation grouting @ 2bm/1.5day#

	To to the ord				
	09 2 1,080	100CT	0	oan 15, On completion of grouting wks at F5	
CH 2865-2970 Tsugn Wan West Service Reservior Group	2	29SEP09	0	6aR 14; On completion of grouting wks at WSD's	6AR1FT0928
	N	05SEP09	0	6aR 13; On completion of grouting wks at P3	- 1
•	09 2 1,151	31700	0	6aR 12; On completion of grouting wks at P4	7
•	87	10JUL09	0	6aR 11; On completion of grouting wks at P5	
•	2	15JUN09	0	6aR 10; On completion of grouting works at P6	6AR1FT0920
•	8	90NUC30	0	6aR 9; On completion of 80% grout by Ith at P6	6AR1FT0918
•	2	26MAY09	0	6aR 8; On completion of 60% grout by Ith at P6	6AR1FT0916
	2	16MAY09	0	6aR 7; On completion of 40% grout by Ith at P6	6AR1FT0914
•	09 2 1,236	07MAY09	0	6aR 6; On completion of 20% grout by Ith at P6	6AR1FT0912
•	ļ	10JUN09	0	6aR 5; On completion of grouting at WSD T. 3	6AR1FT0910
•	09 2 1,250	23APR09	0	6aR 4; On completion of grouting at F6a	6AR1FT0908
•	2	01APR09	0	6aR 3; On completion of grouting at F6b	6AR1FT0906
	2	25MAH09	0	6аR 2; On completion of grouting at F6c	- 1
	N09 2 1.334	29JAN	0	6aR 1; On completion of grouting at P7	. ,
	B11 2 577	OSFEB11 25FEE	24	SO issues completion certificate	3AL1FT0888
	-	28JA	0	Handover of Portion F	3AL1FT0886
	2 5	04FE	7	Contractor serve notice for Works completion	3AL1FT0884
	-	04DEC10 28JAN11	45	Authorities' inspection/remedial works; daytime	3AL1FT0882
	-		788	Testing & Commissioning; daytime	3AL1FT0880
	+-	0110	06	Installation of communication system (Daytime)	3AL1FT0878
rpoor comprehensive comprehensive comprehensive comprehensive γ supplier (γ supplier γ γ γ γ γ γ γ γ γ γ γ γ γ γ γ γ γ γ γ	-	24SE	98	Complete maintennce access & dry weather channel	3AL1FT0876
W. 740% 181 7001	-	22DEC08 20MAY10	414	Back grouting (daytime); CH5100-00	3AL1FT0874
	-	15MAY10 15JUI	£0\$	Desembly & demobilization of TBM	3AL1FT0873
Dre-excavation months (2) 20 m/4 Education	-	14M	37	TBM advances; F1 CH300-0	3AL1FT0872
74	-	15MAR10 26MA	=	TBM advances; CH530-300	3AL1FT0870
Ago, Zi Myoay	-	13MAR10 13MA	+	TBM advances; P1 CH540-530	3AL1FT0868
	-	12M	1	TBM advances; CH770-540	3AL1FT0866
Gre-excavation grainting @ 20m/1.5Hm.4		÷	6	TBM advances; P2 CH795-770	3AL1FT0864
ASSOCIATION OF BUILDING OF BUI	-	24F	2	TBM advances; CH1230-795	3AL1FT0862
pre-exception arouting a some interest			6	TBM advances; F2 CH1250-1230	3AL1FT0860
I plvv advance rate 10.5m/day=i BW operates 0700 to 1900	- 1 -		2	TBM advances; CH1295-1250	3AL1FT0858
Town Advanced of the Company of the		05JAN10 21JAN10	15	TBM advances; Noise sesitive area CH1449-1295	3AL1FT0856
Portocavation is usually and the control of the con		20NOV09 04.IAN10	36	TBM advances; CH2205-1449	3AL1FT0854
ma expension and the South of the Company	- -	·	9		3AL1FT0852
September 1 Allow 1 Al	- -	•	13	TBM advances; CH2535-2255	3AL1FT0850
Dre-excevation grounding @ 20m/4 Edwar	-	21OCT09 28OCT09	9		3AL1FT0848
	T09 1 8	12OCT09 20OCT09	8	-	3AL1FT0846
Dre-lexnavation months @ Dom (+ Education and provided an	-	08OCT09 10OCT09	က		3AL1FT0844
8.19.10.11.13.11.13.10.17.19.19.19.19.19.19.19.19.19.19.19.19.19.	-	0.20	5	TBM advances; CH286	3AL1FT0842
JEMINAMULY ASSONDO FEMANDATAS OF THE MAINTENANT PROPERTY ENDINGS OF THE PROPERTY OF THE PROPER	inty Car Total	ωá			
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nud Activity Describition	Early Stan	Early. Cal Finish ID	Total D	POWER TOWN TO THE PROPERTY OF	A WIN TAKE OF
6AR1FT0932 6aR 16; On completion of grouting wks at F4	2	T09	1,062		0.0000000000000000000000000000000000000
6AR1FT0934 6aR 17; On completion of grouting wks at F3	-	19NOV09 2	1,040		
6AR1FT0936 6aR 18; On completion of grouting wks at F2 0	2	27JAN10 2	97.1	•	
	N I	27FEB10 2	940	•	
	-	13MAR10 2	926		
1	e	31MAR10 2	908		
	0		668	•	
6aR 23; On completion of	-	14APR10 2	894		
6aR 24; On completion of			888	•	
6aR 25; On completion of	2	710	885	•	,
F	2	28APR10 2	880	•	
6AR1FT0954 6aR 27; On completion of 70% grout by Ith at F1	· · ·	04MAY10 2	874	•	
		10MAY10 2	898	•	
6AR1FT0958 6aR 29; On completion of 90% grout by Ith at F1 0	-	11MAY10 2	867	•	
6AR1FT0960 6aR 30; On completion of grouting works at F1 0	÷	14MAY10 2	864	•	
6AR1FT0970 6aR 31; On completion of all works under this CC 0	2	20MAY10 2	828	Sunder this Cast Centre	
Santedule on Wilestrones to receive services No. serv					
3AL1FT1002 3aL 1; On providing evidence of procuring TBM 0		19JAN08 2	1,710	•	
3AL1FT1004 3aL 2; On providing evidence of TBM Factory Test 0	0	P08	1,481	•	
3AL1FT1006 3aL 3; On delivery of all parts of TBM to the Si	ŏ	09NOV08 2	1,415		
3AL1FT1008 3aL 4; On completion of site comm. & test. of TB 0	ð	800	1,386	•	
3AL1FT1010 3aL 5; On completion of 5% perm. tunnel lining	Š	25MAR09 2	1,279		
3AL1FT1012 3aL 6; On completion of 10% perm. tunnel lining 0	ŏ	09APR09 2	1,264	•	
3AL1FT1014 3aL 7; On completion of 15% perm. tunnel lining 0	ίδ.	22MAY09 2	1,22.1	•	
3AL1FT1016 3aL 8; On completion of 20% perm. tunnel lining 0	8	22JUN09 2	1,190	•	
3AL1FT1018 3aL 9; On completion of 25% perm. tunnel lining 0	_	10JUL09 2	1,172	•	
3AL1FT1020 :3aL 10; On completion of 30% perm. tunnel lining	α.	24JUL09 2	1,158	•	
3AL1FT1022 3aL 11; On completion of 35% perm. tunnel lining 0	1(L	1,141	•	
3AL1FT1024 3aL 12; On completion of 40% perm, tunnel lining 0	ŏ	09SEP09 2	1,1,1	•	
3aL 13; On completion of 45% perm. tunnel lining	ö		1,087	•	
	č.		1,066	•	
3AL1FT1030 3aL 15; On completion of 55% perm. tunnel lining 0	0	09NOV09 2	1,050	•	
3AL1FT1032 3aL 16; On completion of 60% perm. tunnel lining	2	27NOV09 2	1,032	•	
3AL1FT1034 3aL 17; On completion of 65% perm. tunnel lining	ŏ	CJ	1,020	•	
3AL1FT1036 3aL 18; On completion of 70% perm. tunnel lining	. 27	21DEC09 2	1,008	•	
3AL1FT1038 3aL 19; On completion of 75% perm. tunnel lining	72	22JAN10 2	926	•	
- 1	ð		362	•	
- 1	5	01MAR10 2	938	•	-
- T	Φ,		924	•	** **********************************
	.0	07APR10 2	901	•	
3AL1FT1048 3aL 24; On completion of perm. tunnel lining	4	14MAY10 2	864	•	
		ō			

	10 110		
	03MAY08 27JUN12 1 24	1,230 03	SULTALTUS Monitorreport Geotechnical Instrumentation
	02MAY08 1	30 27	
	26MAR08 2 29	0	
	27MAR08 23JUN08 1 73	72 27	16R7Al1102 Tree transplanting; 4 nos.
	03MAY08 11JUL11 2 16	1,165 03	1
	27MAR08 02MAY08 1 12	30 27	01R1AI1122 Install remote control CCTV as per ER 4.4.10
<u> </u>	03MAY08 31MAY08 1 31	24	
	27MAR08 02MAY08 1 31	30 27	01R1Al1116 Site clearance
	27MAR08 02MAY08 1 31	30 27	
♦ 90d after DOC	26MAR08 1 12	0 26	
	07MAR08 2 59	0 07	
	26MAR08 2 90	0	01R1Al1108 Obtain tree felling permit
			Construction of Intake I-1
 	18FEB09 2 1,314	0 du	10AH1JT137 10aR 7; On recharge of the water after wrk comp
	16FEB09 2 1,316	0	
	31JAN09 2 1,332	wks 0	- 1
	1	wks 0	- 1
	2	wks 0	10AR1JT133 10aR 3; On completion of 25% strengthening wks
	03DEC08 2 1,391	0	10AR1JT132 10aR 2; On installation temp. lighting
	03DEC08 2 11,391	0	
		UBE	Sofetille of Mirestones, for cost earther Na (18
under this Cost Centre	26JUL12 2 60	0	3DL10T1224 3dL 12; On completion of all works under this CC
flow monitoring to issue of Main. Certificate.	26JUL12 2 60	0 QV	- 1
flow measurement devices for Portion D.	19MAY11 2 . 494	0	- 1
flow measurement devices for Portion C.	05MAR11 2 569	0	
flow measurement devices for Portion B.	10JUN11 2 472	0	
flow measurement devices at Portion A.	12MAR11 2 562	0	
monitoring for installedinstruments	26JUL12 2 60	0	
installed instruments for 48 months from DOC.	26DEC11 2 273	0	
Installed instruments for 36 months from DOC.	26DEC10 2 638	0	Ť
In the stalled instruments for 24 months from DOC	1	0	
◆installed instruments for 12 months from DOC	ļ	0	
• deptechnical instruments	02SEP09 2 1,118	0	
) o Le	
*within this cost centre	28JAN11 2 605	0 0	3AL1F I1054 3aL 27; On completion of all works under this CC
	01NOV10 2 693	ic. 0	
**************************************	2	han 0	3AL1FT1050 3aL 25; On completion of maint, access/flow chan
A TEM A MILES A SECONDE SERVICE MANAGEMENT SECOND DESIGNATION SECOND	Start Finish ID Roat		
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Activity Description	Orig Bark Early ca foral Dur Star	DULMAMILLEASIOND FERNAM 11 KSONDITEMAM SAKSONDITEMAM SONDES
PiingWolks		77.2829399713223344959697389394041 k2k3n4k346k77k8k9605152553545555756
	24 19JUN08 17JUL08 1 17	
	36 18JUL08 28AUG08 1 17	Sal 273mm dia.
	36 29AUG08 13OCT08 1 17	
11R2Al1208 Construct skin wall/access platforms; Portion A	72 02JUL10 24SEP10 1 198	
Remienten Sol Nathing Works		
11R2Al1302 Erect scaffolding & working platform	24 03MAY08 31MAY08 1 57	
11R2Al1304 Install test nails & proof loading test; 2 nos.	02JUN08 16JUN08 1	63
- 1	12 17JUN08 30JUN08 1 57	522
	24 17JUN08 15JUL08 1 57	極
11R2Al1310 Constrcut soil nail heads; 150 nos.	24 16JUL08 12AUG08 1 57	
Constitution of Some Renjowalessage		
Excavation from Existing GL to +103.5mPD		
04L1AI1402 Bulk excavation; soil (80m3)	4 16SEP08 19SEP08 1 17	After obtaining AIP for design submission
04L1Al1404 Install test tie-back & proof load test; 1 no.		
04L1A11406 Install working tie-backs; 10 nos.	10 03OCT08 15OCT08 1 17	Eassuming 7-day grout strength>30MPa
Excavation from +103.5mPD to +100,5mPD		
!	4 16OCT08 20OCT08 1 17	
į	10 21OCT08 31OCT08 1 17	
04L1Al1412 Install working tie-backs; 10 nos.	10 01NOV08 12NOV08 1 17	Bassuming 7-day grout strength>30MPa
Excavation from +100.5mPD to +97.5mPD		
04L1Al1414 Bulk excavation; soil (510m3)	6 13NOV08 19NOV08 1 17	Solution
04i.1Al1416 Install test tie-back & proof load test; 1 no.	10 20NOV08 01DEC08 1 17	673
04L1Al1418 Install working tie-backs; 22 nos.	10 02DEC08 12DEC08 1 17	@assuming 7-day grout strength>30MPa
Excavation from +97.5mPD to +94.5mPD	The state of the s	
1	12 13DEC08 29DEC08 1 17	
04L1A11422 Install test tie-back & proof load test; 1 no.	10 30DEC08: 10JAN09 1 17	
04L1Al1424 Install working tie-backs; 37 nos.	12 12JAN09 24JAN09 1 17	Eassuming 7-day grout strength>30MPa
Excavation from +94.5mPD to +91.5mPD		
	12 29JAN09 11FEB09 1 17	ites
04L1A11428 Bulk excavation; rock (650m3)	24 12FEB09 11MAR09 1 17	
04L1Al1430 Install test tie-back & proof load test; 1 no.	10 05FEB09 16FEB09 1 19	
04L1Al1432 Install working tie-backs; 43 nos.	18 17FEB09 09MAR09 1 19	Massuming 7-day grout strangth>30MPa
Excavation from +91.5mPD to +88.5mPD		
į	18 12MAR09 01APR09 1 17	
Ì	18 26MAR09 20APH09 1 17	33
- 1	10 Z6MAR09 07APR09 1 17	EMF
04L1Al1440 Install working tie-backs; 27 nos.	12 08APR09 24APR09 1 17	Sassuming 7-day grout strength>30MPa

Excavation from +88.5mPD to +72.5mPD; North 04L1A11442 Bulk excavation; rock (6300m3)	25APH09 04SEP09 1 17	10.1 m Feb. 10.1 m. February February 10.000
	25APR09 04SEP09 1	
1 01 1711 444 Duik excavation for venicular access; 1400m3	30 01AUG09 04SEP09 1 17	Salduna Arthura Arthura Arthura
07R1Al1446 Construct vehicular access	05SEP09 19OCT09 1	Filtranson (turnelling)
Excavation to Bottom Level to south west of SR		when the second is a second se
04L1Al1448 Bulk excavation; rock (5300m3)	88 20OCT09 03FEB10 1 71	100 mg 20 mg 100 mg
Construction of Spiral Ramp Structure		The second of th
	12 20OCT09 03NOV09 1 17	Englishmental 959 mg 4 mls. 100.
07R1Al1404 Construct RC spiral ramp	04NOV09 30JUN10 1 17MK	=10272m2, re-bar=755f, condrete=2788m38m38m38m38m38m38m38m38m38m38m38m38m3
07R1A11406 Construct RC spiral ramp top	12 02JUL10 15JUL10 1 17	Early pour line and l
Dismantle & removal of TBM		
04L1Al1450 Install temporary steel works for removal of TBM	24 16APR10 14MAY10 1	
04L1Al1452 Dissembly & demobilization of TBM	15MAY10 15JUL10 1	
Construction of Cascade Structure		DESCRIPTION OF THE PROPERTY OF
04L1Al1454 Construct box culvert & cascade	72 16JUL10 09OCT10 1 17	(
Modification of the city of the manual manual season.		
SANTATION OF THE PROPERTY OF T		
	36 :01NOV10* 11DEC10 1 0	
07R1AI1504 Modify channel bed and orfice; Phase 2	36 13DEC10 26JAN11 1 61	Trans
07R1Al1506 Modify channel bed and orfice; Phase 3	12MAR11 1	DLC ST
ABURTHURS Webschild in the property of the pro		
07R1Al1602 Backfill & compaction above box culvert: Port. A	72 11OCT10 06.14N11 1 90	
07R1Al1606 Finishing & reinstatement works; Portion A	14FB11 11APB11 1	Production of the Control of the Con
07R1Al1608 Pre-handover inspections and remedial works	14MAB11 13MAY11 1	THAT COLOR
07R1Al1610 Contractor serve notice for Works completion	14MAY11 20MAY11 2	
07R1AI1612 SO issues completion certificate	21MAY11 10JUN11 2	
16R7Al1602 Landscaping works at Portion A	14FEB11 13MAY11 1	15/100c Allmhor 2000cc unchall and 2000cc
	14MAY11 12MAY12 2	Control Strained, 200105. Wound not see the Straines of the St
3DL1Al1602 Install flow measurement devices at Intake I-1	12MAR11 1	
3DL1Al1604 Maintain & monitor flow monitoring	365 13MAR11 11MAR12 2 137	
Softed the control of some sentence of the softes		
04L1Al1802 4L 1; On completion of 50% excavation	0 24APR09 2 1.249	Frieds Stranger
04L1Al1804 4L 2; On completion of excavation	03FEB10 2	L CALCACTOR DE LA CALCACTOR DE
04L1Al1806 4L 3; On completion of 25% concreting	2	Atomic accorded at make 1.1
04L1Al1808 4L 4; On completion of 50% concreting	0 26AUG10 2 760	Proceedings 1.1
	0 16SEP10 2 739	◆for Casoade at Intake I-1
[Ì	◆ At Intake I.1
i	0 190CT09 2 (1,071	Spox culvert at Intake I-1
04L1Al1816 4L 8; On completion of all works under this CC	0 13MAY11 2 500	• within this Cost Contra

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The 1-Concentration of 19th extendion 0 19th				
778 Concompletion of State excension		0	2	I-I ayein ac ool oots pue
77.8 (10.0 competion of 25% execution 0 111AAR00 2 1220		0		
The 2,00 completion of signature and branches 0 0 0 0 0 0			23	Spiral ramp at Intake 1-1
77 B. Cho completion of all concentration 0 0 0 0 0 0 0 0 77 B. Cho completion of signal range to scheme? 0 0 0 0 0 0 0 0 77 B. Cho completion of signal range to scheme? 0 0 0 0 0 0 0 0 0		0	2	Spiral ramp at Intake I-1
This Concompletion of spiral trans to schomb		0	2	♦for spiral ramp at Intake I-I
77 R. Concentrelation of spiral ramp to +30mPD		0	2	Spirak ramp at Intake I-
778 S. On completion of ginal ramp to ±10mPD			2	• Soiral ramp at Infake 1-1
778 (2) On completion of spined accesses amp 15 miles 1 mil				т, ф
11 R 1; Cn completion of sulf works under this CC 0 12AAUG08 2 1,504	1 1	0	2	at Intake -1
11R 1; On completion of sell reling works 0 12ALIGOB 2 1,504 11R 2; On completion of pling at brainch access 0 13SEPD6 2 1,465 11R 2; On completion of pling at brainch access 0 13SEPD6 2 1,462 11R 3; On completion of pling at brainch access 0 13SEPD6 2 1,462 11R 3; On completion of pling at brainch access 0 13SEPD6 2 1,462 11R 4; On completion of pling at brainch access 0 13SEPD6 2 1,462 11R 4; On completion of pling at brainch access 0 13SEPD6 2 1,462 11R 4; On completion of pling at brainch access 0 13SEPD6 2 1,462 11R 4; On completion of pling at brainch access 0 13SEPD6 2 1,462 11R 4; On completion of pling at brainch access 0 13SEPD6 2 1,462 11R 4; On completion of pling at brainch access 0 13SEPD6 2 1,462 11R 4; On completion of pling at brainch access 0 13SEPD6 2 1,462 11R 4; On completion of pling at brainch access 0 13SEPD6 2 1,462 11R 4; On completion of pling at brainch access 0 13SEPD6 2 1,462 11R 4; On completion of pling at brainch access 0 1,462 11R 4; On completion of pling at brainch access 0 1,462 11R 4; On completion of pling at brainch access 0 1,462 11R 4; On completion of pling at brainch access 0 1,462 11R 4; On completion of pling at brainch access 0 1,462 11R 4; On completion of pling at brainch access 0 1,462 11R 4; On completion of pling at brainch access 0 1,462 11R 4; On completion of pling access 0 1,462 11R 4; On completion of pling access 0 1,462 11R 4; On completion of pling at brainch access 0 1,462 11R 4; On completion of pling access 0 1,462 11R 4; On completion access 0 1,462 11R 5; On completion access 0 1,462 11R 5; On completion access 0 1,462 11R 5; On completion a	07R1Al1920 7R 10; On completion of all works under this CC		2	
11R 2; On completion of soin railing works 0 12AUG08 2 1,466	Streditie of Milestones (of Loss Centreling) HE			
11R 2; On completion of piling at bianch access 0 18.5EPOR 2 1,442			2	
11R 3: On completion of pling at branch access of nitrice 1.1	1		r c	Swall at platform at loake 1.1
11R 4; On completion of all works under this CC	7		٥ ا	- 1
Obtain TTA (ingress & egress) approval 0 28MAR08 2 36 4 Possession of Portion B -god of DOC 0 28MAR08 22MAR08 1 13 15 Site eatablishment 3 27MAR08 0 22MAR08 1 13 15 Install remote contort CCTV as per ER 4.4.10 30 27MAR08 0 28MAR08 1 12 16 Maintain & operate CCTV 1.165 0 0 0 0 0 0 0 0 0 Installation of Geotechnical Instrumentation 1 2 0 0 0 0 0 0 0 0 0	1		2 0 6	
Obtain TTA (ingress & egress) approval	Constantistion of Intolia 10			אַ מווים וווים מווים
Dobain TTA (ingress & egress) approval	Construction of Intake F-2 F/All Will LIV Works			
Site establishment Site es	ļ		2	
Site establishment 30 27MAR08 02MAY08 1 13 15 15 15 15 15 15	Ī —	26MAR08	O.	
Site clearance		27MAR08	- -	
Install remote contorl CCTV as per ER 4.4.10 30 27MAR08 1 12 16 Maintain & operate CCTV 2 03ARY08 11.JUL11 2 16 Maintain & operate CCTV 2 03ARY08 11.JUL11 2 16 Maintain & operate CCTV 2 03ARY08 11.JUL11 2 16 Maintain & operate CCTV 2 03ARY08 11.JUL11 2 16 Maintain & operate CCTV 2 03ARY08 11.JUL11 2 16 Maintain & operate CCTV 2 03ARY08 11.JUL108 11.JUL10	, ,	†- ·-	1 108	- E
Maintain & operate CCTV 1,165 03MAY08 11JUL11 2 16 Tree transplanting; 1 no. 72 03APR08 30JUN08 1 38 Obtain approval for Geotechnical Instrumentation 30 27MAR08 02MAY08 1 13 Monitor/report Geotechnical Instrumentation 1,230 03MAY08 27JUN12 1 24 Monitor/report Geotechnical Instrumentation 24 05APR08 27JUN12 1 24 Monitor/report Geotechnical Instrumentation 24 05APR08 27JUN12 1 24 Monitor/report Geotechnical Instrumentation 24 05MAY08 1 13 6 05MAY08 1 13 Form temp. access ramp along west side of stream 2 05MAY08 1 13 6 05MAY08 1 13 6 6 6 6 6 6 6 6 13 6 6 13 6 6 13 6 13 6 13 1 1 13 1		27MAR08	- - -	
Tree transplanting: 1 no. 72 03APR08 30JUN08 1 398	i—	03MAY08	8	
Obtain approval for Geotechnical Instrumentation 0 26MAR08 2 16		03APR08	-	
Installation of Geotechnical Instrumentation 3.0 27MAR08 1 13 13 13 14 15 15 15 15 15 15 15			2	
Wonitor/report Geotechnical Instrumentation 1,230 03MAY08 27JUN12 1 24 CAPRON 23MAY08 1 33MAY08 1 33MAY08 1 33MAY08 1 33MAY08 1 33MAY08 1 13 4mble mentation of TTA 15 nos. pre-bored H-piles at southern eacess ramp (tail) 12 24MAY08 05JUN08 1 13 4mble mentation of TTA Remaining 44 nos. pre-bored H-piles 30 07JUN08 15JUL08 1 298 6mg/21.5 nos/rigday Demolize piling rig 1 15JUL08 1 298 6mg/21.5 nos/rigday	1	27MAR08	-	10000000000000000000000000000000000000
Gardia H-Pile Wall Form temp, access ramp along west side of stream 24 05APR08 03MAY08 1 13 Homobilize piling rig & set up 6 05MAY08 10MAY08 1 13 15 nos. pre-bored H-piles at southern end 10 13MAY08 23MAY08 1 13 Remaining 44 nos. pre-bored H-piles 30 07JUN08 14JUL08 1 298 Demolize piling rig 1 15JUL08 15JUL08 1 298 Excavate for skin wall & remove temp, access 40 16JUL08 30AUG08 1 298	3DL1Bl2108 Monitor/report Geotechnical Instrumentation	· · · · ·	-	Control of the Contro
g 1-Construct 550 dia. H-Pile Wail 24 05APR08 03MAY08 1 13 Form temp, access ramp along west side of stream 24 05APR08 03MAY08 1 13 Mobilize piling rig & set up 6 05MAY08 1 13 15 nos. pre-bored H-piles at southern end 10 13MAY08 23MAY08 1 13 Remove southern access ramp (tail) 12 24MAY08 06JUN08 1 13 Remaining 44 nos. pre-bored H-piles 30 07JUN08 14JUL08 1 298 Demolize piling rig 1 15JUL08 1 298 Excavate for skin wall & remove temp, access 40 16JUL08 30AUG08 1 298	Sheenni Maskion Aopteabh Shannethaile Val			
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Mobilize piling rig & set up 6 05MaY08 1 0MaY08 1 13 15 nos. pre-bored H-piles at southern end 10 13MaY08 23MaY08 1 13 Remaining 44 nos. pre-bored H-piles 30 07JUN08 14JUL08 1 298 Demolize piling rig 1 15JUL08 15JUL08 1 298 Excavate for skin wall & remove termp. access 40 16JUL08 30AUG08 1 298		05APR08	-	
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Remove southern access ramp (tail) 12 24MAY08 06JUN08 1 13 Remaining 44 nos, pre-bored H-piles 30 07JUN08 14JUI.08 1 298 Demolize piling rig 1 15JUI.08 1 298 Excavate for skin wall & remove temp, access 40 16JUI.08 1 298		13MAY08	-	B1.5 nos/rigday
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Excavate for skin wall & remove temp, access 40 16JUL08 30AUG08 1 298		15JUL08	-	
		16JUL08	-	

