



Construction of a Secondary Boundary Fence and New Sections of Primary Boundary Fence and Boundary Patrol Road

Improvement Works for Mai Po, Lok Ma Chau, Sha Tau Kok, Planting Works at Tak Yuet Lau and Demolition Work at Shek Chung Au and Lo Wu to Sha Tau Kok – Final EM&A Summary Report

April 2017
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Wu to Sha Tau Kok – Final EM&A Summary
Report

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Pursuant to Section 11.6 of the EM&A Manual for the captioned project and Condition 1.9 of Environmental Permit No. EP-347/2009/A, this Final EM&A Summary Report for improvement works along the boundary in the Frontier Closed Area (FCA), planting works at Tak Yuet Lau, the demolition works at Shek Chung Au and the minor works order “Demolition of Existing Security Facilities from Lo Wu to Sha Tau Kok” has been certified by the Environmental Team Leader and verified by the Independent Environmental Checker.

Certified by:



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24 July 2017

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24 July 2017

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Executive summary

Mott MacDonald Hong Kong Limited (MMHK) has been commissioned by the Architectural Services Department (ArchSD) as the Environmental Team (ET) to carry out Environmental Monitoring and Audit (EM&A) services for improvement works along the boundary in the Frontier Closed Area (FCA), planting works at Tak Yuet Lau, the demolition works at Shek Chung Au and the minor works order “Demolition of Existing Security Facilities from Lo Wu to Sha Tau Kok” (the subject works), which form part of the “Construction of a Secondary Boundary Fence and New Sections of Primary Boundary Fence and Boundary Patrol Road” (the Project).

This Final EM&A Summary Report summaries the works carried out during the construction phase and presents a summary of the environmental monitoring and audit works, list of activities, and mitigation measures implemented during 1 September 2015 to 31 March 2017 (the reporting period).

Exceedance of Action and Limit Levels

One Limit Level exceedance for construction noise was recorded at STK-ICLK during the reporting period. Investigation was conducted and the exceedance was identified to be non-Project related. No Action Limit exceedance for noise was recorded.

Implementation of Mitigation Measures

Weekly site audits were carried out during the reporting period to confirm the Contractor’s implementation of mitigation measures listed in the EM&A Manual. Potential environmental impacts due to the construction activities, including air quality, noise, water quality, waste management, ecology and landscape and visual were monitored or reviewed.

Record of Complaints

There was no record of complaints received in the reporting period.

Record of Notification of Summons and Successful Prosecutions

There was no record of notification of summons and successful prosecution in the reporting period.

1. Introduction

1.1 Project information

The Architectural Services Department (ArchSD) has been entrusted with the management of the “Construction of a Secondary Boundary Fence and New Sections of Primary Boundary Fence and Boundary Patrol Road” (the Project) by the Project Proponent – the Secretary for Security of the HKSAR Government.

Mott MacDonald Hong Kong Limited (MMHK) has in turn been commissioned by ArchSD as the consulting engineer for the entire Project under Consultancy Agreement No. 9SN005, and is the Engineer’s Representative (ER) for construction of the Project.

Under the Environmental Impact Assessment Ordinance (EIAO, Cap. 499), an EIA Report and an Environmental Monitoring and Audit (EM&A) Manual were completed in January 2009 and approved by the Environmental Protection Department (EPD) in April 2009 (Register No. AEIAR-136/2009). An Environmental Permit (EP) covering the overall proposed works was issued in June 2009 (Permit No. EP-347/2009) and the amended Environmental Permit (Permit No. EP-347/2009/A) was issued by EPD on 9 June 2010. A general layout plan of the Project site is presented in **Figure 1.1**, in which Section 3 is further divided into 3 sub-sections: Section 3A, 3B and 3C. The construction of the project will be implemented in two phases – Phase 1 and Phase 2. Phase 1 covers Section 1, 2 and 4; Phase 2 covers Sections 3A and 3C.

In April 2015, ArchSD issued Works Order No. ASD011777 incorporating the improvement works for boundary fence at Mai Po, Lok Ma Chau and Sha Tau Kok for Phase 1, Quotation Contract No. 002/15/PMB203 covering landscape works at Tak Yuet Lau for Phase 2 to Lanon Development Limited (LANON) and Wah On Garden Landscaping Limited (WAH ON) (“The Contractors”) respectively.

In August 2015, ArchSD issued Works Order No. ASD 011783 for the Demolition Works of Vehicle Inspection Shelter and Shek Chung Au Check Post at Sha Tau Kok to LANON. Subsequently, the demolition of the vehicle inspection shelter was omitted from this Works Order by ER’s instruction on 1 March 2016 and this Works Order was confirmed as substantially completed on the same day. The EM&A programme at Shek Chung Au was suspended on 23 June 2016.

In April 2016, ArchSD issued Works Order No. ASD011794 incorporating the demolition works of existing security facilities from Lo Wu to Sha Tau Kok to LANON. The commencement date of this Works Order is on 1 June 2016. The demolition works at Lin Ma Hang Road commenced on 20 July 2016. This Works Order was varied by ArchSD on 8 November 2016 to include the aforementioned demolition of the vehicle inspection shelter at Sha Tau Kok. Resumption of the EM&A programme at this location was approved by EPD on 17 February 2017 and resumed on 28 February 2017.

MMHK and Ramboll Environ Hong Kong Limited (Ramboll Environ) have been commissioned as the ET and IEC respectively to undertake the Environmental Monitoring and Audit (EM&A) programme as described in the approved EM&A Manual of the Project.

This Final EM&A Summary Report summaries the impact monitoring results and audit findings of the EM&A programme during the reporting period from 1 September 2015 to 31 March 2017 (the reporting period).

1.2 Construction Programme

The construction programmes of the abovementioned work orders are shown in **Appendix A**.

1.3 Project Organisation and Contacts of Key Management

The organisation chart and lines of communication with respect to the on-site environmental management structure together with the contact information of the key personnel and the contacts of key management are shown in **Appendix B**.

1.4 Work Undertaken During Construction Phase

The subject works undertaken comprise the following:

- Works Order No. ASD011777 - improvement works for boundary fence at Mai Po, Lok Ma Chau and Sha Tau Kok for Phase 1 (September 2015 to December 2015);
- Quotation Contract No. 002/15/PMB203 covering landscape works at Tak Yuet Lau for Phase 2 (November 2015 to October 2016);
- Works Order No. ASD 011783 for the Demolition Works of Vehicle Inspection Shelter and Shek Chung Au Check Post at Sha Tau Kok (August 2015 to March 2016); and
- ArchSD issued Works Order No. ASD011794 incorporating the demolition works of existing security facilities from Lo Wu to Sha Tau Kok (April 2016 to March 2017);

Regarding the works undertaken during the reporting period, baseline noise monitoring was conducted at the noise monitoring stations listed in **Table 1.1**.

Table 1.1: Summary of Baseline Noise Monitoring

Noise Monitoring Station	Description	Section of works	Baseline Monitoring Period
VH03	Village House at Mai Po	Section 1	3 to 16 February 2010
WL01(R) (relocated from WL01)	Village House at Wang Lek	Section 3C	22 September 2012 to 5 October 2012
STK05	Village House at Sha Tau Kok	Section 4	7 to 20 September 2012
STK-ICHK (replacing STK05)	International College Hong Kong	Section 4	5, 6, 8 November 2015

2. EM&A Requirements

2.1 Summary of EM&A Requirements

The EM&A programme requires environmental monitoring of construction noise as well as environmental site inspections for air quality, noise, water quality, waste management, ecology, landscape and visual, as specified in the approved EM&A Manual. A summary of impact EM&A requirements is presented in **Table 2.2**.

Table 2.2: Summary of EM&A Requirements

Parameters	Description	Location(s)	Frequency	Duration
Air	On-site Inspection	Active Works Sites	Weekly	During Construction
Noise	Impact Monitoring (Leq, 30min)	VH03 STK-ICLK WL01(R)	Weekly	During Construction
Waste management	On-site Waste Audit On-site Waste Inspection	Active Works Sites	Weekly	During Construction
Wastewater	On-site Wastewater Audit	Active Works Sites	Weekly	During Construction
Ecology	On-site Audit of Recommended Ecological Mitigation Measures	Active Works Sites	Periodically (by Contractor)	As specified in EM&A Manual (see Table E.5)
Landscape and Visual	On-site Audit of Recommended Landscape and Visual Mitigation Measures	Active Works Areas	Regular intervals (by Contractor/ Landscape Sub-Contractor)	As specified in EM&A Manual (see Table E.6)
General Site Conditions	Environmental Site Inspection	Works areas and areas affected by works	Weekly	During Construction

2.2 Environmental Quality Performance Limit

The Action Level and Limit Level for construction noise are presented in **Appendix C**. The Event and Action Plan to be implemented in the event of Action/ Limit Level exceedance is presented in **Appendix D**.

2.3 Implementation Status of Environmental Protection and Pollution Control/ Mitigation Measures

The Contractor was required to implement mitigation measures listed in the valid EP and FEP(s) (where applicable), EIA Report and EM&A Manual. A schedule of the implementation of mitigation measures identified at the EIA stage is given in **Appendix E**.

Environmental site inspections were carried out on a weekly basis to monitor the proper implementation of environmental pollution control and mitigation measures for the subject works.

2.4 Status of Environmental Submissions, Permits and Licences

The EM&A programme for the subject works was conducted in accordance with the requirement of the EP. The relevant Baseline Monitoring Reports and Monthly EM&A Reports were

submitted as required under the EP. A summary of status of the valid permits/licences for the subject works during the reporting period is presented in **Table 2.3**.

Table 2.3: Status of Environmental Permits and Licences

Statutory Reference	Description	Permit / Reference No.	Status
EIAO	Environmental Permit	EP-347/2009/A	Valid
WDO	Bill Account Disposal	7021313	Valid
Legend: EIAO	–	Environmental Impact Assessment Ordinance	
WDO	–	Waste Disposal Ordinance	

Note: The Bill Account Disposal for Contract No. TCC508 was registered by Lanon Development Limited.

2.5 EM&A Data during the Reporting Period

The summary of the graphical plot and the noise monitoring data during the reporting period is shown in **Appendix F**.

2.6 Advice on the Solid and Liquid Waste Management Status

The construction and demolition (C&D) material and general refuse generated by the subject works of the Project in the reporting period are shown in **Appendix G**. Wastes were handled and disposed from site in accordance with the EM&A Manual and all relevant legislation and regulations.

2.7 Review of Environmental Monitoring Procedures

The monitoring works conducted by the Environmental Team were reviewed regularly. No changes in the environmental monitoring procedures were implemented.

3. Comments and Recommendations

3.1 Non-compliance of Action and Limit Levels

During the construction period, one noise Limit Level exceedance was recorded at monitoring station STK-ICLK on 30 December 2015.

Investigation was carried out to identify the causes of the noise level exceedance. The exceedance was identified to be due to the use of powered mechanical equipment at a nearby construction site and identified to be non-Project related.

In accordance with the Event and Action plan, monitoring frequency was increased and the measured noise levels were below the Limit Level. As no further exceedance was detected, monitoring frequency was restored to once per week.

