

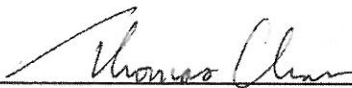
MTR Corporation Limited

South Island Line (East)

Monthly EM&A Report No. 1

August 2011

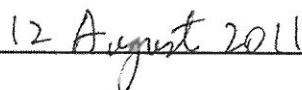
Verified by:



Thomas Chan

Independent Environmental Checker

Date:




MTR Corporation Limited

South Island Line (East)

Monthly EM&A Report No. 1

August 2011

Certified by:



Dr. Glenn Frommer
Environmental Team Leader

Date:

12 AUG 2011

EXECUTIVE SUMMARY

With the main civil works contracts of the South Island Line (East) (SIL(E)) Project awarded in May 2011, the commencement date of construction of the Project was on 25 June 2011. The Environmental Monitoring and Audit (EM&A) programme of the Project also commenced on 25 June 2011. This is the **first** Monthly EM&A Report for SIL(E) Project. The Report presents the results of EM&A works undertaken during the period of 25 June 2011 to 31 July 2011. The major construction activities in the reporting period included site clearance and preparation as well as piling works at Nam Fung Portal and Wong Chuk Hang Depot sites.

Impact monitoring for air quality and noise were conducted in the reporting period. No exceedance was found and there was no breach of Action / Limit Levels for air quality and noise. Impact water quality monitoring was undertaken at Aberdeen Channel from 18 July 2011 onwards. Exceedances in DO and turbidity against Action/ Limit Levels were recorded and the exceedances were considered not related to the project works.

No environmental complaint, notification of summon or prosecution related to the environmental issue was received in the reporting period.

Regular site inspections were conducted by the Environmental Team (ET) to check the implementation of environmental mitigation measures. No non-conformance to the environmental requirements was identified in the reporting period.

Future key issues envisaged in the coming month include noise and dust emission from site works. The ET will continue the implementation of the EM&A programme in accordance to the EM&A Manual.

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1 INTRODUCTION

1.1 Project Background

The South Island Line (East) (SIL(E)) of 7.0km approximately is a new medium capacity railway with stations at South Horizons (SOH), Lei Tung (LET), Wong Chuk Hang (WCH), Ocean Park (OCP) and Admiralty (ADM), comprising underground and elevated structures. A depot is required at Wong Chuk Hang to provide maintenance support for the SIL(E).

1.2 Project Programme

Main civil works contracts of the SIL(E) was awarded in May 2011. The commencement date of construction of the Project was on 25 June 2011. The construction of the Project is expected to complete in 2015.

1.3 Coverage of EM&A Report

The Environmental Monitoring and Audit (EM&A) programme of the Project commenced on 25 June 2011. This is the first Monthly Environmental Monitoring and Audit (EM&A) Report for the Project. The Report presents the results of EM&A undertaken during the period of 25 June 2011 to 31 July 2011.

2 PROJECT INFORMATION

2.1 Project Organization and Management Structure

The project organization is shown in **Appendix A1**. Contacts of key personnel of the Project are shown in **Appendix A2**.

2.2 Construction Activities in the Reporting Month

Major construction activities carried out by the respective SIL(E) civil works contractors during the reporting period include:

Contract No. 901

| Site | Construction Activities |
|-----------------|--|
| Harcourt Garden | <ul style="list-style-type: none">- Site clearance and preparation- Hoarding erection- Tree transplantation- Pre-drilling |

Contract No. 902

| Site | Construction Activities |
|-----------------|---|
| Nam Fung Portal | <ul style="list-style-type: none">- Site clearance and preparation- Hoarding erection- Tree transplantation- Pre-drilling- Bored piling |

| Site | Construction Activities |
|-------------------------|----------------------------------|
| Hong Kong Park | - Site clearance and preparation |
| Chung Hom Shan Magazine | - Site clearance and preparation |

Contract No. 903

| Site | Construction Activities |
|--|--|
| New OCP Site Office | - Site preparation and foundation works |
| WCH Station | - Pre-drilling / Ground Investigation - Excavation to formation level |
| Zone B (Ex-Canadian Site to OCP Station) | - Site clearance and preparation - Tree transplantation - Pre-drilling / Ground investigation - Utility diversion - Bored piling |
| Zone C (OCP Station to WCH Station) | - Site clearance - Pre-drilling / Ground investigation - Tree transplantation - Utility diversion - Hoarding erection |
| Zone D (WCH Station to WCH nullah) | - Site preparation - Pre-drilling / Ground Investigation - Tree transplantation - Hoarding erection - Excavation and slope stabilisation |
| Zone E (Aberdeen Channel) | - Pre-drilling / Ground Investigation - Set up of temporary working platform for pier |

Contract No. 904

| Site | Construction Activities |
|-------------------------------|---|
| Ex-Harbour Mission School | - Site clearance and preparation - Erection of hoarding and scaffolds - Pedestrian sidewalk diversion |
| Lee Wing Street | - Site clearance and preparation - Erection of hoarding and rock fall fence - Tree transplantation |
| South Horizons | - Site clearance and preparation - Trial trench |
| LET Station Entrance A | - Site clearance and preparation - Trial trench |
| LET Station Entrance B | - No major works |
| Ap Lei Chau Bridge Playground | - Site clearance and preparation |

Contract No. 907

| Site | Construction Activities |
|-------------------------------|---|
| WCH Depot | - Site clearance and preparation - Pre-drilling - Bored piling - Construction of the bus terminus (EPIW) |
| Lee Nam Road Barging Facility | - Construction of platform footing - Trail run of the barging point with the use of a pontoon |

2.3 Construction Activities for the Coming Month

The scheduled major construction activities in the next reporting month are as follows:

Contract No. 901

| Site | Construction Activities |
|-----------------|---|
| Harcourt Garden | <ul style="list-style-type: none"> - Hoarding erection and site clearance - Tree transplantation - Construction of EVA structure - Covered walkway installation - Demolition of LCSD Office and CITIC footbridge staircase - Installation of bulkhead at Entrance E |

Contract No. 902

| Site | Construction Activities |
|-------------------------|---|
| Nam Fung Portal | <ul style="list-style-type: none"> - Site clearance and preparation - Hoarding erection - Tree transplantation - Pre-drilling - Bored piling - Soil nailing |
| Hong Kong Park | <ul style="list-style-type: none"> - Site clearance and preparation - Fencing / hoarding erection - Tree transplantation - Demolition of LCSD building |
| Chung Hom Shan Magazine | <ul style="list-style-type: none"> - Site clearance and preparation - Soil nailing - Magazine structure construction |

Contract No. 903

| Site | Construction Activities |
|--|---|
| New OCP Site Office | <ul style="list-style-type: none"> - Office construction and fitting out - Demolition of temporary site office - Pre-drilling / Ground investigation - Bored piling |
| WCH Station | <ul style="list-style-type: none"> - Pre-drilling / Ground investigation - Construction of footings / Bored piling - Demolition of existing nullah wall & new south nullah wall excavation |
| Zone B (Ex-Canadian Site to OCP Station) | <ul style="list-style-type: none"> - Tree transplantation - Bored piling - Pile cap construction |
| Zone C (OCP Station to WCH Station) | <ul style="list-style-type: none"> - Pre-drilling / Ground investigation - Pipe piling - Bored piling - Construction of platform crossing nullah - Utility diversion |
| Zone D (WCH Station to WCH nullah) | <ul style="list-style-type: none"> - Pre-drilling / Ground investigation - Excavation - Hoarding erection - Slope stabilisation |

| Site | Construction Activities |
|---------------------------|---|
| | - Demolition of Cooked Food Market Kiosk |
| Zone E (Aberdeen Channel) | - Pre-drilling / Ground investigation from working platform - Bored piling - Utility diversion - Pipe piling - Seawall modification |

Contract No. 904

| Site | Construction Activities |
|-------------------------------|---|
| Ex-Harbour Mission School | - Site clearance and preparation - Demolition of the school building |
| Lee Wing Street | - Site clearance and preparation - Erection of hoarding and rock fall fence - Slope excavation - Access road and retaining wall construction |
| South Horizons | - Site clearance and preparation - Trial trench |
| Lei Tung Station Entrance A | - Site clearance and preparation - Trial trench |
| Lei Tung Station Entrance B | - Site preparation |
| Ap Lei Chau Bridge Playground | - Site clearance and preparation - Erection of project site office |

Contract No. 907

| Site | Construction Activities |
|-------------------------------|--|
| WCH Depot | - Tree transplantation - Bored piling - Removal of existing noise barrier & reconstruction of existing hoarding at project boundary - Formation of haul road - Construction of the bus terminus (EPIW) |
| Lee Nam Road Barging Facility | - Construction of barging facility - Roundabout expansion |

2.4 Project Areas and Environmental Monitoring Locations

The works areas of the Project are shown in **Figures 1 and 2**.

The locations of environmental monitoring stations are shown in **Figures 3 to 9**. Tables 1 and 2 below shows the details of the active monitoring stations as reported in Sections 3.1 to 3.3 below.

Table 1 Summary of impact dust and noise monitoring stations

| ID | Monitoring Station |
|--------------|--|
| Dust | |
| CD1 | Wong Chuk Hang San Wai |
| CD2 | Police College – Police Quarters |
| CD3 | San Wui Commercial Society of HK Chan Pak Sha School |
| CD4 | Shan On House |
| CD5* | South Horizons Phase IV – Block 25 |
| Noise | |
| CN1 | San Wui Commercial Society of HK Chan Pak Sha School (Educational Institution) |
| CN2 | Holy Spirit Seminary (Education Institution) |
| CN3* | Shun Fung Building (Residential) |
| CN4* | South Horizons Phase IV – Block 25 Dover Court (Residential) |
| CN5* | TWGHs Jockey Club Rehabilitation Complex Block A (Convalescent Home) |

* Location updated due to site access problem, or as per the agreement with the premises landlord, and agreed with EPD

Table 2 Summary of impact water quality monitoring stations

| ID | Location | Easting | Northing |
|-----|--------------------------------|---------|----------|
| WM1 | Aberdeen West Typhoon Shelter | 833953 | 811923 |
| WM2 | Wong Chuk Hang Nullah | 834547 | 811966 |
| WM3 | WSD Brick Hill Seawater Intake | 834896 | 811567 |
| WM4 | Aberdeen South Typhoon Shelter | 834761 | 811292 |
| CS1 | Control Station | 832689 | 811967 |
| CS2 | Control Station | 834852 | 810689 |

2.5 Summary of EM&A Requirements

The EM&A programme as specified in the EM&A Manual has been implemented during the construction stage.

In the reporting period, impact monitoring of LAeq, 30min noise levels was carried out at the monitoring locations as shown in Table 1 once every week. Also, 24-hour TSP monitoring was conducted at the monitoring locations as shown in Table 1 once every week.

Impact water quality monitoring at Aberdeen Channel was also undertaken at the monitoring locations as shown in Table 2 three working days per week at mid-ebb and mid-flood tides from 18 July 2011 onwards.

Action and Limit Levels for construction noise and air quality as well as water quality are shown in Appendices B1 and B2 respectively. Should non-compliance of the criteria occurs, action in accordance with the respective Event and Action Plans for construction noise, air quality and water quality in the EM&A Manual / Updated EM&A Manual should be carried out.

Monthly monitoring of the ardeid night roost location beside Wong Chuk Hang Nullah by qualified ecologist was also conducted.

In addition, regular site inspection to active works areas was carried out. The areas of inspection included the pollution control and mitigation measures within the site. Waste management and landscape and visual aspects were covered.

3 IMPACT MONITORING

3.1 Air Quality

Monitoring Methodology

24-hour TSP samples were collected by High Volume Sampler (Graseby-Andersen) following United States Environmental Protection Agency regulations.

The sampling procedure follows to that described in the App. B of Pt 50 in 40CFR Ch.1 (U.S. Environmental Protection Agency). TSP is sampled by drawing air through a conditioned, pre-weighed filter paper inside the high volume sampler at a controlled rate. After 24-hour sampling, the filter paper with retained particles is collected and returned to the laboratory for drying in a desiccators followed by weighing. TSP levels are calculated from the ratio of the mass of particulate retained on the filter paper to the total volume of air sampled.

The samplers have been properly maintained. Prior to dust monitoring commencing, appropriate checks have been made to ensure that all equipment and necessary power supply are in good working condition.

Calibration Requirements

The flow rate of the high volume sampler with mass flow controller is calibrated using an orifice calibrator. Initial calibration (five points) is conducted upon installation and prior to commissioning. Calibration will be carried out every six months. Calibration certificates are attached in **Appendix C**.

Monitoring Results

To examine the construction dust levels, 24-hour TSP monitoring was undertaken at the monitoring locations as shown in Table 1 according to the EM&A Manual.

Monitoring results are presented in the following table (see **Appendix D** for graphical plots). The 24-hour TSP levels were within the Action Level. No exceedance was found. This indicates that the construction activities did not have a noticeable adverse effect on the general air quality of the project areas.

| Date | TSP ($\mu\text{g}/\text{m}^3$) | Action Level ($\mu\text{g}/\text{m}^3$) | Limit Level ($\mu\text{g}/\text{m}^3$) | Compliance (Yes/No) | Weather Condition |
|---|----------------------------------|---|--|---------------------|-------------------|
| CD1 Wong Chuk Hang San Wai | | | | | |
| 28-Jun | 48.9 | 173 | 260 | Yes | Fine |
| 06-Jul | 36.1 | 173 | 260 | Yes | Fine |
| 13-Jul | 36.9 | 173 | 260 | Yes | Cloudy |
| 20-Jul | 34.6 | 173 | 260 | Yes | Cloudy |
| 26-Jul | 53.8 | 173 | 260 | Yes | Fine |
| CD2 Police College – Police Quarters | | | | | |
| 28-Jun | 60.6 | 184 | 260 | Yes | Fine |
| 06-Jul | 44.5 | 184 | 260 | Yes | Fine |
| 13-Jul | 34.5 | 184 | 260 | Yes | Cloudy |
| 20-Jul | 36.7 | 184 | 260 | Yes | Cloudy |
| 26-Jul | 31.1 | 184 | 260 | Yes | Fine |
| CD3 San Wui Commercial Society of HK Chan Pak Sha School | | | | | |
| 29-Jun | 53.6 | 169 | 260 | Yes | Fine |
| 06-Jul | 26.5 | 169 | 260 | Yes | Fine |
| 13-Jul | 30.5 | 169 | 260 | Yes | Cloudy |
| 20-Jul | 24.9 | 169 | 260 | Yes | Cloudy |
| 26-Jul | 29.9 | 169 | 260 | Yes | Fine |
| CD4 Shan On House | | | | | |
| 29-Jun | 36.5 | 176 | 260 | Yes | Fine |
| 04-Jul | 23.2 | 176 | 260 | Yes | Fine |
| 11-Jul | 30.1 | 176 | 260 | Yes | Cloudy |
| 18-Jul | 41.3 | 176 | 260 | Yes | Cloudy |
| 25-Jul | 31.3 | 176 | 260 | Yes | Fine |
| CD5 South Horizons Phase IV – Block 25 | | | | | |
| 29-Jun | 30.7 | 169 | 260 | Yes | Fine |
| 04-Jul | 32.8 | 169 | 260 | Yes | Fine |
| 12-Jul | 41.4 | 169 | 260 | Yes | Cloudy |
| 18-Jul | 55 | 169 | 260 | Yes | Cloudy |
| 25-Jul | 36.6 | 169 | 260 | Yes | Fine |

3.2 Noise

Monitoring Methodology

Monitoring was conducted using B&K sound analysis equipment – B&K SLM 2250. Microphone was extended 1 meter from building facades and oriented towards the works area.

Calibration Requirements

B&K 2250 sound level meters and B&K 4231 calibrators which complied with the International Electrotechnical Commission Publication 651:1979 (Type 1) and 804:1985 (Type 1), specification as referred to in the Technical Memoranda to the NCO were used for the impact monitoring. The sound level meters and calibrators are verified by the certified laboratory or manufacturer once every two years to ensure they perform to the same level of accuracy as stated in the manufacturer's specifications. Calibration certificates are attached in **Appendix C**.

Immediately prior to and following each set of measurements at any NSR, the accuracy of the sound level meter was checked using an acoustic calibrator generating a known sound pressure level at a known frequency. If the calibration levels before and after the measurement differs by more than 1.0dB, the measurement shall be repeated to obtain a reliable result (note: maximum deviation during this initial baseline monitoring period was 0.3dB). Periods of prolonged or repeated overloading of the sound level meter detector were avoided by setting the meter with adequate headroom prior to commencing measurements. Measurements were recorded to the nearest 0.1 dB, with values of 0.05 being rounded up.

Monitoring Results

Impact monitoring of LAeq, 30min noise levels was undertaken to measure construction noise levels in accordance with the Updated EM&A Manual at the monitoring locations as shown in Table 1.

Monitoring results are presented in the following table (see **Appendix D** for graphical plots). No exceedance was found.

| Date | Time | LAeq (dBA) | Limit Level (dBA) | Compliance (Yes/No) | Weather Condition |
|---|-------|------------|-------------------|---------------------|-------------------|
| CN1 San Wui Commercial Society of HK Chan Pak Sha School | | | | | |
| 29 Jun | 11:15 | 66.5 | 70 | Yes | Fine |
| 8 Jul | 13:25 | 69.3 | 70 | Yes | Fine |
| 13 Jul | 10:55 | 67.7 | 70 | Yes | Cloudy |
| 20 Jul | 11:00 | 67.0 | 70 | Yes | Cloudy |
| 28 Jul | 14:50 | 68.9 | 70 | Yes | Fine |
| CN2 Holy Spirit Seminary | | | | | |
| 30 Jun | 10:20 | 65.7 | 70 | Yes | Fine |
| 8 Jul | 11:00 | 63.5 | 70 | Yes | Fine |
| 14 Jul | 15:30 | 63.6 | 70 | Yes | Fine |
| 21 Jul | 15:10 | 63.8 | 70 | Yes | Fine |
| 27 Jul | 11:15 | 63.5 | 70 | Yes | Fine |
| CN3 Shun Fung Building | | | | | |
| 27 Jun | 17:40 | 67.1 | 75 | Yes | Fine |
| 4 Jul | 16:20 | 68.3 | 75 | Yes | Fine |
| 12 Jul | 17:05 | 64.6 | 75 | Yes | Fine |
| 18 Jul | 16:15 | 66.2 | 75 | Yes | Fine |
| 25 Jul | 16:10 | 67.1 | 75 | Yes | Fine |
| CN4 South Horizons Phase IV – Block 25 Dover Court | | | | | |
| 27 Jun | 18:30 | 66.1 | 75 | Yes | Fine |
| 4 Jul | 15:20 | 67.1 | 75 | Yes | Fine |
| 12 Jul | 16:15 | 67.6 | 75 | Yes | Fine |
| 18 Jul | 16:15 | 67.9 | 75 | Yes | Fine |
| 26 Jul | 16:50 | 67.3 | 75 | Yes | Fine |
| CN5 TWGHs Jockey Club Rehabilitation Complex Block A | | | | | |
| 29 Jun | 10:20 | 68.6 | 75 | Yes | Fine |
| 8 Jul | 9:55 | 67.3 | 75 | Yes | Fine |
| 13 Jul | 10:05 | 66.6 | 75 | Yes | Cloudy |
| 20 Jul | 10:00 | 66.1 | 75 | Yes | Cloudy |
| 27 Jul | 10:25 | 67.5 | 75 | Yes | Fine |

3.3 *Water Quality*

Monitoring Methodology

Water quality was monitored in terms of the following parameters: Dissolved Oxygen (DO, mg/L) and Dissolved Oxygen Saturation (DO %), temperature (°C), pH, turbidity (NTU), salinity (ppt), suspended solids (mg/L) and water depth (m). All parameters were measured in-situ whereas SS shall be determined by the laboratory.

Water samples were taken with a water sampler, consisting of a transparent PVC cylinder of 2 litres that can be effectively sealed with cups at both ends. The water sampler has a positive latch system to keep it open and prevent premature closure until released by a messenger when the sampler arrives is at the pre-determined depth.

Measurement was taken at 3 water depths, namely, 1m below water surface, mid-depth and 1m above sea bed, except where the water depth less than 6m, the mid-depth station may be omitted. Should the water depth be less than 3m, only the mid-depth station was monitored.

Duplicate in-situ measurements and samples were collected and analyzed to ensure a robust statistically interpretable dataset. Where the difference in value between the first and second measurement of DO or turbidity parameters is more than 25% of the value of the first reading, the reading was discarded and further readings were taken.

Water samples for all monitoring parameters were collected, stored, preserved and analyzed according to APHA Standard Methods. Water samples were stored in high-density polythene bottles, packed in ice and delivered to the laboratory of ETS-Testconsult Limited, a HOKLAS accredited laboratory, details of the accreditation status is given in Appendix C3.

The SS determination work was start within 24 hours after collection of the water samples. The SS analyses followed the standard method APHA 2540D with a detection limit of 1mg/L as described in APHA Standard Methods for the Examination of Water and Wastewater.

A digital depth detector was employed to determine the water depth at selected stations when flows permit.

Calibration Requirements

On-site monitoring equipment namely the salinity meter, pH meter, turbidity meter, dissolved oxygen meter and temperature meter were calibrated before use. The methodologies for the calibration are referred to the instruction manual provided by the manufactures respectively. The calibration records are shown in **Appendix C**. Response of sensors and electrodes was checked with certified standard solutions before each use.

Monitoring Results

Impact water quality monitoring was undertaken in accordance with the EM&A Manual at the six designated monitoring locations at Aberdeen Channel as shown in Table 2 from 18 July 2011 onwards. Monitoring locations WM1-WM4 cover the Aberdeen West Typhoon Shelter, Wong Chuk Hang Nullah, WSD Brick Hill Seawater intake and Aberdeen South Typhoon Shelter while monitoring location CS1 and CS2 are the control stations. CS1 and CS2 are the upstream control stations for the Ebb and Flood tide conditions respectively.

Monitoring results and graphical plots are presented in **Appendix D**.

3.4 Action taken in Event of Exceedence

There was no exceedance in air quality and noise monitoring parameters recorded in the reporting period, therefore no action was taken.

Exceedances in DO against Action/ Limit Levels were recorded at monitoring stations WM1 to WM4 on 18th, 20th, 22nd, 25th, 27th and 30th in the reporting month. Exceedances in turbidity against Action/ Limit Levels were recorded at monitoring stations WM2 on 27th (mid flood) in the reporting month. The exceedances were considered not related to the project works. Please refer to **Appendix E** for the review of exceedance in water quality monitoring.

4 LANDSCAPE AND VISUAL

4.1 EM&A Requirements

The landscape and visual mitigation measures undertaken by the contractors during the construction phase have been audited on a regular basis according to the EM&A Manual.

4.2 Site Audit Results

Regular inspections and audits were conducted by the Certified Arborist as required by the EP and it was found that the transplanting works and the tree protection works being carried out by the civil works and transplantation contractors were in accordance with the EP/ EIA. No non compliance was identified in the reporting period.

Retained Trees

No immediate hazards were noted for any of the OVTs during reporting period.

As recommended by Tree Removal Application and agreed with the arborist, retained tree number OCP-T779 *Ficus elastica* located at Wong Chuk Hang San Wai would be pruned in order to facilitate the construction of the viaduct pier. The contractor was reminded to closely monitor the pruning works of above tree.

Transplanted Tree

Total of 206 trees of the SIL(E) had been transplanted as of the reporting month. They were mostly transplanted to the holding nursery at Chung Hom Shan as well as permanent receptor sites such as Lok Ma Chau or in-situ under project areas.

Others

As informed by the 903 contractor, some tree pruning works outside works boundary of Zone D (i.e. in front of TWGHs Jockey Club Rehabilitation Complex) were carried out by other parties in the reporting month.

5 *ECOLOGY*

5.1 *EM&A Requirements*

Auditing of the ecological mitigation measures during the construction phase have been carried out on a regular basis according to the EM&A Manual.

5.2 *Site Audit Results*

Ardeid Night Roost

Regular inspections to the works areas around the ardeid night roost have been conducted by the ecologist to check the ecological mitigation measures with regard to the ardeids at Wong Chuk Hang Nullah. Inspections of the ardeid night roost have been made for any active ardeid nests. Whilst ardeids have never been recorded nesting at this site, precautionary checks for active nests or signs of breeding have been made.

Monthly monitoring of the ardeid night roost location was also conducted by the ecologist from a vantage point, the Ap Lei Chau Bridge (on the Wong Chuk Hang side), with an unobstructed view over the area. According to the EM&A Manual, the surveys have been commenced approximately one hour before sunset and continue for 20 minutes after sunset, or until nightfall, which comes sooner. Any aggregation of night roosting ardeid in the degraded woodland or adjacent area have been located and counted.

The monthly night ardeid survey was conducted on 14 July 2011 at 6:07pm. A total of 55 ardeids, all of which were Little Egrets, arrived at the roost location at Wong Chuk Hang Nullah and no ardeid breeding behaviour was recorded during the monitoring survey.

Proper tree protection measures have been implemented as practical as possible by the contractor to the current and potential roost trees retained on site. However, potential risks of some of these slope trees are noted and tree felling may be required for safety concern.

Plant Species of Conservation Interest

Detailed field survey led by the ecologist was undertaken in March and early May 2011 to ascertain the presence of any rare or protected flora species to be affected. The surveys covered all above ground works areas of the project and the survey results were presented in the Detailed Transplanting Baseline Survey Report submitted under the Environmental Permit.

As in the Detailed Transplanting Baseline Survey Report, two plant species of conservation interest recorded in the degraded woodland to the south of Wong Chuk Hang Nullah, namely herb *Houttuynia cordata* and tree *Aquilaria sinensis* (including seedlings), and planted young tree *Ailanthus fordii* (including seedlings) recorded in a plantation area near Hong Kong Park will be influenced by the project works. Other plant species of conservation interest identified will be protected on-site and appropriate tree protection measures would be established if needed. Health condition of the most plant species generally remained unchanged as in the Detailed Transplanting Baseline Survey Report. However, it is noted that health condition of *Ailanthus fordii* (tree no. OCP-T2231), which is outside the active works area at Wong Chuk Hang San Wai, was found to be declining.

To suit the works programme, transplantation of the recorded *H. cordata* was undertaken by the Transplantation Contractor on 14 July 2011 under the supervision of the ecologist. The transplantation methodology as stipulated in the Transplantation Proposal was followed. The

receptor site was at Wong Chuk Hang San Wai. Regular monitoring on the transplanted herb has been conducted. The transplanted herb remained in fair condition and a protection fence was established around the receptor site.

6 WASTE MANAGEMENT

Mitigation measures on waste management have been implemented in accordance with the site waste management plans for the respective civil works contracts. The C&D materials have been disposed of at the public fill reception facilities while C&D wastes have been disposed of at the landfills. Quantities of wastes disposed in the reporting period are summarized in the following table:

| Contract No | Inert C&D Materials Disposed at Public Fill (m³) | Inert C&D Materials Reused (m³) | Non-inert Waste Disposed at Landfill (m³) | Chemical Waste to Designated Treatment Facility (litre) |
|------------------------------------|--|---|---|--|
| Reporting Period: June – July 2011 | | | | |
| Contract 901 | N/A | 5,531 | 30 | N/A |
| Contract 902 | 720 | 4,902 | 1,122 | N/A |
| Contract 903 | N/A | 17,431 | 285 | N/A |
| Contract 904 | 432 | N/A | 53 | N/A |
| Contract 907 | 790 | 1,065 | 57 | N/A |

7 RECORD OF ENVIRONMENTAL COMPLAINTS

No public environmental complaint was received in the reporting period.

8 RECORD OF NON-COMPLIANCES

As detailed in S3.4, exceedances in water quality monitoring parameters against Action/ Limit Levels were recorded in the reporting month. The exceedances were considered not related to the project works. There was no other non-compliance identified in the reporting period.

9 RECORD OF NOTIFICATIONS OF SUMMONS AND PROSECUTIONS

No summon or prosecution related to environmental issue was received or made against the Project in the reporting period.

