CINOTECH 漢綠
consultants limited

Room 1710, Technology Park,
18 On Lai Street, Shatin, N.T., Hong Kong.
Tel.: (852) 2151 2083 Fax: (852) 3107 1388
Website : http://www.cinotech.com.hk
E-mail : info@cinotech.com.hk

Our ref.: CCL/MA13003/Corres/Out/vw140613_Mrpt1405

Environmental Protection Department
Environmental Assessment Division
Assessment and Noise Group
27th Floor, Southorn Centre,
130 Hennessy Road
Wan Chai, Hong Kong

By Courier

13 June 2014

Attn.: Mr. Tom TAM

Dear Sirs,

Environmental Permit (EP) No. FEP-24/004/1998/I
West Rail, Phase I - MTRC Works Contract 1117
Pat Heung Depot Modification Works

- Monthly Noise Monitoring Report (May 2014) for Pat Heung Depot Modification Works

On behalf of MTRCL, we are pleased to submit herewith three hard copies and one electronic copy of the captioned report in accordance with Condition 4.5 of the Project EP.

Please kindly note that the captioned report has been certified by the Environmental Team (ET) Leader and verified by the Independent Environmental Checker (IEC) as per Condition 4.5 of the Project EP.

Should you require any further information, please feel free to contact our Mr. Victor Wong at 2151-2078 or the undersigned at 2151 2089.

Yours faithfully,
Cinotech Consultants Ltd.

Dr. Priscilla Choy
Environmental Team Leader

Encl.

Cc. (all w/e)

EPD	(Attn: Mr. Wai CHAU)	w/encl.
MTRCL	(Attn: Mr. Richard KWAN)	w/o encl.
Paul Y	(Attn: Mr. Eddie SUEN)	w/encl.

Paul Y. Construction Company, Limited

MTR Works Contract 1117-
Pat Heung Depot Modification Works

Monthly Noise Monitoring Report
for
May 2014

(Version 1.0)

Certified By

Environmental Team Leader

(Dr. Priscilla Choy)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties.

CINOTECH CONSULTANTS LTD
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong
Tel: (852) 2151 2083 Fax: (852) 3107 1388
Email: info@cinotech.com.hk

MTR Corporation Limited

West Rail

Pat Heung Modification Works

Monthly Noise Monitoring Report No. 15

[Period from 1 to 31 May 2014]

(June 2014)

Verified by: Fredrick Leong

Position: Independent Environmental Checker

Date: 13 June 2014

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EXECUTIVE SUMMARY

Introduction

1. This is the 15th Monthly Noise Monitoring Report prepared by Cinotech Consultants Limited for MTR Works Contract 1117 - Pat Heung Depot (PHD) Modification Works. This report documents the findings of EM&A Works conducted from 1 May to 31 May 2014 since major construction works for Contract 1117 commenced on 1 March 2013.

Summary of Construction Works undertaken during Reporting Period

2. The major site activities undertaken in the reporting period include:

- Site clearance;
- Site formation;
- Site surveying;
- Pre-bored socketed H-piling;
- Sheet-piling;
- Chiller pipe diversion;
- Embankment works;
- Manholes excavation;
- Pipe jacking;
- ELS works for EMU extension building, Ancillary E&M plant building and IMB building;
- Installation of temporary noise barrier at location 3.

3. As of this reporting period, there is no record of any project changes from that originally proposed as described in the latest Environmental Review Report (ERR) for this Works Contract 1117.

Environmental Monitoring and Audit Progress

4. A summary of the monitoring activities in this reporting period is listed below:

- Construction Noise Monitoring during normal weekdays
  - NM1 4 times
  - NM2 4 times
  - NM3A 4 times
  - Environmental Site Inspection 4 times

Noise

5. 4 sets of 30-minute construction noise measurements were carried out at each of the monitoring stations during normal weekdays of the reporting period. No exceedance was recorded during the reporting period.

Waste Management

6. Wastes generated from this Project include inert construction and demolition (C&D) materials and non-inert C&D materials. About 7,047 m^3 of inert C&D materials were generated during the reporting period. Non-inert C&D includes 26 m^3 of general refuse, 5,510 kg of metal, 5 kg of plastic and 305 kg of paper/cardboard packaging materials was generated during the reporting period. The inert C&D materials generated from the Project were disposed of at TM 38 Area Fill Bank, while all non-inert waste was disposed of at NENT.

Environmental Site Inspection

7. A monthly joint environmental site inspection was carried out by the representatives of the Contractor, the IEC and the ET. Details of the audit findings and implementation status are presented in Section 6.

Environmental Exceedance/Non-conformance/Complaint/Summon and Prosecution

8. Summary of the events and action taken and key information in the reporting month is tabulated in **Table I** and **Table II** respectively.

Table I Summary Table for Events Recorded in the Reporting Month

Parameter	No. of Exceedance		Action Taken
	Action Level	Limit Level	
Impact Noise Monitoring	0	0	N/A

Table II Summary Table for Key Information in the Reporting Month

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---
Changes to the assumptions and key construction / operation activities recorded	0	---	N/A	N/A	---
Notifications of any summons &prosecutions	0	---	N/A	N/A	---

Future Key Issues

9. Major site activities for the coming reporting month will include:

- Site clearance and formation;
- Site surveying;
- Auger piling;
- Sheet-piling;
- Chiller pipe diversion

- Embankment works;
- Manholes excavation;
- Pipe jacking;
- ELS works for EMU extension building, Ancillary E&M plant building and IMB building;
- Modification works for protected corridor;
- Installation of temporary noise barrier at Location 3
- Upgrading of existing noise barrier;
- Excavations for train wash plant.

1 INTRODUCTION

1.1 Cinotech Consultants Limited (Cinotech) is commissioned by Paul Y. Construction Company, Limited as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme during construction phase of the MTR Works Contract 1117 –Pat Heung Depot (PHD) Modification Works (hereafter referred to "the Project").

Purpose of the Report

1.2 This is the 15th Monthly Noise Monitoring Report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from 1 May to 31 May 2014 since major construction works for Contract 1117 commenced on 1 March 2013.

Structure of the Report

1.3 The structure of the report is as follows:

Section 1: **Introduction -** details the scope and structure of the report.

Section 2: **Project Information** - summarises background and scope of the project, site description, project organization and contact details, construction programme, the construction works undertaken and the status of Environmental Permits/Licenses during the reporting period.

Section 3: **Environmental Monitoring Requirement -** summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, Event / Action Plans, environmental mitigation measures as recommended in the Environmental Review Report (ERR) and relevant environmental requirements.

Section 4: **Implementation Status on Environmental Mitigation Measures -** summarises the implementation of environmental protection measures during the reporting period.

Section 5: **Monitoring Results** - summarises the monitoring results obtained in the reporting period.

Section 6: **Environmental Site Inspection -** summarises the audit findings of the weekly site inspections undertaken within the reporting period.

Section 7: **Environmental Non-conformance -** summarises any monitoring exceedance, environmental complaints and environmental summons within the reporting period.

Section 8: **Future Key Issues -** summarises the impact forecast and monitoring schedule for the next three months.

Section 9: **Conclusions and Recommendations**

2 PROJECT INFORMATION

Background

2.1 West Rail Line (WRL) is one of the strategic rail infrastructures in Hong Kong providing the people of Hong Kong an environmentally friendly and convenient way to travel between the western part of the New Territories and western Kowloon. Under the approved WRL Environmental Impact Assessment (EIA) Report (EIA-149/BC), it has a total length of about 30.5km with 9 stations, including Nam Cheong, Mei Foo, Tsuen Wan West, Kam Sheung Road, Yuen Long, Long Ping, Tin Shui Wai, Siu Hong, Tuen Mun and one depot at Pat Heung.

2.2 The EIA Report of WRL was prepared and submitted to Environmental Protection Department (EPD) prior to the enactment of the Environmental Impact Assessment Ordinance (EIAO) in1998. Since the first Environmental Permit (EP) (EP-004/1998), there have been amendments made to the permit through a number of EP variation applications related to the main line of WRL.

2.3 This Works Contract 1117 covers the modification works at the existing Pat Heung Depot (PHD) of WRL to meet future operational and maintenance requirements. The PHD modification works include the construction of a new train wash plant, locomotive shed, permanent - way workshop, stabling sidings, extension of maintenance building and modification of noise barriers.

2.4 Since the modification works at PHD forms part of the WRL, a variation of environmental permit (VEP) was applied and a VEP (EP No. EP-004/1998/I) was subsequently granted. Moreover, a further Environmental Permit (FEP) (EP No: FEP-24/004/1998/I) on construction and operation of WRL (including the PHD modification works) was issued by Director of Environmental Protection (DEP) to the MTR Corporation Limited on 23 July 2012.

General Site Description

2.5 The site layout and proposed modification works are illustrated in **Figure 1**.

Construction Programme and Activities

2.6 A summary of the major construction activities undertaken in this reporting period is shown as follows. The tentative construction programme is presented in **Appendix A**.

- Site clearance;
- Site formation;
- Site surveying;
- Pre-bored socketed H-piling;
- Sheet-piling;
- Chiller pipe diversion;
- Embankment works;
- Manholes excavation;
- Pipe jacking;
- ELS works for EMU extension building, Ancillary E&M plant building and IMB building;

- Installation of temporary noise barrier at location 3.

Project Organisation

2.7 Different parties with different levels of involvement in the project organization include:

- Engineer or Engineer's Representative (ER)– MTR Corporation (MTRC)
- Contractor's Environmental Team (Contractor's ET) – Cinotech Consultants Ltd. (Cinotech)
- Independent Environmental Checker (IEC) – Meinhardt Infrastructure and Environment Limited (MIEL)
- Contractor – Paul Y. Construction Company, Limited(Paul Y)

2.8 The responsibilities of respective parties are detailed in Section 2 of the approved EM&A Programme for PHD Modification Works.

2.9 The project organisation including key personnel contact names and telephone numbers is presented in **Figure 2**.

Status of Environmental Licences, Notification and Permits

2.10 A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project is presented in **Table 2.1**.

Table 2.1 Status of Environmental Licenses, Notification and Permits

Permit / License No.	Valid Period		Status
	From	To	
Environmental Permit (EP)			
FEP-24/004/1998/J	21/10/2013	End of the Project	Valid
Notification pursuant to Air Pollution Control (Construction Dust) Regulation			
No.351534	26/10/2012	N/A	Valid
Billing Account for Construction Waste Disposal			
Account No. 7016256	2/11/2012	N/A	Valid
Registration of Chemical Waste Producer			
5218-531-P2991-02	4/12/2012	N/A	Valid
Effluent Discharge License under Water Pollution Control Ordinance (WPCO)			
WT00015378-2013	26/3/2013	31/3/2018	Valid
Construction Noise Permit			
GW-RN0658-13 **(Area D: A64-2 Local Cable Diversion)**	22/11/2013	17/5/2014	Expired
PP-RN0006-14 **(Area A: Percussive Piling – Ancillary E&M Building)**	20/3/2014	14/5/2014	Expired
GW-RN0184-14 **(Area D: Location 4 Noise Barrier Upgrade)**	21/3/2014	12/9/2014	Valid
GW-RN0199-14 **(Area A: EMU Extension)**	26/3/2014	19/9/2014	Valid
GW-RN0246-14 **(Area B to D: Pipe Jacking)**	11/4/2014	10/10/2014	Valid

Permit / License No.	Valid Period		Status
	From	To	
GW-RN0272-14 **(Area D: A64-2 Local Cable Diversion)**	20/5/2014	19/11/2014	Valid

Summary of EM&A Requirements

2.11 The EM&A programme under Works Contract 1117 require construction noise monitoring as well as environmental site audits. The EM&A requirements are described in the following sections, including:

- all monitoring parameters;
- environmental quality performance limits (Action and Limit levels);
- Event-Action Plans;
- Environmental mitigation measures, as recommended in the Environmental Review Report (ERR) for the VEP (EP No. FEP-24/004/1998/I); and
- Environmental requirements in contract documents.

2.12 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 6 of this report.

2.13 This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the required monitoring parameters, namely construction noise as well as audit works for the Project in the reporting month.

