

Kowloon-Canton Railway Corporation

KCRC East Rail Extensions Sheung Shui to Lok Ma Chau

Monthly EM&A Report –
February 2004

March 2004

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EXECUTIVE SUMMARY

INTRODUCTION

This Report (in HTML format) is the twentieth Monthly EM&A Report for the Sheung Shui to Lok Ma Chau Spur Line and includes the Monthly EM&A Reports for construction contracts LDB201, LCC202 and LCC300. This Report and all monitoring data collected under the EM&A Programme are available on the KCRC East Rail Extensions Environmental Monitoring and Audit Website at www.env-ere.kcrc.com.

Further to the application of Variation of Environmental Permit (VEP) in December 2003, the Environmental Permit No. EP-129/2002/B was issued on 15 January 2004.

LDB201 Sheung Shui to Chau Tau Tunnels

The construction works for LDB201 commenced in late November 2002. This Report presents the EM&A findings in the period from 26 January to 25 February 2004. The main construction activities undertaken in the reporting month include:

- East Approach Area – San Wan Road & East Rail Area: 900mm diameter watermain diversion stage 2, ducting and trench for CLP cable diversion, hoarding between existing East Rail uptrack and WSD watermains, removal of ballasts on abandoned up and down tracks, pre-drilling for driving sheet piles for tunnel boxes, constructing retaining wall of noise barrier from Ch30+200 to Ch30+380, removal of abandoned OHL masts and footings along old up and down tracks, erection of additional movable protective frames and signal post S2411 at Ch30+900, and construction of access no. 1 at Ch30+200;
- Cut and cover cofferdam (near Sheung Shui Launching Shaft Area): Sheet piling work for cofferdam construction, PIP piling for ventilation building, pumping test and excavation, excavation and strutting in Cut & Cover Tunnel Box E cofferdam and diversion of a diameter-250 Golf Club water pipe;
- TBM Works area: Tunnel boring and lining, and regular maintenance of TBM;
- East EAP (EAP 2): Tunnel boring and lining in TBM Works Area, strut and Water installation, soil, boulder and rock excavation;
- West EAP (EAP 5): Diaphragm wall and guide walls trimming, capping beam construction and parapet wall construction, preparation work prior to excavation;
- Future Kwu Tung Station Enabling Works Area: 3rd Layer strut and waling dismantling, cut & cover box base slab, upstand beam, and column and north wall construction; and
- West Approach Area: Extraction shaft excavation, excavation and lateral support of cofferdam, installation of geotechnical instruments, sheet pile installation, and construction of tunnel box at Box A and Chau Tau Channel.

LDB201 conducted the routine monitoring works at these monitoring locations: AM1, AM2 and AM3 for air quality, NM1, NM1A, NM2, NM3, NM4, NM5, NM6, NM7, NM8, NM9, NM10, NM11 and NM12 for noise, and URS, SR1, URB, RB1, UCTC and CTC1 for water quality, in this reporting month.

24-hour TSP monitoring was conducted once every six days and three sets of 1-hr TSP monitoring were conducted once every six days at the monitoring locations. There were a number of Action and Limit Levels exceedances of TSP at the monitoring locations during the reporting month. These exceedances were likely due to the dry weather during the monitoring period. Nevertheless more frequent watering of unpaved areas was recommended by the contractor's Environmental Team Leader (CET Leader) to reduce the potential dust impacts.

Noise monitoring of $L_{eq(30min)}$ was conducted once every six days during non-restricted hours at the identified monitoring locations. There was no exceedance recorded in the reporting month.

Water quality monitoring was conducted at the identified water quality monitoring locations. Exceedances of suspended solids were recorded at River Beas monitoring locations in the reporting month. The exceedances were likely due to the cleaning up of riverbed by DSD's contractor which disturbed the natural sediment.

The excavated spoil was mainly generated from the shaft excavation at East EAP, TBM excavation, jet grouting works at Cross Passages and excavation at both East and West Cut & Cover Tunnels. These excavated spoils were disposed of to Kai Tak Public Filling Barging Point. Some of the excavated spoils were transferred to alternative sites for reuse including the works area under the EPD's Project of Development and Management of NENT Landfill and Contract LCC202 – West Section Alignment and Associated Works. All the disposal and transportation of waste were recorded under the four-page trip ticket system. Delivery and arrival time of the trucks were also recorded.

No complaint, warning or prosecution was received during the reporting month.

