

Interim Notifications of Environmental Quality Limits Exceedances

Incident Report on Action Level or Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	28-Oct-09
Time	1st measurement at 15:08 and repeat measurement at 15:38
Monitoring Location	Roof top of Greenview Terrace facing to the construction site (NSR 9)
Parameter	Daytime Construction Noise
Action & Limit Levels	When one documented complaint is received / 75 dB(A)
Measured Level	1st measurement = 76.6 dB(A) & Repeat measurement = 75.9dB(A), therefore it is the Limit Level Exceedance.
Possible reason for Action or Limit Level Non-compliance	Two possible reasons were identified for this exceedance. 1. One of the existing bamboo noise barrier was removed due to removal of the berm under this existing noise barrier. 2. Comparing with the previous noise monitoring results, number of PMEs were increased and the PMEs were also fully utilized simultaneously: a. One no. of small rock breaker for portal b. One no. of drilling rig for pre-bored H-piling and c. Two nos. of rock breaker at +24 mPD platform.
Actions taken / to be taken	Noise monitoring frequency would be increased from twice per week to at least three times per week. Noise monitoring would be tested and further assess whether any further exceedance occurs and the effectiveness of the remedial action after the proposed mitigate measures implemented by the Contractor.
Remarks	Under the Contractor's proposal for Noise Exceedance of Limit Level on 28 October 2009, proposal was reviewed and analysis of working procedures was carried out. Following mitigation measures would be implemented: (1) noise enclosure was used to cover the ceiling of the portal (2) scaffold of noise acoustic material was relocated (3) noise barriers will be placed as closer as the breaker and the drilling rig during operation and (4) in addition, the number of breakers would be reduced.

Prepared by: Terence Kong

Designation: Environmental Team Leader

Signature:



Date: 4-Nov-09

Remedial Proposal for Noise Exceedance of Limit Level on 28-Oct-09 Rev I

Background

EPD had carried out audit inspection for noise measurement on 28-Oct-09 and two exceedance found at below:

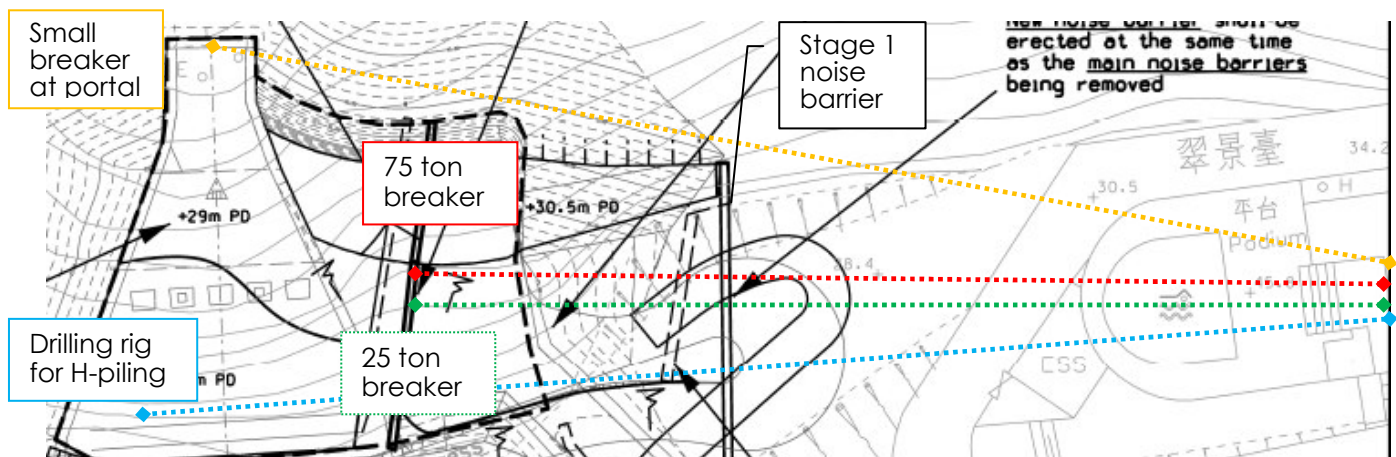
- NSR 9 – Greenview Terrace (Block 1)
- $Leq(30min)$ 76.6 dB(A) at 1508 hrs
- $Leq(30min)$ 75.9 dB(A) at 1538 hrs

