

Kowloon-Canton Railway Corporation

# KCRC East Rail Extensions Sheung Shui to Lok Ma Chau

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Monthly EM&A Report –  
December 2003

January 2004

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## EXECUTIVE SUMMARY

### INTRODUCTION

This Report (in HTML format) is the eighteenth 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](http://www.env-ere.kcrc.com).

### 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 November to 25 December 2003. The main construction activities undertaken in the reporting month include:

- East Approach Area – San Wan Road & East Rail Area: Installation of Saint Andrew's Cross at south of Sheung Shui Station, cable trough for CLP cable diversion, hoarding between existing East Rail uptrack and WSD watermains, change over of TTMS from stage 4A to 4B, compensatory tree planting phase 1 between East Rail downtrack and DSD Sewage Treatment Plant, and Removal of abandoned OHL masts and footings next to old downtrack.
- Cut and cover cofferdam (near Sheung Shui Launching Shaft Area): sheet piling work for cofferdam construction; installation of king posts; GI and installation for pumping tests, and temporary steel deckings for site access to cut & cover tunnel;
- TBM Works area: Tunnel boring and lining, regular maintenance of TBM;
- East EAP (EAP 2): Shaft excavation, strut and water installation, D-wall overbreak trimming and surface grinding;
- West EAP (EAP 5): Shear pin installation, D-wall water pumping test and toe grouting;
- Future Kwu Tung Station Enabling Works Area: Shaft excavation, strut installation and dismantling, and cut & cover box base slab construction; and
- West Approach Area: Breaking top portion of D-wall, H-pile foundation of WPVB, excavation and lateral support of cofferdam, sheet pile installation, construction tunnel box at Box A1 and Chau Tau channel construction.

LDB201 has undertaken 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. Hydrological monitoring at Gates 1, 2, 3 and 4, and water quality monitoring at LVW1, LVW2, LVW3, LVW4, LVW5, LVS1 and LVS2 in Long Valley was also monitored when TBM was passing under Long Valley.

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 poor ambient weather condition 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. No exceedance was recorded in the reporting month.

The excavated spoil was mainly generated from the diaphragm wall construction at East EAP, TBM excavation, excavation works at Future Kwu Tung Station Box and West Cut & Cover Tunnels. These C&D waste were disposed of to Kai Tak Public Filling Barging Point. 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, DSD's project of the construction of San Tin Eastern Main Drainage Channel and a Housing Authority project of the construction of Fanling Area 36, Phase 3 and KCRC ERE LCC202 – West Section Alignment and Associated Works. All the disposal and transportation of waste were recorded under the four-page trip ticket system.

No warning or prosecution was received during the reporting month. However a public complaint and one pink notice from EPD were received. The public complaint was related to the cracks inside the complainant's house and noise and vibration nuisance due to the piling works at Chau Tau site. The sub-contractor's representative proposed to investigate the vibration level due to the piling works and noise measurement will be undertaken. The sub-contractor will communicate with the village representatives.

There were weekly site inspections carried out by the CET Leader and an IEC monthly site audit on 19 December 2003. The Contractor has proposed mitigation measures to rectify the environmental deficiencies or improve the environmental performance in response to the observations raised by the CET Leader during weekly site inspection and the IEC during the monthly site audit. The proposed measures include cleaning up of perimeter channels more frequently, closely monitoring the discharge from the perimeter channel, providing bund to avoid washing off the silt into the channel, and providing clear indication of contaminated area. 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 26 November to 25 December 2003. Within this reporting month, 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 W24-37, W40-49 and W50-57. No works were conducted during restricted hours.

LCC202 has undertaken the routine monitoring works at these monitoring locations: AM4 for air quality, NM15 for noise, and FP1, FP2, USRT and STR1 for water quality, in this reporting month.

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.

Exceedances were recorded on 8 December in this reporting month. Dust from the excavation works and truck movement were likely the dominant dust sources.