There were weekly site inspections carried out by the CET Leader and an IEC monthly site audit on 17 February. The Contractor has proposed mitigation measures to rectify the environmental deficiencies or improve the environmental performance in response to the non-compliances and observations raised by the CET Leader during weekly site inspection and the IEC during the monthly site audit. The proposed measures include more frequent watering of unpaved areas, the installation of drainage system according to the corresponding Drainage Layout and Management Plans (DLMPs), proper arrangement of wheel-washing area, hydroseeding, prompt collection of trip tickets, proper monitoring of surface channels, covering of stockpiles, relocating loose material near the contaminated area, cleaning up of sump pit, providing drip trays to oil drums, removing debris from sedimentation tank, sealing of hoarding and the removal of the pile of sediment inside Chau Tau Channel. The implementation and effectiveness of the corrective actions will be assessed during the next site audit.

LCC202 West Section Alignment and Associated Works

The commencement date for LCC202 started on 26 March 2003. This Report presents the EM&A works during the period from 25 January to 24 February 2004. Within this reporting month, the major construction works included pre-bored H-piling at P3, pre-bore drilling at W24-37 and W40-49, bored piling at P3, column construction at W24-37 and W40-49, as well as pile cap construction at W24-49. Construction Noise Permit (CNP) was obtained for the launching girder preparation for segment construction during the restricted hours and this was conducted from 25 January to 10 February 2004.

LCC202 conducted the routine monitoring works at these monitoring locations: AM4 for air quality, NM15 for noise, and FP2, USRT and STR1 for water quality, in this reporting month. As FP1 was found dry and FP3 was already filled for reedbed construction, no water quality monitoring was conducted at these two locations.

24-hour TSP monitoring was conducted once every six days and three sets of 1-hr TSP monitoring were conducted once every six days at the monitoring location. There was no exceedance recorded in the reporting month.

Noise monitoring of $L_{eq(30min)}$ was conducted once every six days during non-restricted hours at the identified monitoring location. There was no exceedance recorded in the reporting month.

Water monitoring was undertaken at USTR and STR1 at San Tin River, and the fishpond, namely, FP2. Exceedances on pH value and turbidity were recorded in this reporting month. The CET Leader conducted the site investigations on the cause of the exceedances. It was found that the exceedances were likely due to natural variation and other constructor's works conducted in the vicinity of the sampling locations. Moreover the nature of the monitoring locations were substantially changed comparing to the baseline monitoring period. Therefore the exceedances due to the works from LCC202 are unlikely.

There were about 2,250m³ of reusable excavated material transported from Pond 18 within LCC202 site to LFCC007 and about 906m³ of excavated material were delivered to the Government public fill barging point. About 14.88m³ of general refuse was collected by a licensed collector for disposal in the reporting month. All the disposal and transportation of waste were recorded under a trip ticket system.

No notification of summons or complaint was received during the reporting month.

The CET Leader carried out weekly site inspections and an IEC monthly site audit was conducted on 26 February. In response to the observations raised by the ET Leader and the IEC, the Contractor has proposed mitigation measures including taking part in cleaning the station access road, removing stagnant water, prompt removal of refuse skip, paying attention to site cleaning, providing drip tray to oil drum, cleaning up silty material, and relocating cement bags to enclosed area for storage. The implementation and effectiveness of the corrective actions will be assessed during the next site audit.

LCC300 Lok Ma Chau Station and Associated Works

The EM&A programme for LCC300 commenced in mid-December 2002. This report summarises the EM&A works conducted during the period from 26 January to 25 February 2004. During the reporting month the principal work activities included earth works for reedbed and surcharge areas, substructure and superstructure at the terminus area, construction of western channel outfall and Chau Tau Culvert, bored piling, pipe pile wall excavation, tree felling and trench excavation for utility works along the Emergency Access Road (EVA). In accordance to the new EP conditions, acoustic panels as specified in the Construction Noise Impact Assessment report under the EP should be provided. The installation of the acoustic panels was commenced in early February 2004.

LCC300 conducted the routine monitoring works at these monitoring locations: AM4 for air quality, NM13, NM14 and NM15 for noise, and two alternative water quality monitoring locations, namely, FPBBL1 and FPBBL2 for water quality, in this reporting

month. As FP3 was filled and no construction works of this contract is likely affecting the San Tin River, the alternative water quality monitoring locations which are located to the south of the terminus site were identified to replace FP3, STR1 and USTR. The proposal of the alternative water quality monitoring location was submitted to EPD for approval.

24-hour TSP monitoring was conducted once every six days and three sets of 1-hr TSP monitoring were conducted once every six days at the monitoring location. An Action Level exceedance of TSP was recorded during the reporting month. The exceedance was likely due to the hazy weather and the intensive earth works by Lok Ma Chau Crossing Improvement Works.

Noise monitoring of $L_{eq(30min)}$ was conducted once every six days during non-restricted hours at the identified monitoring locations. There was no exceedance recorded in the reporting month.

Water quality monitoring was conducted at the approved alternative monitoring locations. The action and limit levels were under review.