10 STATUS OF STATUTORY SUBMISSIONS

10.1 Submissions required under Environmental Permit

A summary of the status of submissions required under the SIL(E) Environmental Permit as of 31 July 2011 is shown below:

| EP Clause No. | Description of Submission | Status |
|----------------------|--|---|
| 1.11 | Commencement date of construction | Submitted on 25 May 2011 |
| 1.14 | Commencement date of operation | To be submitted no later than 2 months prior to commencement of operation of the Project |
| 2.1 & 2.2 | Employment of IEC & ET | Submitted on 6 Apr 2011 |
| 2.3 | Employment of Qualified Ecologist | Submitted on 6 Apr 2011 |
| 2.4 | Employment of Certified Arborist | Submitted on 6 Apr 2011 |
| 2.5 | Management organization of main construction companies | Submitted on 9 Jun 2011 |
| 2.6 | Construction programme & EP submission schedule | Submitted on 10 Jun 2011 |
| 2.7 | Set up of Community Liaison Group | Submitted on 20 Apr 2011 |
| 2.8 | Updated EM&A Manual | Submitted on 16 May 2011 |
| 2.9 | Construction noise mitigation measures plan | Contract 903: Submitted on 25 May 2011 Comments received from EPD on 28 Jun 2011 and resubmitted on 28 Jul 2011 Contract 907: Submitted on 7 Jun 2011 Comments received from EPD on 6 Jul 2011 and to be resubmitted within 1 month of receipt of comments Contract 904: To be submitted in Aug 2011 |
| 2.11 | Construction & demolition materials management plan for barging points | Submitted on 10 Jun 2011 Comments received from EPD on 12 Jul 2011 and to be resubmitted within 1 month of receipt of comments |
| 2.13 (a) | Ecological planting & landscape plan | Submitted on 18 Apr 2011 Comments received from EPD on 9 May 2011 and resubmitted on 9 Jun 2011 Further comments received on 13 Jul 2011 and to be resubmitted within 1 month of receipt of comments |
| 2.13 (b) | As built drawings of ecological planting & landscape works | To be submitted no later than 1 month after completion of planting works (at Wong Chuk Hang nullah) |
| 2.13 (c) | Final monitoring report of ecological planting & landscape works | To be submitted no later than 1 month after completion of the 3-year post planting care and maintenance period |

| EP Clause No. | Description of Submission | Status |
|---------------|--|--|
| 2.14 (a) | Detailed transplanting baseline survey report for plant species of conservation interest | Submitted on 6 Apr 2011 Comments received from EPD on 27 Apr 2011 and resubmitted on 27 May 2011 Further comments received on 28 Jun 2011 and resubmitted on 28 Jul 2011 |
| 2.14 (b) | Transplantation proposal for plant species of conservation interest | H. cordata: Submitted on 9 Jun 2011 Comments received from EPD on 13 Jul 2011 and to be resubmitted within 1 month of receipt of comments A. sinensis & A. fordii: To be submitted in Aug 2011 |
| 2.14 (c) | As built drawings of transplanting works for plant species of conservation interest | To be submitted no later than 1 month after completion of transplanting works |
| 2.15 | Tree protection plan | Submitted on 6 Apr 2011 Comments received from EPD on 12 May 2011 and resubmitted on 11 Jun 2011 |
| 2.16(a) | Silt curtain plan | Submitted on 30 May 2011 Comments received from EPD on 30 Jun 2011 and resubmitted on 28 Jul 2011 |
| 2.19 | Operational groundborne noise review plan | To be submitted no later than 1 month after completion of corresponding parts of tunnel excavation |
| 2.20 | Operational groundborne noise mitigation measures plan | To be submitted no later than 1 month prior to installation of rail tracks |
| 2.21 | As built drawings for operational groundborne noise mitigation measures | To be submitted no later than 1 month after completion of tracks installation |
| 2.23 | As built drawings for operational airborne noise mitigation measures on viaduct section | To be submitted no later than 1 month after completion of noise mitigation measures installation on viaduct section |
| 2.24 | Noise performance test report | To be submitted no later than 1 month prior to commencement of operation of the Project |
| 2.25 | Fixed plant noise audit report | To be submitted no later than 1 month prior to commencement of operation of the Project |

| EP Clause No. | Description of Submission | Status |
|---------------|---|---|
| 2.26 | Visual & landscape plan | To be submitted no later than 1 month before commencement of corresponding parts of landscape works |
| 3.3 | Baseline monitoring report | Submitted on 10 Jun 2011 Comments received from EPD on 12 Jul 2011 and to be resubmitted within 1 month of receipt of comments |
| 3.4 | Monthly EM&A reports | Submit within 2 weeks after the end of the reporting month |
| 4.2 | Internet address of EM&A and project data | Submitted on 25 Jul 2011 |

10.2 Statutory Permits and Licenses

A summary of the status of all relevant environmental permit and licenses as of 31 July 2011 is shown below:

| Description | Effective Date | Expiry Date |
|---|-------------------|---------------------------------------|
| Environmental Permit for South Island Line (East) EP-407/2010 | 8/12/2010 | N/A |
| Contract 901 | | |
| Chemical Waste Producer Licence | 5213-124-K3004-01 | 23/5/2011 |
| Waste Disposal | 7012859 | 1/6/2011 |
| Water Discharge Licence | WT00009466-2011 | 4/7/2011 |
| Construction Noise Permit (CNP) for Queensway | GW-RS0411-11 | 24/5/2011 |
| Contract 902 | | |
| Chemical Waste Producer Licence | 5213-175-N2206-12 | 24/6/2011 |
| Waste Disposal | 7012912 | 26/5/2011 |
| Water Discharge Licence for Nam Fung Path | WT00009749-2011 | 22/7/2011 |
| Water Discharge Licence for HK Park | WT00009688-2011 | 22/7/2011 |
| CNP for Nam Fung Path | GW-RS0578-11 | 23/06/2011 |
| Contract 903 | | |
| Chemical Waste Producer Licence | 5213-175-L2174-31 | 14/6/2011 |
| Chemical Waste Producer Licence | 5213-175-L2174-32 | 30/6/2011 |
| Chemical Waste Producer Licence | 5213-175-L2174-33 | 30/6/2011 |
| Chemical Waste Producer Licence | 5213-175-L2174-34 | 30/6/2011 |
| Chemical Waste Producer Licence | 5213-175-L2174-35 | 30/6/2011 |
| Waste Disposal | 7012721 | 12/5/2011 |
| CNP for Zone D | GW-RS0467-11 | 29/5/2011 and 5/6/2011 only |
| CNP for Zone D | GW-RS0480-11 | 1 day only from 3/6/2011 to 30/6/2011 |

| Description | | Effective Date | Expiry Date |
|---|-------------------|------------------------------------|-------------|
| CNP for WCH station | GW-RS0674-11 | 29/7/2011 | 28/1/2012 |
| CNP for Zone D | - | Application submitted on 14/6/2011 | Rejected |
| Water Discharge Licence for Western of Wong Chuk Hang | - | Application submitted on 26/5/2011 | Pending |
| Water Discharge Licence for WCH station | - | Application submitted on 26/5/2011 | Pending |
| Water Discharge Licence for Bore piles area | - | Application submitted on 14/6/2011 | Pending |
| Water Discharge Licence for OCP station | - | Application submitted on 14/6/2011 | Pending |
| Water Discharge Licence for Zone D | - | Application submitted on 14/6/2011 | Pending |
| Water Discharge Licence for Ap Lei Chau Bridge | - | Application submitted on 14/6/2011 | Pending |
| Water Discharge Licence for Zone C | - | Application submitted on 23/6/2011 | Pending |
| Water Discharge Licence for WCH station | - | Application submitted on 29/7/2011 | Pending |
| <u>Contract 904</u> | | | |
| Waste Disposal | 7012979 | 25/6/2011 | N/A |
| Water Discharge Licence | - | Application submitted | Pending |
| Chemical Waste Producer Licence | - | Application submitted | Pending |
| <u>Contract 907</u> | | | |
| Chemical Waste Producer Licence | 5113-175-C3675-01 | 24/6/2011 | N/A |
| Waste Disposal | 7012950 | 31/5/2011 | N/A |
| Water Discharge Licence | - | Application submitted on 24/5/2011 | Pending |
| Water Discharge Licence | - | Application submitted on 24/5/2011 | Pending |
| Water Discharge Licence | - | Application submitted on 24/5/2011 | Pending |
| CNP for WCH Depot | - | Application submitted on 27/7/2011 | Pending |

| Description | Effective Date | Expiry Date |
|------------------------|------------------------------------|-------------|
| CNP for Bus Terminus - | Application submitted on 27/7/2011 | Pending |

11 SITE INSPECTIONS

11.1 Implementation of Environmental Mitigation Measures

Regular site inspections were undertaken by the ET in accordance with the EM&A Manual to check the implementation of environmental mitigation measures in the EIA. The contractors' performance on environmental matters was assessed. The environmental mitigation measures are being implemented by the civil works contractors where appropriate.

11.2 Observations

The findings from the site inspections and the associated recommendations on improvement to the environmental protection and pollution control works were raised to the contractors for reference and/ or action. Observations against the implementation of the mitigation measures recommended in the EP/ EIA are summarized as follows:

| Item | Description | Follow up Status |
|---------------------|---|--------------------|
| Contract 901 | | |
| 1 | The contractor was reminded to provide drip trays for chemicals. | Ongoing |
| 2 | The contractor was reminded to set up site drainage system and wastewater treatment facility prior to any discharge. | By end August 2011 |
| 3 | The contractor was reminded to keep tree protection areas free of stockpiles or materials stacking. | Ongoing |
| 4 | The contractor was reminded to cover the stockpiles properly. | Ongoing |
| 5 | The contractor was reminded to spray water during handling of dusty materials for dust suppression. | Ongoing |
| Contract 902 | | |
| 1 | The contractor is reminded to properly implement waste segregation. | Ongoing |
| 2 | The contractor is reminded to improve the chemical waste storage and spillage management. | Ongoing |
| 3 | The contractor is reminded to properly maintain the tree protection zone. | Ongoing |
| 4 | The contractor is reminded to properly maintain the drainage system and provide sufficient sand/silt removal facilities to meet the effluent standard under WPCO license. | Ongoing |

| Item | Description | Follow up Status |
|---------------------|---|---|
| Contract 903 | | |
| 1 | The contractor was reminded to remove the felled tree as soon as possible. Good housekeeping should be maintained. | Improved and the standard to be maintained continuously |
| 2 | The contractor was reminded to improve the tree protection works. | Ongoing |
| 3 | Untreated water was noted in the WCH nullah, investigation was conducted by the contractor and it was confirmed that the effluent are from other parties. | N/A |
| 4 | The contractor was reminded to place sand bag along the site boundary, in order to avoid untreated effluent to the nullah. | Improved and the standard to be maintained continuously |
| 5 | The contractor was reminded to provide drip tray for all chemical / solvent. | Ongoing |
| 6 | The contractor was reminded to clear stagnant water in the drip trays. | Ongoing |
| 7 | The contractor was reminded to label the chemical waste in the chemical waste store. | Ongoing |
| 8 | The contractor was reminded to cover the exposed earth works surface. | Improved and the standard to be maintained continuously |
| Contract 904 | | |
| 1 | The contractor is reminded to properly implement waste segregation | Ongoing |
| 2 | The contractor is reminded to improve the chemical waste storage and spillage management. | Ongoing |
| 3 | The contractor is reminded to properly maintain the drainage system and cover the stockpile. | Ongoing |
| Contract 907 | | |
| 1 | The contractor was reminded to cover the exposed earth works surface, and increase the watering frequency. | Improved and the standard to be maintained continuously |
| 2 | Good housekeeping should be maintained. | Ongoing |
| 3 | The contractor was reminded to provide drip tray for all chemical / solvent. | Ongoing |
| 4 | The contractor was reminded to label the chemical waste in the chemical waste store. | Improved and the standard to be maintained continuously |
| 5 | The contractor was reminded to turn off the idling machine. | Improved and the standard to be maintained continuously |
| 6 | The contractor is reminded to provide sufficient noise mitigation measures. | On-going |

11.3 *Solid and Liquid Waste Management Status*

Base on the findings of the site inspections, the Contractors' performance in solid and liquid waste management were acceptable and compliance with the EIA requirements were demonstrated. The current management standard should be maintained.

11.4 *Other Notable Events*

IEC Site Inspections

The IEC conducted site inspections for respective works areas on 13, 18, 21 and 26 July 2011. Minor irregularities were observed during the site inspections. Follow up actions had been taken by the respective civil works contractors.

12 *FUTURE KEY ISSUES*

Future key issues envisaged in the coming month include noise and dust emission from site works, disposal of C&D wastes arising as well as tree protection on site. The ET will continue the implementation of the EM&A programme in accordance to the EM&A Manual.

13 *CONCLUSIONS*

It is concluded from the environmental monitoring and audit works for the SIL(E) Project that the construction works were undertaken in an appropriately environmentally sensitive manner in the reporting period. The environmental protection and pollution control measures provided by the respective civil works contractors were generally acceptable apart from some minor irregularities which were rectified timely by the contractors.

The ET will continue the implementation of the EM&A programme in accordance to the EM&A Manual and to a level consistent with MTRCL's Corporate Sustainability Policy.

FIGURES

Figures 1 to 2
Works Areas of the Project

Figures 3 to 6
Location of Construction Air Quality
Monitoring Stations

Figures 7 to 8
Location of Construction Noise
Monitoring Stations

Figure 9
Location of Water Quality Monitoring
Stations

Figure 1 – Works Areas of the Project (1 of 2)

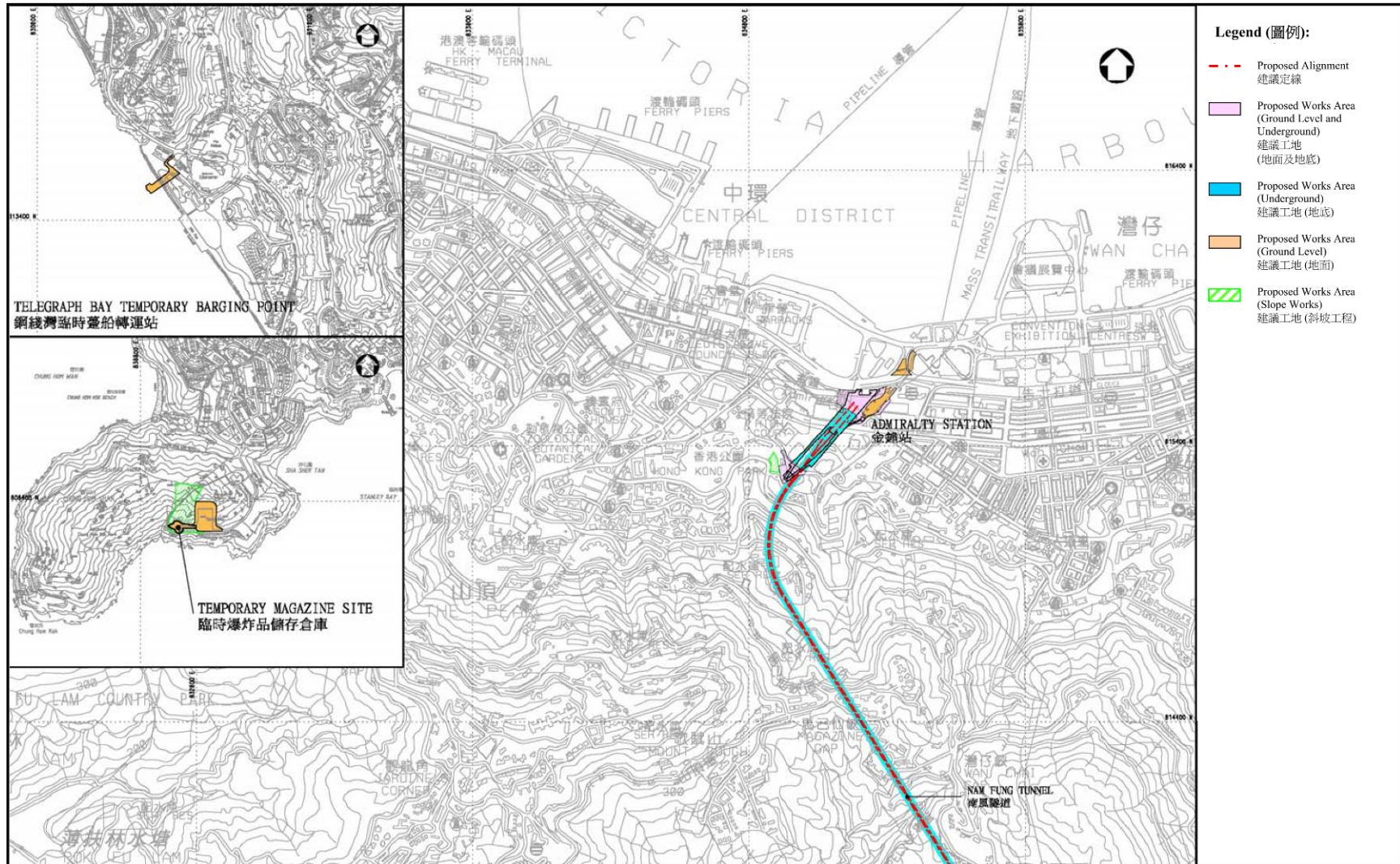


Figure 2 – Works Areas of the Project (2 of 2)

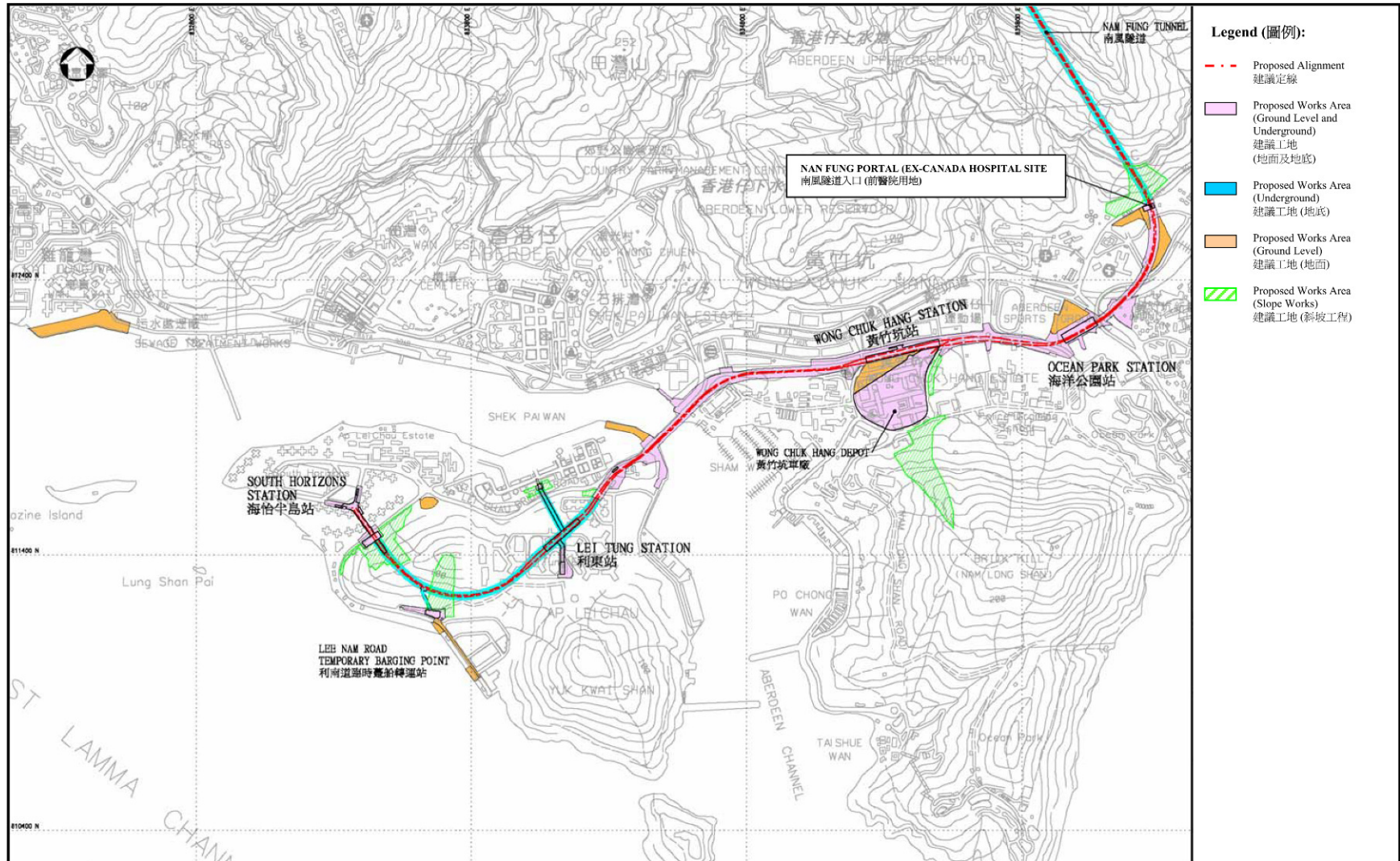


Figure 3 – Location of Construction Air Quality Monitoring Stations (1 of 4)

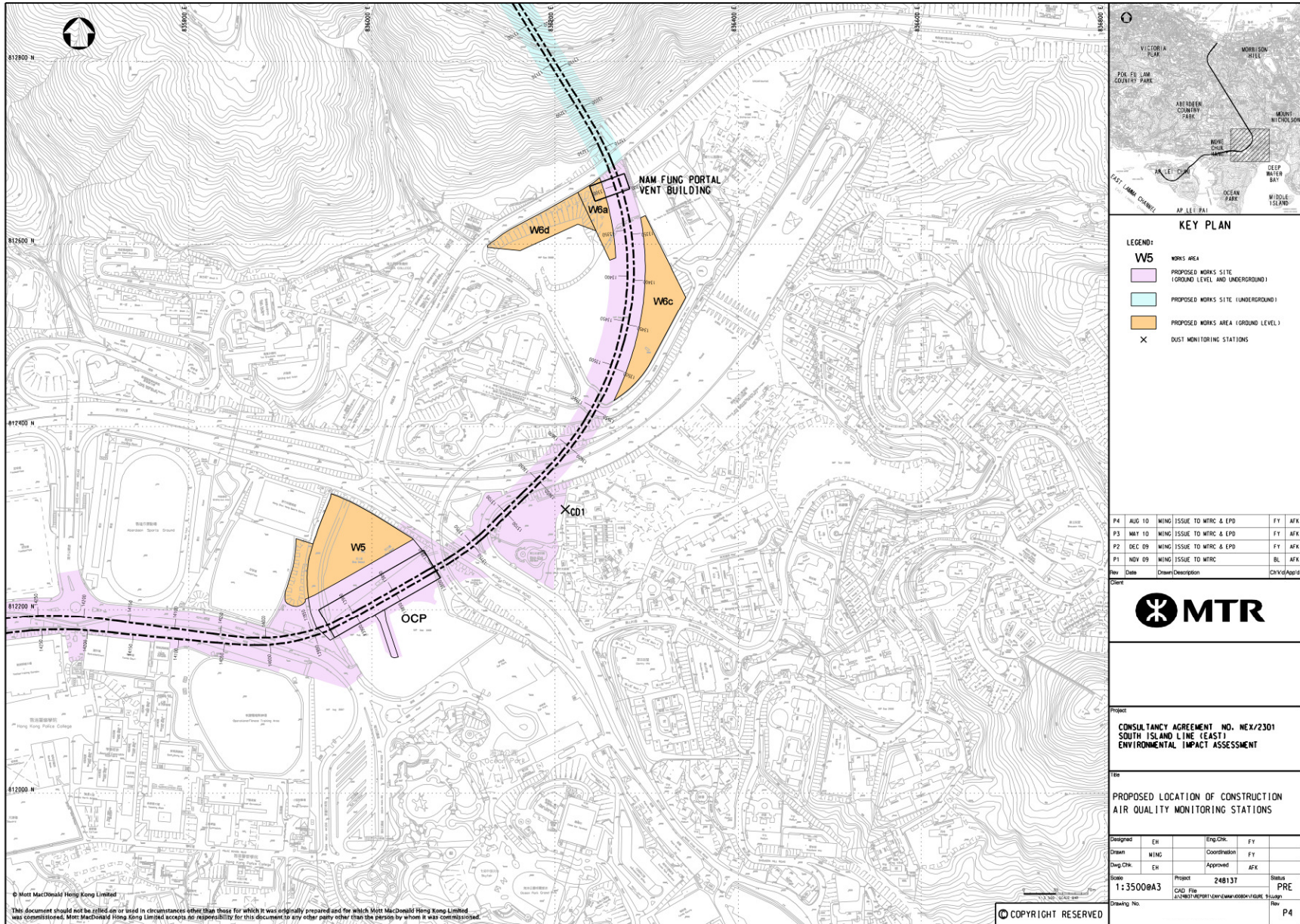


Figure 4 – Location of Construction Air Quality Monitoring Stations (2 of 4)

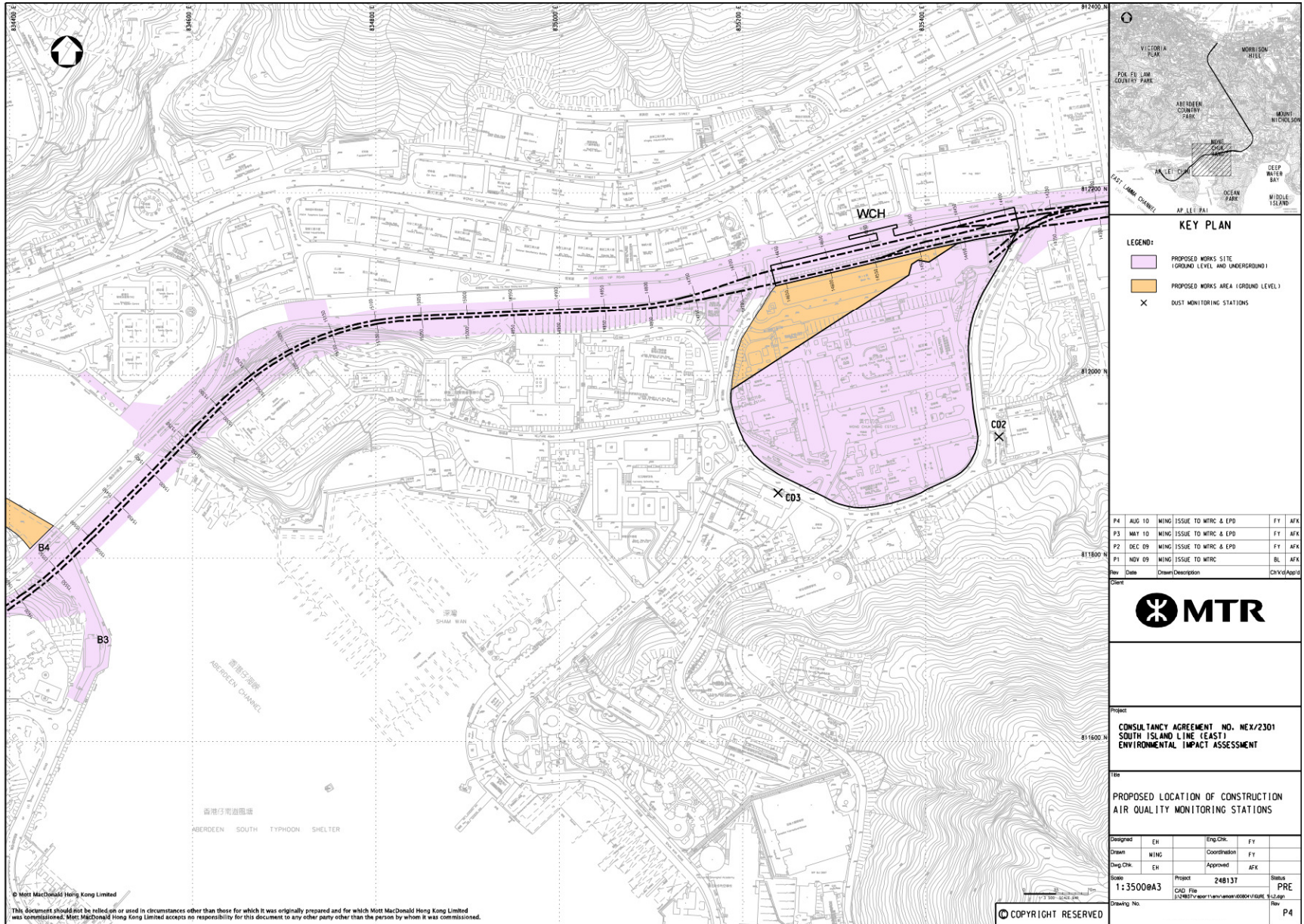


Figure 5 – Location of Construction Air Quality Monitoring Stations (3 of 4)

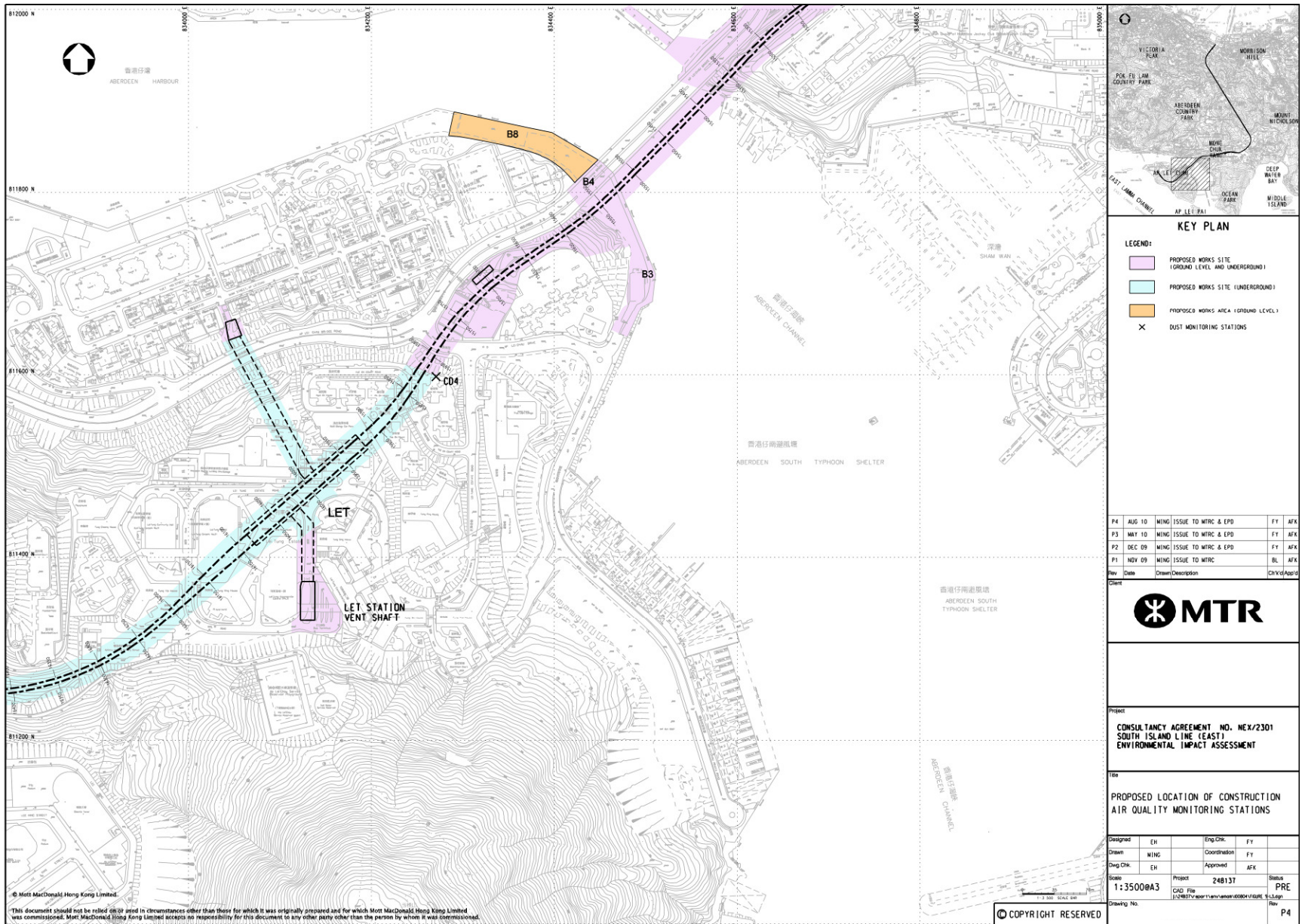


Figure 7 – Location of Construction Noise Monitoring Stations (1 of 2)

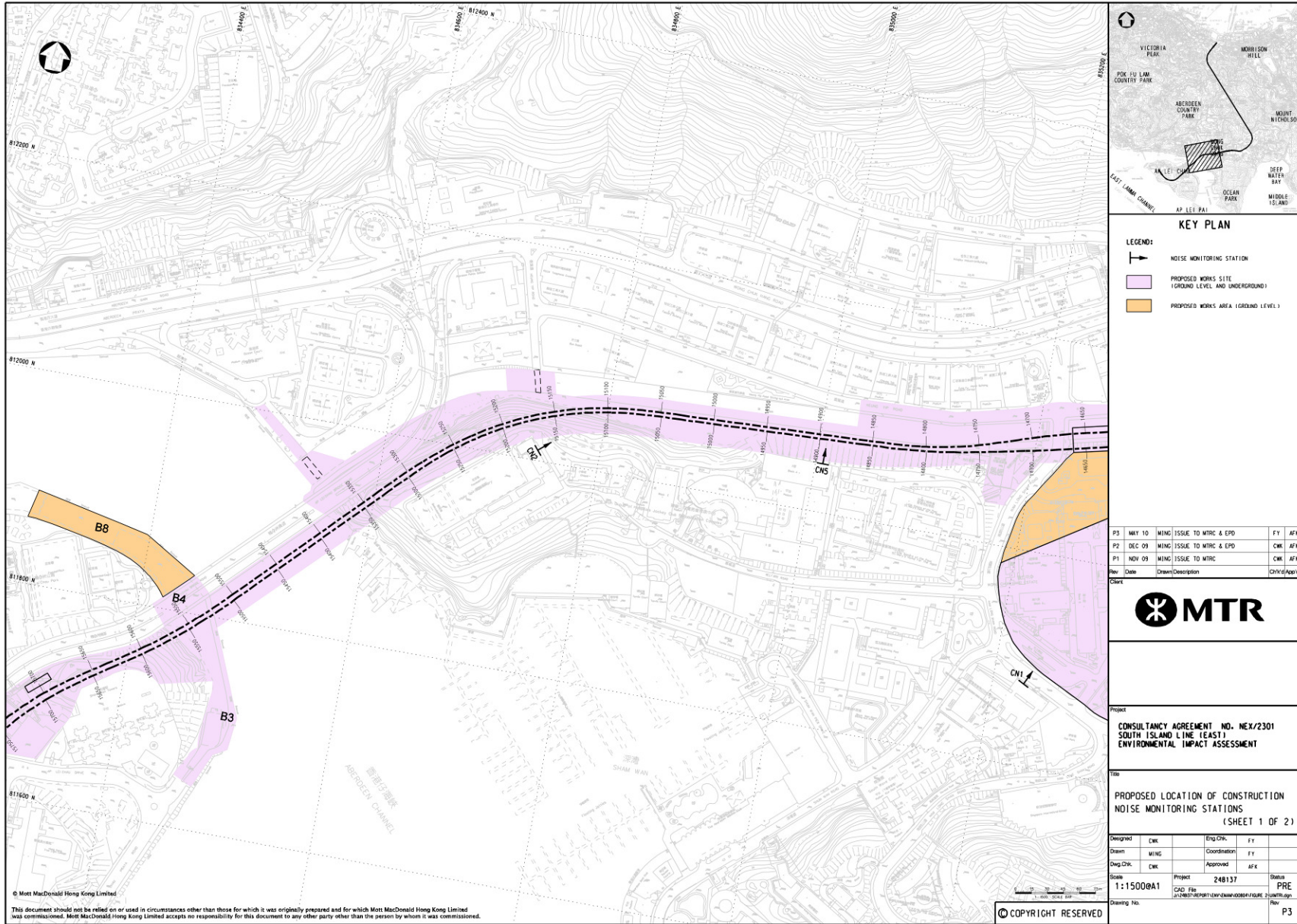


Figure 8 – Location of Construction Noise Monitoring Stations (2 of 2)

