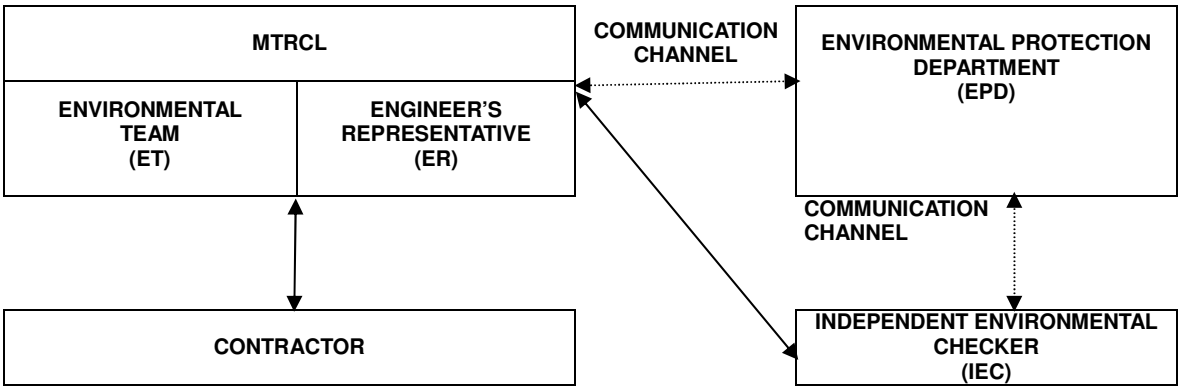
# APPENDIX A1

## 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** | Mr. Richard Kwan | 2688 1179 |
| **Engineer's Representative** | | |
| Project Manager – SIL Civil | Mr. Ken Wong | 3987 8288 |
| Construction Manager – SIL (901) | Mr. Mike Bezzano | 2206 8688 |
| Sr Construction Engineer – SIL (902) | Mr. Lawrence Lee | 3519 4420 |
| Construction Manager – SIL (903 / 904) | Mr. Jimmy Poon | 2285 4688 |
| Sr Construction Engineer – SIL (903 / 908) | Ms. Patty Kwan | 3975 6950 |
| **Contract No. 901**<br>**Admiralty Integrated Station and SCL Enabling Works**<br>Main Contractor: Kier – Laing O'Rourke – Kaden Joint Venture | | |
| Project Director | Mr. Viv Jones | 9248 8482 |
| QA & Environmental Manager | Mr. Ronald Fung | 9777 7667 |
| **Contract No. 902**<br>**Nam Fung Tunnel and Ventilation Buildings**<br>Main Contractor: Nishimatsu Construction Co., Ltd. | | |
| Project Manager | Mr. Masanori Ishii | 6112 6707 |
| Senior Construction Manager (External) | Toshiya Fujita | 3190 7500 |
| Senior Construction Manager (Tunnel) | Norihisa Murakawa | 3190 7500 |
| **Contract No. 903**<br>**Ocean Park Station, Wong Chuk Hang Station, Viaduct and Aberdeen Channel Bridge**<br>Main Contractor: Leighton Contractors (Asia) Ltd. | | |
| Project Manager | Mr. Au Wing Chung | 9319 8198 |
| Construction Manager | Mr. Gary Chow | 9162 1142 |
| **Contract No. 904**<br>**Lei Tung Station, South Horizons Station and Tunnels**<br>Main Contractor: Leighton – John Holland Joint Venture | | |
| Operation Manager | Mr. Paul Freeman | 9856 1988 |
| Project Director | Mr. Jan Torka | 6323 9468 |
| | | |

| Organization | Name | Telephone |
|---|---|---|
| **Contract No. 908**<br>**Wong Chuk Hang Depot Superstructure**<br>Main Contractor: Hsin Chong Construction Company Limited | | |
| Project Manager | Mr. Eric Chan | 6404 0775 |
| Deputy Project Manager | Mr. Foster Tsang | 9105 3265 |

**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) | Dr. Anthony Lee | 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 ($\mu g/m^3$) | Limit Level ($\mu g/m^3$) |
|---|---|---|---|
| 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 ($\mu g/m^3$) | Limit Level ($\mu g/m^3$) |
|---|---|---|---|
| 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**<br>Location: **I1** | | | | |
|---|---|---|---|---|
| Parameters | Action Level | | Limit Level | |
| DO in mg/L | Surface | 4.9 | Surface | 4.6 |
| | Middle | 4.3 | Middle | 4.2 |
| | Bottom | 3.0 | Bottom | 3.0 |
| SS in mg/L (depth averaged) | 5.2 | | 5.3 | |
| Turbidity in NTU (depth averaged) | 6.0 | | 6.1 | |
| Tide: **Ebb**<br>Location: **I2** | | | | |
| Parameters | Action Level | | Limit Level | |
| DO in mg/L | Surface | 5.0 | Surface | 4.7 |
| | Middle | 3.6 | Middle | 3.4 |
| | Bottom | 2.7 | Bottom | 2.5 |
| SS in mg/L (depth averaged) | 6.2 | | 6.3 | |
| Turbidity in NTU (depth averaged) | 6.0 | | 6.1 | |
| Tide: **Ebb**<br>Location: **Intake A** | | | | |
| Parameters | Action Level | | Limit Level | |
| DO in mg/L | Surface | 4.7 | Surface | 4.5 |
| | Middle | 4.2 | Middle | 3.9 |
| | Bottom | 2.9 | Bottom | 2.7 |
| SS in mg/L (depth averaged) | 6.5 | | 6.9 | |
| Turbidity in NTU (depth averaged) | 6.5 | | 7.0 | |
| Tide: **Ebb**<br>Location: **Intake B** | | | | |
| Parameters | Action Level | | Limit Level | |
| DO in mg/L | Surface | 4.7 | Surface | 4.6 |
| | Middle | 4.0 | Middle | 3.9 |
| | Bottom | 2.9 | Bottom | 2.6 |
| SS in mg/L (depth averaged) | 6.7 | | 7.5 | |
| Turbidity in NTU (depth averaged) | 8.9 | | 10.2 | |

***Table B2.2 Action and Limit Levels for Flood Condition***

| Tide: **Flood**<br>Location: **I1** | | | | |
|---|---|---|---|---|
| Parameters | Action Level | | Limit Level | |
| DO in mg/L | Surface | 4.5 | Surface | 4.5 |
| | Middle | 3.4 | Middle | 3.1 |
| | Bottom | 2.5 | Bottom | 2.2 |
| SS in mg/L (depth averaged) | 6.9 | | 7.0 | |
| Turbidity in NTU (depth averaged) | 6.3 | | 6.3 | |
| Tide: **Flood**<br>Location: **I2** | | | | |
| Parameters | Action Level | | Limit Level | |
| DO in mg/L | Surface | 4.5 | Surface | 4.5 |
| | Middle | 3.7 | Middle | 3.4 |
| | Bottom | 2.6 | Bottom | 2.2 |
| SS in mg/L (depth averaged) | 6.8 | | 7.2 | |
| Turbidity in NTU (depth averaged) | 5.3 | | 5.3 | |
| Tide: **Flood**<br>Location: **Intake A** | | | | |
| Parameters | Action Level | | Limit Level | |
| DO in mg/L | Surface | 4.3 | Surface | 4.2 |
| | Middle | 3.7 | Middle | 3.7 |
| | Bottom | 3.2 | Bottom | 3.1 |
| SS in mg/L (depth averaged) | 7.3 | | 7.5 | |
| Turbidity in NTU (depth averaged) | 6.0 | | 6.3 | |
| Tide: **Flood**<br>Location: **Intake B** | | | | |
| Parameters | Action Level | | Limit Level | |
| DO in mg/L | Surface | 4.0 | Surface | 4.0 |
| | Middle | 3.2 | Middle | 3.1 |
| | Bottom | 2.7 | Bottom | 2.6 |
| SS in mg/L (depth averaged) | 7.0 | | 7.4 | |
| Turbidity in NTU (depth averaged) | 7.8 | | 8.2 | |

# APPENDIX C

## Calibration Details

Summary of Calibration Certificate

Noise Equipment

| Model | Serial Number | Calibration Date | Expiry Date | Remark |
|---|---|---|---|---|
| B&K 2250-L | 2741135 | 11 Nov 2014 | 11 Nov 2016 | |
| B&K 2250-L | 2741137 | 17 Oct 2014 | 17 Oct 2016 | |
| B&K 4231 Calibrator | 2309393 | 11 Nov 2014 | 11 Nov 2015 | |

High Volume Sampler

| Model | Sampler | Calibration Date | Expiry Date | Remark |
|---|---|---|---|---|
| Graseby-Andersen | 694-0661 | 5 Jul 2014 | 5 Jan 2015 [1] | |
| Graseby-Andersen | 894-0833 | 5 Jul 2014 | 5 Jan 2015 [1] | |
| Graseby-Andersen | 994-0878 | 5 Jul 2014 | 5 Jan 2015 [1] | |
| Graseby-Andersen | 1294-1104 | 5 Jul 2014 | 5 Jan 2015 [1] | |
| Graseby-Andersen | 1294-1111 | 5 Jul 2014 | 5 Jan 2015 [1] | |
| Graseby-Andersen | 694-0664 | 5 Jul 2014 | 5 Jan 2015 [1] | |