3.2 Environmental Complaints

No environmental complaints were received or made against the subject works of the Project during the reporting period. The complaint log is presented in **Appendix H**.

3.3 Notifications of Summons and Successful Prosecutions

No notifications of summons or successful prosecution were received or made against the subject works of the Project during the reporting period.

3.4 Review of Monitoring Methodology

The environmental monitoring methodology was considered well established as the monitoring results were found in line with EIA results.

3.5 Review of Practicality and Effectiveness of the EIA Process and EM&A Programme

The environmental monitoring results indicated that the construction activities were in generally in compliance with the relevant environmental requirements and were environmentally friendly acceptable. The weekly site inspections were carried out to ensure that all the mitigation measures recommended in the EIA and EM&A Manual implemented. Therefore, the effectiveness of the of the mitigation measures were considered high for most of the time.

3.6 Comparison and assessment of the EM&A data with the EIA prediction

A summary table for the comparison of the EM&A monitored data and the EIA predicted data is shown below:

Table 3.1: Comparison of the EM&A data and EIA prediction

Monitoring Station	EM&A Monitored Noise Level, L_{eq}	EIA Predicted Noise Level, L_{eq}
VH03	51 (43-61)	67
STK-ICLK	68 (63-72)	N/A

Monitoring Station	EM&A Monitored Noise Level, L _{eq}	EIA Predicted Noise Level, L _{eq}
STK05	N/A	69
WL01(R)	55 (47-68)	N/A
WL01	N/A	70

Note: STK05 is replaced by STK-ICLK, WL01 is replaced by WL01(R) during the monitoring period.

From the **Table 3.1** above, all monitored noise levels are lower than the predicted noise levels. It is considered that the EIA assessment has adopted a more conservative approach for the assessment.

3.7 Recommendations

Improvements in the implementation of mitigation measures were recommended based on the deficiencies identified during environmental site audits in the reporting month. No further recommendations were made based on the monitoring and audit findings.

4. Conclusions

The construction phase EM&A programme for the subject works was performed from 1 September 2015 to 31 March 2017. All monitoring and audit results and findings in the reporting period were checked and reviewed.

During the site audits, any deficiencies were identified and recommendations on remedial actions were given to the Contractor.

Wastes were handled and disposed from site in accordance with EM&A Manual and all relevant legislation and regulations.

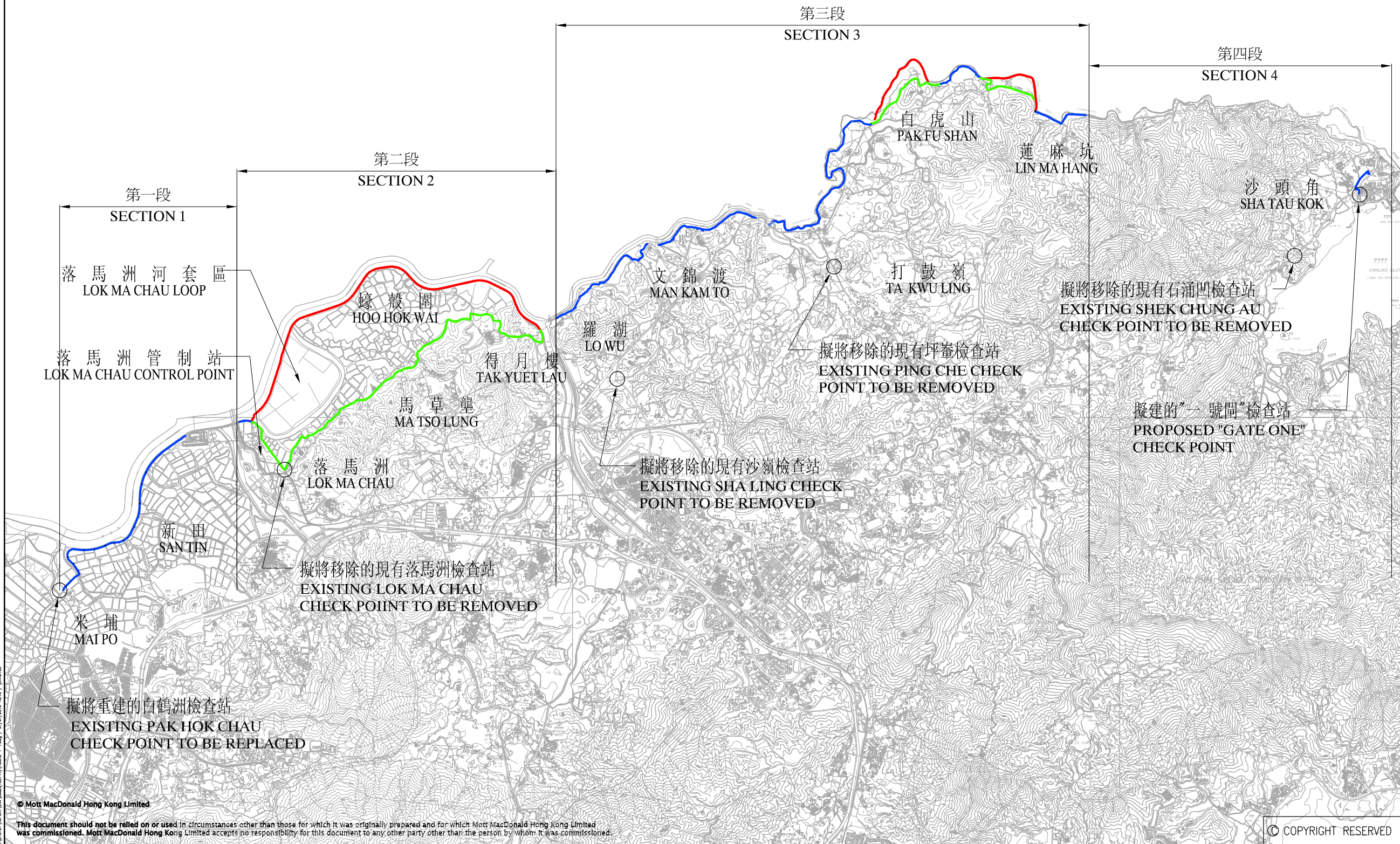
No environmental complaints, notification of summons or successful prosecutions were received or made against the subject works of the Project during the reporting period.

All construction works under the scope of this report were confirmed as completed during the reporting period. No further major works are scheduled. No future key issues are considered necessary. Termination of the EM&A Programme was proposed by ET Leader, verified by IEC and submitted to EPD, and took effect on 31 March 2017.



圖例：
LEGEND:

- 建議於現有邊界巡邏通路興建的輔助邊界圍網
PROPOSED SECONDARY BOUNDARY FENCE
ALONG EXISTING BOUNDARY PATROL ROAD
- 建議的主要及輔助邊界圍網及新邊界巡邏通路
PROPOSED NEW BOUNDARY PATROL ROAD WITH
PRIMARY AND SECONDARY BOUNDARY FENCES
- 擬將移除的現有邊界圍網
EXISTING BOUNDARY FENCE TO BE REMOVED



P1	JUL 10	AT	FIRST ISSUE	BW	TI
Rev	Date	Drawn	Description	Ch'k'd	App'd

ARCHITECTURAL SERVICES DEPARTMENT

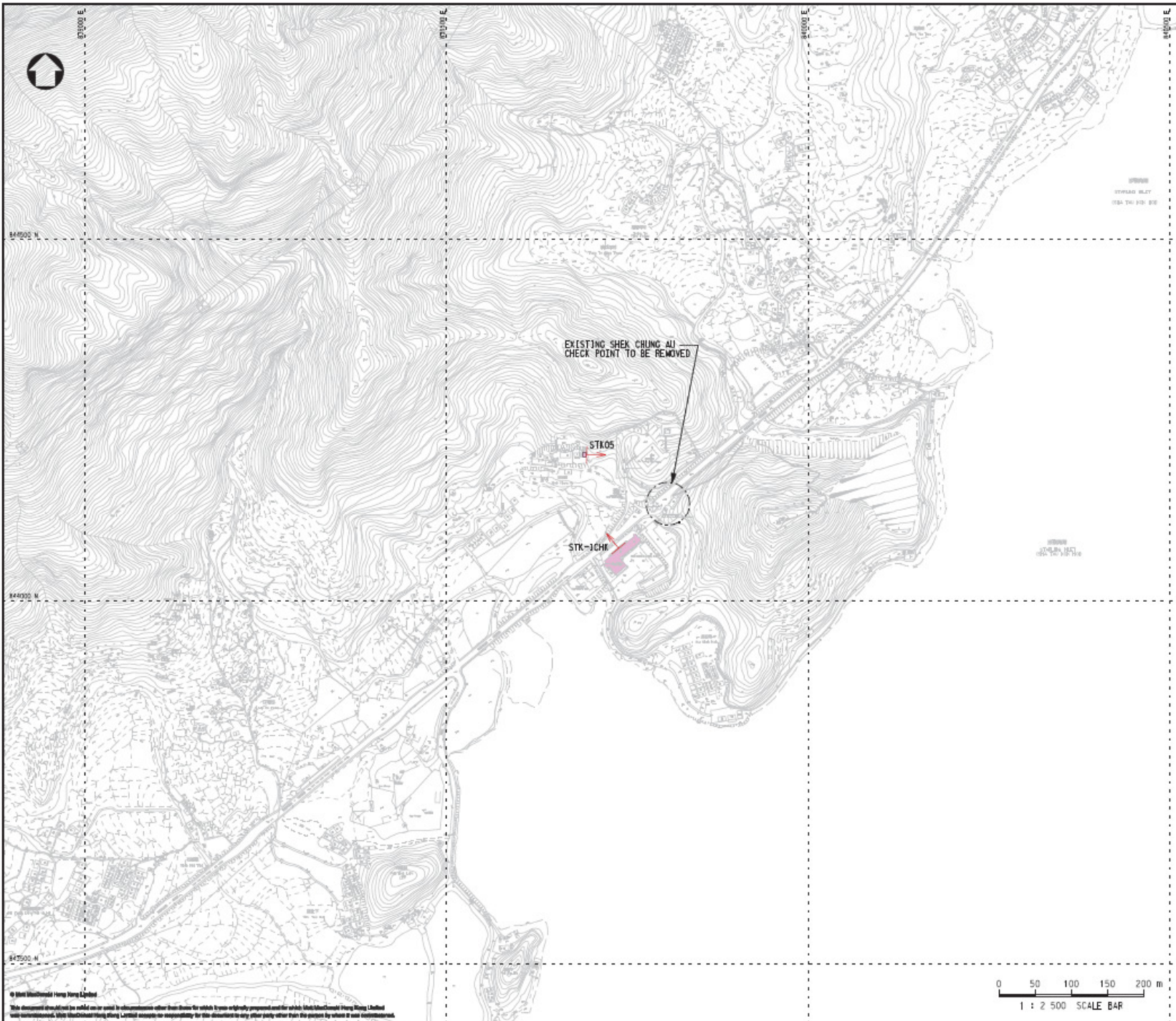
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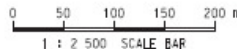
Project
CONSTRUCTION OF A SECONDARY BOUNDARY FENCE AND NEW SECTIONS OF PRIMARY BOUNDARY FENCE AND BOUNDARY PATROL ROAD