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12R3B12216 Construct skin walf: 45m; Portion D		2222-4226272883031323345536B73836AA 42444ABBATRAGGARSESS FEET FEET TO THE TOTAL STATES OF THE STATES
Constitution and wall, 4011, FORION &	40 30JUL08 13SEP08 1 298	
0		
	12 01NOV08* 14NOV08 1	
08R1BI2204 Excavate for new low flow channel	708 1 236	of water purify
- !	29NOV08 29DEC08 1 236	
08R1Bl2208 Remove temp. concrete block bund	30DEC08 13.IAN09 1 226	
5 0		
08R1Bl2210 Construct temp. concrete block bund	6 (02NOV09* 07NOV09 1	
	09NOV09 21NOV09 1	provision of water pump
	23NOV09 12DEC09 1	E. E.
08R1Bl2216 Excavate eastern portion of guide wall & slab	14DEC09 29DEC09 1	
	20JAN10 1	
08R1Bl2220 Remove temp. concrete blook bund	21JAN10 27JAN10 1	
Phase 2, Stg 2- Const Approach Channel at West		
08R1BI2222 Construct temp. concrete block bund	8 28.IANIO DAFEBIO 1 17E	
08R1BI2224 Excavate for western portion guide wall & slab	04FEB10 20FFB10 1	provision of water pump
	22FFB10 20MAB10 1	
08R1BI2228 Remove concrete block bund	22MAR10 27MAR10 1	
Phase 4- Construct Remaining Approach Channel		.5
08R1Bi2234 Construct temp, concrete block bund	6 18APR11 27APR11 1 8	
	28APR11 12MAY11 1	
08R1Bl2238 Remove temp. conctete block bund	6 13MAY11 19MAY11 1 8	Matter Construction of Outfall O-1
Pycevaje o Constitue Voleevibrop Shaif		
Phase 1, Stg 2- Form temp, access ramp to VS		
- 1	6 05SEP08 11SEP08 1 13	
	12SEP08 13OCT08 1 13	
05L1Bl2310 Construct ELS around shaft	1 13	
0		
05L1Bl2316 Construct temp. concrete block bund	6 01NOV10* 06NOV10 1 0	1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
ŀ	1 0	provision of water pump
	28DEC10 11FEB11 1	5.44 5.44
- 1	12 12FEB11 25FEB11 1 13	1075
12R3BI2124 Construction of boulder traps; 7nos.	11MAR11 1	25
Phase 3, Stg 2- Construct Rem. West. Guide Wall		333
08R1BI2126 Relocate temp. concrete block bund	4 12MAB11 16MAB11 1	,
08R1BI2128 Excavate/const. rem. western guide wall	1	
08R1Bl2134 Remove temp. concrete block bund		
051 4 R1934 9 Machanical and Company		
- 1	-	高色の.2m/day
1812314 Construct from shaft: 94m		

	T Caro	יייייייייייייייייייייייייייייייייייייי	
	365 17JUL11 15JUL12 2 11	Establishment Works at Portion B	16R7BI2104
Projection:		Landscaping works at Portion B	16R7BI2102
	21 24JUL11 13AUG11 2 348	SO issues completion certificate	08R1BI2105
	17JUL11	Contractor serve notice for Works completion	08R1BI2104
Manager Control of the Control of th		Pre-handover inspections and remedial works	08R1BI2103
	48 18APR11 17JUN11 1 8	Finishing & reinstatement works; Portion B	08R1BI2102
		Renizintig Warks Pridric Handover);
5 bays, invert, walls & toof 3 pours each bay感动	36 27NOV10 11JAN11 1 38	Construct man access tunnel; 35m	05L1812806
	30AUG10	Mechanical excavation breakthrough	05L1BI2804
国の表示の記念の記念の記念 @ 0.15m/day	240 06NOV09 28AUG10 1 109	Mechanical excavation for Man Access Tunnel	05L1BI2802
		excevere woonshippen access hunde	
(認証(ryert, wall & ropf	36 26JAN11 11MAR11 1 38	Construct collar between MT & AT	3BL1B12108
18@ 0,3m/day	25JAN11 1	Mechanical excavation breakthrough	3BL1BI2106
Marie Bays, Invert, walls & roof 8 pours @ bay 51 d	50 14JUL10 09SEP10 1 13	Construct adit tunnel; 60m	3BL1BI2104
SESTING SESTION © 0.3m/day	200 06NOV09 13JUL10 1 13	Mechanical excavation for Adit Tunnel	38L1B12102
		Excavate o Gonstruct Aul Funnell	-112/09X
IIIII 2 walls & roof total 32 days	32 10SEP10 20OCT10 1 13	Construct de-aeration chamber	05L1BI2604
2832m3, 2@ 20m3/day	132 01JUN09 05NOV09 1 13	Mechanical excavation for chamber; 22.5m	051,1812602
		encevare a construction de deration chamides	
EGATING 4m/8days	76 27NOV10 02MAR11 1 67	Construct man access shaft including stairs; 38m	05L1Bl2514
Exercise Control of Smiday	190 30DEC08 21AUG09 1 443	Mechanical excavation for man access shaft; 38m	05L1BI2512
	24 29NOV08 29DEC08 1 443	Probing & curtain grouting around shaft	051.1812504
₹335mm dfa. temp. pipe pile wall	24 01NOV08* 28NOV08 1 0	Construct ELS around shaft	05L1B12502
		Excavate Goostfloot/Nart Access Shaff	
©a [®] @4m/4days	34 27NOV10 08JAN11 1 67	Construct air vent shaft; 34m	3BL1B12412
	6 04NOV08 10NOV08 1 13	Dismante & remove temp platform	05L1BI2410
provision of TTA	1 04SEP08 04SEP08 1 13	Demobilize RCD	05L1B12408
图 图	34 26JUL08 03SEP08 1 13	Excavate by RCD; 34m @ 1m/day	05L1B12406
Provision of TTA	6 19JUL08 25JUL08 1 13	Mobilize & set up plants for RCD excavation	05L1BI2404
	10 08JUL08 18JUL08 1 13	Construct temp. platform for RCD	05L1BI2402
	24 07JUN08 07JUL08 1 13	Form temp, access ramp; Lo Wai Rd to Drop Shaft	05L1BI2302
	ANGARYON MARKATANGANANTANGANANTANGANANTANGANGANGANGANANTANGANANTANGANGANANTANGANANTANGANANTANGANANTANGANANTANGAN	Phase 1, Stg 2- Form temp. access ramp to VS	Phase 1, St
		Szcavaler z construct arriventshaft	Electronia Processes
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	Fant Cal Total	AMININ	10.5

•under this Cost Centre			16JUL11	0	12114, Oil completion of all works under this CC
◆traps at Intake -2		2	11MAR11	0	12R3bl2Sub 12R 3; On completion of boulder traps
	wall at Intake I-2	13SEP08 2 1,472	13SE	0	Ţ.
	♦wall at Intake I-2	14JUL08 2 1,533	14.11	0	\Box T
♦under this Cost Centre		16JUL11 2 436	16J	0	CONTROLL TO GARAS, OF COMPREHEND OF All WORKS UNder This CC
Aat Intake I-2			25FI	0	U8K1 BI2R04 8R 2; On completion of trash grill
channel and assiciated decking at fritake 1-2.	chan	AY11 2 501	12MA	0	
◆under this Cost Centre		JL11 2 436	1630	O T	The sample of th
◆adit at Intake F-2		2	011	0	OF TRIOMOD RI 10: On completion of all marks and
Shaft at Intake I-2		~	02M	0	OSE REIGHTE SE 8; On completion of man access shaft
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Tor Adit Tunnel at Intake 1-2		310 2	19AU	0	
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▼1or Adit Tunnel at Intake I-2		G10 2	04AU	0	_
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			11JUN11	365	3DL1BI2105 Maintain & monitor flow monitoring

	Aerving Description	ong Early Dar Stan	Early Gal Total Finish ID Float	2005 DIJE MAJERI JAS GINDU. EMAMILITAKSDINDU FIJANI JUNSONI EMAMINI KAMMUNIKASI GINDU. TAMAMUNIKASI GINDU TAMAMUNIKA 78. BIDI JI JI JAS GINDU JAS GINDU KAMAMUNIKASI KAMAMUNIKA JAMAMUNIKA JAMAMUNIKA KAMAMUNIKA KAMAMUNIKA KAMAMUNIKA
	CONSINUING FOWER PAIL OF ACCESS HORIS			
09R1Cl3402	1 [60 13MAY09	09 23JUL09 1 274	
09R1Cl3406		60 24JUL09	02OCT09 1	
09R1CI3408	ı	30 03OCT	03OCT09 09NOV09 1 274	
09R1Cl3410		32 10NOV	-	
09R1Cl3412		32 17DEC	-	
09R1Cl3414	†	48 27JAN10	26MAR10 1	
13R1Cl3402		112 28AUG	28AUG08 12JAN09 1 288	
13R1Cl3404	Excavate & install soil nail (NW Turning Area)		-	
13R1CI3406		+	12MAY09 1	Example of Lagrangian and Lagrangian
16R7Cl3402		 -	24FEB09 1	100 I 00 I 100 I 1
Excevane	Skeavare & Construction in Vent Share			
Phase 1	A CONTRACTOR OF THE PROPERTY O			
06L1Cl3502	Modify & flatten the stream bed	6 26NOV08	02DFC08 1	
06L1Cl3504	Construct temporary concrete block wall bund	1	· 🛉	
06L1Cl3506	Mobilization & setting up of RCD rig	+		
06L1Cl3508	Drilling for air vent shaft	+:	20JAN09 1	Market Ma
06L1Cl3510	Construction of air vent shaft	14 21 JAN09	09FFB09 1 1	1/m long for the day and a containing AIP 107 design submission
	Excelvate & Construction Shart			The months of the same of the
Phase 1	ALE PROMISSION CONTRACTOR OF THE WORLD OF TH			
06L1Cl3602	Probing & curtain grouting	18 21JAN09	9 13FEB09 1 71	
06L1Cl3604	Construct temp. rain shelter & bund	24 21JAN0	20FEB09 1	
06L1Cl3606	Bulk excavation for Vortex (southern portion)		-	27 July 198m 3 10m 2 10 July 1 57
06L1Cl3608	Bulk excavation for drop shaft	60 27APH09	09JUL09 1	
06L1Cl3610	Construction of vortex (southern portion)	24 10JUL09	9 06AUG09 1 71	
Phase 2				
06L1Cl3612	Construction of drop shaft	12 19FEB10 04MA	0 04MAR10 1 83	3004m/4riavs
Phase 3				
06L1Cl3614	Bulk excavation for Vortex (northern portion)	37 21SEP1	21SEP10 05NOV10 1 106	27 - vehicle 10m3/day - 27
06L1Cl3616	Construction of vortex (northern portion)	24 06NOV1	06NOV10 03DEC10 1 106	
06L1Cl3618	Relocate flood wall within vortex	4 04DEC10	0 08DEC10 : 1 106	
06L1Cl3620	Construct remaining of the vortex	24 09DEC10	08JAN11 1	
) 	A constituct Mail Access Shaft			
Phase 1				
06L1Cl3706	Bulk excavation for man access shaft	110 14FEB09	30JUN09 1 170	Waterway 22m, @0.2m/dav
06L1Cl3708	Construction of man access shaft	44 30SEP09	3 23NOV09 1 170	6*4 cycle each cycle 4 days@@22m @ 4m/8days including stairs
	Well Reniement Stream Beach (Day Season) (not ks)			
Phase 2				
09R1Cl3802	Construct temporary sand bag bund	6 02NOV09* 07NO	1 07NOV09 1 07NOV09	

09R1CI3804 09R1CI3806 09R1CI3808		THE PARTY NAMED IN			1031 7 8 9	
09R1CI3806 09R1CI3808 09R1CI3810	Removal of large boulders	01	60AON60	19NOV09		88.9 P. 01.11.21.31.41.51.61.77.08 P. 92021 P. 22021 P. 2
09R1CI3808 09R1CI3810	Excavation of the stream bed	36	20NOV09		1 67	2
09R1Cl3810	Laying of granular filter	42	05JAN10	05JAN10 01FEB10	16	
(T (C () T () () T () T	Laying of rock armour	24	05JAN10	05JAN10 · 01FEB10	1 67	
09R1CI3812	Construction of boulder trap; 7 nos.	24	02FEB10	04MAR10	1 67	
09R1Cl3814	Removal of sand bag bund	4	05MAR10		1 67	3
09R1Cl3816	Construct temporary concrete block bund	8	10MAR10	10MAR10 30MAR10	1 67	
E.G. Valle	Aceivate a Gunstraki Approach Channel					
Phase 3	Sira habara kakana kaka da kata ka	N. C.	THE STATE OF THE S			
09R1Cl3902	Excavation of the Stream Bed	54	31MAR10	31MAR10 08JUN10	1 67	
09R1CI3904	Laying Granular Filter within Stream Bed	18	09JUN10 - 30JU	30JUN10	1 67	
09R1Cl3908	Open excavation for Approach Channel	69	02JUL10	20SEP10	1 67	
09R1Cl3910	Construction of Approach Channel	122	21SEP10	21SEP10 : 19FEB11	1 67	
09R1Cl3912	Construction of trash grill	12	14FEB11	26FEB11	1 67	
0CR1Cl3914	Removal of concrete bolck bund	9	28FEB11	05M	1 67	
	excavate & Construct Delacration Spanioer					
Phase 2	erronen en elektrikan kantalan		A 10 TO 10 T		· · · · · · · · · · · · · · · · · · ·	
06L1Cl3102	Excavation for de-aeration chamber	87	10JUL09	21OCT09	1 83	23 - 125 m 3 0 0 m 3/Hav - 124 byce
06L1Cl3104	Construction of de-aeration chamber	32	09JAN10	18FEB10	- 83	A Jours & week days invert drave walls 向 ave a succession of
	a cavaler v Goresii i jora oliminin nei					<u> </u>
Phase 2	ocai alesa caranterra cerementare es es escentrares es estados de estados estados estados estados estados esta					
3CL1Cl3102	Mechanical excavation for Adit Tunnel	40	22OCT09	22OCT09 08DEC09	1 83	web/me @ udtm
3CL1Cl3104	Construction of Adit Tunnel	24	09DEC09	08JAN10	1 83	Sill Davis Books
3CL1Cl3106	Mechanical excavation breakthrough	12	22JUN10	22JUN10 06JUL10	1 206	
3CL1Cl3108	Construct collar between MT & AT	36	07JUL10	17AUG10	1 206	Mainvert, wall & roof
	Excavate to constitute Matrix cossistimates					
Phase 2	CALLY CALLY THE PROPERTY OF TH	A COLUMN TO THE	Decide Tables of the Control of the	A THE PROPERTY OF THE PROPERTY		
06L1Cl3122	Mechanical excavation for man access tunnel	53	02JUL09	01SEP09	1 170	mocking out access經過8m (@0.15m/dav
06L1Cl3124	Construction of man access tunnel	24	02SEP09	29SEP09	1 170	Sign Spays: 6 pours
	Aquianny Volks Pricing handoverny dienk					
09R1Cl3142	Finishing & reinstatement works; Portion C	48	07FEB11 02AP	02APR11	1 67	
09R1Cl3143	Pre-handover inspections and remedial works	48	O7MAR11 O5MA	05MAY11	1 67	
09R1Cl3144	Contractor serve notice for Works completion	2	06MAY11	12MA	2 480	
09R1Cl3146	SO issues completion certificate	21	13MAY11	02JUN11	2 480	
16R7Cl3142	Landscaping works at Portion C	120	06DEC10 05MA	05MAY11	1 68	
	Establishment Works at Portion C	365	06MAY11	04MAY12	2 83	
	Install flow measurement devices at Intake I-3	24	07FEB11 05MA	05MAR11	1 88	· · · · · · · · · · · · · · · · · · ·
3DL1Cl3143	Maintain & monitor flow monitoring	365	06MAR11 04MA	04MAR12	2 144	