Water Quality Monitoring Equipment

| Model | Serial Number | Calibration Date | Expiry Date | Remark |
|---|---|---|---|---|
| Multimeter for Dissolved Oxygen, pH, Temperature, Salinity and Turbidity | | | | |
| YSI 6920V2 | 11F100014 | 21 Oct 2014 | 21 Jan 2015 | |

Note:

[1] Calibration certificates refer to Appendix C of EM&A report - August 2014

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HOKLAS 028 CAL

# CERTIFICATE OF CALIBRATION

**Certificate No.:** 14CA1110 04-01 **Page** 1 **of** 2

## Item tested

| | | | |
|---|---|---|---|
| Description: | Sound Level Meter (Type 1) | , | Microphone |
| Manufacturer: | B & K | , | B & K |
| Type/Model No.: | 2250-L | , | 4950 |
| Serial/Equipment No.: | 2741135 | , | 2717594 |
| Adaptors used: | - | , | - |

## Item submitted by

| | |
|---|---|
| Customer Name: | MTR Corporation Limited |
| Address of Customer: | - |
| Request No.: | - |
| Date of receipt: | 10-Nov-2014 |

## Date of test: 11-Nov-2014

## Reference equipment used in the calibration

| Description: | Model: | Serial No. | Expiry Date: | Traceable to: |
|---|---|---|---|---|
| Multi function sound calibrator | B&K 4226 | 2288444 | 20-Jun-2015 | CIGISMEC |
| Signal generator | DS 360 | 33873 | 09-Apr-2015 | CEPREI |
| Signal generator | DS 360 | 61227 | 09-Apr-2015 | CEPREI |

## Ambient conditions

| | |
|---|---|
| Temperature: | 22 ± 1 °C |
| Relative humidity: | 65 ± 10 % |
| Air pressure: | 1010 ± 10 hPa |

## Test specifications

1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.

2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.

3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsess of the Sound Level Meter.

## Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

**Approved Signatory:** Huang Jian Min/Feng Jun Qi **Date:** 11-Nov-2014 **Company Chop:** SOILS AND MATERIALS ENGINEERING COMPANY LTD. 綜合試驗有限公司

**Comments:** The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

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HKLAS 028 CAL

# CERTIFICATE OF CALIBRATION

(Continuation Page)

**Certificate No.:** 14CA1110 04-01 **Page** 2 **of** 2

## 1, Electrical Tests

The electrical tests were perfomed using an equivalent capacitance substituted for the microphone. The results are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

| Test: | Subtest: | Status: | Expanded Uncertainty (dB) | Coverage Factor |
|---|---|---|---|---|
| Self-generated noise | A | Pass | 0.3 | |
| | C | Pass | 0.8 | 2.1 |
| | Lin | Pass | 1.6 | 2.2 |
| Linearity range for Leq | At reference range , Step 5 dB at 4 kHz | Pass | 0.3 | |
| | Reference SPL on all other ranges | Pass | 0.3 | |
| | 2 dB below upper limit of each range | Pass | 0.3 | |
| | 2 dB above lower limit of each range | Pass | 0.3 | |
| Linearity range for SPL | At reference range , Step 5 dB at 4 kHz | Pass | 0.3 | |
| Frequency weightings | A | Pass | 0.3 | |
| | C | Pass | 0.3 | |
| | Lin | Pass | 0.3 | |
| Time weightings | Single Burst Fast | Pass | 0.3 | |
| | Single Burst Slow | Pass | 0.3 | |
| Peak response | Single 100μs rectangular pulse | N/A | N/A | |
| R.M.S. accuracy | Crest factor of 3 | Pass | 0.3 | |
| Time weighting I | Single burst 5 ms at 2000 Hz | Pass | 0.3 | |
| | Repeated at frequency of 100 Hz | Pass | 0.3 | |
| Time averaging | 1 ms burst duty factor $1/10^3$ at 4kHz | Pass | 0.3 | |
| | 1 ms burst duty factor $1/10^4$ at 4kHz | Pass | 0.3 | |
| Pulse range | Single burst 10 ms at 4 kHz | Pass | 0.4 | |
| Sound exposure level | Single burst 10 ms at 4 kHz | Pass | 0.4 | |
| Overload indication | SPL | Pass | 0.3 | |
| | Leq | Pass | 0.4 | |

## 2, Acoustic tests

The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.

| Test: | Subtest | Status | Expanded Uncertainty (dB) | Coverage Factor |
|---|---|---|---|---|
| Acoustic response | Weighting A at 125 Hz | Pass | 0.3 | |
| | Weighting A at 8000 Hz | Pass | 0.5 | |

## 3, Response to associated sound calibrator

**N/A**

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

- End -

**Calibrated by:** Fung Chi Yip **Date:** 11-Nov-2014

**Checked by:** Lam Tze Wai **Date:** 11-Nov-2014

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

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A CIGIS GROUP COMPANY



| | | | | | |
|---|---|---|---|---|---|
| Sound level meter type: | 2250-L | Serial No. | 2741135 | Date | 11-Nov-2014 |
| Microphone type: | 4950 | Serial No. | 2717594 | | |
| | | | | Report: | 14CA1110 04-01 |

## SELF GENERATED NOISE TEST

The noise test is performed in the most sensitive range of the SLM with the microphone replaced by an equivalent impedance.

| | | |
|---|---|---|
| Noise level in A weighting | 13.3 | dB |
| Noise level in C weighting | 14.2 | dB |
| Noise level in Lin | 20.3 | dB |

## LINEARITY TEST

The linearity is tested relative to the reference sound pressure level using a continuous sinusoidal signal of frequency 4 kHz. The measurement is made on the reference range for indications at 5 dB intervals starting from the 94 dB reference sound pressure level. And until within 5 dB of the upper and lower limits of the reference range, the measurements shall be made at 1 dB intervals.(SLM set to LEQ/SPL)

| Reference/Expected level | Actual level | | Tolerance | Deviation | |
|---|---|---|---|---|---|
| | non-integrated | integrated | | non-integrated | integrated |
| dB | dB | dB | +/- dB | dB | dB |
| 94.0 | 94.0 | 94.0 | 0.7 | 0.0 | 0.0 |
| 99.0 | 99.0 | 99.0 | 0.7 | 0.0 | 0.0 |
| 104.0 | 104.0 | 104.0 | 0.7 | 0.0 | 0.0 |
| 109.0 | 109.0 | 109.0 | 0.7 | 0.0 | 0.0 |
| 114.0 | 114.0 | 114.0 | 0.7 | 0.0 | 0.0 |
| 119.0 | 119.0 | 119.0 | 0.7 | 0.0 | 0.0 |
| 124.0 | 124.0 | 124.0 | 0.7 | 0.0 | 0.0 |
| 129.0 | 129.0 | 129.0 | 0.7 | 0.0 | 0.0 |
| 134.0 | 134.0 | 134.0 | 0.7 | 0.0 | 0.0 |
| 135.0 | 135.0 | 135.0 | 0.7 | 0.0 | 0.0 |
| 136.0 | 136.0 | 136.0 | 0.7 | 0.0 | 0.0 |
| 137.0 | 137.0 | 137.0 | 0.7 | 0.0 | 0.0 |
| 138.0 | 138.0 | 138.0 | 0.7 | 0.0 | 0.0 |
| 139.0 | 139.0 | 139.0 | 0.7 | 0.0 | 0.0 |
| 140.0 | 140.0 | 140.0 | 0.7 | 0.0 | 0.0 |
| 89.0 | 89.0 | 89.0 | 0.7 | 0.0 | 0.0 |
| 84.0 | 84.0 | 84.0 | 0.7 | 0.0 | 0.0 |
| 79.0 | 79.0 | 79.0 | 0.7 | 0.0 | 0.0 |
| 74.0 | 74.0 | 74.0 | 0.7 | 0.0 | 0.0 |
| 69.0 | 69.0 | 69.0 | 0.7 | 0.0 | 0.0 |
| 64.0 | 64.0 | 64.0 | 0.7 | 0.0 | 0.0 |
| 59.0 | 59.0 | 59.0 | 0.7 | 0.0 | 0.0 |
| 54.0 | 54.0 | 54.0 | 0.7 | 0.0 | 0.0 |
| 49.0 | 49.0 | 49.0 | 0.7 | 0.0 | 0.0 |

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Sound level meter type: 2250-L Serial No. 2741135 Date 11-Nov-2014
Microphone type: 4950 Serial No. 2717594
Report: 14CA1110 04-01

| | | | | | |
|---|---|---|---|---|---|
| 44.0 | 44.0 | 44.0 | 0.7 | 0.0 | 0.0 |
| 39.0 | 39.0 | 39.0 | 0.7 | 0.0 | 0.0 |
| 34.0 | 34.0 | 34.0 | 0.7 | 0.0 | 0.0 |
| 33.0 | 33.0 | 33.0 | 0.7 | 0.0 | 0.0 |
| 32.0 | 32.0 | 32.0 | 0.7 | 0.0 | 0.0 |
| 31.0 | 31.0 | 31.0 | 0.7 | 0.0 | 0.0 |
| 30.0 | 30.0 | 30.0 | 0.7 | 0.0 | 0.0 |

Measurements for an indication of the reference SPL on all other ranges which include it

| Other ranges | Expected level | Actual level | Tolerance | Deviation |
|---|---|---|---|---|
| dB | dB | dB | +/- dB | dB |
| 20-140 | 94.0 | 94.0 | 0.7 | 0.0 |

Measurements on all level ranges for indications 2 dB below the upper limit and 2 dB above the lower limit

| Ranges | Reference/Expected level | Actual level | Tolerance | Deviation |
|---|---|---|---|---|
| dB | dB | dB | +/- dB | dB |
| 20-140 | 30.0 | 30.0 | 0.7 | 0.0 |
| | 138.0 | 138.0 | 0.7 | 0.0 |

## FREQUENCY WEIGHTING TEST

The frequency response of the weighting netwoks are tested at octave intervals over the frequency ranges 31.5 Hz to 12500 Hz. The signal level at 1000 Hz is set to give an indication of the reference SPL.