Title
概覽圖
GENERAL LAYOUT PLAN

Designed	WHC	Eng.Chk.	WHC	
Drawn	MCL	Coordination	WHC	
Dwg.Chk.	WHC	Approved	TI	
Scale	Project 216727		Status	
	N.T.S.		CAD File	INF
Drawing No.	FIGURE 1.1 (圖 1.1)			Rev
	COPYRIGHT RESERVED			P1



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Notes

Key to symbols

- NOISE SENSITIVE RECEIVER
- FACADE FACING

Reference drawings

PI	NO	DATE	BY	CHK'D	APPR'D	ISSUE FOR COMMENT

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Client
ARCHITECTURAL SERVICES DEPARTMENT

Project
CONSTRUCTION OF A SECONDARY BOUNDARY FENCE AND NEW SECTIONS OF PRIMARY BOUNDARY FENCE AND BOUNDARY PATROL ROAD

LOCATION OF NOISE MONITORING STK-1CHK

Designed	SC	Eng check	JC
Drawn	MBG	Coordination	JC
Design check	SC	Approved	SC
Scale at A1	1:2500	Status	PRE
		Rev	P1

Drawing Number **Figure 2.2**

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A. Construction Works Programme

ID	Task Name	Duration	Start	Finish	Gantt Chart											
					2nd Quarter			3rd Quarter			4th Quarter					
					A	M	J	J	A	S	O	N				
1	Works Order Period (Improvement Works for Boundary Fence at Mai Po, Lok Ma Chau and Sha Tau Kok)	184 days	Tue 28/4/15	Wed 28/10/15	28/4 ————— 28/10											
2	Works Order Commcement Date	0 days	Tue 28/4/15	Tue 28/4/15	◆ 28/4											
3	Mai Po Section	184 days	Tue 28/4/15	Wed 28/10/15	28/4 ————— 28/10											
4	1.) Replacement of Hinge at Gate no. 102C, 102B, 102A, 101K, 101J, 101I, 101H, 99E, 99A, 98 (Total 10 Nos.)	164 days	Tue 28/4/15	Thu 8/10/15	—————											
5	Material Procurement and Fabrication	104 days	Tue 28/4/15	Sun 9/8/15	—————											
6	Replacement of Hinge	60 days	Mon 10/8/15	Thu 8/10/15	—————											
7	2.) Installation Additional CCTV Information Plates at Gate no. 99D, 99G, 100A, 100B, 100E, 100G, 101B, 101C, 101D, 101E, 101G (Toal 11 Nos.)	127 days	Tue 28/4/15	Tue 1/9/15	—————											
8	Material Submission, Procurement and Fabrication	99 days	Tue 28/4/15	Tue 4/8/15	—————											
9	Installation of CCTV Information Plates	28 days	Wed 5/8/15	Tue 1/9/15	—————											
10	3.) Provision of Speed Limit Road Marking at Various Locations as Specified in the Drawings (Details to be Issued)	70 days	Mon 6/7/15	Sun 13/9/15	—————											
11	Material Submission	60 days	Mon 6/7/15	Thu 3/9/15	—————											
12	Provision FCA Road Marking	10 days	Fri 4/9/15	Sun 13/9/15	—————											
13	4.) Removal Existing Vegetation and Top Soil and Provision 75mm Thick Concrete Slab on Verge Area between Fence Kerb and Road Kerb along SBF	160 days	Tue 28/4/15	Sun 4/10/15	—————											
14	Application of Excavation Permit and Lead Time Waiver*	100 days	Tue 28/4/15	Wed 5/8/15	—————											
15	Construction of Concrete Slab on Verge Area	60 days	Thu 6/8/15	Sun 4/10/15	—————											
16	5.) Modification Gate no. 101K including Installation of Additional Horizontal Support and 6 nos. Additional Heavy Duty Hydraulic wheels	184 days	Tue 28/4/15	Wed 28/10/15	—————											
17	Material Submission, Procurement and Fabrication	100 days	Tue 28/4/15	Wed 5/8/15	—————											
18	Modification of Gate	20 days	Fri 9/10/15	Wed 28/10/15	—————											
19	6.) Removal Existing Vegetation and Top Soil and Construction Concrete Pavement at Gate no. 100D and 100H	174 days	Tue 28/4/15	Sun 18/10/15	—————											
20	Application of Excavation Permit and Lead Time Waiver	100 days	Tue 28/4/15	Wed 5/8/15	—————											
21	Detection Survey of Underground Utilities	2 days	Sat 3/10/15	Sun 4/10/15	—————											
22	Construction of Concrete Pavement	14 days	Mon 5/10/15	Sun 18/10/15	—————											
23	7.) Removal Existing Vegetation and Top Soil and Construction Concrete Pavement Run-in at Gate no. 100D and 100H	184 days	Tue 28/4/15	Wed 28/10/15	—————											
24	Application of Excavation Permit and Lead Time Waiver	100 days	Tue 28/4/15	Wed 5/8/15	—————											
25	Detection Survey of Underground Utilities	2 days	Sat 17/10/15	Sun 18/10/15	—————											
26	Construction of Concrete Pavement Run-in	10 days	Mon 19/10/15	Wed 28/10/15	—————											
27	8.) Installation of EPDM Gasket for 150x150 Opening at the Various Gates as per Sketch no. SK009	7 days	Mon 17/8/15	Sun 23/8/15	—————											
28	9.) Trimming Down Existing Pavement outside Pak Hok Chau Checkpoint and Installation Anti-slip Tiles with same FFL with Existing	44 days	Tue 15/9/15	Wed 28/10/15	—————											
29	Material Submission and Procurement	14 days	Tue 15/9/15	Mon 28/9/15	—————											
30	Trimming Down Existing Pavement and Installation of Anti-slip Tiles	30 days	Tue 29/9/15	Wed 28/10/15	—————											
31	Lok Ma Chau Section	184 days	Tue 28/4/15	Wed 28/10/15	28/4 ————— 28/10											
32	10.) Replacement Installed Information Plate at Gate no. 78, 78B, 81A, 89A, 91A, 96A, 97 as per Sketch no. SK046 (Total 7 Nos.)	141 days	Tue 28/4/15	Tue 15/9/15	—————											
33	Material Submission, Procurement and Fabrication	91 days	Tue 28/4/15	Mon 27/7/15	—————											
34	Installation of Information Plates	14 days	Wed 2/9/15	Tue 15/9/15	—————											
35	11.) Installation Additional Information Plate for Gate no. 91A and 91B as per Sketch no. SK047-048	146 days	Tue 28/4/15	Sun 20/9/15	—————											
36	Material Submission, Procurement and Fabrication	91 days	Tue 28/4/15	Mon 27/7/15	—————											
37	Installation of Information Plates	5 days	Wed 16/9/15	Sun 20/9/15	—————											