Therefore, MCSJV is obliged to propose the following noise mitigation measures for the activities identified as the source of limit level exceedance as below (i.e. Portal work, pre-bored H-piling & rock breaking)

Investigation for the Source of Exceedance

The plants operated during the measurement as below:

1. One no. of small rock breaker for portal
2. One no. of drilling rig for pre-bored H-piling
3. Two nos. of rock breaker at +24 mPD platform



The approximate combined noise level is around 78 dB(A) if all plants fully utilized simultaneously. In addition, the 25 ton & 75 ton breakers did break the most hard rock and therefore relative noisy was expected. It was the first time all plants operated simultaneously without stoppage and rescheduling of plants. **It reflected that over use of plants was the major source to the exceedance.** The management and scheduling of plants have to be re-considered.

The other possible reason for the course is one of our noise barrier had been dismantled for breaking the berm underneath and the shielding effect by the remaining noise barriers had been diminished.

Remedial Proposal for Noise Mitigation

It was noted that the over use of plants was the major source to the exceedance. Therefore, the immediate action is to prevent the use of three breakers + drilling rig simultaneously. The analysis of the scenario of the noisy operation for the portal works & piping works & 24 platform rock breaking should be as follow:

1. Rock breaking or hole drilling for inserting chemical explosive agent at portal
2. Drilling for H-piling
3. Rock breaking at 24 platform and excavator for mucking out

The on-site Noise Mitigation Measures should be as follows:

- a. Use movable barrier to screen off the noise source by movable barrier closing to the drilling head as shown in Photo 1 & 2 (Not more than 2m from the noise source and the barrier facing to GVT). The line of sight from NSR to the drilling head had been blocked, see attached sketch.
- b. The combined noise level was found **72.9 dB(A)** refer to appendix B.
- c. A demarcation line by spray paint (as indicated in red in above) will be laid on site to delineate the pre-bored H piling and portal works
- d. A log sheet will be adopted to record the usage of PME by an Environmental Engineer. Proper record will be maintained on site for EPD checking
- e. The works areas for the drillers and the small breakers shall be confined to the areas (green at portal and blue for pre-bored H piling)
- f. All noise mitigation measures including the enclosure cover at ceiling of portal, movable noise barrier at opening of portal and movable noise barrier for driller shall be properly in place at all time during the drilling and rock breaking works
- g. The movable noise barrier for the driller shall be placed within 2 meters from the major noise emitting source of the driller and properly oriented to block the line of sight to the NSR at all time during the drilling works.