Frequency weighting A:

| Frequency | Ref. level | Expected level | Actual level | Tolerance(dB) | | Deviation |
|---|---|---|---|---|---|---|
| Hz | dB | dB | dB | + | - | dB |
| 1000.0 | 94.0 | 94.0 | 94.0 | 0.0 | 0.0 | 0.0 |
| 31.6 | 94.0 | 54.6 | 54.6 | 1.5 | 1.5 | 0.0 |
| 63.1 | 94.0 | 67.8 | 67.7 | 1.5 | 1.5 | -0.1 |
| 125.9 | 94.0 | 77.9 | 77.9 | 1.0 | 1.0 | 0.0 |
| 251.2 | 94.0 | 85.4 | 85.4 | 1.0 | 1.0 | 0.0 |
| 501.2 | 94.0 | 90.8 | 90.8 | 1.0 | 1.0 | 0.0 |
| 1995.0 | 94.0 | 95.2 | 95.2 | 1.0 | 1.0 | 0.0 |
| 3981.0 | 94.0 | 95.0 | 94.9 | 1.0 | 1.0 | -0.1 |
| 7943.0 | 94.0 | 92.9 | 92.6 | 1.5 | 3.0 | -0.3 |
| 12590.0 | 94.0 | 89.7 | 89.4 | 3.0 | 6.0 | -0.3 |

Frequency weighting C:

| Frequency | Ref. level | Expected level | Actual level | Tolerance(dB) | | Deviation |
|---|---|---|---|---|---|---|
| Hz | dB | dB | dB | + | - | dB |
| 1000.0 | 94.0 | 94.0 | 94.0 | 0.0 | 0.0 | 0.0 |
| 31.6 | 94.0 | 91.0 | 91.1 | 1.5 | 1.5 | 0.1 |

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Sound level meter type: 2250-L Serial No. 2741135 Date 11-Nov-2014
Microphone type: 4950 Serial No. 2717594
Report: 14CA1110 04-01

| | | | | | | |
|---|---|---|---|---|---|---|
| 63.1 | 94.0 | 93.2 | 93.2 | 1.5 | 1.5 | 0.0 |
| 125.9 | 94.0 | 93.8 | 93.9 | 1.0 | 1.0 | 0.1 |
| 251.2 | 94.0 | 94.0 | 94.0 | 1.0 | 1.0 | 0.0 |
| 501.2 | 94.0 | 94.0 | 94.0 | 1.0 | 1.0 | 0.0 |
| 1995.0 | 94.0 | 93.8 | 93.8 | 1.0 | 1.0 | 0.0 |
| 3981.0 | 94.0 | 93.2 | 93.1 | 1.0 | 1.0 | -0.1 |
| 7943.0 | 94.0 | 91.0 | 90.7 | 1.5 | 3.0 | -0.3 |
| 12590.0 | 94.0 | 87.8 | 87.5 | 3.0 | 6.0 | -0.3 |

Frequency weighting Lin:

| Frequency | Ref. level | Expected level | Actual level | Tolerance(dB) | | Deviation |
|---|---|---|---|---|---|---|
| Hz | dB | dB | dB | + | - | dB |
| 1000.0 | 94.0 | 94.0 | 94.0 | 0.0 | 0.0 | 0.0 |
| 31.6 | 94.0 | 94.0 | 94.1 | 1.5 | 1.5 | 0.1 |
| 63.1 | 94.0 | 94.0 | 94.0 | 1.5 | 1.5 | 0.0 |
| 125.9 | 94.0 | 94.0 | 94.0 | 1.0 | 1.0 | 0.0 |
| 251.2 | 94.0 | 94.0 | 94.0 | 1.0 | 1.0 | 0.0 |
| 501.2 | 94.0 | 94.0 | 94.0 | 1.0 | 1.0 | 0.0 |
| 1995.0 | 94.0 | 94.0 | 94.0 | 1.0 | 1.0 | 0.0 |
| 3981.0 | 94.0 | 94.0 | 94.0 | 1.0 | 1.0 | 0.0 |
| 7943.0 | 94.0 | 94.0 | 93.7 | 1.5 | 3.0 | -0.3 |
| 12590.0 | 94.0 | 94.0 | 93.7 | 3.0 | 6.0 | -0.3 |

## TIME WEIGHTING FAST TEST

Time weighting F is tested on the reference range with a single sinusoidal burst of duration 200 ms at a frequency 2000 Hz and an amplitude which produces an indication 4 dB below the upper limit of the primary indicator range when the signal is continuous. (Weight A, Maximum hold)

| Ref. level | Expected level | Actual level | Tolerance(dB) | | Deviation |
|---|---|---|---|---|---|
| dB | dB | dB | + | - | dB |
| 116.0 | 115.0 | 115.0 | 1.0 | 1.0 | 0.0 |

## TIME WEIGHTING SLOW TEST

Time weighting S is tested on the reference range with a single sinusoidal burst of duration 500 ms at a frequency 2000 Hz and an amplitude which produces an indication 4 dB below the upper limit of the primary indicator range when the signal is continuous. (Weight A, Maximum hold)

| Ref. level | Expected level | Actual level | Tolerance(dB) | | Deviation |
|---|---|---|---|---|---|
| dB | dB | dB | + | - | dB |
| 116.0 | 111.9 | 111.9 | 1.0 | 1.0 | 0.0 |

## RMS ACCURACY TEST

The RMS detector accuracy is tested on the reference range for a crest factor of 3.

Test frequency: 2000 Hz
Amplitude: 2 dB below the upper limit of the primary indicator range.
Burst repetition frequency: 40 Hz
Tone burst signal: 11 cycles of a sine wave of frequency 2000 Hz. (Set to INT)

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Sound level meter type: 2250-L Serial No. 2741135 Date 11-Nov-2014
Microphone type: 4950 Serial No. 2717594
Report: 14CA1110 04-01

| | Ref. Level | Expected level | Tone burst signal | Tolerance | Deviation |
|---|---|---|---|---|---|
| Time wighting | dB | dB | indication(dB) | +/- dB | dB |
| Slow | 118.0+6.6 | 118.0 | 118.0 | 0.5 | 0.0 |

## TIME WEIGHTING IMPULSE TEST

Time weighting I is tested on the reference range (Set the SLM to LAImax)
Test frequency: 2000 Hz
Amplitude: The upper limit of the primary indicator range.

Single sinusoidal burst of duration 5 ms:

| Ref. Level | Single burst indication | | Tolerance | Deviation |
|---|---|---|---|---|
| dB | Expected (dB) | Actual (dB) | +/- dB | dB |
| 120.0 | 111.2 | 111.2 | 2.0 | 0.0 |

Repeated at 100 Hz

| Ref. Level | Repeated burst indication | | Tolerance | Deviation |
|---|---|---|---|---|
| dB | Expected (dB) | Actual (dB) | +/- dB | dB |
| 120.0 | 117.3 | 117.3 | 1.0 | 0.0 |

## TIME AVERAGING TEST

This test compares the SLM reading for continuous sine signals with readings obtained from a sine tone burst sequence having the same RMS level. The test level is 30 dB below the upper limit of the linearity range and repeated for Type 1 SLM with 40 dB below the upper limit of the linearity.

Frequency of tone burst: 4000 Hz
Duration of tone burst: 1 ms

| Repetition Time | Level of tone burst | Expected Leq | Actual Leq | Tolerance | Deviation | Remarks |
|---|---|---|---|---|---|---|
| msec | dB | dB | dB | +/- dB | dB | |
| 1000 | 110.0 | 110.0 | 109.9 | 1.0 | -0.1 | 60s integ. |
| 10000 | 100.0 | 100.0 | 99.9 | 1.0 | -0.1 | 6min. integ. |

## PULSE RANGE AND SOUND EXPOSURE LEVEL TEST

The test tone burst signal is superimposed on a baseline signal corresponding to the lower limit of reference rar

Test frequency: 4000 Hz
Integration time: 10 sec

The integrating sound level meter set to Leq:

| Duration | Rms level of | Expected | Actual | Tolerance | Deviation |
|---|---|---|---|---|---|
| msec | tone burst (dB) | dB | dB | +/- dB | dB |
| 10 | 120.0 | 90.0 | 90.0 | 1.7 | 0.0 |

The integrating sound level meter set to SEL:

| Duration | Rms level of | Expected | Actual | Tolerance | Deviation |
|---|---|---|---|---|---|
| msec | tone burst (dB) | dB | dB | +/- dB | dB |
| 10.0 | 120.0 | 100.0 | 100.0 | 1.7 | 0.0 |

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Sound level meter type: 2250-L Serial No. 2741135 Date 11-Nov-2014
Microphone type: 4950 Serial No. 2717594
Report: 14CA1110 04-01

## OVERLOAD INDICATION TEST

For SLM capable of operating in a non-integrating mode.