3 ENVIRONMENTAL MONITORING REQUIREMENTS

Construction Noise Monitoring

Monitoring Requirements

3.1 Noise monitoring was conducted in accordance with the approved EM&A Programme for PHD Modification Works.

3.2 With reference to the baseline monitoring report for the Project, **Table 3.1** and **Table 3.2** summarises the location of noise monitoring stations and shows the established Action and Limit Levels for construction noise monitoring works respectively. Location of the monitoring stations is shown on **Figure 3**.

Table 3.1 Construction Noise Monitoring Stations

ID in the approved EM&A Programme	ID in Baseline Noise Monitoring Report	Construction Noise Monitoring Station
NM1	NM1	Tourmaline Villa
NM2	NM2	Kam Po Road
NM3	NM3A(1)	Tai Kek Tsuen

Note:
(1) Since permission of access could not be obtained, an alternative location at a village house just next to the original proposed monitoring location in the EM&A Programme was adopted for the baseline noise monitoring.

Table 3.2 Criteria for Action and Limit Levels for Construction Noise

Time Period (1)	Noise Monitoring Station	Action Level	Limit Level, dB (A)
0700-1900 hrs of normal weekdays	Tourmaline Villa (NM1)	When one documented valid complaint is received.	75.0
	Kam Po Road (NM2)		
	Tai Kek Tsuen (NM3A)		

Note:
(1) If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority should be followed.

3.3 Should non-compliance of the criteria in **Table 3.2** occur, action in accordance with the Event and Action Plan in **Appendix B** should be carried out.

Monitoring Equipment

3.4 **Table 3.3** summarizes the noise monitoring equipment model being used.

Table 3.3 Noise Monitoring Equipment

Equipment	Model and Make	Quantity
Integrating Sound Level Meter	Pulsar Instruments Model 93 (Serial no. B22487)	1
Calibrator	Pulsar Instruments Model 105 (Serial no. 64958)	1

Monitoring Parameters, Frequency and Duration

3.5 **Table 3.4** summarizes the monitoring parameters, frequency and total duration of monitoring.

Table 3.4 Noise Monitoring Parameters, Frequency and Duration

Station	Parameter	Period	Frequency
NM1, NM2 and NM3A	$L_{eq,30\ min.}$ (1) (L_{10} and L_{90} were also recorded as supplementary information)	0700-1900 hours on normal weekdays	Once a week

Note (1): Leq, $30_{min.}$ as six consecutive $L_{eq,\ 5min}$ readings.

Monitoring Methodology and QA/QC Procedures

Field Monitoring

3.6 The monitoring procedures are as follows:

- The microphone head of the sound level meter was positioned 1m exterior of the noise sensitive facade and lowered sufficiently so that the building's external wall acts as a reflecting surface.
- The battery condition was checked to ensure good functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:

  - Frequency weighting : A
  - Time weighting : Fast
  - Measurement time : 5 minutes (obtaining six consecutive $L_{eq,\ 5min}$ readings for a $L_{eq,\ 30\ min}$ reading)

- Prior to and after noise measurement, the meter was calibrated using the calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement is more than 1.0 dB, the measurement was considered invalid and repeat of noise measurement was required after re-calibration or repair of the equipment.
- The wind speed at the monitoring station was checked with the portable wind meter. Noise monitoring was cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s.

- Noise measurement was paused during periods of high intrusive noise if possible and observation was recorded when intrusive noise was not avoided.
- At the end of the monitoring period, the L_{eq}, L_{10} and L_{90} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- A façade correction of +3dB (A) shall be made to the noise parameter obtained by free field measurement.

Maintenance and Calibration

3.7 Maintenance and Calibration procedures were as follows:

- The microphone head of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.
- The sound level meter and calibrator were checked and calibrated at yearly intervals. Copies of calibration certificates are attached in **Appendix C**.

4 IMPLEMENTATION STATUS ON ENVIRONMENTAL PROTECTION REQUIREMENTS

4.1 The Contractor has implemented environmental mitigation measures and requirements as stated in the ERR, the Environmental Permit and approved EM&A Programme for PHD Modification Works. The status of submission required under the Environmental Permit is summarized in **Table 4.1**. The implementation status of the environmental mitigation measures during the reporting period is summarized in **Appendix D**.

Table 4.1 Status of Required Submissions under EP

EP Condition	Submission	Submission Date
Condition 4.5	Monthly Noise Monitoring Report (April 2014)	15th May 2014

5 MONITORING RESULTS

Noise

5.1 In this reporting period, noise monitoring during non-restricted hours was conducted as scheduled at the designated locations. The noise monitoring schedule is shown in **Appendix E**.

5.2 The details of the monitoring results and graphical presentations are shown in **Appendix F**. The weather during the monitoring sessions was mainly cloudy and sunny.

5.3 Based on the on-site measurement, traffic on nearby major road is considered as a noise source other than construction works of the Project that affects the monitoring results of the reporting month.

5.4 No Action/Limit Level exceedance for construction noise monitoring was recorded in the reporting period.

Waste Management

5.5 Waste generated from this Project includes inert construction and demolition (C&D) materials, non-inert C&D materials and dredging materials. Non-inert C&D materials are made up of general refuse, chemical waste, paper/cardboard packaging materials, plastic materials and metals. Metals generated from the project are also grouped into non-inert C&D materials as the metals were not disposed of with other inert C&D materials. With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting period are summarised in **Table 5.1**. The inert C&D materials and general refuse generated from the Project were disposed of at TM 38 Area Fill Bank, TKO 137 Area Fill Bank and NENT respectively. 5,510 kg of metal, 5 kg of plastic and 305 kg of paper/cardboard packaging materials were generated during the reporting period. Detail of waste management data is presented in **Appendix G**.

Table 5.1 Quantities of Waste Generated from the Project

Reporting Month	Quantity					
	C&D Materials (inert) [a]	C&D Materials (non-inert)[b]				
		General Refuse	Chemical Waste	Paper/ cardboard	Plastics	Metals
May 2014	7,047 m^3	26 m^3	0 *kg*	305 *kg*	5 *kg*	5,510 *kg*

Notes:
(a) Inert C&D materials include bricks, concrete, building debris, rubble and excavated soil.
(b) Non-inert C&D materials include steel, paper/cardboard packaging waste, plastics and other wastes such as general refuse. Steel materials generated from the project are grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials.

6 ENVIRONMENTAL SITE INSPECTION

Site Audits

6.1 Site audits were carried out by ET on weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix H**.

6.2 Site audits were conducted on 5, 13, 23 and 27 May 2014 by ET. A joint site audit with the representative with IEC, ER, the Contractor and the ET was carried out on 23 May 2014. No site inspection was conducted by EPD during the reporting period. The details of observations during site audit can refer to **Table 6.1**.

Implementation Status of Environmental Mitigation Measures

6.3 According to the ERR, Environmental Permit and the approved EM&A Programme of the Project, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is provided in **Appendix D**.

6.4 During site inspections in the reporting period, no non-conformance was identified. The observations and recommendations made during the audit sessions are summarized in **Table 6.1**.

Table 6.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	5 May 2014	Reminder: The Contractor is reminded to improve the efficiency of the sedimentation tank for better waste water treatment (Area A).	Further improvement on the sedimentation tank and the drainage system will be provided in the next reporting month.
	13 May 2014	The Contractor should review the drainage system in Area B	The Contractor has simplified the drainage system for easier management on 23 May 2014.
	13 May 2014	The slope in Area D should be covered properly to prevent surface run-off.	Covers were provided to the exposed slope on 23 May 2014.
	13 May 2014	Reminder: The Contractor should improve the efficiency of the sedimentation tank for better waste water treatment (Area A).	Further improvement on the sedimentation tank and the drainage system will be provided in the next reporting month.
	13 May 2014	Reminder: The Contractor should continue to improve the drainage system in Area D.	Drainage facilities were installed to improve the off-site drainage system in the area on 23 May 2014.
	23 May 2014	Reminder: The Contractor should ensure the sedimentation tank is adequate for muddy water treatment; No water should be discharge before the water quality has met the requirement (Area A).	Further improvement on the sedimentation tank and the drainage system will be provided in the next reporting month.

Parameters	Date	Observations and Recommendations	Follow-up
	27 May 2014	Reminder: The Contractor should continue to improve the drainage system in Area A.	Further improvement on the sedimentation tank and the drainage system will be provided in the next reporting month.
	27 May 2014	Mud is observed on the road in Area C; The Contractor should ensure the road is tidy and prevent muddy run-off from entering the u-channel.	The Contractor has washed the road regularly on 3 June 2014.
Noise	N/A	N/A	N/A
Tree Protection/ Landscape and Visual	N/A	N/A	N/A
Air Quality	29 April 2014	Reminder: More tarpaulin should be provided to cover the cement mixer (Area B).	The mixer and cement bags were covered properly on 13 May 2014.
	5 May 2014	More tarpaulin should be provided to cover the cement mixer; Cement packages should be properly covered (Area B).	The mixer and cement bags were covered properly on 13 May 2014.
Waste / Chemical Management	23 May 2014	Chemical waste storage should be free from accumulated oil and water; Chemical waste label should be provided to unidentified containers (Area A).	The oily water was cleared and the chemical and oil containers were provided with chemical labels on 27 May 2014.
	23 May 2014	Oil stain is observed on the road in Area A; The Contractor should prevent equipments from leaking oil.	No oil was observed on the ground on 27 May 2014.
Permits/Licenses	N/A	N/A	N/A

7 ENVIRONMENTAL NON-CONFORMANCE

Summary of Exceedances

7.1 No exceedance of monitoring results was recorded in the reporting period. The summary of exceedance is provided in **Appendix I**.

Summary of Environmental Non-Compliance

7.2 No environmental non-compliance was recorded in the reporting period.

Summary of Environmental Complaint

7.3 No environmental Project-related complaint was received in the reporting month. The Cumulative Complaint Log since the commencement of the Project is presented in **Appendix J**.

Summary of Environmental Summon and Successful Prosecution

7.4 There was no successful environmental prosecution or notification of summons received since the Project commencement. The Cumulative Log for environmental summon and successful prosecution since the commencement of the Project is presented in **Appendix J**.

8 FUTURE KEY ISSUES

Key Issues in the Coming Month

8.1 Key issues to be considered in the coming month include:

- Handling of waste water arising from drilling works and surface run-off;
- Dust control during loading of materials and excavation;
- Oil leakage from equipment;
- Noise nuisance generated by on-site construction and demolition works; and
- Protection of retained trees within construction site.
- Maintaining the sand bags and bundings at the u-channel to prevent muddy run-off from directly accessing the main drainage channels.

Monitoring Schedule for the Next Month

8.2 The tentative construction noise monitoring schedule for the next month is shown in **Appendix E**.

Construction Programme for the Next Month

8.3 A tentative construction programme is provided in **Appendix A**. The major construction activities in the coming month will include:

- Site clearance and formation;
- Site surveying;
- Auger piling;
- Sheet-piling;
- Chiller pipe diversion
- Embankment works;
- Manholes excavation;
- Pipe jacking;
- ELS works for EMU extension building, Ancillary E&M plant building and IMB building;
- Modification works for protected corridor;
- Installation of temporary noise barrier at Location 3
- Upgrading of existing noise barrier;
- Excavations for train wash plant.

9 CONCLUSIONS

Conclusions

9.1 This Monthly Noise Monitoring Report presents the EM&A works undertaken during the period from 1 May to 31 May 2014 since major construction works for Contract 1117 commenced on 1 March 2013 in accordance with approved EM&A Programme for PHD Modification Works and the requirement under FEP-24/004/1998/I.

9.2 As of this reporting period, there is no record of any project changes from that originally proposed as described in the latest Environmental Review Report (ERR) for this Works Contract 1117.

9.3 No exceedance of monitoring results was recorded in the reporting period.

9.4 There was no environmental complaint, prosecution or notification of summons received.

9.5 The ET will keep track on the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Recommendations

9.6 According to the environmental audits performed in the reporting month, the following recommendations were made:

Water Quality

- Sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly during the wet season;
- Temporary ditches should be used for diverting runoff to treatment before disposal;
- Bunding should be provided to confine the runoff in site area during rainstorm, particularly along the drainage channel; and
- U-channel should be maintained by regularly removing trapped mud and providing coverage and sediment baffles to the channel wherever possible.
- The discharge quality must meet the requirements specified in the discharge licence.