Photo no. 1 Movable barrier for Drilling rig





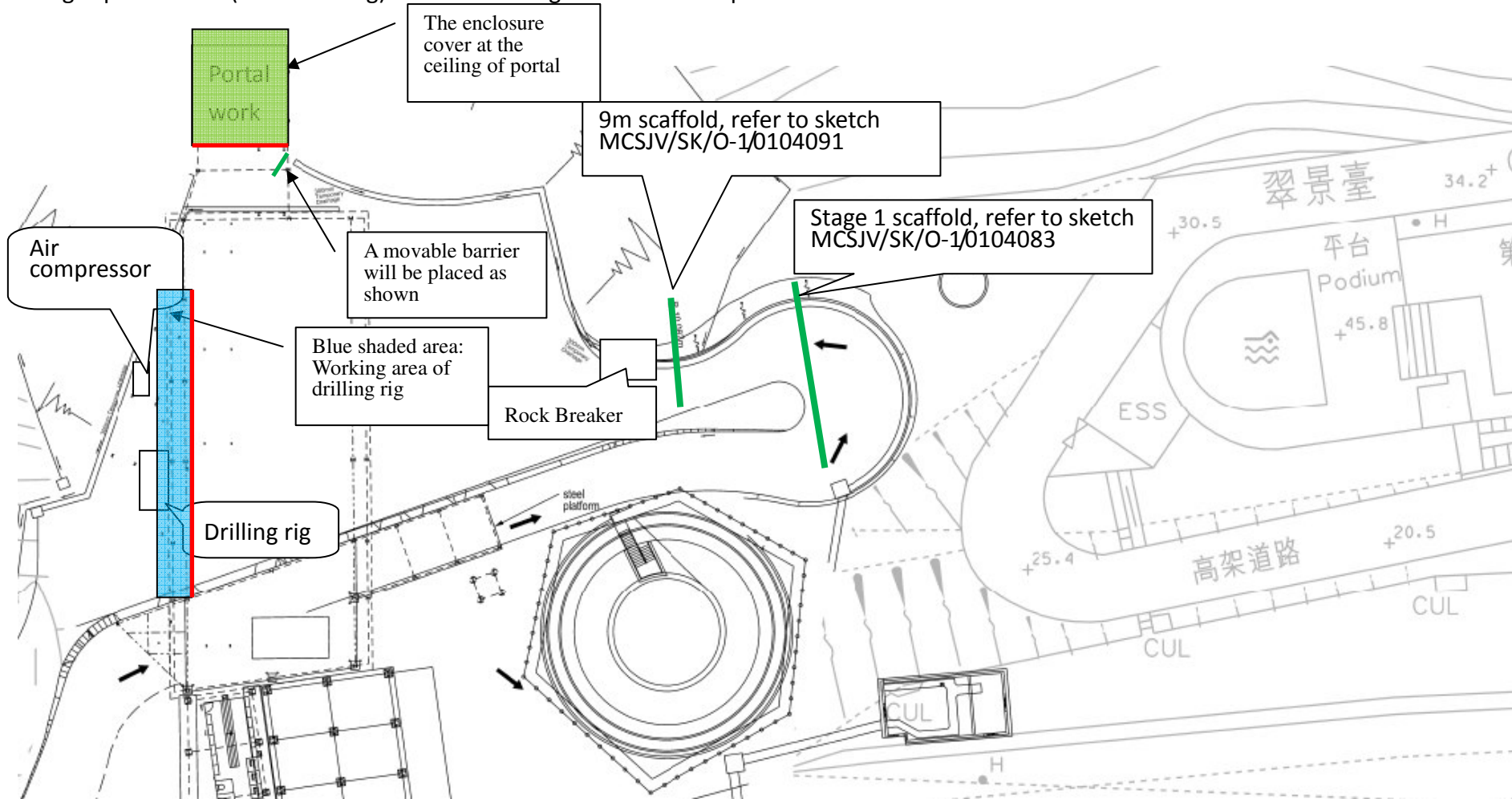
Photo no. 2 Movable barrier for Drilling rig

Proposed Noise Monitoring & Verification for Closure of the Exceedance Event

1. The mitigation measures will be implemented
2. The ETL will arrange noise monitoring for three days a week and last for a week. The monitoring duration should be 1 hour for each time.
3. If the readings are below $Leq_{30} 75$ dB(A), the noise monitoring will switch back to the frequency as described in EM&A manual and the exceedance event will be closed out.

Appendix A: Layout Plan

Piling & portal work (rock breaking) & Rock Breaking at middle of 24 platform



Interim Notifications of Environmental Quality Limits Exceedances

Incident Report on Action Level or Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	2-Oct-09
Time	N/A
Monitoring Location	Roof top of Greenview Terrace facing to the construction site (NSR 9)
Parameter	Noise
Action & Limit Levels	When one documented complaint is received / 75 dB(A)
Measured Level	N/A
Possible reason for Action or Limit Level Non-compliance	Daytime Construction works (Soil nailing, excavation, rock breaking and drilling, loading and unloading the materials)
Actions taken / to be taken	The documented complaint for noise is considered to trigger the action level and the Contractor was also reminded to enhance the on site noise mitigation measures continuously. Noise monitoring frequency would be proposed to increase twice per week by ET
Remarks	Please refer to the Complaint Investigation Report (CIR-010) attached for details.

Prepared by: Terence Kong

Designation: Environmental Team Leader

Signature:



Date: 3-Nov-09

Complaint Investigation Report

Contractor: Maeda – CREC – SELI Joint Venture	ET Received Date: 2 October 2009	Ref: CIR – 010
Project: Design and Construction of Tsuen Wan Drainage Tunnel		
COMPLAINANT		
Name: Mr. Lam, Greenview Terrace Property Management Office Tel: 2490 9680 Fax: 3426 9700	Address: No. 6 Castle Peak Road, Tsuen Wan, N.T.	
COMPLAINT INVESTIGATION		
Description (cause of impact, type of impact and location, etc.)		
<u>Details of the Complaint</u> A complaint (SOR ref: (DC/2007/12)/M45/500/02749) was received from Greenview Terrace regarding to daytime construction noise level ($L_{eq(30min)}$) was sometimes exceeded 75 dB(A) at the outfall construction site. The complaint date was corresponded to 24 September 2009.		
<u>Findings/ Observations</u> Regular daytime construction noise monitoring, in accordance with EM&A Manual are performed by Environmental Team. The monitoring station concerned is NSR9 (i.e. at the roof top of Greenview Terrace facing to the construction site). Soil nailing, excavation, rock breaking and drilling, loading and unloading the materials were generally observed during monitoring period in July and September 2009. The monitoring results from 6 July 2009 to 29 October 2009 at NSR 9 under EM&A requirements were summarised in the attached table. In accordance with EIAO-TM, the daytime construction noise limit is 75 dB(A) for NSR9. The measured noise levels complied with the limit level in accordance with the EIAO-TM. These cases would also be treated as an action level exceedance on noise and would be reported in next EM&A report. The Contractor and the Environmental Team were also undertaken site investigation on the subject area in response to Greenview Terrace's complaint. The mitigation measures during the site investigation were observed as follows: <u>Noise</u> <ul style="list-style-type: none">• Several layers of sound insulation sheets were installed at several locations of the site area.• Movable noise barriers were used to surround the breaking activities.• Noise insulation materials were used to enclose the breaking tip tightly.		
<u>Conclusion/Proposed Action</u> Based on our site inspection and monitoring results, no noise levels ($L_{eq(30min)}$) from the measurement taken from ET were exceeded 75dB(A). However, it was a recurrent case from Greenview Terrace. The Contractor was reminded to enhance the on-site noise mitigation measures. The enhanced mitigation measures have been implemented as follows: <ol style="list-style-type: none">1. A staff from the Contractor was designated to take the reading of L_{eq} (5mins) at the roof of Greenview Terrace. In case of the L_{eq} (5min) exceed 73 dB(A), the Contractor would re-schedule the noisy plants to mitigate the escalation of noise level.2. The designated staff was reminded to record all the weather condition including raining and wind speed.3. Tools box talk for Contractor's Team was carried out for reminding that the movable barrier should be placed to the breaking activities as much as possible.4. Several movable noise barriers had been placed on site and the movable noise barriers was modified.5. Existing 25 ton rock breaker had been replaced by the another breaker.6. The breaking tap of the 25 ton rock breaker had been replaced by another breaking tap.7. A joint filler wall was installed at the vertical face of westbound to mitigate the noise rebound from the vertical face to high level of Greenview Terrace.8. Noise monitoring frequency was increased twice per week.		

The frequency of noise monitoring was increased by ET. The additional measurement was taken on 10, 12, 15, 17, 28 August, 4, 11, 18, 25 September and 2, 6, 16, 23 and 31 October 2009. The noise levels ($L_{eq, 30 \text{ min}}$) were shown in the following table.

Date	Start Time	End Time	L_{eq} , dB(A)	Limit Level, dB(A)	Noise Sources
10-Aug-09	10:27	10:57	73	75	Breaker x 2, Backhoe x 1, Traffic Noise
12-Aug-09	09:57	10:27	74.1	75	Breaker x 2, Backhoe x 2, Traffic Noise
15-Aug-09	09:48	10:18	71.5	75	Breaker x 2 & Backhoe x 2, Traffic Noise
17-Aug-09	15:41	16:11	70.9	75	Breaker x 2, Backhoe x 2, Traffic and Aircraft Noise
28-Aug-09	14:34	15:04	73.5	75	Breaker x 2, Excavator x 1, Traffic and Aircraft Noise
4-Sep-09	10:20	10:50	72.8	75	Breaker x 1, Excavator x 1, Traffic Noise
11-Sep-09	09:50	10:20	71.9	75	Breaker x 1, Excavator x 1, Traffic Noise
18-Sep-09	09:40	10:10	71.9	75	Breaker x 1, Drilling Work, Excavator x1, Traffic Noise
25-Sep-09	15:40	16:10	74.8	75	Breaker x 1, Excavator x 1, Decoration at 14/F, Traffic Noise
2-Oct-09	09:40	10:10	73.7	75	Breaker x 1, Excavator x 1, Decoration at 14/F, Traffic & Aircraft Noise
6-Oct-09	09:45	10:15	71.2	75	Breaker x 1, Excavator x 1, Decoration at 14/F, Traffic & Aircraft Noise
16-Oct-09	14:32	15:02	71.8	75	Breaker x 1, Excavator x 1
23-Oct-09	09:15	09:45	72.0	75	Breaker x 1, Excavator x 1
31-Oct-09	15:01	15:31	67.6	75	Excavator x 1

Remark:

The location of PME will be changed on and off and the utilization time for each PME may not be in constant.