A small amount of general refuse and C&D materials were generated during the reporting month. They were transferred to the landfill site by a licensed collector. Recycling of used paper was undertaken. Recyclable materials, such as completely decomposed granite (CDG) from the Kai Tak public fill area, were also used on site.

No notification of summons was received during the reporting month. However two complaints were received regarding the construction dust emission and muddy condition at Lok Ma Chau Road. Investigation was undertaken and ETL has conducted site inspections more frequently to closely monitor the site condition and the environmental awareness of the subcontractors.

The CET Leader and the Engineer conducted regular site inspections and the IEC conducted a monthly site audit on 20 February during the reporting month. In response to the observations raised by the IEC during the site audit, the Contractor has instigated an action plan to rectify the inadequacies. The remedial actions included cement surfacing of slope, providing sand bags to stop surface runoff, hydroseeding of exposed slope, modifying acoustic panels according to the EP condition, cleaning up station access road on daily basis, reviewing the management of general rubbish, and installing sprinkler system at surcharge area. The implementation and effectiveness of the corrective actions will be assessed during the next site audit.

1 Introduction

Hyder has been commissioned by KCRC as the IEC for the East Rail Extensions, which include the Ma On Shan to Tai Wai Rail, the Hung Hom to Tsim Sha Tsui Extension and the Lok Ma Chau Spur Line. A requirement of the Contract is for the IEC to prepare a combined EM&A Report on a monthly basis for each of the above rail lines. The combined report combines the Monthly EM&A Reports for each of the construction contracts within each rail line. This Report (in HTML format) is the twentieth IEC Monthly EM&A Report for the Sheung Shui to Lok Ma Chau Spur Line and includes the Monthly EM&A Reports for construction contracts LDB201, LCC202 and LCC300 and a summary of the reports. It also includes a brief summary of the IEC Site Audits and information supplied by KCRC on Public Consultation activities.

2 IEC monthly site audits

IEC monthly site audits were conducted on 17 February for LDB201, on 26 February for LCC202 and on 20 February for LCC300. Non-compliances and observations issued by the IEC are based on the requirements of KCRC's Environmental Management System.

2.1 Contract LDB201

The IEC site audit for LDB201 was undertaken on 17 February. The main construction activities undertaken in the reporting month include:

- East Approach Area – San Wan Road & East Rail Area: 900mm diameter watermain diversion stage 2, ducting and trench for CLP cable diversion, hoarding between existing East Rail uptrack and WSD watermains, removal of ballasts on abandoned up and down tracks, pre-drilling for driving sheet piles for tunnel boxes, constructing retaining wall of noise barrier from Ch30+200 to Ch30+380, removal of abandoned OHL masts and footings along old up and down tracks, erection of additional movable protective frames and signal post S2411 at Ch30+900, and construction of access no. 1 at Ch30+200;
- Cut and cover cofferdam (near Sheung Shui Launching Shaft Area): Sheet piling work for cofferdam construction, PIP piling for ventilation building, pumping test and excavation, excavation and strutting in Cut & Cover Tunnel Box E cofferdam and diversion of a diameter-250 Golf Club water pipe;
- TBM Works area: Tunnel boring and lining, and regular maintenance of TBM;
- East EAP (EAP 2): Tunnel boring and lining in TBM Works Area, strut and Waler installation, soil, boulder and rock excavation;

- West EAP (EAP 5): Diaphragm wall and guide walls trimming, capping beam construction and parapet wall construction, preparation work prior to excavation;
- Future Kwu Tung Station Enabling Works Area: 3rd Layer strut and waling dismantling, cut & cover box base slab, upstand beam, and column and north wall construction; and
- West Approach Area: Extraction shaft excavation, excavation and lateral support of cofferdam, installation of geotechnical instruments, sheet pile installation, and construction of tunnel box at Box A and Chau Tau Channel.

Two non-compliances and eleven observations were raised during the site audit:

Non-compliances

West Tunnel Area (Area B), Kwu Tung, East EAP and TBM Temporary Spoil Basin

1. Although the some areas were cleaned up, some surface channels and perimeter channels were still full of silt. The condition of the channels should be closely monitored and cleaned up as necessary. Moreover the sump pit near the stockpiling area of Kwu Tung was already full of silt. Cleaning up should also be done as soon as possible.

West Tunnel Area

2. The sediment and vegetation from clearing of Chau Tau Channel were piled up in the Channel. Immediate removal of these materials from the channel is necessary.

Observations

East Approach CH30+050 – CH30+659

3. Dusty ground was observed.

East Approach Cut-and-Cover area and Cross Passage CP8

4. The installation of drainage channels for surface runoff could not be clearly identified on site. The CET Leader is advised to check the installation against the DLMPs.

East Approach Cut-and-Cover area Ch30+659 and West Tunnel Approach (Box B)

5. The backfall at the site exit was insufficient. There was potential runoff flowing outside the site. Washing water should be diverted to the sedimentation system.

