

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. 12

BioEnviroLink Technologies Limited
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Prepared by: ET Leader (BioEnviroLink Technologies Limited)

Signature: _____
Miss Patricia Chung

Date: _____

Audited by: _____
Mr. Ivan Ng

Date: _____

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EXECUTIVE SUMMARY

This is the twelfth 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 May 2004.

The site activities in the reporting period mainly consisted of installation of chemical pipework at Chemical Pipe Trench, Ferric Chloride pumps and associated pipework & fittings at Ferric Chloride Storage Area, building services at Potable Washwater Pumping Station, as well as scrapers and 3T overhead crane at Primary Tanks.

There were no complaints received or notifications of summons or successful prosecutions during May 2004.

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

1. Installation of runways for A-frame overhead crane on Mixing Tanks
2. Installation of scrapers at Primary Tanks
3. Installation of cable trays and accessories at Primary Tanks
4. Cable wiring and termination in Portion B
5. Instruments installation at Primary Tanks

1. BACKGROUND INFORMATION

1.1 Introduction

This is the twelfth 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 May 2004. 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 .

Site Area of Portion A was handed / taken over by Civil Works Contractor, China State Construction Engineering Company on 27 April 2004. E&M installation will be mainly carried out at Portion B.

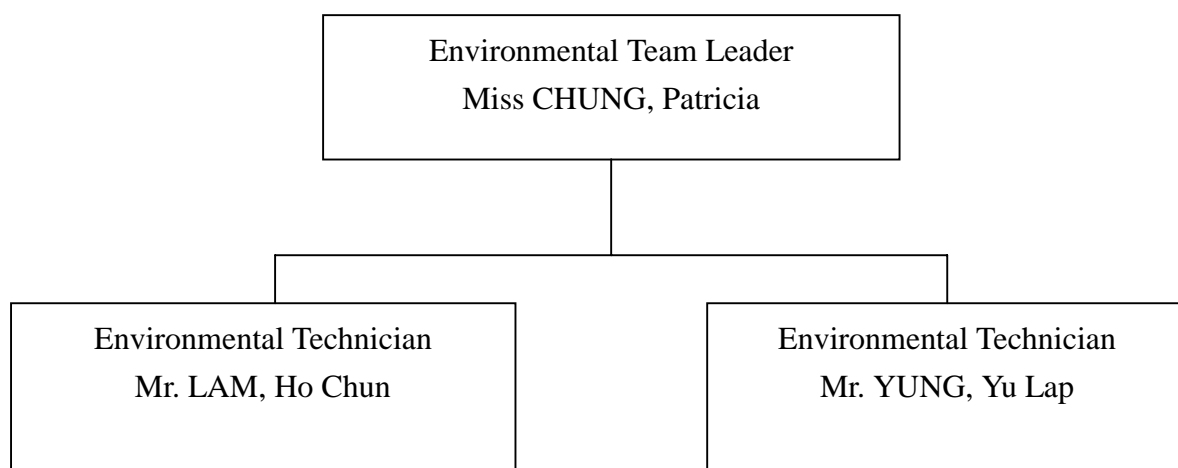
The contact persons and telephone number of key personnel for the captioned project are shown in Appendix 2.

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 May 2004

| Item | Location | Work Activities | Date of Occurrence |
|-------------|-----------------------------------|---|--|
| 1 | Primary Tank | - Installation of scrapers - Setting out and installation of 3T overhead crane - Installation of cable trays and supports - Cables laying and termination - Installation of MCC Panel | 1 – 31 May 1 – 31 May 1 – 31 May 1 – 31 May 1 – 31 May |
| 2 | Ferric Chloride Storage Area | - Installation of Ferric Chloride Storage Tanks - Installation of Ferric Chloride pumps and associated pipework & fittings | 1 – 31 May 1 – 31 May |
| 3 | Chemical Pipe Trench | - Installation of chemical pipework | 1 – 31 May |
| 4 | Potable Washwater Pumping Station | - Installation of Building Services | 1 – 31 May |
| 5 | General Store | - Installation of Building Services | 1 – 31 May |
| 6 | Other Area | - Installation of lamp poles | 1 – 31 May |

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 May 2004

| 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>No inert C&D Wastes were produced at site up to May 2004. Waste dumper for temporary storage of C&D Waste are provided.</p> | <p>The non-inert portion of C&D Wastes 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 wastes were generated in May 2004. 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 11 and 20 May 2004 and ET has escorted the waste collector to public landfill to ensure proper waste disposal C&D wastes such as timbers are reused at site.</p> |

4 STATUS OF ENVIRONMENTAL PROTECTION AND SITE INSPECTIONS

4.1 Site Inspections

The Environmental Team conducted four site inspections on 6, 13, 19 and 27 May 2004.

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 May 2004 are provided in Section 4.2.

4.2 Status of Environmental Protection

Details of Permits / Licences

| Types of Permit / Licence | Status |
|------------------------------------|--------------------------------|
| Wastewater Discharge Permit | Valid |
| Construction Noise Permit | Renewal application in process |
| Licence of Chemical Waste Producer | Valid |

Air Dust

Stockpile of excavated material were accumulated at storage area in Portion G. The Contractor is required to cover the material with plastic sheets or spray water for dust suppression.