| 13R 1; On completion of 30% soil natiling 0 28AUG08 2 1,488 ◆at intake I-3 13R 2; On completion of 60% soil natiling 0 25NOV08 2 1,399 ◆at intake I-3 13R 3; On completion of all soil nating works 0 12MAY09 2 1,231 ◆at intake I-3 13R 4; On completion of 10% piles by number 0 26MAY08 2 1,582 ◆at intake I-3 | 0 19FEB11 2 583 | channel 0 21JAN11 2 612 | G.L 0 24FEB09 2 1,308 | G.L 0 05SEP08 2 1,480 | 0 26MAR10 2 913
 |
 | 0 05MAY11 2 508 | 0 293EP09 2 1,091 | 0 23NOV09 2 1,036
 | 0 09FEB09 2 1,323 | n chamber 0 18FEB10 2 949 | 0 08.JAN11 2 625 | 0 21OCT09 2 1,069 Helmin C 1
 | | C 0 17AUG10 2 769 | 0 08JAN10 2 990 | 31DEC09 2 998
 | 0 : 28DEC09 2: 1,001 | 0 22DEC09 2 1,007 | 0 18DEC09 2 1,011 | 0 15DEC09 2 11.014 | 11DEC09 2 1.018 | 0 210CT09: 2 1,069 | | ### Part Process Control of Contr | 109 2 1,018 109 2 1,014 109 2 1,011 109 2 1,001 100 2 1,001 100 2 1,001 100 2 1,001 100 2 1,001 100 2 1,001 100 2 1,009 100 2 1,036 100 2 1,036 100 2 1,036 100 2 1,036 11 2 1,031 11 2 1,159 12 1,159 13 2 1,159 14 2 1,159 15 2 1,159 15 2 1,159 15 2 1,159 15 2 1,159 16 2 5,83 17 2 5,83 18 2 5,83 | | 3CL1CI3A02 3CL1; On establishing tunnelling equipments 3CL1CI3A04 3cL 2; On completion of 12.5% perm. tunnel lining 3CL1CI3A08 3cL 4; On completion of 25% perm. tunnel lining 3CL1CI3A10 3cL 5; On completion of 50% perm. tunnel lining 3CL1CI3A11 3cL 5; On completion of 50% perm. tunnel lining 3CL1CI3A12 3cL 6; On completion of 50% perm. tunnel lining 3CL1CI3A14 3cL 7; On completion of 50% perm. tunnel lining 3CL1CI3A18 3cL 9; On completion of 62.5% perm. tunnel lining 3CL1CI3A18 3cL 9; On completion of 62.5% perm. tunnel lining 3CL1CI3A18 3cL 9; On completion of 62.5% perm. tunnel lining 3CL1CI3A18 3cL 9; On completion of 60.5% perm. tunnel lining 3CL1CI3A18 3cL 9; On completion of 60.5% perm. tunnel lining 3CL1CI3A18 3cL 9; On completion of 60.5% perm. tunnel lining 3CL1CI3A18 3cL 9; On completion of 60.5% perm. tunnel lining 3CL1CI3A18 3cL 9; On completion of 60.5% perm. tunnel lining 3CL1CI3A18 3cL 9; On completion of forexavation works 3CL1CI3A18 3cL 9; On completion of forexavation of 60.5% of excavation 3CL1CI3A18 3cL 9; On completion of forex shaft 3CL1CI3A18 3cL 9; On completion of 60.5% of excavation at G.L 3CL1CI3A18 3cL 9cl |
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	0 05/MAY11 2 508	2 0 19FEB11 2 583	Columbia Columbia	G.L 0 24FEB09 2 1,308 G.L 0 12MAY09 2 1,159 nef 0 23JUL09 2 1,159 nef 0 2JJAN11 2 674 0 19FEB11 2 583 0 19FEB11 2 508 0 19FEB11 2 508	Columbia Columbia	G.L 0 26MAR10 2 913 Pat Intake I-3 Pat Intake I-3 G.L 0 24FEB09 2 1,1308 Pat Intake I-3 Pat Intake I-3 <td< td=""><td> Channel and associated decking at Intake I-3 Channel at Intake I-3 Chann</td><td> C O O O O O O O O O</td><td>C 0 29SEP09 2 1,091 Punder this Cost C 0 0 26MAY11 2 508 G.L 0 26MAR10 2 913 Punder this Cost G.L 0 26MAR10 2 913 Punder this Cost G.L 0 26FEB09 2 1,231 Pat Intake I-3 Pat Intake I-3 Pat Intake I-3 G.L 0 23JUL09 2 1,159 Pat Intake I-3 Pat Intake I-3</td><td>C 0 23NOV09 2 1,034 C 0 29SEP09 2 1,091 C 0 26MAY11 2 508 G.L 0 26MARTIO 2 913 G.L 0 24FEB09 2 1,308 G.L 0 23JULO9 2 1,139 G.L 0 22JULO9 2 1,139 mel 0 23JULO9 2 1,139 0 21JANTI 2 674 0 21JANTI 2 583 0 19FEB11 2 583 0 19FEB11 2 583</td><td>0 0 09FEB09 2 1,332 ◆at Intake I-3 <</td><td>0 18FEB10 2 943 Pat Intake I.3 Pat Intake I.3 Pat Intake I.3 0 0 23NDV09 2 1,323 1,323 1,323 Pat Intake I.3 Pat Intake I.3 Pat Intake I.3 Pat Intake I.3 Punder this Cost C 0 28SED09 2 1,333 Pat Intake I.3 Pat Intake</td><td>0 0</td><td> 0 21OCT09 2 11,069 Colored G.L. except for Adit Tunnel at Intake I-3 O O OSNAV11 2 E25 O O OSSNAV11 2 E35 O O OSSNAV11 2 E31 O OSSNAV11 2 E31 O O OSSNAV11 O O O OSSNAV11 O O OSSNAV11 O O O OSSNAV11 O O OSSNAV11 O O O OSSNAV11 O O O OSSNAV11 O O O O OSSNAV11 O O O O O O O O O </td><td> 0 21/OCT09 2 1,069 </td><td>C 0 17ALG10 2 769 0 0 0 0 0 0 0 0 0 4 belowe G.L. except for Adit Tunnel at Intake I-3 4 under this Cost Centre 0 0 0 0 0 0 4 belowe G.L. except for Adit Tunnel at Intake I-3 4 at Intake I-3 <th< td=""><td> C</td><td> 1</td><td> 1</td><td> 10 10 10 10 10 10 10 10</td><td> 10 18DEC09 2 1,017 </td><td> 150EC09 150EC09 2 1,014 </td><td> 10 10 10 10 10 10 10 10</td><td> 10</td><td>Wunder this Dost C</td><td></td><td></td><td>indices i centralité de l'ass</td></th<></td></td<>
* under this	▼	0 19FER1 2	1.L 0 12MAY09 2 1,231	1.L 0 24FEB09 2 1,308 1.L 0 12MAY09 2 1,231 0 23JUL09 2 1,159 1 0 20NOV10 2 674 0 21JAN11 2 612 0 19FER11 2 529	1.L 0 0 05SEP08 2 1.480	
 | 1.L 0 0 26MAR10 2 913
1.L 0 0 24FEB09 2 1,231
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el 0 22JAN11 2 612
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 | 0 26MAR10 2 913 | 0 05MAY11 2 508 L 0 0 26MAR10 2 913 L 0 0 05SEP08 2 1,480 L 0 0 24FEB09 2 1,308 0 0 23JUL09 2 1,159 0 0 20NOV10 2 674 0 0 21JAN11 2 612 0 0 19FER11 2 503 | 0 29SEP09 2 1,091 0 26MAY11 2 508 L 0 26MAR10 2 913 L 0 24FEB09 2 1,308 L 0 23JUL09 2 1,159 0 21JAN11 2 612 0 19FFB11 2 60
 | 0 23NOV09 2 1,036 Part Intake I-3 Part Intake I-3 Part Intake I-3 Punder this Cost 0 0 0 05MAY11 2 508 4 | 0 0 0 0 0 0 23NOV09 2 1,323 ◆at Intake I-3 ◆orlation intake I-3 ◆orlationer at Intake I-3 | 0 18FEB10 2 943 Pat Intake I-3 Chamber at Intake I-3 Pat Intake | 0 0 0 0 0 0 0 0 0 0 0 0 09FEB09 2 1,323 0 4 0 0 0 0 0 0 0 0 0 0 23NOV09 2 1,036 2 1,036 2 4 </td <td> 0 0 0 0 0 0 0 0 0 0</td> <td> 0 210CT09 2 1,059 2</td> <td>C 0 17AUG10 2 759 0 21OCT09 2 1,069 0 0 GSNOV10 2 689 0 0 GSNOV10 2 689 0 0 GSEE09 2 1,089 0 2 2NOV09 2 1,034 0 2 2SEE09 2 1,094 0 2 4FEB09 2 1,094 0 2 4FEB09 2 1,398 0 2 4FEB09 2 1,398 0 2 4FEB09 2 1,480 0 2 3JUL09 2 1,189 0 2 0 2NOV10 2 612 0 2 1,1480 0 2 1,1480</td> <td> 1</td> <td> 3 DEC09 2 999 </td> <td> 1</td> <td> 1</td> <td> 18DECO9 2 1,001 2 1</td> <td> 150EC09 150EC09 2 1,014 </td> <td> 11 12 12 13 14 15 15 15 15 15 15 15</td> <td> 10 110EC09 2 1,0104 2 1,0104 3 4 4 1 1 1 1 1 1 1 1</td> <td>at Intake I-3</td> <td>N CI</td> <td>0</td> <td>in of all works under this CC</td> | 0 0 0 0 0 0 0 0 0 0
 | 0 210CT09 2 1,059 2 | C 0 17AUG10 2 759 0 21OCT09 2 1,069 0 0 GSNOV10 2 689 0 0 GSNOV10 2 689 0 0 GSEE09 2 1,089 0 2 2NOV09 2 1,034 0 2 2SEE09 2 1,094 0 2 4FEB09 2 1,094 0 2 4FEB09 2 1,398 0 2 4FEB09 2 1,398 0 2 4FEB09 2 1,480 0 2 3JUL09 2 1,189 0 2 0 2NOV10 2 612 0 2 1,1480 0 2 1,1480 | 1 | 3 DEC09 2 999 | 1 | 1 | 18DECO9 2 1,001 2
1,001 2 1 | 150EC09 150EC09 2 1,014 | 11 12 12 13 14 15 15 15 15 15 15 15 | 10 110EC09 2 1,0104 2 1,0104 3 4 4 1 1 1 1 1 1 1 1 | at Intake I-3 | N CI | 0 | in of all works under this CC |
| 0 21JAN11 2 612 channel and associated deliving at Intake I-3 value Intake I-3 0 19FEB11 2 583 4at Intake I-3 4at Intake I-3 0 0 05MAY11 2 508 4at Intake I-3 | channel 0 21JAN11 2 612 | | 0 12MAY09 2 1,231 | 0 24FEB09 2 1,308 | 0 05SEP08 2 1,480
 | 0 26MAR10 2 913 0 05SEP08 2 1,480 0 24FEB09 2 1,308 0 12MAV09 2 1,231 0 23JUL09 2 1,159
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 | 0 21/OCT09 2 i j,069 CGNOV10 2 i j,069 Belowe G.L. escept for Adit Tunnel at Intake I-3 Cotamble Intake I-3 Pelow G.L. escept for Adit Tunnel at Intake I-3 Pelowe G.L. escept for Adit Tunnel at Intake I-3 Pelowe G.L. escept for Adit Tunnel at Intake I-3 Pelowe G.L. escept for Adit Tunnel at Intake I-3 Pelowe G.L. escept for Adit Tunnel at Intake I-3 Pelowe G.L. escept for Adit Tunnel at Intake I-3 Pelowe G.L. escept for Adit Tunnel at Intake I-3 Pelowe G.L. escept for Adit Tunnel at Intake I-3 Pelowe G.L. escept for Adit Tunnel at Intake I-3 Pelowe G.L. escept for Adit Tunnel at Intake I-3 Pelowe G.L. escept for Adit Tunnel at Intake I-3 Pelowe G.L. escept for Adit Tunnel at Intake I-3 Pelowe G.L. escept for Adit Tunnel at Intake I-3 Pelowe G.L. escept for Adit Tunnel at Intake I-3 Pelowe G.L. escept for Adit Tunnel at Intake I-3 Pelowe G.L. escept for Adit Tunnel at Intake I-3 Pelowe G.L. escept for Adit Tunnel at Intake I-3 Pelowe G.L. escept for Adit Tunnel G.L. escept for Adit Tunnel at Intake I-3 Pelowe G.L. escept for Adit Tunnel G.L. escept f | 0 21OCT09 2 1,069 0 05NOV10 2 625 belowe G.L. except for Adit Tunnel at Intake I-3 Pat Intake I- | C 0 17AuG10 2 769 Actin Tunnel at Inhake 1-3 Punder this Cost Centre 0 21OCT09 2 ii.069 2 ii.069 2 ii.069 4 below G. except for Adit Tunnel at Inhake 1-3 4 chamber at Inhake 1-3 4 chandar at Inhake 1-3 4 chamber at Inhake 1-3 | 1 | 1 | 1 | 0 22DEC09 2 1,007 | 1 10 10 10 10 10 10 10
 | Section 15DE-C09 2 1,014 | 10 | 10 | י מו ווומוע ו-ט | 2 | 0 | on of 50% of approach channel |
| nnel 0 20NOV10 2 674 | oproach channel 0 20NOV10 2 674 channel 0 21JAN11 2 612 | 0 20NOV10 2 674 | 12MAY09 2 1,231 | G.L 0 24FEB09 2 1,308 | G.L 0 05SEP08 2 1,480 | G.L 0 26MAR10 2 913 ◆at Intake I-3 G.L 0 05SEP08 2 1480 ◆at Intake I-3 G.L 0 24FEB09 2 1;308 ◆at Intake I-3 G.L 0 12MAY09 2 1;231 ◆at Intake I-3 | L 0 28MAR10 2 913 ◆at Intake I-3 ◆at Intake I-3 ◆at Intake I-3 ◆at Intake I-3 L 0 24FEB09 2 1,308 ◆at Intake I-3 ◆at Intake I-3 ◆at Intake I-3 | 0 OSMANY11 2 508 Cunder this Cost L 0 26MAR10 2 913 4at Intake I-3 4at Intake | 0 29SEP09 2 1,091 0 05MAY11 2 508 L 0 26MAR10 2 1,480 L 0 24FEB09 2 1,231 L 0 12MAY09 2 1,231 | 0 23NOV09 2 1,036 0 29SEP09 2 1,091 0 0 0 0 0 26MAP10 2 913 0 0 05SEP08 2 1,308 L 0 24FEB09 2 1,308 L 0 12MAY09 2 1,231 | 0 09FEBO9 2 1,323 ◆at Intake I-3 ◆adit at Intake I-3 0 23NOV09 2 1,091 ◆adit at Intake I-3 ◆adit at Intake I-3 ◆under this Cost 0 05NAY11 2 508 4 | 0 18FEB10 2 949 Pat Intake I-3 Pat Intake Int | 0 0 0 0 0 0 0 0 0 0 | 0 21OCT09 2 i nose Pelowe G.L. escept for Adit Tunnel at Intake I-3 Pelowe G.L. escept for Adit Tunnel at Intake I-3 Pat Intake I-3 | 0 21OCT09 2 1,089 Belowe G.I. escept for Adif Tunnel at Intake I-3 Achamber at Intak | C 0 17AuG10 2 759 Purple at Inhake I-3 Purple at Inhake I- | C OBJANTO 2 990 Patit Tunnel at Intake 3 Patit Tunnel at Int | 1 | 1 | 0 22DEC09 2 1,007 4 Adit Turnel at Intake 1-3 1,007 4 Adit Turnel at Intake 1-3 4 Adit Turnel at Intake 1-3 | 1 10 1 10 10 10 10 10 | 150EC09 2 i i j j j j j j j j j j j j j j j j j | 1 | 10 | , d | 8 | 0 | on of excavation at G.L. |
| nnel 0 23JUL09 2 1159 Pequannel Pequannel Pequannel Intake I-3 Pequannel Pequannel Intake I-3 Pequannel Intake I-3 Pequannel Intake I-3 Pequannel Intake I-3 Pepulation Intake I-3 Pepulation Intake I-3 Pepulation Pepulation Pepulation Pepulation Intake I-3 Pepulation | oproach channel 0 23JUL09 2 1,159 oproach channel 0 20NOV10 2 674 channel 0 21JAN11 2 612 | 0 23JUL09 2 1,159 0 at G.L. at Intake I-3 0 20NOV10 2 674 | | G.L 0 24FEB09 2 1,308 | G.L 0 05SEP08 2 1,480
 | G.L 0 26MAR10 2 913 Pat Intake I-3 G.L 0 05SEP08 2 1,480 Pat Intake I-3 G.L 0 24FEB09 2 1,308 Pat Intake I-3
 | Cost | 0 05/MAY11 2 508 L 0 26MAR10 2 913 L 0 24FEB09 2 11,308 | 0 29SEP09 2 1,091 0 05MAY11 2 508 L 0 26MAR10 2 913 L 0 05SEP08 2 1,480 L 0 24FEB09 2 1,308 | 0 23NOV09 2 1,036 0 29SEP09 2 1,091 0 05MAY11 2 508 L 0 26MAR10 2 1,480 L 0 24FEB09 2 1,480 L 0 24FEB09 2 1,308 | 0 09FEB09 2 1,323 ◆at Intake I-3 ◆adit at Intake I-3 0 23NOV09 2 1,031 ◆adit at Intake I-3 ◆adit at Intake I-3 0 25SEP09 2 1,091
 ◆adit at Intake I-3 ◆adit at Intake I-3 ◆under this Cost L 0 28MARTIO 2 91,309 ◆at Intake I-3 ◆at Intake I-3 ◆at Intake I-3 | 0 18FEB10 2 949 Pat Intake I-3 Pat Intake Intake I-3 Pat Intake | 0 08JAN11 2 625 949 941 Intake I-3 941 Intake I-3 942 Intake I-3 943 942 Intake I-3 943 943 Intake I-3 943 943 Intake I-3 944 Intake Inta | 0 21OCT09 2 i1,089 belowe G.L. escept for Adit Tunnel at Intake I-3 below G.L. escept for Adit Tunnel at Intake I-3 thrake I-3 at Intake I-3 | 0 210CT09 2 1,069 0 05NOV10 2 689 0 0 0 0 0 0 0 0 0 | C 0 17AUG10 2 789 Peroper 10 moder this Cost Centre 0 21CCT09 2 1,069 Belowe G.L. escept for Adit Tunnel at Intake I-3 Punder this Cost Centre 0 0 0SANU11 2 625 Belowe G.L. escept for Adit Tunnel at Intake I-3 Pat Intake I-3
 | 1 | 1 | 1 | 0 220EC09 2 1,007 | 9 0 18DEC09 2 1,001 in 0 28DEC09 2 1,001 in 0 28DEC09 2 1,001 in 0 0 8DEC09 3 1,001 in 0 0 0 0 0 0 8DEC09 3 1,001 in 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 150EC09 2 1,014 | 1 | 1 1 1 2 1 1 1 1 2 1 1 | at Intake | 0 | 0 | n of 75% of excavation at G.L
 |
| 150EC09 2 1,009 2 1,001 4,000 2 1,001 4,000 2 1,001 4,000 2 1,001 | 0 2100709 2 1,099 0 160500 2 1,014 | 0 2100T09 2 1,009 0 1,000 0 1 | 0 | 0 210CT09 2 1,069 0 110EC09 2 1,001 0 22DEC09 2 1,001 0 22DEC09 2 1,001 0 22DEC09 2 1,001 0 22DEC09 2 1,001 0 310EC09 2 1,001 0 05AN11 2 625 0 05AN11 2 625 0 05AN11 2 625 0 05AN11 2 625 0 05AN11 2 1,001 0 05AN11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 210CT09 2 1,069 2 1,069 2 1,069 2 1,018 3 4 4 1 1 1 1 1 1 1 1
 | 210CT09 2 1,069
 | 210CT09 2 1,069 | 210CT09 2 1,069 15DEC09 2 1,014 15DEC09 2 1,014 18DEC09 2 1,011 22DEC09 2 1,001 22DEC09 2 1,069 2 1,069 2 1,069 2 1,069 2 1,323 23NOV09 2 1,388 | 110 210 2 1,069 2 1,069 2 1,014 150 2 1,014 150 2 1,014 150 2 1,011 220 2 1,011 220 2 2 398 220 2 398 220 2 398 220 2 398 220 2 398 220 2 398 220 2 398 220 2 398 220 2 398 220 2 398 220 2 398 220 398 220 398 328 | 110EC09 2 1,069 4 euipment 150EC09 2 1,014 4 euipment 150EC09 2 1,014 4 euipment 180EC09 2 1,001 220EC09 2 1,001 280EC09 2 1,001 4 euipment 280EC09 2 1,001 280EC09 2 1,001 4 euipment 5 euipment 6 euipment | 210CT09 2 1,069 15DEC09 2 1,014 15DEC09 2 1,014 15DEC09 2 1,011 22DEC09 2 1,001 28DEC09 2 1,001 31DEC09 2 998 31DEC09 2 998 31DEC09 2 998 4Adit 08JAN10 2 990 17AUG10 2 797 17AUG10 2 797 17AUG10 2 889 05NOV10 2 689
 | 210CT09 2 1,069 11DEC09 2 1,014 15DEC09 2 1,011 22DEC09 2 1,001 28DEC09 3 1,00 | 210CT09 2 1,069 Padit Tunnel 15DEC09 2 1,014 15DEC09 2 1,014 18DEC09 2 1,011 22DEC09 2 1,001 31DEC09 2 998 Padit Tunnel Pad | 21OCT09 2 1,069 11DEC09 2 1,014 15DEC09 2 1,014 18DEC09 2 1,007 22DEC09 2 1,007 28DEC09 2 1,007 31DEC09 2 990 08JAN10 2 990 20JUL10 2 797 | 210CT09 2 1,069 Padit Tunnel 15DEC09 2 1,014 Padit Tunnel 18DEC09 2 1,014 Padit Tunnel 22DEC09 2 1,007 Padit Tunnel 23DEC09 2 1,007 Padit Tunnel 31DEC09 2 990 Padit Tunnel 220JUL10 2 990 Padit Tunnel 220JUL10 2 20JUL10 2 20JUL | 210CT09 2 1,069 11DEC09 2 1,018 15DEC09 2 1,014 18DEC09 2 1,007 22DEC09 2 1,007 22DEC09 2 1,007 31DEC09 2 1,007 31DEC09 2 998 | 210CT09 2 1,069 11DEC09 2 1,018 15DEC09 2 1,014 18DEC09 2 1,007 22DEC09 2 1,007 28DEC09 2 1,007 28DEC09 2 1,007
 | 210CT09 | 210CT09 2 1,069 11DEC09 2 1,018 15DEC09 2 1,014 18DEC09 2 1,014 | 21OCT09 2 1,069 | 210CT09 2 1,069 Seulpment for tunnelling at Intake | 210CT09 2 1 069 | TO SERVICE AND ADDRESS OF THE PROPERTY OF THE | | 2224/2322/2027/2027/22/24/25/25/25/25/25/25/25/25/25/25/25/25/25/ | | には、自己の名の形式は自己の一方式を |
 |

H2*40*4m2	12 18AUG10 31AUG10 1 8	10R1D00704 Drive temp, sheet piles along footpath
310	12 04AUG10 17AUG10 1 8	10R1DO0702 Form temp. working platorm
		Constitute carcade v. Upper Pan Box Guivan
81 0	24 07JUL10 03AUG10 1 8	3AL1DO0606 Construct portal head wall
#For TBM Launching Chamber	12 22JUN10 06JUL10 1 8	3AL1DO0604 Construct permanent lining for CH5100-5085
Eminal gantry crane	30 15MAY10 21JUN10 1 8	
3.6	12 18DEC10 04JAN11 1 8	
	48 04AUG10 29SEP10 1 74	10R1DO0604 Construct tapered open channel
86	24 07JUL10 03AUG10 1 8	10R1DC0602 Excavation/formation for tapered open channel
		construct Panel Read & Lesocrated Shartness
6.50	6 01MAR11 07MAR11 1 39	10R1D00528 Reinstate existing outfall "W"
	-	10R1D00526 Construct open channel at 2.3 mPD
	24 14JAN11 14FEB11 1 39	10R1DC0524 Construct channel toe below 2.3mPD
	24 30DEC10 27JAN11 1 39	10R1D00522 Excavate for open channel
	-	10R1D00520 Construt wall & roof of box culvert; 2 cells
Cardy a decorate a february	19OCT10 10NOV10 1	10R1D00518 Construct base slabs of box culvert; 2 cells
Security Collision of the Collision of t	25AUG10 18OCT10 1	10R1D00516 Excavate for box-culvert; 2 cells
	40 TIMAY10 28JUN10 1 39	10R1D00515 Install 273mm dia temp. pile for nine modina
M2Concete 160m3	16APR10 10MAY10 1	10H10U0512 Construct base slabs of box culvert; 2 cells
(KEE)/SOII 2900m3	19FEB10	10R1DO0510 Excavate for box-culvert; 2 cells
Manager 2 cells: 105 rios.	48 18DEC09 18FEB10 1 39	
20440E	24 20NOV09 17DEC09 1 39	10R1DO0506 Excavate & form pipe roofing platform @+2.3mPD
	36 08OCT09 19NOV09 1 39	10R1DO0504 Divert exist. outfall "W" under CPR arch bridge
	0 08OCT09 2 47	10R1D00502 Site possession of Portion E-650d of DOC
		Constate EnwersPansBo Colliver & Open Channel
	12 11JUN10 25JUN10 1 40	10R1D00424 Commission of Spiral Ramp
	24 13MAY10 10JUN10 1 40	10R1D00422 Construct vehicular access bet, tunnel & s. ramp
	27NOV09 27APR10 1	10H10U0416 Construct spiral ramp; +4.5 to +24mPD at 0-1
		_
	16 24OCT09 12NOV09 1 40	-
	8 15OCT09 23OCT09 1 40	10R1DO0410 Construct base for vehicular access
sheet pile roofing & lagging ~180m2@also; 640m3	48 18AUG09 14OCT09 1 40	10R1DO0408 Excavation for vehicular access underneath CPR
740ft3 soil & 4000m3 rock隔离高高加口cluding terms supports mesures	120 21MAR09 17AUG09 1 40	10R1DO0404 Mechanical excavation for spiral ramp
740 nos. *13m lono	12 07MAR09 20MAR09 1 40	10R1DO0402 Install 273mm dia. temp. pipe piles; 40 nos.
7.8 9.00 (1/2/3/4/5/G67/8/92/02/22/24/22/24/22/24/22/24/24/24/24/24/24	Dur Starf Finish 15 Float	
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10R1DO0706 Excavate for box culvert (upper part)	_	Miles Sol 5400m3
10R1DO0708 Construct box-culvert (upper part)	15OCT10 04JAN11 1	Emergeoncrete 1830m3
10R1DO0710 Excavate for cascade construction	05JAN11	##Soi 840m3, rock 600m3
10R1D00712 Construct cascade	48 19FEB11 16APR11 1 8	Emilia concrete 950m3
10B1D00714 Construct retaining wall, baffle, railing etc.	48 19FEB11 16APR11 1 33	
Seabeathratestion Wolks		
10R1DO0804 Excavate & formation for 100m*16m slab	72 11MAY10 05AUG10 1 93	IMMERICASION 4000m3
10R1DO0806 Construct concrete apron with pre-cast RC slabs	26MAY10 19AUG10 1	[国际][1] [1] [1] [1] [1] [1] [1] [1] [1] [1]
10R1D00808 Installtion of precast stepped blocks	144 06AUG10 27JAN11 1 93	pre-cast panel 2340m2, granular filter 700m3 Francisco and control of 300mm granular fill & geotextile
10RtDO0810 Removal of platform & formation	12 08MAR11 21MAR11 1 39	128
10H1D00812 Install remain. Concrete apron for rem. Area	04APR11 1	
14R5DO0802 Removal of sea wall armour	72 26APR10 22JUL10 1 93	[3] [3] [3] [3] [3] [3] [3] [4] [4] [4] [4] [4] [4] [4] [4] [4] [4
Repellings Works, Enton of Ednolover		
10R1DO0904 Finishing & reinstatement works; Portion D	48 19MAR11 19MAY11 1 33	
10R1DO0906 Pre-handover inspections and remedial works	48 18APR11 17JUN11 1 33	
10R1DO0908 Contractor serve notice for Works completion	7 18JUN11 24JUN11 2 437	
10R1DO0910 SO issues completion certificate	21 25JUN11 15JUL11 2 437	£32
i 16R7DO0902 Landscaping works at Portion D	120 19JAN11 17JUN11 1 33	
16R7DO0904 Establishment Works at Portion D	365 18JUN11 16JUN12 2 40	
3DL1D00902 Install flow measurement devices at Outfall O-1	24 18APR11 19MAY11 1 29	
37L1DO0904 Maintain & monitor flow monitoring	365 20MAY11 18MAY12 2 69	
Schedule of Milestones/forcoshicemne No. 105		
110R1DO1002 10R 1; On completion of 20% excavation works	0 09JUL08 2 1,538	♦Outfli O-1
10R1DO1004 10R 2; On completion of 40% excavation works		♦Outrai O-1
10R1DO1006 10R 3; On completion of 60% excavation works	08NOV08 2	♦Outfall Q-1
10R1DO1008 10R 4; On completion of 80% excavation works	14OCT09 2 11	Ontial Oil
10R1DO1010 10R 5; On completion all excavation works	18FEB11	◆ati Outfall 0-1
10B1DO1014 10B 7: On completion of caircle structure	u 0	
10R1DO1016 10R 8; On completion of spiral access ramp	25JUN10 2	◆at Outfall O-1
10R1DO1018 10R 9; On completion box-culvert & open channel	į	and open channel underneath CPR
10R1DO1020 10R 10; On completion of seabed protection wks	0 04APR11 2 539	Protection works at Outfall O-1
10R1DO1022 10R 11; On completion of all works under this CC	0 17JUN11 2 465	♦ under this Cost Centre
्रात्ता है। इस स्थापन स्था स्थापन स्थापन		
14R5DO1102 14R 1; On complet. of remove exist. rock armour	8	Parmour al Outfall O-1
	20JUN08 2	In Outfall O-1
14R5DO1106 14R 3; On completion all soiling works	0 13AUG08 2 1,503	❤nailing at Outfall O-1

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Sheet

SOLVEN STANDARD STAND	◆pipe jacking method at Portion G	Poipe jacking method at Portion G	Spipe jacking method at Portion G	Spipe facking method at Portion G	Sunder this Cost Centre
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Appendix D

Implementation Status of **Environmental Mitigation Measures**

IMPLEMENTATION SCHEDULE

EIA Ref.	Recommended Mitigation Measures	Who to implement the measure?	Location of the measure	What requirements or standards for the measure to achieve ?	Status
Air Q	uality				
3.6.1	As mentioned in Section 3.5, exceedances of 1-hour and 24-hour average TSP guideline levels have been predicted at most of the ASRs. Hence, mitigation measures are considered necessary in order to suppress the potential dust impact.	DSD's Contractor	Construction Work Sites	Air Pollution Control (Construction Dust) Regulation	N/A
	The dust suppression measures set out in the <i>Air Pollution Control (Construction Dust)</i> Regulation, in fact, are more extensive. Therefore, it is expected that with watering the construction site every four times daily together with strict implementation of dust suppression measures as stipulated in the <i>Air Pollution Control (Construction Dust)</i> Regulation, the dust level is expected to be reduced by over 75%.				N/A
	General To further ensure compliance with the guideline and AQO limit at the ASRs at all time, it is recommended to implement the <i>Air Pollution Control (Construction Dust) Regulation</i> and include good site practice in the contract clauses to minimize cumulative dust impact.In addition, a comprehensive dust monitoring and audit programme is recommended to ensure proper implementation of the identified mitigation measures. Details of the monitoring and audit requirements are provided in a separate EM&A Manual. • effective dust screens, sheeting or netting should be provided to enclose the scaffolding				
	from the ground floor level of the building or if a canopy is provided at the first floor level, from the first floor level, up to the highest level of the scaffolding where a scaffolding is erected around the perimeter of a building under construction;				N/A
	 dump truck for material transport should be totally enclosed by impervious sheeting; any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated within 24 hours of the excavation or unloading; 				√
	 stockpile of dusty materials should not extend beyond the pedestrian barriers, fencing or traffic cones; dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; 				√

EIA Ref.	Recommended Mitigation Measures	Who to implement the measure ?	Location of the measure	What requirements or standards for the measure to achieve ?	Status
3.6.1	• the area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;	DSD's Contractor	Construction Work Sites	Air Pollution Control (Construction Dust) Regulation	✓
	 where a site boundary adjoins a road, street or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length except for a site entrance or exit; 				✓
	• every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet;				✓
	• the portion of road leading only to a construction site that is within 30m of a designated vehicle entrance or exit should be kept clear of dusty materials;				✓
	stockpile of dusty materials should be either covered entirely by impervious sheeting, placed in an area sheltered on the top and the 3 sides; or sprayed with water so as to maintain the entire surface wet;				✓
	all dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet;				✓
	vehicle speed should be limited to 10 kph except on completed access roads;				✓
	• every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites;				✓
	the load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle; and				✓
	• the working area of excavation should be sprayed with water immediately before, during and immediately after the operations so as to maintain the entire surface wet.				✓
Noise					
4.6.1	During Construction Appropriate mitigation measures such as the use of quiet equipment and movable barriers will be developed to ensure that noise can be reduced to acceptable levels without causing programme delays	DSD's Contractor	Construction Work Sites	PN 2/93 Noise from Construction Activities & EIAO	N/A
	Good Site Practice Good site practice and noise management can significantly reduce the impact of construction site activities on nearby NSRs. The following package of measures should be followed during construction:				
	 only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction works; 				✓
	 machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; 				✓

EIA Ref.	Recommended Mitigation Measures	Who to implement the measure ?	Location of the measure	What requirements or standards for the measure to achieve ?	Status
4.6.1	• plant known to emit noise strongly in one direction should, where possible, be orientated to direct noise away from the NSRs;	DSD's Contractor	Construction Work	Air Pollution Control (Construction Dust)	✓
	mobile plant should be sited as far away from NSRs as possible; and		Sites	Regulation	\checkmark
	• material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.				✓
	 For Drill and Blast Works Charge mass per delay should be decreased by minimising the number of blastholes firing on each delay. 				N/A
	Smaller blasthole patterns and longer delays should be used between dependent charges.				N/A
	Times of blasting should be established to suit the situation and firing blasts when neighbours are busy with their daily tasks (and at a regular time such as lunch time).				N/A
	 For TBM Tunnelling For the tunnel excavation, it is anticipated that beyond the initial length (say within 30m), excavation will be carried out well within the tunnel and door should be provided to further minimize the noise nuisance to the nearby receivers. 				N/A
4.6.2	During Operation	DSD's Contractor	Project Area	NCO & EIAO	
	Good site practice and noise management can significantly reduce the impact of maintenance activities on nearby NSRs. The following package of measures should be followed during construction				
	only well-maintained plant should be operated on-site;				N/A
	machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; and				N/A
	• plant known to emit noise strongly in one direction should, where possible, be orientated to direct noise away from the NSRs.				N/A
	Quality				
5.9.1	During Construction	DSD's Contractor	Construction Work Sites	Practice Note for Professional Persons with	√
	Mitigation measures and a spill control and response plan have been prepared for works at the intakes and work sites.			regard to site drainage (ProPECC PN 1/94) and	
	Precautions to be taken at any time of year when rainstorms are likely:			WQO	✓
	 Temporarily exposed surfaces should be covered e.g. by tarpaulin. Temporary access roads should be protected by crushed stone or gravel. 	-			✓
	Trenches should be dug and backfilled in short sections. Measures should be taken to minimize the ingress of rainwater into trenches.	-			✓
	Actions to be taken when a rainstorm is imminent or forecast: • Silt removal facilities, should be checked to ensure that they can function properly.				✓

EIA Ref.	Recommended Mitigation Measures	Who to implement the measure?	Location of the measure	What requirements or standards for the measure to achieve?	Status
5.9.1	 Open stockpiles of construction materials on site should be covered with tarpaulin or similar fabric. 	DSD's Contractor	Construction Work Sites	WQO	✓
	All temporary covers to slopes and stockpiles should be secured.				✓
	 Actions to be taken during or after rainstorms: Silt removal facilities should be checked and maintained to ensure satisfactory working conditions. 				✓
	Spill Control and Response Plan				
	1 Prevention and Precaution Measures				
	General PrecautionsNo discharge of silty water into watercourses.				✓
	 All materials to be used during construction and operation shall be identified and their hazard potential evaluated. 				✓
	 Maintenance of vehicles and equipment involving activities with potential for leakage and spillage shall only be undertaken with the areas appropriately equipped to control these discharges. 				✓
	 Any soil contaminated with chemicals/oils shall be removed from site and the void created shall be filled with suitable materials. 				✓
	 Any construction plant which causes pollution to catchwaters or water gathering ground due to leakage of oil or fuel shall be removed off-site immediately. 				✓
	 Suitable containers shall be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport 				✓
	 Chemical waste containers shall be suitably labelled to notify and warn the personnel who are handling the wastes to avoid accidents. 				✓
	• Storage areas shall be selected at safe locations on site and adequate space shall be allocated to the storage area.				✓
	• Prevent obstructions and tripping hazards.				✓
	Storage PrecautionsAll chemical storage containers shall be correctly labelled.				✓
	Solid and impermeable enclosure walls or storage shelves shall be used.				✓
	Only compatible chemical wastes shall be stored in the same storage area.				✓
	• The storage areas shall be inspected to detect any leakages or defective containers on a regular basis.				\checkmark
	• The storage areas shall be inspected to detect any leakages or defective containers on a regular basis.				✓
	• Suitable notices warning of hazards, emergency response plans, telephone numbers etc shall be posted around the site, including storage areas.				✓
	Large and heavy containers shall be stored at ground level.				✓