Test frequency: 2000 Hz
Amplitude: 2 dB below the upper limit of the primary indicator range.
Burst repetition frequency: 40 Hz
Tone burst signal: 11 cycles of a sine wave of frequency 2000 Hz.

| Level | Level reduced by | Further reduced | Difference | Tolerance | Deviation |
|---|---|---|---|---|---|
| at overload (dB) | 1 dB | 3 dB | dB | dB | dB |
| 135.8 | 134.8 | 131.8 | 3.0 | 1.0 | 0.0 |

For integrating SLM, with the instrument indicating Leq.

For integrating SLM, with the instrument indicating Leq and set to the reference range. The test signal as follow
The test tone burst signal is superimposed on a baseline signal corresponding to the lower limit of reference rar

Test frequency: 4000 Hz
Integration time: 10 sec
Single burst duration: 1 msec

| Rms level | Level reduced by | Expected level | Actual level | Tolerance | Deviation |
|---|---|---|---|---|---|
| at overload (dB) | 1 dB | dB | dB | dB | dB |
| 143.0 | 142.0 | 102.0 | 102 | 2.2 | 0.0 |

## ACOUSTIC TEST

The acoustic test of the complete SLM is tested at the frequency 125 Hz and 8000 Hz using a B&K type 4226 Multifunction Acoustic Calibrator. The test is performed in A weighting.

| Frequency | Expected level | Actual level | Tolerance (dB) | | Deviation |
|---|---|---|---|---|---|
| Hz | dB | Measured (dB) | + | - | dB |
| 1000 | 94.0 | 94.0 | 0.0 | 0.0 | 0.0 |
| 125 | 77.9 | 77.9 | 1.0 | 1.0 | 0.0 |
| 8000 | 92.9 | 93.5 | 1.5 | 3.0 | 0.6 |

---------END---------

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HKLAS 028 CAL

# CERTIFICATE OF CALIBRATION

**Certificate No.:** 14CA1016 01-02 **Page** 1 **of** 2

## Item tested

| | | | |
|---|---|---|---|
| Description: | Sound Level Meter (Type 1) | , | Microphone |
| Manufacturer: | B & K | , | B & K |
| Type/Model No.: | 2250-L | , | 4189 |
| Serial/Equipment No.: | 2741137 | , | 2550231 |
| Adaptors used: | - | , | - |

## Item submitted by

| | |
|---|---|
| Customer Name: | MTR Coporation Limited |
| Address of Customer: | - |
| Request No.: | - |
| Date of receipt: | 16-Oct-2014 |

## Date of test: 17-Oct-2014

## Reference equipment used in the calibration

| Description: | Model: | Serial No. | Expiry Date: | Traceable to: |
|---|---|---|---|---|
| Multi function sound calibrator | B&K 4226 | 2288444 | 20-Jun-2015 | CIGISMEC |
| Signal generator | DS 360 | 33873 | 09-Apr-2015 | CEPREI |
| Signal generator | DS 360 | 61227 | 09-Apr-2015 | CEPREI |

## Ambient conditions

| | |
|---|---|
| Temperature: | 22 ± 1 °C |
| Relative humidity: | 60 ± 10 % |
| Air pressure: | 1000 ± 10 hPa |

## Test specifications

1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.

2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.

3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsess of the Sound Level Meter.

## Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

**Approved Signatory:** Huang Jian Min/Feng Jun Qi **Date:** 18-Oct-2014 **Company Chop:**

SOILS & MATERIALS ENGINEERING COMPANY LIMITED 綜合試驗有限公司

**Comments:** The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

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# CERTIFICATE OF CALIBRATION

(Continuation Page)

**Certificate No.:** 14CA1016 01-02 **Page** 2 **of** 2

## 1, Electrical Tests

The electrical tests were perfomed using an equivalent capacitance substituted for the microphone. The results are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

| Test: | Subtest: | Status: | Expanded Uncertainty (dB) | Coverage Factor |
|---|---|---|---|---|
| Self-generated noise | A | Pass | 0.3 | |
| | C | Pass | 0.8 | 2.1 |
| | Lin | Pass | 1.6 | 2.2 |
| Linearity range for Leq | At reference range , Step 5 dB at 4 kHz | Pass | 0.3 | |
| | Reference SPL on all other ranges | Pass | 0.3 | |
| | 2 dB below upper limit of each range | Pass | 0.3 | |
| | 2 dB above lower limit of each range | Pass | 0.3 | |
| Linearity range for SPL | At reference range , Step 5 dB at 4 kHz | Pass | 0.3 | |
| Frequency weightings | A | Pass | 0.3 | |
| | C | Pass | 0.3 | |
| | Lin | Pass | 0.3 | |
| Time weightings | Single Burst Fast | Pass | 0.3 | |
| | Single Burst Slow | Pass | 0.3 | |
| Peak response | Single 100μs rectangular pulse | N/A | N/A | |
| R.M.S. accuracy | Crest factor of 3 | Pass | 0.3 | |
| Time weighting I | Single burst 5 ms at 2000 Hz | Pass | 0.3 | |
| | Repeated at frequency of 100 Hz | Pass | 0.3 | |
| Time averaging | 1 ms burst duty factor $1/10^3$ at 4kHz | Pass | 0.3 | |
| | 1 ms burst duty factor $1/10^4$ at 4kHz | Pass | 0.3 | |
| Pulse range | Single burst 10 ms at 4 kHz | Pass | 0.4 | |
| Sound exposure level | Single burst 10 ms at 4 kHz | Pass | 0.4 | |
| Overload indication | SPL | Pass | 0.3 | |
| | Leq | Pass | 0.4 | |

## 2, Acoustic tests

The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.

| Test: | Subtest | Status | Expanded Uncertainty (dB) | Coverage Factor |
|---|---|---|---|---|
| Acoustic response | Weighting A at 125 Hz | Pass | 0.3 | |
| | Weighting A at 8000 Hz | Pass | 0.5 | |

## 3, Response to associated sound calibrator

**N/A**

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

- End -

**Calibrated by:** Fung Chi Yip **Date:** 17-Oct-2014

**Checked by:** Lam Tze Wai **Date:** 18-Oct-2014

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

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| | | | | | |
|---|---|---|---|---|---|
| Sound level meter type: | 2250-L | Serial No. | 2741137 | Date | 17-Oct-2014 |
| Microphone type: | 4189 | Serial No. | 2550231 | | |
| | | | | Report: | 14CA1016 01-02 |

## SELF GENERATED NOISE TEST

The noise test is performed in the most sensitive range of the SLM with the microphone replaced by an equivalent impedance.

| | | |
|---|---|---|
| Noise level in A weighting | 12.7 | dB |
| Noise level in C weighting | 14.0 | dB |
| Noise level in Lin | 19.8 | dB |

## LINEARITY TEST

The linearity is tested relative to the reference sound pressure level using a continuous sinusoidal signal of frequency 4 kHz. The measurement is made on the reference range for indications at 5 dB intervals starting from the 94 dB reference sound pressure level. And until within 5 dB of the upper and lower limits of the reference range, the measurements shall be made at 1 dB intervals.(SLM set to LEQ/SPL)

| Reference/Expected level | Actual level | | Tolerance | Deviation | |
|---|---|---|---|---|---|
| | non-integrated | integrated | | non-integrated | integrated |
| dB | dB | dB | +/- dB | dB | dB |
| 94.0 | 94.0 | 94.0 | 0.7 | 0.0 | 0.0 |
| 99.0 | 99.0 | 99.0 | 0.7 | 0.0 | 0.0 |
| 104.0 | 104.0 | 104.0 | 0.7 | 0.0 | 0.0 |
| 109.0 | 109.0 | 109.0 | 0.7 | 0.0 | 0.0 |
| 114.0 | 114.0 | 114.0 | 0.7 | 0.0 | 0.0 |
| 119.0 | 119.0 | 119.0 | 0.7 | 0.0 | 0.0 |
| 124.0 | 124.0 | 124.0 | 0.7 | 0.0 | 0.0 |
| 129.0 | 129.0 | 129.0 | 0.7 | 0.0 | 0.0 |
| 134.0 | 134.0 | 134.0 | 0.7 | 0.0 | 0.0 |
| 135.0 | 135.0 | 135.0 | 0.7 | 0.0 | 0.0 |
| 136.0 | 136.0 | 136.0 | 0.7 | 0.0 | 0.0 |
| 137.0 | 137.0 | 137.0 | 0.7 | 0.0 | 0.0 |
| 138.0 | 138.0 | 138.0 | 0.7 | 0.0 | 0.0 |
| 139.0 | 139.0 | 139.0 | 0.7 | 0.0 | 0.0 |
| 140.0 | 140.0 | 140.0 | 0.7 | 0.0 | 0.0 |
| 89.0 | 89.0 | 89.0 | 0.7 | 0.0 | 0.0 |
| 84.0 | 84.0 | 84.0 | 0.7 | 0.0 | 0.0 |
| 79.0 | 79.0 | 79.0 | 0.7 | 0.0 | 0.0 |
| 74.0 | 74.0 | 74.0 | 0.7 | 0.0 | 0.0 |
| 69.0 | 69.0 | 69.0 | 0.7 | 0.0 | 0.0 |
| 64.0 | 64.0 | 64.0 | 0.7 | 0.0 | 0.0 |
| 59.0 | 59.0 | 59.0 | 0.7 | 0.0 | 0.0 |
| 54.0 | 54.0 | 54.0 | 0.7 | 0.0 | 0.0 |
| 49.0 | 49.0 | 49.0 | 0.7 | 0.0 | 0.0 |