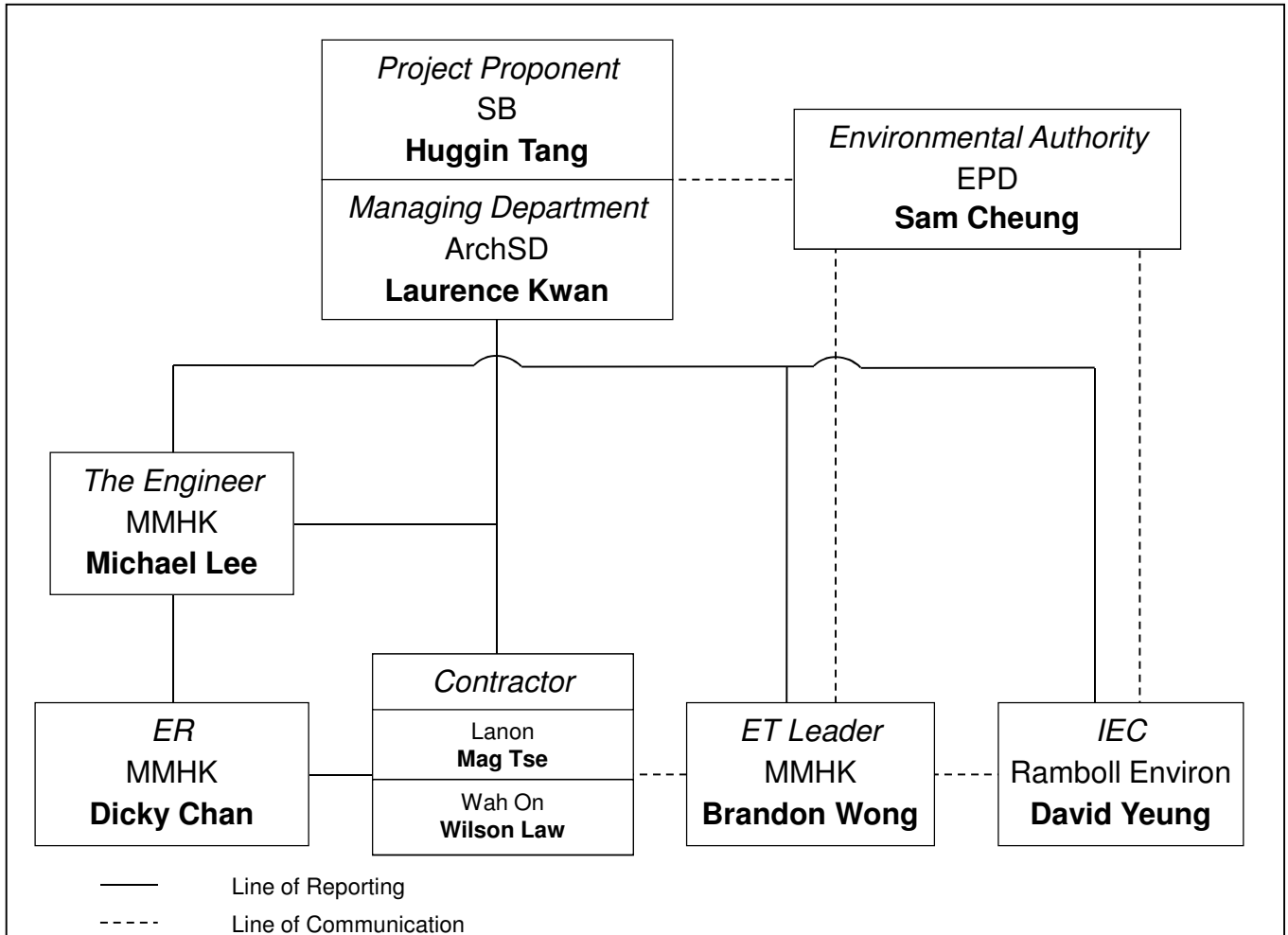
ID	Task Name	Duration	Start	Finish	2nd Quarter			3rd Quarter			4th Quarter				
					A	M	J	J	A	S	O	N			
38	12.) Installation 1 nos. Proposed Retractable Awning of approx. Size of 5m in width and 3m in Projection for Existing Canopy at Entrance of Tak Yuet Lau Police Post	114 days	Tue 28/4/15	Wed 19/8/15											
39	Material Submission, Procurement and Fabrication	100 days	Tue 28/4/15	Wed 5/8/15											
40	Installation of Proposed Retractable Awning	14 days	Thu 6/8/15	Wed 19/8/15											
41	13.) Installation 8 nos. of "No Climbing" Warning Signs on the Railing at DSD Maintenance Road Behind Ng Tung River	164 days	Tue 28/4/15	Thu 8/10/15											
42	Material Submission, Procurement and Fabrication	91 days	Tue 28/4/15	Mon 27/7/15											
43	Installation of Warning Signs	18 days	Mon 21/9/15	Thu 8/10/15											
44	14.) Construction 4 nos. of "Fish Convex Mirror" and the Associated Installation Works as per Sketch nos. SK052-054	184 days	Tue 28/4/15	Wed 28/10/15											
45	Application of Excavation Permit	100 days	Tue 28/4/15	Wed 5/8/15											
46	Material Submission, Procurement and Fabrication	30 days	Tue 7/7/15	Wed 5/8/15											
47	Detection Survey of Underground Utilities	2 days	Thu 6/8/15	Fri 7/8/15											
48	Installation of "Fish Convex Mirror" and Associated Installation Works	82 days	Sat 8/8/15	Wed 28/10/15											
49	Sha Tau Kok Section	184 days	Tue 28/4/15	Wed 28/10/15											
50	15.) Installation of 2 nos. Anti-mosquito Lantern for Booths of Vehicular Inspection Shelter and 2 nos. Anti-mosquito Lantern for Gate 1 Checkpoint G/F	114 days	Tue 28/4/15	Wed 19/8/15											
51	Material Submission, Procurement and Fabrication	100 days	Tue 28/4/15	Wed 5/8/15											
52	Installation of Anti-mosquito Lantern	14 days	Thu 6/8/15	Wed 19/8/15											
53	16.) Installation of Anti-slip Tiles at Vehicular Inspection Shelters	182 days	Tue 28/4/15	Mon 26/10/15											
54	Application of Excavation Permit	150 days	Tue 28/4/15	Thu 24/9/15											
55	Detection Survey of Underground Utilities	2 days	Fri 25/9/15	Sat 26/9/15											
56	Material Submission, Procurement and Fabrication	40 days	Thu 9/7/15	Mon 17/8/15											
57	Installation of Anti-slip Tiles	30 days	Sun 27/9/15	Mon 26/10/15											
58	17.) Construction Ramp, Handrail and Stainless Steel Wire Mesh Guard at Gate 1 Checkpoint	72 days	Tue 18/8/15	Wed 28/10/15											
59	Consent for Construction at Gate 1 Check Point from HKPF & C&ED	30 days	Tue 18/8/15	Wed 16/9/15											
60	Detection Survey of Underground Utilities	2 days	Thu 17/9/15	Fri 18/9/15											
61	Material Submission, Procurement and Fabrication	30 days	Thu 20/8/15	Fri 18/9/15											
62	Construction Ramp, Handrail and Stainless Steel Wire Mesh Guard	40 days	Sat 19/9/15	Wed 28/10/15											
63	18.) Installation CCTV Plates at Gate M/P4-2, Gate M/P4-7, Gate besides Waterfront, Fence near CCTV Post 26B in VHA, Fence near CCTV Post 20B in VHA, Gate 6 at Shan Tsui Village and Gate 7 at Shan Tsui Village	182 days	Tue 28/4/15	Mon 26/10/15											
64	Material Submission, Procurement and Fabrication	91 days	Tue 28/4/15	Mon 27/7/15											
65	Installation of CCTV Plates	18 days	Fri 9/10/15	Mon 26/10/15											
66	19.) Construction Additional Lamp Poles (Flood Light) to Replace the Existing Lamp as per Sketch no. SK017, 018A and 018B	184 days	Tue 28/4/15	Wed 28/10/15											
67	Application of Excavation Permit	130 days	Tue 28/4/15	Fri 4/9/15											
68	Material Submission, Procurement and Fabrication	100 days	Tue 28/4/15	Wed 5/8/15											
69	Construction Additional Lamp Poles	50 days	Sat 5/9/15	Sat 24/10/15											
70	Testing & Commissioning	4 days	Sun 25/10/15	Wed 28/10/15											
71	20.) Installation Additional Information Plates on Pedestrian Gate no. M/P4-7 and M/P4-2 at Sha Tau Kok	141 days	Tue 28/4/15	Tue 15/9/15											
72	Material Submission, Procurement and Fabrication	91 days	Tue 28/4/15	Mon 27/7/15											
73	Installation of Information Plates	10 days	Sun 6/9/15	Tue 15/9/15											
74	21.) Provision FCA Road Marking at Sha Tau Kok	71 days	Mon 6/7/15	Mon 14/9/15											
75	Material Submission	60 days	Mon 6/7/15	Thu 3/9/15											
76	Provision FCA Road Marking	1 day	Mon 14/9/15	Mon 14/9/15											

ID	Task Name	Duration	Start	Finish	Qtr 2, 2016				Qtr 3, 2016			Qtr 4, 2016			Qtr 1, 2017		
					Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan		
1	Works Order Commencement Date	217 days	Fri 29/04/16	Tue 06/12/16													
2	Ping Che Checkpost	90 days	Fri 29/04/16	Wed 27/07/16													
3	Submission and approval	59 days	Fri 29/04/16	Sun 26/06/16													
4	Demolition Works	62 days	Thu 26/05/16	Tue 26/07/16													
5	Handover of carriageway and footpath to HyD, DLO	1 day	Wed 27/07/16	Wed 27/07/16													
6	Lin Ma Hang	195 days	Fri 20/05/16	Mon 05/12/16													
7	Submission and approval	16 days	Fri 17/06/16	Sat 02/07/16													
8	Application and Construction Works (Cable diversion)	195 days	Fri 20/05/16	Mon 05/12/16													
9	Demolition Works	115 days	Sat 02/07/16	Mon 24/10/16													
10	Handover of work area to HyD, DLO	1 day	Tue 25/10/16	Tue 25/10/16													
11	Sha Ling Checkpost	148 days	Tue 31/05/16	Tue 25/10/16													
12	Submission and approval	30 days	Tue 31/05/16	Wed 29/06/16													
13	Demolition Works	68 days	Thu 18/08/16	Mon 24/10/16													
14	Handover to of works area to HyD, DLO	1 day	Tue 25/10/16	Tue 25/10/16													
15	Shek Chung Au Checkpoint	57 days	Wed 05/10/16	Mon 05/12/16													
16	Submission and approval	30 days	Wed 05/10/16	Thu 03/11/16													
17	Demolition Works	26 days	Fri 04/11/16	Sun 04/12/16													
18	Handover of carriway and footpath to HyD, DLD	1 day	Mon 05/12/16	Mon 05/12/16													
19	Miscellaneous Works	171 days	Tue 07/06/16	Sun 27/11/16													



Project: ASD011794_0067
Date: Thu 28/07/16

Task  Summary 

B. Project Organisation Chart



Key Personnel Contact List			
Role	Department / Company	Name	Telephone No.
Project Proponent	Security Bureau (SB)	Mr. Huggin Tang	2810 3523
Managing Department	Architectural Services Department (ArchSD)	Mr. Laurence Kwan	2867 3871
Environmental Authority	Environmental Protection Department (EPD)	Mr. Sam Cheung	2835 2398
The Engineer	Mott MacDonald Hong Kong Limited (MMHK)	Mr. Michael Lee	2585 8560
Engineer's Representative (ER)	Mott MacDonald Hong Kong Limited (MMHK)	Mr. Dicky Chan	2683 1172
Independent Environmental Checker (IEC)	Ramboll Environ Hong Kong Limited (Ramboll Environ)	Mr. David Yeung	3465 2888
Environmental Team (ET) Leader	Mott MacDonald Hong Kong Limited (MMHK)	Mr. Brandon Wong	2828 5875
The Contractor / Project Manager	Lanon Development Limited (Lanon)	Mr. Mag Tse	9161 4727
The Contractor / Project Manager	Wah On Garden Landscaping Limited (Wah On)	Mr. Wilson Law	9046 6205

 Architectural Services Department		Construction of a Secondary Boundary Fence and New Sections of Primary Boundary Fence and Boundary Patrol Road Phase 2 – Improvement Works for Boundary Fence at Mai Po, Lok Ma Chau and Sha Tau Kok Environmental Permit No. EP-347/2009/A	Title:
			Project Organisation Chart for Phase 2

C. Environmental Quality Performance Limits

Table C.1: Action and Limit Levels for Construction Noise

Time Period	Action Level	Limit Level
Daytime (07:00-19:00) except general holidays and Sundays <i>Measurements in L_{eq} (30min)</i>	When one documented complaint is received	75 dB(A) For educational institutions 70 dB(A) (65dB(A) during examinations)

D. Event and Action Plans

Table D.1: Event and Action Plan for Construction Noise

EVENT	ACTION			
	ET Leader	IEC	ER	Contractor
Action Level	<ol style="list-style-type: none"> 1. Notify IEC and the Contractor. 2. Carry out investigation. 3. Report the results of investigation to IEC and the Contractor. 4. Discuss with the Contractor and formulate remedial measures. 5. Increase monitoring frequency to check mitigation measures. 	<ol style="list-style-type: none"> 1. Review with analyzed results submitted by ET. 2. Review the proposed remedial measures by the Contractor and advise ER accordingly. 3. Supervise the implement of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analyzed noise problem. 4. Ensure remedial measures are properly implemented. 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC. 2. Implement noise mitigation proposals.
Limit Level	<ol style="list-style-type: none"> 1. Identify the source. 2. Notify IEC, ER, EPD and the Contractor. 3. Repeat measurement to confirm findings. 4. Increase monitoring frequency. 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented. 6. Inform IEC, ER, and EPD the causes & actions taken for the exceedances. 7. Assess effectiveness of the Contractor's remedial actions and keep IEC, EPD and ER informed of the results. 8. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET Leader and the Contractor on the potential remedial actions. 2. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise ER accordingly. 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analyzed noise problem. 4. Ensure remedial measures are properly implemented. 5. 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. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial actions to IEC within 3 working days of notification. 3. Implement the agreed proposals. 4. Resubmit proposals if problem still not under control. 5. Stop the relevant activity of works as determined by the ER until the exceedance is abated.