EIA Ref.	Recommended Mitigation Measures	Who to implement the measure?	Location of the measure	What requirements or standards for the measure to achieve?	Status
	Chemical waste containers shall be stored below eye level.				✓
5.9.1	Adequate space for handling of the containers shall be provided	DSD's	Construction	WQO	√
	• Spill response kits shall be located adjacent/near to the storage areas.	Contractor	Work Sites		\checkmark
	A log of chemical wastes shall be maintained.				✓
	Incompatible chemicals shall be stored separately.				✓
	2 Responses/Action Plan				
	All Workers shall be made aware of emergency telephone numbers and the location of all relevant pollution control equipment. Training be given in emergency response/action plans. The action include the following steps:				✓
	• Only trained personnel who are equipped with protective clothing and equipment shall be allowed to enter the spillage area for clean up.				✓
	• Spills shall be transferred appropriate back into containers using suitable equipment.				✓
	 Absorbent materials shall be used to clean up the spills and shall be disposed of as chemical wastes. 				✓
	 Where appropriate suitable solvents may be used to clean the contaminated area after removal of all contaminated materials. 				✓
	 All necessary protective devices, safety equipment, containers and clean up materials for emergency use shall be maintained to a high standard. 				✓
	3 Spill Clean Up and Disposal				
	Effect the response plan.				✓
	Control the leakage and absorb the spillage using suitably absorbent materials.				✓
	Provide safety equipment and personal protective equipment for handling of chemical wastes would be similar to that for handling of chemicals.				✓
	Safety equipment includes but is not limited to: • Fire extinguishers.				✓
	• Spades, brushes, dustpan, mop and bucket (or similar readily available on site).				✓
	• Absorbent material such as dry sand, tissues and toweling (all materials readily available on-site).				✓
	Containers including plaster bags, drums, etc.				\checkmark
	Absorbing materials.				✓
	• Pumps.]			\checkmark
	Personal protective equipment includes as appropriate: • First-aid kits.				\checkmark
	Safety helmet and goggles.				\checkmark
	Gloves which can resist chemical reaction.				\checkmark

EIA Ref.	Recommended Mitigation Measures	Who to implement the measure ?	Location of the measure	What requirements or standards for the measure to achieve ?	Status
	Protective boot and clothing.	DSD's	Construction	WQO	✓
5.9.1	Respirators and gas masks.	Contractor	Work Sites		•
	Face visor and masks.				✓
5.9.2	Emergency Responses to Spillages				
	Emergency plans and clean up procedures will need to be provided by the Contractor recognising his specific working methods and construction programme, activities and sequences. Agreement must be sought prior to commencement of the construction work but the following principles should be considered.				
	The emergency plans should include the procedures for:				✓
	spill prevention and precaution;	_			
	response actions; and				✓
	spill clean up and disposal.				✓
	Spill prevention and precaution embraces good site practice and covers:				✓
	good housekeeping practices;	_			
	chemical storage requirements; and				√
	chemical transfer and transport.				✓
5.9.3	During Operation	DSD's Contractor	Project Area		
	Regular inspection of the tunnels is essential to monitor the structural integrity and proper functioning of the drainage tunnel, which allows repairing of structural deterioration when it begins to develop. It is recommended that routine inspection shall be carried out at least two times per year for the drainage tunnel at the beginning and end of wet season from April to September.				N/A
	Management	_			
6.5.1	During Construction Vegetation Removed from Site Clearance Wastes generated from site clearance shall be sorted and excavated topsoil segregated from roots for re-use in landscaping works, thus eliminating the need for off-site disposal.	DSD's Construction Work Sites	Waste Disposal Ordinance (Cap.354); Waste Disposal (Chemical Wastes) (General) Regulation (Cap 354) and ETWBTC No.	✓	
	Construction and Demolition Materials The Contractor should reuse any C&D material on-site. C&D waste should be segregated and stored in different containers to other wastes to encourage the re-use or recycling of materials and their proper disposal. The use of wooden hoardings shall not be allowed. An alternative material, which can be reused or recycled, for example, metal (aluminium, alloy, etc) shall be used.			15/2003, Waste anagement on Construction Site	√

EIA Ref.	Recommended Mitigation Measures	Who to implement the measure ?	Location of the measure	What requirements or standards for the measure to achieve ?	Status
6.5.1	As referred to the section 6.4.1, the 317,936m ₃ of inert surplus material generated by the project is suitable for public fill. The public fill reception facility at Tuen Mun Area 38 provides a suitable facility for the reuse of surplus inert C&D material generated from the project.	DSD's Contractor	Construction Work Sites	WDO (Cap.354), ETWBTC No. 15/2003, ETWBTC No. 12/2002 and ETWBTC No. 31/2004	
	Under the contract, the contractor will be required to minimise the generation of C&D material and reuse it on site through the following:				
	(a) to plan in the design and construction, methods to minimise the generation of C&D material;				✓
	(b) to submit a Waste Management Plan (WMP) in accordance with Environment Transport and Works Bureau Technical Circular (ETWBTC) No. 15/2003 or any superseding circular(s);				✓
	(c) to reuse recycled aggregates in accordance with ETWBTC No. 12/2002 or any superseding circular(s);				✓
	(d) to observe the requirements of the Trip-Ticket System, stipulated in ETWBTC No. 31/2004 or any superceding circular(s), for disposal of C&D material;				✓
	(e) to incorporate a Waste Management System into the WMP for effective management and control of C&D materials to avoid/reduce/minimise the generation of C&D material during construction.				✓
	The contractor will be required to properly sort into inert C&D materials, metals, timber and other non-inert C&D material in the workplace to prevent cross-contamination.				\checkmark
	In addition, DSD will conduct site inspection to monitor the contractors' performance in the implementation of the WMP and other relevant specified requirements.	DSD	Construction Work Sites	WDO (Cap.354) and ETWBTC No. 15/2003	√
	Excavated Materials Excavated materials should be segregated from other wastes to avoid contamination thereby ensuring acceptability at public filling areas and avoiding the need for disposal at landfill. Municipal Waste	DSD's Contractor	Construction Work Sites	WDO (Cap.354) and ETWBTC No. 15/2003	√
	Temporary refuse collection facilities should be set-up by the contractor and wastes should be stored in appropriate containers prior to collection and disposal.				✓
	Domestic effluent generated by the workforce will be directed to foul sewer or chemical toilets if public facilities are not available.				\checkmark
6.5.1	Waste Management Plan A Waste Management Plan (WMP) for the construction of the Project should be prepared as part of the contractors submission. It will provide recommendations for appropriate recycling or disposal route and should include method statement for stockpiling and transportation of the excavated material and other construction wastes should also be included in the WMP and approved before the commencement of construction. All mitigation measures arising from the approved WMP shall be fully implemented.	DSD's Contractor	Construction Work Sites	WDO (Cap.354), ETWBTC No. 15/2003 and ETWBTC No. 33/2002	√

EIA Ref.	Recommended Mitigation Measures	Who to implement the measure?	Location of the measure	What requirements or standards for the measure to achieve?	Status
	For the purpose of enhancing the management of C&D material including rock, and to minimize its generation at source, a C&D Material Management Plan (C&DMMP) has been prepared for this project and would be processed in accordance with the Environment, Transport and Works Bureau Technical Circular (Works) No. 33/2002 - Management of Construction and Demolition Material Including Rock.				N/A
Ecology	_			· · · · · · · · · · · · · · · · · · ·	
7.7.1	Avoidance The surface structures are located mainly on existing disturbed areas (ie pollution and urbanisation) and have generally avoided the natural stream sections of higher species diversity and abundance of aquatic organisms.	DSD's Contractor	Construction Work Sites	EIAO	✓
	The major construction activities at streams are scheduled to avoid wet season of high water flow which may adversely affect the downstream natural habitats due to the construction runoff.				✓
7.7.2	Minimisation				
	The previous discussion in Section 7.6.4 has indicated that the impacts on ecological resources due to the construction and operation of the proposed Project are generally expected to be low. The following mitigation measures to minimise impacts and disturbance to the surrounding habitats, are recommended.				✓
	Measures for Construction Runoff Install sheet piles/cofferdam/weir along the boundary of the works area within the stream habitats in particular Sam Dip Tam Stream and Tso Kung Tam Stream before the commencement of works to prevent construction runoff during construction. Provision of adequate designed sand/ silt removal facilities such as sand traps, silt traps and sediment basin in the areas which could potentially be affected may be required.				✓
	Good Construction Practice				✓
	Erect fences along the boundary of the works area before the commencement of works to prevent tipping, vehicle movements, and encroachment of personnel onto adjacent areas, particularly the stream habitats.	DSD's Contractor	Construction Work Sites	EIAO	✓
	Avoid any damage and disturbance, particularly those caused by filling and illegal dumping, to the remaining and surrounding natural stream habitats.				✓
	Regularly check the work site boundaries to ensure that they are not breached and that no damage occurs to surrounding areas.				\checkmark
	Prohibit and prevent open fires within the site boundary during construction and provide temporary fire fighting equipment in the work areas.	_			✓
	Treat any damage that may have occurred to individual major trees in the adjacent area with surgery.				✓

EIA Ref.	Recommended Mitigation Measures	Who to implement the measure ?	Location of the measure	What requirements or standards for the measure to achieve ?	Status
	Reinstate temporary work sites/disturbed areas, particularly stream of natural bottom and bank, plantation, intertidal habitat, and the areas located within the proposed Ecological Park, immediately after completion of the construction works, ie through on-site tree/shrub planting and reprovision of natural or semi-natural bottom (also refer to Section 7.7.3), in order to facilitate the recolonisation of the wildlife recorded during the baseline surveys. Tree/shrub species used should make reference from those in the surrounding area	DSD's Contractor	Construction Work Sites	EIAO	~
7.7.3	Compensation Provide natural stream bed (approximately 0.03 ha) for the new Dry Weather Flow Channel (created from village-orchard) by laying natural stones at Intake I-2 (Figure 7.7). The reinstated stream bed shall mimic the existing natural conditions with certain portion of big boulders creating the lentic and lotic zones for the aquatic fauna, and while it will be developed during detailed design may draw on concepts shown in Figure 2.18. Provide natural stream bed (approximately 0.5 ha,) for the Approach Channel and Dry				N/A
	Weather Flow Channel by laying natural stones at Intake I-3 (Figure 7.8). The reinstated stream bed shall mimic the existing natural conditions (rocky bottom with very limited aquatic plants) with certain portion of big boulders creating the lentic and lotic zones for the aquatic fauna, and while it will be developed during detailed design may draw on concepts shown in Figure 2.18.				N/A
	Provide natural bottom (ie retain the existing stream bed or reinstate the stream bed by providing boulders/ rocks, riprap or gabion) for the affected stream sections (Figure 7.8) in order to allow natural colonisation of aquatic fauna. Provide at least 2.2 ha of compensatory planting on the permanent and temporary affected				N/A
	plantation areas, particularly the slopes along access road and adjacent to Intake I-3 and cascade at Outfall O-1, after construction to stabilise the slope to present soil erosion and consequent stream sedimentation. Among the 2.2 ha compensatory planting, at least 0.5 ha of compensatory tree planting on the new formed slope along the access road of the Intake I-3 and 0.5 ha of compensatory tree planting over the cascade (by constructing intermediate platform) at Outfall O-1 will be provided (location refer to Figures 7.4 – 7.6). Species used for planting should take reference from the species identified in Appendix F and be native to Hong Kong or South China region.				N/A
	Provide armour rocks for the affected intertidal habitat in order to allow natural colonisation of intertidal organisms.				N/A

EIA Ref.	Recommended Mitigation Measures	Who to implement the measure ?	Location of the measure	What requirements or standards for the measure to achieve ?	Status
Cultura	<u>Heritage</u>				
8.6	As no impacts on recorded archaeological sites or area with archaeological potential were identified within the Study Area, no mitigation measure for archaeological resources is considered necessary.				N/A
	The construction methods to be employed should seek to avoid potential vibration impacts to Kuen Yuen Tung Monastery at Lo Wai, the Western Monastery, Yuen Yuen Home for the Aged, Hong Hoi Chee Hong Temple, Chiu Yum Tsing Yuen, Tse's Grave, Wan Lin Bridge and Sam Dip Tam Rock Carving in Sam Dip Tam and the Tin Hau Temple, Yam Kom Tau Village Rural Committee and the Yeung's Ancestral Hall in Yau Kom Tau as these sites fall within 50 m of the Preferred Option of the drainage tunnel alignment or associated Intakes/Outfall construction activities. Construction works that generates excessive vibration in close proximity to these sites should be restricted to protect the building from adverse vibration impacts and to ensure that the building structures will not be damaged as a result of these impacts.	DSD's Contractor	Construction Work Sites	EIAO	N/A
	In order to ensure that no structural or superficial damage will be caused by the construction activities, a precautionary approach involving a pre-construction condition survey and establishment of appropriate vibration limits for the potentially impacted structures should be adopted. Protection measures for the potentially impacted structures, if considered necessary from the pre-construction condition survey, should be implemented prior to the commencement of construction works. Vibration monitoring during the construction phase should be undertaken as part of the EM&A programme.	Qualified archaeologist/ built heritage specialist	Construction Work Sites	EIAO	N/A
<u>Fisherie</u>		•		· · ·	
10.6	In accordance with the guidelines in the <i>EIAO-TM</i> on fisheries impact assessment the general policy for mitigating impacts to fisheries, in order of priority are avoidance, minimization and compensation.	DSD's Contractor	Construction Work Sites	EIAO	N/A
	Impacts to fisheries resources and fishing operations have largely been avoided during the construction and operation of the drainage tunnel through the avoidance of dredging, reclamation and filling activities. Good construction practice and associated measures were recommended in Water Quality Assessment in Section 5 to control water quality impacts to within acceptable levels and are also expected to control impacts to fisheries resources. Hence, no fisheries-species mitigation measures are required during construction and operation of the drainage tunnel.				N/A

Remarks:

√ x Compliance of mitigation measure Non-compliance of mitigation measure Not applicable

N/A



Appendix E

Status of License and Permit

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Updated Status of Environmental Permit & Licence

Application Date	Issued Date	Due Date	Environmental Permit / Licence	Ref No.	Account No.	Remarks
2-Jan-2008	3-Jan-2008		Registration as a Waste Producer	001026707		Contractor had received the acknowledge receipt on 3 Jan 2008.
2-Jan-2008	26-Feb-2008		Waste Disposal (Chemical Waste) (General) - Chemical Waste Producer		5111-324-M2703-01	
2-Jan-2008	17-Jan-2008		Waste Disposal (Charges for Disposal of Construction Waste) Regulation - Billing Account		7006574	
10-Jan-2008	10-Jan-2008		Notification Pursuant to Section 3(1) of the Air Pollution Control (Construction Dust) Regulation	001026901		Contractor had received the acknowledge receipt on 10 Jan 2008.
25-Feb-2008	7-Aug-2008	31-Aug-2013	Water Pollution Control Ordinance – Outfall	001028154	Licence No.: EP760/323/012997 I	Contractor had received the acknowledge receipt on 3 March 2008. Public Notice had been issued on 16 June 2008. Application fees had been paid on 28 July 2008. Licence had been issued on 7 Aug 2008.
9-Apr-2008	29-Apr-2008		Notification of Change in the Registration of Chemical Waste Producer		5111-324-M2703-01	MCSJV's Managing Director had been changed from Mr. Richard Myrans to Mr. Christopher Shaw.
10-Apr-2008	6-May-2008		Further Environmental Permit	FEP-088/2008	Permit No.: FEP-01/275/2007	Contractor had received the acknowledge receipt on 17 April 2008. FEP had been issued on 6 May 2008.
11-Apr-2008	30-May-2008		Application for Issuance of Chits for Disposal of Construction Waste for Existing Account Holder		7006574	Contractor had applied extra 200 chits for further usage. Chits had been received on 10 June 2008.
18-Apr-2008	19-Jun-2008	30-Jun-2013	Water Pollution Control Ordinance – Intake	001029978	Licence No.: EP760/327/013315I	Contractor had received the acknowledge receipt on 8 May 2008. Application fees had been paid on 13 June 2008. Licence had been issued on 19 June 2008.

18-Apr-2008	2-Jul-08	31-Jul-2013	Water Pollution Control Ordinance – Intake 2	001029959	Licence No.: EP760/321/013020I	Contractor had received the acknowledge receipt on 8 May 2008. Application fees had been paid on 26 June 2008. Licence had been issued on 2 July 2008.
18-Apr-2008	5-Aug-2008	31-Aug-2013	Water Pollution Control Ordinance – Intake	001029960	Licence No.: EP760/323/013324 I	Contractor had received the acknowledge receipt on 8 May 2008. Public Notice had been issued on 16 June 2008. Application fees had been paid on 28 July 2008. Licence had been issued on 5 Aug 2008.
18-Apr-2008	26-Jun-2008	30-Jun-2013	Water Pollution Control Ordinance – Portion I	001029974	Licence No.: EP760/350/013334I	Contractor had received the acknowledge receipt on 8 May 2008. Application fees had been paid on 13 June 2008. Licence had been issued on 26 June 2008.
18-Jun-2008	27-Jun-2008		Variation of Environmental Permit	VEP-266/2008	Permit No.: FEP-01/275/2007/A	Contractor had received the acknowledge receipt on 23 June 2008. Licence had been issued on 27 June 2008.
23-Jul-2008	27-Aug-2008	31-Aug-2013	Water Pollution Control Ordinance – Intake 1 (Intersection of Wo Yi Hop Lane and Ho Fung College)	001031974	Licence No.: EP760/325/013536I	Contractor had received the acknowledge receipt on 25 July 2008. Application fees had been paid on 19 Aug 2008. Licence had been issued on 27 Aug 2008.
21-Nov-2008			Construction Noise Permit 1) Chai Wan Kok Valve House (Near Summit Terrace - Tusen Wan) 2) Valve House (Near The Wonderland - Castle Peak Road- Ting Kau)			Contractor had applied the permit on 21 Nov 2008. Contractor had received the acknowledge receipt on 2 Dec 2008. Notice of Refusal had been received on 6 Dec 2008.



Appendix F

Calibration Certificates

13/01/09 10:44 5

Project Title:

Design and Construction of Tsuen Wan Drainage Tunnel

Monitoring Location:

Greenview Terrance

Calibration Date: Calibration Due Date 10-Oct-08 10-Dec-08

Time:

16:15

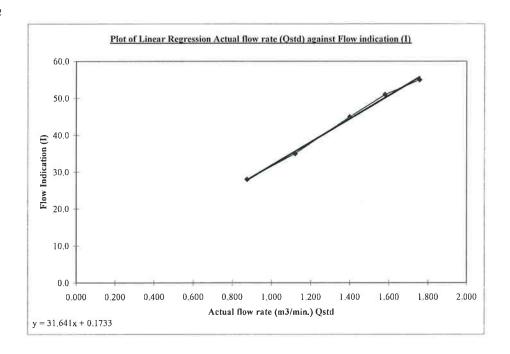
Sampler Model:	TE5005X
Serial No.:	0646
Calibrator Orifice no.:	517N
Slope (in):	2.02953
Intercept (b):	-0.01939
Correction coeff. (r)	0.9999

$$Flow(corrected) = \sqrt{H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}}$$

$Qstd = \frac{1}{m} \times (\sqrt{\frac{1}{m}})$	u Pa	Tstd	14
$Qsia = - \times ($	Pstd	Ta	-0)

Sample no.	Pressure Drop (H), inch	Flow (corrcted), m ³ /min	Actual flow rate (Qstd), m ³ /min	Flow indication (I), arbitrary
1	12.6	3.545	1.756	55.0
2	10.2	3.190	1.581	51.0
3	8.0	2.825	1,401	45.0
4	5.1	2.256	1,121	35.0
5	3.1	1.759	0.876	28.0

Correlation Coefficient: 0.9982



Remark 1HPa = 0.750062 mmHg

Calibrated by:

Mak Kei Ho 1-10

)

Checked by:

Tang Hiu Yeung

Date: (0-10108

Project Title: Design and Construction of Tsuen Wan Drainage Tunnel

Monitoring Location: Greenview Terrance

Calibration Date: 09-Dec-08
Calibration Due Date 09-Feb-09
Time: 16:57

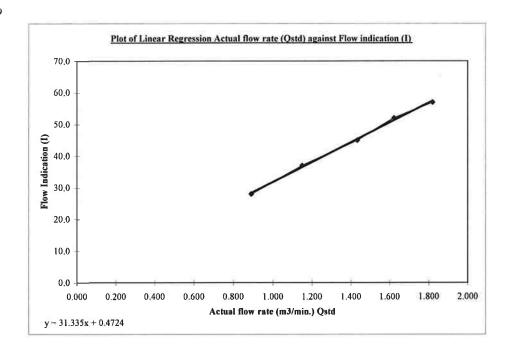
Sampler Model:	TE5005X
Serial No.:	0646
Calibrator Orifice no.:	517N
Slope (m):	2.02953
Intercept (b):	-0.01939
Correction coeff. (r)	0.9999

$$Flow(corrected) = \sqrt{H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}}$$

$$Qstd = \frac{1}{m} \times (\sqrt{H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}} - b)$$

Sample no.	Pressure Drop (H), inch	Flow (corrcted), m ³ /min	Actual flow rate (Qstd), m ³ /min	Flow indication (I), arbitrary
1	13.1	3.673	1.819	57.0
2	10.4	3.273	1.622	52.0
3	8.1	2.888	1.433	45.0
4	5.2	2.314	1.150	37.0
5	3.1	1.787	0.890	28.0

Correlation Coefficient: 0.9989



Remark 1HPa = 0.750062 mmHg

Calibrated by: Mak Kei Ho

Ho)

)

Checked by:

Tang Hiu Yeung

Date: 11-12-08

Project Title:

Design and Construction of Tsuen Wan Drainage Tunnel

Monitoring Location: Calibration Date:

Ho Fung College 10-Oct-08

Calibration Due Date

Time:

10-Dec-08 08:30

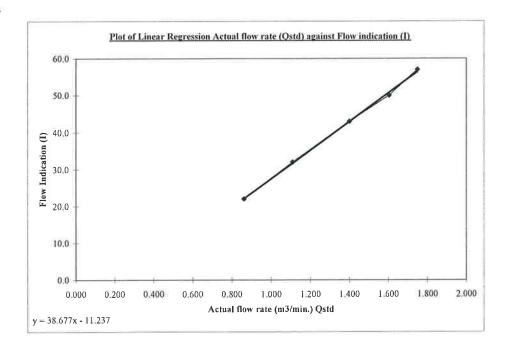
Sampler Model:	BM2000HX
Serial No.:	4994
Calibrator Orifice no.:	517N
Slope (m):	2.02953
Intercept (b):	-0.01939
Correction coeff. (r)	0.9999

$$Flow(corrected) = \sqrt{H \times \frac{Pa}{Pstd}} \times \frac{Tstd}{Ta}$$

$Qstd = \frac{1}{2} \times (\sqrt{2})$, Pa	Txtd	4)
$QSIU = \frac{1}{m} \times (\sqrt{\frac{1}{m}})$	Psid	Ta	-0)

Sample no.	Pressure Drop (H), inch	Flow (correted), m3/min	Actual flow rate (Qstd), m3/min	Flow indication (1), arbitrary
1	12.5	3,531	1.749	57.0
2	10.5	3.236	1.604	50.0
3	8.0	2.825	1.401	43.0
4	5.0	2.233	1.110	32.0
5	3.0	1,730	0.862	22.0

Correlation Coefficient: 0.9993



Remark 1HPa = 0,750062 mmHg

Calibrated by:

Mak Kei Ho

110

)

)

Checked by:

Tang Hiu Yeung

Date: () - () - ()

Project Title: Design and Construction of Tsuen Wan Drainage Tunnel

Monitoring Location: Ho Fung College
Calibration Date: 09-Dec-08
Calibration Due Date 09-Feb-09
Time: 17:59

Sampler Model:	BM2000HX
Serial No.:	4994
Calibrator Orifice no.:	517N
Slope (m):	2.02953
Intercept (b):	-0.01939
Correction coeff. (r)	0.9999

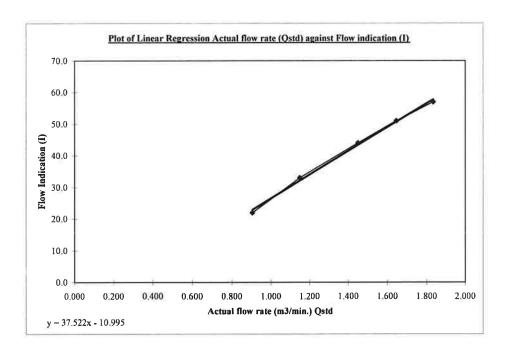
Standard pressure (mmHg) Pstd:	756.9	
Standard temp. (K) Tstd;	297.18	
Calibration pressure (mmHg) Pa:	764.0	
Calibration temp. (K) Ta:	292.1	

$$Flow(corrected) = \sqrt{H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}}$$

$$Qsid = \frac{1}{m} \times (\sqrt{H \times \frac{Pa}{Psid}} \times \frac{Tsid}{Ta} - b)$$

Sample no.	Pressure Drop (H), inch	Flow (correted), m ³ /min	Actual flow rate (Qstd), m3/min	Flow indication (I), arbitrary
1	13.3	3.701	1.833	57.0
2	10.7	3,319	1.645	51.0
3	8.3	2.924	1.450	44.0
4	5.2	2.314	1.150	33.0
5	3.2	1.815	0.904	22.0

Correlation Coefficient: 0.9983



Remark 1HPa = 0.750062 mmHg

Calibrated by: Mak Kei Ho

H0)

Date: 1/-12-08

Checked by:

Tang Hiu Yeung

Project Title:

Design and Construction of Tsuen Wan Drainage Tunnel

Monitoring Location:

Heng Hoi Chi Hong Ship Temple

Calibration Date: Calibration Due Date 10-Oct-08 10-Dec-08

Time:

10:58

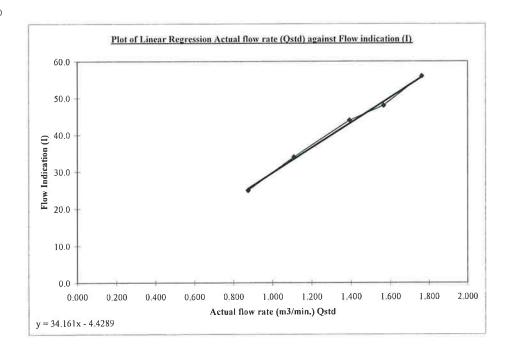
Sampler Model:	BM2000HX
Serial No.1	5875
Calibrator Orifice no.:	517N
Slope (m):	2.02953
Intercept (b):	-0.01939
Correction coeff. (r)	0.9999

$$Flow(corrected) = \sqrt{H \times \frac{Pa}{Pstd}} \times \frac{Tstd}{Ta}$$

Oud - 1 w	u Pa	Tstd	4.
$Qstd = \frac{1}{m} \times (\sqrt{\frac{1}{m}})$	Pstd	Ta	-0)

Sample no.	Pressure Drop (H), inch	Flow (correted), m ³ /min	Actual flow rate (Qstd), m3/min	Flow indication (1), arbitrary
T.	12.7	3.559	1.763	56.0
2	10.0	3.158	1.566	48.0
3	7.9	2.807	1.393	44.0
4	5.0	2.233	1.110	34.0
5	3.1	1.759	0.876	25,0