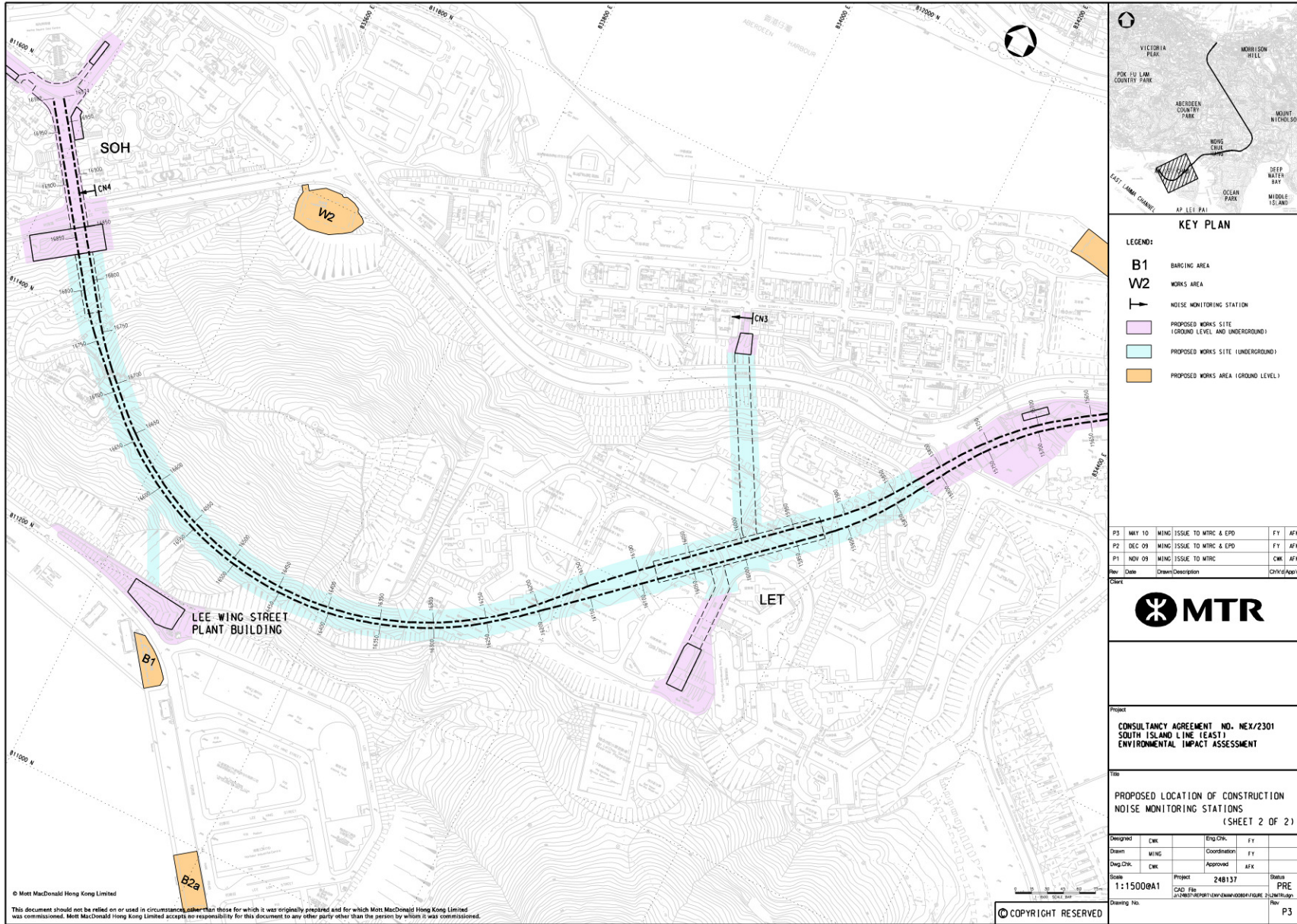
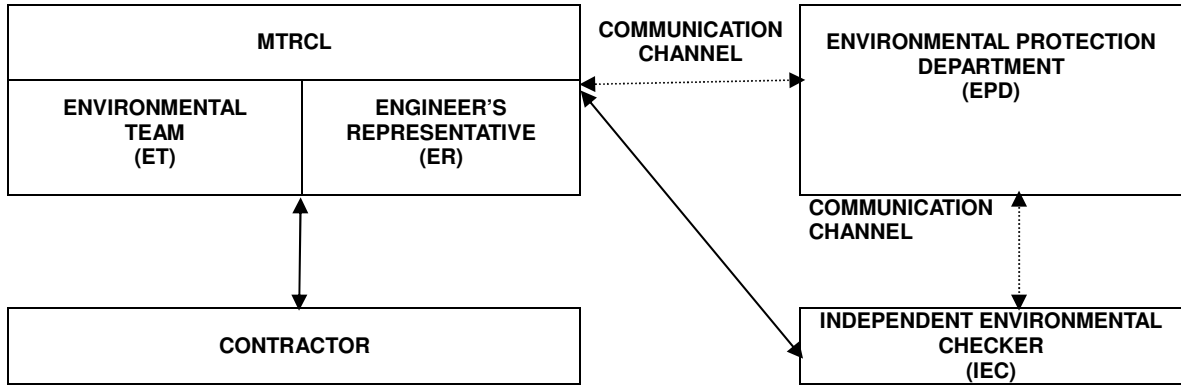


Figure 9 – Location of Water Quality Monitoring Stations



APPENDIX A1
Project Organization

Appendix A1
Project Organization and Lines of Communications



APPENDIX A2

Contact List of Key Personal of the Project

Appendix A2
Contact List of Key Personnel

Table A2.1 Contact List of Key Personnel of Project Management

| Organization | Name | Telephone |
|--|--------------------|------------------|
| Independent Environmental Checker | Mr. Thomas Chan | 2268 3093 |
| Environmental Team Leader | Dr. Glenn Frommer | 2688 1552 |
| Engineer's Representative | | |
| Project Manager – SIL Civil | Mr. Mark Cuzner | 3987 8288 |
| Construction Manager – SIL (901) | Mr. Neil Smith | 2206 8688 |
| Construction Manager – SIL (902 / 904) | Mr. Ken Wong | 3987 8388 |
| Construction Manager – SIL (903 / 907 / 908) | Mr. Kit Chan | 2871 5888 |
| Contract No. 901 | | |
| Admiralty Integrated Station and SCL Enabling Works | | |
| Main Contractor: Kier – Laing O'Rourke – Kaden Joint Venture | | |
| Project Director | Mr. Matthew Bowe | 9726 6117 |
| QA & Environmental Manager | Mr. Ronald Fung | 9777 7667 |
| Contract No. 902 | | |
| Nam Fung Tunnel and Ventilation Buildings | | |
| Main Contractor: Nishimatsu Construction Co., Ltd. | | |
| Contractors Representative | Mr. Colin Birky | 9641 2485 |
| Project Manager | Mr. Kozo Suguta | 9227 9717 |
| Contract No. 903 | | |
| Ocean Park Station, Wong Chuk Hang Station, Viaduct and Aberdeen Channel Bridge | | |
| Main Contractor: Leighton Contractors (Asia) Ltd. | | |
| Project Director | Mr. Paul Freeman | 9856 1988 |
| Project Manager, Stations and Nullah | Mr. Ian Rawsthorne | 9383 0735 |
| Project Manager, Viaducts, Bridge and Precast | Mr. Jon Kitching | 9101 9013 |
| Contract No. 904 | | |
| Lei Tung Station, South Horizons Station and Tunnels | | |
| Main Contractor: Leighton – John Holland Joint Venture | | |
| Operation Manager | Mr. Brain Gillon | 2823 1178 |
| Project Manager | Mr. Ken Henderson | 2823 1134 |

| Organization | Name | Telephone |
|---|-------------------|------------------|
| Contract No. 907 | | |
| Wong Chuk Hang Depot Site Formation and Piling | | |
| Main Contractor: Chun Wo – Hip Hing Joint Venture | | |
| Construction Manager | Mr. Wallace Yeung | 9773 9711 |
| Project Manager | Mr. Patrick Wong | 9465 1064 |

Table A2.2 Contact List of Key Personnel of EPD

| Organization | Name | Telephone |
|---|--------------|------------------|
| EPD | | |
| Sr Env Protection Offr (Metro Assessment) | Mr. Steve Li | 2835 1142 |
| Sr Env Protection Offr (Regional S) | Mr. YK Chan | 2516 1802 |
| Sr Env Protection Offr (Regional S) | Mr. Sean Law | 2516 1806 |

APPENDIX B1

Action and Limit Levels for Construction Noise and Air Quality

Appendix B1

Action and Limit Levels for Construction Noise and Air Quality

Action and Limit Levels for 24-hours TSP

Table B1.1 Action and Limit Levels for 24-hour TSP

| ID | Description | Action Level ($\mu\text{g}/\text{m}^3$) | Limit Level ($\mu\text{g}/\text{m}^3$) |
|-----------|---|---|--|
| CD1 | Wong Chuk Hang San Wai | 173 | 260 |
| CD2 | Police College – Police Quarters | 184 | 260 |
| CD3 | San Wui Commercial Society of HK Chan Pak Sha School | 169 | 260 |
| CD4 | Shan On House | 176 | 260 |
| CD5 | South Horizons Phase IV – Block 25 | 169 | 260 |

Note: TSP levels are to the nearest whole number, with values of 0.5 rounded up

Action and Limit Levels for 1-hour TSP

Table B1.2 Action and Limit Levels for 1-hour TSP

| ID | Description | Action Level ($\mu\text{g}/\text{m}^3$) | Limit Level ($\mu\text{g}/\text{m}^3$) |
|-----------|---|---|--|
| CD1 | Wong Chuk Hang San Wai | 315 | 500 |
| CD2 | Police College – Police Quarters | 311 | 500 |
| CD3 | San Wui Commercial Society of HK Chan Pak Sha School | 322 | 500 |
| CD4 | Shan On House | 318 | 500 |
| CD5 | South Horizons Phase IV – Block 25 | 336 | 500 |

Note: 1-hour TSP criterion recommended in the EIAO-TM
TSP levels are to the nearest whole number, with values of 0.5 rounded up

Action and Limit Levels for Construction Noise

Table B1.3 Action and Limit Levels for Construction Noise

| Time Period | Action Level | Limit Level |
|---|--|--|
| Daytime (0700-1900), Monday through Saturday excluding Public Holidays | When one document complaint received. | $L_{Aeq\ 30mins} 75dB(A)^{(1)(2)}$ |
| All evenings (1900-2300) | | Subject to control under the Noise Control Ordinance |
| General Holidays (including all Sundays) during the daytime and evening (0700-2300) | | Subject to control under the Noise Control Ordinance |
| All night time periods (2300-0700) | | Subject to control under the Noise Control Ordinance |

(1) 70dB(A) for schools and 65dB(A) during school examination periods.

(2) Updated prediction of noise levels as contained in the construction noise mitigation measures plan.

APPENDIX B2

Action and Limit Levels for Water Quality

Appendix B2
Action and Limit Levels for Water Quality

Table B2.1 Action and Limit Levels for Ebb Condition

| Tide: Ebb | | | | |
|--------------------------------------|--|-----|--|-----|
| Location: WM1 | | | | |
| Parameters | Action Level | | Limit Level | |
| DO in mg/L | Surface | 5.9 | Surface | 5.5 |
| | Middle | 6.0 | Middle | 5.6 |
| | Bottom | 6.0 | Bottom | 5.7 |
| SS in mg/L (depth averaged) | 14.9 and 120% of upstream control station of the same day | | 16.4 and 130% of upstream control station of the same day | |
| Turbidity in NTU (depth averaged) | 4.4 and 120% of upstream control station of the same day | | 5.2 and 130% of upstream control station of the same day | |
| Tide: Ebb | | | | |
| Location: WM2 | | | | |
| Parameters | Action Level | | Limit Level | |
| DO in mg/L | Surface | 5.9 | Surface | 5.5 |
| | Middle | NA | Middle | NA |
| | Bottom | 6.0 | Bottom | 5.7 |
| SS in mg/L (depth averaged) | 14.7 and 120% of upstream control station of the same day | | 15.5 and 130% of upstream control station of the same day | |
| Turbidity in NTU (depth averaged) | 5.5 and 120% of upstream control station of the same day | | 7.0 and 130% of upstream control station of the same day | |

| Tide: Ebb | | | | |
|--------------------------------------|--|-----|--|-----|
| Location: WM3 | | | | |
| Parameters | Action Level | | Limit Level | |
| DO in mg/L | Surface | 6.1 | Surface | 5.7 |
| | Middle | 6.1 | Middle | 5.7 |
| | Bottom | 6.3 | Bottom | 5.9 |
| SS in mg/L (depth averaged) | 14.4 and 120% of upstream control station of the same day | | 16.0 and 130% of upstream control station of the same day | |
| Turbidity in NTU (depth averaged) | 3.4 and 120% of upstream control station of the same day | | 3.8 and 130% of upstream control station of the same day | |
| Tide: Ebb | | | | |
| Location: WM4 | | | | |
| Parameters | Action Level | | Limit Level | |
| DO in mg/L | Surface | 6.1 | Surface | 5.8 |
| | Middle | 6.3 | Middle | 6.0 |
| | Bottom | 6.5 | Bottom | 6.2 |
| SS in mg/L (depth averaged) | 14.0 and 120% of upstream control station of the same day | | 15.5 and 130% of upstream control station of the same day | |
| Turbidity in NTU (depth averaged) | 3.0 and 120% of upstream control station of the same day | | 3.2 and 130% of upstream control station of the same day | |

Table B2.2 Action and Limit Levels for Flood Condition

| Tide: Flood | | | | |
|--------------------------------------|--|-----|--|-----|
| Location: WM1 | | | | |
| Parameters | Action Level | | Limit Level | |
| DO in mg/L | Surface | 5.9 | Surface | 5.6 |
| | Middle | 6.1 | Middle | 5.7 |
| | Bottom | 6.2 | Bottom | 5.8 |
| SS in mg/L (depth averaged) | 12.7 and 120% of upstream control station of the same day | | 12.9 and 130% of upstream control station of the same day | |
| Turbidity in NTU (depth averaged) | 3.8 and 120% of upstream control station of the same day | | 4.0 and 130% of upstream control station of the same day | |

| Tide: Flood | | | | |
|--------------------------------------|--|-----|--|-----|
| Location: WM2 | | | | |
| Parameters | Action Level | | Limit Level | |
| DO in mg/L | Surface | 6.0 | Surface | 5.7 |
| | Middle | NA | Middle | NA |
| | Bottom | 6.1 | Bottom | 5.8 |
| SS in mg/L (depth averaged) | 12.8 and 120% of upstream control station of the same day | | 13.6 and 130% of upstream control station of the same day | |
| Turbidity in NTU (depth averaged) | 3.5 and 120% of upstream control station of the same day | | 3.9 and 130% of upstream control station of the same day | |
| Tide: Flood | | | | |
| Location: WM3 | | | | |
| Parameters | Action Level | | Limit Level | |
| DO in mg/L | Surface | 6.0 | Surface | 5.7 |
| | Middle | 6.2 | Middle | 5.8 |
| | Bottom | 6.2 | Bottom | 5.9 |
| SS in mg/L (depth averaged) | 11.5 and 120% of upstream control station of the same day | | 11.5 and 130% of upstream control station of the same day | |
| Turbidity in NTU (depth averaged) | 3.1 and 120% of upstream control station of the same day | | 3.2 and 130% of upstream control station of the same day | |
| Tide: Flood | | | | |
| Location: WM4 | | | | |
| Parameters | Action Level | | Limit Level | |
| DO in mg/L | Surface | 6.0 | Surface | 5.8 |
| | Middle | 6.2 | Middle | 5.8 |
| | Bottom | 6.3 | Bottom | 6.1 |
| SS in mg/L (depth averaged) | 13.4 and 120% of upstream control station of the same day | | 15.6 and 130% of upstream control station of the same day | |
| Turbidity in NTU (depth averaged) | 2.7 and 120% of upstream control station of the same day | | 2.8 and 130% of upstream control station of the same day | |

APPENDIX C

Calibration Details

Summary of Calibration Certificate

Noise Equipment

| Model | Serial Number | Calibration Date | Expiry Date | Remark |
|------------------------|---------------|------------------|-------------|--------|
| B&K 2250L | 2741137 | 21 Jan 2011 | 21 Jan 2013 | |
| B&K 2250 | 2551244 | 25 Jan 2011 | 25 Jan 2013 | |
| B&K 4231 Calibrator | 2725557 | 15 Jun 2011 | 15 Jun 2013 | |
| B&K 4231 Calibrator | 2309393 | 15 Jun 2011 | 15 Jun 2013 | |

High Volume Sampler

| Model | Sampler | Calibration Date | Expiry Date | Remark |
|------------------|-----------|------------------|-------------|--------|
| Graseby-Andersen | 694-0661 | 8 Feb 2011 | 8 Aug 2011 | |
| Graseby-Andersen | 894-0833 | 8 Feb 2011 | 8 Aug 2011 | |
| Graseby-Andersen | 994-0878 | 8 Feb 2011 | 8 Aug 2011 | |
| Graseby-Andersen | 1294-1104 | 16 May 2011 | 16 Nov 2011 | |
| Graseby-Andersen | 1294-1111 | 8 Feb 2011 | 8 Aug 2011 | |

Water Quality Monitoring Equipment

| Model | Serial Number | Calibration Date | Expiry Date | Remark |
|--|---------------|------------------|-------------|--------|
| Turbidimeter | | | | |
| HACH 2100P | 06070C018334 | 30 Apr 2011 | 29 Jul 2011 | |
| HACH 2100P | 06070C018334 | 29 Jul 2011 | 29 Oct 2011 | |
| HACH 2100P | 080600030281 | 13 Jul 2011 | 13 Oct 2011 | |
| pH Meter | | | | |
| HANNA HI8314 | 674469 | 16 Jul 2011 | 15 Aug 2011 | |
| Multimeter for Temperature / Dissolved Oxygen / Salinity | | | | |
| YSI 85D | 082100716 | 27 Jun 2011 | 26 Sep 2011 | |

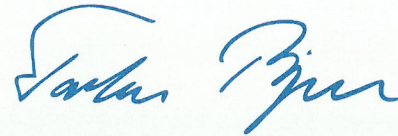
MANUFACTURER'S CERTIFICATE OF CONFORMANCE

We certify that Brüel & Kjær **-2250-L--** Serial No. **2741137**
has been tested and passed all production tests, confirming compliance with
the manufacturer's published specification at the date of the test.

The final test has been performed using calibrated equipment, traceable to
National or International Standards or by ratio measurements.

Brüel & Kjær is certified under ISO 9001:2008 assuring that all test data is
retained on file and is available for inspection upon request.

Nærum 21-jan-2011



Torben Bjørn
Vice President, Operations

Please note that this document is not a calibration certificate.
For information on our calibration services please contact your nearest Brüel & Kjær office.



MAXLAB

CALIBRATION CERTIFICATE

Certificate Information

Date of Issue 25th January, 2011

Certificate Number MLCN110186S

Customer Information

Company Name MTR Corporation Limited
Address MTR Tower, Telford Plaza,
33 Wai Yip St., Kowloon Bay,
Kowloon,
Hong Kong

Unit Under Test (UUT)

Description Handheld Analyzer
Manufacturer Brüel & Kjær
Model Number Type 2250
Serial Number 2551244
Equipment Number -

Calibration Result

- * The exact manufacturer's specification is not available from the customer.
- * Calibration data are detailed on the attached sheet(s).

Approved By

Laboratory Manager

- * Calibration equipment used for this calibration are traceable to national / international standards.
- * The results on this Calibration Certificate only relate to the values measured at the time of the calibration and the uncertainties quoted will not include allowance for the UUT long term drift, variation with environmental changes, vibration and shock during transportation, overloading, mishandling, misuse, and the capacity of any other laboratory to repeat the measurement.
- * MaxLab Calibration Centre Limited shall not be liable for any loss or damage resulting from the use of the UUT.
- * The copy of this Certificate is owned by MaxLab Calibration Centre Limited. No part of this Certificate may be reproduced without the prior written approval of MaxLab Calibration Centre Limited.



MAXLAB

CALIBRATION CERTIFICATE

Certificate Information

Date of Issue 25th January, 2011

Certificate Number MLCN110186S

Calibration Status

| | |
|----------------------------|--|
| Date of Calibration | 25 th January, 2011 |
| Calibration Equipment Used | 4231 (MLTE008)/ C1002184/ 8 th Mar 2012 |
| Calibration Procedure | MLCG00 & MLCG15. |
| Calibration Uncertainty | ±0.2 dB |

| | | | |
|-----------------------|-----|-------------------|------------------|
| Calibration Condition | Lab | Temperature | 23 °C ± 5 °C |
| | UUT | Relative Humidity | 55% ± 25% |
| | | Stabilizing Time | Over 3 hours |
| | | Warm-up Time | 10 minutes |
| | | Supply Voltage | Internal Battery |

Calibration Data

| Frequency Weighted | UUT Setting | | | UUT Rdg | Std Rdg | UUT Error |
|--------------------|-------------|----------|------------|----------|---------|-----------|
| | Parameter | Response | Range (dB) | | | |
| A (1 kHz Input) | SPL | F | Auto | 93.8 dB | 94 dB | -0.2 dB |
| | | S | | 93.8 dB | 94 dB | -0.2 dB |
| | | I | | 93.8 dB | 94 dB | -0.2 dB |
| C (1 kHz Input) | | F | | 93.8 dB | 94 dB | -0.2 dB |
| | | S | | 93.8 dB | 94 dB | -0.2 dB |
| | | I | | 93.8 dB | 94 dB | -0.2 dB |
| A (1 kHz Input) | | F | | 113.8 dB | 114 dB | -0.2 dB |
| | | S | | 113.8 dB | 114 dB | -0.2 dB |
| | | I | | 113.8 dB | 114 dB | -0.2 dB |
| C (1 kHz Input) | F | 113.8 dB | 114 dB | -0.2 dB | | |
| | S | 113.8 dB | 114 dB | -0.2 dB | | |
| | I | 113.8 dB | 114 dB | -0.2 dB | | |



MAXLAB

CALIBRATION CERTIFICATE

Certificate Information

Date of Issue 15th June, 2011

Certificate Number

MLCN110665S

Customer Information

Company Name

MTR Corporation Limited

Address

MTR Tower, Telford Plaza,
33 Wai Yip St., Kowloon Bay,
Kowloon,
Hong Kong

Unit Under Test (UUT)

Description

Sound Level Calibrator

Manufacturer

Brüel & Kjær

Model Number

4231

Serial Number

2725557

Equipment Number

-

Calibration Result

- * All calibration results within the manufacturer's specification.
- * Calibration data are detailed on the attached sheet(s).

Approved By

Laboratory Manager

- * Calibration equipment used for this calibration are traceable to national / international standards.
- * The results on this Calibration Certificate only relate to the values measured at the time of the calibration and the uncertainties quoted will not include allowance for the UUT long term drift, variation with environmental changes, vibration and shock during transportation, overloading, mishandling, misuse, and the capacity of any other laboratory to repeat the measurement.
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MAXLAB

CALIBRATION CERTIFICATE

Certificate Information

Date of Issue 15th June, 2011

Certificate Number

MLCN110665S

Calibration Status

Date of Calibration

15th June, 2011

Calibration Equipment Used

4231 (MLTE008)/ C1002184/ 8th Mar 2012
1351 (MLTE049)/ MLEC11/06/04/ 15th Jun 2012
MLCG00 & MLCG15.

Calibration Procedure

Calibration Uncertainty

± 0.1 dB

Calibration Condition

Lab

Temperature

23 °C ± 5 °C

Relative Humidity

55% ± 25%

UUT

Stabilizing Time

Over 3 hours

Warm-up Time

Not applicable

Supply Voltage

Internal battery

Calibration Data

| UUT Setting | STD Rdg | UUT Error | UUT Error Limit |
|-------------|----------|-----------|-----------------|
| 94 dB | 94.0 dB | 0.0 dB | 0.2 dB |
| 114 dB | 114.0 dB | 0.0 dB | 0.2 dB |



MAXLAB

CALIBRATION CERTIFICATE

Certificate Information

Date of Issue 15th June, 2011

Certificate Number MLCN110664S

Customer Information

Company Name MTR Corporation Limited
Address MTR Tower, Telford Plaza,
33 Wai Yip St., Kowloon Bay,
Kowloon,
Hong Kong

Unit Under Test (UUT)

Description Sound Level Calibrator
Manufacturer Brüel & Kjær
Model Number 4231
Serial Number 2309393
Equipment Number -

Calibration Result

- * All calibration results within the manufacturer's specification.
- * Calibration data are detailed on the attached sheet(s).

Approved By

Laboratory Manager

- * Calibration equipment used for this calibration are traceable to national / international standards.
- * The results on this Calibration Certificate only relate to the values measured at the time of the calibration and the uncertainties quoted will not include allowance for the UUT long term drift, variation with environmental changes, vibration and shock during transportation, overloading, mishandling, misuse, and the capacity of any other laboratory to repeat the measurement. MaxLab Calibration Centre Limited shall not be liable for any loss or damage resulting from the use of the UUT. The copy of this Certificate is owned by MaxLab Calibration Centre Limited. No part of this Certificate may be reproduced without the prior written approval of MaxLab Calibration Centre Limited.



MAXLAB

CALIBRATION CERTIFICATE

Certificate Information

Date of Issue 15th June, 2011

Certificate Number

MLCN110664S

Calibration Status

Date of Calibration

15th June, 2011

Calibration Equipment Used

4231 (MLTE008)/ C1002184/ 8th Mar 2012
1351 (MLTE049)/ MLEC11/06/04/ 15th Jun 2012
MLCG00 & MLCG15.

Calibration Procedure

Calibration Uncertainty

± 0.1 dB

Calibration Condition

Lab

Temperature

23 °C ± 5 °C

Relative Humidity

55% ± 25%

UUT

Stabilizing Time

Over 3 hours

Warm-up Time

Not applicable

Supply Voltage

Internal battery

Calibration Data

| UUT Setting | STD Rdg | UUT Error | UUT Error Limit |
|-------------|----------|-----------|-----------------|
| 94 dB | 94.0 dB | 0.0 dB | 0.2 dB |
| 114 dB | 114.0 dB | 0.0 dB | 0.2 dB |

ANDERSEN INSTRUMENTS INC.

GS2310 Series Sampler Calibration

(Dickson Recorder)

Customer -> MTRC

SITE

Location -> Police College- Police Quart

Date -> 8-Feb-11

Sampler -> 694-0661

Tech -> Chan Kin Fung

CONDITIONS

| | | | | | |
|----------------------|---------|-------|----------------------|---------|--------|
| Sea Level Pressure | (hpa) | 1007 | Sampler Elevation | (feet) | 60 |
| Sea Level Pressure | (in Hg) | 29.74 | Corrected Pressure | (mm Hg) | 753.73 |
| Temperature | (deg C) | 23.5 | Temperature | (deg K) | 296.50 |
| Seasonal SL Pressure | (in Hg) | 29.74 | Corrected Seasonal | (mm Hg) | 753.73 |
| Seasonal Temperature | (deg C) | 23.50 | Seasonal Temperature | (deg K) | 296.50 |

CALIBRATION ORIFICE

Make -> Andersen Instruments Inc.

Qstd Slope -> 1.99

Model -> 25A

Qstd Intercept -> -0.014012

Serial# -> 5303

Date Certified ->

CALIBRATION

| | Plate or | H ₂ O | Qstd | I | IC | LINEAR |
|---|----------|------------------|-----------------------|---------|-------------|-----------------------|
| | Test # | (in) | (M ³ /min) | (chart) | (corrected) | REGRESSION |
| 1 | 18 | 14.7 | 1.931 | 67 | 66.892 | Slope = 36.5750 |
| 2 | 13 | 11.9 | 1.738 | 62 | 61.900 | Intercept = -2.6461 |
| 3 | 10 | 9.1 | 1.520 | 53 | 52.914 | Corr. Coeff. = 0.9974 |
| 4 | 7 | 5.8 | 1.215 | 43 | 42.931 | |
| 5 | 5 | 3.5 | 0.946 | 31 | 30.950 | |

Calculations

$$Qstd = 1/m [\text{Sqrt} (H_2O (Pa/Pstd) (Tstd/Ta)) - b]$$

$$IC = I [\text{Sqrt} (Pa/Pstd) (Tstd/Ta)]$$

Qstd = standard flow rate

IC = corrected chart response

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pa = actual pressure during calibration (mm Hg)

Tstd = 298 deg K

Pstd = 760 mm Hg

For subsequent calculation of sampler flow:

$$1/m ((I) [\text{Sqrt} (298/Tav) (Pav/760)] - b)$$

m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



This is to certify that the above equipment has been calibrated in accordance with manufacturer's procedure.

ANDERSEN INSTRUMENTS INC.

GS2310 Series Sampler Calibration

(Dickson Recorder)

Customer -> MTRC

SITE

Location -> Chan Pak Sha School

Date -> 8-Feb-11

Sampler -> 894-0833

Tech -> Chan Kin Fung

CONDITIONS

| | | | | | |
|----------------------|---------|-------|----------------------|---------|--------|
| Sea Level Pressure | (hpa) | 1011 | Sampler Elevation | (feet) | 60 |
| Sea Level Pressure | (in Hg) | 29.85 | Corrected Pressure | (mm Hg) | 756.73 |
| Temperature | (deg C) | 22 | Temperature | (deg K) | 295.00 |
| Seasonal SL Pressure | (in Hg) | 29.85 | Corrected Seasonal | (mm Hg) | 756.73 |
| Seasonal Temperature | (deg C) | 22.00 | Seasonal Temperature | (deg K) | 295.00 |

CALIBRATION ORIFICE

Make -> Andersen Instruments Inc.

Qstd Slope -> 1.99

Model -> 25A

Qstd Intercept -> -0.014012

Serial# -> 5303

Date Certified ->

CALIBRATION

| | Plate or | H ₂ O | Qstd | I | IC | LINEAR | |
|---|----------|------------------|-----------------------|---------|-------------|----------------|---------|
| | Test # | (in) | (M ³ /min) | (chart) | (corrected) | REGRESSION | |
| 1 | 18 | 13 | 1.824 | 60 | 60.175 | Slope = | 29.0331 |
| 2 | 13 | 10.5 | 1.640 | 55 | 55.160 | Intercept = | 7.5836 |
| 3 | 10 | 8.1 | 1.441 | 50 | 50.146 | Corr. Coeff. = | 0.9992 |
| 4 | 7 | 5.2 | 1.156 | 41 | 41.119 | | |
| 5 | 5 | 3.3 | 0.923 | 34 | 34.099 | | |

Calculations

$$Qstd = 1/m [\text{Sqrt} (H_2O (Pa/Pstd) (Tstd/Ta)) - b]$$

$$IC = I [\text{Sqrt} (Pa/Pstd) (Tstd/Ta)]$$

Qstd = standard flow rate

IC = corrected chart response

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pa = actual pressure during calibration (mm Hg)

Tstd = 298 deg K

Pstd = 760 mm Hg

For subsequent calculation of sampler flow:

$$1/m (I) [\text{Sqrt} (298/Tav) (Pav/760)] - b$$

m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



This is to certify that the above equipment has been calibrated in accordance with manufacturer's procedure.

ANDERSEN INSTRUMENTS INC.