E. Schedule of Mitigation Measures from the EIA

Table E.1: Recommended Mitigation Measures – Air Quality

EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
2.5.2	3.2.2	<p>The following good site practice should be implemented:</p> <ul style="list-style-type: none"> 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; 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; dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting; the area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should paved with concrete, bituminous materials or hardcores; the portion of road leading only to a construction site that is within 30m of designated vehicle entrance or exit should be kept clear of dusty materials; all dusty materials should be sprayed with water prior to any loading, unloading or transfer; vehicle speed should be limited to 10kph 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. 	Contractor	C	✓

Legend: (1) C - During Construction
 (2) ✓ - Implemented
 P - Partially Implemented
 x - Not Implemented
 REC - Rectified by Contractor
 (REC) - Partially Rectified by Contractor
 ! - Pending Contractor's Rectification Action
 N/A - Not Applicable

Table E.2: Recommended Mitigation Measures – Noise

EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
3.8.14	4.8.1	The following good site practical should be implemented: <ul style="list-style-type: none"> • The Contractor shall adopt the Code of Practice on Good Management Practice to Prevent Violation of the Noise Control Ordinance (Chapter 400) (for Construction Industry) published by EPD; • The Contractor shall observe and comply with the statutory and non-statutory requirements and guidelines; • Before commencing any work, the Contractor shall submit to the Engineer Representative for approval the method of working, equipment and noise mitigation measures intended to be used at the site; • The Contractor shall devise and execute working methods to minimise the noise impact on the surrounding sensitive uses, and provide experienced personnel with suitable training to ensure that those methods are implemented; • Noisy equipment and noisy activities should be located as far away from the Noise Sensitive Receivers (NSRs) as is practical; • Unused equipment should be turned off. Powered Mechanical Equipment (PME) should be kept to a minimum and the parallel use of noisy equipment / machinery should be avoided; • Regular maintenance of all plant and equipment; • Material stockpiles and other structures should be effectively utilised as noise barriers, where practicable. 	Contractor	C	✓
3.8.1 -3.8.3	4.8.2 -4.8.3	Other than good site practice, the Contractor is required to adopt Levels 1 and 2 site-specific direct mitigation measures as specified below during the construction phase. With construction / demolition work undertaken at a distance of 60m or less to the NSRs, below mitigation measures should be included: Level 1 – Use of Quiet Plant and Movable Noise Barrier <ul style="list-style-type: none"> • The Contractor shall obtain particular models of plant that are quieter than standards given in the Technical Memorandum on Noise from Construction Work other than Percussive Piling (GW-TM). • Purpose-built movable noise barriers should be used to mitigate construction noise directly at sources that are not usually mobile provide that the direct line of sight to the source is blocked. 	Contractor	C	✓

Legend: (1) C - During Construction
 (2) ✓ - Implemented (REC) - Partially Rectified by Contractor
 P - Partially Implemented ! - Pending Contractor's Rectification Action
 x - Not Implemented N/A - Not Applicable
 REC - Rectified by Contractor

Table E.3: Recommended Mitigation Measures – Water Quality

EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
4.7.1	5.3.1	<p>Good site practices in addition to the implementation of mitigation measures would minimize the impact to the surrounding environment.</p> <p><i>General Prevention and Precaution Measures:</i></p> <ul style="list-style-type: none"> • The site should be confined to avoid silt runoff to the site. • No discharge of silty water into the storm drain and drainage channel within and the vicinity of the site. • Any soil contaminated with chemicals/oils shall be removed from site and the void created shall be filled with suitable materials. • Stockpiles to be covered by tarpaulin to avoid spreading of materials during rainstorms; • 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 labelled with appropriate warning signs in English and Chinese to avoid accidents. there shall also be clear instructions showing what action to take in the event of an accidental; • Storage areas shall be selected at safe locations on site and adequate space shall be allocated to the storage area; • Any construction plant which causes pollution to the water system due to leakage of oil or fuel shall be removed off-site immediately; • Spillage or leakage of chemical waste to be controlled by using suitable absorbent materials; • Chemicals will always be stored on drip trays or in bunded areas where the volume is 110% of the stored volume; • Regular clearance of domestic waste generated in the temporary sanitary facilities to avoid waste water spillage. • Temporary sanitary facilities to be provided for on-site workers during construction. 	Contractor	C	✓
4.7.2 - 4.7.3	5.3.2 - 5.3.3	<p>Concreting Work</p> <p>A temporary drainage channel and associated facilities should be provided to collect the runoff generated and prevent concrete-contaminated water from entering watercourses. Adjustment of pH can be achieved by adding a suitable neutralising reagent to wastewater prior to discharge.</p> <p>The concreting works should be temporarily isolated with proper methods, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props.</p>	Contractor	C	N/A
4.7.4	5.3.4	<p>Soil Excavation and Stockpiling</p> <p>Excavated soil which needs to be temporarily stockpiled should be stored in a specially designated area and provided with a tarpaulin cover to avoid runoff into the drainage channels.</p>	Contractor	C	✓

EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
4.7.5 - 4.7.6	5.3.5 -5.3.6	<p>Site Depot</p> <p>All compounds in works areas should be located on areas of hard standing with provision of drainage channels and settlement ponds where necessary to allow interception and controlled release of settled/treated water. Hard standing compounds should drain via an oil interceptor. The oil interceptor should be regularly inspected and cleaned to avoid wash-out of oil during storm conditions. A bypass should be provided to avoid overload of the interceptor's capacity. Any contractor generating waste oil or other chemicals as a result of his activities should register as a chemical waste producer. Disposal of the waste oil should be done by a licensed collector.</p> <p>Good housekeeping practices should be implemented to minimise careless spillage and to keep the storage and the work space in a tidy and clean condition. Appropriate training including safety codes and relevant manuals should be given to the personnel who regularly handle the chemicals on site.</p>	Contractor	C	N/A
4.7.7	5.3.7	<p>Construction of Checkpoint</p> <p>Sewage system should be constructed to divert domestic sewage, which will be generated from the sanitary facilities provided in the new checkpoint at Sha Tau Kok, to public sewer connected to government sewage treatment facilities.</p>	Contractor	C	N/A

Legend: (1) C - During Construction
 (2) ✓ - Implemented
 P - Partially Implemented
 x - Not Implemented
 REC - Rectified by Contractor
 (REC) - Partially Rectified by Contractor
 ! - Pending Contractor's Rectification Action
 N/A - Not Applicable

Table E.4: Recommended Mitigation Measures – Waste Management

EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
5.6.7	6.3.6	<p>Site Clearance</p> <p>The topsoil and vegetation removed and excavated material may have to be temporarily stockpiled on-site. Control measures should be taken at the stockpiling area to prevent the generation of dust and pollution of stormwater channels, fish ponds or river channels. However, to eliminate the risk of blocking drains in the wet season, it is recommended that stockpiling of excavated materials during the wet season should be avoided as far as practicable.</p>	Contractor	C	N/A
5.6.10 - 5.6.12	6.3.8	<p>Construction and Demolition Materials</p> <p>Careful design, planning and good site management can minimize over-ordering and generation of waste materials such as concrete mortars and cement grouts. The design of formwork should maximize the use of standard wooden panels so to achieve high reuse levels. Alternatives such as steel formwork or plastic facing should be considered to increase the potential for reuse.</p> <p>The Contractor should recycle as much of the C&D materials as possible on-site. Proper segregation of waste on-site will increase the feasibility of certain components of the waste stream by the recycling contractors. Different areas of the worksite shall be designated for such segregation and storage wherever site conditions permit.</p> <p>Trip-ticket system should be employed to monitor the disposal of C&D material and solid at public filling facilities and landfills, and to control fly-tipping. Government has established a differentiated charging scheme for the disposal of waste to landfill, construction waste sorting facilities and public fill facilities. This will provide additional incentives to reduce the volume of waste generated and to ensure proper segregation of wastes.</p>	Contractor	C	✓
5.6.13 - 5.6.14	6.3.9 - 6.3.13	<p>Chemical Waste</p> <p>For those processes which generate chemical waste, it may be possible to find alternatives which generate reduced quantities or even no chemical waste, or less dangerous types of chemical waste.</p> <p>Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handed in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Waste as follows:</p> <p>Containers used for the storage of chemical wastes should:</p> <ul style="list-style-type: none"> • 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 litres unless the specification have been approved by the EPD; and • display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations, <p>The storage area for chemical wastes should:</p> <ul style="list-style-type: none"> • be clearly labelled and used solely for the storage of 	Contractor	PL	N/A

EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
		chemical waste; <ul style="list-style-type: none"> 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 that area whichever is the 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: <ul style="list-style-type: none"> be via a licensed waste collector; and be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Facility which also offers a chemical waste collection service and can supply the necessary storage containers, or to be re-user of the waste, under approval from the EPD. 			
5.6.16	6.3.15	General Refuse Should be stored in enclosed bins or compaction units separate from C&D and chemical wastes. The Contractor should employ a reputable waste collector to remove general refuse from the site, separate from C&D and chemical wastes, on a regular basis to minimise odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law.	Contractor	C	✓
5.6.18	6.3.16	Construction Waste Management Plan A construction waste management plan (CWMP) should be prepared and developed by the contractor to ensure proper collection, treatment and disposal of waste on site. This CWMP will also take into account the requirement to handle chemical wastes on site which will need to be managed by a licensed waste collection contractor.	Contractor	C	✓

- Legend: (1) C - During Construction
 PL - During Construction Planning
 (2) ✓ - Implemented
 P - Partially Implemented
 x - Not Implemented
 REC - Rectified by Contractor
 (REC) - Partially Rectified by Contractor
 ! - Pending Contractor's Rectification Action
 N/A - Not Applicable

Table E.5: Recommended Mitigation Measures – Ecology

EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
Table 6.38	7.2	Ecological Impacts on Floral Species of Conservation Concern <ul style="list-style-type: none"> Erection of protective fencing to protect the plant during construction period 	Contractor	C	✓
Table 6.40	7.2	Potential Ecological Impacts on Offsite Habitats <ul style="list-style-type: none"> Good site practices for controlling the dust and water quality (avoid stockpiles adjacent to wetlands, covering the stockpiles with impervious sheeting, control of vehicle speed, no discharge of silty water to the rivers, streams and drainage channels); Clear definition of works limit to avoid impact on adjacent habitats. 	Contractor	C	✓
Table 6.39 - Table 6.45	7.2	Disturbance to Wetland-Dependent Birds, Raptors, Terrestrial Birds and Egretty <ul style="list-style-type: none"> Good working practices include switching off unused equipment, keep minimum number of powered mechanical equipment in operation at the same period, the use of stockpiles and other structures to form noise barriers where practicable, avoidance of feeding the wildlife to cause disturbance, site confinement and proper cover of stockpiles with impervious sheeting to minimize construction noise, uncontrolled surface runoff and discharge of silts; Avoidance of construction works using Power Mechanical Equipments within the Wetland Conservation Area during bird migratory season (15th November – 15th March); and Restriction of excavation works within a 150m buffer zone from the egretty to ardeid non-breeding season (from August to February). 	Contractor	C	✓

Legend: (1) C - During Construction
 (2) ✓ - Implemented
 P - Partially Implemented
 × - Not Implemented
 REC - Rectified by Contractor
 (REC) - Partially Rectified by Contractor
 ! - Pending Contractor's Rectification Action
 N/A - Not Applicable