Waste/Chemical Management

- Good site practice of providing drip trays for temporary use of chemicals is recommended to sustain. Drip trays should be properly maintained; and
- Proper maintenance should be provided to equipment in site to prevent oil leakage.
- Oil stains on the floor should be treated as chemical waste and cleaned off immediately.

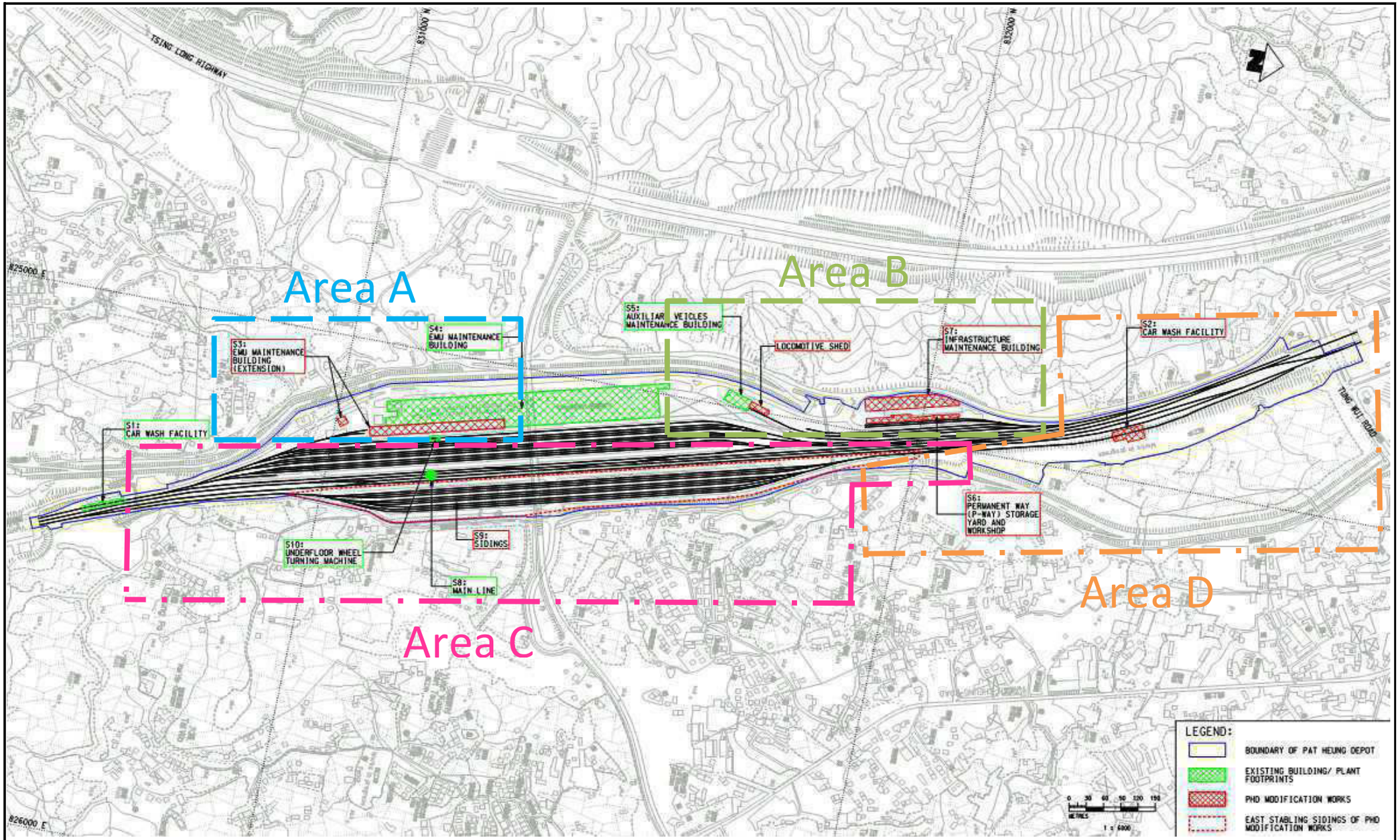
Air Quality

- Proper covering of stockpile, especially cement, should be provided to reduce dust generation; and
- Adequate water spraying should be applied on the haul roads and site entrances to reduce dust emission generated by traffic movement.

Construction Noise Impact

- Minimise noise nuisance to the nearby residential area by utilising noise barriers to shield off mechanical equipments.

FIGURES



Title	SCL Contract 1117 Shatin to Central Link - Pat Heung Depot Modification Works Site Layout Plan	Scale: N.T.S Date: Apr-13	Proposal No.: MA13003 Figure: 1

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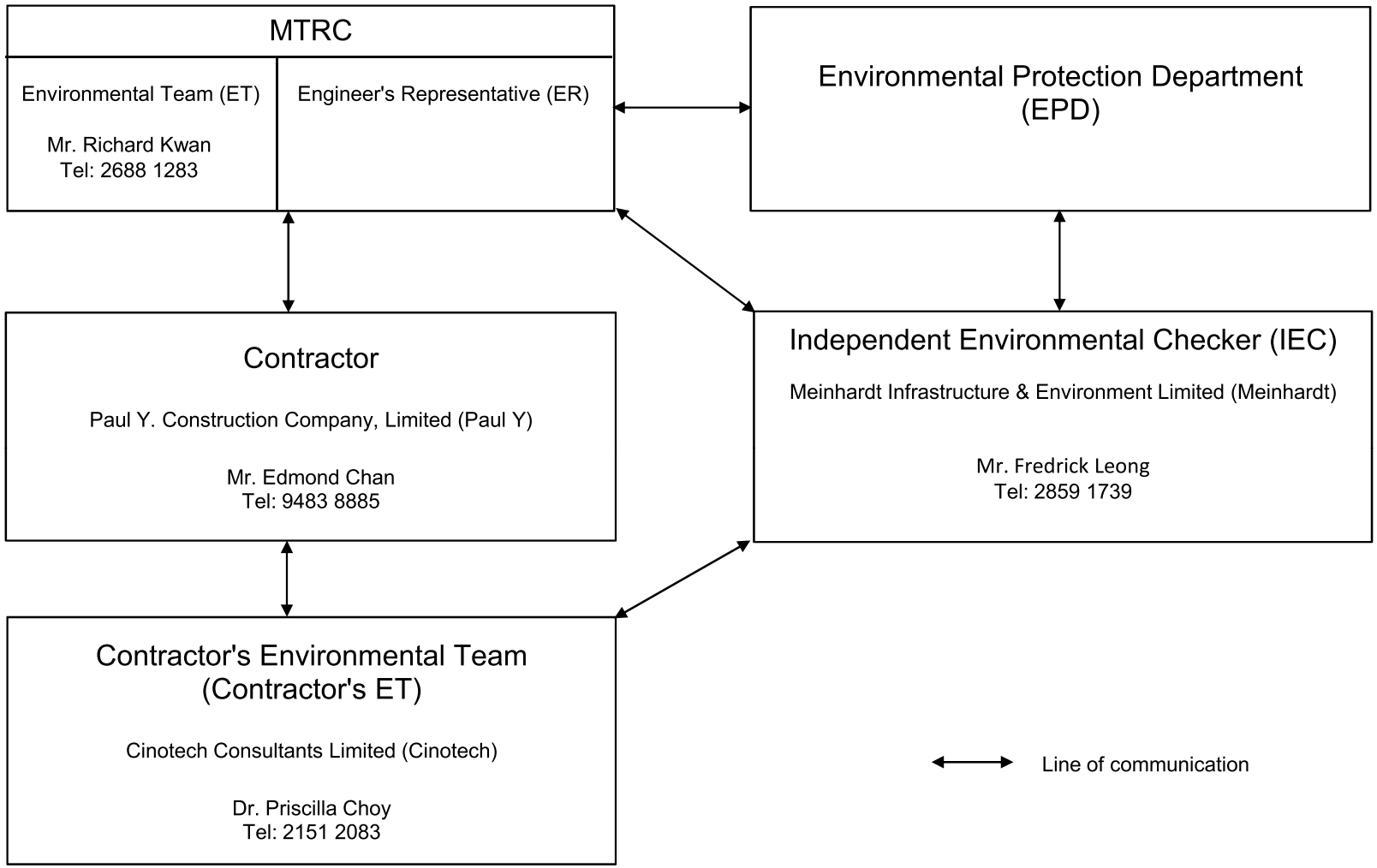
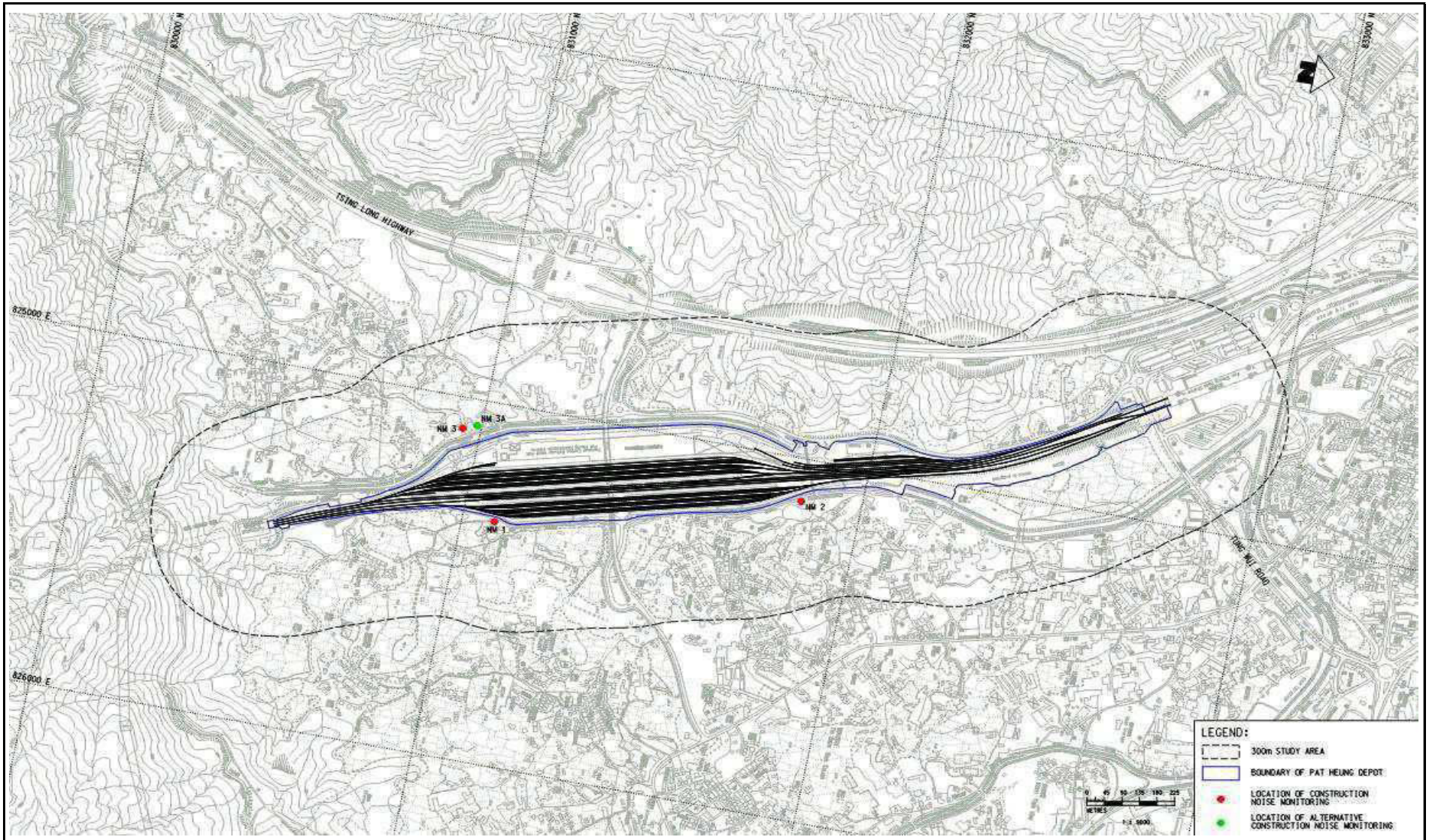