From the additional monitoring data above and the regular monitoring in the attachment under EM&A requirements, the measured noise levels were complied with the limit level in accordance with the EIAO-TM. From the noise level on 25 September 2009 and 2 October 2009, the trend of noise level seemed to be increased since the decoration work at 14/F Greenview Terrace was the domain noise source during the monitoring. The noise level during that time would be considered for reference only. There was no exceedance of the measured noise level at Greenview Terrace in our investigation.

FOLLOW UP ACTION (S)

ET will continuously review the condition of the site during the routine site inspections and provide reminder to the Contractor. The noise monitoring frequency would be maintained in twice per week. This case would be reported an action level exceedance on noise and also would be recorded in complaint log in the monthly EM&A report (October 2009).

Prepared & Confirmed by:

Name: Terence Kong (ET Leader)

Signature:



Date: 09 November 2009

ATTACHMENTS: Noise Monitoring Data from 6 July to 29 October 2009.

Noise Monitoring Data from 6 July 2009 to 29 October 2009

Monitoring Locations	Date	Weather Conditions	Temperature (°C)	Wind Speed (m/s)	Wind Direction	Start Time	End Time	Limit Level dB(A)	L _{eq(30min)} dB(A)	Observation / Site Condition	Remark
NSR 9 Greenview Terrace	06-Jul-09	Sunny	31	0.5	S	15:05	15:35	75	72.4	Soil Nailing,Excavation by backhoe	Traffic noise
	16-Jul-09	Sunny	32	0.3	E	10:05	10:35	75	71.4	Soil Nailing,Excavation by backhoe	Traffic noise
	22-Jul-09	Sunny	31	0.6	E	14:05	14:35	75	72.7	Soil Nailing,Excavation & Breaking by backhoe	Traffic noise
	28-Jul-09	Fine	30	0.5	E	15:18	15:48	75	71.4	Soil Nailing,Breaking by backhoe	Traffic noise, aircraft noise
	03-Aug-09	Sunny	27	0.9	E	15:13	15:43	75	72.3	Breaking by backhoe,excavation work	Traffic noise
	14-Aug-09	Cloudy	28	0.2	E	14:35	15:05	75	72.6	Drilling,Breaking by backhoe	Traffic noise, aircraft noise
	19-Aug-09	Cloudy	31	1.3	E	13:15	13:45	75	72.1	Drilling,Breaking by backhoe	Traffic noise, aircraft noise
	25-Aug-09	Sunny	32	0.8	E	10:25	10:55	75	73.0	Breaking by backhoe,excavation work	Traffic noise
	31-Aug-09	Sunny	33	0.5	E	10:10	10:40	75	73.5	Breaking by backhoe,excavation work	Traffic noise
	10-Sep-09	Sunny	31	0.5	E	09:55	10:25	75	69.9	Excavation work	Traffic noise
	16-Sep-09	Cloudy	27	0.5	E	15:30	16:00	75	71.2	Drilling work,Breaking by backhoe	Traffic noise, aircraft noise
	22-Sep-09	Sunny	30	0.5	E	14:38	15:08	75	73.2	Breaking by backhoe,excavation work	Traffic noise
	28-Sep-09	Cloudy	27	0.8	E	09:30	10:00	75	72.4	Breaking by backhoe,excavation work	Traffic noise
	08-Oct-09	Sunny	26	0.6	E	11:03	11:33	75	71.3	Breaking by backhoe,excavation work	Traffic noise, 14/F A (decoration)
	14-Oct-09	Cloudy	26	0.5	E	13:50	14:20	75	70.7	Breaking by backhoe,excavation work	Traffic noise
20-Oct-09	Cloudy	26	1	E	10:30	11:00	75	72.5	Breaking by backhoe,excavation work	Traffic noise	
29-Oct-09	Sunny	25	0.8	E	09:55	10:25	75	63.2	Excavation work	Traffic noise	