GS2310 Series Sampler Calibration (Dickson Recorder)

| | |
|---------------------------------|-----------------------|
| Customer -> MTRC | SITE |
| Location -> Shan On House (YOC) | Date -> 8-Feb-11 |
| Sampler -> 994-0878 | Tech -> Chan Kin Fung |

CONDITIONS

| | | | |
|------------------------------|-------|-----------------------------|--------|
| Sea Level Pressure (hpa) | 1007 | Sampler Elevation (feet) | 60 |
| Sea Level Pressure (in Hg) | 29.74 | Corrected Pressure (mm Hg) | 753.73 |
| Temperature (deg C) | 23.5 | Temperature (deg K) | 296.50 |
| Seasonal SL Pressure (in Hg) | 29.74 | Corrected Seasonal (mm Hg) | 753.73 |
| Seasonal Temperature (deg C) | 23.50 | Seasonal Temperature(deg K) | 296.50 |

CALIBRATION ORIFICE

| | |
|-----------------------------------|-----------------------------|
| Make -> Andersen Instruments Inc. | Qstd Slope -> 1.99 |
| Model -> 25A | Qstd Intercept -> -0.014012 |
| Serial# -> 5303 | Date Certified -> |

CALIBRATION

| Plate or Test # | H ₂ O (in) | Qstd (M ³ /min) | I (chart) | IC (corrected) | LINEAR REGRESSION |
|-----------------|-----------------------|----------------------------|-----------|----------------|-----------------------|
| 1 | 18 | 14.8 | 1.937 | 68 | Slope = 36.8221 |
| 2 | 13 | 12 | 1.745 | 63 | Intercept = -2.3479 |
| 3 | 10 | 9.2 | 1.529 | 54 | Corr. Coeff. = 0.9973 |
| 4 | 7 | 5.9 | 1.226 | 44 | |
| 5 | 5 | 3.6 | 0.959 | 32 | |

Calculations

$$Qstd = 1/m [\text{Sqrt} (H_2O (Pa/Pstd) (Tstd/Ta)) - b]$$

$$IC = I [\text{Sqrt} (Pa/Pstd) (Tstd/Ta)]$$

Qstd = standard flow rate

IC = corrected chart response

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pa = actual pressure during calibration (mm Hg)

Tstd = 298 deg K

Pstd = 760 mm Hg

For subsequent calculation of sampler flow:

$$1/m ((I) [\text{Sqrt} (298/Tav) (Pav/760)]) - b$$

m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



This is to certify that the above equipment has been calibrated in accordance with manufacturer's procedure.

ANDERSEN INSTRUMENTS INC.

GS2310 Series Sampler Calibration (Dickson Recorder)

Customer -> MTRC

SITE

Location -> South Horizons

Date -> 16-May-11

Sampler -> 1294-1104

Tech -> Chan Kin Fung

CONDITIONS

| | | | | | |
|----------------------|---------|-------|----------------------|---------|--------|
| Sea Level Pressure | (hpa) | 1010 | Sampler Elevation | (feet) | 90 |
| Sea Level Pressure | (in Hg) | 29.83 | Corrected Pressure | (mm Hg) | 755.23 |
| Temperature | (deg C) | 26 | Temperature | (deg K) | 299.00 |
| Seasonal SL Pressure | (in Hg) | 29.83 | Corrected Seasonal | (mm Hg) | 755.23 |
| Seasonal Temperature | (deg C) | 26.00 | Seasonal Temperature | (deg K) | 299.00 |

CALIBRATION ORIFICE

Make -> Andersen Instruments Inc.

Qstd Slope -> 2.0075

Model -> G25A

Qstd Intercept -> -0.038138

Serial# -> 1436

Date Certified ->

CALIBRATION

| | Plate or Test # | H ₂ O (in) | Qstd (M ³ /min) | I (chart) | IC (corrected) | LINEAR REGRESSION |
|---|--------------------|--------------------------|-------------------------------|--------------|-------------------|-----------------------|
| 1 | 18 | 12.3 | 1.758 | 60 | 59.711 | Slope = 31.4600 |
| 2 | 13 | 10 | 1.587 | 54 | 53.740 | Intercept = 4.2370 |
| 3 | 10 | 7.8 | 1.404 | 49 | 48.764 | Corr. Coeff. = 0.9996 |
| 4 | 7 | 5.1 | 1.139 | 40 | 39.807 | |
| 5 | 5 | 3.2 | 0.906 | 33 | 32.841 | |

Calculations

$$Qstd = 1/m [\text{Sqrt} (H_2O (Pa/Pstd) (Tstd/Ta)) - b]$$

$$IC = I [\text{Sqrt} (Pa/Pstd) (Tstd/Ta)]$$

Qstd = standard flow rate

IC = corrected chart response

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pa = actual pressure during calibration (mm Hg)

Tstd = 298 deg K

Pstd = 760 mm Hg

For subsequent calculation of sampler flow:

$$1/m ((I) [\text{Sqrt} (298/Tav) (Pav/760)] - b)$$

m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



This is to certify that the above equipment has been calibrated in accordance with manufacturer's procedure.

ANDERSEN INSTRUMENTS INC.

GS2310 Series Sampler Calibration

(Dickson Recorder)

Customer -> MTRC

SITE

Location -> Wong Chuk Hang San Wai

Date -> 8-Feb-11

Sampler -> 1294-1111

Tech -> Chan Kin Fung

CONDITIONS

| | | | | | |
|----------------------|---------|-------|----------------------|---------|--------|
| Sea Level Pressure | (hpa) | 1007 | Sampler Elevation | (feet) | 60 |
| Sea Level Pressure | (in Hg) | 29.74 | Corrected Pressure | (mm Hg) | 753.73 |
| Temperature | (deg C) | 23 | Temperature | (deg K) | 296.00 |
| Seasonal SL Pressure | (in Hg) | 29.74 | Corrected Seasonal | (mm Hg) | 753.73 |
| Seasonal Temperature | (deg C) | 23.00 | Seasonal Temperature | (deg K) | 296.00 |

CALIBRATION ORIFICE

Make -> Andersen Instruments Inc.

Qstd Slope -> 1.99

Model -> 25A

Qstd Intercept -> -0.014012

Serial# -> 5303

Date Certified ->

CALIBRATION

| | Plate or | H ₂ O | Qstd | I | IC | LINEAR | |
|---|----------|------------------|-----------------------|---------|-------------|----------------|---------|
| | Test # | (in) | (M ³ /min) | (chart) | (corrected) | REGRESSION | |
| 1 | 18 | 14.8 | 1.939 | 64 | 63.951 | Slope = | 29.7514 |
| 2 | 13 | 11.9 | 1.739 | 59 | 58.954 | Intercept = | 6.2347 |
| 3 | 10 | 9.3 | 1.538 | 51 | 50.961 | Corr. Coeff. = | 0.9970 |
| 4 | 7 | 5.9 | 1.227 | 42 | 41.968 | | |
| 5 | 5 | 3.7 | 0.973 | 36 | 35.972 | | |

Calculations

$$Qstd = 1/m [\text{Sqrt} (H_2O (Pa/Pstd) (Tstd/Ta)) - b]$$

$$IC = I [\text{Sqrt} (Pa/Pstd) (Tstd/Ta)]$$

Qstd = standard flow rate

IC = corrected chart response

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pa = actual pressure during calibration (mm Hg)

Tstd = 298 deg K

Pstd = 760 mm Hg

For subsequent calculation of sampler flow:

$$1/m ((I) [\text{Sqrt} (298/Tav) (Pav/760)] - b)$$

m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



This is to certify that the above equipment has been calibrated in accordance with manufacturer's procedure.



Internal Calibration & Performance Check Report of pH Meter

Equipment Ref. No. : E7IEW10071003 Manufacturer : HANNA
 Model No. : HZ 8314 Serial No. : 674469
 Date of Calibration : 16/7/11 Calibration Due Date : 15/8/11

Liquid Junction Error

Primary Standard Solution Used : Phosphate Ref No. of Primary Solution: 003/5.2/001/6
 Temperature of Solution : 20.0 pH_s = +0.08
 pH value of diluted buffer : 6.88 pH(S) = 7.00
 pH = pH(S) - pH of diluted buffer = 0.12 (Observed Deviation)
 Liquid Junction Error (pH_j) = pH - pH_s = 0.04

Shift on Stirring

pH of buffer solution (with stirring), pH_s = 7.05
 Shift on stirring, pH_s = pH_s - pH(S) - pH_j = 0.01

Noise

Noise, pH_n = difference between max and min reading : 0.01

Verification of ATC

Ref. No. of reference thermometer used: E7105211001
 Temperature record from the reference thermometer (T_R): 20.2 °C
 Temperature record from the ATC (T_{ATC}): 20.0 °C
 Temperature Difference (T_R - T_{ATC}) : 0.2 °C

Acceptance Criteria

| Performance Characteristic | Acceptable Range |
|---|------------------|
| Liquid Junction Error pH _j | ≤0.05 |
| Shift on Stirring pH _s | ≤0.02 |
| Noise pH _n | ≤0.02 |
| Verification of ATC Temperature Difference | ≤0.5°C |

The pH meter complies * / ~~does not comply~~ * with the specified requirements and is deemed acceptable * / ~~unacceptable~~ * for use. Measurements are traceable to national standards.

* Delete as appropriate

Calibrated by : z Approved by : [Signature]



Internal Calibration Report of Dissolved Oxygen Meter

| | |
|---|---|
| Equipment Ref. No. : <u>E7/EW/008/103</u> | Manufacturer : <u>YSI</u> |
| Model No. : <u>YSI 85D</u> | Serial No. : <u>Z 0521285 082100716</u> |
| Date of Calibration : <u>27/6/11</u> | Calibration Due Date : <u>26/9/11</u> |

Temperature Verification

Ref. No. of Reference Thermometer : E7/0521/1003
 Ref. No. of Water Bath : E7/0533/1001

| Reference Thermometer reading | Temperature (°C) | | | |
|-------------------------------|------------------|-----------|------------|--|
| | Measured | Corrected | Difference | |
| DO Meter reading | 21.0 | 20.9 | 0.3 | |
| | 21.2 | | | |

Standardization of sodium thiosulphate (Na₂S₂O₃) solution

| | | | |
|---|-------------------------|---|--------------------------|
| Reagent No. of Na ₂ S ₂ O ₃ titrant | <u>CPE/012/45/04/12</u> | Reagent No. of 0.025N K ₂ Cr ₂ O ₇ | <u>CPE/012/4.4/001/2</u> |
| | Trial 1 | Trial 2 | |
| Initial Vol. of Na ₂ S ₂ O ₃ (ml) | 0 | 0 | |
| Final Vol. of Na ₂ S ₂ O ₃ (ml) | 40.10 | 40.05 | |
| Vol. of Na ₂ S ₂ O ₃ used (ml) | 40.10 | 40.05 | |
| Normality of Na ₂ S ₂ O ₃ solution (N) | 0.02494 | 0.02497 | |
| Average Normality (N) of Na ₂ S ₂ O ₃ solution (N) | 0.02496 | | |
| Acceptance criteria, Deviation | Less than ± 0.001N | | |

Calculation: Normality of Na₂S₂O₃, N = 1 / ml Na₂S₂O₃ used

Linearity Checking

Determination of dissolved oxygen content by Winkler Titration *

| Purging Time (min) | 2 | | 5 | | 10 | |
|---|---------------------|-------|---------------------|-------|---------------------|-------|
| | 1 | 2 | 1 | 2 | 1 | 2 |
| Trial | | | | | | |
| Initial Vol. of Na ₂ S ₂ O ₃ (ml) | 0 | 11.45 | 0 | 9.05 | 0 | 6.60 |
| Final Vol. of Na ₂ S ₂ O ₃ (ml) | 11.45 | 22.90 | 9.05 | 18.05 | 6.60 | 13.30 |
| Vol. (V) of Na ₂ S ₂ O ₃ used (ml) | 11.45 | 11.45 | 9.05 | 9.00 | 6.60 | 6.70 |
| Dissolved Oxygen (DO), mg/L | 7.67 | 7.67 | 6.06 | 6.03 | 4.42 | 4.49 |
| Acceptance criteria, Deviation | Less than + 0.3mg/L | | Less than + 0.3mg/L | | Less than + 0.3mg/L | |

Calculation: DO (mg/L) = V x N x 8000/298

| Purging time, min | DO meter reading, mg/L | | | Winkler Titration result *, mg/L | | | Difference (%) of DO Content |
|-------------------------------|------------------------|------|---------|----------------------------------|------|---------|------------------------------|
| | 1 | 2 | Average | 1 | 2 | Average | |
| 2 | 7.76 | 7.74 | 7.75 | 7.67 | 7.67 | 7.67 | 1.04 |
| 5 | 6.16 | 6.08 | 6.12 | 6.06 | 6.03 | 6.05 | 1.15 |
| 10 | 4.45 | 4.45 | 4.45 | 4.42 | 4.49 | 4.46 | 0.22 |
| Linear regression coefficient | | | | | | | 0.9998 |



Internal Calibration Report of Dissolved Oxygen Meter

Zero Point Checking

| | |
|------------------------|------|
| DO meter reading, mg/L | 0.00 |
|------------------------|------|

Salinity Checking

| | | | |
|--|-------------------|-----------------------------|-------------------|
| Reagent No. of NaCl (10ppt) 2 | CEP/012/4.7/00/84 | Reagent No. of NaCl (30ppt) | CEP/012/4.8/00/13 |
|--|-------------------|-----------------------------|-------------------|

Determination of dissolved oxygen content by Winkler Titration **

| Salinity (ppt) | 10 | | 30 | |
|---|---------------------|-------|---------------------|-------|
| | 1 | 2 | 1 | 2 |
| Initial Vol. of Na ₂ S ₂ O ₃ (ml) | 0 | 11.45 | 0 | 10.80 |
| Final Vol. of Na ₂ S ₂ O ₃ (ml) | 11.45 | 23.00 | 10.80 | 21.55 |
| Vol. (V) of Na ₂ S ₂ O ₃ used (ml) | 11.45 | 11.55 | 10.80 | 10.75 |
| Dissolved Oxygen (DO), mg/L | 7.68 | 7.74 | 7.24 | 7.20 |
| Acceptance criteria, Deviation | Less than + 0.3mg/L | | Less than + 0.3mg/L | |

Calculation: $DO (mg/L) = V \times N \times 8000/298$

| Salinity (ppt) | DO meter reading, mg/L | | | Winkler Titration result**, mg/L | | | Difference (%) of DO Content |
|----------------|------------------------|------|---------|----------------------------------|------|---------|------------------------------|
| | 1 | 2 | Average | 1 | 2 | Average | |
| 10 | 7.70 | 7.60 | 7.65 | 7.68 | 7.74 | 7.71 | 0.78 |
| 30 | 7.27 | 7.25 | 7.26 | 7.24 | 7.20 | 7.22 | 0.55 |

Acceptance Criteria

- (1) Difference between temperature readings from temperature sensor of DO probe and reference thermometer : < 0.5 °C
- (2) Linear regression coefficient : >0.99
- (3) Zero checking: 0.0mg/L
- (4) Difference (%) of DO content from the meter reading and by winkler titration : within ± 5%

The equipment complies [#] / ~~does not comply~~ [#] with the specified requirements and is deemed acceptable [#] / ~~unacceptable~~ [#] for use.

* Delete as appropriate

Calibrated by : _____ 2

Approved by : _____



Hong Kong Accreditation Service
香港認可處

Certificate of Accreditation
認可證書

This is to certify that
特此證明

ETS-TESTCONSULT LIMITED
東業德勤測試顧問有限公司

8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fo Tan, New Territories, Hong Kong
香港新界火炭坳背灣街34-36號豐盛工業中心B座8樓

has been accepted by the HKAS Executive, on the recommendation of the Accreditation Advisory Board, as a
為香港認可處執行機關根據認可諮詢委員會建議而接受的

HOKLAS Accredited Laboratory
「香港實驗所認可計劃」認可實驗所

This laboratory meets the requirements of ISO / IEC 17025 : 2005 – General requirements for the competence of testing and calibration laboratories and it has been accredited for performing specific tests or calibrations as listed in the HOKLAS Directory of Accredited Laboratories within the test category of
此實驗所符合ISO / IEC 17025 : 2005 - 《測試及校正實驗所能力的通用規定》所訂的要求，獲認可進行載於香港實驗所認可計劃《認可實驗所名冊》內下述測試類別中的指定
測試或校正工作

Environmental Testing
環境測試

This laboratory is accredited in accordance with the recognised International Standard ISO / IEC 17025 : 2005.
本實驗所乃根據公認的國際標準 ISO / IEC 17025 : 2005 獲得認可。

This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (see joint IAF-ILAC-ISO Communiqué).
這項認可資格演示在指定範疇所需的技術能力及實驗所質量管理體系的運作
(見國際認可論壇、國際實驗所認可合作組織及國際標準化組織的聯合公報)。

The common seal of the Hong Kong Accreditation Service is affixed hereto by the authority of the HKAS Executive
香港認可處根據認可處執行機關的權限在此蓋上通用印章

CHAN Sing Sing, Terence, Executive Administrator
執行幹事 陳成城
Issue Date : 5 May 2009
簽發日期：二零零九年五月五日

Registration Number : **HOKLAS 022**
註冊號碼：

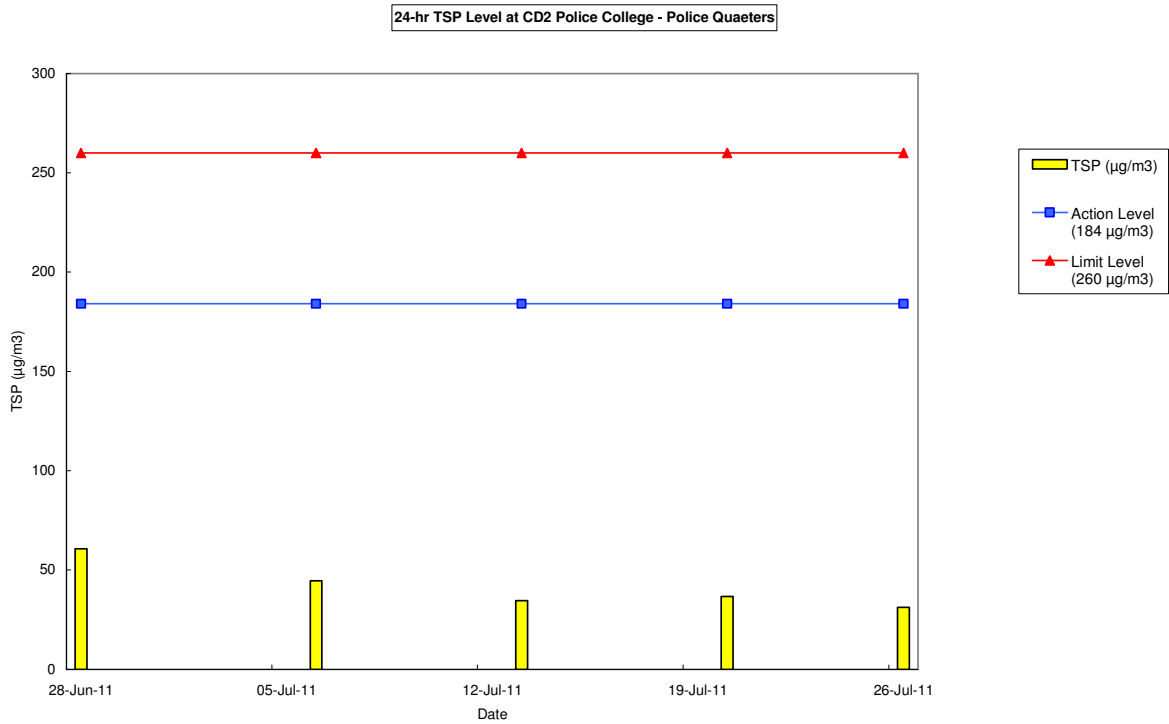
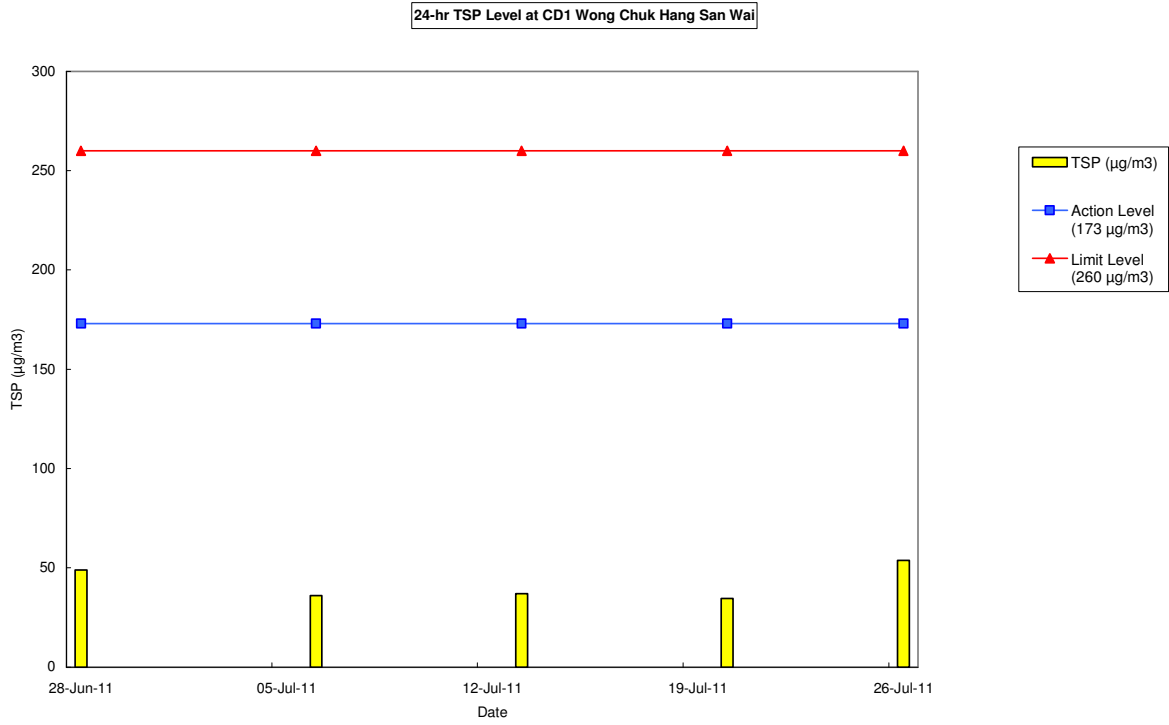
Date of First Registration : 10 February 1990
首次註冊日期：一九九零年二月十日



APPENDIX D

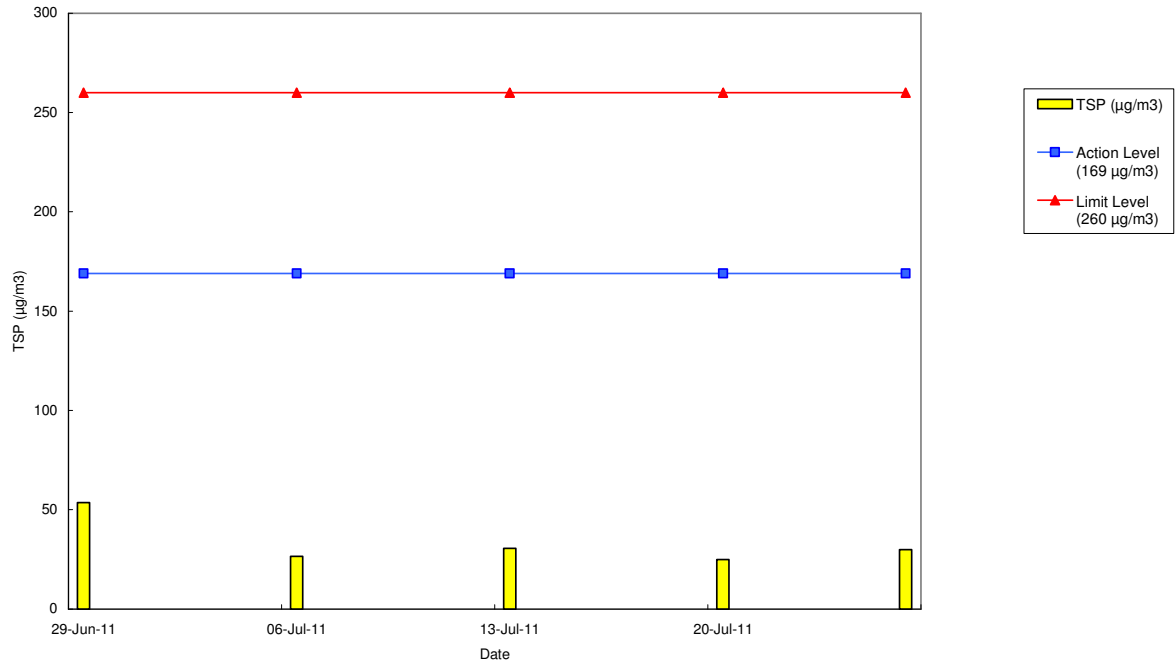
Graphical Plots of Air Quality, Noise & Water Quality Impact Monitoring
and Monitoring Results for Water Quality

Graphical Plots of Air Quality Monitoring Results

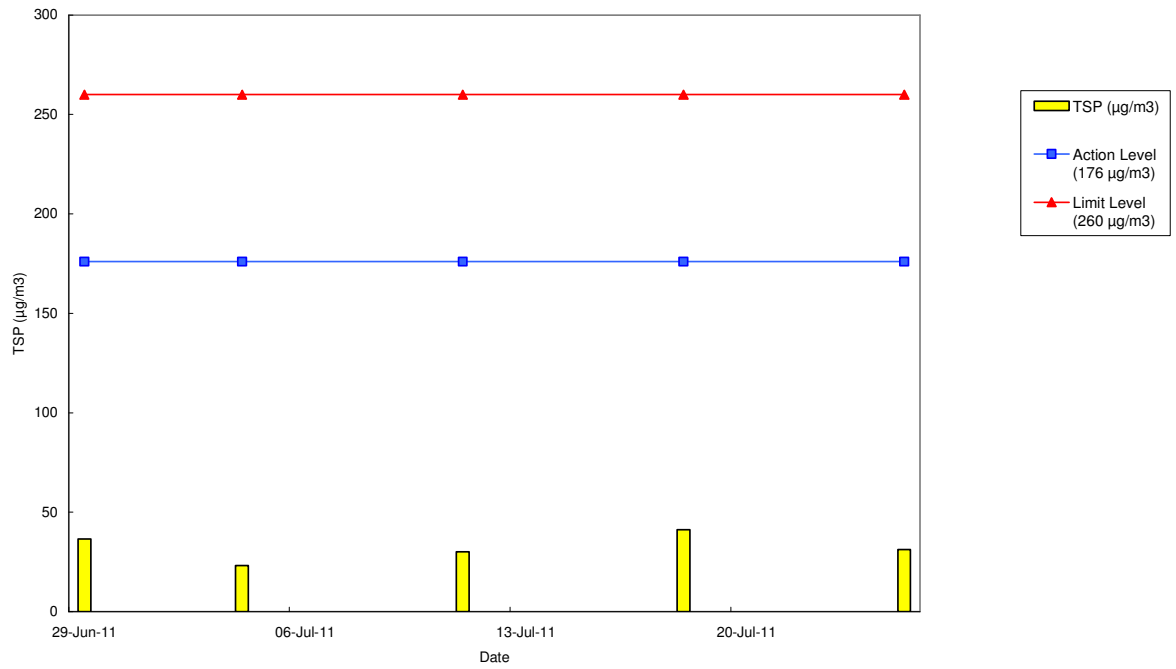


Graphical Plots of Air Quality Monitoring Results

24-hr TSP Level at CD3 San Wui Commercial Society of HK Chan Pak Sha School

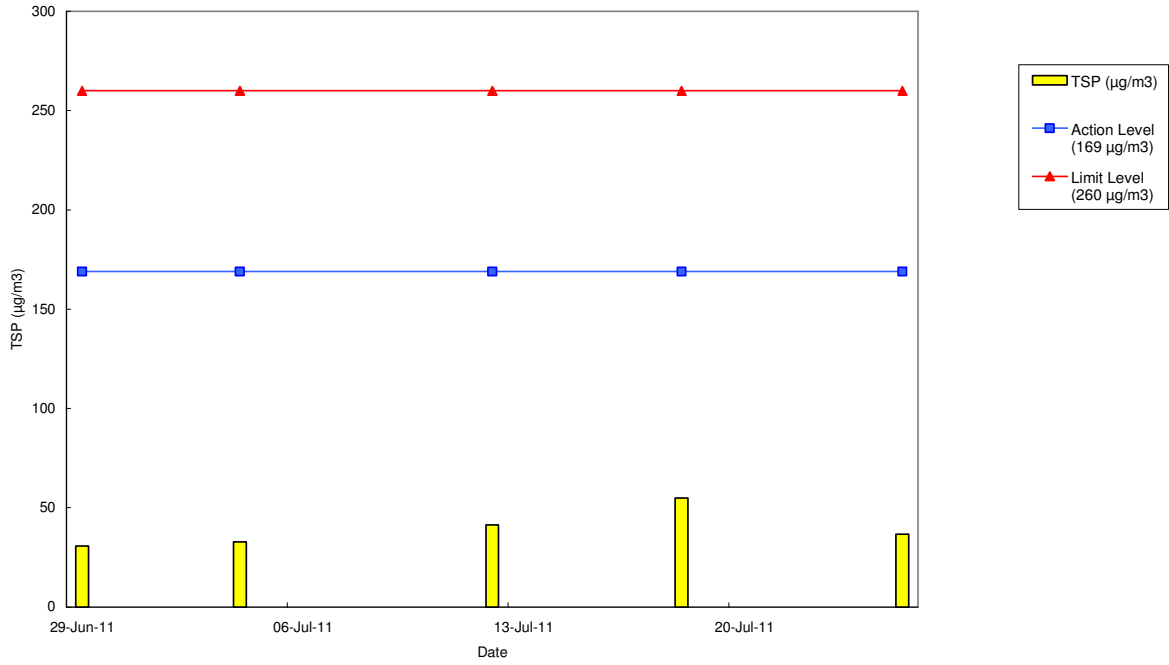


24-hr TSP Level at CD4 Shan On House



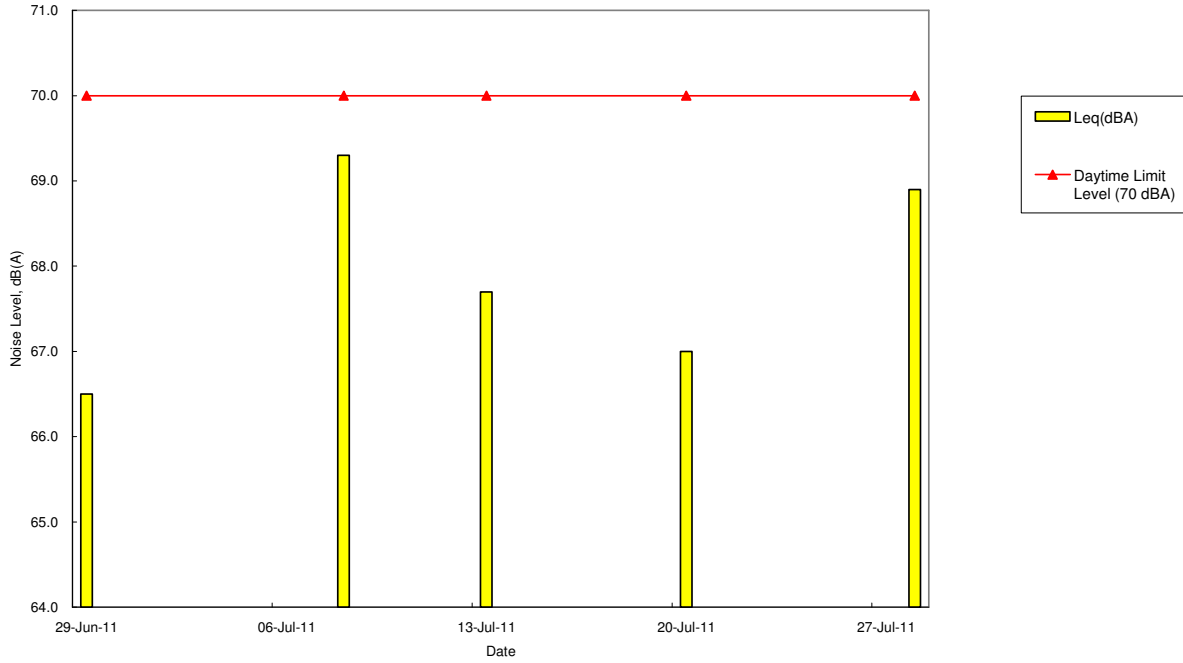
Graphical Plots of Air Quality Monitoring Results

