

Contract No. : DE/99/12
Outlying Islands Sewerage – Stage 1 Phase 1
Upgrading of Siu Ho Wan Sewage Treatment Plant
– E&M Works

ENVIRONMENTAL MONITORING AND AUDIT
MONTHLY EM&A REPORT No. 7

BioEnviroLink Technologies Limited
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EXECUTIVE SUMMARY

This is the seventh monthly Environmental Monitoring and Audit (EM&A) Report for the Drainage Services Department Contract No. DE/99/12 entitled “Upgrading of Siu Ho Wan STP – E&M Works Outlying Islands Sewerage – Stage 1 Phase 1C”. (Environmental Permit No. EP-076/2000)

This report contains the results and findings of site inspection activities and EM&A works carried out by the Environmental Team (ET) of the E&M Contractor as required in the contract during December 2003.

The site activities in the reporting period mainly consisted of installation of centrifuge feed pumps and pipework at centrifuge pump area of Centrifuge Building, anionic polymer stock tanks, preparation unit and pipework at Chemical Building, building services, electrical equipment and HVAC system air ductwork at Administration Building, as well as bottom rails for scraper and drive chain for scraper motor at Primary Tanks.

Ponding water was still seen in the hoppers of the Primary Tanks during the site inspections of 4, 11, 18 and 27 December 2003 and the remedial actions taken such as installation of pumping facilities were considered insufficient. C&D and Chemical waste storage facilities have been provided at site. EPD inspected the site on 17 December 2003 and commented that the stockpiles of excavated materials of the cable trenches were not covered properly and more regular watering of the open area of the Primary Tank should be provided to avoid generation of excessive dust. It has been monitored in the reporting period that the follow up actions taken were not satisfactory.

There were no complaints received or notifications of summons or successful prosecutions during December 2003.

The main planned activities for January 2004 with regard to E&M equipment installation consist of

1. Installation of centrifuge feed pumps and pipework at centrifuge pump area of Centrifuge Building
2. Installation of cationic polymer stock tanks, preparation unit and pipework at polyelectrolyte area of Centrifuge Building

3. Installation of anionic polymer stock tanks, preparation unit and pipework at Chemical Building
4. Installation of building services, electrical equipment and HVAC system air ductwork at Administration Building
5. Installation of bottom rails for sprocket and drive chain for scraper motor at Primary Tanks
6. Installation of sludge transfer pump and pipework at Sludge Transfer Chamber
7. Installation of grit pump and pipework at Grit Pumping Station
8. Installation of Anchor bolts for odour duct & cable bridge at Sludge Buffer Tanks
9. Installation of cable trays and accessories at Cable Trench
10. Installation of return liquor pumps & pipework at Return Liquor P/S
11. Installation of HV cables and accessories at Excavation Trench
12. Installation of control panel support in Centrifuge Building, MCC & Control Room
13. Installation of odour plant, including electrical installation & cable wiring
14. Installation of Detritor & Motor Bridge
15. Installation of runways for A-frame overhead crane on Primary Tanks

1. BACKGROUND INFORMATION

1.1 Introduction

This is the seventh monthly Environmental Monitoring and Audit (EM&A) Report for the Drainage Services Department Contract No. DE/99/12 entitled “Upgrading of Siu Ho Wan STP – E&M Works Outlying Islands Sewerage – Stage 1 Phase 1C”. The site layout plan, with the indication of a temporary storage of installation items as well as the designated waste storage area, is shown in Appendix 1. The report was prepared by the Environmental Team, BioEnviroLink Technologies Limited, of the E&M Contractor, Mitsubishi Corporation (Hong Kong) Limited. The report is to be submitted to the Contractor, the Engineer and the Environmental Protection Department.

This report presents the results of the environmental monitoring of the project activities conducted during the month of December 2003. This included regular site inspections once per week for verification of implementation of the mitigation measures as recommended in the EM&A Manual.

The E&M installation works has already commenced in June 2003 and is anticipated to be completed on 11 October 2004.