Table E.6: Recommended Mitigation Measures – Landscape and Visual

EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
Preservation of Existing Vegetation					
Table 7-13 CP1	Table 9-1	● To retain trees that have high amenity or ecology value and contribute most to the landscape and visual amenity of the site and its immediate environs.	Project Landscape Architect / Contractor	C1	✓
Table 7-13 CP1	Table 9-1	● Creation of precautionary area around trees to be retained equal to half of the trees canopy diameter. Precautionary area to be fenced.	Project Landscape Architect / Contractor	BC	✓
Table 7-13 CP1	Table 9-1	● Prohibition of the storage of materials including fuel, the movement of construction vehicles, and the refuelling and washing of equipment including concrete mixers within the precautionary area.	Project Landscape Architect / Contractor	C1	✓
Table 7-13 CP1	Table 9-1	● Phased segmental root pruning for trees to be retained and transplanted over a suitable period (determined by species and size) prior to lifting or site formation works which affect the existing rootball of trees identified for retention. The extent of the pruning will be based on the size and the species of the tree in each case.	Project Landscape Architect / Contractor	C1	✓
Table 7-13 CP1	Table 9-1	● Pruning of the branches of existing trees identified for transplantation and retention to be based on the principle of crown thinning maintaining their form and amenity value.	Project Landscape Architect / Contractor	C1	✓
Table 7-13 CP1	Table 9-1	● The watering of existing vegetation particularly during periods of excavation when the water table beneath the existing vegetation is lowered.	Project Landscape Architect / Contractor	C1	N/A
Table 7-13 CP1	Table 9-1	● The rectification and repair of damaged vegetation following the construction phase to its original condition prior to the commencement of the works or replacement using specimens of the same species, size and form where appropriate to the design intention of the area affected.	Project Landscape Architect / Contractor	C1	✓
Table 7-13 CP1	Table 9-1	● All works affecting the trees identified for retention and transplantation will be carefully monitored. This includes the key stages in the preparation of the trees, the implementation of protection measures and health monitoring through out the construction period.	Project Landscape Architect / Contractor	C1	✓
Table 7-13 CP1	Table 9-1	● Detailed landscape and tree preservation proposals will be submitted to the relevant government departments for approval under the lease conditions and in accordance with ETWB TCW No. 2/2004 and WBTC No. 3/2006.	Project Landscape Architect / Contractor	C1	✓
Table 7-13 CP1	Table 9-1	● The tree preservation works should be implemented by approved Landscape Contractors and inspected and approved on site by a qualified Landscape Architect. A tree protection specification would be included within the contract documents.	Contractor	C1	✓
Preservation of Existing Topsoil					
Table 7-13 CP2	Table 9-1	● Topsoil disturbed during the construction phase should be tested using a standard soil testing	Contractor	C1	✓

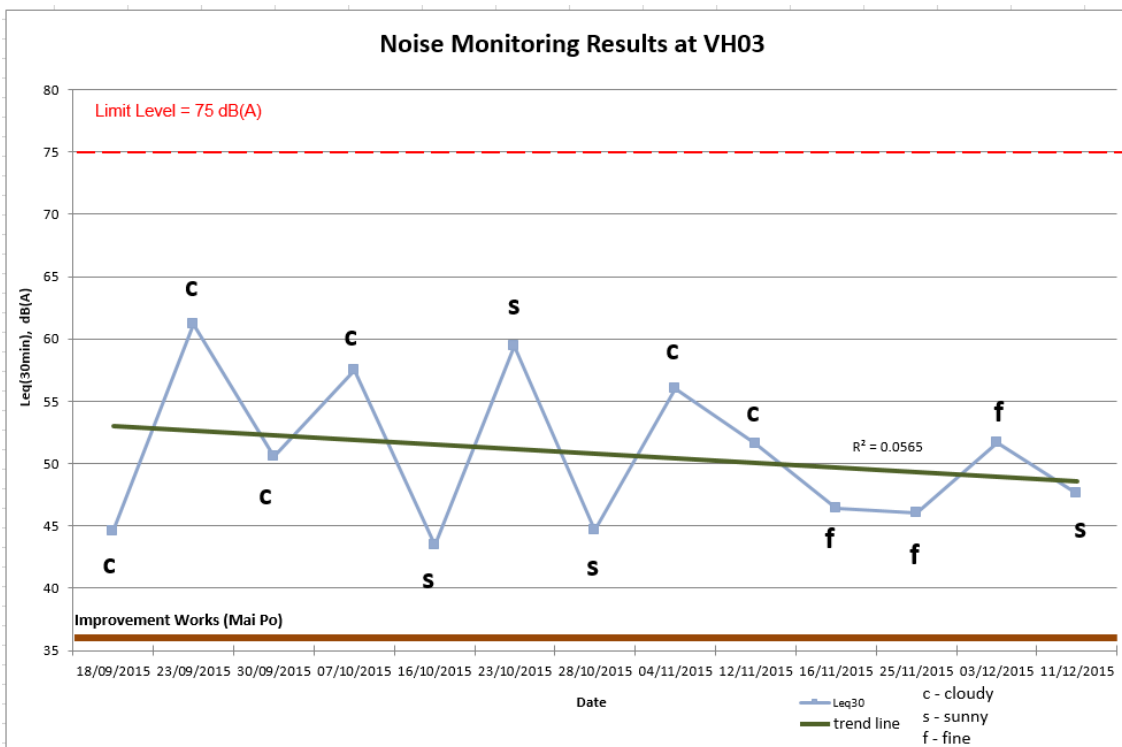
EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
		methodology and where it is found to be worthy of retention stored for re-use.			
Table 7-13 CP2	Table 9-1	• The soil will be stockpiled to a maximum height of 2m and will be either temporarily vegetated with hydroseeded grass during construction or covered with a waterproof covering to prevent erosion.	Contractor	C1	✓
Table 7-13 CP2	Table 9-1	• The stockpile should be turned over on a regular basis to avoid acidification and the degradation of the organic material, and reused after completion. Alternatively, if this is not practicable, it should be considered for use elsewhere, including other projects.	Contractor	C1	✓
Permanent and Temporary Works Areas					
Table 7-13 CP3	Table 9-1	• Where appropriate to the final design the landscape of these works areas should be restored following the completion of the construction phase.	Contractor	C1	✓
Table 7-13 CP3	Table 9-1	• Construction site controls should be enforced including the storage of materials, the location and appearance of site accommodation and the careful design of site lighting to prevent light spillage.	Contractor	C1	✓
Mitigation Planting					
Table 7-13 CP4	Table 9-1	• Replanting of disturbed vegetation should be undertaken at the earliest possible stage of the construction phase.	Contractor	C1	✓
Table 7-13 CP4	Table 9-1	• Use of native plant species predominantly in the planting design for the buffer areas.	Contractor	C1	✓
Table 7-13 CP4	Table 9-1	• The tree planting works should be implemented by approved Landscape Contractors and inspected and approved on site by a qualified Landscape Architect. A tree planting specification would be included within the contract documents.	Contractor	C1	✓
Transplantation of Existing Trees					
Table 7-13 CP5	Table 9-1	• The tree transplanting works should be implemented by approved Landscape Contractors and inspected and approved on site by a qualified Landscape Architect. A tree protection / transplanting specification would be included within the contract documents.	Contractor	BC1	✓
Design of the Fence and associated Structures					
Table 7-14 OP1	Table 9-2	Design of Boundary Fence, Boundary Patrol Road and Police Check Point – These structural elements will be designed in accordance with security requirement from Police Force and incorporate design features as part of design mitigation measures including: <ul style="list-style-type: none"> 1. Integrated design approach – the boundary fence should integrated, as far as technically feasible, with existing built structures such as existing road, footpath and track and embankment of fishponds, river and drainage channel as part of design mitigation measures to reduce the potential cumulative impact of the proposed works. The location and orientation of the police 	ArchSD	D	✓

EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
		<p>check points should be away from landscape and visually sensitive areas such wetland, fishpond and agricultural field.</p> <ol style="list-style-type: none"> 2. Building massing - the proposed use of simple responsive design for the built structures with a low building height profile to reduce the potential visual mass of the structure within a rural context. 3. Treatment of built structures - the architectural design should seek to reduce the apparent visual mass of the facilities further through the use of natural materials such as wooden frame, vertical greening or other sustainable materials such as recycled plastic. 4. Responsive building and fence finishes - In terms of the proposed finishes natural tones should be considered for the colour palette with non-reflective finishes are recommended to reduce glare effect. The use of colour blocking on the proposed fence could be used to break up the visual mass of the structure. 5. Responsive lighting design – Aesthetic design of architectural and track lighting with following glare design measures: <ul style="list-style-type: none"> – Directional and full cut off lighting is recommended particularly for areas adjacent to existing village to minimise light spillage. – Minimise geographical spread of lighting, only applied for safety and security reasons; – Limited lighting intensity to meet the minimum safety and operation requirement; and – High-pressure sodium road lighting is recommended for more stringent light control reducing spillage and thus visual impacts. 			
Compensatory Planting Proposals					
Table 7-14 OP2	Table 9-2	<ul style="list-style-type: none"> ● Utilise native to Hong Kong will be utilized within the buffer planting areas. 	Contractor	D	✓
Table 7-14 OP2/3	Table 9-2	<ul style="list-style-type: none"> ● A qualified or registered landscape architect will be involved in the design, construction supervision and monitoring, and maintenance period to oversee the implementation of the recommended landscape and visual mitigation measures including the tree preservation and landscape works on site. 	Contractor	D	✓
Table 7-14 OP2	Table 9-2	<p>Tree and Shrub Planting – Given the rural nature of the proposed alignment it is recommended that the where possible tree and shrub species which are native to Hong Kong be used. In addition where possible the planting of new trees and shrubs will aim to link together existing woodland areas and small tree groups to improve the connectivity between habitats and create more coherent landscape framework. The planting of small groups of trees along the alignment of the proposed fence will serve to de-emphasise the horizontality of the fence structure and provide for better sense of visual integration with the landscape context. Where practicable vertical greening measures</p>	Contractor	D	✓