Correlation Coefficient: 0.9980



Remark 1HPa = 0.750062 mmHg

Calibrated by:

Mak Kei Ho H10

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Date: 10-10-08

Checked by:

Tang Hiu Yeung

Date: 0 . 0 . 0 8

Project Title: Design and Construction of Tsuen Wan Drainage Tunnel

Monitoring Location: Heng Hoi Chi Hong Ship Temple

Calibration Date: 09-Dec-08
Calibration Due Date 09-Feb-09
Time: 12:30

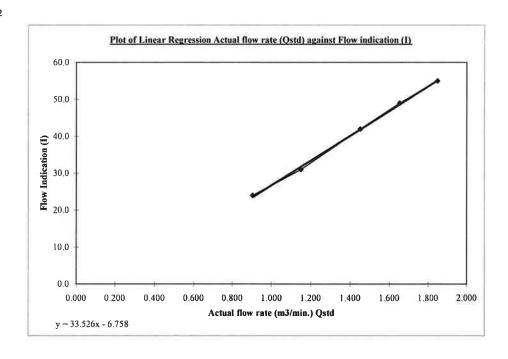
Sampler Model:	BM2000HX
Serial No.:	5875
Calibrator Orifice no.:	517N
Slope (m):	2.02953
Intercept (b):	-0.01939
Correction coeff. (r)	0,9999

$$Flow(corrected) = \sqrt{H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}}$$

$$Qstd = \frac{1}{m} \times (\sqrt{H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}} - b)$$

Sample no.	Pressure Drop (H), inch	Flow (corrcted), m³/min	Actual flow rate (Qstd), m ³ /min	Flow indication (I), arbitrary	
1	13.5	3.729	1.847	55.0	
2	10.8	3.335	1.653	49.0	
3	8.3	2.924	1.450	42.0	
4	5.2	2.314	1.150	31.0	
5	3.2	1.815	0,904	24.0	

Correlation Coefficient: 0.9992



Remark 1HPa = 0.750062 mmHg

Calibrated by: Mak Kei Ho

Ho

)

Date: 11-12-08

Checked by:

Tang Hiu Yeung

Date: _ ((- () - 08

Project Title: Design and Construction of Tsuen Wan Drainage Tunnel

Monitoring Location: Long Beach Gardan

Calibration Date: 10-Oct-08
Calibration Due Date 10-Dec-08
Time: 15:45

Sampler Model:	TE5005X
Serial No.:	0390
Calibrator Orifice no.:	517N
Slope (in):	2.02953
Intercept (b):	-0.01939
Correction coeff. (r)	0.9999

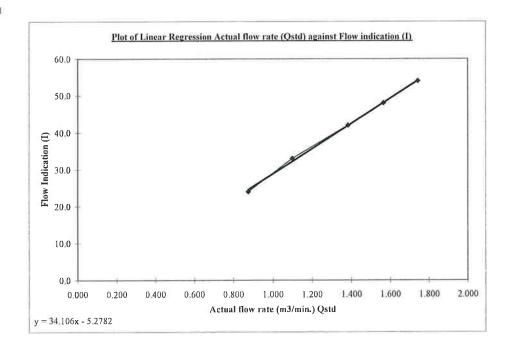
Standard pressure (mmHg) Pstd:	756.9	
Standard temp. (K) Tstd:	297.18	
Calibration pressure (mmHg) Pa:	762.1	
Calibration temp. (K) Ta:	300.8	

$$Flow(corrected) = \sqrt{H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}}$$

$$Qstd = \frac{1}{m} \times (\sqrt{H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}} - b)$$

Sample no.	Pressure Drop (H), inch	Flow (correted), m ³ /min	Actual flow rate (Qstd), m ³ /min	Flow indication (I), arbitrary	
i i	12.4	3.517	1.742	54.0	
2	10.0	3.158	1.566	48.0	
3	7.8	2.789	1.384	42.0	
4	4.9	2.211	1.099	33.0	
5	3.1	1.759	0.876	24.0	

Correlation Coefficient: 0.9991



Remark 1HPa = 0,750062 minHg

Calibrated by: Mak Kei Ho

(i-(0)

Checked by:

Tang Hiu Yeung

Date: (17 / 10 - 08

Project Title:

Design and Construction of Tsuen Wan Drainage Tunnel

Monitoring Location:

Long Beach Gardan

Calibration Date: Calibration Due Date 09-Dec-08 09-Feb-09

Time:

15:45

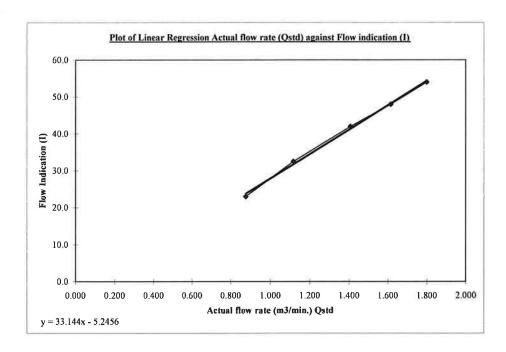
Sampler Model:	TE5005X
Serial No.:	0390
Calibrator Orifice no.:	517N
Slope (m):	2.02953
Intercept (b):	-0.01939
Correction coeff. (r)	0.9999

$$Flow(corrected) = \sqrt{H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}}$$

$$Qstd = \frac{1}{m} \times (\sqrt{H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}} - b)$$

Sample no.	Pressure Drop (H), inch	Flow (corrcted), m ³ /min	Actual flow rate (Qstd), m ³ /min	Flow indication (I), arbitrary
Ī	12.8	3.631	1.798	54.0
2	10.3	3.257	1.614	48.0
3	7.8	2.834	1.406	42.0
4	4.9	2.246	1.116	32.5
5	3.0	1.758	0.876	23.0

Correlation Coefficient: 0.9985



Remark

1HPa = 0.750062 mmHg

Calibrated by:

Mak Kei Ho

Checked by:

Tang Hiu Yeung

Date: 11/12/08



TISCH ENVIROMENTAL, INC. 145 SOUTH MIAMI AVE. VILLAGE OF CLEVES, OH 45002 513.467.9000 877.263.7610 TOLL FREE 513.467.9009 FAX WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

	=========		=======	========	========	======
PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1 2 3 4 5	NA NA NA NA	NA NA NA NA	1.00 1.00 1.00 1.00	1.4040 0.9940 0.8860 0.8450 0.6980	3.2 6.4 7.9 8.8 12.8	2.0 4.0 5.0 5.5 8.0

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9883 0.9841 0.9820 0.9809 0.9756	0.7039 0.9901 1.1084 1.1608 1.3977	1.4090 1.9926 2.2278 2.3365 2.8179		0.9957 0.9915 0.9894 0.9882 0.9829	0.7092 0.9975 1.1167 1.1695 1.4082	0.8889 1.2570 1.4054 1.4740 1.7777
Qstd slo intercer coeffici	ot (b) = ient (r) =	2.02953 -0.01939 0.99999	 'a)]	Qa slop intercep coeffici	t (b) =	0.99999

CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa] Qa = Va/Time

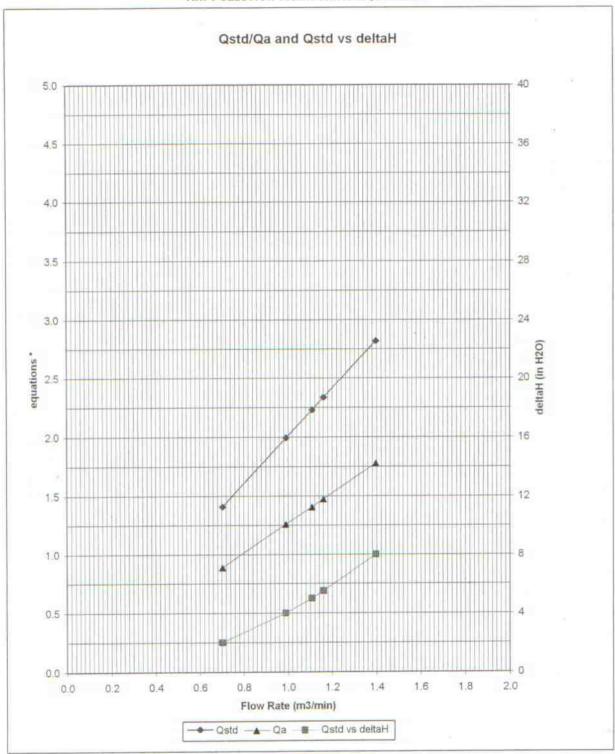
For subsequent flow rate calculations:

Qstd = $1/m\{ [SQRT (H2O (Pa/760) (298/Ta))] - b\}$ Qa = $1/m\{ [SQRT H2O (Ta/Pa)] - b\}$



TISCH ENVIROMENTAL, INC. 145 SOUTH MIAMI AVE. VILLAGE OF CLEVES, OH 45002 513.467.9000 877.263.7610 TOLL FREE 513.467.9009 FAX WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT



* y-axis equations:

Qstd series:

$$\sqrt{\Delta H \left(\frac{P a}{P s t d}\right) \left(\frac{T s t d}{T a}\right)}$$

Qa series:

$$\sqrt{(\Delta H (Ta / Pa))}$$

#517N



Calibration Certificate

Certificate No.

80026

Page

3 Pages

Customer: Hyder Consulting Limited

Address:

Room 3801., Hopewell Centre, 183 Queen's Road East, Wan Chai, Hong Kong

Order No.:

Q72325

Date of receipt

3-Jan-08

Item Tested

Description: Sound Level Meter

Manufacturer: B&K

Model

: 2238

Serial No.

: 2285726

Test Conditions

Date of Test: 17-Jan-08

Supply Voltage

Ambient Temperature:

 $(23 \pm 3)^{\circ}C$

Relative Humidity: (50 ± 25) %

Test Specifications

Calibration check.

Calibration procedure:

Z01.

Test Results

All results were within the IEC 651 Type 1 & IEC 804 Type 1 specification.

The results are shown in the attached page(s).

Main Test equipment used:

Equipment No. Description

Cert. No.

Due Date

Traceable to

S017

Multi-Function Generator

C071115

14-Mar-08

SCL-HKSAR

S024

Sound Level Calibrator

71791

16-Jul-08

NIM-PRC & SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI). The test results apply to the above Unit-Under-Test only

Calibrated by:

This Certificate is issued by:

Hong Kong Calibration Ltd.

Date:

17-Jan-08

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong Tel: 2425 8801 Fax: 2425 8646

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Calibration Certificate

Certificate No. 80026

Page 2 of 3 Pages

Results:

1. SPL Accuracy

	UU'	T Setting	Applied Value	UUT Reading	
Range	Freq. Wgt.	Bandwith	Center Freq.	(dB)	(dB)
$20 \sim 100$	A	BB/F	-	94.03	93.9
	A	BB/S			93.9
	C	BB/F			93.9
40 ~ 120	A	BB/F		94.03	94.0
	A	BB/F		113.97	113.8

IEC 651 Type 1 Spec. : \pm 0.7 dB

Uncertainty: ± 0.1 dB

2. Level Stability: 0.0 dB

IEC 651 Type 1 Spec. : \pm 0.3 dB

Uncertainty: ± 0.01 dB

3. Linearity

3.1 Level Linearity

	Applied	UUT Reading	Variation	IEC 651 Type 1 Spec.
UUT Range	Value (dB)	(dB)	(dB)	(Primary Indicator Range)
140	114.0	114.0	0.0	± 0.7 dB
130	104.0	104.0	0.0	
120	94.0	94.0 (Ref.)		3
110	84.0	84.0	0.0	
100	74.0	74.0	0.0	
90	64.0	64.0	0.0	
80	54.0	54.0	0.0	

Uncertainty: ± 0.1 dB

3.2 Differential level linearity

3.2 Differen	itiai ievei iiiieai	ity		
	Applied	UUT Reading		
UUT Range	Value (dB)	(dB)	Variation (dB)	IEC 651 Type 1 Spec.
120	84.0	84.0	0.0	± 0.4 dB
	94.0	94.0 (Ref.)		
	95.0	95.0	0.0	± 0.2 dB
	104.0	103.9	0.1	± 0.3 dB
	105.0	104.9	0.1	± 1.0 dB

Uncertainty: ± 0.1 dB



Calibration Certificate

Certificate No.

80026

Page 3 of 3 Pages

4. Frequency Weighting

A weighting

Freque	ency	Attenuation (dB))	IEC 651 Type 1 Spec.
31.5	Hz	- 39.3		- 39.4 dB, ± 1.5 dB
63	Hz	- 26.1		- 26.2 dB, ± 1.5 dB
125	Hz	- 16.1		- 16.1 dB, ± 1 dB
250	Hz	- 8.7		- 8.6 dB, ± 1 dB
500	Hz	- 3.2		- 3.2 dB, ± 1 dB
1 1	kHz	0.0	(Ref)	$0 dB, \pm 1 dB$
2	kHz	+ 1.2		+ 1.2 dB, \pm 1 dB
4 1	kHz	+ 1.0		+ 1.0 dB, \pm 1 dB
8 1	kHz	- 1.1		- 1.1 dB , + $1.5 \text{ dB} \sim -3 \text{ dB}$
16	kHz	- 6.7		- 6.6 dB, + 3 dB \sim - ∞

Uncertainty: ± 0.1 dB

5. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	40.0	40.0	
1/10	40.0	39.9	± 0.5 dB
$1/10^2$	40.0	39.6	
$1/10^3$	40.0	39.4	± 1.0 dB
1/104	40.0	39.1	

Uncertainty: ± 0.1 dB

Remarks: 1. UUT: Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. Atmospheric pressure: 1 015 hPa.

----- END -----



Calibration Certificate

Certificate No.

80027

1 Page

of 2 Pages

Customer: Hyder Consulting Limited

Address : Room 3801., Hopewell Centre, 183 Queen's Road East, Wan Chai, Hong Kong

Order No.:

Date of receipt

3-Jan-08

Item Tested

Description : Sound Level Calibrator

Model

Manufacturer: B&K

: Type 4231

Serial No.

: 1770806

Test Conditions

Date of Test: 17-Jan-08

(23 ± 3)°C

Supply Voltage

Relative Humidity: (50 ± 25) %

Ambient Temperature : **Test Specifications**

Calibration check.

Calibration procedure:

F21, Z02.

Test Results

All results were within the IEC 942 Class 1 specification.

The results are shown in the attached page(s).

Main Test equipment used:

Main 1000 adail		5 = 4 NI	Due Date	Traceable to
Equipment No.	Description	<u>Cert. No.</u>	<u>Due Date</u>	
		73602	7-Jul-08	NIM-PRC & SCL-HKSAR
S014	Spectrum Analyzer	73002		
S024	Sound Level Calibrator	71791	16-J⊔I-08	NIM-PRC & SCL-HKSAR
5024	Soulid Feat Calibrate.		00 0 00	SCL-HKSAR
S041	Universal Counter	73453	22-Aug-08	SCL-IIIISAN

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI). The test results apply to the above Unit-Under-Test only

Calibrated by

This Certificate is issued by:

Hong Kong Calibration Ltd.

17-Jan-08 Date:

Unit 88, 24F., Well Fung Industrial Centre, No. 58-75, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

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Manufacturer's Test Certificate Hersteller - Prüfzertifikat

Product / Produkt:

Multi-parameter instrument / Mehrparameter-Meßgerät

Model / Modell:

pH/Oxi 340i

Serial no. / Serien-Nr.

08101283

The a.m. product has been checked by us and complies with the demanded specifications.

Das oben genannte Produkt wurde von uns geprüft und entspricht den geforderten Spezifikationen.

Accuracy of the pH measurement: $\leq 0.01 \text{ pH} \pm 1 \text{ digit}$

Genauigkeit der pH-Messung: ≤ 0,01 pH ± 1 Digit

Accuracy of the voltage measurement: ≤ 1 mV ± 1 digit

Genauigkeit der Spannungsessung: ≤ 1 mV ± 1 Digit

Accuracy of the oxygen measurement: ≤ 0,5% of measured value ± 1 digit

Genauigkeit der Sauerstoff-Messung: ≤ 0,5% vom Meßwert ± 1 Digit

Accuracy of the temperature measurement: ≤ 0,1 K ± 1 digit Genauigkeit der Temperaturmessung: ≤ 0,1 K ± 1 Digit

The test equipment used for checking is regularly calibrated by means of a precision multimeter (HP 3458A, Ser.-No. 2823 A 09038) which itself is annually calibrated in a laboratory accredited to the national German Calibration Service DKD (EADS Deutschland GmbH, DKD-K-01901). This ensures the traceability to national and international standards.

Die zur Prüfung eingesetzten Prüfmittel werden regelmäßig anhand eines Präzisionsmultimeters (HP 3458A, Ser.-Nr. 2823 A 09038) kalibriert, das seinerseits jährlich in einem DKD-Labor kalibriert wird (EADS Deutschland GmbH, DKD-K-01901). Damit ist der Anschluß an nationale und internationale Normale gewährleistet.

Weilheim, 07.04.2008
WISSENSCHAFTLICH-TECHNISCHE WERKSTÄTTEN GMBH
Dr.K,Löhnert
Quality Manager / Leiter Qualitätssicherung

⁻ This document has been generated using electronic data processing and is valid without signature - Dieses Dokument wurde mittels EDV erstellt und ist ohne Unterschrift gueltig -

TEST REPORT

Report No.

: 107244N

Project Name

: Calibration of Field measurement equipment

Customer

: Hyder Consulting Limited

Address

: 47/F, Hopewell Centre, 183 Queen's Road East, Wanchai, Hong Kong

Lab Job No.

: J651

Lab Sample No.

: 21456/1

Sample Description Sample Receipt Date

: 13-10-2008

: One Turbidimeter and four turbidity standards. **Test Period**

: 14-10-2008

lest information				
Test Parameter	Test Procedure			
Calibraion of Turbidimeter and Turbidity Standard	In-house Method IC 42			

- Notes: 1. This report shall not be reproduced, except in full, without prior written approval from Lam Laboratories Limited.
 - 2. Results related to sample(s) as received.
 - 3. Results satisfy all in-house QA/QC protocols as attached.

Authorized Signatory

WONG Yau Tim (Operation Manager) **Issue Date**

14-10-2008

Lab Sample No.

: 21456/1

TEST REPORT

Report No.

: 107244N

Project Name

: Calibration of Field measurement equipment

Customer

: Hyder Consulting Limited

Lab Job No.

: J651

Test Results

Value re-assigmnemt for Turbidity Standards:

Customer Ref.	Measured value	
Customer Ref.	(NTU)	
STD 1	0.00	
STD 2	17.74	
STD 3	102	
STD 4	893	

Linearity check for Turbidimeter:

Serial No.	Linearity range		
Serial No.	(NTU)		
215619	0-100		

- End of Report -

CERTIFICATE OF ANALYSIS



Batch:

HK0816176

Date of Issue:

03/10/2008

Client:

HYDER CONSULTING LTD

Client Reference:

Calibration of pH System

Item:

Multi-parameter Instrument / Mehrparameter-MeBgerat

Model No.:

WTW pH / Oxi 340i

Serial No.:

08101283

Equipment No.:

--

Calibration Method:

This meter was calibrated in accordance with standard method APHA (19th Ed.) 4500-H⁺B

Date of Calibration:

03 October, 2008

Testing Results:

Expected Reading	Recording Reading
4.00	3.90
7.00	6.98
10.0	9.95
Allowing Deviation	± 0.2

Ms Wong Wali Man, Alice

Laboratory Manager - Hong Kong

CERTIFICATE OF ANALYSIS



Batch:

HK0816176

Date of Issue:

03/10/2008

Client:

HYDER CONSULTING LTD

Client Reference:

Calibration of DO System

Item:

Multi-parameter Instrument / Mehrparameter-MeBgerat

Model No.:

WTW pH / Oxi 340i

Serial No.:

08101283

Equipment No.:

Calibration Method:

This meter was calibrated in accordance with standard method APHA (18th Ed.) 4500-0C & G

Date of Calibration:

03 October, 2008

Testing Results:

Expected Reading	Recording Reading	
3.41 mg/L	3.46 mg/L	
5.62 mg/L	5.48 mg/L	
7.34 mg/L	7.37 mg/L	
Allowing Deviation	±0.2 mg/L	

Ms Wong Wai Maly, Alice

Laboratory Manager - Hong Kong



Appendix G

Monitoring Locations

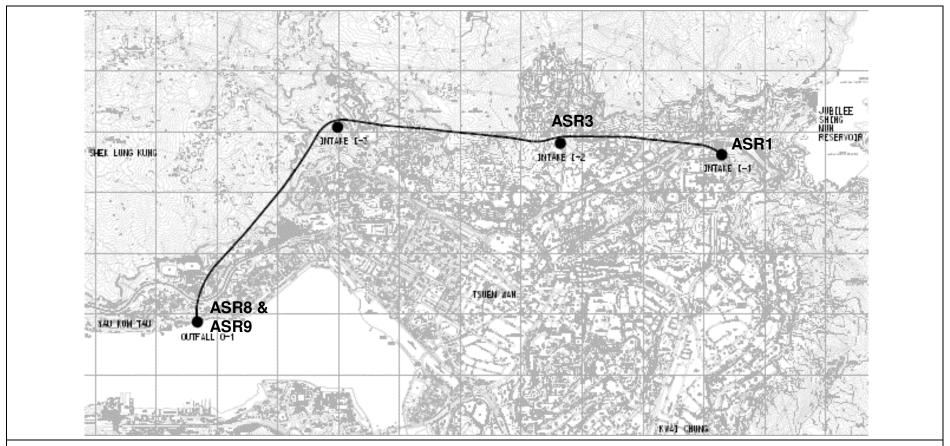


Figure 1 Air Quality Monitoring Stations

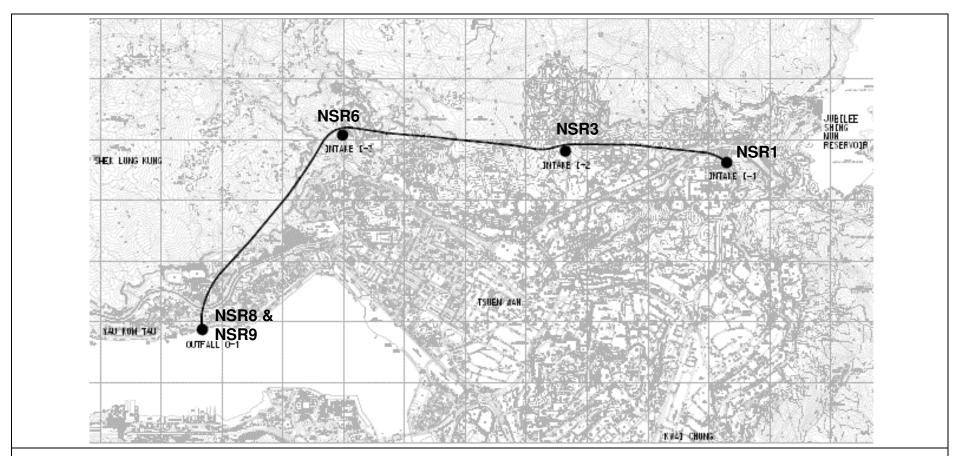


Figure 2 Noise Monitoring Stations

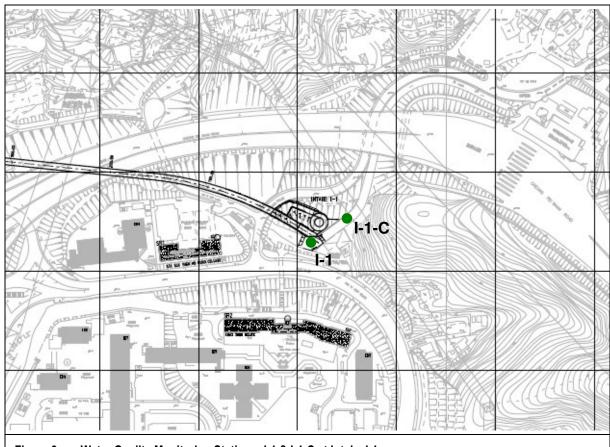
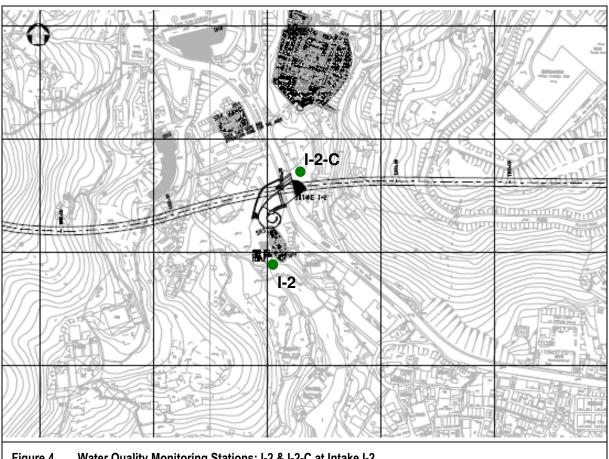
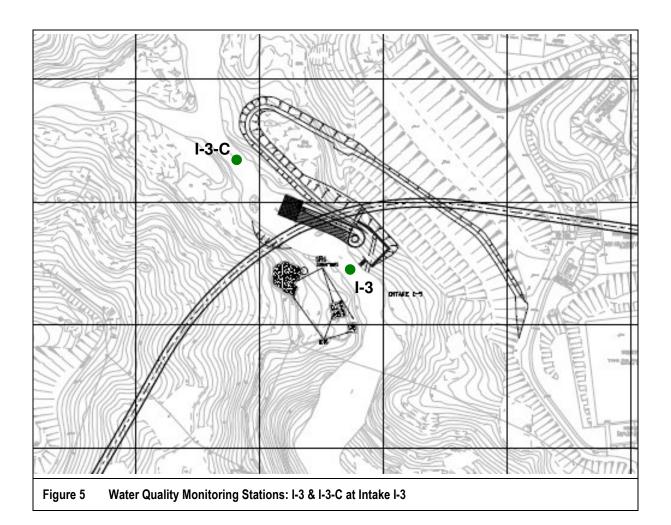


Figure 3 Water Quality Monitoring Stations: I-1 & I-1-C at Intake I-1



Water Quality Monitoring Stations: I-2 & I-2-C at Intake I-2 Figure 4



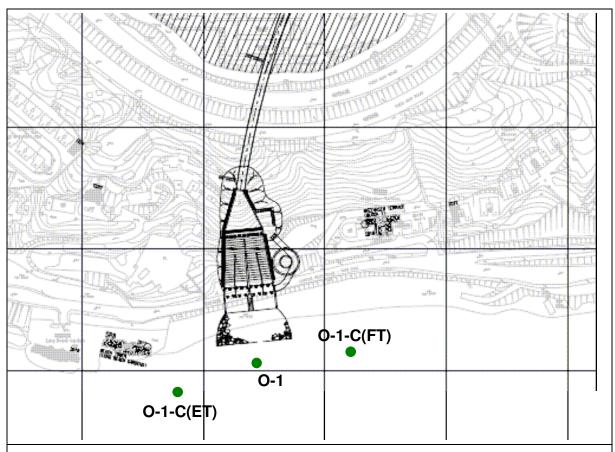


Figure 6 Water Quality Monitoring Stations: O-1, O-1-C(ET) & O-1-C(FT) at Outfall O-1



Appendix H

EM&A Schedule

Contract No. DC/2007/12 – Design and Construction of Tsuen Wan Drainage Tunnel Impact Monitoring Programme – December 2008

Date		Air	Noise	Water
01-Dec-08	Mon			✓
02-Dec-08	Tue			
03-Dec-08	Wed	✓	✓	✓
04-Dec-08	Thu			
05-Dec-08	Fri			✓
06-Dec-08	Sat			
07-Dec-08	Sun			
08-Dec-08	Mon			✓
09-Dec-08	Tue	✓	✓	
10-Dec-08	Wed			✓
11-Dec-08	Thu			
12-Dec-08	Fri			✓
13-Dec-08	Sat			
14-Dec-08	Sun			
15-Dec-08	Mon	✓	✓	✓
16-Dec-08	Tue			
17-Dec-08	Wed			✓
18-Dec-08	Thu			
19-Dec-08	Fri			✓
20-Dec-08	Sat	✓		
21-Dec-08	Sun			
22-Dec-08	Mon			✓
23-Dec-08	Tue	✓	✓	
24-Dec-08	Wed			✓
25-Dec-08	Thu			
26-Dec-08	Fri			
27-Dec-08	Sat			✓
28-Dec-08	Sun			
29-Dec-08	Mon	✓	✓	✓
30-Dec-08	Tue			
31-Dec-08	Wed			✓

Note:

Shaded area indicates public holiday.