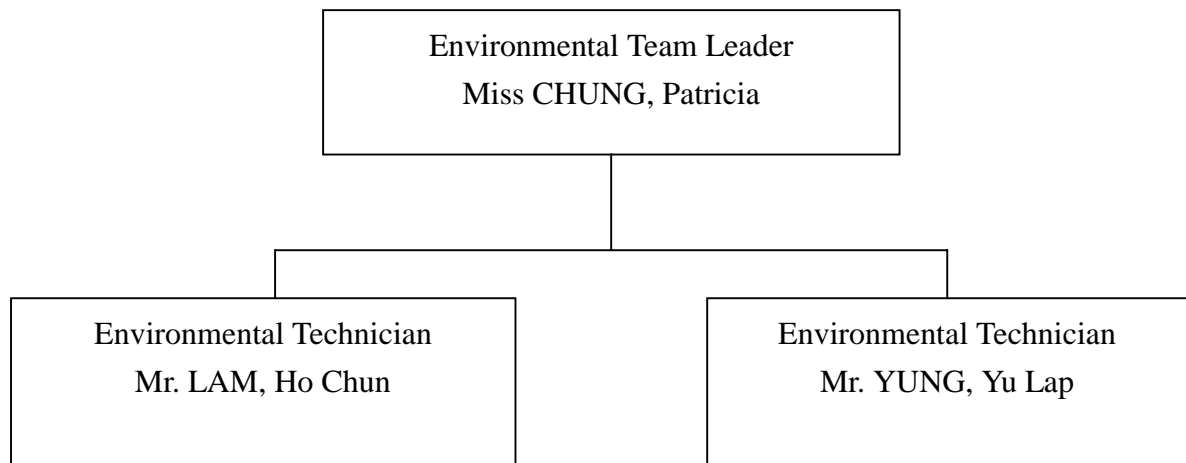
The contact persons and telephone number of key personnel for the captioned project are shown in Appendix 2.

1.2 Project Organization and Management

The Environmental Team, which comprises the environmental team leader and the environmental technicians to undertake the environmental monitoring and audit work for this project, has commissioned BioEnviroLink Technologies Limited. The project Organization Chart of Environmental Team is shown in Figure 1.2.

Figure 1.2 Organization Chart of Environmental Team

Environmental Team Organization Chart



2. SUMMARY OF WORK ACTIVITIES

A summary of the site works in this month, with the information of locations, details of each activity, equipment/materials and dates of occurrence, is listed in Table 1.

Table 1: Work Activities for December 2003

Item	Location	Work Activities	Date of Occurrence
1	Primary Tank	- Checking of civil works for tank bottom profile - Installation of bottom rails for scraper - Installation of drive chain for scraper motor - Setting out of the 3T overhead crane	8 – 31 December 8 – 31 December 8 – 31 December 1 – 31 December
2	Chemical Building	- Setting out & installation of electrical services - Installation of Anionic Plymer Stock Tanks, Preparation Unit & Pipework - Installation 1/2 Toverhead crane & hoist - Weld test of 1/2 T overhead crane runaway beam	8 – 31 December 2003 1 – 31 December 2003 1 – 31 December 2003 8 – 31 December 2003
3	Centrifuge Building	- Installation of centrifuge feed pumps and Pipework at centrifuge pump area - Installation of Cationic Polymer Stock Tanks, Preparation Unit & Pipework - Setting out and installation of electrical services - Installation of rail & baseplate set for Sludge rail train system - Installation of fast rolling doors	1 – 31 December 2003 1 – 31 December 2003 1 – 31 December 2003 8 – 31 December 2003 8 – 31 December 2003
4	Administration Building	- Installation of building services and electrical equipment - Installation of chiller unit & associated pipework - Installation of HVAC system air ductwork - Installation of fire services system	1 – 31 December 2003 8 – 31 December 2003 1 – 31 December 2003 1 – 31 December 2003
5	Sludge Buffer Tanks	- Installation of anchorage for Odour Dust & Cable Bridge - Installation of portable davit & baseplate	8 – 31 December 2003 8 – 31 December 2003
6	Detritor	- Installation of Grit pump - Installation of slewing jib crane	8 – 31 December 2003 8 – 31 December 2003

3 IMPLEMENTATION OF WASTE MANAGEMENT PLAN

A Waste Management Plan has been prepared for governing a good waste management, which is essential to avoid, minimize, salvage for reuse, recycle, dispose of waste and reduce the load on landfills to improve the standards of environmental protection.