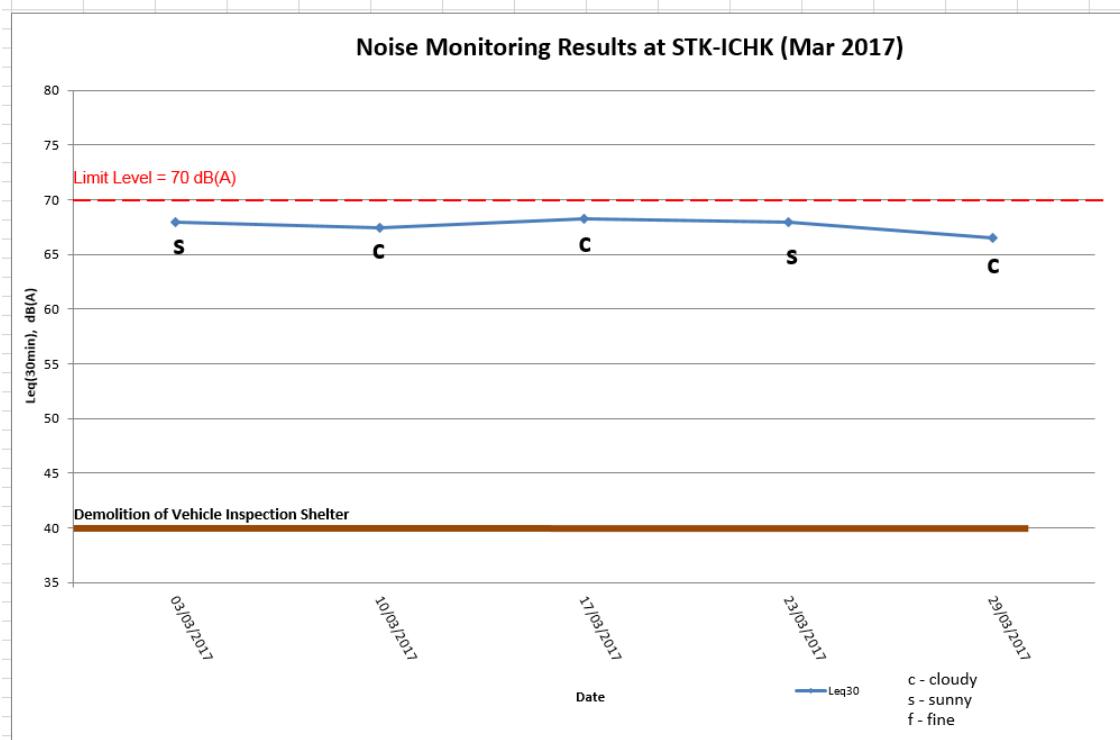
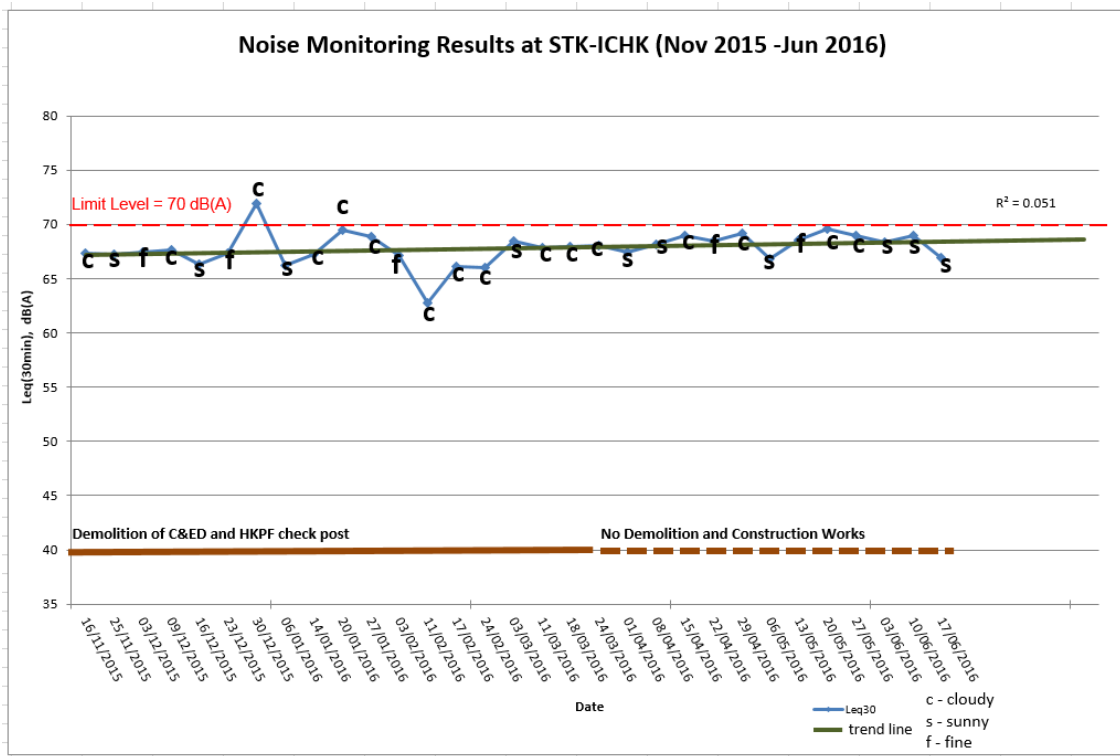
EIA Ref.	EM&A Manual Ref.	Recommended Mitigation Measures	Who to implement?	When to implement? (1)	Implementation Status (2)
should also be considered on engineering structures.					
Table 7-14 OP2	Table 9-2	<p>Compensatory Planting Proposals – Given the works extent is largely limited along existing roadside embankment to minimise impact to existing village settlements and valuable landscape resources such as wetland, fishpond, stream course and existing trees, and considered the importance of tree retention within the works area, new tree planting will concentrate in selected new amenity areas along the alignment, infilling between retained and transplanted trees. The preliminary planting proposals for the proposed works include the planting of some 357 new trees utilising a combination of mature to light standard sized stock (i.e. approximately 15% of mature trees, 75% of standard trees, and 10% light standard trees). These trees will be planted in woodland clumps and small tree groups at strategic locations to de-emphasise the horizontality of the fence alignment. Based on preliminary findings the proposed planting will result in a compensatory planting ratio of 1:1 (new planting: trees recommended for felling). This compares favourably with the report's assertion that some 357 trees would be felled due to the proposed works. With the proposed preservation of existing trees, transplantation of trees in conflict with the proposals and the planting of new trees the project area will contain approximately 2000 trees. Trees forming part of the new planting will provide screening to neighbourhood villagers and will utilise species native to Hong Kong. These proposals will be subject to review at detailed design stage of the project.</p>	Contractor	D	✓

- Legend: (1)
- C1 - Throughout Construction Phase
 - BC - Before Construction Phase Commences
 - BC1 - Prior to the Commencement of the Proposed Works
 - D - Throughout Design Phase
- (2)
- ✓ - Implemented
 - P - Partially Implemented
 - x - Not Implemented
 - REC - Rectified by Contractor
 - (REC) - Partially Rectified by Contractor
 - ! - Pending Contractor's Rectification Action
 - N/A - Not Applicable

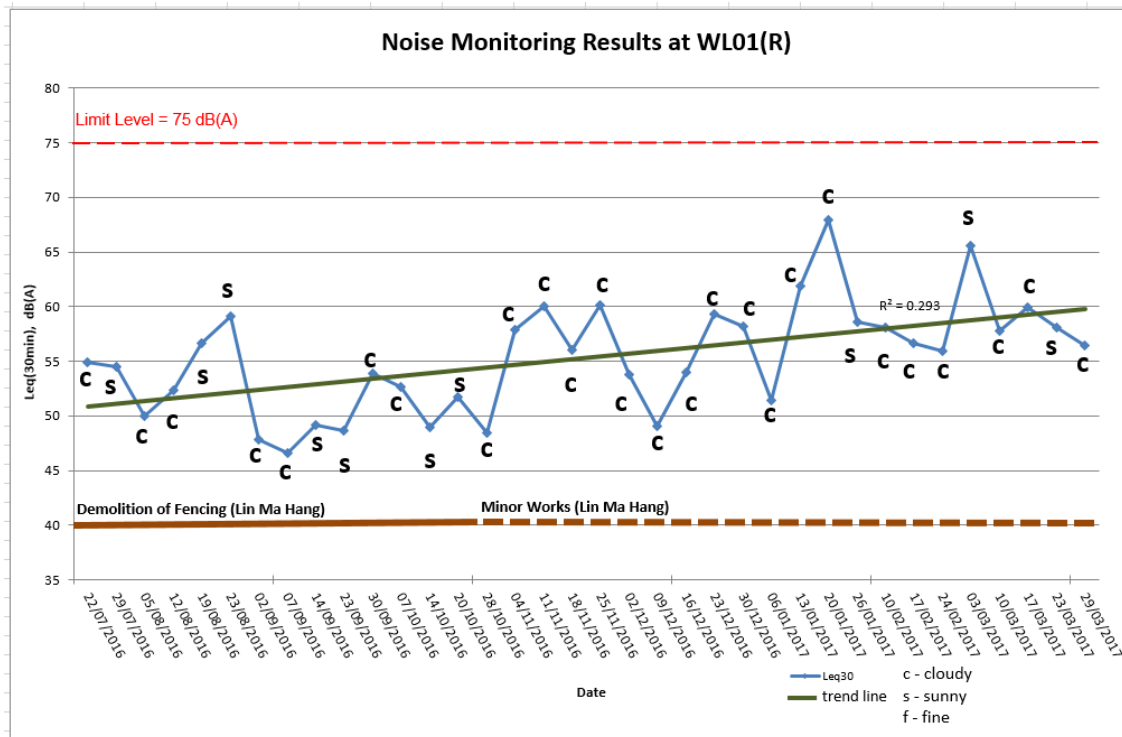
F. Noise Monitoring Results and Graphical Presentation



Remark: Linear regression analysis is applied. No significant trend of measured noise level was observed. The monitoring station was generally with a low noise background with the major noise sources from the nearby moving or stationary road traffic.



Remark: Linear regression analysis is applied (November 2015 to June 2016). No significant trend of measured noise level was observed. The monitoring station was located next to a two-way traffic road. The major noise sources were due to the passing by heavy vehicles.



Remark: Linear regression analysis is applied. No significant trend of measured noise level was observed. The monitoring station was generally with a low noise background. The major noise sources were due to the nearby road traffic and dog barks.

Noise Monitoring Results

Station VH03

Date	Start Time	Noise Level for 30 min, dB(A)			Wind Speed (m/s)	Weather Condition	Limit Level of L _{eq}	Baseline Mean Noise Level L _{eq} , (Range)	Within Baseline Range (Y/N)
		L _{eq}	L ₁₀	L ₉₀					
18-Sep-15	10:08	45	46	42	2.2	Cloudy	75	49.8 (39.4 - 61.6)	Y
23-Sep-15	10:19	61	62	61	1.9	Cloudy	75	49.8 (39.4 - 61.6)	Y
30-Sep-15	10:34	51	55	39	2.2	Cloudy	75	49.8 (39.4 - 61.6)	Y
07-Oct-15	15:11	57	58	57	1.7	Cloudy	75	49.8 (39.4 - 61.6)	Y
16-Oct-15	11:43	43	45	41	2.2	Sunny	75	49.8 (39.4 - 61.6)	Y
23-Oct-15	11:56	59	60	59	2.5	Sunny	75	49.8 (39.4 - 61.6)	Y
28-Oct-15	10:27	45	46	42	2.2	Sunny	75	49.8 (39.4 - 61.6)	Y
04-Nov-15	11:26	56	56	56	2.2	Cloudy	75	49.8 (39.4 - 61.6)	Y
12-Nov-15	09:30	52	54	45	2.8	Cloudy	75	49.8 (39.4 - 61.6)	Y
16-Nov-15	12:25	46	48	44	3.6	Fine	75	49.8 (39.4 - 61.6)	Y
25-Nov-15	11:40	46	48	43	1.4	Fine	75	49.8 (39.4 - 61.6)	Y
03-Dec-15	11:14	52	53	50	2.2	Fine	75	49.8 (39.4 - 61.6)	Y
11-Dec-15	08:55	48	50	45	2.2	Sunny	75	49.8 (39.4 - 61.6)	Y
	Min	43							
	Mean	51							
	Max	61							