24-hr TSP Level at CD5 South Horizons Phase IV - Block 25

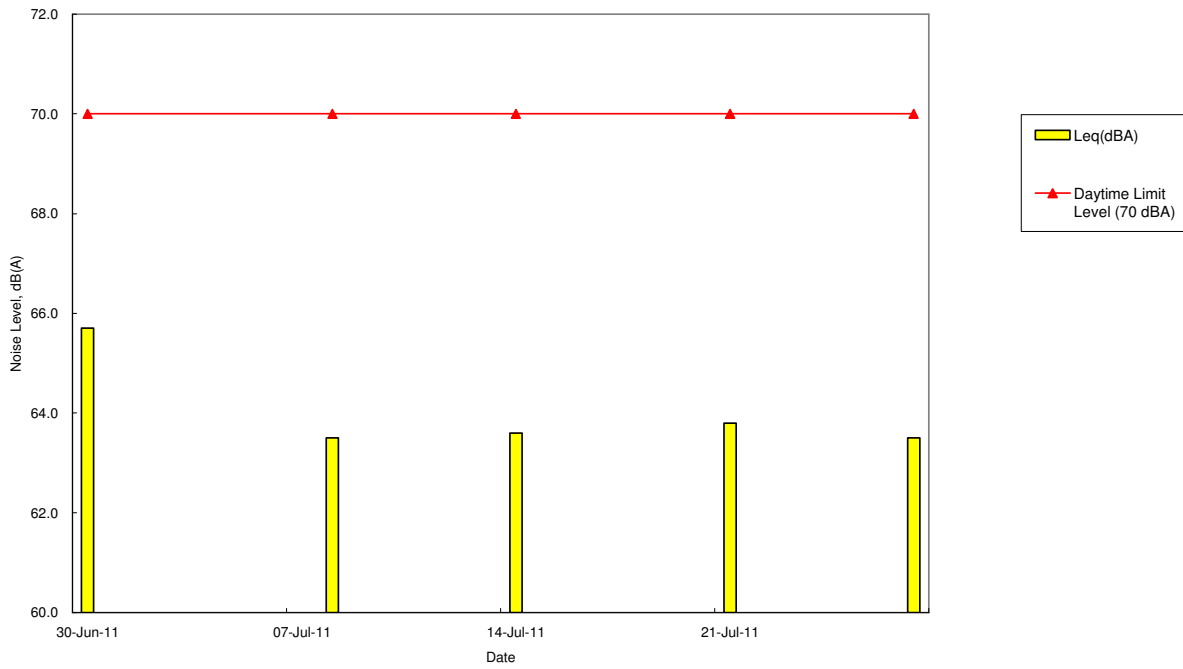


Graphical Plots of Noise Monitoring Results

Noise Level at CN1 San Wui Commercial Society of HK Chan Pak Sha School (Educational Institution)

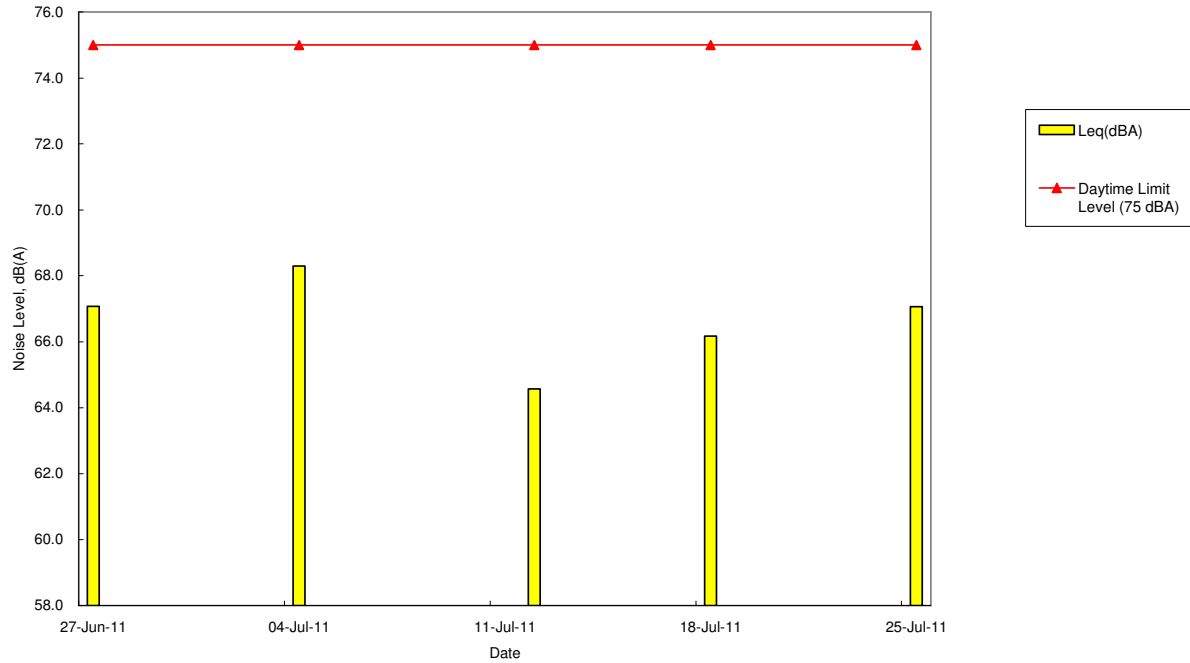


Noise Level at CN2 Holy Spirit Seminary (Educational Institution)

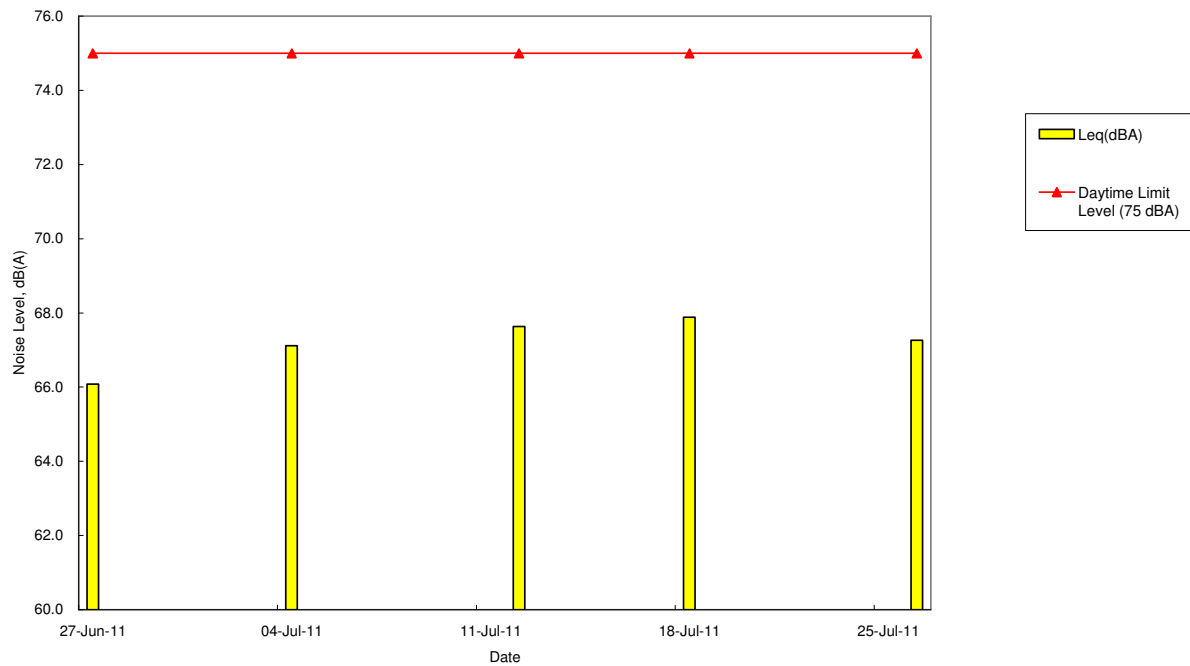


Graphical Plots of Noise Monitoring Results

Noise Level at CN3 Shun Fung Building (Residential)

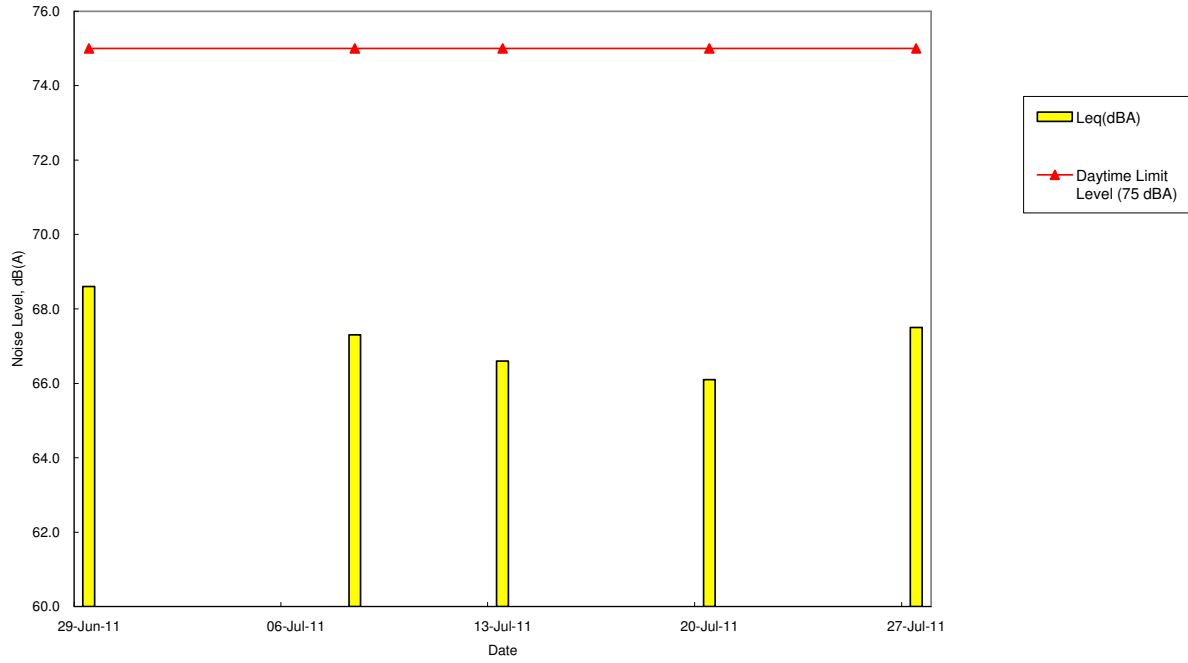


Noise Level at CN4 South Horizons Phase IV – Block 25 Dover Court (Residential)



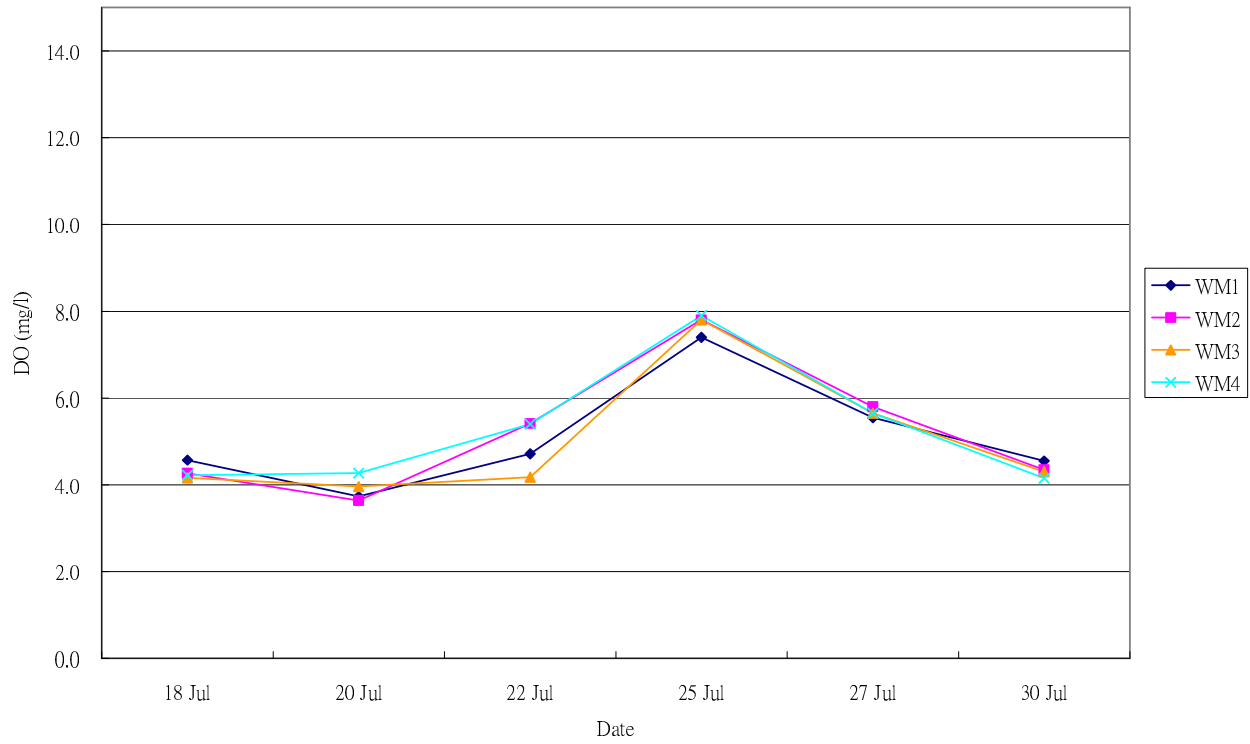
Graphical Plots of Noise Monitoring Results

Noise Level at CNS TWGHs Jockey Club Rehabilitation Complex Block A (Convalescent Home)

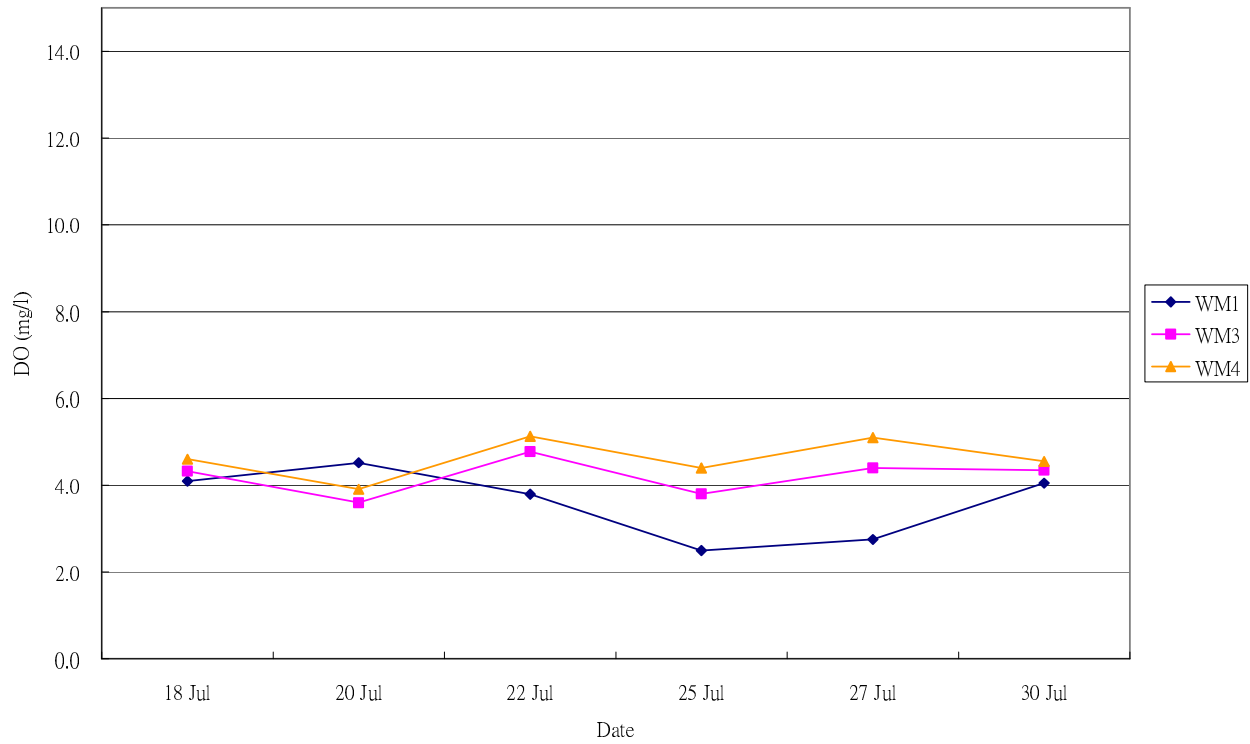


Graphical Plots of Water Quality Monitoring Results

Monitoring Results (July 2011) for Dissolved Oxygen in Ebb Tide - Surface Level

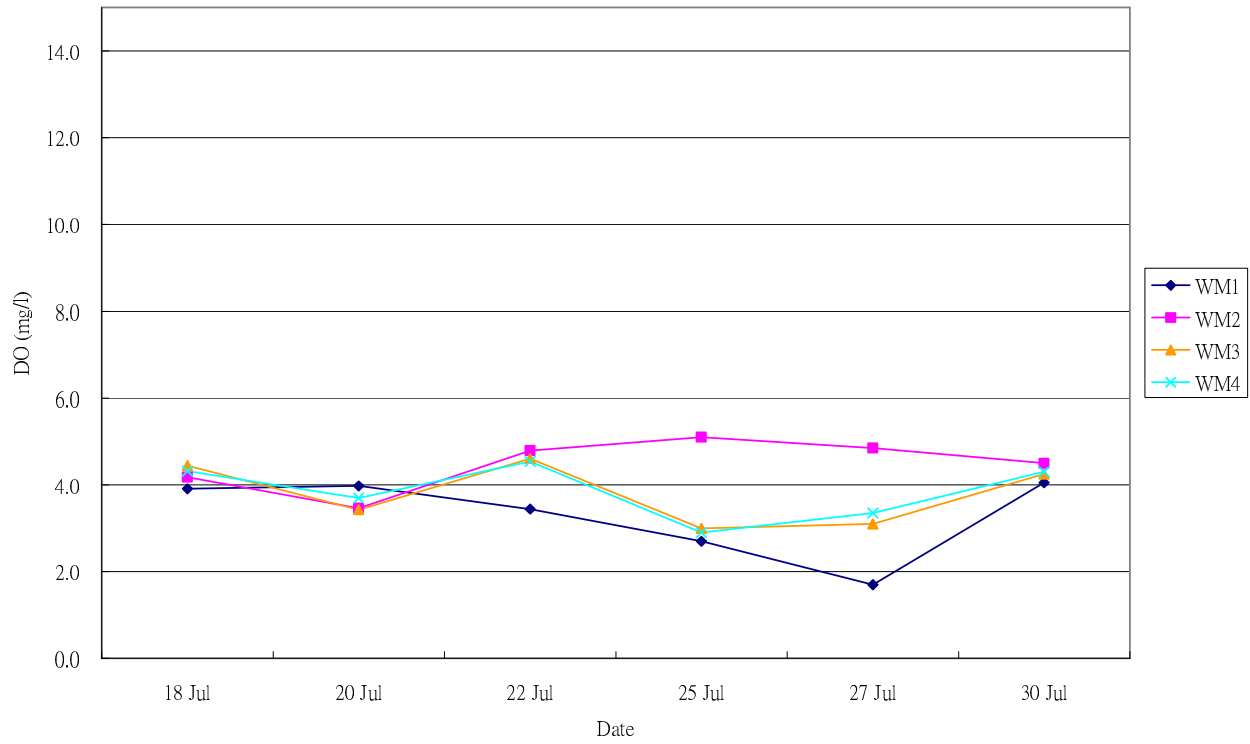


Monitoring Results (July 2011) for Dissolved Oxygen in Ebb Tide - Middle Level

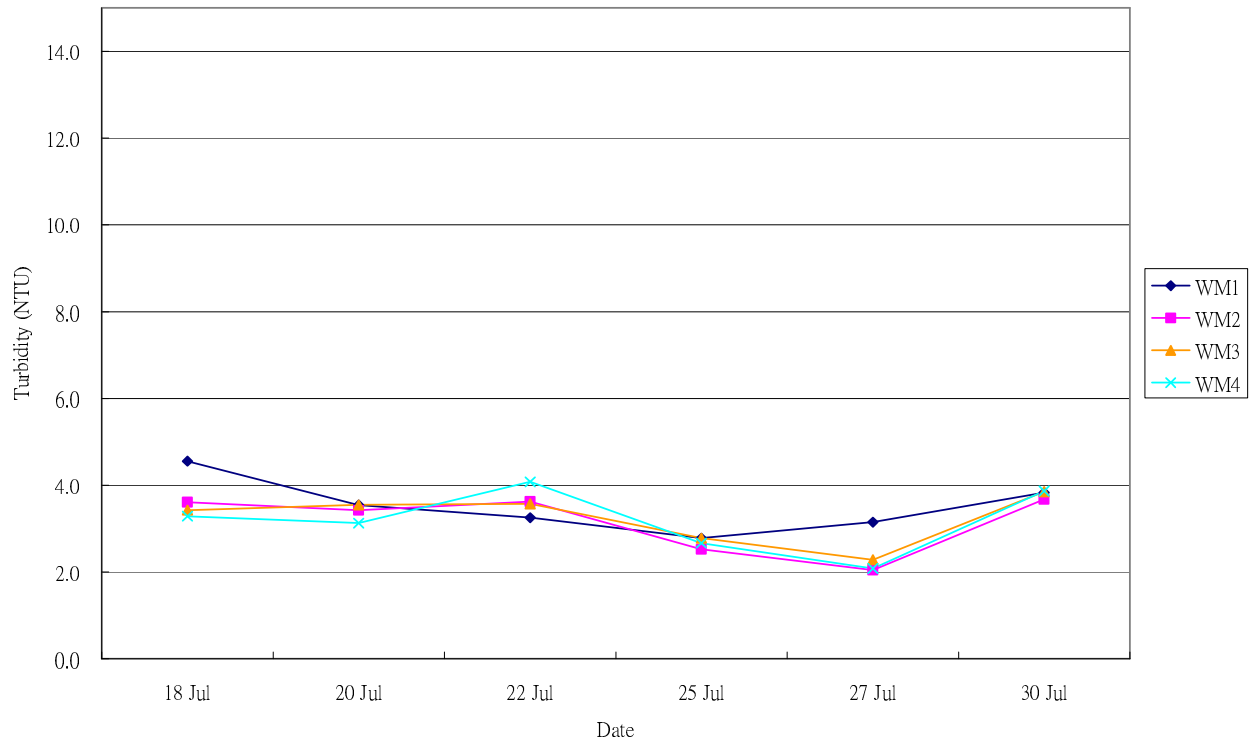


Graphical Plots of Water Quality Monitoring Results

Monitoring Results (July 2011) for Dissolved Oxygen in Ebb Tide - Bottom Level

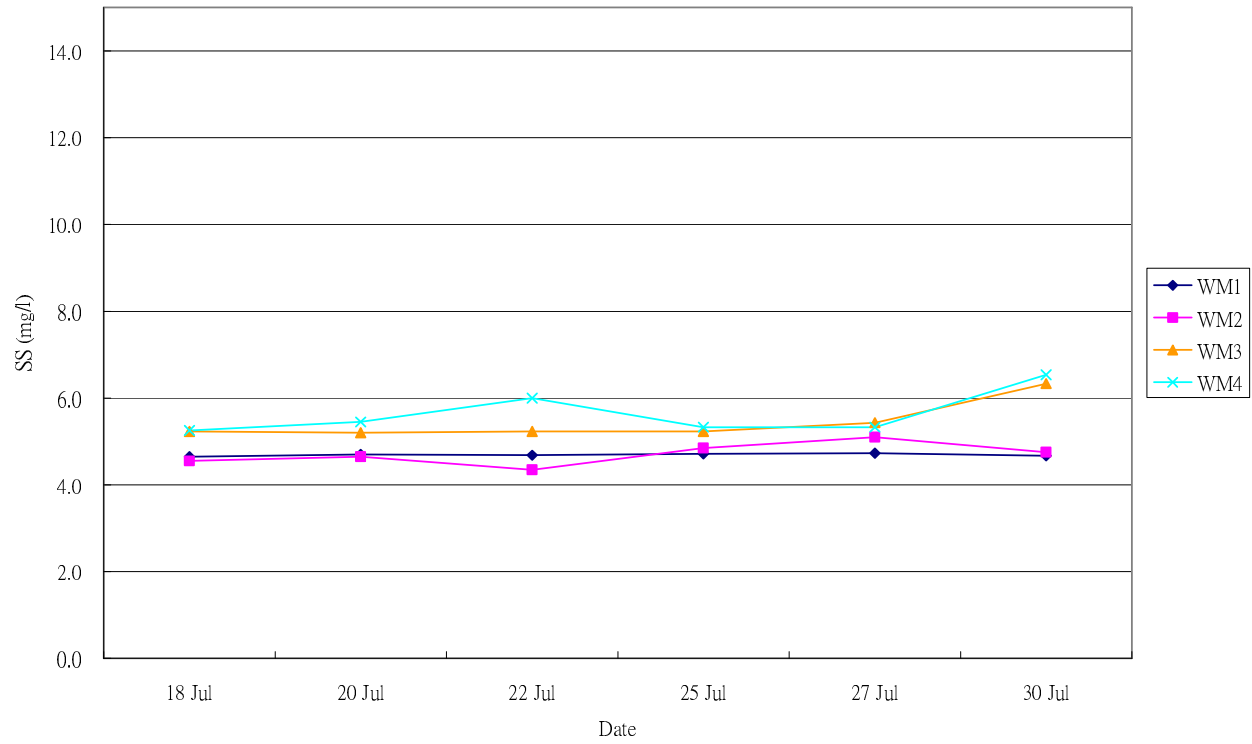


Monitoring Results (July 2011) for Turbidity in Ebb Tide - Depth Average

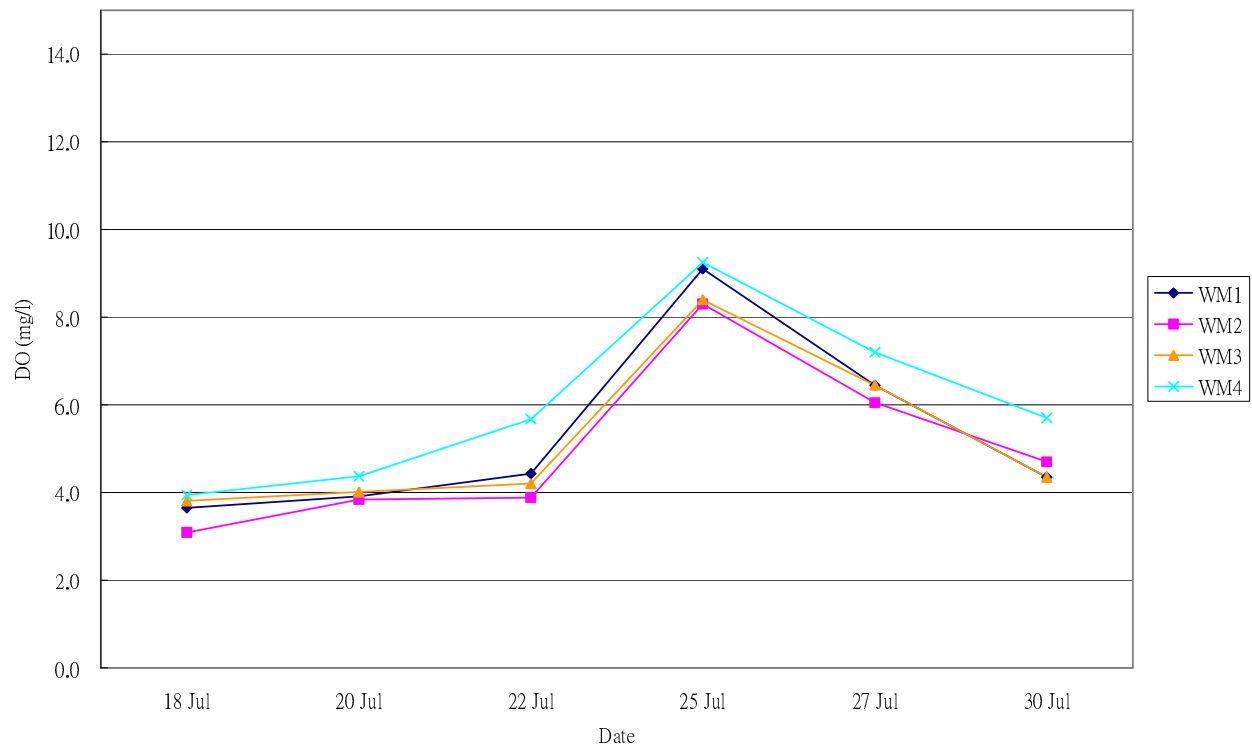


Graphical Plots of Water Quality Monitoring Results

Monitoring Results (July 2011) for Suspended Solids in Ebb Tide - Depth Average

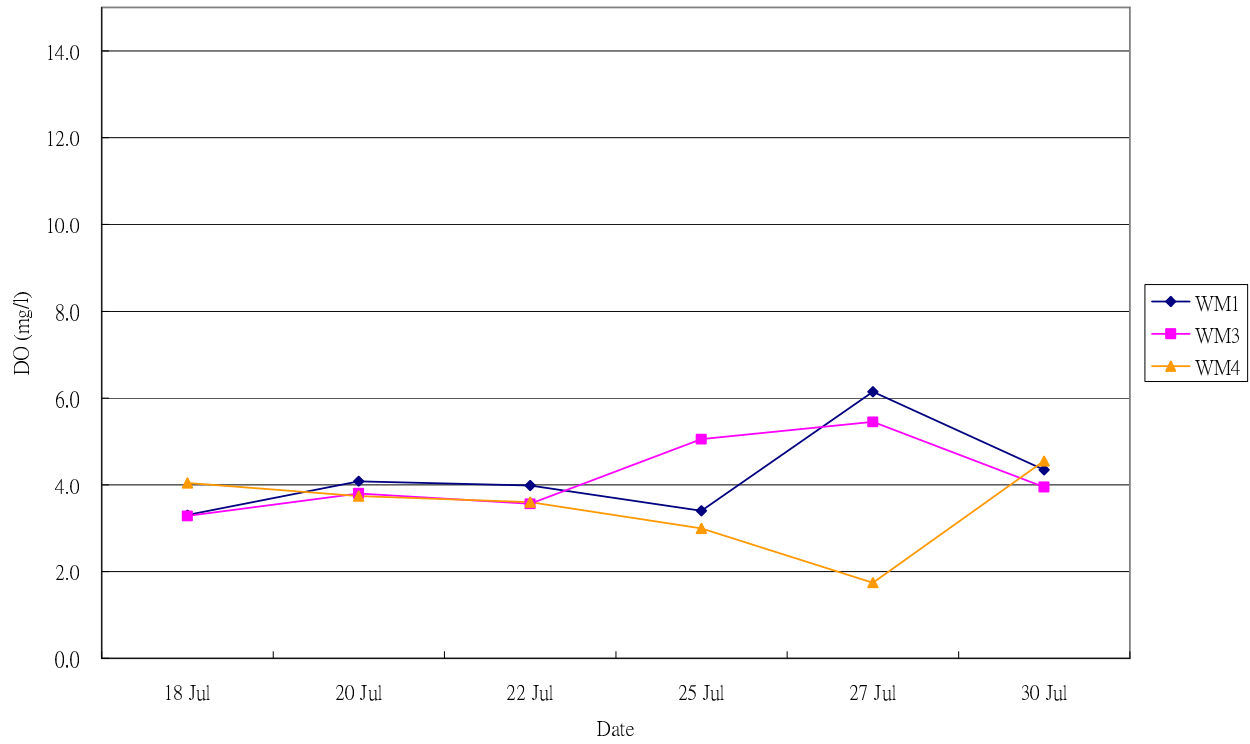


Monitoring Results (July 2011) for Dissolved Oxygen in Flood Tide - Surface Level