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Sound level meter type: 2250-L Serial No. 2741137 Date 17-Oct-2014
Microphone type: 4189 Serial No. 2550231
Report: 14CA1016 01-02

| | | | | | |
|---|---|---|---|---|---|
| 44.0 | 44.0 | 44.0 | 0.7 | 0.0 | 0.0 |
| 39.0 | 39.0 | 39.0 | 0.7 | 0.0 | 0.0 |
| 34.0 | 34.0 | 34.0 | 0.7 | 0.0 | 0.0 |
| 33.0 | 33.0 | 33.0 | 0.7 | 0.0 | 0.0 |
| 32.0 | 32.0 | 32.0 | 0.7 | 0.0 | 0.0 |
| 31.0 | 31.0 | 31.0 | 0.7 | 0.0 | 0.0 |
| 30.0 | 30.0 | 30.0 | 0.7 | 0.0 | 0.0 |

Measurements for an indication of the reference SPL on all other ranges which include it

| Other ranges | Expected level | Actual level | Tolerance | Deviation |
|---|---|---|---|---|
| dB | dB | dB | +/- dB | dB |
| 20-140 | 94.0 | 94.0 | 0.7 | 0.0 |

Measurements on all level ranges for indications 2 dB below the upper limit and 2 dB above the lower limit

| Ranges | Reference/Expected level | Actual level | Tolerance | Deviation |
|---|---|---|---|---|
| dB | dB | dB | +/- dB | dB |
| 20-140 | 30.0 | 30.0 | 0.7 | 0.0 |
| | 138.0 | 138.0 | 0.7 | 0.0 |

## FREQUENCY WEIGHTING TEST

The frequency response of the weighting netwoks are tested at octave intervals over the frequency ranges 31.5 Hz to 12500 Hz. The signal level at 1000 Hz is set to give an indication of the reference SPL.

Frequency weighting A:

| Frequency | Ref. level | Expected level | Actual level | Tolerance(dB) | | Deviation |
|---|---|---|---|---|---|---|
| Hz | dB | dB | dB | + | - | dB |
| 1000.0 | 94.0 | 94.0 | 94.0 | 0.0 | 0.0 | 0.0 |
| 31.6 | 94.0 | 54.6 | 54.5 | 1.5 | 1.5 | -0.1 |
| 63.1 | 94.0 | 67.8 | 67.8 | 1.5 | 1.5 | 0.0 |
| 125.9 | 94.0 | 77.9 | 77.9 | 1.0 | 1.0 | 0.0 |
| 251.2 | 94.0 | 85.4 | 85.4 | 1.0 | 1.0 | 0.0 |
| 501.2 | 94.0 | 90.8 | 90.8 | 1.0 | 1.0 | 0.0 |
| 1995.0 | 94.0 | 95.2 | 95.2 | 1.0 | 1.0 | 0.0 |
| 3981.0 | 94.0 | 95.0 | 94.9 | 1.0 | 1.0 | -0.1 |
| 7943.0 | 94.0 | 92.9 | 92.6 | 1.5 | 3.0 | -0.3 |
| 12590.0 | 94.0 | 89.7 | 89.4 | 3.0 | 6.0 | -0.3 |

Frequency weighting C:

| Frequency | Ref. level | Expected level | Actual level | Tolerance(dB) | | Deviation |
|---|---|---|---|---|---|---|
| Hz | dB | dB | dB | + | - | dB |
| 1000.0 | 94.0 | 94.0 | 94.0 | 0.0 | 0.0 | 0.0 |
| 31.6 | 94.0 | 91.0 | 91.0 | 1.5 | 1.5 | 0.0 |

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Sound level meter type: 2250-L Serial No. 2741137 Date 17-Oct-2014
Microphone type: 4189 Serial No. 2550231
Report: 14CA1016 01-02

| | | | | | | |
|---|---|---|---|---|---|---|
| 63.1 | 94.0 | 93.2 | 93.2 | 1.5 | 1.5 | 0.0 |
| 125.9 | 94.0 | 93.8 | 93.8 | 1.0 | 1.0 | 0.0 |
| 251.2 | 94.0 | 94.0 | 94.0 | 1.0 | 1.0 | 0.0 |
| 501.2 | 94.0 | 94.0 | 94.0 | 1.0 | 1.0 | 0.0 |
| 1995.0 | 94.0 | 93.8 | 93.8 | 1.0 | 1.0 | 0.0 |
| 3981.0 | 94.0 | 93.2 | 93.1 | 1.0 | 1.0 | -0.1 |
| 7943.0 | 94.0 | 91.0 | 90.7 | 1.5 | 3.0 | -0.3 |
| 12590.0 | 94.0 | 87.8 | 87.5 | 3.0 | 6.0 | -0.3 |

Frequency weighting Lin:

| Frequency | Ref. level | Expected level | Actual level | Tolerance(dB) | | Deviation |
|---|---|---|---|---|---|---|
| Hz | dB | dB | dB | + | - | dB |
| 1000.0 | 94.0 | 94.0 | 94.0 | 0.0 | 0.0 | 0.0 |
| 31.6 | 94.0 | 94.0 | 94.1 | 1.5 | 1.5 | 0.1 |
| 63.1 | 94.0 | 94.0 | 94.0 | 1.5 | 1.5 | 0.0 |
| 125.9 | 94.0 | 94.0 | 94.0 | 1.0 | 1.0 | 0.0 |
| 251.2 | 94.0 | 94.0 | 94.0 | 1.0 | 1.0 | 0.0 |
| 501.2 | 94.0 | 94.0 | 94.0 | 1.0 | 1.0 | 0.0 |
| 1995.0 | 94.0 | 94.0 | 94.0 | 1.0 | 1.0 | 0.0 |
| 3981.0 | 94.0 | 94.0 | 94.0 | 1.0 | 1.0 | 0.0 |
| 7943.0 | 94.0 | 94.0 | 93.7 | 1.5 | 3.0 | -0.3 |
| 12590.0 | 94.0 | 94.0 | 93.7 | 3.0 | 6.0 | -0.3 |

## TIME WEIGHTING FAST TEST

Time weighting F is tested on the reference range with a single sinusoidal burst of duration 200 ms at a frequency 2000 Hz and an amplitude which produces an indication 4 dB below the upper limit of the primary indicator range when the signal is continuous. (Weight A, Maximum hold)

| Ref. level | Expected level | Actual level | Tolerance(dB) | | Deviation |
|---|---|---|---|---|---|
| dB | dB | dB | + | - | dB |
| 116.0 | 115.0 | 115.0 | 1.0 | 1.0 | 0.0 |

## TIME WEIGHTING SLOW TEST

Time weighting S is tested on the reference range with a single sinusoidal burst of duration 500 ms at a frequency 2000 Hz and an amplitude which produces an indication 4 dB below the upper limit of the primary indicator range when the signal is continuous. (Weight A, Maximum hold)

| Ref. level | Expected level | Actual level | Tolerance(dB) | | Deviation |
|---|---|---|---|---|---|
| dB | dB | dB | + | - | dB |
| 116.0 | 111.9 | 111.9 | 1.0 | 1.0 | 0.0 |

## RMS ACCURACY TEST

The RMS detector accuracy is tested on the reference range for a crest factor of 3.

Test frequency: 2000 Hz
Amplitude: 2 dB below the upper limit of the primary indicator range.
Burst repetition frequency: 40 Hz
Tone burst signal: 11 cycles of a sine wave of frequency 2000 Hz. (Set to INT)

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Sound level meter type: 2250-L Serial No. 2741137 Date 17-Oct-2014
Microphone type: 4189 Serial No. 2550231
Report: 14CA1016 01-02

| Time wighting | Ref. Level dB | Expected level dB | Tone burst signal indication(dB) | Tolerance +/- dB | Deviation dB |
|---|---|---|---|---|---|
| Slow | 118.0+6.6 | 118.0 | 118.0 | 0.5 | 0.0 |

TIME WEIGHTING IMPULSE TEST

Time weighting I is tested on the reference range (Set the SLM to LAImax)
Test frequency: 2000 Hz
Amplitude: The upper limit of the primary indicator range.

Single sinusoidal burst of duration 5 ms:

| Ref. Level | Single burst indication | | Tolerance | Deviation |
|---|---|---|---|---|
| dB | Expected (dB) | Actual (dB) | +/- dB | dB |
| 120.0 | 111.2 | 111.1 | 2.0 | -0.1 |

Repeated at 100 Hz

| Ref. Level | Repeated burst indication | | Tolerance | Deviation |
|---|---|---|---|---|
| dB | Expected (dB) | Actual (dB) | +/- dB | dB |
| 120.0 | 117.3 | 117.2 | 1.0 | -0.1 |

TIME AVERAGING TEST

This test compares the SLM reading for continuous sine signals with readings obtained from a sine tone burst sequence having the same RMS level. The test level is 30 dB below the upper limit of the linearity range and repeated for Type 1 SLM with 40 dB below the upper limit of the linearity.