In order to comply with the Air Pollution (Construction Dust) Regulation, the contractor has to arrange water truck to spray water for dust suppression at least twice a day. However, the frequency of watering was not maintained as scheduled, sometimes due to rainy conditions.

Surface Water Quality

In general, the E&M installation work does not cause significant environmental

impact on surface water.

The contractor has applied mosquito drugs to such locations as Ferric Chloride Tank, Pipe Gallery and Hoppers at Primary Tanks once per week to prevent mosquito breeding.

Ponding water in pipe gallery under Primary Tank causes mosquito hazard. The contractor has removed the ponding water and has regularly sprayed pesticides for suppression of mosquito breeding in any wet areas.

The Contractor has been seriously and repeatedly reminded to pump away ponding water at Primary Tanks as the water has become dirty. The Contractor has agreed to pump away the ponding water but the pumping work was slow.

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 May 2004. There are no existing sensitive receivers identified in the vicinity of Siu Ho Wan works. The current noise permit has been expired and renewal application is in progress. The contractor has been reminded that no work can be carried out in the restricted hours until the new noise permit is obtained.

Waste / Chemical Waste

Site activity has started in June 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.

No chemical waste was produced at site up to May 2004. 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).

The follow-up work for proper handling of C&D Wastes has been carried out in May. No *inert C&D Wastes* were produced at site up to May 2004. A C&D waste dumper has been provided since October 2003 for the disposal of the non-inert portion of C&D waste. ET has taken measures to ensure the waste collector has properly dumped the waste in public landfill; photos are taken for reference and record.

Sorting and classification of municipal solid wastes have been carried out at work site during May 2004. 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 May 2004) are summarized as follows:

| Types of Waste Recycled | | Estimated quantity |
|--------------------------------|--------------------|-----------------------------------|
| Municipal | Paper | 55 kg |
| Municipal | Aluminum Cans | 240 pcs |
| Municipal | Plastic Bottles | 80 pcs |
| C&D Waste | Cable Armour | 92 kg |
| C&D Waste | Wooden Cable Drum | 14 pcs |
| | Size of Cable Drum | Diameter : 1.24 m, Width : 0.64 m |
| C&D Waste | Timber | 5 kg |

| Types of Waste Disposed | Estimated quantity |
|-----------------------------------|---------------------------|
| Total waste disposal | 2.95 tonnes |
| % of non-inert C&D waste (Timber) | 60% |

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 Waste Recycler | 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 at Primary Tank, Pipe Gallery at Primary Tank, and Cable Trenches around site. | <ul style="list-style-type: none"> The Contractor has to continue to pump away ponding water immediately Mosquito drug was applied in the accumulated water to prevent mosquito breeding. Regular Pesticide spray has been applied for mosquito suppression |
| <ul style="list-style-type: none"> It was noted that scattered wastes, such as plastic bottles, packaging material and timber were found at area around Primary Tank. | <ul style="list-style-type: none"> The Contractor has to dispose the packaging materials accordingly and properly. The Contractor was reminded to always keep the site tidy and clean. |
| <ul style="list-style-type: none"> Stockpiles of excavated materials were accumulated at Storage Area in Portion G. 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 should apply dust suppression measures such as cover with plastic/canvas sheets or watering; The Contractor should pay more effort to carry out action as recommended. 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 May 2004. 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 May 2004.

8. FUTURE KEY ISSUES

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

| Item | Location | Works | Anticipated Environmental Issues |
|------|---------------------------|---|---|
| 1 | Primary Tank | - Electrical system installation - Instrument Installation | - Ponding water should be pumped away. - Plastic and timber will be generated and should be re-used on site or disposed properly - Pesticide should be added for mosquito suppression |
| 2 | Cable Trench | - Electrical power cable installation | - Timber will be generated and should be re-used on site, or disposed properly. |
| 3 | Other Area | - Booster pump, pressure vessel and pipework installation - Electrical system installation - Lamp Pole installation | - 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. |
| 4 | Open Area & Site Accesses | - Earthwork and vehicle movements | - Regular watering should be provided |

The site inspection schedule for the next month (June 2004) is designated on 3, 10, 17 and 24 June 2004.

9. CONCLUSION

No non-compliances were found during the weekly site inspections being conducted. Also there is no summon nor prosecutions reported during May 2004.

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, C&D waste dumper, and application of relevant environmental permits.

The contractor was reminded to pay more efforts on environmental concerns and awareness such as maintaining site cleanliness at Primary Tank and Pipe Gallery, removal of ponding water immediately; 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.

ET has taken proper action, including vehicle escort, to ensure that the registered waste collector properly dispose the waste at public landfill.

The environmental condition at site was fair in May 2004, though the contractor should make more effort to promptly rectify the deficiencies in future.

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 May 2004 | 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 |
|-----------------|-----------------------------------|-----------------|--------------------------|-----------------------------|---|------------------------------|
| -- | --- | --- | --- | --- | --- | --- |