West Tunnel Approach (Area B) and TBM Temporary Spoil Basin

6. Stockpiles were not entirely covered.

West Tunnel Approach (Area B)

7. Stockpile of soil was too close to the contamination area.

West Tunnel Approach (Box C)

8. Oily sump pit was observed near the wheel washing area.
9. Drip tray was not provided to oil container.
10. Floating object was observed in a sedimentation tank. Cleaning up is necessary.

Cross Passage CP8

11. The bottom of site hoarding was not sealed properly.

Kwu Tung

12. Some patches of grass slope were already worn away and need to be seeded again.
13. The white forms of the trip ticket for 2 February 2004 were still not received from sub-contractors during the IEC site audit. Trip tickets should be collected from sub-contractors within the week.

As a result of the non-compliances and the observations raised by the IEC the contractor has proposed mitigation measures which include more frequent watering of unpaved areas, the installation of drainage system according to the corresponding Drainage Layout and Management Plans (DLMPs), proper arrangement of wheel-washing area, hydroseeding, prompt collection of trip tickets, proper monitoring of surface channels, covering of stockpiles, relocating loose material near the contaminated area, cleaning up of sump pit, providing drip trays to oil drums, removing debris from sedimentation tank, sealing of hoarding and the removal of the pile of sediment inside Chau Tau Channel. The implementation and effectiveness of the corrective actions will be assessed during the next site audit.

2.2 Contract LCC202

The IEC site audit for LCC202 was undertaken on 26 February 2004. The major construction works include pre-bored H-piling at P3, pre-bore drilling at W24-37 and W40-49, bored piling at P3, column construction at W24-37 and W40-49, as well as pile cap construction at W24-49. A Construction Noise Permit (CNP) was obtained for the launching girder preparation for segment construction during the restricted hours and this was conducted from 25 January to 10 February 2004. Ten observations were raised during the site audit:

Observations

Station access road

1. Stagnant water pond and silty surface were observed. Proper cleaning up and coordination with LCC300 are necessary.

Pier W52

2. Concrete surface which was not well-finished was observed next to W52. Contractor should investigate where this was done for construction purpose or is concrete waste.

Pier W50

3. Stagnant water pond was observed near the exit
4. The refuse skip was already very full. Prompt removal of the skip of refuse should be arranged.
5. Rubbish was observed on site. The contractor should pay attention to their housekeeping.

LFCC007 site entrance

6. An oil drum without the provision of drip tray was observed.

Pier W24

7. Oil spillage was observed. Proper clean up is necessary.

Area P3

8. Silty material was accumulated beside the sedimentation tank near the discharge point. Clean up is necessary to avoid washing into the watercourse during the rain.
9. Over 200 bags of cement were delivered to site. However no enclosure for these bags of cement was observed on site.

Station access road

10. The silty bund along the fence near the wheel-washing bay was still observed.

As a result of the observations raised by the IEC, the contractor has proposed mitigation measures including taking part in cleaning the station access road, removing stagnant water, prompt removal of refuse skip, paying attention to site cleaning, providing drip tray to oil drum, cleaning up silty material, and relocating cement bags to enclosed area for storage. The implementation and effectiveness of the corrective actions will be assessed during the next site audit.

2.3 Contract LCC300

The IEC site audit was conducted on 20 February 2004. The major construction works include earth works for reedbed and surcharge areas, substructure and superstructure at the terminus area, construction of western channel outfall and Chau Tau Culvert, bored piling, pipe pile wall excavation, tree felling and trench excavation for utility works along the Emergency Access Road (EVA). Six observations were raised during the site audit:

Observations

Chau Tau culvert

1. Loose soil was observed at the slope and near the old channel. Compaction or other mitigation measures should be implemented to avoid washing off of soil into the watercourse.

Police Check Point

2. The slope was not entirely covered with tarpaulin sheets.

Lok Ma Chau Road

3. The EP requirements of the acoustic panels for the PME were not fully implemented yet.

Station access road – area B (near Ha Wan Channel Bridge)

4. Muddy road was observed. Proper cleaning up and checking are required.

Terminus site area

5. General refuse was observed on site. More rubbish bins should be provided if necessary. Instruction should be given to workers.
6. Surcharge for sewage treatment plant was not covered. Watering or covering with tarpaulin sheet is necessary.

In response to the observations raised by the IEC, the Contractor has proposed some improvement measures including cement surfacing of slope, providing sand bags to stop surface runoff, hydroseeding of exposed slope, modifying acoustic panels according to the EP condition, cleaning up station access road on daily basis, reviewing the management of general rubbish, and installing sprinkler system at surcharge area. The implementation and effectiveness of these measures will be assessed and verified during the next site audit.

3 Public Consultation

No public consultation was conducted in the reporting month.