The information and the implementation status of waste management are summarized in Table 2.

Table 2: Information and the implementation status of
 Waste Management in December 2003

Information of Waste Management Plan	Implementation Status	Remarks
<p><u>Municipal Solid Waste Management</u> Sorting and classification of aluminum cans, plastics are required at site. Paper and cardboard generated from site office should be reused or recycled.</p>	<p>Sorting and classification of municipal solid waste are available at work site. Waste sorting facilities (bins) are provided.</p>	<p>Collection of municipal solid waste has been carried out since September 2003.</p>
<p><u>Construction & Demolition (C&D) Waste Management</u> Waste sorting and classification by using a 100 m² sorting shed at site are required.</p>	<p>Waste dumper for temporary storage of C&D Waste are provided.</p>	<p>C&D Waste has been appropriately handled since 14 October 2003.</p>
<p><u>Chemical Waste Management</u> A licensed chemical waste collector is engaged for collecting the chemical wastes generated from this project. Storage facilities must follow the Code of Practice.</p>	<p>No chemical waste was generated in December 2003. The E&M Contractor has registered with EPD as chemical waste producer. Chemical waste storage enclosure was provided in September located near the site office.</p>	<p>The permit has been issued in September. Proper label and signage for Chemical waste storage enclosure and container(s) are provided.</p>
<p><u>Disposal and Recording</u> A complete record, in the format of compiled logbook is maintained for every vehicle trip transporting C&D materials. Adequate record of recycled and reused waste materials must be well kept.</p>	<p>Adequate record forms for recycled & reused waste materials for municipal waste are available and are in proper use. C&D wastes generated at site have been recorded and filed adequately.</p>	<p>C&D waste collector was arranged to collect the wastes on 17 November 2003. C&D wastes such as timbers are reused at site.</p>

4 STATUS OF ENVIRONMENTAL PROTECTION AND SITE INSPECTIONS

4.1 Site Inspections

The ET leader and the ET technician conducted four site inspections on 4, 11, 18 and 27 December 2003.

All environmental aspects in the work areas were inspected during the weekly site walk, including air dust, surface water quality, waste management, site tidiness and hygiene.

A detailed checklist of each site inspection together with comments, relevant photos and maps have been filed and kept in site office.

The findings and results of site inspections in December 2003 are provided in Section 4.2.

4.2 Status of Environmental Protection

Air Dust

Stockpile of excavated material were accumulated while dredging trenches for cable installation. The contractor has utilized plastic sheets to cover the bare soil. However, the plastic sheets were either not large enough or not secured to prevent generation of excessive dust. Furthermore, the stockpiles of soil along the cable trenches besides the Flowmeter Chamber and the Buffer Tanks were mostly not covered.

In order to comply with the Air Pollution (Construction Dust) Regulation, the contractor had arranged water truck to spray water for dust suppression at least twice a day. However, the frequency of watering was not maintained as scheduled and excessive dust was noted during very dry and windy days.

Surface Water Quality

In general, the E&M installation work does not cause significant environmental impact on surface water.

Ponding water was still seen in the hoppers of the Primary Tanks during the site inspections despite that there was little rainfall in December. It appeared that the contractor did not remove all the ponding water as requested after site inspections.

Two chemical toilets have been provided by a licensed contractor, of which sewage generated is collected weekly without causing contamination on surface water. Weekly records are kept properly for each sewage collection.

A wastewater discharge permit has been issued effective since 29 November 2003.

Noise

All installation activities were being carried out within normal working hours during November 2003. There are no existing sensitive receivers identified in the vicinity of Siu Ho Wan works. A noise permit for working during restricted hours has been issued effective since 26 September 2003.

Waste / Chemical Waste

Site activity has started in June 2003. No chemical waste was produced at site up to December 2003.

A designated waste storage area is provided for the storage of general wastes and C&D wastes, as specified in the waste management plan. An adequate chemical waste storage enclosure and containers for storage of chemical wastes in accordance with WMP have already been provided on-site (See Appendix 1). A C&D waste dumper has been provided since October 2003 for the disposal of C&D waste. The follow-up work for proper handling of chemical wastes has been carried out in December.