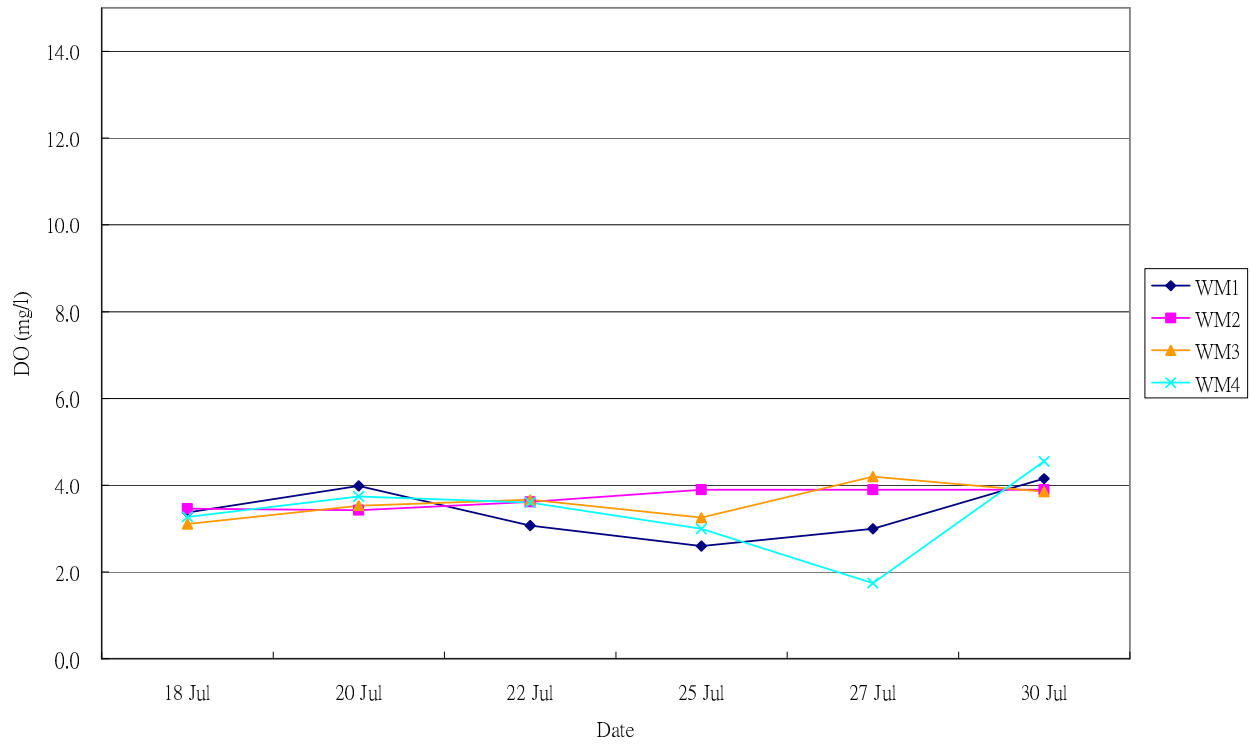


Graphical Plots of Water Quality Monitoring Results

Monitoring Results (July 2011) for Dissolved Oxygen in Flood Tide - Middle Level

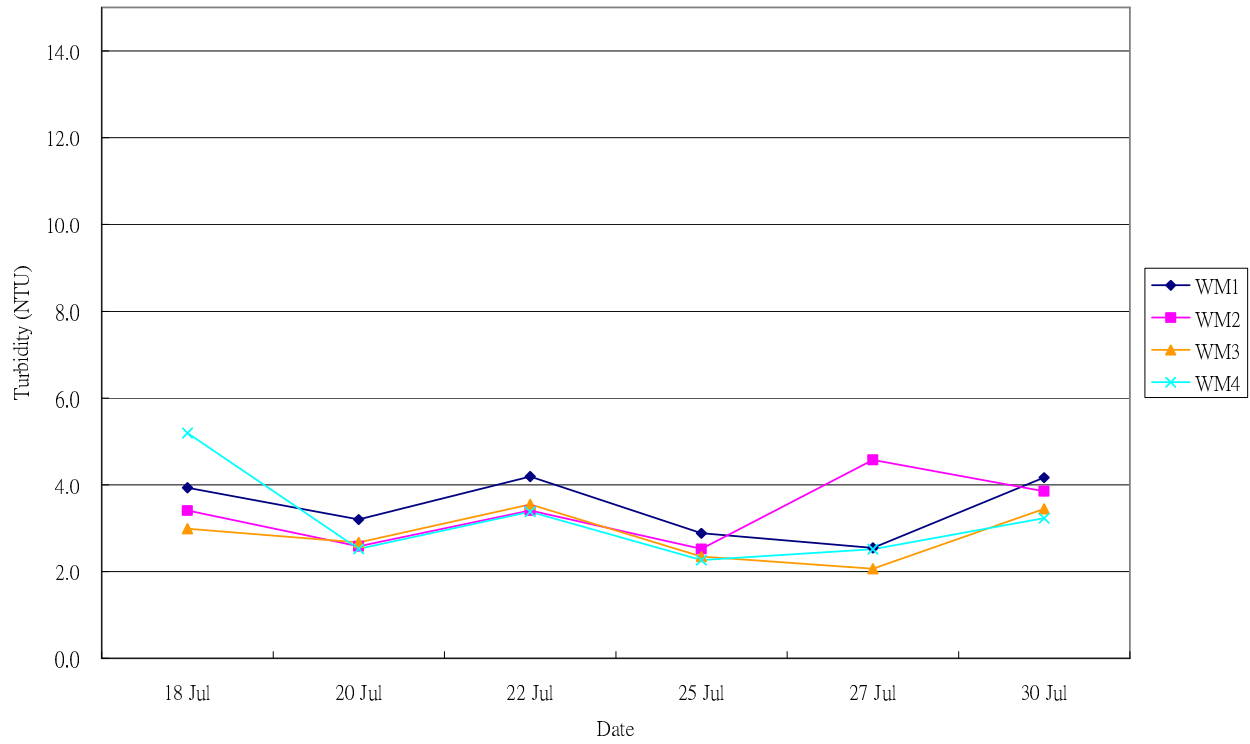


Monitoring Results (July 2011) for Dissolved Oxygen in Flood Tide - Bottom Level

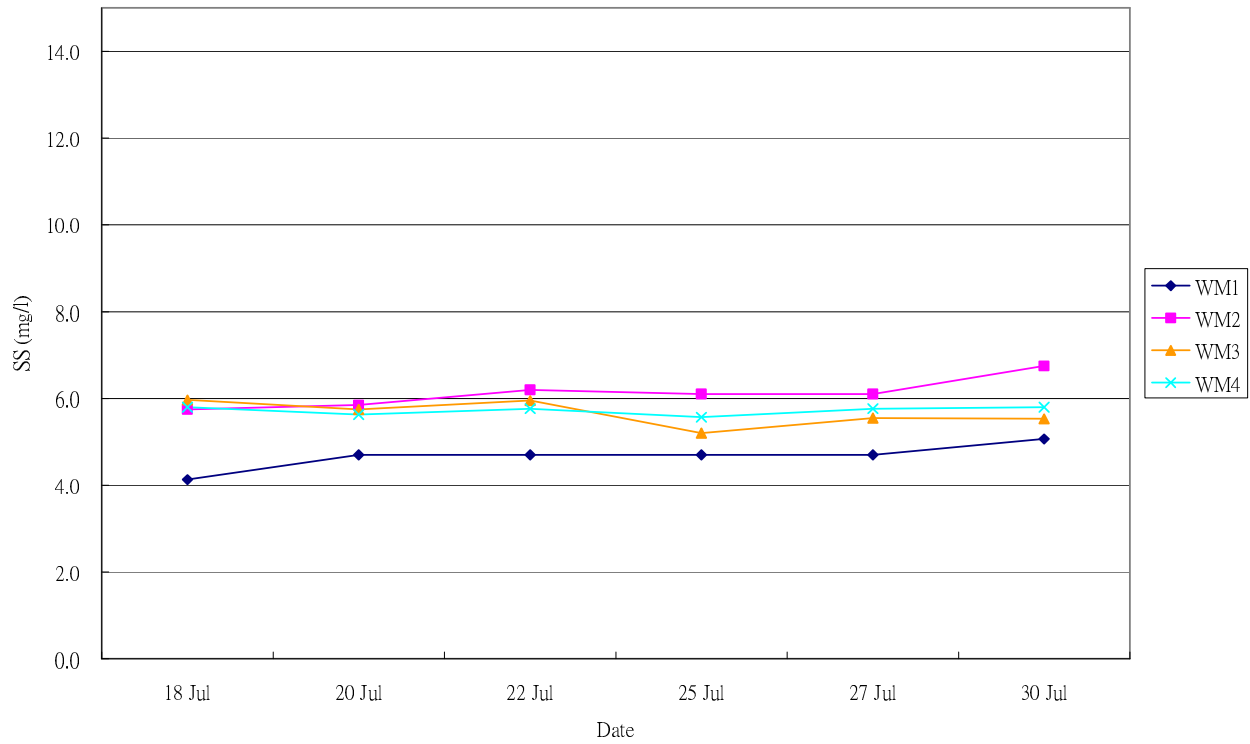


Graphical Plots of Water Quality Monitoring Results

Monitoring Results (July 2011) for Turbidity in Flood Tide - Depth Average



Monitoring Results (July 2011) for Suspended Solids in Flood Tide - Depth Average



SIL(E) Water Quality Monitoring Data Record Sheet

Date: 18-Jul-11
 Tide: Mid-Flood
 Weather: Rainy
 Sea Conditions:
 Upstream Control Station CS2

| Location | Sampling Time | Water Depth (m) | Monitoring Depth | Temperature (°C) | | | pH | | | Salinity (ppt) | | | DO (mg/l) | | | DO Saturation (%) | | | Turbidity (NTU) | | | | Suspended Solids (mg/l) | | | | | | | |
|----------|---------------|-----------------|------------------|------------------|------|-------|-----|-----|-------|----------------|------|-------|-----------|-----|-------|-------------------|------|-------|-----------------|-----|-------|--------|-------------------------|---|-------|--------|-----|-----|-----|-----|
| | | | | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | D.A.** | 1 | 2 | Ave.* | D.A.** | | | | |
| CS1 | 0946 | 11.4 | Surface | 26.2 | 26.2 | 26.2 | 8.2 | 8.2 | 8.2 | 28.6 | 28.6 | 28.6 | 3.7 | 3.8 | 3.7 | 56.1 | 58.0 | 57.1 | 3.6 | 3.5 | 3.5 | | | | | 9.0 | 9.2 | 9.1 | | |
| | | | Middle | 26.1 | 26.1 | 26.1 | 8.2 | 8.2 | 8.2 | 28.8 | 28.7 | 28.8 | 3.5 | 3.5 | 3.5 | 52.1 | 53.9 | 53.0 | 5.6 | 5.5 | 5.5 | 4.7 | | | | | 7.2 | 6.8 | 7.0 | 6.3 |
| | | | Bottom | 25.5 | 25.6 | 25.6 | 8.2 | 8.2 | 8.2 | 30.0 | 30.1 | 30.1 | 3.3 | 3.3 | 3.3 | 50.8 | 49.9 | 50.4 | 5.0 | 4.9 | 5.0 | | | | | 2.8 | 3.0 | 2.9 | | |
| WM1 | 0920 | 15.8 | Surface | 26.2 | 26.2 | 26.2 | 8.2 | 8.2 | 8.2 | 28.8 | 28.7 | 28.8 | 3.8 | 3.5 | 3.7 | 55.6 | 54.0 | 54.8 | 3.1 | 2.9 | 3.0 | | | | | 1.2 | 1.2 | 1.2 | | |
| | | | Middle | 26.0 | 25.9 | 26.0 | 8.2 | 8.2 | 8.2 | 29.2 | 29.3 | 29.3 | 3.3 | 3.3 | 3.3 | 50.7 | 50.3 | 50.5 | 3.2 | 3.2 | 3.2 | 3.9 | | | | | 4.2 | 4.0 | 4.1 | 4.1 |
| | | | Bottom | 25.5 | 25.4 | 25.5 | 8.2 | 8.1 | 8.1 | 30.0 | 30.0 | 30.0 | 3.3 | 3.4 | 3.4 | 50.2 | 50.7 | 50.5 | 5.6 | 5.6 | 5.6 | | | | | 7.0 | 7.2 | 7.1 | | |
| WM2 | 0900 | 5.5 | Surface | 26.2 | 26.2 | 26.2 | 8.2 | 8.2 | 8.2 | 28.6 | 28.6 | 28.6 | 3.2 | 3.0 | 3.1 | 49.5 | 45.3 | 47.4 | 2.7 | 2.5 | 2.6 | | | | | 8.2 | 7.8 | 8.0 | | |
| | | | Middle | | | | | | | | | | | | | | | | | | | 3.4 | | | | | | | 5.8 | |
| | | | Bottom | 26.0 | 26.1 | 26.1 | 8.2 | 8.2 | 8.2 | 29.0 | 28.9 | 29.0 | 3.5 | 3.4 | 3.5 | 52.3 | 51.1 | 51.7 | 4.2 | 4.2 | 4.2 | | | | | 3.6 | 3.4 | 3.5 | | |
| WM3 | 0840 | 10.0 | Surface | 26.4 | 26.3 | 26.4 | 8.2 | 8.2 | 8.2 | 28.4 | 28.4 | 28.4 | 3.9 | 3.8 | 3.8 | 58.1 | 55.5 | 56.8 | 2.4 | 2.2 | 2.3 | | | | | 6.0 | 5.8 | 5.9 | | |
| | | | Middle | 26.0 | 26.1 | 26.1 | 8.2 | 8.2 | 8.2 | 29.1 | 29.0 | 29.1 | 3.3 | 3.2 | 3.3 | 51.8 | 50.7 | 51.3 | 3.2 | 3.2 | 3.2 | 3.0 | | | | | 6.6 | 7.0 | 6.8 | 6.0 |
| | | | Bottom | 25.8 | 25.7 | 25.8 | 8.2 | 8.2 | 8.2 | 29.5 | 29.6 | 29.6 | 3.1 | 3.1 | 3.1 | 46.8 | 47.0 | 46.9 | 3.4 | 3.5 | 3.5 | | | | | 5.0 | 5.4 | 5.2 | | |
| WM4 | 0805 | 10.4 | Surface | 26.6 | 26.5 | 26.6 | 8.2 | 8.2 | 8.2 | 28.5 | 28.5 | 28.5 | 3.9 | 4.0 | 3.9 | 59.7 | 60.8 | 60.3 | 4.8 | 4.9 | 4.9 | | | | | 4.6 | 4.4 | 4.5 | | |
| | | | Middle | 26.0 | 26.0 | 26.0 | 8.2 | 8.2 | 8.2 | 29.6 | 29.7 | 29.7 | 4.1 | 4.0 | 4.0 | 60.2 | 59.6 | 59.9 | 5.1 | 5.2 | 5.2 | 5.2 | | | | | 6.4 | 6.8 | 6.6 | 5.8 |
| | | | Bottom | 25.0 | 25.1 | 25.1 | 8.2 | 8.2 | 8.2 | 30.6 | 30.5 | 30.6 | 3.2 | 3.4 | 3.3 | 47.6 | 50.3 | 49.0 | 5.5 | 5.6 | 5.5 | | | | | 6.4 | 6.2 | 6.3 | | |
| CS2 | 0740 | 15.4 | Surface | 26.9 | 26.8 | 26.9 | 8.1 | 8.1 | 8.1 | 28.0 | 28.1 | 28.1 | 5.2 | 5.1 | 5.2 | 67.6 | 56.7 | 62.2 | 5.0 | 4.9 | 4.9 | | | | | 5.0 | 5.4 | 5.2 | | |
| | | | Middle | 25.7 | 25.4 | 25.6 | 8.1 | 8.1 | 8.1 | 29.9 | 30.0 | 30.0 | 3.2 | 3.2 | 3.2 | 51.0 | 48.5 | 49.8 | 5.3 | 5.3 | 5.3 | 5.3 | | | | | 3.8 | 4.0 | 3.9 | 6.0 |
| | | | Bottom | 24.8 | 24.6 | 24.7 | 8.1 | 8.1 | 8.1 | 30.8 | 30.8 | 30.8 | 3.0 | 3.2 | 3.1 | 44.3 | 47.4 | 45.9 | 5.8 | 5.8 | 5.8 | | | | | 8.8 | 9.0 | 8.9 | | |

Remark or Observation:

Note: * Average

** Depth Average

SIL(E) Water Quality Monitoring Data Record Sheet

Date: 18-Jul-11
 Tide: Mid-Ebb
 Weather: Cloudy
 Sea Conditions:
 Upstream Control Station CS1

| Location | Sampling Time | Water Depth (m) | Monitoring Depth | Temperature (°C) | | | pH | | | Salinity (ppt) | | | DO (mg/l) | | | DO Saturation (%) | | | Turbidity (NTU) | | | | Suspended Solids (mg/l) | | | |
|----------|---------------|-----------------|------------------|------------------|------|-------|-----|-----|-------|----------------|------|-------|-----------|-----|-------|-------------------|------|-------|-----------------|-----|-------|--------|-------------------------|-----|-------|--------|
| | | | | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | D.A.** | 1 | 2 | Ave.* | D.A.** |
| CS1 | 1330 | 11.6 | Surface | 26.9 | 26.8 | 26.9 | 8.0 | 8.0 | 8.0 | 28.3 | 28.4 | 28.4 | 5.0 | 5.0 | 5.0 | 71.8 | 72.6 | 72.2 | 3.7 | 3.6 | 3.6 | | 2.0 | 2.0 | 2.0 | |
| | | | Middle | 26.1 | 26.1 | 26.1 | 8.1 | 8.1 | 8.1 | 29.1 | 29.1 | 29.1 | 4.8 | 4.6 | 4.7 | 64.4 | 63.7 | 64.1 | 4.4 | 4.3 | 4.3 | 4.3 | 6.6 | 6.2 | 6.4 | 4.4 |
| | | | Bottom | 25.8 | 25.6 | 25.7 | 8.1 | 8.1 | 8.1 | 29.7 | 29.7 | 29.7 | 4.0 | 4.1 | 4.1 | 57.6 | 58.2 | 57.9 | 5.0 | 5.0 | 5.0 | | 4.6 | 5.0 | 4.8 | |
| WM1 | 1355 | 15.8 | Surface | 26.6 | 26.6 | 26.6 | 8.1 | 8.2 | 8.1 | 28.9 | 28.8 | 28.9 | 4.6 | 4.6 | 4.6 | 66.7 | 66.9 | 66.8 | 3.4 | 3.4 | 3.4 | | 5.5 | 6.0 | 5.8 | |
| | | | Middle | 26.0 | 26.0 | 26.0 | 8.1 | 8.1 | 8.1 | 29.7 | 29.6 | 29.7 | 4.1 | 4.1 | 4.1 | 55.3 | 55.6 | 55.5 | 5.1 | 5.0 | 5.0 | 4.6 | 4.0 | 3.8 | 3.9 | 4.7 |
| | | | Bottom | 25.5 | 25.4 | 25.5 | 8.1 | 8.1 | 8.1 | 30.3 | 30.2 | 30.3 | 4.0 | 3.9 | 3.9 | 50.0 | 49.3 | 49.7 | 5.3 | 5.2 | 5.2 | | 4.2 | 4.4 | 4.3 | |
| WM2 | 1420 | 4.7 | Surface | 26.5 | 26.4 | 26.5 | 8.1 | 8.1 | 8.1 | 29.0 | 29.0 | 29.0 | 4.3 | 4.2 | 4.3 | 60.7 | 59.7 | 60.2 | 3.1 | 3.2 | 3.2 | | 4.8 | 5.0 | 4.9 | |
| | | | Middle | | | | | | | | | | | | | | | | | | | 3.6 | | | | 4.6 |
| | | | Bottom | 29.0 | 28.9 | 29.0 | 8.1 | 8.2 | 8.1 | 26.8 | 26.5 | 26.7 | 4.1 | 4.2 | 4.2 | 60.6 | 61.7 | 61.2 | 4.0 | 4.1 | 4.1 | | 4.4 | 4.0 | 4.2 | |
| WM3 | 1435 | 9.9 | Surface | 26.8 | 26.4 | 26.6 | 8.2 | 8.1 | 8.2 | 29.1 | 29.1 | 29.1 | 4.2 | 4.1 | 4.2 | 61.6 | 59.4 | 60.5 | 3.7 | 3.8 | 3.7 | | 7.8 | 7.6 | 7.7 | |
| | | | Middle | 26.4 | 26.4 | 26.4 | 8.1 | 8.2 | 8.1 | 29.2 | 29.1 | 29.2 | 4.4 | 4.3 | 4.3 | 62.7 | 62.0 | 62.4 | 3.3 | 3.4 | 3.3 | 3.4 | 4.2 | 4.0 | 4.1 | 5.2 |
| | | | Bottom | 26.9 | 26.7 | 26.8 | 8.2 | 8.2 | 8.2 | 29.2 | 29.3 | 29.3 | 4.5 | 4.4 | 4.4 | 63.6 | 62.7 | 63.2 | 3.3 | 3.2 | 3.2 | | 3.8 | 4.0 | 3.9 | |
| WM4 | 1500 | 9.8 | Surface | 26.5 | 26.6 | 26.6 | 8.2 | 8.2 | 8.2 | 29.3 | 29.2 | 29.3 | 4.2 | 4.3 | 4.2 | 61.4 | 62.2 | 61.8 | 3.3 | 3.0 | 3.1 | | 5.4 | 5.2 | 5.3 | |
| | | | Middle | 26.6 | 26.5 | 26.6 | 8.2 | 8.2 | 8.2 | 29.1 | 29.4 | 29.3 | 4.6 | 4.6 | 4.6 | 63.5 | 62.9 | 63.2 | 3.4 | 3.3 | 3.4 | 3.3 | 5.2 | 5.0 | 5.1 | 5.3 |
| | | | Bottom | 26.5 | 26.3 | 26.4 | 8.2 | 8.2 | 8.2 | 29.3 | 29.2 | 29.3 | 4.3 | 4.3 | 4.3 | 62.2 | 61.7 | 62.0 | 3.4 | 3.3 | 3.4 | | 5.5 | 5.2 | 5.4 | |
| CS2 | 1519 | 14.2 | Surface | 26.5 | 26.7 | 26.6 | 8.3 | 8.3 | 8.3 | 29.6 | 29.7 | 29.7 | 5.3 | 5.4 | 5.3 | 77.7 | 78.8 | 78.3 | 2.5 | 2.2 | 2.3 | | 4.2 | 4.4 | 4.3 | |
| | | | Middle | 26.5 | 26.4 | 26.5 | 8.2 | 8.3 | 8.2 | 29.9 | 29.6 | 29.8 | 4.4 | 4.5 | 4.4 | 64.4 | 65.3 | 64.9 | 2.2 | 2.3 | 2.3 | 2.6 | 3.2 | 3.6 | 3.4 | 4.9 |
| | | | Bottom | 26.1 | 26.0 | 26.1 | 8.2 | 8.2 | 8.2 | 29.9 | 30.0 | 30.0 | 4.5 | 4.4 | 4.4 | 65.0 | 64.1 | 64.6 | 3.2 | 3.0 | 3.1 | | 6.8 | 7.0 | 6.9 | |

Remark or Observation:

Note: * Average

** Depth Average

SIL(E) Water Quality Monitoring Data Record Sheet

Date: 20-Jul-11
 Tide: Mid-Flood
 Weather: Cloudy
 Sea Conditions: Calm
 Upstream Control Station CS2

| Location | Sampling Time | Water Depth (m) | Monitoring Depth | Temperature (°C) | | | pH | | | Salinity (ppt) | | | DO (mg/l) | | | DO Saturation (%) | | | Turbidity (NTU) | | | | Suspended Solids (mg/l) | | | | | |
|----------|---------------|-----------------|------------------|------------------|------|-------|-----|-----|-------|----------------|------|-------|-----------|-----|-------|-------------------|------|-------|-----------------|-----|-------|--------|-------------------------|-----|-------|--------|-----|-----|
| | | | | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | D.A.** | 1 | 2 | Ave.* | D.A.** | | |
| CS1 | 1035 | 15.4 | Surface | 25.2 | 25.1 | 25.2 | 8.3 | 8.3 | 8.3 | 28.4 | 29.0 | 28.7 | 4.9 | 4.9 | 4.9 | 66.9 | 67.4 | 67.2 | 2.5 | 2.6 | 2.5 | | | | | 8.5 | 8.8 | 8.7 |
| | | | Middle | 24.4 | 24.4 | 24.4 | 8.2 | 8.2 | 8.2 | 29.8 | 29.9 | 29.9 | 4.4 | 4.4 | 4.4 | 60.1 | 60.7 | 60.4 | 3.2 | 3.2 | 3.2 | 3.5 | 7.2 | 7.4 | 7.3 | 6.6 | | |
| | | | Bottom | 24.0 | 23.9 | 24.0 | 8.3 | 8.3 | 8.3 | 30.6 | 30.7 | 30.7 | 4.0 | 4.1 | 4.0 | 55.0 | 56.0 | 55.5 | 4.9 | 4.8 | 4.9 | | 4.0 | 3.8 | 3.9 | | | |
| WM1 | 1010 | 13.4 | Surface | 25.5 | 25.1 | 25.3 | 8.3 | 8.2 | 8.2 | 29.2 | 29.4 | 29.3 | 3.8 | 4.0 | 3.9 | 52.9 | 54.9 | 53.9 | 2.7 | 2.7 | 2.7 | | | | | 2.2 | 2.4 | 2.3 |
| | | | Middle | 24.6 | 24.6 | 24.6 | 8.3 | 8.3 | 8.3 | 29.9 | 30.0 | 30.0 | 4.1 | 4.1 | 4.1 | 55.8 | 56.8 | 56.3 | 3.1 | 3.1 | 3.1 | 3.2 | 4.0 | 4.4 | 4.2 | 4.7 | | |
| | | | Bottom | 24.0 | 24.0 | 24.0 | 8.2 | 8.2 | 8.2 | 30.4 | 30.6 | 30.5 | 4.0 | 4.0 | 4.0 | 55.3 | 54.6 | 55.0 | 3.8 | 3.9 | 3.9 | | 7.6 | 7.6 | 7.6 | | | |
| WM2 | 0945 | 5.6 | Surface | 24.8 | 24.9 | 24.9 | 8.2 | 8.2 | 8.2 | 29.6 | 29.7 | 29.7 | 3.8 | 3.9 | 3.8 | 52.5 | 53.4 | 53.0 | 2.3 | 2.1 | 2.2 | | | | | 7.8 | 8.0 | 7.9 |
| | | | Middle | | | | | | | | | | | | | | | | | | | 2.6 | | | | | | 5.9 |
| | | | Bottom | 24.6 | 24.5 | 24.6 | 8.2 | 8.2 | 8.2 | 30.1 | 30.1 | 30.1 | 3.4 | 3.4 | 3.4 | 47.1 | 47.4 | 47.3 | 3.0 | 3.0 | 3.0 | | 4.0 | 3.6 | 3.8 | | | |
| WM3 | 0925 | 8.8 | Surface | 24.8 | 24.8 | 24.8 | 8.3 | 8.3 | 8.3 | 29.8 | 29.8 | 29.8 | 4.0 | 4.0 | 4.0 | 55.7 | 54.9 | 55.3 | 2.3 | 2.1 | 2.2 | | | | | 5.2 | 5.4 | 5.3 |
| | | | Middle | 24.6 | 24.6 | 24.6 | 8.3 | 8.3 | 8.3 | 29.9 | 29.9 | 29.9 | 3.8 | 3.8 | 3.8 | 52.5 | 52.7 | 52.6 | 2.8 | 2.7 | 2.8 | 2.7 | 7.6 | 7.0 | 7.3 | 5.8 | | |
| | | | Bottom | 24.2 | 24.1 | 24.2 | 8.3 | 8.3 | 8.3 | 30.3 | 30.2 | 30.3 | 3.5 | 3.6 | 3.5 | 48.4 | 48.9 | 48.7 | 3.0 | 3.2 | 3.1 | | 4.5 | 4.8 | 4.7 | | | |
| WM4 | 0905 | 10.6 | Surface | 24.8 | 24.7 | 24.8 | 8.2 | 8.3 | 8.2 | 29.7 | 29.9 | 29.8 | 4.3 | 4.4 | 4.4 | 59.8 | 60.7 | 60.3 | 2.4 | 2.3 | 2.3 | | | | | 5.0 | 4.6 | 4.8 |
| | | | Middle | 24.4 | 24.5 | 24.5 | 8.3 | 8.3 | 8.3 | 29.9 | 30.0 | 30.0 | 4.0 | 4.1 | 4.0 | 54.9 | 55.8 | 55.4 | 2.5 | 2.6 | 2.6 | 2.5 | 6.2 | 6.0 | 6.1 | 5.6 | | |
| | | | Bottom | 24.1 | 24.2 | 24.2 | 8.2 | 8.3 | 8.2 | 30.3 | 30.4 | 30.4 | 3.7 | 3.8 | 3.7 | 51.3 | 52.0 | 51.7 | 2.8 | 2.6 | 2.7 | | 5.8 | 6.2 | 6.0 | | | |
| CS2 | 0820 | 14.8 | Surface | 24.8 | 24.8 | 24.8 | 8.1 | 8.1 | 8.1 | 29.9 | 29.9 | 29.9 | 6.0 | 5.9 | 6.0 | 83.3 | 81.5 | 82.4 | 2.2 | 2.2 | 2.2 | | | | | 5.4 | 5.6 | 5.5 |
| | | | Middle | 24.4 | 24.4 | 24.4 | 8.1 | 8.1 | 8.1 | 29.9 | 30.0 | 30.0 | 3.4 | 3.4 | 3.4 | 46.6 | 47.1 | 46.9 | 2.4 | 2.4 | 2.4 | 2.4 | 4.0 | 4.2 | 4.1 | 6.1 | | |
| | | | Bottom | 24.0 | 23.9 | 24.0 | 8.2 | 8.2 | 8.2 | 30.6 | 30.7 | 30.7 | 3.6 | 3.7 | 3.6 | 49.9 | 50.5 | 50.2 | 2.5 | 2.6 | 2.5 | | 9.0 | 8.6 | 8.8 | | | |

Remark or Observation:

Note: * Average

** Depth Average

SIL(E) Water Quality Monitoring Data Record Sheet

Date: 20-Jul-11
 Tide: Mid-Ebb
 Weather: Cloudy
 Sea Conditions: Calm
 Upstream Control Station CS1

| Location | Sampling Time | Water Depth (m) | Monitoring Depth | Temperature (°C) | | | pH | | | Salinity (ppt) | | | DO (mg/l) | | | DO Saturation (%) | | | Turbidity (NTU) | | | Suspended Solids (mg/l) | | | | |
|----------|---------------|-----------------|------------------|------------------|------|-------|-----|-----|-------|----------------|------|-------|-----------|-----|-------|-------------------|------|-------|-----------------|-----|-------|-------------------------|-----|-----|-------|--------|
| | | | | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | D.A.** | 1 | 2 | Ave.* | D.A.** |
| CS1 | 1345 | 15.9 | Surface | 25.6 | 25.5 | 25.6 | 8.1 | 8.1 | 8.1 | 28.8 | 28.7 | 28.8 | 4.5 | 4.7 | 4.6 | 65.0 | 66.8 | 65.9 | 2.6 | 2.7 | 2.7 | 2.4 | 2.6 | 2.5 | | |
| | | | Middle | 24.4 | 24.3 | 24.4 | 8.2 | 8.2 | 8.2 | 29.6 | 29.6 | 29.6 | 4.2 | 4.2 | 4.2 | 58.7 | 59.8 | 59.3 | 2.7 | 2.8 | 2.7 | 3.0 | 7.0 | 6.6 | 6.8 | 4.8 |
| | | | Bottom | 24.0 | 24.1 | 24.1 | 8.2 | 8.2 | 8.2 | 30.2 | 30.1 | 30.2 | 3.8 | 3.9 | 3.9 | 55.4 | 56.9 | 56.2 | 3.7 | 3.6 | 3.6 | 5.0 | 5.0 | 5.0 | | |
| WM1 | 1415 | 10.2 | Surface | 24.7 | 24.6 | 24.7 | 8.2 | 8.2 | 8.2 | 29.6 | 29.7 | 29.7 | 3.7 | 3.8 | 3.7 | 48.9 | 49.5 | 49.2 | 3.6 | 3.4 | 3.5 | 6.0 | 5.8 | 5.9 | | |
| | | | Middle | 24.5 | 24.5 | 24.5 | 8.2 | 8.2 | 8.2 | 29.8 | 29.9 | 29.9 | 4.6 | 4.5 | 4.5 | 68.0 | 65.3 | 66.7 | 3.9 | 3.9 | 3.9 | 3.5 | 4.2 | 3.8 | 4.0 | 4.7 |
| | | | Bottom | 24.1 | 24.2 | 24.2 | 8.2 | 8.2 | 8.2 | 30.1 | 30.0 | 30.1 | 4.0 | 4.0 | 4.0 | 49.9 | 52.3 | 51.1 | 3.2 | 3.3 | 3.3 | 4.4 | 4.0 | 4.2 | | |
| WM2 | 1440 | 7.8 | Surface | 24.7 | 24.8 | 24.8 | 8.2 | 8.2 | 8.2 | 29.8 | 29.9 | 29.9 | 3.7 | 3.6 | 3.6 | 49.4 | 48.8 | 49.1 | 3.6 | 3.6 | 3.6 | 5.0 | 4.6 | 4.8 | | |
| | | | Middle | 24.5 | 24.4 | 24.5 | 8.2 | 8.2 | 8.2 | 29.9 | 29.8 | 29.9 | 3.3 | 3.3 | 3.3 | 43.0 | 43.6 | 43.3 | 3.5 | 3.4 | 3.5 | 3.4 | 4.2 | 4.2 | 4.7 | |
| | | | Bottom | 24.5 | 24.4 | 24.5 | 8.2 | 8.2 | 8.2 | 29.9 | 29.8 | 29.9 | 3.5 | 3.5 | 3.5 | 46.0 | 47.8 | 46.9 | 3.2 | 3.3 | 3.2 | 4.4 | 4.6 | 4.5 | | |
| WM3 | 1505 | 8.0 | Surface | 24.6 | 24.7 | 24.7 | 8.2 | 8.2 | 8.2 | 29.8 | 29.9 | 29.9 | 3.9 | 4.0 | 4.0 | 50.7 | 52.3 | 51.5 | 3.4 | 3.5 | 3.5 | 7.6 | 7.2 | 7.4 | | |
| | | | Middle | 24.5 | 24.4 | 24.5 | 8.2 | 8.2 | 8.2 | 29.9 | 29.9 | 29.9 | 3.6 | 3.6 | 3.6 | 48.2 | 47.7 | 48.0 | 3.5 | 3.5 | 3.5 | 3.5 | 4.0 | 3.8 | 3.9 | 5.2 |
| | | | Bottom | 24.5 | 24.4 | 24.5 | 8.2 | 8.2 | 8.2 | 29.9 | 29.8 | 29.9 | 3.4 | 3.5 | 3.4 | 46.7 | 47.6 | 47.2 | 3.7 | 3.7 | 3.7 | 4.4 | 4.2 | 4.3 | | |
| WM4 | 1530 | 10.4 | Surface | 24.7 | 24.6 | 24.7 | 8.5 | 8.2 | 8.3 | 29.7 | 29.8 | 29.8 | 4.3 | 4.3 | 4.3 | 55.7 | 56.0 | 55.9 | 3.7 | 3.5 | 3.6 | 5.2 | 5.0 | 5.1 | | |
| | | | Middle | 24.4 | 24.5 | 24.5 | 8.2 | 8.2 | 8.2 | 29.8 | 29.9 | 29.9 | 3.9 | 3.9 | 3.9 | 54.8 | 55.4 | 55.1 | 2.6 | 2.7 | 2.7 | 3.1 | 5.5 | 5.2 | 5.4 | 5.5 |
| | | | Bottom | 24.2 | 24.1 | 24.2 | 8.2 | 8.2 | 8.2 | 30.0 | 30.1 | 30.1 | 3.7 | 3.7 | 3.7 | 47.1 | 48.9 | 48.0 | 3.1 | 3.2 | 3.1 | 6.0 | 5.8 | 5.9 | | |
| CS2 | 1555 | 14.4 | Surface | 25.1 | 25.2 | 25.2 | 8.2 | 8.2 | 8.2 | 29.7 | 29.8 | 29.8 | 6.0 | 5.9 | 6.0 | 83.1 | 81.2 | 82.2 | 1.8 | 1.9 | 1.9 | 6.0 | 5.8 | 5.9 | | |
| | | | Middle | 24.6 | 24.7 | 24.7 | 8.2 | 8.2 | 8.2 | 30.0 | 30.1 | 30.1 | 3.8 | 4.0 | 3.9 | 53.4 | 54.5 | 54.0 | 2.0 | 2.1 | 2.1 | 2.4 | 3.6 | 3.8 | 3.7 | 4.7 |
| | | | Bottom | 24.0 | 24.1 | 24.1 | 8.2 | 8.2 | 8.2 | 31.3 | 31.4 | 31.4 | 3.2 | 3.2 | 3.2 | 49.2 | 50.4 | 49.8 | 3.0 | 3.2 | 3.1 | 4.6 | 4.5 | 4.6 | | |

Remark or Observation:

Note: * Average

** Depth Average

SIL(E) Water Quality Monitoring Data Record Sheet

Date: 22-Jul-11
 Tide: Mid-Flood
 Weather: Sunny
 Sea Conditions: Calm
 Upstream Control Station CS2

| Location | Sampling Time | Water Depth (m) | Monitoring Depth | Temperature (°C) | | | pH | | | Salinity (ppt) | | | DO (mg/l) | | | DO Saturation (%) | | | Turbidity (NTU) | | | | Suspended Solids (mg/l) | | | | | | |
|----------|---------------|-----------------|------------------|------------------|------|-------|-----|-----|-------|----------------|------|-------|-----------|-----|-------|-------------------|------|-------|-----------------|-----|-------|--------|-------------------------|-----|-------|--------|--|--|-----|
| | | | | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | D.A.** | 1 | 2 | Ave.* | D.A.** | | | |
| CS1 | 1130 | 15.0 | Surface | 25.8 | 25.8 | 25.8 | 8.1 | 8.1 | 8.1 | 27.7 | 27.6 | 27.7 | 5.0 | 5.0 | 5.0 | 70.7 | 71.1 | 70.9 | 4.2 | 4.2 | 4.2 | 7.5 | 8.2 | 7.9 | | | | | |
| | | | Middle | 24.3 | 24.3 | 24.3 | 8.1 | 8.1 | 8.1 | 30.4 | 30.4 | 30.4 | 4.0 | 4.1 | 4.1 | 57.1 | 57.5 | 57.3 | 4.3 | 4.2 | 4.3 | 4.2 | 7.8 | 7.8 | 7.8 | 6.3 | | | |
| | | | Bottom | 23.9 | 23.9 | 23.9 | 8.1 | 8.1 | 8.1 | 30.9 | 31.0 | 31.0 | 3.9 | 3.9 | 3.9 | 55.2 | 55.7 | 55.5 | 4.1 | 4.0 | 4.1 | | 3.4 | 3.2 | 3.3 | | | | |
| WM1 | 1100 | 14.0 | Surface | 25.8 | 25.8 | 25.8 | 8.1 | 8.1 | 8.1 | 28.6 | 28.4 | 28.5 | 4.4 | 4.5 | 4.4 | 63.3 | 64.0 | 63.7 | 4.5 | 4.5 | 4.5 | 2.6 | 2.8 | 2.7 | | | | | |
| | | | Middle | 24.7 | 24.7 | 24.7 | 8.1 | 8.1 | 8.1 | 30.1 | 30.0 | 30.1 | 4.0 | 4.0 | 4.0 | 57.4 | 56.9 | 57.2 | 4.1 | 4.2 | 4.1 | 4.2 | 4.2 | 4.4 | 4.3 | 4.7 | | | |
| | | | Bottom | 24.2 | 24.2 | 24.2 | 8.1 | 8.1 | 8.1 | 30.7 | 30.6 | 30.7 | 3.1 | 3.1 | 3.1 | 43.4 | 43.8 | 43.6 | 4.0 | 3.9 | 4.0 | | 7.2 | 7.0 | 7.1 | | | | |
| WM2 | 1040 | 5.8 | Surface | 25.6 | 25.6 | 25.6 | 8.0 | 8.1 | 8.0 | 29.1 | 29.3 | 29.2 | 3.9 | 3.9 | 3.9 | 55.7 | 56.3 | 56.0 | 3.2 | 3.2 | 3.2 | 7.4 | 7.6 | 7.5 | | | | | |
| | | | Middle | | | | | | | | | | | | | | | | | | | 3.4 | | | | | | | 6.2 |
| | | | Bottom | 25.1 | 25.1 | 25.1 | 8.0 | 8.0 | 8.0 | 29.5 | 29.5 | 29.5 | 3.6 | 3.6 | 3.6 | 52.2 | 51.7 | 52.0 | 3.7 | 3.6 | 3.6 | | 4.8 | 5.0 | 4.9 | | | | |
| WM3 | 1010 | 9.8 | Surface | 25.6 | 25.5 | 25.6 | 8.1 | 8.1 | 8.1 | 29.3 | 29.4 | 29.4 | 4.2 | 4.2 | 4.2 | 60.2 | 60.8 | 60.5 | 3.2 | 3.3 | 3.3 | 6.0 | 5.6 | 5.8 | | | | | |
| | | | Middle | 25.1 | 25.0 | 25.1 | 8.2 | 8.2 | 8.2 | 29.8 | 29.7 | 29.8 | 3.6 | 3.6 | 3.6 | 52.2 | 52.7 | 52.5 | 3.3 | 3.4 | 3.4 | 3.6 | 8.0 | 7.5 | 7.8 | 6.0 | | | |
| | | | Bottom | 23.3 | 23.2 | 23.3 | 8.2 | 8.2 | 8.2 | 31.6 | 31.7 | 31.7 | 3.7 | 3.7 | 3.7 | 54.2 | 54.8 | 54.5 | 4.0 | 4.1 | 4.1 | | 4.0 | 4.6 | 4.3 | | | | |
| WM4 | 0930 | 9.2 | Surface | 25.7 | 25.4 | 25.6 | 8.2 | 8.2 | 8.2 | 29.3 | 29.4 | 29.4 | 5.7 | 5.7 | 5.7 | 83.1 | 82.6 | 82.9 | 2.4 | 2.5 | 2.5 | 4.8 | 5.0 | 4.9 | | | | | |
| | | | Middle | 24.4 | 24.7 | 24.6 | 8.2 | 8.2 | 8.2 | 30.4 | 30.1 | 30.3 | 3.6 | 3.6 | 3.6 | 51.4 | 50.8 | 51.1 | 3.7 | 3.8 | 3.7 | 3.4 | 6.4 | 6.0 | 6.2 | 5.8 | | | |
| | | | Bottom | 24.4 | 24.2 | 24.3 | 8.2 | 8.2 | 8.2 | 30.4 | 30.7 | 30.6 | 3.6 | 3.6 | 3.6 | 51.7 | 50.6 | 51.2 | 4.0 | 3.9 | 3.9 | | 6.0 | 6.4 | 6.2 | | | | |
| CS2 | 0900 | 14.4 | Surface | 25.9 | 25.8 | 25.9 | 8.1 | 8.1 | 8.1 | 29.1 | 29.1 | 29.1 | 6.0 | 6.0 | 6.0 | 87.3 | 86.9 | 87.1 | 4.9 | 5.0 | 4.9 | 7.8 | 7.6 | 7.7 | | | | | |
| | | | Middle | 24.0 | 24.4 | 24.2 | 8.1 | 8.0 | 8.0 | 30.9 | 30.4 | 30.7 | 3.8 | 3.8 | 3.8 | 53.5 | 54.2 | 53.9 | 5.6 | 5.7 | 5.6 | 5.3 | 3.2 | 3.6 | 3.4 | 6.8 | | | |
| | | | Bottom | 23.7 | 23.8 | 23.8 | 8.0 | 8.0 | 8.0 | 32.1 | 32.1 | 32.1 | 3.4 | 3.4 | 3.4 | 47.9 | 48.1 | 48.0 | 5.3 | 5.3 | 5.3 | | 9.4 | 9.0 | 9.2 | | | | |

Remark or Observation:

Note: * Average
 ** Depth Average

SIL(E) Water Quality Monitoring Data Record Sheet

Date: 22-Jul-11
 Tide: Mid-Ebb
 Weather: Fine
 Sea Conditions: Calm
 Upstream Control Station CS1

| Location | Sampling Time | Water Depth (m) | Monitoring Depth | Temperature (°C) | | | pH | | | Salinity (ppt) | | | DO (mg/l) | | | DO Saturation (%) | | | Turbidity (NTU) | | | | Suspended Solids (mg/l) | | | | | | |
|----------|---------------|-----------------|------------------|------------------|------|-------|-----|-----|-------|----------------|------|-------|-----------|-----|-------|-------------------|------|-------|-----------------|-----|-------|--------|-------------------------|-----|-------|--------|-----|--|-----|
| | | | | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | D.A.** | 1 | 2 | Ave.* | D.A.** | | | |
| CS1 | 1500 | 14.0 | Surface | 26.2 | 26.2 | 26.2 | 7.9 | 7.9 | 7.9 | 27.3 | 27.4 | 27.4 | 5.8 | 5.7 | 5.8 | 83.2 | 81.4 | 82.3 | 4.3 | 4.5 | 4.4 | 3.0 | 3.4 | 3.2 | | | | | |
| | | | Middle | 25.0 | 25.1 | 25.1 | 7.9 | 7.9 | 7.9 | 29.3 | 29.4 | 29.4 | 5.4 | 5.5 | 5.4 | 75.8 | 76.2 | 76.0 | 4.6 | 4.7 | 4.6 | 4.6 | 7.6 | 7.4 | 7.5 | 5.3 | | | |
| | | | Bottom | 23.8 | 23.7 | 23.8 | 7.9 | 7.9 | 7.9 | 30.5 | 30.6 | 30.6 | 4.0 | 4.1 | 4.1 | 56.2 | 56.7 | 56.5 | 4.8 | 4.7 | 4.8 | | 5.2 | 5.0 | 5.1 | | | | |
| WM1 | 1520 | 14.6 | Surface | 26.0 | 25.9 | 26.0 | 8.1 | 8.1 | 8.1 | 28.5 | 28.6 | 28.6 | 4.7 | 4.7 | 4.7 | 68.3 | 67.2 | 67.8 | 3.1 | 3.1 | 3.1 | 5.5 | 5.8 | 5.7 | | | | | |
| | | | Middle | 25.3 | 25.2 | 25.3 | 8.1 | 8.0 | 8.0 | 29.0 | 29.0 | 29.0 | 3.9 | 3.7 | 3.8 | 58.7 | 57.2 | 58.0 | 3.4 | 3.3 | 3.3 | 3.3 | 4.4 | 4.0 | 4.2 | 4.7 | | | |
| | | | Bottom | 24.0 | 23.9 | 24.0 | 8.0 | 8.0 | 8.0 | 30.6 | 30.7 | 30.7 | 3.4 | 3.5 | 3.4 | 40.1 | 41.6 | 40.9 | 3.3 | 3.4 | 3.3 | | 4.2 | 4.2 | 4.2 | | | | |
| WM2 | 1540 | 5.4 | Surface | 25.8 | 25.9 | 25.9 | 8.0 | 8.0 | 8.0 | 28.0 | 28.1 | 28.1 | 5.4 | 5.5 | 5.4 | 66.3 | 67.1 | 66.7 | 3.1 | 3.2 | 3.2 | | | | 4.6 | 4.8 | 4.7 | | |
| | | | Middle | | | | | | | | | | | | | | | | | | | 3.6 | | | | | | | 4.4 |
| | | | Bottom | 24.1 | 24.2 | 24.2 | 8.0 | 8.0 | 8.0 | 29.9 | 29.8 | 29.9 | 4.8 | 4.8 | 4.8 | 60.3 | 61.4 | 60.9 | 4.1 | 4.1 | 4.1 | | 3.8 | 4.2 | 4.0 | | | | |
| WM3 | 1605 | 8.4 | Surface | 25.5 | 25.6 | 25.6 | 8.1 | 8.1 | 8.1 | 29.4 | 29.5 | 29.5 | 4.2 | 4.1 | 4.2 | 70.4 | 69.7 | 70.1 | 3.3 | 3.3 | 3.3 | 7.4 | 7.8 | 7.6 | | | | | |
| | | | Middle | 25.2 | 25.1 | 25.2 | 8.2 | 8.2 | 8.2 | 29.4 | 29.3 | 29.4 | 4.8 | 4.8 | 4.8 | 68.9 | 69.3 | 69.1 | 3.5 | 3.6 | 3.6 | 3.6 | 4.2 | 4.2 | 4.2 | 5.2 | | | |
| | | | Bottom | 25.0 | 25.1 | 25.1 | 8.1 | 8.1 | 8.1 | 29.6 | 29.7 | 29.7 | 4.6 | 4.6 | 4.6 | 67.0 | 67.8 | 67.4 | 3.9 | 3.8 | 3.8 | | 3.8 | 4.0 | 3.9 | | | | |
| WM4 | 1623 | 8.8 | Surface | 26.1 | 26.0 | 26.1 | 8.2 | 8.2 | 8.2 | 29.2 | 29.3 | 29.3 | 5.4 | 5.4 | 5.4 | 70.4 | 69.7 | 70.1 | 3.9 | 3.8 | 3.8 | 5.0 | 4.8 | 4.9 | | | | | |
| | | | Middle | 25.8 | 25.7 | 25.8 | 8.2 | 8.2 | 8.2 | 29.4 | 29.5 | 29.5 | 5.1 | 5.2 | 5.1 | 69.2 | 68.9 | 69.1 | 4.1 | 4.2 | 4.1 | 4.1 | 6.0 | 6.0 | 6.0 | 6.0 | | | |
| | | | Bottom | 25.2 | 25.3 | 25.3 | 8.2 | 8.2 | 8.2 | 29.7 | 29.8 | 29.8 | 4.5 | 4.6 | 4.5 | 65.4 | 66.0 | 65.7 | 4.3 | 4.2 | 4.3 | | 7.0 | 7.2 | 7.1 | | | | |
| CS2 | 1642 | 14.4 | Surface | 25.9 | 25.8 | 25.9 | 8.2 | 8.2 | 8.2 | 30.1 | 30.2 | 30.2 | 6.0 | 5.9 | 6.0 | 81.4 | 79.8 | 80.6 | 2.9 | 2.9 | 2.9 | 4.0 | 4.0 | 4.0 | | | | | |
| | | | Middle | 25.1 | 25.1 | 25.1 | 8.2 | 8.2 | 8.2 | 30.8 | 30.9 | 30.9 | 5.9 | 5.9 | 5.9 | 80.1 | 79.2 | 79.7 | 3.3 | 3.4 | 3.3 | 3.3 | 4.8 | 4.6 | 4.7 | 5.4 | | | |
| | | | Bottom | 23.8 | 23.7 | 23.8 | 8.2 | 8.2 | 8.2 | 31.2 | 31.1 | 31.2 | 5.0 | 5.1 | 5.1 | 67.8 | 68.7 | 68.3 | 3.8 | 3.7 | 3.8 | | 7.2 | 7.5 | 7.4 | | | | |

Remark or Observation:

Note: * Average

** Depth Average

SIL(E) Water Quality Monitoring Data Record Sheet

Date: 25-Jul-11
 Tide: Mid-Flood
 Weather: Fine
 Sea Conditions: Small Wave
 Upstream Control Station CS2

| Location | Sampling Time | Water Depth (m) | Monitoring Depth | Temperature (°C) | | | pH | | | Salinity (ppt) | | | DO (mg/l) | | | DO Saturation (%) | | | Turbidity (NTU) | | | | Suspended Solids (mg/l) | | | | | | | |
|----------|---------------|-----------------|------------------|------------------|------|-------|-----|-----|-------|----------------|------|-------|-----------|------|-------|-------------------|-------|-------|-----------------|-----|-------|--------|-------------------------|---|-------|--------|-----|-----|-----|-----|
| | | | | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | D.A.** | 1 | 2 | Ave.* | D.A.** | | | | |
| CS1 | 1519 | 13.0 | Surface | 28.3 | 28.3 | 28.3 | 8.8 | 8.6 | 8.7 | 26.2 | 26.2 | 26.2 | 11.9 | 12.0 | 12.0 | 181.5 | 181.9 | 181.7 | 3.0 | 3.5 | 3.3 | | | | | 8.5 | 8.4 | 8.5 | | |
| | | | Middle | 24.3 | 24.2 | 24.3 | 8.5 | 8.5 | 8.5 | 30.4 | 30.5 | 30.5 | 4.1 | 4.0 | 4.1 | 62.6 | 62.3 | 62.5 | 2.8 | 3.0 | 2.9 | 3.1 | | | | | 6.8 | 7.0 | 6.9 | 6.5 |
| | | | Bottom | 23.4 | 23.5 | 23.5 | 8.5 | 8.3 | 8.4 | 31.8 | 31.8 | 31.8 | 2.6 | 2.7 | 2.7 | 41.2 | 41.4 | 41.3 | 3.1 | 3.4 | 3.3 | | | | | 4.0 | 4.0 | 4.0 | | |
| WM1 | 1444 | 13.0 | Surface | 27.6 | 27.5 | 27.6 | 8.6 | 8.4 | 8.5 | 27.1 | 27.1 | 27.1 | 9.1 | 9.1 | 9.1 | 134.1 | 134.4 | 134.3 | 3.3 | 3.7 | 3.5 | | | | | 2.8 | 2.6 | 2.7 | | |
| | | | Middle | 24.4 | 24.4 | 24.4 | 8.6 | 8.6 | 8.6 | 30.9 | 31.0 | 31.0 | 3.4 | 3.4 | 3.4 | 57.9 | 57.3 | 57.6 | 2.5 | 2.3 | 2.4 | 2.9 | | | | | 4.0 | 3.6 | 3.8 | 4.7 |
| | | | Bottom | 23.6 | 23.5 | 23.6 | 8.4 | 8.5 | 8.5 | 31.6 | 31.7 | 31.7 | 2.6 | 2.6 | 2.6 | 32.5 | 32.2 | 32.4 | 2.7 | 2.8 | 2.8 | | | | | 7.4 | 7.8 | 7.6 | | |
| WM2 | 1424 | 5.8 | Surface | 27.9 | 27.8 | 27.9 | 8.3 | 8.5 | 8.4 | 27.0 | 27.1 | 27.1 | 8.3 | 8.3 | 8.3 | 120.1 | 120.6 | 120.4 | 2.2 | 2.5 | 2.4 | | | | | 8.0 | 8.2 | 8.1 | | |
| | | | Middle | | | | | | | | | | | | | | | | | | | 2.5 | | | | | | | 6.1 | |
| | | | Bottom | 24.2 | 24.3 | 24.3 | 8.4 | 8.5 | 8.5 | 30.5 | 30.4 | 30.5 | 3.9 | 3.9 | 3.9 | 34.8 | 34.6 | 34.7 | 2.6 | 2.8 | 2.7 | | | | | 4.0 | 4.2 | 4.1 | | |
| WM3 | 1405 | 8.9 | Surface | 27.5 | 27.5 | 27.5 | 8.5 | 8.6 | 8.6 | 27.4 | 27.3 | 27.4 | 8.4 | 8.4 | 8.4 | 125.3 | 125.1 | 125.2 | 2.1 | 2.4 | 2.3 | | | | | 4.6 | 4.4 | 4.5 | | |
| | | | Middle | 25.8 | 25.9 | 25.9 | 8.4 | 8.6 | 8.5 | 29.0 | 29.1 | 29.1 | 5.1 | 5.0 | 5.1 | 84.6 | 84.3 | 84.5 | 2.5 | 2.2 | 2.4 | 2.4 | | | | | 6.6 | 6.0 | 6.3 | 5.2 |
| | | | Bottom | 23.7 | 23.8 | 23.8 | 8.3 | 8.4 | 8.4 | 31.0 | 31.1 | 31.1 | 3.2 | 3.3 | 3.3 | 44.5 | 44.6 | 44.6 | 2.6 | 2.3 | 2.5 | | | | | 5.0 | 4.6 | 4.8 | | |
| WM4 | 1345 | 8.9 | Surface | 28.1 | 27.6 | 27.9 | 8.4 | 8.5 | 8.5 | 27.2 | 27.4 | 27.3 | 8.7 | 9.8 | 9.3 | 126.7 | 131.8 | 129.3 | 2.4 | 2.6 | 2.5 | | | | | 5.2 | 4.8 | 5.0 | | |
| | | | Middle | 26.5 | 25.5 | 26.0 | 8.5 | 8.5 | 8.5 | 30.0 | 29.7 | 29.9 | 6.9 | 8.0 | 7.5 | 104.2 | 106.8 | 105.5 | 2.0 | 2.1 | 2.1 | 2.3 | | | | | 6.0 | 5.6 | 5.8 | 5.6 |
| | | | Bottom | 23.2 | 23.2 | 23.2 | 8.4 | 8.6 | 8.5 | 31.9 | 32.0 | 32.0 | 3.0 | 3.0 | 3.0 | 43.2 | 42.6 | 42.9 | 2.1 | 2.4 | 2.3 | | | | | 6.0 | 5.8 | 5.9 | | |
| CS2 | 1330 | 14.5 | Surface | 27.4 | 27.1 | 27.3 | 8.4 | 8.4 | 8.4 | 27.6 | 27.9 | 27.8 | 9.1 | 8.7 | 8.9 | 137.6 | 127.6 | 132.6 | 2.9 | 2.8 | 2.9 | | | | | 6.0 | 6.2 | 6.1 | | |
| | | | Middle | 24.0 | 24.1 | 24.1 | 8.4 | 8.4 | 8.4 | 31.1 | 31.1 | 31.1 | 4.1 | 4.4 | 4.3 | 59.5 | 66.7 | 63.1 | 2.2 | 2.3 | 2.3 | 2.8 | | | | | 4.4 | 4.2 | 4.3 | 6.5 |
| | | | Bottom | 22.5 | 22.6 | 22.6 | 8.3 | 8.3 | 8.3 | 32.3 | 32.4 | 32.4 | 2.9 | 3.0 | 3.0 | 40.3 | 41.8 | 41.1 | 3.3 | 3.5 | 3.4 | | | | | 9.2 | 9.0 | 9.1 | | |

Remark or Observation:

Note: * Average
 ** Depth Average

SIL(E) Water Quality Monitoring Data Record Sheet

Date: 25-Jul-11
 Tide: Mid-Ebb
 Weather: Sunny
 Sea Conditions: Calm
 Upstream Control Station CS1

| Location | Sampling Time | Water Depth (m) | Monitoring Depth | Temperature (°C) | | | pH | | | Salinity (ppt) | | | DO (mg/l) | | | DO Saturation (%) | | | Turbidity (NTU) | | | | Suspended Solids (mg/l) | | | |
|----------|---------------|-----------------|------------------|------------------|------|-------|-----|-----|-------|----------------|------|-------|-----------|-----|-------|-------------------|-------|-------|-----------------|-----|-------|--------|-------------------------|-----|-------|--------|
| | | | | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | D.A.** | 1 | 2 | Ave.* | D.A.** |
| CS1 | 0800 | 15.6 | Surface | 27.1 | 27.1 | 27.1 | 8.4 | 8.4 | 8.4 | 25.9 | 25.8 | 25.9 | 9.4 | 9.4 | 9.4 | 136.4 | 137.0 | 136.7 | 3.5 | 3.6 | 3.6 | | 3.0 | 3.0 | 3.0 | |
| | | | Middle | 24.4 | 24.4 | 24.4 | 8.4 | 8.4 | 8.4 | 30.2 | 30.1 | 30.2 | 4.8 | 4.8 | 4.8 | 69.3 | 68.8 | 69.1 | 3.2 | 3.3 | 3.3 | 4.1 | 6.8 | 7.2 | 7.0 | 5.0 |
| | | | Bottom | 23.0 | 23.0 | 23.0 | 8.3 | 8.3 | 8.3 | 31.7 | 31.7 | 31.7 | 3.1 | 3.1 | 3.1 | 43.2 | 43.9 | 43.6 | 5.4 | 5.5 | 5.5 | | 5.2 | 5.0 | 5.1 | |
| WM1 | 0830 | 14.2 | Surface | 27.1 | 27.2 | 27.2 | 8.4 | 8.3 | 8.4 | 26.6 | 26.5 | 26.6 | 7.0 | 7.8 | 7.4 | 115.0 | 114.5 | 114.8 | 2.2 | 2.2 | 2.2 | | 6.5 | 6.2 | 6.4 | |
| | | | Middle | 24.0 | 24.0 | 24.0 | 8.3 | 8.3 | 8.3 | 31.2 | 31.2 | 31.2 | 2.5 | 2.5 | 2.5 | 36.9 | 37.5 | 37.2 | 2.7 | 2.8 | 2.8 | 2.8 | 4.0 | 4.2 | 4.1 | 4.7 |
| | | | Bottom | 23.5 | 23.5 | 23.5 | 8.2 | 8.2 | 8.2 | 31.7 | 31.7 | 31.7 | 2.7 | 2.7 | 2.7 | 38.8 | 39.3 | 39.1 | 3.4 | 3.4 | 3.4 | | 3.6 | 3.8 | 3.7 | |
| WM2 | 0855 | 5.4 | Surface | 27.3 | 27.3 | 27.3 | 8.4 | 8.4 | 8.4 | 26.7 | 26.7 | 26.7 | 7.8 | 7.8 | 7.8 | 114.3 | 114.8 | 114.6 | 2.8 | 2.7 | 2.8 | | 5.4 | 5.0 | 5.2 | |
| | | | Middle | | | | | | | | | | | | | | | | | | | 2.5 | | | | 4.9 |
| | | | Bottom | 25.9 | 25.8 | 25.9 | 8.5 | 8.5 | 8.5 | 28.8 | 28.8 | 28.8 | 5.1 | 5.1 | 5.1 | 74.5 | 74.8 | 74.7 | 2.3 | 2.3 | 2.3 | | 4.6 | 4.4 | 4.5 | |
| WM3 | 0915 | 9.6 | Surface | 27.2 | 27.1 | 27.2 | 8.5 | 8.5 | 8.5 | 26.9 | 27.0 | 27.0 | 7.8 | 7.8 | 7.8 | 114.6 | 114.1 | 114.4 | 2.5 | 2.5 | 2.5 | | 7.0 | 7.2 | 7.1 | |
| | | | Middle | 25.5 | 25.5 | 25.5 | 8.5 | 8.5 | 8.5 | 29.7 | 29.7 | 29.7 | 3.8 | 3.8 | 3.8 | 55.4 | 55.9 | 55.7 | 2.3 | 2.4 | 2.4 | 2.8 | 4.6 | 4.4 | 4.5 | 5.2 |
| | | | Bottom | 24.2 | 24.2 | 24.2 | 8.3 | 8.3 | 8.3 | 31.2 | 31.2 | 31.2 | 3.0 | 3.0 | 3.0 | 42.8 | 43.3 | 43.1 | 3.5 | 3.5 | 3.5 | | 4.0 | 4.2 | 4.1 | |
| WM4 | 0940 | 8.5 | Surface | 27.0 | 27.0 | 27.0 | 8.5 | 8.5 | 8.5 | 27.0 | 26.9 | 27.0 | 7.9 | 7.9 | 7.9 | 116.4 | 115.9 | 116.2 | 2.8 | 2.8 | 2.8 | | 4.8 | 5.0 | 4.9 | |
| | | | Middle | 25.6 | 25.6 | 25.6 | 8.5 | 8.5 | 8.5 | 29.3 | 29.3 | 29.3 | 4.4 | 4.4 | 4.4 | 62.4 | 62.8 | 62.6 | 2.6 | 2.6 | 2.6 | 2.7 | 5.6 | 5.5 | 5.6 | 5.3 |
| | | | Bottom | 24.1 | 24.0 | 24.1 | 8.3 | 8.3 | 8.3 | 31.3 | 31.3 | 31.3 | 2.9 | 2.9 | 2.9 | 42.9 | 42.5 | 42.7 | 2.6 | 2.6 | 2.6 | | 5.5 | 5.6 | 5.6 | |
| CS2 | 1005 | 14.3 | Surface | 27.4 | 27.4 | 27.4 | 8.4 | 8.4 | 8.4 | 27.9 | 27.9 | 27.9 | 8.2 | 8.2 | 8.2 | 122.1 | 121.6 | 121.9 | 1.6 | 1.6 | 1.6 | | 4.0 | 3.8 | 3.9 | |
| | | | Middle | 23.3 | 23.3 | 23.3 | 8.1 | 8.1 | 8.1 | 32.1 | 32.1 | 32.1 | 3.0 | 3.0 | 3.0 | 42.5 | 43.0 | 42.8 | 2.1 | 2.1 | 2.1 | 2.1 | 4.8 | 4.6 | 4.7 | 5.2 |
| | | | Bottom | 22.7 | 22.8 | 22.8 | 8.1 | 8.1 | 8.1 | 32.4 | 32.5 | 32.5 | 3.0 | 3.0 | 3.0 | 42.9 | 42.7 | 42.8 | 2.5 | 2.5 | 2.5 | | 7.2 | 7.0 | 7.1 | |