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 two selected fishponds, namely, FP1 and 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 1,470m<sup>3</sup> of reusable excavated material transported from LCC202 site to LFCC007 and about 59.48 m<sup>3</sup> of general refuse collected by a licensed collector for disposal in the reporting month. All the disposal and transportation of waste were recorded under the trip ticket system.

No notification of summons or complaint was received during the reporting month. However a yellow notice was received during the site inspection of EPD regarding the unsatisfactory discharge at P3 site. The silty discharge was likely due to the deposition of silt along the perimeter channel and sump pits. The condition was rectified and the operation of the sedimentation system was satisfactory during the CET weekly site inspection and the IEC monthly site audit.

The CET Leader has carried out weekly site inspections and an IEC monthly site audit has been conducted on 18 December 2003. In response to the non-compliances and the observations raised by the ET Leader and the IEC, the Contractor has proposed mitigation measures including cleaning up the box culvert and channels, putting the pond mud and the marine deposit on the same place being stopped immediately, returning concrete waste for recycling, managing all concrete lorry washing at Area P3, providing desilting tank for wheel washing wastewater, minimising the use of fishpond and removing concrete waste from the refuse skip. 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 November to 25 December 2003. During the reporting month the principal work activities include earth works, the operation of the western channel outfall, site investigation, bored piling, tree transplantation, trench excavation for utility works along the Emergency Access Road (EVA). Pipe-pile work was undertaken along Lok Ma Chau Road during the reporting month.

LCC300 has undertaken the routine monitoring works at these monitoring locations: AM4 for air quality, NM13, NM14 and NM15 for noise, and USRT and STR1 for water quality, in this reporting month. Due to the sand filling works at FP3, alternative water quality monitoring location was identified to replace FP3 and the proposal of alternative water quality monitoring location has been submitted to EPD for approval.

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. No exceedance was recorded at the monitoring locations in this reporting month.

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 one upstream station USTR, and one downstream monitoring location STR1 at San Tin River. There were limit level exceedances of pH value and SS recorded at STR1 during the reporting month. However further to the site inspection conducted by the CET Leader, there was no LCC300 construction activity undertaken in proximity to the monitoring locations. It is unlikely that the exceedances were related to LCC300 construction works. The impact from adjacent contractor's works is a possible cause of the exceedances.

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 is undertaken.

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

The CET Leader and the Engineer have conducted regular site inspections and the IEC has conducted a monthly site audit on 17 December 2003 during the reporting month. If the observations raised by the CET Leader and IEC are rectified, these would result in the improvements in the review and the reinforcement of good housekeeping at sub-contractors' level, relocation of the concrete washing area, provision of covering and watering for stockpiles, review of the route of water browser and provision of extra refuse skip. The implementation and effectiveness of the corrective actions will be assessed during the next site audit.

# 1 Introduction

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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 eighteenth 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

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IEC monthly site audits were conducted on 19 December for LDB201, on 18 December for LCC202 and on 17 December 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 19 December. The main construction activities undertaken in the reporting month include:

- East Approach Area – San Wan Road & East Rail Area: Installation of Saint Andrew's Cross at south of Sheung Shui Station, cable trough for CLP cable diversion, hoarding between existing East Rail uptrack and WSD watermains, change over of TTMS from stage 4A to 4B, compensatory tree planting phase 1 between East Rail downtrack and DSD Sewage Treatment Plant, and Removal of abandoned OHL masts and footings next to old downtrack.
- Cut and cover cofferdam (near Sheung Shui Launching Shaft Area): sheet piling work for cofferdam construction; installation of king posts; GI and installation for pumping tests, and temporary steel deckings for site access to cut & cover tunnel;
- TBM Works area: Tunnel boring and lining, regular maintenance of TBM;
- East EAP (EAP 2): Shaft excavation, strut and water installation, D-wall overbreak trimming and surface grinding;
- West EAP (EAP 5): Shear pin installation, D-wall water pumping test and toe grouting;



- Future Kwu Tung Station Enabling Works Area: Shaft excavation, strut installation and dismantling, and cut & cover box base slab construction; and
- West Approach Area: Breaking top portion of D-wall, H-pile foundation of WPVB, excavation and lateral support of cofferdam, sheet pile installation, construction tunnel box at Box A1 and Chau Tau channel construction.