Title	SCL Contract 1117 Shatin to Central Link - Pat Heung Depot Modification Works Project Organisation Chart for Environmental Works	Scale: N.T.S Date: Aug-13	Proposa No.: MA13003 Figure: 2

CINOTECH



Title	MTR Works Contract 1117 Pat Heung Depot Modification Works	Scale: N.T.S	Proposal No.: MA13003
	Location of Constrcution Noise Monitoring Stations	Date: Apr-13	Figure: 3

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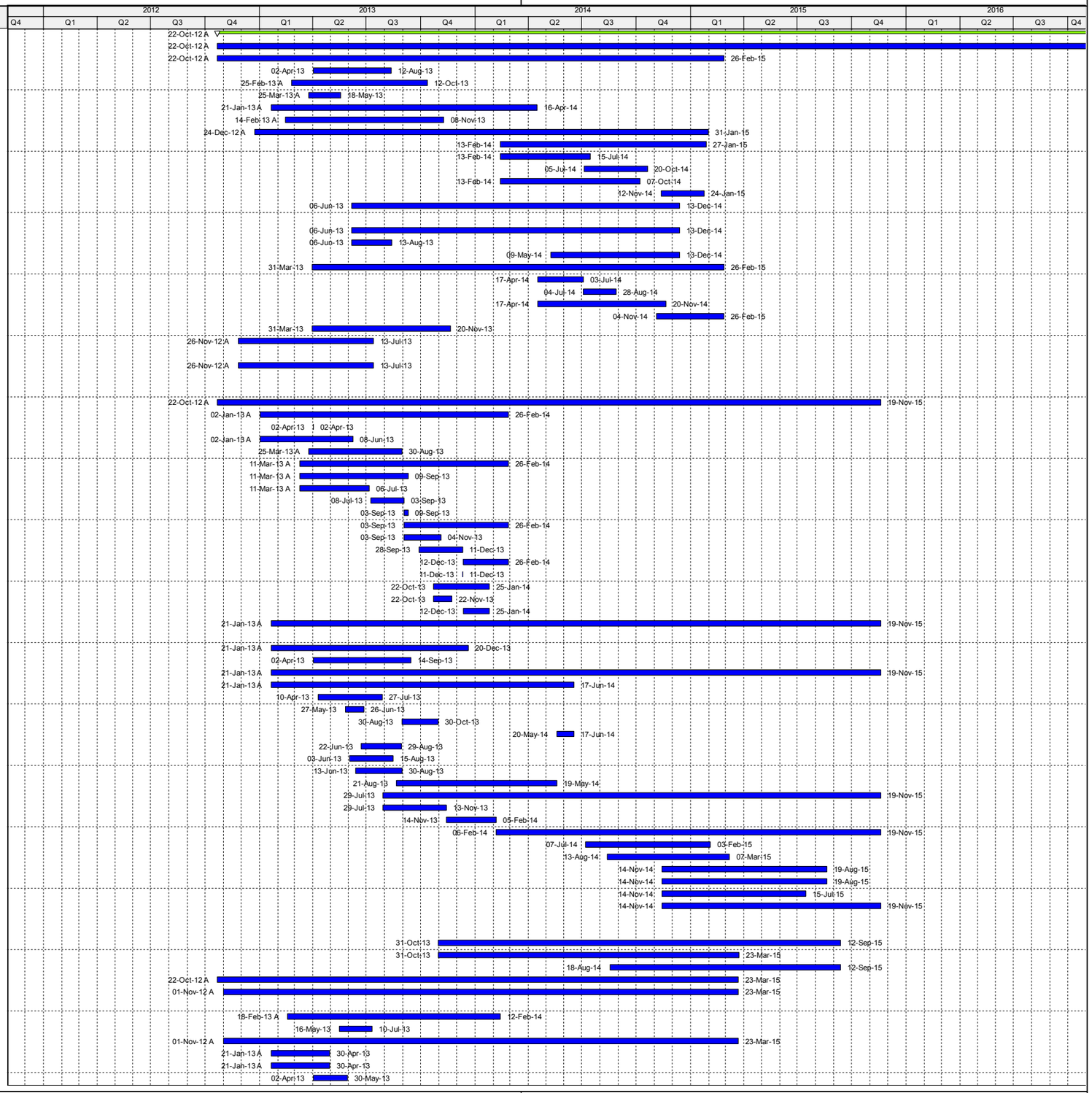
APPENDIX A
TENTATIVE CONSTRCUTION PROGRAMME

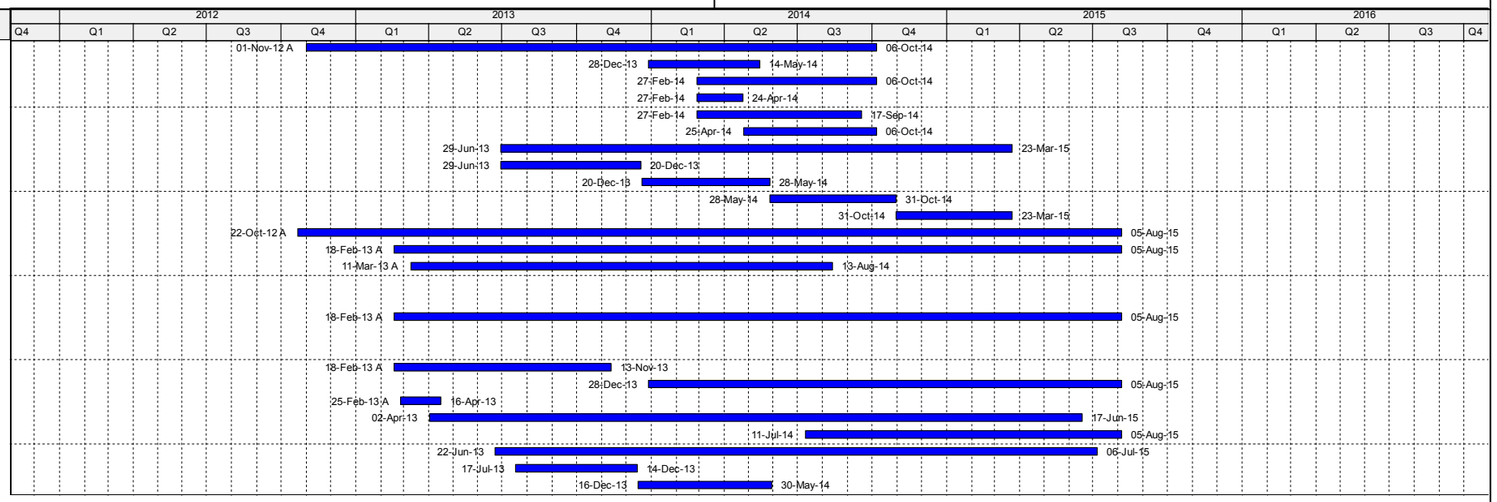
WBS Name	Start	Finish
1117 - Pat Heung Depot Modification Works (130301)	22-Oct-12 A	29-Oct-17
Milestone & Completion Obligation	22-Oct-12 A	29-Oct-17
Area A	22-Oct-12 A	26-Feb-15
Design in Area A	02-Apr-13	12-Aug-13
Works submission in Area A	25-Feb-13 A	12-Oct-13
Instrumentation and Monitoring Point Installation	25-Mar-13 A	18-May-13
Option 1 Cable Containment Works in Area A (Drawpit A3 & A5)	21-Jan-13 A	16-Apr-14
Utilities Diversion	14-Feb-13 A	08-Nov-13
Construction Works in EMU Building Extension (EMU)	24-Dec-12 A	31-Jan-15
BS / EM Works	13-Feb-14	27-Jan-15
EMU Extension (BS 1st Fix)	13-Feb-14	15-Jul-14
EMU Extension (BS 2nd Fix)	05-Jul-14	20-Oct-14
Ancillary E&M Plant Building	13-Feb-14	07-Oct-14
EMU Extension & Ancillary E&M Plant Building Testing & Commissioning (Building Services)	12-Nov-14	24-Jan-15
Works in Existing EMU Building	06-Jun-13	13-Dec-14
A&A Works (Builder)		
BS / EM Works	06-Jun-13	13-Dec-14
Phase A	06-Jun-13	13-Aug-13
Phase B	09-May-14	13-Dec-14
Area A External Works	31-Mar-13	26-Feb-15
Works at E100 Road T-Junction (EMU TTM Stage 3)	17-Apr-14	03-Jul-14
Works at E100 Road T-Junction (EMU TTM Stage 4)	04-Jul-14	28-Aug-14
Area A Exteranl Works Near Noise Barrier No 1	17-Apr-14	20-Nov-14
Area A Exteranl Works Near EMU Extension	04-Nov-14	26-Feb-15
Systemwide Cable Containment inside Area A	31-Mar-13	20-Nov-13
General Area	26-Nov-12 A	13-Jul-13
General Submission		
Works submission in General Area	26-Nov-12 A	13-Jul-13
Construction Works in External Area		
Area A		
Area B - Loco Shed Reprovision/ New Training Track/ IMB/ Pway Workshop and Associated Works	22-Oct-12 A	19-Nov-15
Section of Works - Loco Shed Reprovision	02-Jan-13 A	26-Feb-14
Contract Key Dates	02-Apr-13	02-Apr-13
Design Deliverable	02-Jan-13 A	08-Jun-13
Procurement & Deliveries	25-Mar-13 A	30-Aug-13
Construction Works	11-Mar-13 A	26-Feb-14
New Fuel Station - Works Area W5A	11-Mar-13 A	09-Sep-13
Extenal Civil Works	11-Mar-13 A	06-Jul-13
BS Installation Works	08-Jul-13	03-Sep-13
Interfacing Coordination	03-Sep-13	09-Sep-13
New Loco Shed - Works Area W5C	03-Sep-13	26-Feb-14
Extenal Civil Works	03-Sep-13	04-Nov-13
Structural Works	28-Sep-13	11-Dec-13
BS Installation Works	12-Dec-13	26-Feb-14
Interfacing Coordination	11-Dec-13	11-Dec-13
AVMB Building - Works Area W5B	22-Oct-13	25-Jan-14
ABWF Works	22-Oct-13	22-Nov-13
BS Installation Works	12-Dec-13	25-Jan-14
Section of Works - IMB, Pway Workshop and Assoicated EVA	21-Jan-13 A	19-Nov-15
Contract Key Dates		
Design Deliverable	21-Jan-13 A	20-Dec-13
Procurement & Deliveries	02-Apr-13	14-Sep-13
Construction Works	21-Jan-13 A	19-Nov-15
Extenal Civil Works	21-Jan-13 A	17-Jun-14
Works Area W6	10-Apr-13	27-Jul-13
Works Area W6A	27-May-13	26-Jun-13
Works Area W6B	30-Aug-13	30-Oct-13
Works Area W6C	20-May-14	17-Jun-14
Works Area W6D	22-Jun-13	29-Aug-13
Systemwide Cable Diversion (Red)	03-Jun-13	15-Aug-13
New Training Track - Works Area W6A	13-Jun-13	30-Aug-13
Long Weld Rail Storage Paltform - Works Area W6D	21-Aug-13	19-May-14
IMB	29-Jul-13	19-Nov-15
Works Area W6	29-Jul-13	13-Nov-13
Works Area W6B	14-Nov-13	05-Feb-14
Building Construction Works	06-Feb-14	19-Nov-15
TX Room	07-Jul-14	03-Feb-15
Lift Shaft	13-Aug-14	07-Mar-15
ABWF Works	14-Nov-14	19-Aug-15
Internal ABWF Works	14-Nov-14	19-Aug-15
External ABWF Works	14-Nov-14	15-Jul-15
BS Installation Works	14-Nov-14	19-Nov-15
Ground Level		
U1 Level		
Pway Workshop	31-Oct-13	12-Sep-15
Over Head Crane - Works Area W6/ W6B/ W6D	31-Oct-13	23-Mar-15
Building Construction Works	18-Aug-14	12-Sep-15
Area C - East Stabling Silding/ Noise Barrier 3 & 4/ Extg A100 Rd/ Extg Loco Shed/ OHL Reprovision	22-Oct-12 A	23-Mar-15
Section of Works - East Stabling Sliding (Area C)	01-Nov-12 A	23-Mar-15
Contract Key Dates		
Design Deliverable	18-Feb-13 A	12-Feb-14
Procurement & Deliveries	16-May-13	10-Jul-13
Construction Works	01-Nov-12 A	23-Mar-15
Works Area W11	21-Jan-13 A	30-Apr-13
Works Area W12	21-Jan-13 A	30-Apr-13
Works Area W13	02-Apr-13	30-May-13