Frequency of tone burst: 4000 Hz
Duration of tone burst: 1 ms

| Repetition Time | Level of tone burst | Expected Leq | Actual Leq | Tolerance | Deviation | Remarks |
|---|---|---|---|---|---|---|
| msec | dB | dB | dB | +/- dB | dB | |
| 1000 | 110.0 | 110.0 | 109.9 | 1.0 | -0.1 | 60s integ. |
| 10000 | 100.0 | 100.0 | 99.9 | 1.0 | -0.1 | 6min. integ. |

PULSE RANGE AND SOUND EXPOSURE LEVEL TEST

The test tone burst signal is superimposed on a baseline signal corresponding to the lower limit of reference rar

Test frequency: 4000 Hz
Integration time: 10 sec

The integrating sound level meter set to Leq:

| Duration | Rms level of | Expected | Actual | Tolerance | Deviation |
|---|---|---|---|---|---|
| msec | tone burst (dB) | dB | dB | +/- dB | dB |
| 10 | 120.0 | 90.0 | 89.9 | 1.7 | -0.1 |

The integrating sound level meter set to SEL:

| Duration | Rms level of | Expected | Actual | Tolerance | Deviation |
|---|---|---|---|---|---|
| msec | tone burst (dB) | dB | dB | +/- dB | dB |
| 10.0 | 120.0 | 100.0 | 99.9 | 1.7 | -0.1 |

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong.
香港黃竹坑道37號利達中心地下，9樓，12樓，13樓及20樓
E-mail: smec@cigismec.com Website: www.cigismec.com
Tel : (852) 2873 6860
Fax : (852) 2555 7533
CIGISMEC
A CIGIS GROUP COMPANY



Sound level meter type: 2250-L Serial No. 2741137 Date 17-Oct-2014
Microphone type: 4189 Serial No. 2550231
Report: 14CA1016 01-02

## OVERLOAD INDICATION TEST

For SLM capable of operating in a non-integrating mode.

Test frequency: 2000 Hz
Amplitude: 2 dB below the upper limit of the primary indicator range.
Burst repetition frequency: 40 Hz
Tone burst signal: 11 cycles of a sine wave of frequency 2000 Hz.

| Level | Level reduced by | Further reduced | Difference | Tolerance | Deviation |
|---|---|---|---|---|---|
| at overload (dB) | 1 dB | 3 dB | dB | dB | dB |
| 135.0 | 134.0 | 131.0 | 3.0 | 1.0 | 0.0 |

For integrating SLM, with the instrument indicating Leq.

For integrating SLM, with the instrument indicating Leq and set to the reference range. The test signal as follow
The test tone burst signal is superimposed on a baseline signal corresponding to the lower limit of reference rar

Test frequency: 4000 Hz
Integration time: 10 sec
Single burst duration: 1 msec

| Rms level | Level reduced by | Expected level | Actual level | Tolerance | Deviation |
|---|---|---|---|---|---|
| at overload (dB) | 1 dB | dB | dB | dB | dB |
| 141.9 | 140.9 | 100.9 | 100.8 | 2.2 | -0.1 |

## ACOUSTIC TEST

The acoustic test of the complete SLM is tested at the frequency 125 Hz and 8000 Hz using a B&K type 4226 Multifunction Acoustic Calibrator. The test is performed in A weighting.

| Frequency | Expected level | Actual level | Tolerance (dB) | | Deviation |
|---|---|---|---|---|---|
| Hz | dB | Measured (dB) | + | - | dB |
| 1000 | 94.0 | 94.0 | 0.0 | 0.0 | 0.0 |
| 125 | 77.9 | 77.8 | 1.0 | 1.0 | -0.1 |
| 8000 | 92.9 | 93.7 | 1.5 | 3.0 | 0.8 |

---------END---------

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SOILS & MATERIALS ENGINEERING CO., LTD.
G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong. Tel : (852) 2873 6860
香港黃竹坑道37號利達中心地下，9樓，12樓，13樓及20樓 Fax : (852) 2555 7533
E-mail: smec@cigismec.com Website: www.cigismec.com

HKLAS 028 CAL

# CERTIFICATE OF CALIBRATION

**Certificate No.:** 14CA1110 04-02 **Page:** 1 **of** 2

## Item tested

| | |
|---|---|
| Description: | Acoustical Calibrator (Class 1) |
| Manufacturer: | B & K |
| Type/Model No.: | 4231 |
| Serial/Equipment No.: | 2309393 |
| Adaptors used: | - |

## Item submitted by

| | |
|---|---|
| Curstomer: | MTR Corporation Limited |
| Address of Customer: | - |
| Request No.: | - |
| Date of receipt: | 10-Nov-2014 |

## Date of test: 11-Nov-2014

## Reference equipment used in the calibration

| Description: | Model: | Serial No. | Expiry Date: | Traceable to: |
|---|---|---|---|---|
| Lab standard microphone | B&K 4180 | 2412857 | 13-May-2015 | SCL |
| Preamplifier | B&K 2673 | 2743150 | 10-Apr-2015 | CEPREI |
| Measuring amplifier | B&K 2610 | 2346941 | 08-Apr-2015 | CEPREI |
| Signal generator | DS 360 | 61227 | 09-Apr-2015 | CEPREI |
| Digital multi-meter | 34401A | US36087050 | 17-Dec-2014 | CEPREI |
| Audio analyzer | 8903B | GB41300350 | 07-Apr-2015 | CEPREI |
| Universal counter | 53132A | MY40003662 | 11-Apr-2015 | CEPREI |

## Ambient conditions

| | |
|---|---|
| Temperature: | 22 ± 1 °C |
| Relative humidity: | 65 ± 10 % |
| Air pressure: | 1010 ± 10 hPa |

## Test specifications

1, The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.

2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.

3, The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

## Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on **page 2** of this certificate.

**Approved Signatory:** Huang Jian Min/Feng Jun Qi **Date:** 11-Nov-2014 **Company Chop:**

SOILS AND MATERIALS ENGINEERING CO., LTD. 綜合試驗有限公司

**Comments:** The results reported in this certificate refer to the conditon of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong.
香港黃竹坑道37號利達中心地下，9樓，12樓，13樓及20樓
E-mail: smec@cigismec.com Website: www.cigismec.com
Tel : (852) 2873 6860
Fax : (852) 2555 7533

HOKLAS 028 CAL

# CERTIFICATE OF CALIBRATION

(Continuation Page)

**Certificate No.:** 14CA1110 04-02 **Page:** 2 of 2

## 1, Measured Sound Pressure Level

The output Sound Pressure Level in the calibrator head was measured at the setting and frequency shown using a calibrated laboratory standard microphone and insert voltage technique. The results are given in below with the estimated uncertainties.

(Output level in dB re 20 μPa)

| Frequency Shown Hz | Output Sound Pressure Level Setting dB | Measured Output Sound Pressure Level dB | Estimated Expanded Uncertainty dB |
|---|---|---|---|
| 1000 | 94.00 | 94.01 | 0.10 |

## 2, Sound Pressure Level Stability - Short Term Fluctuations

The Short Term Fluctuations was determined by measuring the maximum and minimum of the fast weighted DC output of the B&K 2610 measuring amplifier over a 20 second time interval as required in the standard. The Short Term Fluctuation was found to be:

**At 1000 Hz** **STF = 0.002 dB**

Estimated expanded uncertainty 0.005 dB

## 3, Actual Output Frequency

The determination of actual output frequency was made using a B&K 4180 microphone together with a B&K 2673 preamplifier connected to a B&K 2610 measuring amplifier. The AC output of the B&K 2610 was taken to an universal counter which was used to determine the frequency averaged over 20 second of operation as required by the standard. The actual output frequency at 1 KHz was:

**At 1000 Hz** **Actual Frequency = 1000.0 Hz**

Estimated expanded uncertainty 0.1 Hz Coverage factor k = 2.2

## 4, Total Noise and Distortion

For the Total Noise and Distortion measurement, the unfiltered AC output of the B&K 2610 measuring amplifier was connected to an Agilent Type 8903 B distortion analyser. The TND result at 1 KHz was:

**At 1000 Hz** **TND = 0.6 %**

Estimated expanded uncertainty 0.7 %

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

- End -

**Calibrated by:** Fung Chi Yip **Date:** 11-Nov-2014

**Checked by:** Lam Tze Wai **Date:** 11-Nov-2014

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

# ALS Technichem (HK) Pty Ltd

## *REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION*

| | | | |
|---|---|---|---|
| **CONTACT:** | MR SAM WONG | **WORK ORDER:** | HK1428192 |
| **CLIENT:** | ENOVATIVE ENVIRONMENTAL SERVICE LIMITED | **LABORATORY:** | HONG KONG |
| **ADDRESS:** | RM 3704, SIK MAN HOUSE,<br>HOMANTIN ESTATE,<br>KOWLOON,<br>HONG KONG | **DATE RECEIVED:** | 11/10/2014 |
| | | **DATE OF ISSUE:** | 21/10/2014 |
| **PROJECT:** | -- | | |