Four observations were raised during the site audit:

#### Observations

##### Kwu Tung and Temporary Spoil Basin

1. The perimeter channel near DSD channel in Kwu Tung site and the perimeter channel near the temporary spoil basin were silty. More frequent cleaning up is necessary.

##### West Tunnel Approach

2. Soil and rock formed a bund along the verge of Chau Tau Channel. The bund should be compacted or paved with concrete to avoid washing off or fall off of soil into the channel.

##### Kwu Tung

3. Ground water discharged into the perimeter channel was eventually discharged into the sump pit. Overflow of sump pit was observed. Although the ground water is clean, close monitoring is necessary to prevent any discharge of silty water.

##### West Approach Area

4. Clear indication of the boundary of the contaminated area should be provided and the area for storage should be avoided.

As a result of the observations raised by the IEC the contractor has proposed mitigation measures which include cleaning up of perimeter channels more frequently, discharge from perimeter channel to be closely monitored, providing bund to avoid washing off the silt into the channel, and providing clear indication of contaminated area. 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 18 December. 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 W24-37, W40-49 and W50-57. Three non-compliances and five observations have been raised during the site audit:

### Non-compliances

#### W38 - W39

1. Silty washing water was flowing into Ha Wan Channel.

#### Pond 18

2. No segregation of pond mud and marine deposit was observed. These two types of waste were mixed at the same stockpile location.

#### W51

3. Residue of concrete waste from concrete washing was still observed on site. Designated washing area at Ha Wan Tsuen should be provided and proper management of lorry drivers should be performed.

### Observations

#### W27

4. Silty wastewater from drilling works was not contained or reused properly. Silty wastewater was seeping through the rock bund and discharging into the stagnant water body.

#### W38 - W39

5. Wheel washing water was directed to a fishpond nearby. The washing water should be contained in a sedimentation tank.

#### W27 – W28

6. Box culvert was silty. More frequent removal of silt is necessary.

#### Pond 18

7. Fishpond filling should be minimized as far as possible.

#### W51

8. Concrete waste was observed in a refuse skip. Concrete waste should be reused where possible. Segregation of waste is necessary.

As a result of the non-compliances and observations raised by the IEC, the contractor has proposed mitigation measures including cleaning up the box culvert and channels, putting the pond mud and the marine deposit on the same place being stopped immediately, returning concrete waste for recycling, managing all concrete lorry washing at Area P3, providing desilting tank for wheel washing wastewater, minimising the use of fishpond and removing concrete waste from the refuse skip. 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 17 December. The major construction works include earth works, the operation of the western channel outfall, site investigation, bored piling, tree transplantation, trench excavation for utility works along the Emergency Access Road (EVA). Pipe-pile work was

undertaken along Lok Ma Chau Road during the reporting month. Five observations were raised during the site audit:

#### Observations

##### Main Site

1. Plastic bottles on the ground and plastic bags in a fishpond were observed.
2. Residue of concrete washing was observed near the desilting pond. Designated area for concrete washing should be provided on site.

##### EVA

3. Stockpiles were not watered or covered.
4. Rubbish bin/skip was not provided at the section near border road (Area C).

##### Lok Ma Chau Road

5. Dusty road was observed at the junction.

In response to the observations raised by the IEC, the Contractor has proposed some improvement measures including the review and the reinforcement of good housekeeping at sub-contractor's level, relocation of the concrete washing area, provision of covering and watering for stockpiles, review of the route of water browser and provision of extra refuse skip. The implementation and effectiveness of these measures will be assessed and verified during the next site audit.

## 3 Public Consultation

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No public consultation was conducted in the reporting month.

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