All Projects Summary

WBS Elements below Project

WBS Name	Start	Finish
East Stabling Silding	01-Nov-12 A	06-Oct-14
Existing A100 Road	28-Dec-13	14-May-14
Noise Barrier - Location 3	27-Feb-14	06-Oct-14
Sounthern Slope (Augar Piles)	27-Feb-14	24-Apr-14
Midle Slope (Retaining Walls)	27-Feb-14	17-Sep-14
Northern Slope (Auger Piles)	25-Apr-14	06-Oct-14
Noise Barrier - Location 4	29-Jun-13	23-Mar-15
1st Bay construction	29-Jun-13	20-Dec-13
2nd Bay construction	20-Dec-13	28-May-14
3rd Bay construction	28-May-14	31-Oct-14
4th Bay construction	31-Oct-14	23-Mar-15
Area D - A100 Rd Ext. / Train Wash Plant & Bldg/ Noise Barrier 2 & 4/ Opt 3 - Slope Improvement	22-Oct-12 A	05-Aug-15
Section of Works - East Stabling Sliding (Area D)	18-Feb-13 A	05-Aug-15
Design Deliverable	11-Mar-13 A	13-Aug-14
Contract Key Dates		
Procurement & Deliveries		
Construction Works	18-Feb-13 A	05-Aug-15
Works Area W9		
Works Area W10/ 10A/ 10B/ 10C		
Option 1 - Systemwide Cable Diversion (Red) - A64 Drawpit	18-Feb-13 A	13-Nov-13
OHL Reprovision - Adjacent to WRL Main Line	28-Dec-13	05-Aug-15
Option 3 - Slope Improvement	25-Feb-13 A	16-Apr-13
A100 Road Extension	02-Apr-13	17-Jun-15
Noise Barrier - Location 2	11-Jul-14	05-Aug-15
Noise Barrier - Location 5	22-Jun-13	06-Jul-15
Pipe Jacking - North (Red)	17-Jul-13	14-Dec-13
Pipe Jacking - North (Blue)	16-Dec-13	30-May-14



APPENDIX B
EVENT AND ACTION PLAN

Event and Action Plan for Noise Monitoring during Construction Phase

Event	Action			
	ET	IEC	ER	Contractor
Action Level	1. Notify IEC, Contactor, and ER; 2. Discuss with the ER, IEC, and Contractor on remedial measures required; and 3. Increase monitoring frequency to check mitigation effectiveness.	1. Review the investigation results submitted by the contractor; and 2. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor, IEC and ET; 3. Review and agree on the remedial measures proposed by the Contractor; and 4. Supervise implementation of remedial measures.	1. Investigate the complaint and propose remedial measures; 2. Report the results of investigation to the IEC, ET and ER; 3. Submit noise mitigation proposals to ER with copy to the IEC and ET within 3 working days of notification; and 4. Implement noise mitigation proposals.
Limit Level	1. Notify IEC, EPD and Contractor; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency; 4. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 5. Arrange meeting with the IEC, Contractor and ER to discuss the remedial measures to be taken; 6. Inform IEC, ER, EPD the causes and actions taken for the exceedances; and 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ER, ET, and Contractor on the potential remedial measures; and 4. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor, IEC and ET; 3. In consultation with the ER and IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; and 5. 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.	1. Identify source and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial actions to ER with copy to IEC and ET within 3 working days; 4. Implement the agreed proposals; 5. Revise and resubmit proposals if problem still not under control; and 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated

APPENDIX C
COPIES OF CALIBRATION CERTIFICATES

SCM
SOUTH CHINA ... AL CENTER OF METROLOGY
GUANGDONG INSTITUTE OF METROLOGY
...量测试中心
...量科学研究院

CNAS 校准 CNAS L0730

校准证书

CALIBRATION CERTIFICATE

证书编号 Certificate No. SSD201400703

委托方 Client: Paul Y Construction Co. Ltd.

委托方地址 Add. of Client: 16/F, Paul Y Ctr., 51 Hung To Rd., Kwun Tong, Kowloon, H.K.

计量器具名称 Description: Sound Level Meter

型号规格 Model/Type: 93

制造厂 Manufacturer: Pulsar

出厂编号 Serial No.: B22487 设备编号 Equipment No.: ——

接收日期 Date of Receipt: 2014 年 Y 02 月 M 24 日 D

结论 Conclusion: 校准结果符合1级合格技术要求

校准日期 Date of Calibration: 2014 年 Y 02 月 M 26 日 D

批准人 Approved Signatory: 李...

核验 Inspected by: ...

校准 Calibrated by: ...

证书专用章 Stamp

本中心地址：中国广州市广园中路松柏东街30号 邮政编码：510405
电话：(8620)86594172 传真：(8620)86590743 投诉电话：(8620)26296063 E-mail: scm@scm.com.cn
Add: No.30, Songbaidong Street, Guangyuanzhong Road, Guangzhou, P. R. China
Post Code: 510405 Tel: (8620)86594172 Fax: (8620)86590743 Complaint Tel: (8620)26296063
证书真伪查询：www.scm.com.cn；www.mtpsp.com Certificate AuthenticityIdentify: www.scm.com.cn; www.mtpsp.com

说 明

证书编号 SSD201400703
Certificate No.

DIRECTIONS

1. 本中心是国家质量监督检验检疫总局在华南地区设立的国家法定计量检定机构，计量授权证书号是：（国）法计（2012）01043号、（国）法计（2012）01032号。本中心的质量管理体系符合ISO/IEC 17025标准的要求，并经中国合格评定国家认可委员会(CNAS)认可，认可证书号为：CNAS L0730.
This laboratory is the National Legal Metrological Verification Institution in southern China set up by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China (AQSIQ) under authorization certificates No.(2012)01043 & (2012)01032. This laboratory's quality management system is in accordance with ISO/IEC 17025 Standard and accredited by China National Accreditation Service for Conformity Assessment under Laboratory Accreditation Certification No. CNAS L0730.

2. 本中心所出具的数据均可溯源至国家计量基准和国际单位制(SI)。
All data issued by this laboratory are traceable to national primary standards and International System of Units (SI).

3. 本次校准的技术依据：
Reference documents for the calibration:
JJG 188-2002 声级计检定规程 V.R. of Sound Level Meters

4. 本次校准所使用的主要计量标准器具：
Major standards of measurement used in the calibration:

设备名称/型号 Name of Equipment /Model	编号 Serial No.	证书号/有效期 Certificate No. /Due Date	计量特性 Metrological Characteristic
标准传声器 Standard Microphones /4180	2488312	LSae2013-1008 /2014-04-08	声压灵敏度级:0.05dB～0.12dB(k=2) Sound pressure sensitivity level:0.05dB～0.12dB(k=2)
消音箱 Sound Reducing Enclosure /2.0 m×1.4 m×1.4 m	1	SSD201302589 /2014-05-27	允差:±1.5 dB MPE:±1.5 dB
PULSE分析仪系统 Pulse analyzer System /3560C（3110模块）	2392397	SSD201301964 /2014-04-24	电平:U_{rel}=0.1%,频率:U_{rel}=0.001%(k=2) Voltage:U_{rel}=0.1%, Frequency :U_{rel}=0.001%(k=2)

5. 校准地点、环境条件：
Place and environmental conditions of the calibration:
地点 Place 声学/振动实验室 Acoustics/Vibration Lab. 温度 Temperature (20±3) ℃ 相对湿度 R.H. (50～60) %

6. 被校准仪器限制使用条件：
Limiting condition of the instrument calibrated:

注：1. 本证书校准结果只与受校准仪器有关。
2. 未经本机构书面批准，不得部分复制此证书。
Note:1. The results relate only to the items calibrated.
2. This certificate shall not be reproduced except in full, without the written approval of our laboratory.

校 准 结 果
RESULTS OF CALIBRATION

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1 外观： 合格

Apparent inspection: Pass

2 声级计指示声级调整：

Level Calibration

（声校准器型号：4231 标准声压级： 94.0 dB）

Sound Level Calibrator Type Standard level

校准前示值：93.7 dB 校准后示值：93.9 dB 传声器型号/编号：PM111/210448

Indication before Calibrated Indication after Adjusted Microphone type/serial number

3 频率计权：见表1、表2、表3

Frequency weightings: Showed in table 1、table2、table 3

表1 Table 1

标称频率（Hz） Nominal frequency	实测值A计权（dB） Measured Value A-weighting	允许范围（dB） Tolerance	结论 Conclusion
10	-67.4	-∞ ～ -66.9	合格(Pass)
20	-50.8	-53.0 ～ -48.0	合格(Pass)
31.5	-39.7	-41.4 ～ -37.4	合格(Pass)
63	-26.3	-27.7 ～ -24.7	合格(Pass)
125	-16.2	-17.6 ～ -14.6	合格(Pass)
250	-8.7	-10.0 ～ -7.2	合格(Pass)
500	-3.2	-4.6 ～ -1.8	合格(Pass)
1000(ref.)	0.0	-1.1 ～ +1.1	合格(Pass)
2000	+1.2	-0.4 ～ +2.8	合格(Pass)
4000	+0.9	-0.6 ～ +2.6	合格(Pass)
8000	-1.2	-4.2 ～ +1.0	合格(Pass)
16000	-6.2	-23.6 ～ -3.1	合格(Pass)
20000	-8.7	-∞ ～ -5.3	合格(Pass)

校准结果
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表2 Table 2

标称频率（Hz） Nominal frequency	实测值C计权（dB） Measured Value C-weighting	允许范围（dB） Tolerance	结论 Conclusion
10	-15.1	-∞ ~ -10.8	合格(Pass)
20	-6.5	-8.7 ~ -3.7	合格(Pass)
31.5	-3.3	-5.0 ~ -1.0	合格(Pass)
63	-0.9	-2.3 ~ +0.7	合格(Pass)
125	-0.2	-1.7 ~ +1.3	合格(Pass)
250	0.0	-1.4 ~ +1.4	合格(Pass)
500	+0.1	-1.4 ~ +1.4	合格(Pass)
1000(ref.)	0.0	-1.1 ~ +1.1	合格(Pass)
2000	-0.2	-1.8 ~ +1.4	合格(Pass)
4000	-0.9	-2.4 ~ +0.8	合格(Pass)
8000	-3.2	-6.1 ~ -0.9	合格(Pass)
16000	-8.4	-25.5 ~ -5.0	合格(Pass)
20000	-10.9	-∞ ~ -7.2	合格(Pass)

表3 Table 3

标称频率（Hz） Nominal frequency	实测值Z计权（dB） Measured Value Z-weighting	允许范围（dB） Tolerance	结论 Conclusion
10	-1.8	-∞ ~ +3.5	合格(Pass)
20	-0.5	-2.5 ~ +2.5	合格(Pass)
31.5	-0.2	-1.5 ~ +1.5	合格(Pass)
63	-0.1	-1.5 ~ +1.5	合格(Pass)
125	0.0	-1.5 ~ +1.5	合格(Pass)
250	0.0	-1.4 ~ +1.4	合格(Pass)
500	0.0	-1.4 ~ +1.4	合格(Pass)
1000(ref.)	0.0	-1.1 ~ +1.1	合格(Pass)
2000	0.0	-1.6 ~ +1.6	合格(Pass)
4000	0.0	-1.6 ~ +1.6	合格(Pass)
8000	+0.1	-3.1 ~ +2.1	合格(Pass)
16000	+0.2	-17.0 ~ +3.5	合格(Pass)
20000	0.0	-∞ ~ +4.0	合格(Pass)