Noise Monitoring Results

Station STK-ICHK

Date	Start Time	Noise Level for 30 min, dB(A)			Wind Speed (m/s)	Weather Condition	Limit Level of L _{eq}	Baseline Mean Noise Level L _{eq} (Range)	Within Baseline Range (Y/N)
		L _{eq}	L ₁₀	L ₉₀					
16-Nov-15	09:50	67	71	58	3.1	Cloudy	70	67.9 (66.5 - 70.2)	Y
25-Nov-15	09:15	67	71	56	3.6	Sunny	70	67.9 (66.5 - 70.2)	Y
03-Dec-15	09:20	67	71	58	1.7	Fine	70	67.9 (66.5 - 70.2)	Y
09-Dec-15	09:15	68	71	61	1.4	Cloudy	70	67.9 (66.5 - 70.2)	Y
16-Dec-15	12:45	66	70	53	3.6	Sunny	70	67.9 (66.5 - 70.2)	Y
23-Dec-15	09:15	67	71	54	2.5	Fine	70	67.9 (66.5 - 70.2)	Y
30-Dec-15	10:05	72	74	68	3.1	Cloudy	70	67.9 (66.5 - 70.2)	N
06-Jan-16	15:05	66	70	53	1.9	Sunny	70	67.9 (66.5 - 70.2)	Y
14-Jan-16	14:50	67	72	53	1.7	Cloudy	70	67.9 (66.5 - 70.2)	Y
20-Jan-16	11:25	69	74	58	2.2	Cloudy	70	67.9 (66.5 - 70.2)	Y
27-Jan-16	11:29	69	73	56	2.5	Cloudy	70	67.9 (66.5 - 70.2)	Y
03-Feb-16	10:16	67	71	60	1.4	Fine	70	67.9 (66.5 - 70.2)	Y
11-Feb-16	11:40	63	67	48	1.7	Cloudy	70	67.9 (66.5 - 70.2)	Y
17-Feb-16	09:22	66	70	57	0.3	Cloudy	70	67.9 (66.5 - 70.2)	Y
24-Feb-16	10:29	66	70	55	3.6	Cloudy	70	67.9 (66.5 - 70.2)	Y
03-Mar-16	16:04	68	72	61	3.1	Sunny	70	67.9 (66.5 - 70.2)	Y
11-Mar-16	10:17	68	72	59	2.2	Cloudy	70	67.9 (66.5 - 70.2)	Y
18-Mar-16	16:16	68	71	58	1.9	Cloudy	70	67.9 (66.5 - 70.2)	Y
24-Mar-16	09:52	68	72	56	0.6	Cloudy	70	67.9 (66.5 - 70.2)	Y
01-Apr-16	09:55	67	72	50	1.4	Sunny	70	67.9 (66.5 - 70.2)	Y
08-Apr-16	09:37	68	72	58	2.8	Sunny	70	67.9 (66.5 - 70.2)	Y
15-Apr-16	10:13	69	73	59	0.5	Cloudy	70	67.9 (66.5 - 70.2)	Y
22-Apr-16	16:15	68	73	58	1.9	Fine	70	67.9 (66.5 - 70.2)	Y
29-Apr-16	09:27	69	72	63	2.5	Cloudy	70	67.9 (66.5 - 70.2)	Y
06-May-16	09:32	67	71	56	1.1	Sunny	70	67.9 (66.5 - 70.2)	Y
13-May-16	09:44	69	73	56	1.7	Fine	70	67.9 (66.5 - 70.2)	Y
20-May-16	09:39	70	73	63	1.4	Cloudy	70	67.9 (66.5 - 70.2)	Y
27-May-16	10:13	69	72	63	1.4	Cloudy	70	67.9 (66.5 - 70.2)	Y
03-Jun-16	10:03	68	72	60	1.7	Sunny	70	67.9 (66.5 - 70.2)	Y
10-Jun-16	09:43	69	72	64	1.4	Sunny	70	67.9 (66.5 - 70.2)	Y
17-Jun-16	09:29	67	71	56	1.4	Sunny	70	67.9 (66.5 - 70.2)	Y
03-Mar-17	08:50	68	72	54	2.5	Sunny	70	67.9 (66.5 - 70.2)	Y
10-Mar-17	09:25	67	71	55	2.5	Cloudy	70	67.9 (66.5 - 70.2)	Y
17-Mar-17	09:20	68	72	58	1.4	Cloudy	70	67.9 (66.5 - 70.2)	Y
23-Mar-17	08:50	68	54	54	1.9	Sunny	70	67.9 (66.5 - 70.2)	Y
29-Mar-17	13:40	67	70	57	3.6	Cloudy	70	67.9 (66.5 - 70.2)	Y
	Min	63							
	Mean	68							
	Max	72							

Noise Monitoring Results

Station WL01 (R)

Date	Start Time	Noise Level for 30 min, dB(A)			Wind Speed (m/s)	Weather Condition	Limit Level of L _{eq}	Baseline Mean Noise Level L _{eq} , (Range)	Within Baseline Range (Y/N)
		L _{eq}	L ₁₀	L ₉₀					
22-Jul-16	10:26	55	57	52	1.4	Cloudy	75	53.3 (43.6 - 61.3)	Y
29-Jul-16	10:46	55	56	46	1.4	Sunny	75	53.3 (43.6 - 61.3)	Y
05-Aug-16	10:38	56	58	56	1.1	Cloudy	75	53.3 (43.6 - 61.3)	Y
12-Aug-16	10:35	52	54	51	1.4	Cloudy	75	53.3 (43.6 - 61.3)	Y
19-Aug-16	10:50	57	59	50	1.1	Sunny	75	53.3 (43.6 - 61.3)	Y
23-Aug-16	13:25	59	62	45	1.4	Sunny	75	53.3 (43.6 - 61.3)	Y
02-Sep-16	10:40	48	49	46	1.1	Cloudy	75	53.3 (43.6 - 61.3)	Y
07-Sep-16	13:32	47	48	44	1.1	Cloudy	75	53.3 (43.6 - 61.3)	Y
14-Sep-16	10:42	49	50	47	0.8	Sunny	75	53.3 (43.6 - 61.3)	Y
23-Sep-16	10:46	49	50	47	3.3	Sunny	75	53.3 (43.6 - 61.3)	Y
30-Sep-16	10:17	54	55	47	2.2	Cloudy	75	53.3 (43.6 - 61.3)	Y
07-Oct-16	10:19	53	54	50	3.6	Cloudy	75	53.3 (43.6 - 61.3)	Y
14-Oct-16	11:04	49	51	46	1.7	Sunny	75	53.3 (43.6 - 61.3)	Y
20-Oct-16	08:56	51	54	47	0.6	Sunny	75	53.3 (43.6 - 61.3)	Y
28-Oct-16	11:06	49	51	50	1.1	Cloudy	75	53.3 (43.6 - 61.3)	Y
04-Nov-16	10:44	58	58	57	2.2	Cloudy	75	53.3 (43.6 - 61.3)	Y
11-Nov-16	10:46	60	60	60	2.8	Cloudy	75	53.3 (43.6 - 61.3)	Y
18-Nov-16	10:37	56	58	53	5.0	Cloudy	75	53.3 (43.6 - 61.3)	Y
25-Nov-16	11:20	60	51	58	1.5	Cloudy	75	53.3 (43.6 - 61.3)	Y
02-Dec-16	11:34	54	57	49	2.2	Cloudy	75	53.3 (43.6 - 61.3)	Y
09-Dec-16	09:50	49	50	47	2.5	Cloudy	75	53.3 (43.6 - 61.3)	Y
16-Dec-16	10:37	54	55	51	2.8	Cloudy	75	53.3 (43.6 - 61.3)	Y
23-Dec-16	15:00	59	61	57	1.9	Cloudy	75	53.3 (43.6 - 61.3)	Y
30-Dec-16	15:27	58	59	57	2.5	Cloudy	75	53.3 (43.6 - 61.3)	Y
06-Jan-17	10:26	51	54	48	2.2	Cloudy	75	53.3 (43.6 - 61.3)	Y
13-Jan-17	10:34	62	63	59	2.2	Cloudy	75	53.3 (43.6 - 61.3)	N
20-Jan-17	15:19	68	72	48	2.8	Cloudy	75	53.3 (43.6 - 61.3)	N
26-Jan-17	10:30	59	59	57	2.5	Sunny	75	53.3 (43.6 - 61.3)	Y
10-Feb-17	10:39	58	59	57	2.8	Cloudy	75	53.3 (43.6 - 61.3)	Y
17-Feb-17	10:43	57	57	56	1.9	Cloudy	75	53.3 (43.6 - 61.3)	Y
24-Feb-17	10:35	56	58	53	2.8	Cloudy	75	53.3 (43.6 - 61.3)	Y
03-Mar-17	10:30	66	71	57	2.5	Sunny	75	53.3 (43.6 - 61.3)	N
10-Mar-17	10:39	58	58	50	2.5	Cloudy	75	53.3 (43.6 - 61.3)	Y
17-Mar-17	10:35	57	60	49	1.4	Cloudy	75	53.3 (43.6 - 61.3)	Y
23-Mar-17	10:39	58	59	57	1.9	Sunny	75	53.3 (43.6 - 61.3)	Y
29-Mar-17	15:04	56	59	51	3.6	Cloudy	75	53.3 (43.6 - 61.3)	Y
	Min	47							
	Mean	55							
	Max	68							

G. Monthly Waste Flow Table

Table G.1: Monthly Summary Waste Flow Table

Month	Actual Quantities of Inert C&D Materials Generated Monthly (in '000 m ³)										Actual Quantities of C&D Wastes Generated Monthly									
	Total Quantity Generated		Broken Concrete		Reused in the Contract		Reused in other Projects		Disposed of at Public Fill		Metals ('000 kg)		Paper/ Cardboard ('000 kg)		Plastics ('000 kg)		Chemical waste ('000 kg)		Others (e.g. refuse) ('000 m ³)	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
Apr-15	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
May-15	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Jun-15	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Jul-15	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Aug-15	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Sep-15	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Oct-15	-	0.0065	-	0	-	0	-	0	-	0.0065	-	0	-	0	-	0	-	0	-	0
Nov-15	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Dec-15	-	0.0189	-	0	-	0	-	0	-	0.0189	-	0	-	0	-	0	-	0	-	0
Sub-total	-	0.0254	-	0	-	0	-	0	-	0.0254	-	0	-	0	-	0	-	0	-	0
Jan-16	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Feb-16	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Mar-16	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Apr-16	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
May-16	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Jun-16	-	0.052	-	0	-	0	-	0	-	0.052	-	0	-	0	-	0	-	0	-	0
Jul-16	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Aug-16	-	0.020	-	0	-	0	-	0	-	0.020	-	0	-	0	-	0	-	0	-	0
Sep-16	-	0.013	-	0	-	0	-	0	-	0.013	-	0	-	0	-	0	-	0	-	0
Oct-16	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Nov-16	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Dec-16	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Sub-total	-	0.1104	-	0	-	0	-	0	-	0.1104	-	0	-	0	-	0	-	0	-	0
Jan-17	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Feb-17	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Mar-17	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Total	-	0.1104	-	0	-	0	-	0	-	0.1104	-	0	-	0	-	0	-	0	-	0

H. Complaint Log

Table H.1: Complaint Log for the Reporting Period

Log Ref.	Location	Complainant / Date of Contact	Details of Complaint	Investigation / Mitigation Action	File Closed
N/A	N/A	N/A	N/A	N/A	N/A

Note: No environmental complaint was received between September 2015 and March 2017.