Remark or Observation:

Note: * Average

** Depth Average

SIL(E) Water Quality Monitoring Data Record Sheet

Date: 27-Jul-11
 Tide: Mid-Flood
 Weather: Sunny
 Sea Conditions: Small Wave
 Upstream Control Station CS2

| Location | Sampling Time | Water Depth (m) | Monitoring Depth | Temperature (°C) | | | pH | | | Salinity (ppt) | | | DO (mg/l) | | | DO Saturation (%) | | | Turbidity (NTU) | | | Suspended Solids (mg/l) | | | | |
|----------|---------------|-----------------|------------------|------------------|------|-------|-----|-----|-------|----------------|------|-------|-----------|-----|-------|-------------------|-------|-------|-----------------|-----|-------|-------------------------|-----|-----|-------|--------|
| | | | | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | D.A.** | 1 | 2 | Ave.* | D.A.** |
| CS1 | 1747 | 12.6 | Surface | 27.8 | 27.9 | 27.9 | 8.6 | 8.6 | 8.6 | 26.8 | 26.8 | 26.8 | 5.8 | 5.8 | 5.8 | 85.1 | 85.6 | 85.4 | 2.0 | 2.2 | 2.1 | 7.0 | 7.6 | 7.3 | | |
| | | | Middle | 25.1 | 25.2 | 25.2 | 8.5 | 8.5 | 8.5 | 29.6 | 29.5 | 29.6 | 3.6 | 3.5 | 3.6 | 55.5 | 54.2 | 54.9 | 2.4 | 2.5 | 2.5 | 2.7 | 7.8 | 7.6 | 7.7 | 6.2 |
| | | | Bottom | 23.6 | 23.5 | 23.6 | 8.4 | 8.3 | 8.4 | 31.3 | 31.1 | 31.2 | 2.5 | 2.5 | 2.5 | 35.4 | 35.9 | 35.7 | 3.6 | 3.7 | 3.7 | 3.6 | 3.8 | 3.7 | | |
| WM1 | 1710 | 8.1 | Surface | 27.8 | 27.9 | 27.9 | 8.5 | 8.5 | 8.5 | 27.7 | 27.6 | 27.7 | 6.4 | 6.5 | 6.5 | 90.7 | 91.2 | 91.0 | 2.5 | 2.6 | 2.6 | 3.0 | 2.6 | 2.8 | | |
| | | | Middle | 27.6 | 27.6 | 27.6 | 8.5 | 8.4 | 8.5 | 27.8 | 27.9 | 27.9 | 6.1 | 6.2 | 6.2 | 86.6 | 86.9 | 86.8 | 2.2 | 2.3 | 2.3 | 2.6 | 4.2 | 4.2 | 4.2 | 4.7 |
| | | | Bottom | 24.9 | 25.0 | 25.0 | 8.4 | 8.3 | 8.4 | 29.2 | 29.6 | 29.4 | 3.0 | 3.0 | 3.0 | 44.9 | 45.1 | 45.0 | 2.8 | 2.9 | 2.9 | 7.2 | 7.0 | 7.1 | | |
| WM2 | 1646 | 5.7 | Surface | 28.0 | 28.0 | 28.0 | 8.5 | 8.4 | 8.5 | 27.3 | 27.4 | 27.4 | 6.0 | 6.1 | 6.1 | 90.1 | 90.4 | 90.3 | 4.8 | 4.8 | 4.8 | 8.0 | 8.0 | 8.0 | | |
| | | | Middle | | | | | | | | | | | | | | | | | | 4.6 | | | | 6.1 | |
| | | | Bottom | 26.2 | 26.1 | 26.2 | 8.4 | 8.5 | 8.5 | 29.1 | 29.2 | 29.2 | 3.9 | 3.9 | 3.9 | 57.4 | 57.8 | 57.6 | 4.4 | 4.3 | 4.4 | 4.2 | 4.2 | 4.2 | | |
| WM3 | 1618 | 9.3 | Surface | 28.6 | 28.5 | 28.6 | 8.6 | 8.5 | 8.6 | 27.1 | 27.2 | 27.2 | 6.4 | 6.5 | 6.5 | 97.1 | 97.8 | 97.5 | 1.2 | 1.3 | 1.3 | 4.8 | 4.6 | 4.7 | | |
| | | | Middle | 27.0 | 27.1 | 27.1 | 8.5 | 8.5 | 8.5 | 28.6 | 28.5 | 28.6 | 5.4 | 5.5 | 5.5 | 84.4 | 84.9 | 84.7 | 2.7 | 2.6 | 2.7 | 2.1 | 7.0 | 7.5 | 7.3 | 5.6 |
| | | | Bottom | 24.5 | 24.6 | 24.6 | 8.4 | 8.4 | 8.4 | 31.1 | 31.2 | 31.2 | 4.2 | 4.2 | 4.2 | 56.6 | 58.9 | 57.8 | 2.2 | 2.4 | 2.3 | 4.6 | 4.8 | 4.7 | | |
| WM4 | 1549 | 9.1 | Surface | 29.0 | 29.0 | 29.0 | 8.5 | 8.6 | 8.6 | 26.7 | 26.7 | 26.7 | 7.1 | 7.3 | 7.2 | 105.8 | 106.3 | 106.1 | 1.8 | 1.9 | 1.9 | 5.4 | 5.6 | 5.5 | | |
| | | | Middle | 25.2 | 25.3 | 25.3 | 8.3 | 8.2 | 8.3 | 29.8 | 29.9 | 29.9 | 6.1 | 6.1 | 6.1 | 62.3 | 62.6 | 62.5 | 1.9 | 2.0 | 2.0 | 2.5 | 6.2 | 6.0 | 6.1 | 5.8 |
| | | | Bottom | 23.6 | 23.6 | 23.6 | 8.4 | 8.3 | 8.4 | 31.8 | 31.7 | 31.8 | 1.8 | 1.7 | 1.8 | 24.7 | 24.2 | 24.5 | 3.8 | 3.7 | 3.8 | 5.6 | 5.8 | 5.7 | | |
| CS2 | 1530 | 14.1 | Surface | 29.2 | 29.2 | 29.2 | 8.1 | 8.2 | 8.2 | 26.4 | 26.3 | 26.4 | 6.9 | 6.8 | 6.9 | 103.4 | 102.7 | 103.1 | 1.3 | 1.4 | 1.4 | 6.4 | 6.2 | 6.3 | | |
| | | | Middle | 25.2 | 25.3 | 25.3 | 8.2 | 8.2 | 8.2 | 30.1 | 30.0 | 30.1 | 5.7 | 5.8 | 5.8 | 81.3 | 81.8 | 81.6 | 3.4 | 3.6 | 3.5 | 3.1 | 4.8 | 5.0 | 4.9 | 6.6 |
| | | | Bottom | 24.0 | 24.0 | 24.0 | 8.1 | 8.2 | 8.2 | 31.7 | 31.6 | 31.7 | 3.4 | 3.5 | 3.5 | 48.8 | 50.0 | 49.4 | 4.3 | 4.5 | 4.4 | 8.6 | 8.4 | 8.5 | | |

Remark or Observation:

Note: * Average

** Depth Average

SIL(E) Water Quality Monitoring Data Record Sheet

Date: 27-Jul-11
 Tide: Mid-Ebb
 Weather: Sunny
 Sea Conditions: Small Wave
 Upstream Control Station CS1

| Location | Sampling Time | Water Depth (m) | Monitoring Depth | Temperature (°C) | | | pH | | | Salinity (ppt) | | | DO (mg/l) | | | DO Saturation (%) | | | Turbidity (NTU) | | | | Suspended Solids (mg/l) | | | | | | |
|----------|---------------|-----------------|------------------|------------------|------|-------|-----|-----|-------|----------------|------|-------|-----------|-----|-------|-------------------|------|-------|-----------------|-----|-------|--------|-------------------------|---|-------|--------|-----|-----|-----|
| | | | | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | D.A.** | 1 | 2 | Ave.* | D.A.** | | | |
| CS1 | 0830 | 14.4 | Surface | 27.4 | 27.4 | 27.4 | 8.2 | 8.2 | 8.2 | 26.2 | 26.3 | 26.3 | 6.6 | 6.7 | 6.7 | 98.5 | 98.9 | 98.7 | 2.3 | 2.2 | 2.3 | | | | | 3.4 | 3.2 | 3.3 | |
| | | | Middle | 25.7 | 25.6 | 25.7 | 8.2 | 8.3 | 8.3 | 29.7 | 29.8 | 29.8 | 5.6 | 5.7 | 5.7 | 76.8 | 76.9 | 76.9 | 1.5 | 1.5 | 1.5 | 3.1 | | | | 7.0 | 7.2 | 7.1 | 5.4 |
| | | | Bottom | 22.8 | 22.8 | 22.8 | 8.2 | 8.3 | 8.3 | 31.9 | 31.8 | 31.9 | 2.4 | 2.4 | 2.4 | 21.7 | 22.6 | 22.2 | 5.4 | 5.6 | 5.5 | | | | | 5.6 | 6.0 | 5.8 | |
| WM1 | 0900 | 15.7 | Surface | 27.2 | 27.2 | 27.2 | 8.3 | 8.2 | 8.3 | 27.2 | 27.3 | 27.3 | 5.5 | 5.6 | 5.6 | 82.0 | 82.5 | 82.3 | 1.8 | 2.0 | 1.9 | | | | | 5.8 | 5.8 | 5.8 | |
| | | | Middle | 25.9 | 26.0 | 26.0 | 8.3 | 8.3 | 8.3 | 30.0 | 30.1 | 30.1 | 2.8 | 2.7 | 2.8 | 43.9 | 43.4 | 43.7 | 2.3 | 2.4 | 2.4 | 3.2 | | | | 4.4 | 4.2 | 4.3 | 4.7 |
| | | | Bottom | 23.5 | 23.5 | 23.5 | 8.2 | 8.2 | 8.2 | 31.4 | 31.4 | 31.4 | 1.7 | 1.7 | 1.7 | 23.8 | 24.0 | 23.9 | 5.2 | 5.2 | 5.2 | | | | | 4.0 | 4.2 | 4.1 | |
| WM2 | 0927 | 5.3 | Surface | 27.1 | 27.2 | 27.2 | 8.3 | 8.3 | 8.3 | 27.7 | 27.7 | 27.7 | 5.8 | 5.8 | 5.8 | 82.6 | 82.4 | 82.5 | 2.2 | 2.3 | 2.3 | | | | | 5.6 | 5.4 | 5.5 | |
| | | | Middle | | | | | | | | | | | | | | | | | | | 2.1 | | | | | | 5.1 | |
| | | | Bottom | 26.9 | 27.0 | 27.0 | 8.4 | 8.3 | 8.4 | 27.9 | 27.9 | 27.9 | 4.9 | 4.8 | 4.9 | 71.5 | 71.2 | 71.4 | 1.8 | 1.9 | 1.9 | | | | | 4.6 | 4.8 | 4.7 | |
| WM3 | 0954 | 10.2 | Surface | 27.4 | 27.4 | 27.4 | 8.5 | 8.4 | 8.5 | 27.9 | 27.8 | 27.9 | 5.6 | 5.7 | 5.7 | 77.9 | 78.2 | 78.1 | 2.1 | 2.1 | 2.1 | | | | | 7.4 | 7.6 | 7.5 | |
| | | | Middle | 26.9 | 26.9 | 26.9 | 8.5 | 8.5 | 8.5 | 28.3 | 28.3 | 28.3 | 4.4 | 4.4 | 4.4 | 57.7 | 67.4 | 62.6 | 2.3 | 2.2 | 2.3 | 2.3 | | | | 4.2 | 4.0 | 4.1 | 5.4 |
| | | | Bottom | 25.0 | 25.0 | 25.0 | 8.4 | 8.4 | 8.4 | 30.0 | 30.0 | 30.0 | 3.1 | 3.1 | 3.1 | 42.3 | 42.1 | 42.2 | 2.4 | 2.6 | 2.5 | | | | | 4.6 | 4.8 | 4.7 | |
| WM4 | 1022 | 8.9 | Surface | 27.7 | 27.6 | 27.7 | 8.5 | 8.5 | 8.5 | 27.7 | 27.8 | 27.8 | 5.6 | 5.7 | 5.7 | 83.2 | 83.8 | 83.5 | 2.6 | 2.8 | 2.7 | | | | | 5.2 | 5.0 | 5.1 | |
| | | | Middle | 27.1 | 27.1 | 27.1 | 8.5 | 8.6 | 8.6 | 28.0 | 28.0 | 28.0 | 5.1 | 5.1 | 5.1 | 78.1 | 78.4 | 78.3 | 1.8 | 1.8 | 1.8 | 2.1 | | | | 6.6 | 7.0 | 6.8 | 5.3 |
| | | | Bottom | 25.0 | 25.1 | 25.1 | 8.6 | 8.5 | 8.6 | 29.8 | 29.9 | 29.9 | 3.3 | 3.4 | 3.4 | 48.8 | 48.4 | 48.6 | 1.7 | 1.8 | 1.8 | | | | | 4.0 | 4.2 | 4.1 | |
| CS2 | 1052 | 14.8 | Surface | 28.4 | 28.3 | 28.4 | 8.6 | 8.5 | 8.6 | 26.1 | 26.2 | 26.2 | 6.3 | 6.3 | 6.3 | 94.1 | 94.4 | 94.3 | 1.2 | 1.3 | 1.3 | | | | | 3.6 | 3.8 | 3.7 | |
| | | | Middle | 23.3 | 23.2 | 23.3 | 8.5 | 8.5 | 8.5 | 31.7 | 31.8 | 31.8 | 2.7 | 2.6 | 2.7 | 37.5 | 37.3 | 37.4 | 3.1 | 3.0 | 3.1 | 2.4 | | | | 4.4 | 4.4 | 4.4 | 5.0 |
| | | | Bottom | 22.4 | 22.4 | 22.4 | 8.5 | 8.4 | 8.5 | 32.4 | 32.4 | 32.4 | 2.2 | 2.2 | 2.2 | 30.6 | 30.4 | 30.5 | 2.9 | 2.7 | 2.8 | | | | | 6.6 | 7.0 | 6.8 | |

Remark or Observation:

Note: * Average

** Depth Average

SIL(E) Water Quality Monitoring Data Record Sheet

Date: 30-Jul-11
 Tide: Mid-Flood
 Weather: Drizzle
 Sea Conditions: Calm
 Upstream Control Station CS2

| Location | Sampling Time | Water Depth (m) | Monitoring Depth | Temperature (°C) | | | pH | | | Salinity (ppt) | | | DO (mg/l) | | | DO Saturation (%) | | | Turbidity (NTU) | | | | Suspended Solids (mg/l) | | | | |
|----------|---------------|-----------------|------------------|------------------|------|-------|-----|-----|-------|----------------|------|-------|-----------|-----|-------|-------------------|------|-------|-----------------|-----|-------|--------|-------------------------|-----|-------|--------|-----|
| | | | | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | D.A.** | 1 | 2 | Ave.* | D.A.** | |
| CS1 | 1747 | 12.6 | Surface | 25.9 | 25.9 | 25.9 | 8.4 | 8.4 | 8.4 | 29.7 | 29.7 | 29.7 | 4.5 | 4.4 | 4.5 | 65.6 | 65.1 | 65.4 | 3.8 | 3.7 | 3.8 | 9.0 | 8.8 | 8.9 | | | |
| | | | Middle | 25.5 | 25.4 | 25.5 | 8.4 | 8.4 | 8.4 | 29.8 | 29.9 | 29.9 | 4.0 | 3.9 | 4.0 | 57.5 | 59.9 | 58.7 | 4.0 | 4.1 | 4.1 | 3.9 | 8.0 | 8.2 | 8.1 | 7.1 | |
| | | | Bottom | 25.3 | 25.3 | 25.3 | 8.5 | 8.4 | 8.5 | 30.0 | 30.0 | 30.0 | 3.3 | 3.4 | 3.4 | 48.5 | 49.1 | 48.8 | 4.0 | 4.0 | 4.0 | | 4.2 | 4.2 | 4.2 | | |
| WM1 | 1710 | 8.1 | Surface | 26.2 | 26.2 | 26.2 | 8.4 | 8.4 | 8.4 | 29.6 | 29.5 | 29.6 | 4.3 | 4.4 | 4.4 | 63.2 | 63.8 | 63.5 | 4.1 | 4.2 | 4.2 | 3.6 | 3.8 | 3.7 | | | |
| | | | Middle | 26.1 | 26.1 | 26.1 | 8.4 | 8.4 | 8.4 | 29.7 | 29.8 | 29.8 | 4.3 | 4.4 | 4.4 | 63.8 | 64.3 | 64.1 | 4.3 | 4.4 | 4.4 | 4.2 | 4.0 | 3.8 | 3.9 | 5.1 | |
| | | | Bottom | 26.0 | 25.9 | 26.0 | 8.4 | 8.4 | 8.4 | 29.7 | 29.7 | 29.7 | 4.1 | 4.2 | 4.2 | 60.7 | 61.3 | 61.0 | 4.0 | 4.0 | 4.0 | | 7.4 | 7.8 | 7.6 | | |
| WM2 | 1646 | 5.7 | Surface | 26.5 | 26.5 | 26.5 | 8.4 | 8.4 | 8.4 | 29.3 | 29.4 | 29.4 | 4.7 | 4.7 | 4.7 | 68.5 | 68.7 | 68.6 | 4.0 | 3.9 | 4.0 | 8.4 | 8.4 | 8.4 | | | |
| | | | Middle | | | | | | | | | | | | | | | | | | | | | | | | 6.8 |
| | | | Bottom | 26.0 | 26.0 | 26.0 | 8.4 | 8.4 | 8.4 | 29.7 | 29.7 | 29.7 | 3.9 | 3.9 | 3.9 | 57.5 | 57.9 | 57.7 | 3.8 | 3.7 | 3.8 | | 5.2 | 5.0 | 5.1 | | |
| WM3 | 1618 | 9.3 | Surface | 26.2 | 26.2 | 26.2 | 8.3 | 8.3 | 8.3 | 29.6 | 29.6 | 29.6 | 4.4 | 4.3 | 4.4 | 67.1 | 66.7 | 66.9 | 3.0 | 2.9 | 3.0 | 4.0 | 4.4 | 4.2 | | | |
| | | | Middle | 26.0 | 26.0 | 26.0 | 8.3 | 8.2 | 8.3 | 29.7 | 29.7 | 29.7 | 3.9 | 4.0 | 4.0 | 58.4 | 59.0 | 58.7 | 3.6 | 3.5 | 3.6 | 3.5 | 7.0 | 7.6 | 7.3 | 5.5 | |
| | | | Bottom | 25.8 | 25.8 | 25.8 | 8.3 | 8.4 | 8.4 | 29.8 | 29.8 | 29.8 | 3.9 | 3.8 | 3.9 | 57.5 | 57.0 | 57.3 | 3.9 | 3.8 | 3.9 | | 5.0 | 5.2 | 5.1 | | |
| WM4 | 1549 | 9.1 | Surface | 26.5 | 26.5 | 26.5 | 8.3 | 8.3 | 8.3 | 29.6 | 29.6 | 29.6 | 5.9 | 5.5 | 5.7 | 82.1 | 81.6 | 81.9 | 3.6 | 3.6 | 3.6 | 6.0 | 5.8 | 5.9 | | | |
| | | | Middle | 26.1 | 26.1 | 26.1 | 8.3 | 8.3 | 8.3 | 29.7 | 29.7 | 29.7 | 5.2 | 5.4 | 5.3 | 76.6 | 77.5 | 77.1 | 3.2 | 3.1 | 3.2 | 3.2 | 6.4 | 6.0 | 6.2 | 5.8 | |
| | | | Bottom | 25.8 | 25.7 | 25.8 | 8.3 | 8.3 | 8.3 | 29.8 | 29.8 | 29.8 | 4.6 | 4.5 | 4.6 | 68.5 | 67.9 | 68.2 | 3.0 | 2.9 | 3.0 | | 5.2 | 5.4 | 5.3 | | |
| CS2 | 1530 | 14.1 | Surface | 26.8 | 26.8 | 26.8 | 8.2 | 8.2 | 8.2 | 29.1 | 29.2 | 29.2 | 6.5 | 6.6 | 6.6 | 96.4 | 97.1 | 96.8 | 3.6 | 3.7 | 3.7 | 7.0 | 7.2 | 7.1 | | | |
| | | | Middle | 25.9 | 25.9 | 25.9 | 8.3 | 8.2 | 8.3 | 29.7 | 29.7 | 29.7 | 5.3 | 5.3 | 5.3 | 78.0 | 77.6 | 77.8 | 4.4 | 4.3 | 4.4 | 4.2 | 4.6 | 4.6 | 4.6 | 6.7 | |
| | | | Bottom | 25.4 | 25.4 | 25.4 | 8.1 | 8.1 | 8.1 | 30.1 | 30.2 | 30.2 | 4.3 | 4.2 | 4.3 | 63.1 | 62.7 | 62.9 | 4.6 | 4.5 | 4.6 | | 8.6 | 8.4 | 8.5 | | |

Remark or Observation:

Note: * Average

** Depth Average

SIL(E) Water Quality Monitoring Data Record Sheet

Date: 30-Jul-11
 Tide: Mid-Ebb
 Weather: Drizzle
 Sea Conditions: Calm
 Upstream Control Station CS1

| Location | Sampling Time | Water Depth (m) | Monitoring Depth | Temperature (°C) | | | pH | | | Salinity (ppt) | | | DO (mg/l) | | | DO Saturation (%) | | | Turbidity (NTU) | | | | Suspended Solids (mg/l) | | | | | | | |
|----------|---------------|-----------------|------------------|------------------|------|-------|-----|-----|-------|----------------|------|-------|-----------|-----|-------|-------------------|------|-------|-----------------|-----|-------|--------|-------------------------|---|-------|--------|-----|-----|-----|-----|
| | | | | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | 1 | 2 | Ave.* | D.A.** | 1 | 2 | Ave.* | D.A.** | | | | |
| CS1 | 1130 | 11.6 | Surface | 26.7 | 26.7 | 26.7 | 7.6 | 7.7 | 7.7 | 28.7 | 28.6 | 28.7 | 5.8 | 5.8 | 5.8 | 86.4 | 85.8 | 86.1 | 5.6 | 5.4 | 5.5 | | | | | 3.8 | 4.2 | 4.0 | | |
| | | | Middle | 26.1 | 26.1 | 26.1 | 7.8 | 7.8 | 7.8 | 29.4 | 29.4 | 29.4 | 5.1 | 5.1 | 5.1 | 75.1 | 75.0 | 75.1 | 5.1 | 5.2 | 5.2 | 5.0 | | | | | 7.6 | 7.6 | 7.6 | 5.9 |
| | | | Bottom | 25.9 | 25.9 | 25.9 | 8.0 | 8.0 | 8.0 | 29.6 | 29.6 | 29.6 | 4.9 | 5.0 | 5.0 | 72.4 | 73.6 | 73.0 | 4.4 | 4.3 | 4.4 | | | | | 6.2 | 6.0 | 6.1 | | |
| WM1 | 1152 | 15.4 | Surface | 26.1 | 26.0 | 26.1 | 8.3 | 8.3 | 8.3 | 29.7 | 29.8 | 29.8 | 4.6 | 4.5 | 4.6 | 68.1 | 67.3 | 67.7 | 3.7 | 3.6 | 3.7 | | | | | 6.6 | 6.2 | 6.4 | | |
| | | | Middle | 25.5 | 25.5 | 25.5 | 8.3 | 8.3 | 8.3 | 30.0 | 30.1 | 30.1 | 4.0 | 4.1 | 4.1 | 58.7 | 59.0 | 58.9 | 3.4 | 3.4 | 3.4 | 3.8 | | | | | 3.8 | 3.8 | 3.8 | 4.7 |
| | | | Bottom | 25.3 | 25.3 | 25.3 | 8.4 | 8.3 | 8.4 | 30.1 | 30.1 | 30.1 | 4.1 | 4.0 | 4.1 | 59.3 | 58.8 | 59.1 | 4.5 | 4.4 | 4.5 | | | | | 4.0 | 3.6 | 3.8 | | |
| WM2 | 1221 | 5.4 | Surface | 26.1 | 26.0 | 26.1 | 8.3 | 8.3 | 8.3 | 29.6 | 29.7 | 29.7 | 4.4 | 4.3 | 4.4 | 64.3 | 63.7 | 64.0 | 3.7 | 3.7 | 3.7 | | | | | 5.2 | 5.6 | 5.4 | | |
| | | | Middle | | | | | | | | | | | | | | | | | | | 3.7 | | | | | | | 4.8 | |
| | | | Bottom | 25.8 | 25.8 | 25.8 | 8.3 | 8.3 | 8.3 | 29.9 | 29.9 | 29.9 | 4.5 | 4.5 | 4.5 | 66.3 | 66.0 | 66.2 | 3.7 | 3.6 | 3.7 | | | | | 4.2 | 4.0 | 4.1 | | |
| WM3 | 1246 | 8.2 | Surface | 26.6 | 26.5 | 26.6 | 8.4 | 8.4 | 8.4 | 29.6 | 29.6 | 29.6 | 4.3 | 4.3 | 4.3 | 63.5 | 63.1 | 63.3 | 3.9 | 3.8 | 3.9 | | | | | 5.2 | 5.2 | 5.2 | | |
| | | | Middle | 25.9 | 25.9 | 25.9 | 8.4 | 8.4 | 8.4 | 29.7 | 29.7 | 29.7 | 4.4 | 4.3 | 4.4 | 64.0 | 63.5 | 63.8 | 3.6 | 3.7 | 3.7 | 3.9 | | | | | 6.8 | 6.6 | 6.7 | 6.3 |
| | | | Bottom | 25.8 | 25.8 | 25.8 | 8.4 | 8.4 | 8.4 | 29.8 | 29.6 | 29.7 | 4.3 | 4.2 | 4.3 | 62.4 | 61.8 | 62.1 | 4.0 | 4.1 | 4.1 | | | | | 7.0 | 7.2 | 7.1 | | |
| WM4 | 1313 | 8.4 | Surface | 26.4 | 26.3 | 26.4 | 8.4 | 8.4 | 8.4 | 29.5 | 29.5 | 29.5 | 4.2 | 4.1 | 4.2 | 62.9 | 62.2 | 62.6 | 4.0 | 4.0 | 4.0 | | | | | 6.6 | 6.4 | 6.5 | | |
| | | | Middle | 25.9 | 25.9 | 25.9 | 8.4 | 8.4 | 8.4 | 29.7 | 29.7 | 29.7 | 4.6 | 4.5 | 4.6 | 67.3 | 66.8 | 67.1 | 3.8 | 3.7 | 3.8 | 3.9 | | | | | 6.0 | 6.0 | 6.0 | 6.5 |
| | | | Bottom | 25.7 | 25.7 | 25.7 | 8.4 | 8.3 | 8.4 | 29.9 | 29.9 | 29.9 | 4.3 | 4.3 | 4.3 | 62.6 | 63.0 | 62.8 | 3.9 | 3.8 | 3.9 | | | | | 7.0 | 7.2 | 7.1 | | |
| CS2 | 1340 | 14.3 | Surface | 26.5 | 26.5 | 26.5 | 8.4 | 8.4 | 8.4 | 29.7 | 29.7 | 29.7 | 6.3 | 6.2 | 6.3 | 93.6 | 93.1 | 93.4 | 3.6 | 3.5 | 3.6 | | | | | 5.0 | 4.8 | 4.9 | | |
| | | | Middle | 25.9 | 25.8 | 25.9 | 8.5 | 8.4 | 8.5 | 30.0 | 30.0 | 30.0 | 4.9 | 4.8 | 4.9 | 71.4 | 70.9 | 71.2 | 3.4 | 3.3 | 3.4 | 3.6 | | | | | 4.6 | 4.2 | 4.4 | 5.4 |
| | | | Bottom | 24.3 | 24.4 | 24.4 | 8.4 | 8.4 | 8.4 | 31.0 | 30.9 | 31.0 | 3.7 | 3.7 | 3.7 | 53.6 | 53.1 | 53.4 | 3.8 | 3.7 | 3.8 | | | | | 7.0 | 6.8 | 6.9 | | |

Remark or Observation:

Note: * Average

** Depth Average

APPENDIX E

Review of Exceedance in Water Quality Monitoring

| Sampling Date | Tidal Mode | Parameter | | | Remarks |
|---------------|---------------------|-----------|-----------|----|--|
| | | DO | Turbidity | SS | |
| 18 Jul 2011 | Mid-Ebb & Mid-Flood | AL, LL | - | - | Exceedances of Action/ Limit Levels were recorded at all monitoring stations (WM1, WM2, WM3, WM4) & water depth (Surface, Middle and Bottom). The exceedances have been investigated and were considered not related to the project works as no marine works were being carried out. As such, the natural fluctuation of the marine water quality has been considered attributed to the low DO levels. |
| 20 Jul 2011 | Mid-Ebb & Mid-Flood | AL, LL | - | - | Exceedances of Action/ Limit Levels were recorded at all monitoring stations (WM1, WM2, WM3, WM4) & water depth (Surface, Middle and Bottom). The exceedances have been investigated and were considered not related to the project works as only the installation of the marker buoys was carried out in the morning (Flood tide) of the day. As such, the natural fluctuation of the marine water quality has been considered attributed to the low DO levels. |
| 22 Jul 2011 | Mid-Ebb & Mid-Flood | AL, LL | - | - | Exceedances of Action/ Limit Levels were recorded at all monitoring stations (WM1, WM2, WM3, WM4) & water depth (Surface, Middle and Bottom). The exceedances have been investigated and were considered not related to the project works as only the installation of the silt curtains was carried out in the afternoon (Ebb tide) of the day. As such, the natural fluctuation of the marine water quality has been considered attributed to the low DO levels. |
| 25 Jul 2011 | Mid-Ebb & Mid-Flood | AL, LL | - | - | Exceedances of Action/ Limit Levels were recorded at all monitoring stations (WM1, WM2, WM3, WM4) & Middle and Bottom water depth (Bottom level only for Mid-flood at WM4). The exceedances have been investigated and were considered not related to the project works as no marine works were being carried out. As such, the natural fluctuation of the marine water quality has been considered attributed to the low DO levels. |

| Sampling Date | Tidal Mode | Parameter | | | Remarks |
|---------------|---------------------|-----------|-----------|----|---|
| | | DO | Turbidity | SS | |
| 27 Jul 2011 | Mid-Ebb & Mid-Flood | AL, LL | - | - | Exceedances of Action/ Limit Levels were record at all monitoring stations (WM1, WM2, WM3, WM4) & water depth (Surface, Middle and Bottom). The exceedances have been investigated and were considered not related to the project works as the works were only carried out near shore and the silt curtain has been inspected and was functioned properly. As such, the natural fluctuation of the marine water quality has been considered attributed to the low DO levels. |
| 27 Jul 2011 | Mid-Flood | - | AL, LL | - | Exceedances of Action/ Limit Levels were recorded at WM2, Mid-flood tide. The exceedances have been investigated. The works were only carried out near shore and the silt curtain has been inspected and was functioned properly. No abnormality was observed during the water quality monitoring. As such, the exceedance was considered not related to the project works. |
| 30 Jul 2011 | Mid-Ebb & Mid-Flood | AL, LL | - | - | Exceedances of Action/ Limit Levels were recorded at all monitoring stations (WM1, WM2, WM3, WM4) & water depth (Surface, Middle and Bottom). The exceedances have been investigated and were considered not related to the project works as the works were only carried out near shore and the silt curtain has been inspected and was functioned properly. As such, the natural fluctuation of the marine water quality has been considered attributed to the low DO levels. |

Note: AL – Action Level ; LL – Limit Level