校准结果
RESULTS OF CALIBRATION

4 级线性（参考频率 1 kHz）

Level linearity error (Reference frequency 1 kHz)

4.1 级程变化误差（量程40 dB～110 dB；参考频率：1000 Hz）：见表4

Level Change Error(Range 40 dB～110 dB; Reference frequency: 1000 Hz): Showed in table 4

表4 Table 4

标准值（dB） Reference Value	指示值（dB） Indication Value	误差（dB） Error	允差（dB） Tolerance	结论 Conclusion
40	40.6	+0.6	±0.7	合格(Pass)
50	50.5	+0.5	±0.7	合格(Pass)
60	60.3	+0.3	±0.7	合格(Pass)
70	70.2	+0.2	±0.7	合格(Pass)
80	80.1	+0.1	±0.7	合格(Pass)
90(ref.)	90.0	0.0	-----	合格(Pass)
100	100.1	+0.1	±0.7	合格(Pass)
110	110.2	+0.2	±0.7	合格(Pass)

4.2 参考级量程

Reference range

起始点指示声级：90 dB

Start point

起始点以上间隔 1 dB点的最大误差：0.1 dB

Maximum Error for each 1 dB above start point

起始点以下间隔 1 dB点的最大误差：0.1 dB

Maximum Error for each 1 dB below start point

4.3 其他级量程

Other range

起始点指示声级：90 dB

Start point

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起始点以上间隔 10 dB点的最大误差：0.2 dB

Maximum Error for each 10 dB above start point

起始点以下间隔 10 dB点的最大误差：0.4 dB

Maximum Error for each 10 dB below start point

上限以下 5 dB内的 1 dB点的最大误差：0.1 dB

Maximum Error for each 1 dB within 5 dB below upper limit

下限以上 5 dB内的 1 dB点的最大误差：0.1 dB

Maximum Error for each 1 dB within 5dB above lower limit

4.4 相对参考级量程的级程控制器最大误差：0.1 dB

Maximum Error for different range

以“40 dB～110 dB”为参考量程

Reference range with “40 dB～110 dB”

以90.0 dB为参考点（0 dB）转向70 dB～140 dB量程误差：0.0 dB

Error of indication from 90.0 dB reference point（0 dB）to 70 dB～140 dB another range

以70.0 dB为参考点（0 dB）转向10 dB～80 dB量程误差：-0.1 dB

Error of indication from 70.0 dB reference point（0 dB）to 10 dB～80 dB another range

5 本机噪声：

Residual noise

A计权：<20 dB 结论：合格(Pass)

A-weighting Conclusion

6 F和S时间计权：

Time weightings F/S

衰减速率： *F*： >25 dB/s（允许范围：≥25 dB/s）；

Attenuation rate Tolerance

S： 4.1 dB/s（允许范围：3.4 dB/s～5.3 dB/s）；

Tolerance

F和S差值：0.0 dB

Dispersion F/S

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7 猝发音响应（A计权）：见表5

Toneburst response (A-weighting) : Showed in table 5

表5 Table 5

单个猝发音持续时间/ms Single tone burst Last time/ms	猝发音响应/dB Tone burst response/dB L_{AFmax}- L_A	允许范围 Tolerance	结论 Conclusion	L_{ASmax}- L_A	允许范围 Tolerance	结论 Conclusion
500	-0.1	+0.7～-0.9	合格(Pass)	-3.7	-3.3～-4.9	合格(Pass)
200	-0.9	-0.2～-1.8	合格(Pass)	-7.1	-6.6～-8.2	合格(Pass)
50	-4.7	-3.5～-6.1	合格(Pass)	-13.1	-11.8～-14.4	合格(Pass)
10	-11.4	-9.8～-12.4	合格(Pass)	-20.4	-18.7～-22.3	合格(Pass)

8 重复猝发音响应（A计权）：见表6

Response to repeated Toneburst (A-weighting): Showed in table 6

表6 Table 6

单个猝发音持续时间/ms Single tone burst last time/ms	相邻单个猝发音持续时间/ms Adjacent single tone burst last time/ms	猝发音响应/dB Tone burst response/dB (L_{AeqT}-L_A)	允许范围 Tolerance	结论 Conclusion
500	2000	-7.0	-6.2～-7.8	合格(Pass)
200	800	-6.9	-6.2～-7.8	合格(Pass)
50	200	-6.9	-5.7～-8.3	合格(Pass)
10	40	-7.0	-5.7～-8.3	合格(Pass)

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RESULTS OF CALIBRATION

9 峰值C声压（500 Hz）：见表7

Peak C sound level: Showed in table 7

表7 Table 7

试验信号中的周期数目 Periods number in test signal	(L_{Cpeak}-L_C) /dB	允差/dB MPE	结论 Conclusion
一个周期 One period	4.0	2.1～4.9	合格(Pass)
正半个周期 Positive half period	2.9	1.0～3.8	合格(Pass)
负半个周期 Minus half period	2.7	1.0～3.8	合格(Pass)

10 过载指示：

Over loading indication

误差：0.6 dB（允许范围：≤1.8 dB） 结论：合格(Pass)

Error Tolerance Conclusion

说明(Note)：

1 声压级测量结果扩展不确定度：

Expanded uncertainty of measurement in Sound Pressure Level Calibration:

10 Hz～200 Hz ,U=0.5 dB, k=2

250 Hz～400 Hz ,U=0.4 dB, k=2

500 Hz～1.25 kHz ,U=0.4 dB, k=2

1.6 kHz～10 kHz ,U=0.6 dB, k=2

12.5 kHz～20 kHz ,U=1.0 dB, k=2

（依据JJF1059.1-2012 测量不确定度评定与表示）

(According to JJF1059.1-2012 Evaluation and Expression of Uncertainty in Measurement)

2 参考IEC 61672-1-2002标准。

Reference standard: IEC 61672-1-2002.

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong.
香港黃竹坑道37號利達中心地下，9樓，12樓，13樓及20樓
E-mail: smec@cigismec.com Website: www.cigismec.com
Tel : (852) 2873 6860
Fax : (852) 2555 7533
HOKLAS 028

CERTIFICATE OF CALIBRATION

Certificate No.: 13CA1129 04 **Page:** 1 **of** 2

Item tested

Description:	Acoustical Calibrator (Class 1)
Manufacturer:	Pulsar Instruments Ltd.
Type/Model No.:	Model 105
Serial/Equipment No.:	64958
Adaptors used:	-

Item submitted by

Curstomer:	Paul Y
Address of Customer:	-
Request No.:	QT131125
Date of receipt:	29-Nov-2013

Date of test: 02-Dec-2013

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2341427	17-Apr-2014	SCL
Preamplifier	B&K 2673	2743150	16-Apr-2014	CEPREI
Measuring amplifier	B&K 2610	2346941	24-Apr-2014	CEPREI
Signal generator	DS 360	61227	15-Apr-2014	CEPREI
Digital multi-meter	34401A	US36087050	10-Dec-2013	CEPREI
Audio analyzer	8903B	GB41300350	15-Apr-2014	CEPREI
Universal counter	53132A	MY40003662	15-Apr-2014	CEPREI

Ambient conditions

Temperature:	22 ± 1 °C
Relative humidity:	60 ± 10 %
Air pressure:	1000 ± 10 hPa

Test specifications

1, The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.

2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.

3, The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on **page 2** of this certificate.

Approved Signatory: Huang Jian Min/Feng Jun Qi **Date:** 03-Dec-2013 **Company Chop:** SOILS AND MATERIALS ENGINEERING COMPANY LTD. 綜合試驗有限公司

Comments: The results reported in this certificate refer to the conditon of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong.
香港黃竹坑道37號利達中心地下，9樓，12樓，13樓及20樓
E-mail: smec@cigismec.com Website: www.cigismec.com
Tel : (852) 2873 6860
Fax : (852) 2555 7533
HOKLAS 028

CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 13CA1129 04 **Page:** 2 **of** 2

1, Measured Sound Pressure Level

The output Sound Pressure Level in the calibrator head was measured at the setting and frequency shown using a calibrated laboratory standard microphone and insert voltage technique. The results are given in below with the estimated uncertainties.

(Output level in dB re 20 μPa)

Frequency Shown Hz	Output Sound Pressure Level Setting dB	Measured Output Sound Pressure Level dB	Estimated Expanded Uncertainty dB
1000	94.00	94.17	0.10

2, Sound Pressure Level Stability - Short Term Fluctuations

The Short Term Fluctuations was determined by measuring the maximum and minimum of the fast weighted DC output of the B&K 2610 measuring amplifier over a 20 second time interval as required in the standard. The Short Term Fluctuation was found to be:

At 1000 Hz **STF = 0.002 dB**

Estimated expanded uncertainty 0.005 dB

3, Actual Output Frequency

The determination of actual output frequency was made using a B&K 4180 microphone together with a B&K 2673 preamplifier connected to a B&K 2610 measuring amplifier. The AC output of the B&K 2610 was taken to an universal counter which was used to determine the frequency averaged over 20 second of operation as required by the standard. The actual output frequency at 1 KHz was:

At 1000 Hz **Actual Frequency = 1000.3 Hz**

Estimated expanded uncertainty 0.1 Hz Coverage factor k = 2.2

4, Total Noise and Distortion

For the Total Noise and Distortion measurement, the unfiltered AC output of the B&K 2610 measuring amplifier was connected to an Agilent Type 8903 B distortion analyser. The TND result at 1 KHz was:

At 1000 Hz **TND = 1.2 %**

Estimated expanded uncertainty 0.7%

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95 %. A coverage factor of 2 is assumed unless explicitly stated.

- End -

Calibrated by: Fung Chi Yip **Date:** 02-Dec-2013

Checked by: Lam Tze Wai **Date:** 03-Dec-2013

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

APPENDIX D
UPDATED ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE

Appendix D - MTR Works Contract 1117–Summary of Environmental Mitigation Implementation Schedule

ERR[(1)] Ref.	ID No.	Recommended Mitigation Measures	Status
Ecology (Construction Phase)			
S7.6.2	-	<u>Tree Felling and Vegetation Clearance</u> Tree felling and compensatory planting will be implemented in accordance with the requirements of ETWB TCW No. 3/2006 as far as practicable. <u>Water Quality</u> Good construction site practices as required in ProPECC PN1/94 will be followed as appropriate. Implementation of some good construction practices are presented as follows: • Containment of silt runoff within the site boundary; • Appropriate storage and disposal of chemicals and chemical waste and the provision of sanitary facilities for on-site workers; • Erection of temporary geo-textile silt or sediment fences/oil traps around any earth-moving works to trap any sediments and prevent them from entering watercourses; • Avoidance of soil storage against trees or close to water bodies; • No on-site burning of waste; and; • Waste and refuse in appropriate receptacles.	^ ^ ^ ^ ^ ^ ^
Landscape & Visual (Construction Phase)			
S9.11	-	The following good site practices and measures have been recommended: • Re-use of Existing topsoil and fill generated from site • For soil conservation, existing topsoil shall be re-used where possible for new planting areas within the project. The construction program shall consider using the soil removed from one phase for backfilling another. Suitable storage ground, gathering ground and mixing ground may be set up on-site as necessary. • To maximise protection to existing trees, ground vegetation and the associated under storey habitats, construction contracts may designate “No-intrusion Zone” to various areas within the site boundary with rigid and durable fencing for each individual no-intrusion zone. The contractor should closely monitor and restrict the site working staff from entering the “no-intrusion zone”, even for indirect construction activities and storage of equipment. • All retained trees should be recorded photographically at the commencement of the Contract, and carefully protected during the construction period. Detailed tree protection specification shall be allowed for and included in the Contract Specification, which specifies the tree protection requirement, submission and approval system, and the tree monitoring system,	^ ^ ^ ^

Appendix D - MTR Works Contract 1117–Summary of Environmental Mitigation Implementation Schedule