### COMMENTS

It is certified that the item under calibration/checking has been calibrated/checked by corresponding calibrated equipment in the laboratory.
Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal acceptance criteria of ALS will be followed.

| | |
|---|---|
| Scope of Test: | Conductivity, Dissolved Oxygen, pH, Salinity, Temperature and Turbidity |
| Equipment Type: | Sonde Environmental Monitoring System |
| Brand Name: | YSI |
| Model No.: | 6920 V2 |
| Serial No.: | 11F100014 |
| Equipment No.: | -- |
| Date of Calibration: | 21 October, 2014 |

### NOTES

This is the Final Report and supersedes any preliminary report with this batch number.
Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

### ISSUING LABORATORY: HONG KONG

**Address**

ALS Technichem (HK) Pty Ltd

11/F Chung Shun Knitting Centre
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Kwai Chung
HONG KONG

**Phone:** 852-2610 1044
**Fax:** 852-2610 2021
**Email:** hongkong@alsglobal.com

Mr. Fung Lim Chee, Richard
General Manager -
Greater China & Hong Kong

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

**Work Order:** HK1428192
**Date of Issue:** 21/10/2014
**Client:** ENOVATIVE ENVIRONMENTAL SERVICE LIMITED

Description: Sonde Environmental Monitoring System
Brand Name: YSI
Model No.: 6920 V2
Serial No.: 11F100014
Equipment No.: --
Date of Calibration: 21 October, 2014 Date of next Calibration: 21 January, 2015

**Parameters:**

**Conductivity** **Method Ref: APHA (21st edition), 2510B**

| Expected Reading (uS/cm) | Displayed Reading (uS/cm ) | Tolerance (% ) |
|---|---|---|
| 146.9 | 136.0 | -7.4 |
| 6667 | 6104 | -8.4 |
| 12890 | 11988 | -7.0 |
| 58670 | 53628 | -8.6 |
| | Tolerance Limit (±%) | 10.0 |

**Dissolved Oxygen** **Method Ref: APHA (21st edition), 4500O: G**

| Expected Reading (mg/L) | Displayed Reading (mg/L) | Tolerance (mg/L) |
|---|---|---|
| 1.85 | 1.70 | -0.15 |
| 5.22 | 5.08 | -0.14 |
| 7.59 | 7.70 | 0.11 |
| | Tolerance Limit (±mg/L) | 0.20 |

**pH Value** **Method Ref: APHA 21st Ed. 4500H:B**

| Expected Reading (pH Unit) | Displayed Reading (pH Unit) | Tolerance (pH unit) |
|---|---|---|
| 4.0 | 4.08 | 0.08 |
| 7.0 | 7.08 | 0.08 |
| 10.0 | 9.98 | -0.02 |
| | Tolerance Limit (±pH unit) | 0.20 |

**Salinity** **Method Ref: APHA (21st edition), 2520B**

| Expected Reading (ppt) | Displayed Reading (ppt) | Tolerance (%) |
|---|---|---|
| 0 | 0.05 | -- |
| 10 | 10.22 | 2.2 |
| 20 | 19.22 | -3.9 |
| 30 | 29.13 | -2.9 |
| | Tolerance Limit (±%) | 10.0 |

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Mr. Fung Lim Chee, Richard
General Manager -
Greater China & Hong Kong

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

**Work Order:** HK1428192
**Date of Issue:** 21/10/2014
**Client:** ENOVATIVE ENVIRONMENTAL SERVICE LIMITED

Description: Sonde Environmental Monitoring System
Brand Name: YSI
Model No.: 6920 V2
Serial No.: 11F100014
Equipment No.: --
Date of Calibration: 21 October, 2014 Date of next Calibration: 21 January, 2015

**Parameters:**

**Temperature**

**Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.**

| Expected Reading (°C ) | Displayed Reading (°C ) | Tolerance (°C ) |
|---|---|---|
| 11.5 | 12.10 | 0.6 |
| 25.0 | 23.40 | -1.6 |
| 40.5 | 40.88 | 0.4 |
| | Tolerance Limit (±°C) | 2.0 |

**Turbidity**

**Method Ref: APHA (21st edition), 2130B**

| Expected Reading (NTU) | Displayed Reading (NTU) | Tolerance (%) |
|---|---|---|
| 0 | 0.0 | -- |
| 4 | 4.3 | 7.5 |
| 40 | 40.2 | 0.5 |
| 80 | 74.0 | -7.5 |
| 400 | 378.6 | -5.3 |
| 800 | 724.7 | -9.4 |
| | Tolerance Limit (±%) | 10.0 |

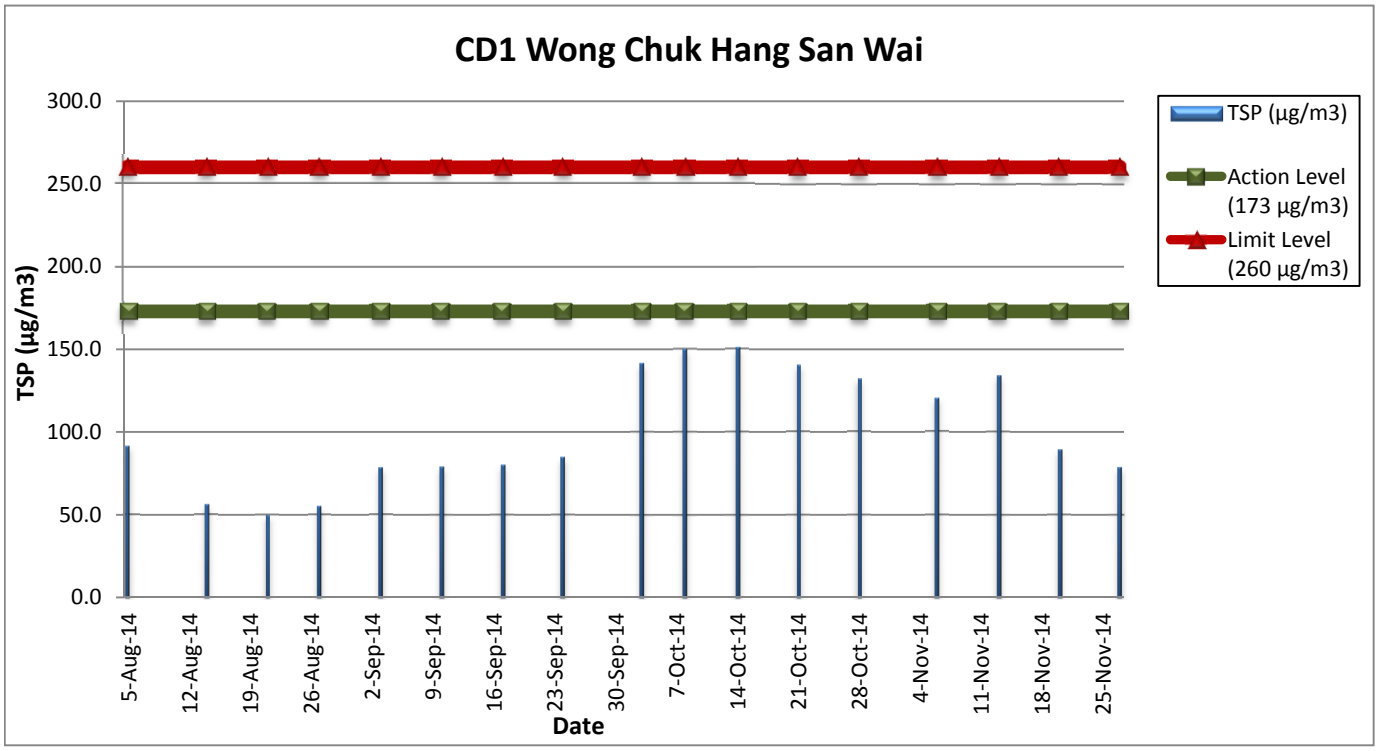
Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