Air – Monitoring 1-hour TSP is undertaken three times per every six days

Noise – Noise measurements is undertaken once every week at (0700-1900 Monday to Saturday)

Contract No. DC/2007/12 – Design and Construction of Tsuen Wan Drainage Tunnel Impact Monitoring Programme – January 2009 (Tentative)

Date		Air	Noise	Water
01-Jan-09	Thu			
02-Jan-09	Fri			✓
03-Jan-09	Sat	✓		
04-Jan-09	Sun			
05-Jan-09	Mon			✓
06-Jan-09	Tue			
07-Jan-09	Wed			✓
08-Jan-09	Thu			
09-Jan-09	Fri	✓	✓	✓
10-Jan-09	Sat			
11-Jan-09	Sun			
12-Jan-09	Mon			✓
13-Jan-09	Tue			
14-Jan-09	Wed			✓
15-Jan-09	Thu	✓	✓	
16-Jan-09	Fri			✓
17-Jan-09	Sat			
18-Jan-09	Sun			
19-Jan-09	Mon			✓
20-Jan-09	Tue			
21-Jan-09	Wed	✓	✓	✓
22-Jan-09	Thu			
23-Jan-09	Fri			✓
24-Jan-09	Sat	✓		
25-Jan-09	Sun			
26-Jan-09	Mon			
27-Jan-09	Tue			
28-Jan-09	Wed			
29-Jan-09	Thu	✓	✓	✓
30-Jan-09	Fri			
31-Jan-09	Sat			✓

Note:

Shaded area indicates public holiday.

Air – Monitoring 1-hour TSP is undertaken three times per every six days

Noise – Noise measurements is undertaken once every week at (0700-1900 Monday to Saturday)

Contract No. DC/2007/12 – Design and Construction of Tsuen Wan Drainage Tunnel Impact Monitoring Programme – February 2009 (Tentative)

Date		Air	Noise	Water
01-Feb-09	Sun			
02-Feb-09	Mon			✓
03-Feb-09	Tue			
04-Feb-09	Wed	✓	✓	✓
05-Feb-09	Thu			
06-Feb-09	Fri			✓
07-Feb-09	Sat			
08-Feb-09	Sun			
09-Feb-09	Mon			✓
10-Feb-09	Tue	✓	✓	
11-Feb-09	Wed			✓
12-Feb-09	Thu			
13-Feb-09	Fri			✓
14-Feb-09	Sat			
15-Feb-09	Sun			
16-Feb-09	Mon	✓	✓	✓
17-Feb-09	Tue			
18-Feb-09	Wed			✓
19-Feb-09	Thu			
20-Feb-09	Fri			✓
21-Feb-09	Sat	✓		
22-Feb-09	Sun			
23-Feb-09	Mon			✓
24-Feb-09	Tue			
25-Feb-09	Wed			✓
26-Feb-09	Thu			
27-Feb-09	Fri	✓	✓	✓
28-Feb-09	Sat			

Note:

Shaded area indicates public holiday.

Air – Monitoring 1-hour TSP is undertaken three times per every six days

Noise - Noise measurements is undertaken once every week at (0700-1900 Monday to Saturday)

Contract No. DC/2007/12 – Design and Construction of Tsuen Wan Drainage Tunnel Impact Monitoring Programme – March 2009 (Tentative)

Date		Air	Noise	Water
01-Mar-09	Sun			
02-Mar-09	Mon			✓
03-Mar-09	Tue			
04-Mar-09	Wed			✓
05-Mar-09	Thu	✓	✓	
06-Mar-09	Fri			✓
07-Mar-09	Sat			
08-Mar-09	Sun			
09-Mar-09	Mon			✓
10-Mar-09	Tue			
11-Mar-09	Wed	✓	✓	✓
12-Mar-09	Thu			
13-Mar-09	Fri			✓
14-Mar-09	Sat			
15-Mar-09	Sun			
16-Mar-09	Mon			✓
17-Mar-09	Tue	✓	✓	
18-Mar-09	Wed			✓
19-Mar-09	Thu			
20-Mar-09	Fri			✓
21-Mar-09	Sat			
22-Mar-09	Sun			
23-Mar-09	Mon	✓	✓	✓
24-Mar-09	Tue			
25-Mar-09	Wed			✓
26-Mar-09	Thu			
27-Mar-09	Fri			✓
28-Mar-09	Sat	✓		
29-Mar-09	Sun			
30-Mar-09	Mon			✓
31-Mar-09	Tue			

Note:

Shaded area indicates public holiday.

Air – Monitoring 1-hour TSP is undertaken three times per every six days

Noise – Noise measurements is undertaken once every week at (0700-1900 Monday to Saturday)



Appendix I

Monitoring Results

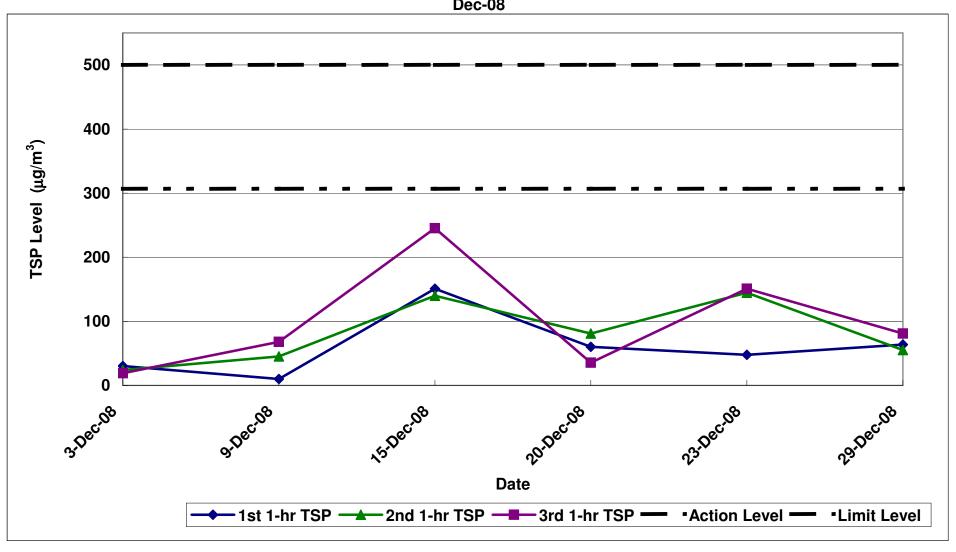
13/01/09 10:44 5

Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel

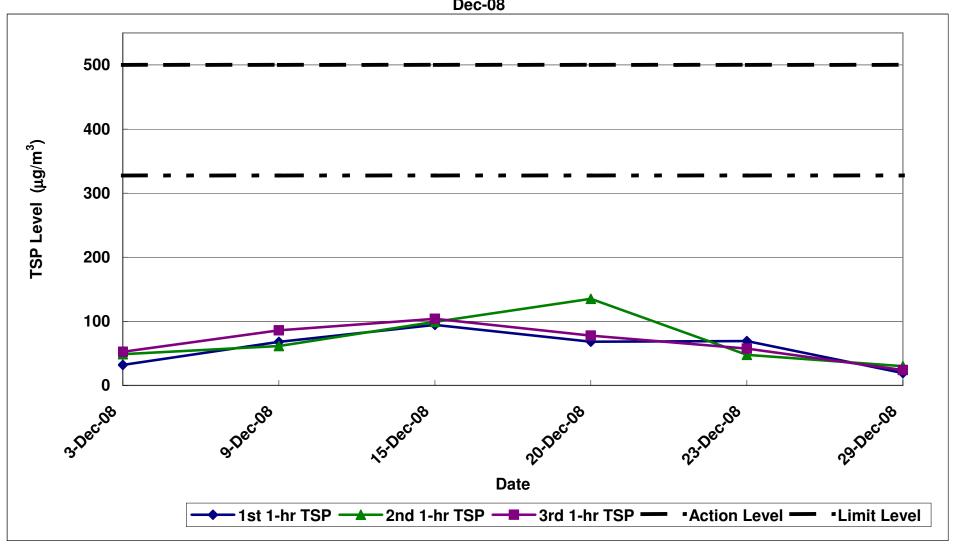
Air Quality Impact Monitoring Results (1-Hour TSP)

Location	Monitoring Date	Weather Conditions	Wind Speed with Direction	Temp (°C)	Timer-I	Timer-F	Time (mins)	Flow-I (CFM)	Flow-F (CFM)	Flow-I (m³/min)	Flow-F (m³/min)	Flow-avg (m³/min)	Volume (m³)	Weight-I (g)	Weight-f (g)	Weight-diff. (g)	1-hr TSP (µg/m³)	Average 1-Hr TSP (µg/m³)	Action/Limit Levels (ug/m³)	Observation / Site Condition	Remark
		Sunny	(m/s)	20	565330	565439	60.0	40	40	1 32	1 32	1.32	79.48	2.8296	2 832	0.0024	30.2		(µg/m²)		
	3-Dec-08	Sunny	0.7N	20	565439	565539	60.0	40	40	1.32	1.32	1.32	79.48	2.8288	2.8307	0.0024	23.9	24.3		Nil	Nil
		Sunny	0.7N	20	565539	565639	60.0	40	40	1.32	1.32	1.32	79.48	2.8694	2.8709	0.0015	18.9				
	0.0 00	Sunny	0.4NE	22	565639	565739	60.0	40	40	1.32	1.32	1.32	79.48	2.8851	2.8859	0.0008	10.1	44.4		Dilian and assessment and assessment	NEI .
	9-Dec-08	Sunny	0.4NE 0.4NE	22	565739 565839	565839 565939	60.0	40 40	40 40	1.32	1.32	1.32	79.48 79.48	2.8172	2.8208 2.7192	0.0036 0.0054	45.3 67.9	41.1		Piling and excavator operation	Nii
		Sunny	0.5NE	18	565939	566039	60.0	40	40	1.36	1.36	1.36	81.54	2.7517	2.7640	0.0123	150.8				
	15-Dec-08	Sunny	0.5NE	18	566039	566139	60.0	40	40	1.36	1.36	1.36	81.54	2.7134	2.7248	0.0114	139.8	178.6		Steel cutting, piling	Nil
Sik Sik Yuen Ho Fung		Sunny	0.5NE	18	566139	566239	60.0	40	40	1.36	1.36	1.36	81.54	2.7057	2.7257	0.0200	245.3		306.6/500		
College - Intake (ASR1)	20-Dec-08	Sunny	0.7E	17	566239 566339	566339 566439	60.0	40	40	1.36	1.36	1.36	81.54 81.54	2.8549	2.8598 2.8896	0.0049	60.1	58.9		Piling	NEI
	20-060-00	Sunny	0.7E 0.7E	17	566439	566539	60.0	40	40	1.36	1.36	1.36	81.54	2.8830 2.8549	2.8896	0.0066	80.9 35.6	30.9		rinig	r-uii
		Sunny	0.5N	18	566539	566639	60.0	40	40	1.36	1.36	1.36	81.54	2.7168	2.7207	0.0039	47.8				
	23-Dec-08	Sunny	0.5N	18	566639	566739	60.0	40	40	1.36	1.36	1.36	81.54	2.7648	2.7766	0.0118	144.7	114.5		Piling	Nil
		Sunny	0.5N	18	566739	566839	60.0	40	40	1.36	1.36	1.36	81.54	2.8435	2.8558	0.0123	150.8				
	29-Dec-08	Sunny	0.5N 0.5N	16 16	566839 566939	566939 567039	60.0	40 40	40 40	1.36	1.36	1.36	81.54 81.54	2.8816 2.8335	2.8868 2.8380	0.0052	63.8 55.2	66.6		Piling	Nil
	25 500 00	Sunny	0.5N	16	567039	567139	60.0	40	40	1.36	1.36	1.36	81.54	2.8296	2.8362	0.0045	80.9	00.0		· mig	
		Sunny	0.7N	20	533789	533889	60.0	40	40	1.30	1.30	1.30	78.03	2.8459	2.8484	0.0025	32.0				
	3-Dec-08	Sunny	0.7N	20	533889	533989	60.0	40	40	1.30	1.30	1.30	78.03	2.8285	2.8323	0.0038	48.7	44.4		Crane operation	Nil
		Sunny	0.7N	20	533989	534089	60.0	40	40	1.30	1.30	1.30	78.03	2.8282	2.8323	0.0041	52.5				
	9-Dec-08	Sunny	0.5N 0.5N	22	534089 534189	534189 534289	60.0	40 40	40 40	1.30	1.30	1.30	78.03 78.03	2.8312 2.8644	2.8365 2.8692	0.0053	67.9 61.5	71.8		Nil	Nil
	3-Dec-00	Sunny	0.5N	22	534189	534389	60.0	40	40	1.30	1.30	1.30	78.03	2.8759	2.8826	0.0048	85.9	71.0		1411	ruii
		Sunny	0.5N	21	534389	534489	60.0	40	40	1.39	1.39	1.39	83.68	2.8560	2.8639	0.0079	94.4				
	15-Dec-08	Sunny	0.5N	21	534489	534589	60.0	40	40	1.39	1.39	1.39	83.68	2.8514	2.8597	0.0083	99.2	99.2		Nil	Nil
Hong Hoi Chee Hong Temple - Intake (ASR3)		Sunny	0.5N	21	534589	534689	60.0	40	40	1.39	1.39	1.39	83.68	2.9042	2.9129	0.0087	104.0		327.4/500		
remple - Intake (ASh3)	20-Dec-08	Sunny	0.6N 0.6N	18 18	534689	534789 534889	60.0	40 40	40 40	1.39	1.39	1.39	83.68	2.7674	2.7731	0.0057	68.1	93.6		Nil	Nil
	20 200 00	Sunny	0.6N	18	534789 534889	534989	60.0	40	40	1.39	1.39	1.39	83.68 83.68	2.8536	2.8649	0.0113	135.0 77.7	50.0		Nil	
		Sunny	0.5N	18	534989	535089	60.0	40	40	1.39	1.39	1.39	83.68	2.7627	2.7685	0.0058	69.3				
	23-Dec-08	Sunny	0.5N	18	535089	535189	60.0	40	40	1.39	1.39	1.39	83.68	2.781	2.785	0.0040	47.8	58.2			Nil
	29-Dec-08	Sunny	0.5N	18	535189	535289	60.0	40	40	1.39	1.39	1.39	83.68	2.827	2.8318	0.0048	57.4			Nii	Nii
		Sunny	0.5N 0.5N	16 16	535289 535389	535389 535489	60.0	40 40	40 40	1.39	1.39	1.39	83.68 83.68	2.7933 2.7927	2.7949 2.7952	0.0016	19.1 29.9	24.3			
		Sunny	0.5N	16	535369	535589	60.0	40	40	1.39	1.39	1.39	83.68	2.8038	2.7952	0.0025	23.9				
		Sunny	0.5N	20	588893	588993	60.0	39	39	1.30	1.30	1.30	77.90	2.8231	2.826	0.0029	37.2				
	3-Dec-08	Sunny	0.5N	20	588993	589093	60.0	39	39	1.30	1.30	1.30	77.90	2.8358	2.8403	0.0045	57.8	48.4	l	Moving of concrete block using backhoe	Nil
		Sunny	0.5N	20	589093	589193	60.0	39	39	1.30	1.30	1.30	77.90	2.8514	2.8553	0.0039	50.1				
	9-Dec-08	Sunny	0.7N 0.7N	22	589193	589293	60.0	40	40	1.33	1.33	1.33	79.65	2.7351	2.7409	0.0058	72.8	93.1		Air compressor operation Excavation , Breaking by backhoe	NEI NEI
	3-Dec-00	Sunny	0.7N 0.7N	22	589293 589393	589395 589493	61.2 60.0	40 40	40 40	1.33	1.33	1.33	81.25 79.65	2.7392	2.7467	0.0075	92.3 114.2	55.1			
		Sunny	0.4E	17	589493	589593	60.0	40	40	1.37	1.37	1.37	81.91	2.7346	2.7420	0.0074	90.3				
	15-Dec-08	Sunny	0.4E	17	589593	589693	60.0	40	40	1.37	1.37	1.37	81.91	2.7531	2.7580	0.0049	59.8	68.4	336.6/500		
Long Beach Gardens - Outfall (ASR8)		Sunny	0.4E	17	589693	589793	60.0	40	40	1.37	1.37	1.37	81.91	2.7184	2.7229	0.0045	54.9				
Outlaii (ASNo)	20-Dec-08	Sunny	0.4E 0.4E	17	589793 589893	589893 589993	60.0	40 40	40 40	1.37	1.37	1.37	81.91 81.91	2.7669 2.7609	2.7714 2.7626	0.0045	54.9 20.8	64.7		Excavator backhoe	Nil
	20 200 00	Sunny	0.4E	17	589993	590093	60.0	40	40	1.37	1.37	1.37	81.91	2.7641	2.7738	0.0017	118.4	04.7		Excertaior basis los	
		Sunny	0.5N	18	590093	590193	60.0	40	40	1.37	1.37	1.37	81.91	2.8022	2.8095	0.0073	89.1				
	23-Dec-08	Sunny	0.5N	18	590193	590293	60.0	40	40	1.37	1.37	1.37	81.91	2.7575	2.7640	0.0065	79.4	86.3		Excavator backhoe	Nil
		Sunny	0.5N	18	590293	590393	60.0	40	40	1.37	1.37	1.37	81.91	2.7702	2.7776	0.0074	90.3				
	29-Dec-08	Sunny	0.5N 0.5N	16 16	590393 590493	590493 590593	60.0	40	40	1.37	1.37	1.37	81.91 81.91	2.7639	2.7725	0.0086	105.0 81.8	89.1		Breaking by backhoe	Nil
	20 000 00	Sunny	0.5N	16	590593	590693	60.0	40	40	1.37	1.37	1.37	81.91	2.7327	2.7393	0.0067	80.6	00.1			
		Sunny	0.6N	20	520793	520893	60.0	40	40	1.26	1.26	1.26	75.52	2.8825	2.8849	0.0024	31.8				
	3-Dec-08	Sunny	0.6N	20	520893	520993	60.0	40	40	1.26	1.26	1.26	75.52	2.8257	2.8335	0.0078	103.3	67.5		Moving of concrete block using backhoe	Nil
		Sunny	0.6N	20	520993	521093	60.0	40	40	1.26	1.26	1.26	75.52	2.8843	2.8894	0.0051	67.5				
	9-Dec-08	Sunny	0.6N 0.6N	22 22	521093 521193	521193 521293	60.0	40 40	40 40	1.26	1.26	1.26	75.52 75.52	2.8133 2.7543	2.8287 2.7649	0.0154	203.9	166.8		Air compressor operation	Nil
		Sunny	0.6N	22	521193	521393	60.0	40	40	1.26	1.26	1.26	75.52	2.7228	2.7346	0.0108	156.2				
		Sunny	0.8E	17	521393	521493	60.0	40	40	1.26	1.26	1.26	75.69	2.7303	2.7428	0.0125	165.2				
1	15-Dec-08	Sunny	0.8E	17	521493	521593	60.0	40	40	1.26	1.26	1.26	75.69	2.7058	2.7114	0.0056	74.0	105.7		Nil	Nil
Greenview Terrance - Outfall (ASR9)		Sunny	0.8E	17	521593	521693	60.0	40	40	1.26	1.26	1.26	75.69	2.7129	2.7188	0.0059	78.0		329.2/500		
Outidii (ASH9)	20-Dec-08	Sunny	0.8E	17	521693 521793	521793 521893	60.0	40 40	40	1.26	1.26	1.26	75.69 75.69	2.7349 2.7703	2.7407 2.7755	0.0058	76.6 68.7	65.6		Excavator backhoe	Nil
	20 200 00	Sunny	0.8E	17	521793	521993	60.0	40	40	1.26	1.26	1.26	75.69	2.7703	2.7755	0.0039	51.5	65.6		Excavator backhoe	
		Sunny	0.5N	18	521993	522093	60.0	40	40	1.26	1.26	1.26	75.69	2.7785	2.7847	0.0062	81.9			Excavator backhoe Nil	
	23-Dec-08	Sunny	0.5N	18	522093	522193	60.0	40	40	1.26	1.26	1.26	75.69	2.7459	2.7522	0.0063	83.2	91.6			Nil
		Sunny	0.5N	18	522193	522293	60.0	40	40	1.26	1.26	1.26	75.69	2.7508	2.7591	0.0083	109.7		i		
	29-Dec-08	Sunny	0.5N 0.5N	16 16	522293 522393	522393 522493	60.0	40	40	1.26	1.26	1.26	75.69 75.69	2.7399 2.7427	2.7457	0.0058	76.6 87.2	67.8		Breaking by backhoe	Nil
		Sunny	0.5N	16	522393	522593	60.0	40	40	1.26	1.26	1.26	75.69	2.8189	2.7493	0.0030	39.6				

Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Air Quality Monitoring (1-hr TSP) Results at Sik Sik Yuen Ho Fung College - Intake (ASR1) Dec-08

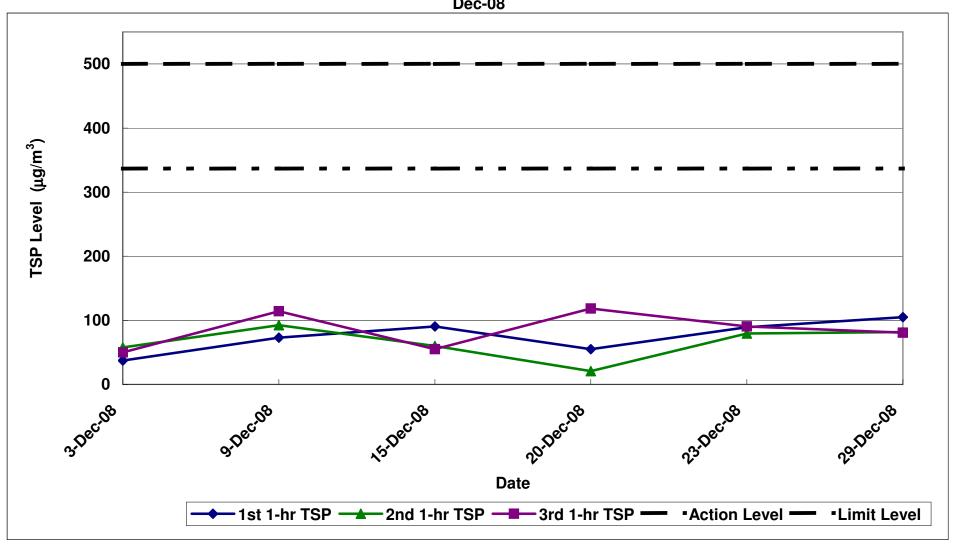


Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Air Quality Monitoring (1-hr TSP) Results at Hong Hoi Chee Hong Temple - Intake (ASR3) Dec-08



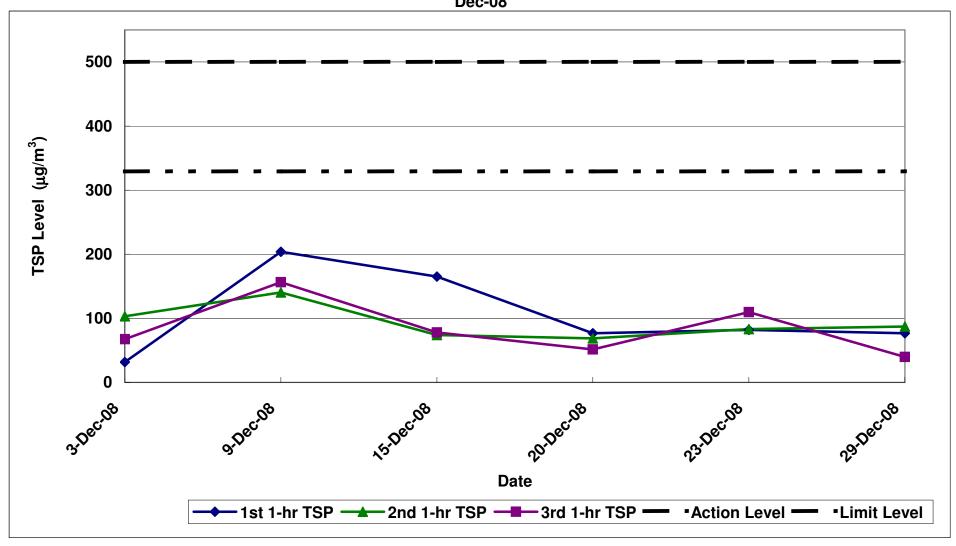
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Air Quality Monitoring (1-hr TSP) Results at Long Beach Gardens - Outfall (ASR8)

Dec-08



Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Air Quality Monitoring (1-hr TSP) Results at Greenview Terrance - Outfall (ASR9)