ERR[(1)] Ref.	ID No.	Recommended Mitigation Measures	Status
		• In addition, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works sites.	^
Table 9.7	CM1	Site Hoarding Erection of solid screen during construction stage to prevent undesirable views of the construction site from visually sensitive areas.	^
Table 9.7	CM2	Management of facilities on work sites To provide proper site management of the facilities on the sites, give control on the height and disposition/ arrangement of all welfare facilities and construction plant on site to minimise landscape and visual impacts to adjacent VSRs and existing/retained site features.	^
Table 9.7	CM3	Construction programme Employ construction techniques which assist in streamlining construction programme, minimise the duration of plant operations. Consider prefabrication of building elements offsite to minimise on site works and construction period.	^
Construction Dust Impact			
S6.3.3	-	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation potential dust impacts. 8-time watering per day on exposed worksites is recommended during construction phase to further alleviate the potential construction dust impacts.	*
S6.3.3	-	• Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones. • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcore; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided and properly maintained as far as practicable along the site boundary with provision for public crossing; Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly	^ ^ ^ ^ ^ ^

ERR[1] Ref.	ID No.	Recommended Mitigation Measures	Status
		maintained throughout the construction period;	
		• The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials;	^
		• Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously;	^
		• Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet;	^
		• Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding;	N/A[2]
		• Any skip hoist for material transport should be totally enclosed by impervious sheeting;	^
		• Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.	^
Construction Airborne Noise			
S5.5.6	-	Implement the following good site practices:	
		• Louvres should be orientated away from adjacent NSRs, preferably onto the main line of WRL which are less sensitive.	N/A[2]
		• Direct noise mitigation measures including silencers, acoustic louvers and acoustic enclosures should be allowed for in the design for the maintenance buildings, plant buildings and workshops.	N/A[2]
		• The façade and doors for these plant / workshops would have adequate sound insulation properties to minimise the noise emanating through the building fabric to acceptable level.	^
		• Acoustic treatments such as silencer, acoustic louvers, noise barriers and acoustic enclosures should be installed for the existing equipment where necessary to minimise the cumulative noise impacts on the NSRs.	N/A[2]
Water Quality (Construction Phase)			
S12.5	-	In accordance with the Practice Noise for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), construction phase mitigation measures shall include the following:	

Appendix D - MTR Works Contract 1117–Summary of Environmental Mitigation Implementation Schedule

ERR[(1)] Ref.	ID No.	Recommended Mitigation Measures	Status
		Construction Runoff and Site Drainage	
		• At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct storm water to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction.	^
		• The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a site/sediment trap. The sediment/silt traps should be incorporated in the permanent drainage channels to enhance deposition rates.	^
		• The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. Sizes may vary depending upon the flow rate, but for a flow rate of 0.1m^3/s a sedimentation basin of 30m^3 would be required and for a flow rate of 0.5 m3/s the basin would be 150 m3. The detailed design of the sand/silt traps shall be undertaken by the Contractor prior to the commencement of construction.	N/A[(2)]
		• All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. Exposed slope surfaces should be covered by tarpaulin or other means.	*
		• The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows, and all traffic areas and access roads protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during prolonged periods of inclement weather and the reduction of surface sheet flows.	N/A[(2)]
		• All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas.	#
		• Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	N/A[(2)]
		• Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m^3should be covered with tarpaulin or similar fabric during	^

ERR[(1)] Ref.	ID No.	Recommended Mitigation Measures	Status
		rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.	
		• Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.	^
		• Precautions be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes.	N/A[(2)]
		• All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.	*
		• Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain.	N/A[(2)]
S12.5.1.2	-	<u>Sewage Effluent</u> • Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.	^
S12.5.1.3	-	<u>Accidental Spillage</u> • In order to prevent accidental spillage of chemicals, proper storage and handling facilities should be provided. All the tanks, containers, storage area should be bunded and the locations should be locked as far as possible from the sensitive watercourse and storm water drains. The Contractor should register as a chemical waste producer if chemical wastes would be generated. Storage of chemical waste arising from the construction activities should be stored with suitable labels and warnings. Disposal of chemical wastes should be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation.	*
Waste Management (Construction Waste)			

Appendix D - MTR Works Contract 1117–Summary of Environmental Mitigation Implementation Schedule

ERR[(1)] Ref.	ID No.	Recommended Mitigation Measures	Status
S11.5.1	-	A trip-ticket system should be established and will comply with the Waste Disposal (Charges for Disposal of Construction Waste) Regulation to monitor the disposal of public fill and solid wastes at public filling facilities and landfills, and to control fly-tipping.	^
S11.5.1	-	<u>C & D Material</u> • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; • Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Adopt "Selective Demolition" technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible; • Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; and • Implement an enhanced Waste Management Plan, which become a part of the Environmental Management Plan in accordance with "ETWBTC (Works) No. 19/2005 – Waste Management on Construction Site", to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction. • In addition, disposal of the C&D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation.	^ ^ ^ N/A[(2)] ^ ^ ^
S11.5.1	-	<u>C&D Waste</u> • Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage. • The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.	^ ^
S11.5.1	-	<u>General Refuse</u> • General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. A reputable waste collector	^

ERR[(1)] Ref.	ID No.	Recommended Mitigation Measures	Status
		should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law.	
		• Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible.	^
		• Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor. In addition, waste separation facilities for paper, aluminium cans, plastic bottles etc., should be provided.	^
S11.5.1	-	<u>Chemical Waste</u>	
		Chemical waste producers should be registered with EPD. For those processes which generate chemical waste, the Contractor shall identify any alternatives that generate reduced quantities or even no chemical waste, or less dangerous types of chemical waste.	
		Chemical waste should be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes as follows.	
		Containers used for storage of chemical wastes should:	
		• Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed;	*
		• Have a capacity of less than 450 L unless the specification have been approved by EPD; and	N/A[(2)]
		• Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations.	*
		The storage area for chemical wastes should:	
		• Be clearly labelled and used solely for the storage of chemical wastes;	^
		• Be enclosed on at least 3 sides;	^
		• Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in the area, whichever is greatest;	^
		• Have adequate ventilation;	^
		• Be covered to prevent rainfall entering (water collected within the bund must be tested and disposed as chemical waste, if necessary); and	^
		• Be arranged so that incompatible materials are adequately separated.	^
		Disposal of chemical waste should:	

Appendix D - MTR Works Contract 1117–Summary of Environmental Mitigation Implementation Schedule

ERR[1] Ref.	ID No.	Recommended Mitigation Measures	Status
		• Be via a licensed waste collector; and	^
		• Be to a facility licensed to receive chemical waste, such as the CWTC which also offers a chemical waste collection service and can supply the necessary storage containers; or	^
		• Be to a re-user of the waste, under approval from EPD.	N/A[2]

Remarks:

(1) The latest Environmental Review Report (ERR) for Pat Heung Depot Modification Works is referred in preparation of this summary.

^ Compliance of mitigation measure X Non-compliance of mitigation measure

- Non-compliance but rectified by the contractor

* Recommendation was made during site audit but improved/rectified by the contractor.

\# Recommendation was made during site audit but not yet improved/rectified by the contractor.

N/A[1] Not Applicable N/A[2] Not Applicable at this stage

APPENDIX E
ENVIRONMENTAL MONITORING SCHEDULE

Contract No. SCL 1117
Pat Heung Depot Modification Works
Impact Noise Monitoring Schedule for May 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-May	2-May	3-May
4-May	5-May	**6-May**	7-May	8-May	9-May	10-May
				Noise (1) at NM1, NM2 & NM3A		
11-May	12-May	13-May	14-May	15-May	16-May	17-May
			Noise (1) at NM1, NM2 & NM3A			
18-May	19-May	20-May	21-May	22-May	23-May	24-May
			Noise (1) at NM1, NM2 & NM3A			
25-May	26-May	27-May	28-May	29-May	30-May	31-May
			Noise (1) at NM1, NM2 & NM3A			

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Noise Monitoring Station:

NM1 - Tourmaline Villa

NM2 - Kam Po Road

NM3A - Tai Kek Tsuen

Category	**Time Period**
(1)	0700-1900 hrs on normal weekdays

Contract No. SCL 1117
Pat Heung Depot Modification Works
Tentative Impact Noise Monitoring Schedule for June 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Jun	**2-Jun**	3-Jun	4-Jun	5-Jun	6-Jun	7-Jun
			Noise (1) at NM1, NM2 & NM3A			
8-Jun	9-Jun	10-Jun	11-Jun	12-Jun	13-Jun	14-Jun
	Noise (1) at NM1, NM2 & NM3A					
15-Jun	16-Jun	17-Jun	18-Jun	19-Jun	20-Jun	21-Jun
			Noise (1) at NM1, NM2 & NM3A			
22-Jun	23-Jun	24-Jun	25-Jun	26-Jun	27-Jun	28-Jun
			Noise (1) at NM1, NM2 & NM3A			
29-Jun	30-Jun					

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Noise Monitoring Station:

NM1 - Tourmaline Villa

NM2 - Kam Po Road

NM3A - Tai Kek Tsuen

Category	Time Period
(1)	0700-1900 hrs on normal weekdays

APPENDIX F
NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

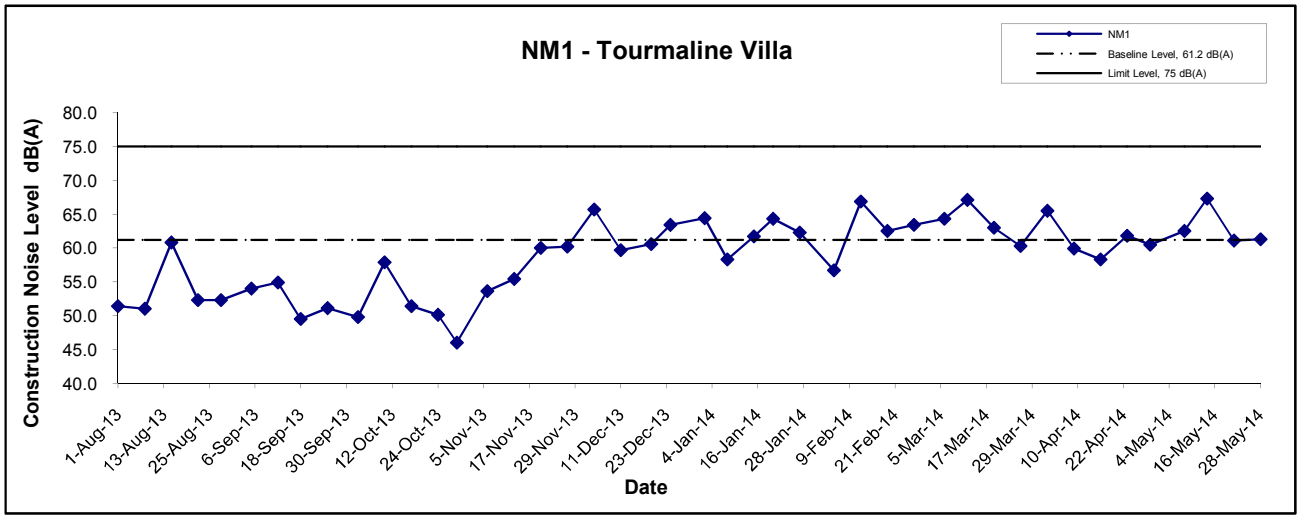
Appendix F - Noise Monitoring Results

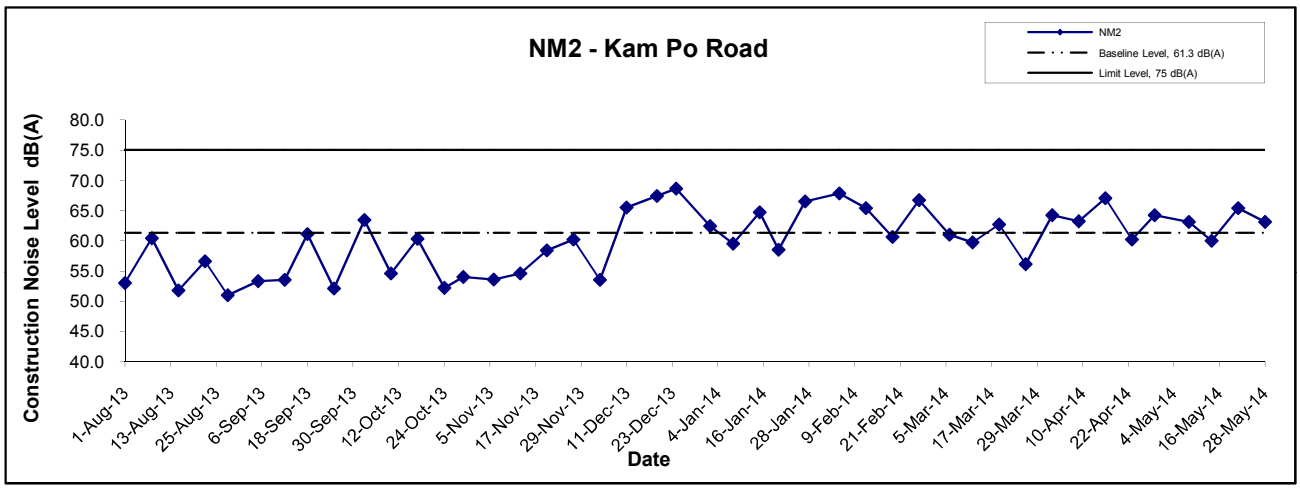
Location NM1 - Tourmaline Villa							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
8-May-14	10:06	Cloudy	62.5	63.5	52.2	61.2	56.6
14-May-14	9:35	Cloudy	67.3	67.8	52.7		66.1
21-May-14	15:28	Sunny	61.1	61.3	52.9		61.1 Measured ≦ Baseline
28-May-14	9:35	Sunny	61.3	63.4	53.4		44.9