Sorting and classification of municipal solid wastes have been carried out at work site during December 2003. Properly labeled waste collection bins are available for sorting and collecting aluminum cans, waste paper and plastic bottles.

Information of recycled and collected wastes (for the month of December 2003) are summarized as follows:

Types of wastes		Estimated quantity
Municipal	Paper	3.0 kg
Municipal	Aluminum Cans	115 pcs
Municipal	Plastic Bottles	34 pcs
C&D Waste	Timber	4.81 tonnes

The Municipal wastes are temporarily stored in the sorting bins at site whereas C&D wastes, such as timber, are reused on-site. Records of recycled and collected wastes are properly kept and filed at site.

Registered waste collectors, as listed in the following table, have been arranged to collect and transport the wastes whenever necessary.

Type of Wastes	Collector Company Name	Tel No.
Municipal wastes	Luen Hop Environment Dev. Ltd.	6083 3208
C&D wastes	Strong Base Environmental Services & Engineering Co. Ltd.	2797 9812
Chemical waste	Enviropace Ltd.	2435 7700
	Strong Base Environmental Services & Engineering Co. Ltd.	2797 9812

5 SUMMARY OF DEFICIENCY, NON-COMPLIANCES AND REMEDIAL ACTIONS

Deficiency	Action taken
<ul style="list-style-type: none"> • It was noted that ponding water and accumulated rainwater have been found on the uneven surface & pits within site area including portion G, Detritor, hopper and inlet trench of Primary Tank in December 2003. 	<ul style="list-style-type: none"> • The Contractor has installed pumping facilities to pump away ponding water. However, the contractor only removed some of the ponding water • Mosquito drug was applied in the accumulated water to prevent mosquito breeding.
<ul style="list-style-type: none"> • It was noted that some wasted packaging materials were found at site, including the Centrifuge building and the temporary storage area. 	<ul style="list-style-type: none"> • The contractor has disposed the packaging materials accordingly and properly. The timbers were re-used on-site.
<ul style="list-style-type: none"> • Stockpiles of excavated materials are accumulated when dredging trenches for cable installation. It could possibly cause dust problem. • The open area of the Primary Tanks and site accesses were dusty in very dry and windy days 	<ul style="list-style-type: none"> • The contractor has applied plastic sheets to the stockpiles of excavated materials for dust suppression. However, the plastic sheets were either not large enough or not secured to prevent generation of excessive dust. The stockpiles in some areas were not covered. The Contractor has provided watering but the frequency was not enough.

6. CUMULATIVE LOG OF COMPLAINTS AND REMEDIAL ACTION

There is no complaint received in association with installation activities during December 2003. The cumulative of complaints is referred in Appendix 3.

7. CUMULATIVE LOG OF NOTIFICATION OF SUMMONS AND PROSECUTIONS

No notification of summons and no prosecutions occurred during December 2003.

8. FUTURE KEY ISSUES

The planned activities for the coming three months (January 2004 – March 2004) and anticipated environmental issues with regard to E&M equipment are summarized as follows:

Item	Location	Works	Anticipated Environmental Issues
1	Administrative Building	<ul style="list-style-type: none"> - Building services and electrical equipment installation - HVAC air ductwork, chilled water pipework & condensation water pipework installation 	<ul style="list-style-type: none"> - Plastic packaging material will be generated and should be re-used on site or disposed properly.
2	Primary Tank	<ul style="list-style-type: none"> - Sludge scraper and scum collector pipe installation - Scum pumps & pipework installation - Electrical equipment installation 	<ul style="list-style-type: none"> - Timber will be generated and should be re-used on site, or disposed properly. - Ponding water should be pumped away.
3	Chemical Building	<ul style="list-style-type: none"> - Electrical system installation - Polymer preparation system, Alum & Anionic Polymer Stock Tanks installation - Chemical pump installation - Chemical pipe installation - Water pipe installation 	<ul style="list-style-type: none"> - No environmental issue is anticipated