Dec-08



Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel

Noise Impact Monitoring Results

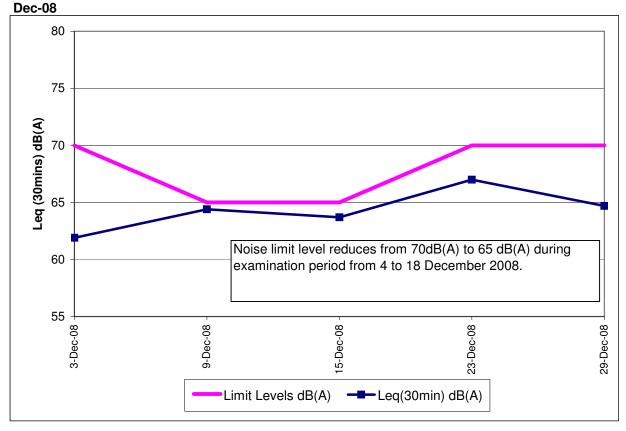
Monitoring Locations	Date	Weather	Temperature	Wind Speed	Wind	Start Time	End Time	BL ¹	LL ²	L _{eq(30min)}	L _{10(30min)}	L _{90(30min)}	CNL ³	Observation /	Remark
		Conditions	(°C)	(m/s)	Direction			dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	Site Condition	
Sik Sik Yuen Ho Fung College	3-Dec-08	Sunny	20	0.7	N	13:15	13:45		70	61.9	64.4	58.1	-	Nil	Traffic noise, human activies
NSR 1	9-Dec-08	Sunny	19	0.6	E	14:00	14:30		65	64.4	68.8	58.0	-	Nil	Traffic Noise
	15-Dec-08	Sunny	19	0.6	E	14:30	15:00	66.1	65	63.7	66.1	59.2	•	Piling working, steel cutting	Traffic noise, human activies
	23-Dec-08	Sunny	18	0.5	N	16:00	16:30		70	67.0	69.0	64.6	-	Piling working	Traffic Noise
	29-Dec-08	Sunny	16	0.5	N	13:00	13:30		70	64.7	67.6	61.5	-	Piling working	Traffic Noise
Hong Hoi Chee Hong Temple	3-Dec-08	Sunny	20	0.7	N	11:20	11:50		75	60.4	63.4	57.2	-	Crane operation, excavation by backhoe	Hammer working at other construction site
NSR 3	9-Dec-08	Sunny	17	0.6	N	11:30	12:00		75	61.9	64.8	58.8	-	Crane operation	Hammer working at other construction site
	15-Dec-08	Sunny	18	0.5	N	11:30	12:00	57.9	75	65.7	68.6	62.5	-	Excavation by backhoe	Nil
	23-Dec-08	Sunny	18	0.4	N	11:30	12:00		75	60.7	63.7	57.5	-	Nil	Traffic Noise
	29-Dec-08	Sunny	16	0.5	N	11:00	12:00		75	61.6	64.6	58.6	-	Nil	Traffic Noise
Squatters	3-Dec-08	Sunny	20	0.4	N	16:00	16:30		75	61.2	64.1	58.1	-	Nil	Dog Darking
NSR 6	9-Dec-08	Sunny	19	0.4	E	14:30	15:00		75	59.8	62.9	56.9	-	Nil	Dog Darking
	15-Dec-08	Sunny	20	0.5	E	16:15	16:45	61.2	75	61.4	64.3	57.0	-	Nil	Dog Darking
	23-Dec-08	Sunny	18	0.5	N	13:20	13:50		75	60.6	63.4	57.2	-	Nil	Dog Darking
	29-Dec-08	Sunny	16	0.4	N	16:05	16:35		75	61.9	64.8	58.8	-	Nil	Dog Darking
Long Beach Gardens	3-Dec-08	Sunny	20	0.5	N	9:05	9:35		75	60.5	63.5	57.7	-	Moving of concrete block using backhoe	Traffic Noise
NSR 8	9-Dec-08	Sunny	17	0.4	E	9:05	9:35		75	62.4	64.9	57.7	-	Nil	Traffic Noise
	15-Dec-08	Sunny	18	0.4	E	9:00	9:30	60.9	75	63.8	65.9	59.7	-	Excavation by backhoe	Traffic Noise
	23-Dec-08	Sunny	18	0.5	N	9:05	9:35		75	63.9	66.6	59.9	-	Nil	Traffic Noise
	29-Dec-08	Sunny	16	0.4	N	9:15	9:45		75	63.0	65.2	59.3	-	Nil	Traffic Noise
Greenview Terrace	3-Dec-08	Sunny	20	0.6	N	10:00	10:30		75	61.7	65.1	56.4	-	Moving of concrete block using backhoe	Traffic Noise
NSR 9	9-Dec-08	Sunny	17	0.7	NE	10:05	10:35		75	62.9	66.0	58.7	-	Breaking by backhoe	Traffic Noise
	15-Dec-08	Sunny	18	0.9	N	10:00	10:30	59.7	75	61.6	65.3	57.0	-	Excavation by backhoe	Traffic Noise
	23-Dec-08	Sunny	18	0.5	N	10:05	10:35		75	63.0	64.5	60.2	-	Nil	Traffic Noise
4. Deselies Naiss Level	29-Dec-08	Sunny	16	0.5	N	10:15	10:45		75	64.6	66.9	62.3	-	Nil	Traffic Noise

^{1:} Baseline Noise Level 2: Limit Level

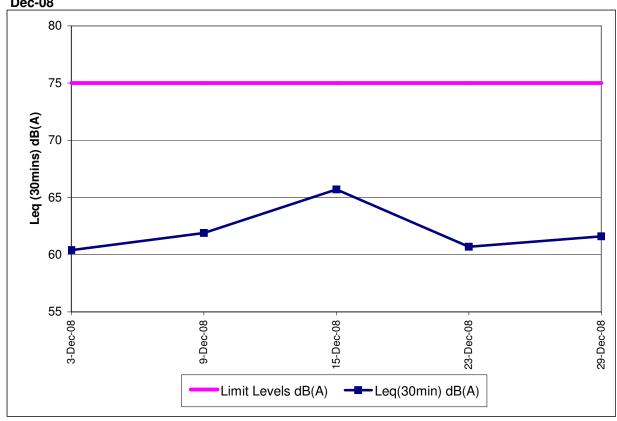
Note: The limit level of NSR1 is 65dB(A) during school examination period. Red Bold indicates an exceedance of Limit Level

^{3:} Corrected Noise Level

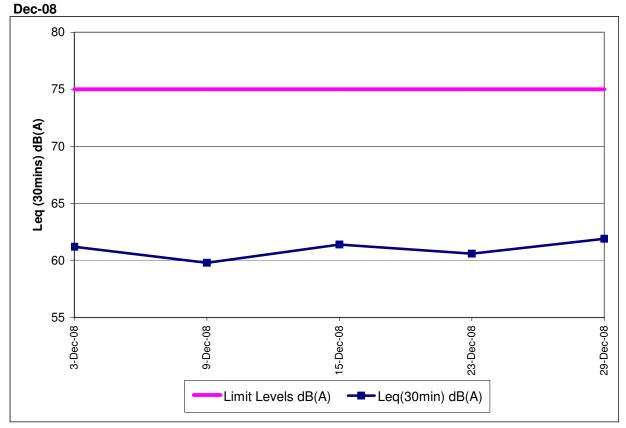
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Noise Monitoring Results at Sik Sik Yuen Ho Fung College (NSR 1)



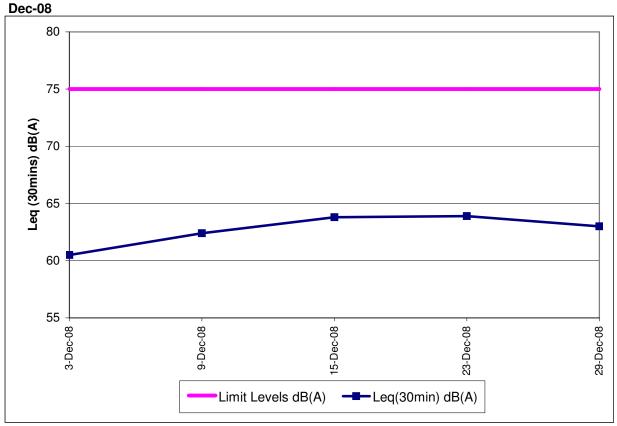
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Noise Monitoring Results at Hong Hoi Chee Hong Temple (NSR 3) Dec-08



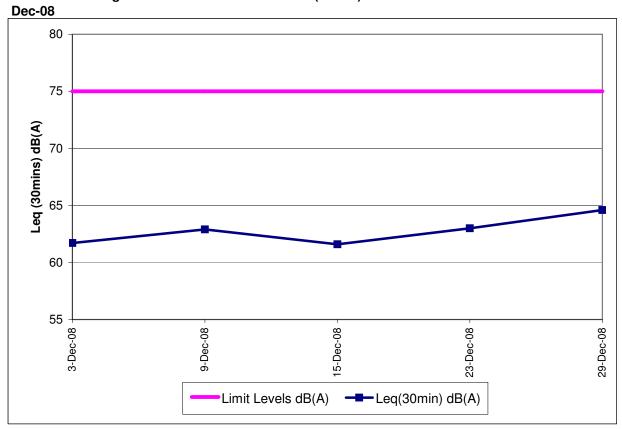
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Noise Monitoring Results at Squatters (NSR 6)



Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Noise Monitoring Results at Long Beach Gardens (NSR 8)



Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Noise Monitoring Results at Greenview Terrace (NSR 9) $\,$



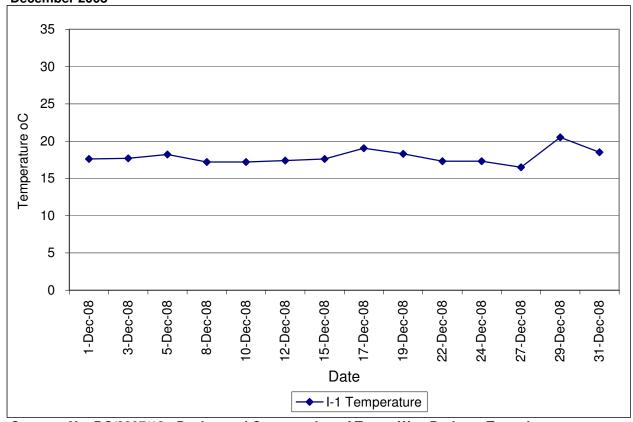
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel

Water Quality Impact Monitoring Results

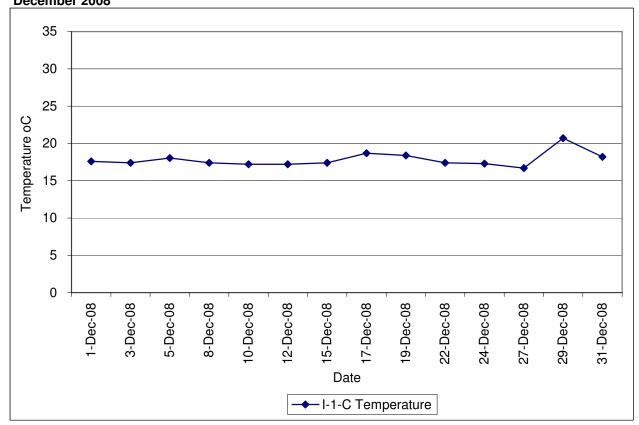
Monitoring Locations	Date	Star					Temp			O(mg/L)	Action/Limit		рН		Turbidity(Action/Limit		SS (mg/L)		Action/Limit	Remarks:	Action to be taken
07.07.1/	4.0	Time			th(m)	1	2	Avg	1	2 Avg	Level of DO(mg/L)		2 Av		2		Level of Tby	1	2	Avg	Level of SS(mg/L)	N 9 0	N.P.
Sik Sik Yuen Ho Fung College	1-Dec-08		Sunny		<1	17.60	17.60			4.78 4.79 4.67 4.65				59 3.3					2.0 8.1	2.0		No piling operation	NII NEI
1-1	3-Dec-08 5-Dec-08		Fine Sunny		<1 <1	17.70 18.20	18.20			4.90 4.91	=	8.22 7.29		22 5.32 29 4.83				7.8	5.9	8.5 6.9		No piling operation Piling working	Nii
	8-Dec-08									4.80 4.81	1			78 3.3					4.9	4.8		Piling working	Nil
	10-Dec-0									4.48 4.47					5.24 5.22 5.23			5.7		5.4 3.7		Piling working, crane operation	Nil
	12-Dec-0			<	<1	17.40	17.40	17.40	4.72	4.74 4.73		7.73	7.73 7.7	73 4.2	4.32	4.30		3.8	3.6			Piling working	Nil
	15-Dec-0					17.60				4.89 4.88	3.42 / 3.34	8.00		00 4.2			9.75 / 12.47			2.0	8.85 / 10.17	Piling working, crane operation	Nil
	17-Dec-0					19.10				4.75 4.74	0.1270.01		8.00 8.0				0.707 12.17			3.8	0.007 10.17	Piling working	Nil
	19-Dec-0				<1	18.30				4.78 4.79	4		8.11 8.1							11.1		Piling working	Nil
	22-Dec-0 24-Dec-0					17.30 17.30				4.71 4.72 5.34 5.33		7.73	8.44 8.4	73 3.52				2.0	2.0	2.0		Piling working	NII NEI
	27-Dec-0			_	<1	16.50				4.64 4.63				77 5.20						2.9		Piling working, breaking by bakhoe Piling working, excavationg by backhoe	Nil
	29-Dec-0									4.89 4.91	1		7.55 7.5							7.5		Piling working, crane operation	Nil
	31-Dec-0					18.50				4.70 4.69		7.70		70 4.3						2.0		Piling working	Nil
Sik Sik Yuen Ho Fung College	1-Dec-08	9:15	Sunny	<	<1	17.60				4.81 4.82		8.36	8.37 8.3	3.42	3.44	3.43		2.0	2.0	2.0		Nil	Nil
I-1-C	3-Dec-08			<	<1					4.44 4.43			8.21 8.2						7.5			Nil	Nil
			Sunny	_	<1	18.10				4.84 4.86		7.62		32 4.99						5.7		Nil.	Nil
			Sunny			17.40				4.95 4.98	4			78 3.4				4.1	3.6	3.9		Nil	Nil
	10-Dec-0									4.82 4.83			7.79 7.7					5.1 3.9		4.9		NII NE	NII
	12-Dec-0 15-Dec-0					17.20 17.40				4.67 4.67 4.89 4.92	-		7.73 7.7 8.02 8.0					2.0	4.3 2.0	4.1 2.0		NII NII	Nii
	17-Dec-0					18.70				4.48 4.51	- /-		8.16 8.1				- /-			4.3	- /-	Nil	Nil
	19-Dec-0				<1	18.40				4.72 4.75			8.06 8.0							11.0		Nil	Nil
	22-Dec-0			_	<1	17.40				4.76 4.77				32 4.35				2.0	2.0	2.0		Nil	Nil
	24-Dec-0	9:15	Sunny			17.30				5.13 5.12			7.77 7.7	77 5.1	5.13	5.12			2.0	2.0		Nil	Nil
	27-Dec-0				<1	16.70	16.70			4.61 4.64	1			33 5.22				3.1	2.9	3.0		Ni	Nil
1	29-Dec-0					20.70			4.94		4	7.77		77 6.42			1		7.6	7.7	-	Nil	Nil
Hann Hai Ohan H	31-Dec-0			_		18.20	18.20			4.60 4.61	 			71 4.42			ļ		2.0	2.0		Nil	Nil
Hong Hoi Chee Hong Temple	1-Dec-08 3-Dec-08		5 Sunny	_		17.60 16.20				4.87 4.86 4.65 4.64	4		7.66 7.6 8.42 8.4							2.0	1	Piling working, crane operation No piling operation	INII Nii
1-2			Sunny		<1 <1	18.00				4.63 4.62	╡		7.72 7.7				1			2.0	1	Crane operation	Nil
	8-Dec-08		3 Sunny		<1	17.50				4.72 4.74	1			74 3.22						2.0		Crane operation, excavation by backhoe	Nil
	10-Dec-0				<1	17.80				4.64 4.58			8.13 8.1							2.0		Crane operation, excavation by backhoe	Nil
	12-Dec-0		3 Fine	<	<1	17.50	17.50	17.50	4.70	4.73 4.72		7.61	7.61 7.6	31 4.2	4.30	4.26		2.0	2.0	2.0		Crane operation	Nil
	15-Dec-0			<	<1	17.50				4.81 4.80	3.66 / 3.63			12 4.2			6.63 / 6.99	2.0		2.0	7.68 / 8.34	Crane operation, excavation by backhoe	Nil
	17-Dec-0				<1	19.70	19.70			4.59 4.58				6 4.2						2.0		Crane operation, excavation by backhoe	Nil
	19-Dec-0									4.49 4.47		7.66		3.18					2.0			NII NE	NII
	22-Dec-0 24-Dec-0				<1 <1	17.80 17.00	17.80			4.57 4.63 4.86 4.85	-	7.59 7.52		58 3.72 51 4.25					2.0	2.0		Excavation by backhoe	Nii
	27-Dec-0				<1	16.30	16.30			4.82 4.85	1	7.98		98 4.28					2.3	2.3		Piling setting	Nil
	29-Dec-0					21.30				3.61 3.67		7.80		30 4.22					6.4			Excavation by backhoe	Nil
	31-Dec-0	3 10:5	Sunny	<	<1	18.20	18.00	18.10	4.78	4.79 4.79		7.73	7.73 7.7	73 4.30	4.32	4.31		2.0	2.0	2.0		Nil	Nil
Hong Hoi Chee Hong Temple			Sunny			17.70				4.78 4.77				3.56					2.0	2.0		Nil	Nil
I-2-C	3-Dec-08		5 Fine		<1	16.30				4.77 4.76	-			32 3.52					2.0	2.0		Nil	Nil
	5-Dec-08		5 Sunny		<1 <1	18.20 17.50				4.71 4.68 4.82 4.85				71 4.87					2.0	2.0		NII Nii	Nii
	10-Dec-0				<1	17.80				4.80 4.81	1			14 3.4			1		2.0	2.0		Nil	Nil
	12-Dec-0					17.50				4.74 4.73				63 4.33						2.0		Nil	Nil
	15-Dec-0			<		17.80	17.80			4.75 4.75	- /-			05 4.52			- /-	2.0	2.0	2.0	- /-	Nil	Nil
	17-Dec-0			_		19.20				4.45 4.45	· '	7.62		32 4.35					2.0	2.0	,	Nil	Nil
	19-Dec-0 22-Dec-0				<1 <1	17.20 17.60		17.25		4.44 4.43 4.52 4.52		7.63 7.60		3.2° 31 3.8°					2.0	2.0		NII NII	NII NEI
	24-Dec-0									4.68 4.67		7.53		53 4.32					2.0			Nil	Nil
	27-Dec-0			_		16.50				5.06 5.05				99 4.35						2.7		Nil	Nil
	29-Dec-0	3 10:2	5 Sunny	<		21.10	21.10	21.10	4.00	4.03 4.02		7.83	7.83 7.8	33 4.32	4.44	4.38		6.4	6.0	6.2		Nil	Nil
	31-Dec-0			<						4.72 4.74		7.69		39 4.3						2.0		Nil	Nil
Squatters			9 Sunny			17.60				4.94 4.96			7.67 7.6						2.0	2.0		Nil	Nil
1-3	3-Dec-08		Fine		<1	17.70	17.70			5.11 5.16	4			3.5° 32 3.2°			1		2.0	2.0	-	NII Nii	NII NII
1	5-Dec-08		5 Sunny	_						5.92 5.91 4.99 4.96	╡	7.82	7.77 7.7				1		2.0	2.0	1	Nil	Nil
			9 Sunny							4.46 4.50	1		7.75 7.7				1	2.0			1	Nil	Nil
	12-Dec-0	,	Joanny		``				1.00	4.75 4.76	1		7.20 7.2				1	2.0	i		1	Nil	Nil
	15-Dec-0				<1	17.30	17.30	17.30	5.07	5.03 5.05	3 65 / 3 51	8.12	8.11 8.1	12 3.52	3.55	3.54	3.99 / 4.18				6.13 / 7.23	Nil	Nil
			4 Sunny							5.05 5.01			8.33 8.3				0.00 / 4.10	2.0			55, 7.20	Nil	Nil
			Sunny							4.71 4.72			8.12 8.1					2.0				Nil	Nil
			5 Sunny 5 Sunny							4.37 4.39 5.00 4.99			7.66 7.6 8.73 8.7					2.0				NII Nii	Nil
			9 Sunny							4.53 4.52	1		7.60 7.6				1	2.0			1	Nil	Nil
			9 Sunny							4.52 4.59			7.73 7.7						6.8			Nil	Nil
	31-Dec-0	3 11:5	5 Sunny		<1	18.50	18.50	18.50	4.90	5.07 4.99			7.44 7.4					2.0				Nil	Nil
Squatters			2 Sunny							4.90 4.91			7.62 7.6					2.0				Nil	Nil
I-3-C	3-Dec-08									4.50 4.52			8.32 8.3						2.0			Nil	Nil
			Sunny							4.81 4.77	4		7.77 7.7					2.0			1	NII Nii	Nil Nil
			5 Sunny 5 Sunny							4.78 4.79 4.83 4.86	1		7.72 7.7 7.76 7.7					2.0	2.0		1	Nii	Nil
	12-Dec-0									4.80 4.80			7.25 7.2				1	2.0			1	Nil	Nil
	15-Dec-0									5.19 5.18			8.11 8.1				,	2.0			1 ,	Nil	Nil
	17-Dec-0	3 14:5	5 Sunny		<1	18.50	18.50	18.50	4.61	4.63 4.62	- /-	8.35	8.35 8.3	35 3.22	3.28	3.25	- /-				- /-	Nil	Nil
	19-Dec-0	3 11:3	3 Sunny							4.82 4.81		8.00	8.00 8.0	00 3.26	3.22	3.24		2.0				Nil	Nil
			Sunny							4.36 4.38			7.61 7.6					2.0				Nil	Nil
	24-Dec-0 27-Dec-0									4.87 4.91 4.38 4.38			8.70 8.7 7.62 7.6					2.0	2.0		-	NII Nii	Nil Nil
	27-Dec-0 29-Dec-0									4.38 4.38 4.52 4.54			7.62 7.6						7.2		1	Nil	Nil
	31-Dec-0									4.80 4.81			7.44 7.4						2.0		1	Nil	Nil
-			, ,			-					•		1 7.	,							•		

Note:
Blue Italic indicates an exceedance of Action Level
Red Bold indicates an exceedance of Limit Level

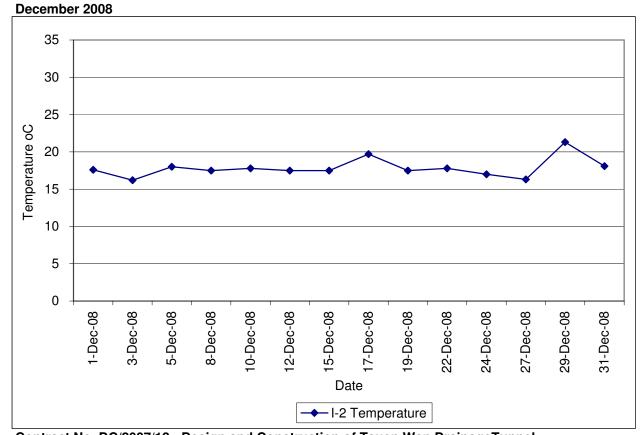
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan DrainageTunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1) December 2008



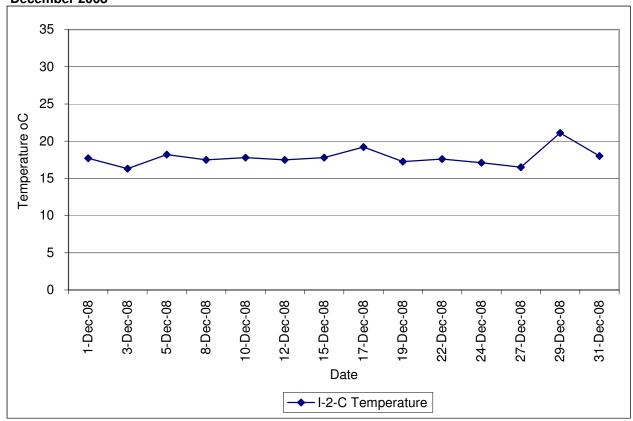
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan DrainageTunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1-C) December 2008



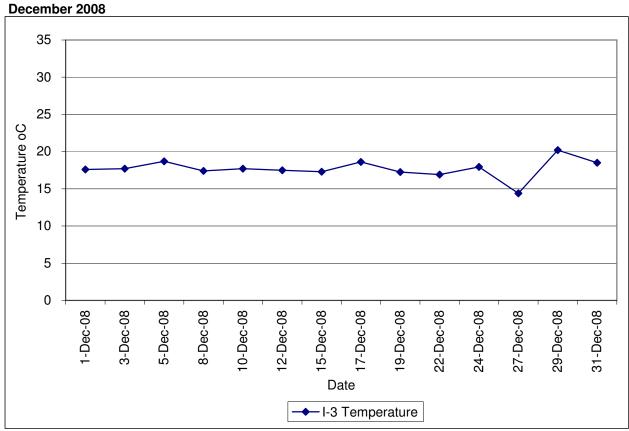
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan DrainageTunnel Water Quality Results at Hong Hoi Chee Hong Temple (I-2)



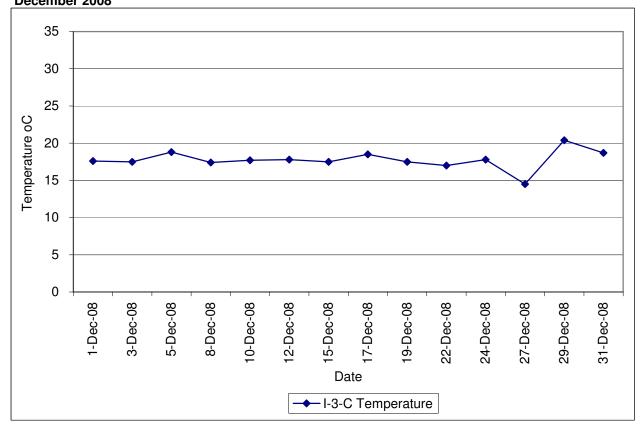
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan DrainageTunnel Water Quality Results at Hong Hoi Chee Hong Temple (I-2-C) December 2008



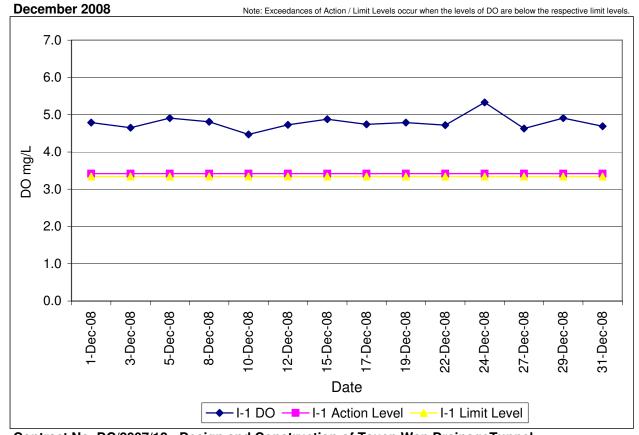
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan Drainage Tunnel Water Quality Results at Squatters (I-3)



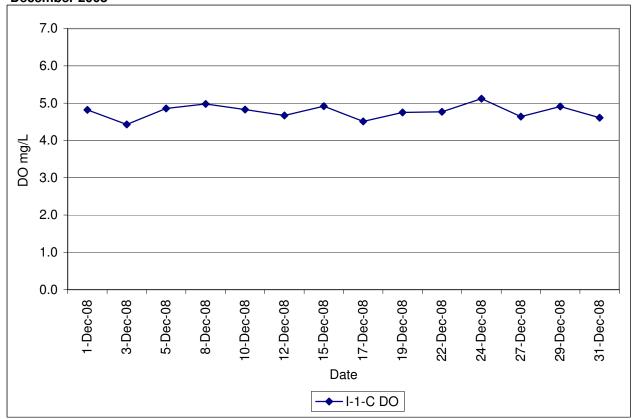
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan DrainageTunnel Water Quality Results at Squatters (I-3-C)
December 2008