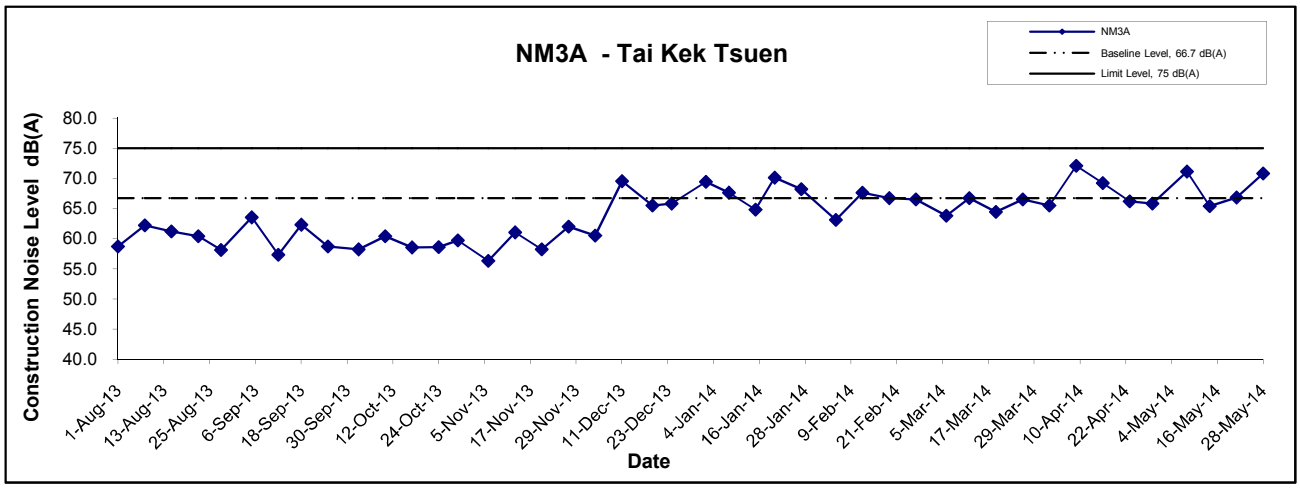
Location NM2 - Kam Po Road							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
8-May-14	10:43	Cloudy	63.1	62.2	50.3	61.3	58.4
14-May-14	10:18	Cloudy	60	61.3	53.1		60 Measured ≦ Baseline
21-May-14	9:37	Cloudy	65.4	67.8	58.5		63.3
28-May-14	10:07	Sunny	63.1	64.5	52.2		58.4

Location NM3A - Tai Kek Tsuen							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
8-May-14	14:49	Cloudy	71.1	71.2	57.6	66.7	69.1
14-May-14	8:51	Cloudy	65.4	67.3	56.5		65.4 Measured ≦ Baseline
21-May-14	8:53	Cloudy	66.8	69.4	55.9		50.3
28-May-14	8:50	Sunny	70.8	73.4	64.1		68.7

Noise Levels







Title: MTR Works Contract 1117 Pat Heung Depot Modification Works Graphical Presentation of Construction Noise Monitoring Results	Scale: N.T.S Date: May-14	Project No.: MA13003 Appendix: F	CINOTECH

APPENDIX G
WASTE GENERATION IN THE REPORTING MONTH

Paul Y. Construction Company, Limited
MTR Contract 1117
Pat Heung Depot Modification Works

Monthly Summary Waste Flow Table for 2014 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly							Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed to Sorting Facilities	Disposed to Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in kg)	(in kg)	(in kg)	(in '000m^3)
Jan '14	11.624	-	3.871	-	-	7.753	-	-	115	-	-	0.052
Feb '14	7.361	-	-	-	0.036	7.325	-	7.25	95	230	-	0.054
Mar '14	7.064	-	-	-	0.016	7.048	-	5.22	150	-	-	0.057
Apr '14	5.309	-	-	-	0.022	5.287	-	-	292	-	-	0.014
May '14	7.047	-	-	-	0.008	7.039	-	5.51	305	5	-	0.026
Jun '14	-	-	-	-	-	-	-	-	-	-	-	-
Sub-total	38.405	-	3.871	-	0.082	34.452	-	17.980	957	235	-	0.203
Jul '14	-	-	-	-	-	-	-	-	-	-	-	-
Aug '14	-	-	-	-	-	-	-	-	-	-	-	-
Sep '14	-	-	-	-	-	-	-	-	-	-	-	-
Oct '14	-	-	-	-	-	-	-	-	-	-	-	-
Nov '14	-	-	-	-	-	-	-	-	-	-	-	-
Dec '14	-	-	-	-	-	-	-	-	-	-	-	-
Total	38.405	-	3.871	-	0.082	34.452	-	17.980	957	235	-	0.203

Note:

Assume the densities of Rock, Soil, Mix Rock and Soil are Regular Spoil to be 2.0 tonnes/m3. Assumption the densities of general refuse is 1.0 tonnes/m3

APPENDIX H
SITE AUDIT SUMMARY

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140505
Date	5 May 2014 (Monday)
Time	08:45 -11:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	Part B - Water Quality	
140505-R02	• The Contractor is reminded to improve the efficiency of the sedimentation tank for better waste water treatment (Area A).	B 17i & B 17ii
	Part C - Tree Management Protection / Landscape & Visual Impact	
	• No environmental deficiency was identified during the site inspection.	
	Part D – Air Quality	
140505-O01	• More tarpaulin should be provided to cover the cement mixer; Cement packages should be properly covered (Area B).	D 7
	Part E – Construction Noise Impact	
	• No environmental deficiency was identified during the site inspection.	
	Part F – Waste/Chemical Management	
	• No environmental deficiency was identified during the site inspection.	
	Part G - Permit / Licenses	
	• No environmental deficiency was identified during the site inspection.	
	Part H – Others	
	• Follow-up on previous audit sessions (ref: 140429): outstanding item of 140429-R03 will be followed up during the next site inspection.	

	Name	Signature	Date
Recorded by	Victor Wong		5 May 2014
Checked by	Ivy Tam		5 May 2014

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140513
Date	13 May 2014 (Tuesday)
Time	08:45 -11:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	Part B - Water Quality	
140513-O01	• The Contractor should review the drainage system in Area B.	B 1
140513-O02	• The slope in Area D should be covered properly to prevent surface run-off.	B 10
140513-R03	• The Contractor should improve the efficiency of the sedimentation tank for better waste water treatment (Area A).	B 6ii
140513-R04	• The Contractor should continue to improve the drainage system in Area D.	B 8
	Part C - Tree Management Protection / Landscape & Visual Impact	
	• No environmental deficiency was identified during the site inspection.	
	Part D – Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	Part E – Construction Noise Impact	
	• No environmental deficiency was identified during the site inspection.	
	Part F – Waste/Chemical Management	
	• No environmental deficiency was identified during the site inspection.	
	Part G - Permit / Licenses	
	• No environmental deficiency was identified during the site inspection.	
	Part H – Others	
	• Follow-up on previous audit sessions (ref: 140505): outstanding items of 140505-R02 will be followed up during the next site inspection.	

	Name	Signature	Date
Recorded by	Victor Wong		13 May 2014
Checked by	Dr. Priscilla Choy		13 May 2014

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140523
Date	23 May 2014 (Friday)
Time	14:00 -17:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	Part B - Water Quality	
140523-R03	• The Contractor should ensure the sedimentation tank is adequate for muddy water treatment; No water should be discharge before the water quality has met the requirement (Area A).	B 6ii
	Part C - Tree Management Protection / Landscape & Visual Impact	
	• No environmental deficiency was identified during the site inspection.	
	Part D – Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	Part E – Construction Noise Impact	
	• No environmental deficiency was identified during the site inspection.	
	Part F – Waste/Chemical Management	
140523-O01	• Chemical waste storage should be free from accumulated oil and water; Chemical waste label should be provided to unidentified containers (Area A).	F 3ii & F 9
140523-O02	• Oil stain is observed on the road in Area A; The Contractor should prevent equipments from leaking oil.	F 8
	Part G - Permit / Licenses	
	• No environmental deficiency was identified during the site inspection.	
	Part H – Others	
	• Follow-up on previous audit sessions (ref: 140513): outstanding item of 140513-R03 will be followed up during the next site inspection as ref no. 140523-R03.	

	Name	Signature	Date
Recorded by	Victor Wong		23 May 2014
Checked by	Dr. Priscilla Choy		23 May 2014

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140527
Date	27 May 2014 (Tuesday)
Time	08:45 -11:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	Part B - Water Quality	
140527-R01 140527-O02	• The Contractor should continue to improve the drainage system in Area A. • Mud is observed on the road in Area C; The Contractor should ensure the road is tidy and prevent muddy run-off from entering the u-channel.	B 1 B 20
	Part C - Tree Management Protection / Landscape & Visual Impact • No environmental deficiency was identified during the site inspection.	
	Part D – Air Quality • No environmental deficiency was identified during the site inspection.	
	Part E – Construction Noise Impact • No environmental deficiency was identified during the site inspection.	
	Part F – Waste/Chemical Management • No environmental deficiency was identified during the site inspection.	
	Part G - Permit / Licenses • No environmental deficiency was identified during the site inspection.	
	Part H – Others • Follow-up on previous audit sessions (ref: 140523): outstanding item of 140523-R03 will be followed up during the next site inspection as ref no. 140527-R01.	

	Name	Signature	Date
Recorded by	Victor Wong		27 May 2014
Checked by	Dr. Priscilla Choy		27 May 2014

APPENDIX I
SUMMARY OF EXCEEDANCE

APPENIDX I – SUMMARY OF EXCEEDANCE

Reporting Month: May 2014

a) Exceedance Report for Noise Monitoring (NIL)

APPENDIX J
CUMULATIVE LOG FOR COMPLAINTS, NOTIFICATIONS OF SUMMONS AND SUCCESSFUL PROSECUTIONS

Appendix J - Cumulative Log for Complaints, Notifications of Summons and Successful Prosecutions

Cumulative Complaint Log

Log Ref.	Date/Location	Complainant/ Date of Contact	Details of Complaint	Investigation/ Mitigation Action	File Closed
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Cumulative Log for Notifications of Summons

Log Ref.	Date/Location	Subject	Status	Total no. Received in this reporting month	Total no. Received since project commencement
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Cumulative Log for Successful Prosecutions

Log Ref.	Date/Location	Subject	Status	Total no. Received in this reporting month	Total no. Received since the commencement of the project
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