4	Centrifuge Building	<ul style="list-style-type: none"> - Chequer plate supports & open floorings for centrifuge steelwork platform installation - Centrifuge feed pumps and pipework installation - Cationic Polymer and Preparation unit installation - Fast rolling door installation - Sludge rail train installation - MCC control panels installation 	- Timber will be generated and should be re-used on site, or disposed properly.
5	Sludge Transfer Chamber	<ul style="list-style-type: none"> - Sludge transfer pump & pipework installation - Odour duct bridge installation 	- Timber will be generated and should be re-used on site, or disposed properly.
6	Detritor	<ul style="list-style-type: none"> - Grit pump & pipework installation - Electrical installation & cable wiring 	- Ponding water should be pumped away.
7	Chemical Pipe Trench	<ul style="list-style-type: none"> - Containment pipe installation 	- Plastic packaging material will be generated and should be re-used on site or disposed properly.
8	Cable Trench	<ul style="list-style-type: none"> - Electrical power cable installation - Excavation for HV cable & lamp pole ducts 	<ul style="list-style-type: none"> - Timber will be generated and should be re-used on site, or disposed properly. - Stockpiles of soil should be covered with canvas sheets to avoid generation of dust.
9	Odour Plant	<ul style="list-style-type: none"> - Odour scrubber & centrifugal fan installation - Odour duct installation - Chemical / water pipe installation - Electrical wiring - Electrical equipment installation 	- Plastic & timber will be generated and should be re-used on site, or disposed properly.
10	Other Area	<ul style="list-style-type: none"> - Booster pump and pressure vessel installation - Electrical installation & cable wiring - Installation of DN1400 EM Flowmeter in Flowmeter Chamber 	<ul style="list-style-type: none"> - Timber will be generated and should be re-used on site, or disposed properly. - Plastic & timber will be generated and should be re-used on site, or disposed properly.
11	Open Area & Site Accesses	<ul style="list-style-type: none"> - Earthwork and vehicle movements 	- Regular watering should be provided

The site inspection schedule for the next month (January 2004) is designated on 2, 8, 15, 21 and 29 January 2004.

9. CONCLUSION

No non-compliances were found during the weekly site inspections being conducted. Also there is no summon nor prosecutions reported during December 2003.

The contractor has taken some actions to meet environmental requirements such as applying pumping facilities to pump out stagnant water, proper sorting out and disposal of municipal wastes, reusing C&D wastes (timbers) at site, provision of chemical waste storage facility, and C&D waste dumper, and application of relevant environmental permits. However, it was not satisfactory in certain areas which include ponding water in the hoppers of the Primary Tanks, inadequate covering of the excavated material of the cable trenches and the watering of open area and site accesses.

The contractor was reminded to pay more efforts on environmental concerns and awareness such as removal of ponding water; proper action taken on disposal of wasted packaging material; full implementation of dust suppression measures for open site areas as well as stockpiles of soil, and proper management of site activities which may lead to any possible environmental impacts.

The environmental condition at site was not satisfactory in certain areas in December 2003. The contractor should make more effort to rectify the unsatisfactory areas.

Appendix 2

**THE CONTACT PERSONS, TELEPHONE NUMBERS OF KEY PERSONNEL
FOR UPGRADE OF SIU HO WAN SEWAGE TREATMENT WORKS**

Company/Department	Name	Position	Telephone
Maunsell Environmental Management Consultants Limited	Mr. Ivan Ng	Independent Environmental Checker	61917256
Maunsell Environmental Management Consultants Limited	Mr. Titus Yeung	Resident Site Engineer	90209585
Mitsubishi Corporation (Hong Kong) Limited	Mr. W B Chu	Site Agent	29840779
Mitsubishi Corporation (Hong Kong) Limited	Mr. Stephen Gu	Site Engineer	29840779
BioEnviroLink Technologies Limited	Miss. Patricia Chung	Environmental Team Leader	2185 0123
BioEnviroLink Technologies Limited	Mr. Ho-Chun Lam	Environmental Technician	2185 0154

Appendix 3

CUMULATIVE LOG OF COMPLAINTS

Environmental Parameters	Cumulative no. Brought forward	No. of complaint December 2003	Overall Total
Air	0	0	0
Noise	0	0	0
Water	0	0	0
Waste	0	0	0
Total	0	0	0

DETAILS OF COMPLAINTS AND REMEDIAL ACTIONS

Log Ref.	Date of Complaint received	Location	Complainant /Date	Details of Complaint	Investigation /Mitigation Action	Investigated by/ Date
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