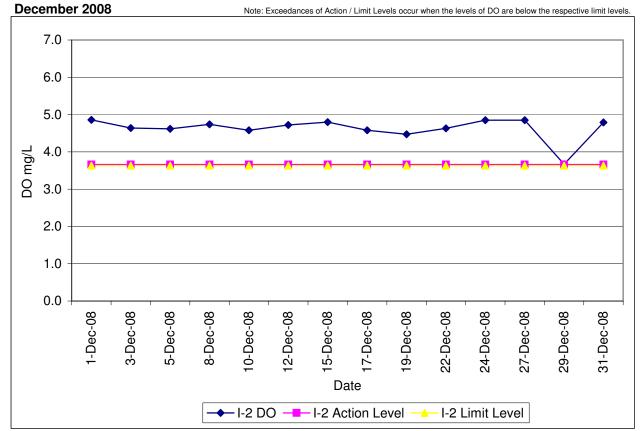
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan DrainageTunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1)



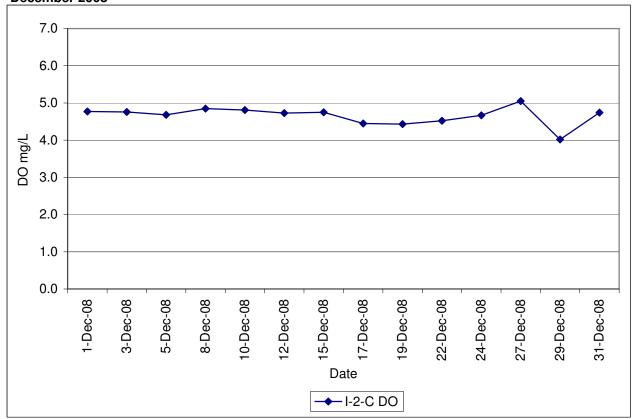
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan DrainageTunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1-C) December 2008



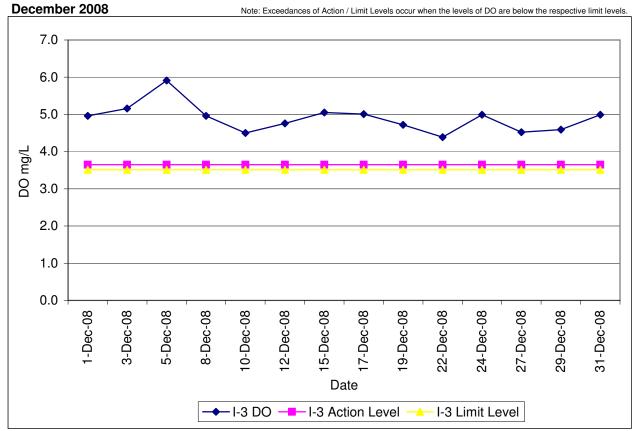
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan DrainageTunnel Water Quality Results at Hong Hoi Chee Hong Temple (I-2)



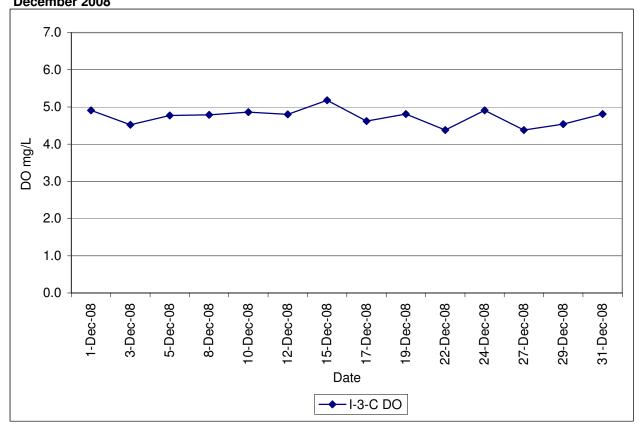
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan DrainageTunnel Water Quality Results at Hong Hoi Chee Hong Temple (I-2-C) December 2008



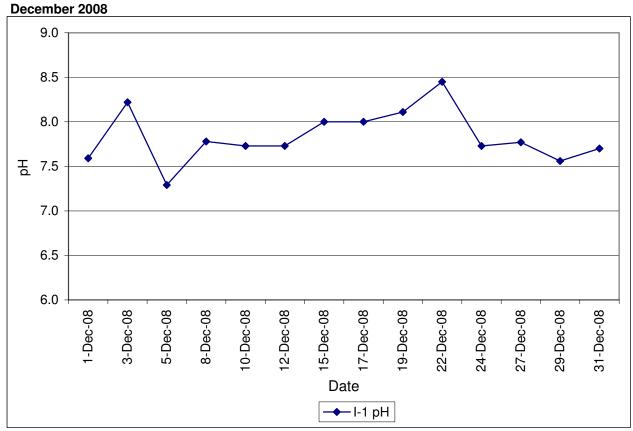
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan DrainageTunnel Water Quality Results at Squatters (I-3)



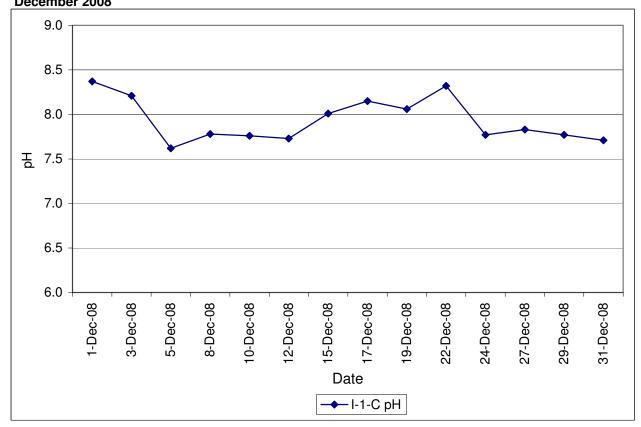
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan DrainageTunnel Water Quality Results at Squatters (I-3-C)
December 2008



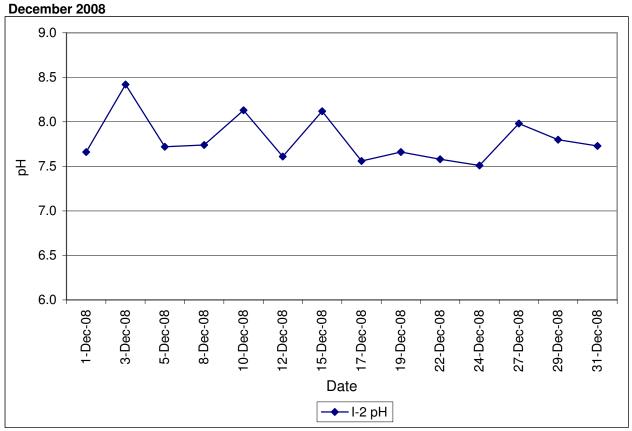
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan DrainageTunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1)



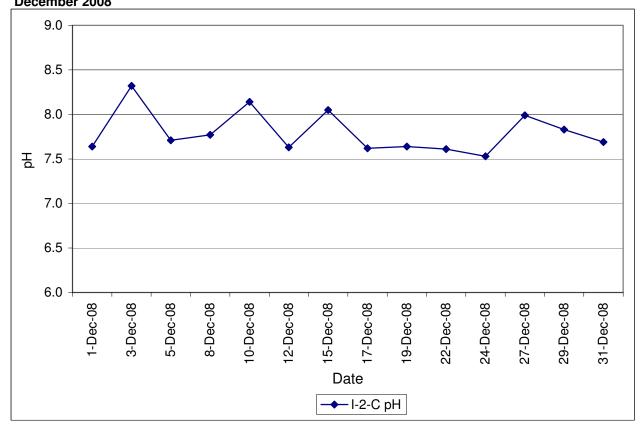
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan DrainageTunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1-C) December 2008



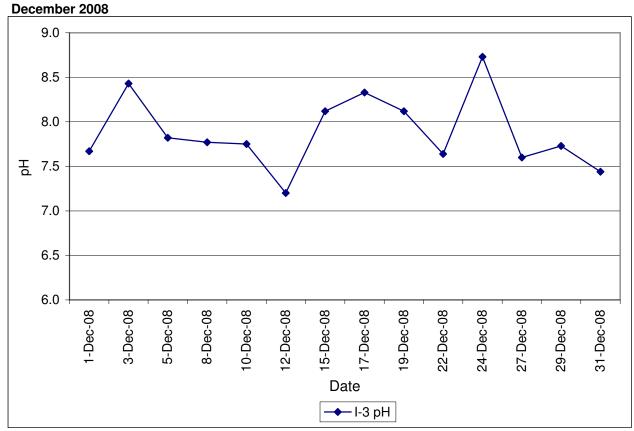
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan DrainageTunnel Water Quality Results at Hong Hoi Chee Hong Temple (I-2)



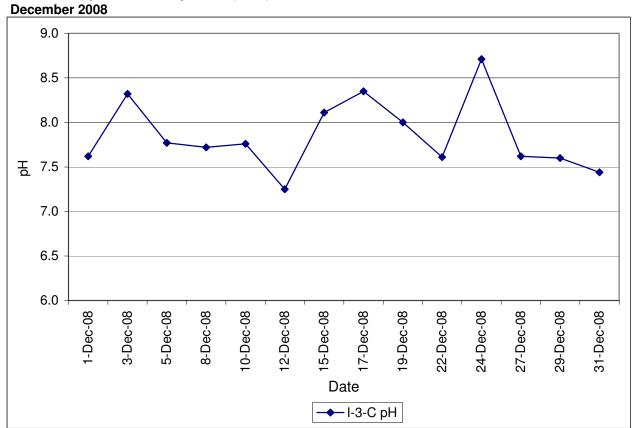
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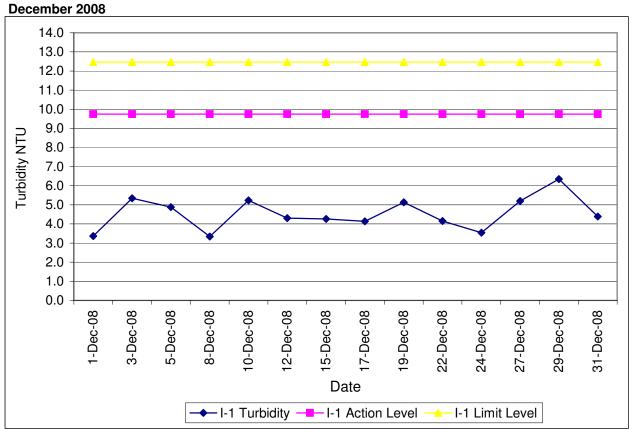
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan DrainageTunnel Water Quality Results at Squatters (I-3)



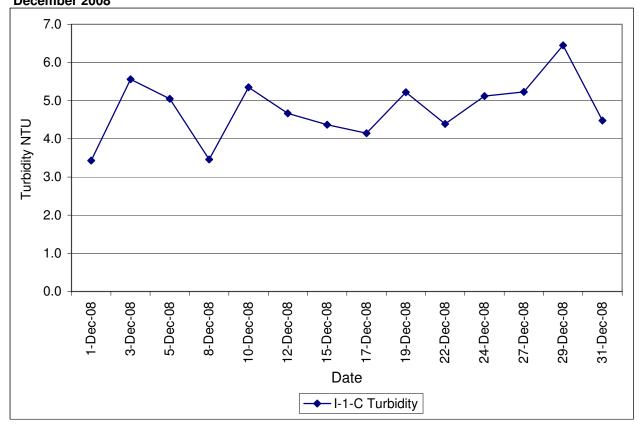
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan DrainageTunnel Water Quality Results at Squatters (I-3-C)



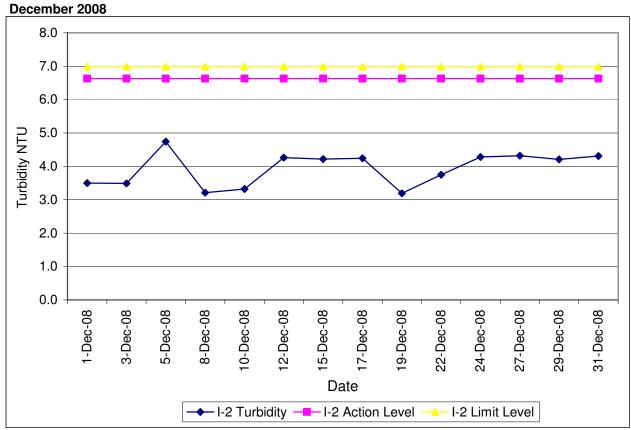
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan DrainageTunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1)



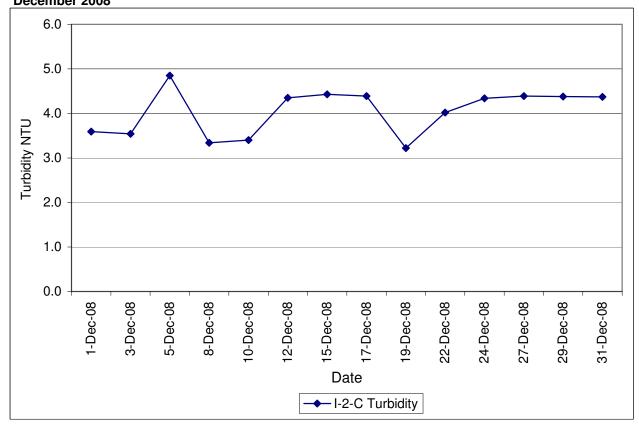
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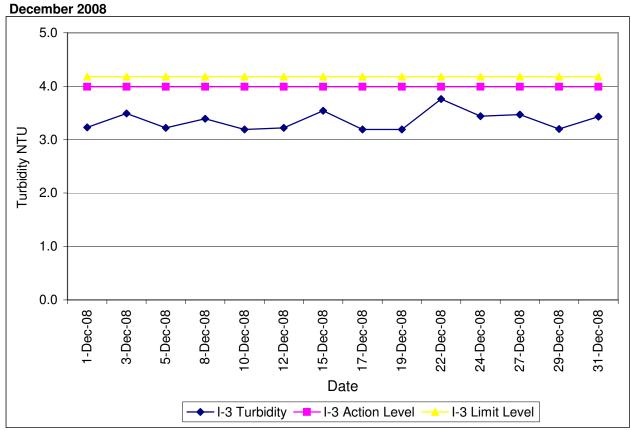
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan DrainageTunnel Water Quality Results at Hong Hoi Chee Hong Temple (I-2)



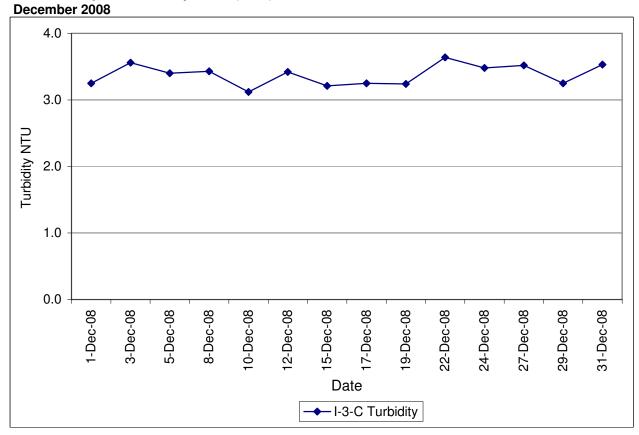
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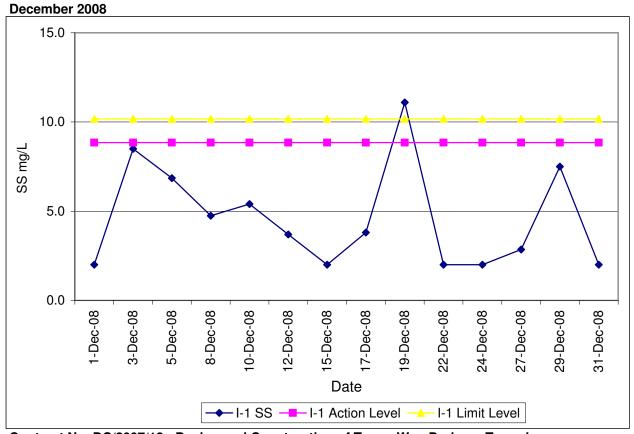
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan DrainageTunnel Water Quality Results at Squatters (I-3)



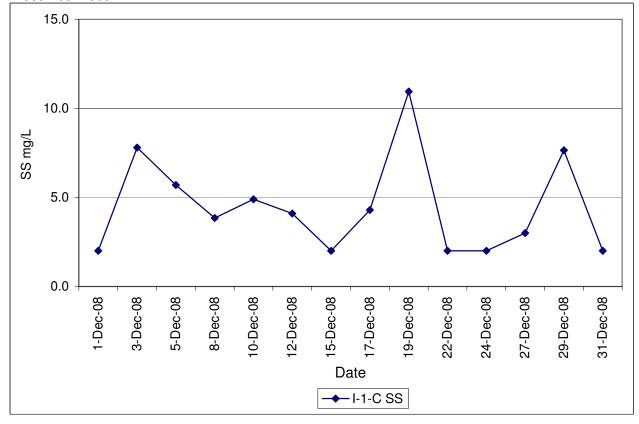
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan DrainageTunnel Water Quality Results at Squatters (I-3-C)



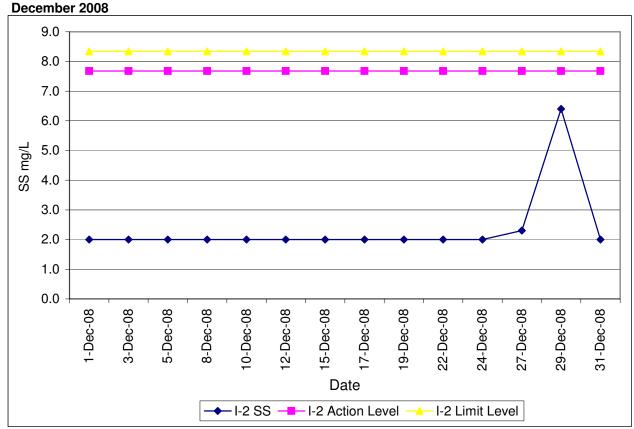
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan DrainageTunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1)



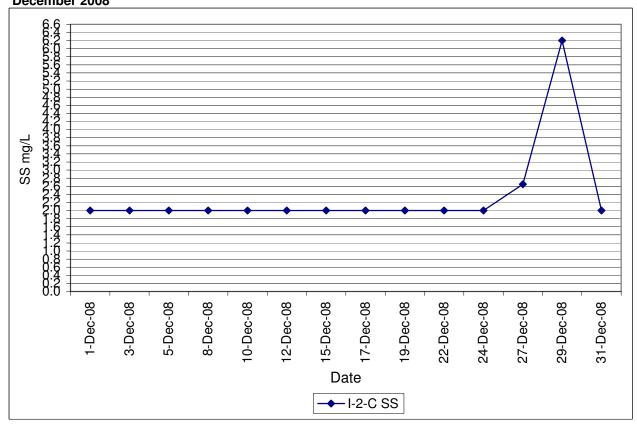
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan DrainageTunnel Water Quality Results at Sik Sik Yuen Ho Fung College (I-1-C) December 2008



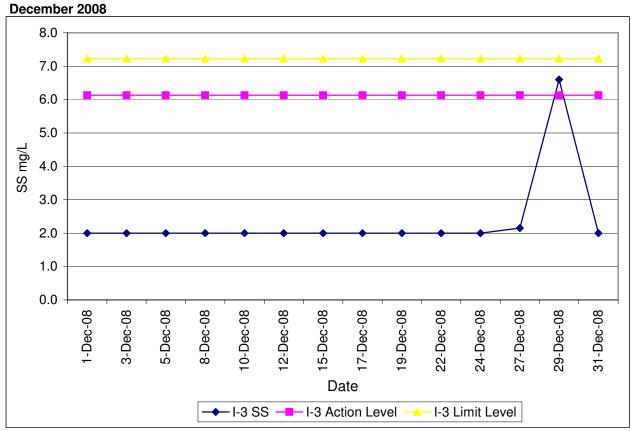
Contract No. DC/2007/12 - Design and Construction of Tsuen Wan DrainageTunnel Water Quality Results at Hong Hoi Chee Hong Temple (I-2)



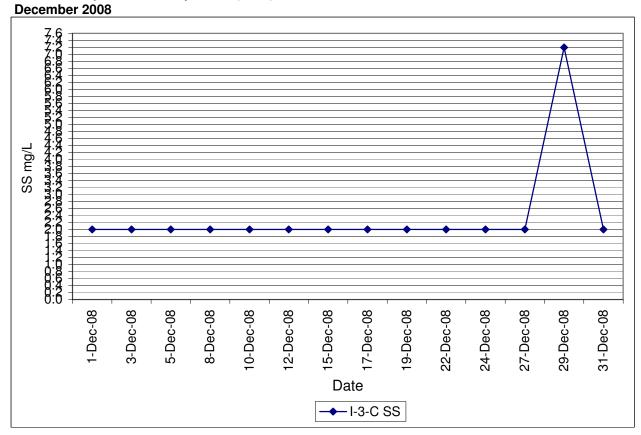
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Contract No. DC/2007/12 - Design and Construction of Tsuen Wan DrainageTunnel Water Quality Results at Squatters (I-3)



Contract No. DC/2007/12 - Design and Construction of Tsuen Wan DrainageTunnel Water Quality Results at Squatters (I-3-C)





Appendix J

Interim Notifications of Environmental Quality Limits
Exceedances

Incident Report on Action Level or Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	5-Dec-08
Time	9:55 AM
Monitoring Location	Sik Sik Yuen Ho Fung College (I-1)
Parameter	Suspended Solid
Action & Limit Levels	8.85 / 10.17
Measured Level	6.9 (higher than 120% of control station's SS)
Possible reason for Action or Limit Level Non-compliance	A low SS level of 5.7 is recorded at Control Station (I-1-C) and natural variation
Actions taken / to be taken	The measured SS level was below baseline Action / Limit Level and was within the range of baseline SS concentration (1.0 - 10.5mg/L). With reference to photo records, pipe piling and levelling of concrete platform were undertaken during the measurement and no direct disturbance was observed. In addition, exposed earth was covered by imprevious sheeting. Thus, the exceedance is considered to be contributed by natural variation and no action should be required.
Remarks	

Designation:	Environmental Team Leader

Antony Wong

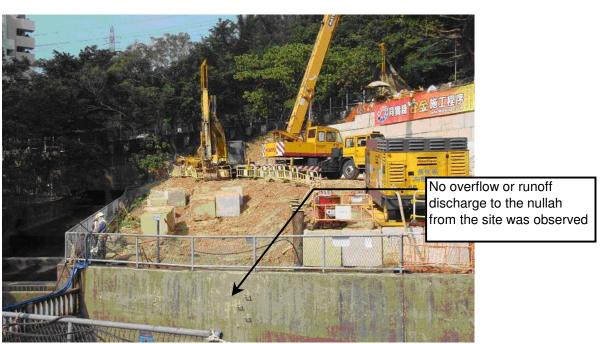
Date: 15-Dec-08

Prepared by:

Signature:

Photographic record for exceedance of Suspended Solid recorded at Sik Sik Yuen Ho Fung College (I-1) on 05-Dec-08





Incident Report on Action Level or Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	8-Dec-08
Time	9:50 AM
Monitoring Location	Sik Sik Yuen Ho Fung College (I-1)
Parameter	Suspended Solid
Action & Limit Levels	8.85 / 10.17
Measured Level	4.8 (higher than 120% of control station's SS)
Possible reason for Action or Limit Level Non-compliance	A low SS level of 3.9 is recorded at Control Station (I-1-C) and natural variation
Actions taken / to be taken	The measured SS level was below baseline Action / Limit Level and was within the range of baseline SS concentration (1.0 - 10.5mg/L). With reference to site photo records, pipe piling and delivery of concrete block were undertaken during the measurement and no direct disturbance was observed. Thus, the exceedance is considered to be contributed by natural variation and no action should be required.
Remarks	

Actions taken / to be taken	concrete block were undertaken during the measurement and no direct disturbance was observed. Thus, the exceedance is considered to be contributed by natural variation and no action should be required.
Remarks	
Prepared by:	Antony Wong
Designation:	Environmental Team Leader
Signature:	tony

15-Dec-08

Date:

Photographic record for exceedance of Suspended Solid recorded at Sik Sik Yuen Ho Fung College (I-1) on 08-Dec-08





Incident Report on Action Level or Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	19-Dec-08
Time	9:45 AM
Monitoring Location	Sik Sik Yuen Ho Fung College (I-1)
Parameter	Suspended Solid
Action & Limit Levels	8.85 / 10.17
Measured Level	11.1
Possible reason for Action or Limit Level Non-compliance	A high SS level of 11.0 was recorded at Control Station (I-1-C)
Actions taken / to be taken	The measured SS level is well below both 120% and 130% of the measured level at Control Station. No direct disturbance was observed contributed by project construction activities including site tidiness and drilling temporary pipe pile during the day of sampling. There is no evidence to show the exceedance is project-related. Thus, no action is required.
Remarks	No exceedance was recorded in the consecutive monitoring on 22 December 2008

Actions taken / to be taken	observed contributed by project construction activities including site tidiness and drilling temporary pipe pile during the day of sampling. There is no evidence to show the exceedance is project-related. Thus, no action is required.
Remarks	No exceedance was recorded in the consecutive monitoring on 22 December 2008
Prepared by:	Antony Wong
Designation:	Environmental Team Leader
Signature:	tony

31-Dec-08

Date:

Photographic record for exceedance of Suspended Solid recorded at Sik Sik Yuen Ho Fung College (I-1) on 19-Dec-08





Incident Report on Action Level or Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	29-Dec-08
Time	3:39 PM
Monitoring Location	Squatters (I-3)
Parameter	Suspended Solid
Action & Limit Levels	6.13 / 7.23
Measured Level	6.6
Possible reason for Action or Limit Level Non-compliance	A high SS level of 7.2 was recorded at Control Station (I-3-C)
Actions taken / to be taken	The measured SS level is well below both 120% and 130% of the measured level at Control Station. No direct disturbance was observed contributed by project construction activities including site tidiness during the day of sampling. There is no evidence to show the exceedance is project-related. Thus, no action is required.
Remarks	

Actions taken / to be taken	The measured SS level is well below both 120% and 130% of the measured level at Control Station. No direct disturbance was observed contributed by project construction activities including site tidiness during the day of sampling. There is no evidence to show the exceedance is project-related. Thus, no action is required.
Remarks	
Prepared by:	Antony Wong
Designation:	Environmental Team Leader
Signature:	tony

6-Jan-09

Date:

Photographic record for exceedance of Suspended Solid recorded at Squatters (I-3) on 29-Dec-