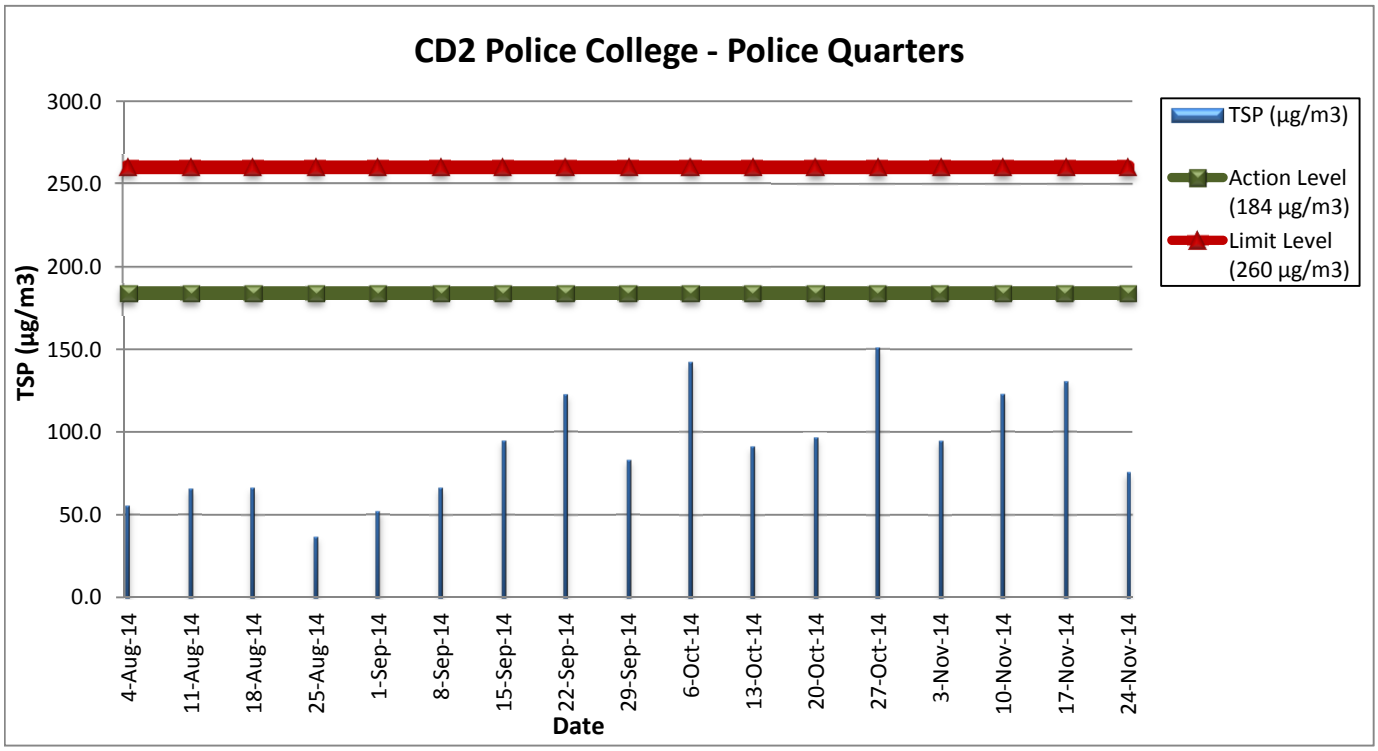
Mr. Fung Lim Chee, Richard
General Manager -
Greater China & Hong Kong

# APPENDIX D

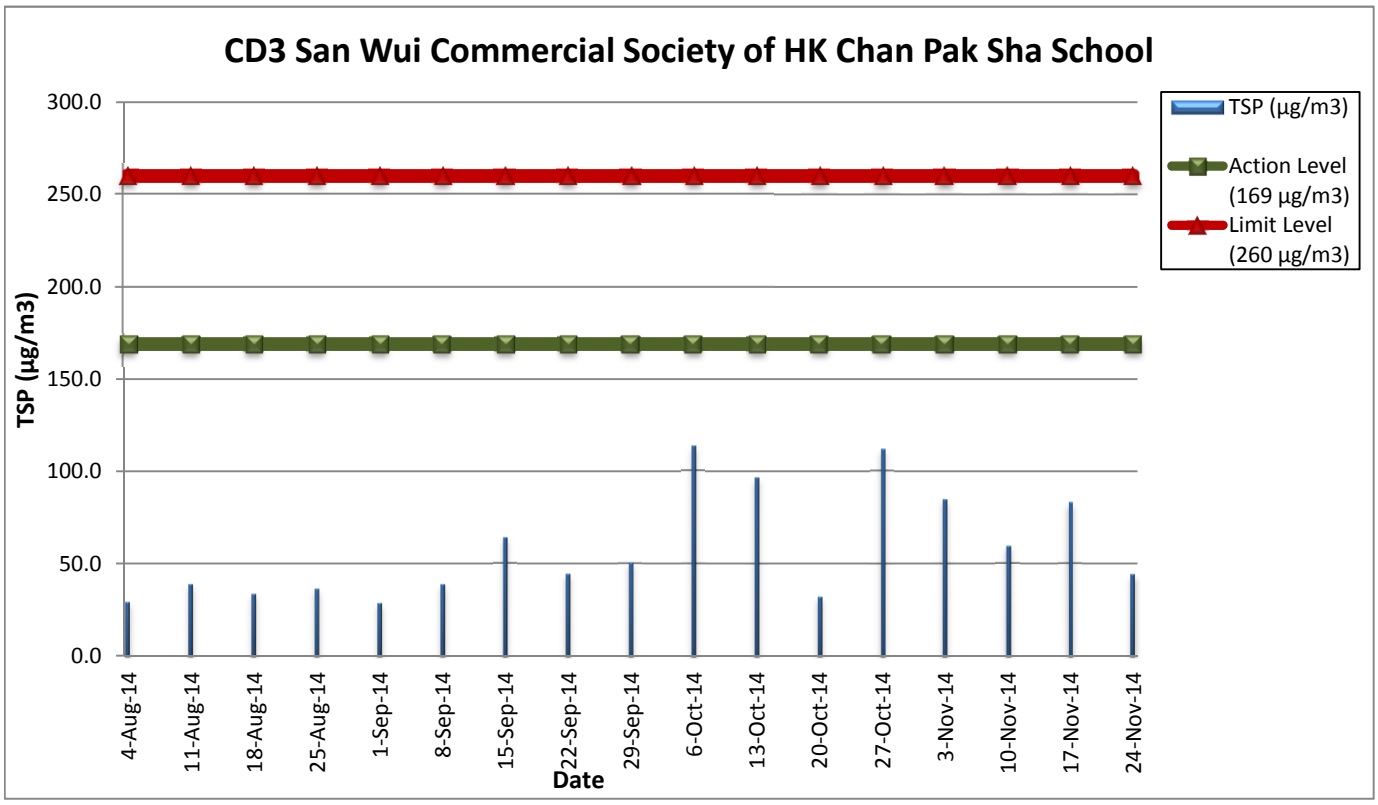
Graphical Plots of Air Quality, Noise & Water Quality Impact Monitoring and Monitoring Results for Water Quality

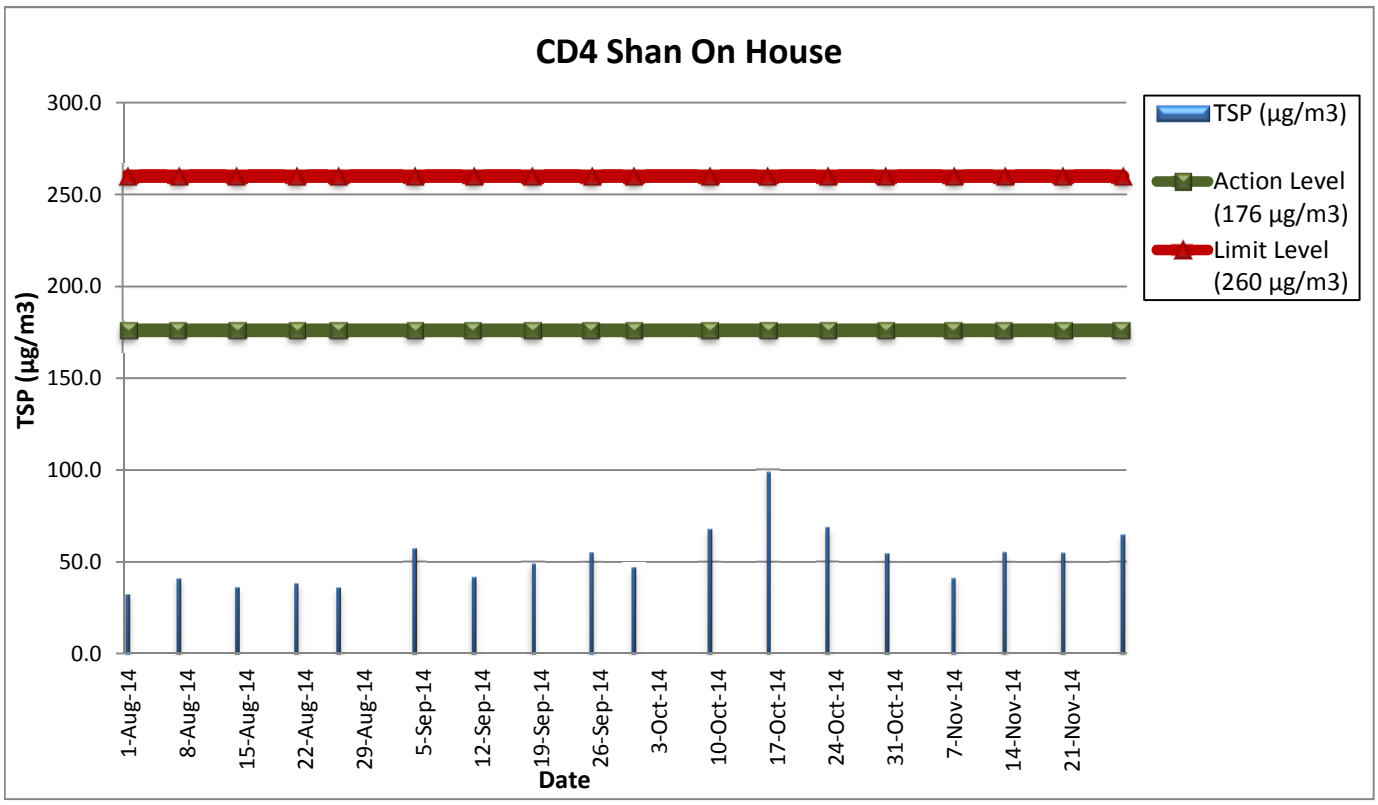
## Graphical Plots for Air Quality Monitoring Results



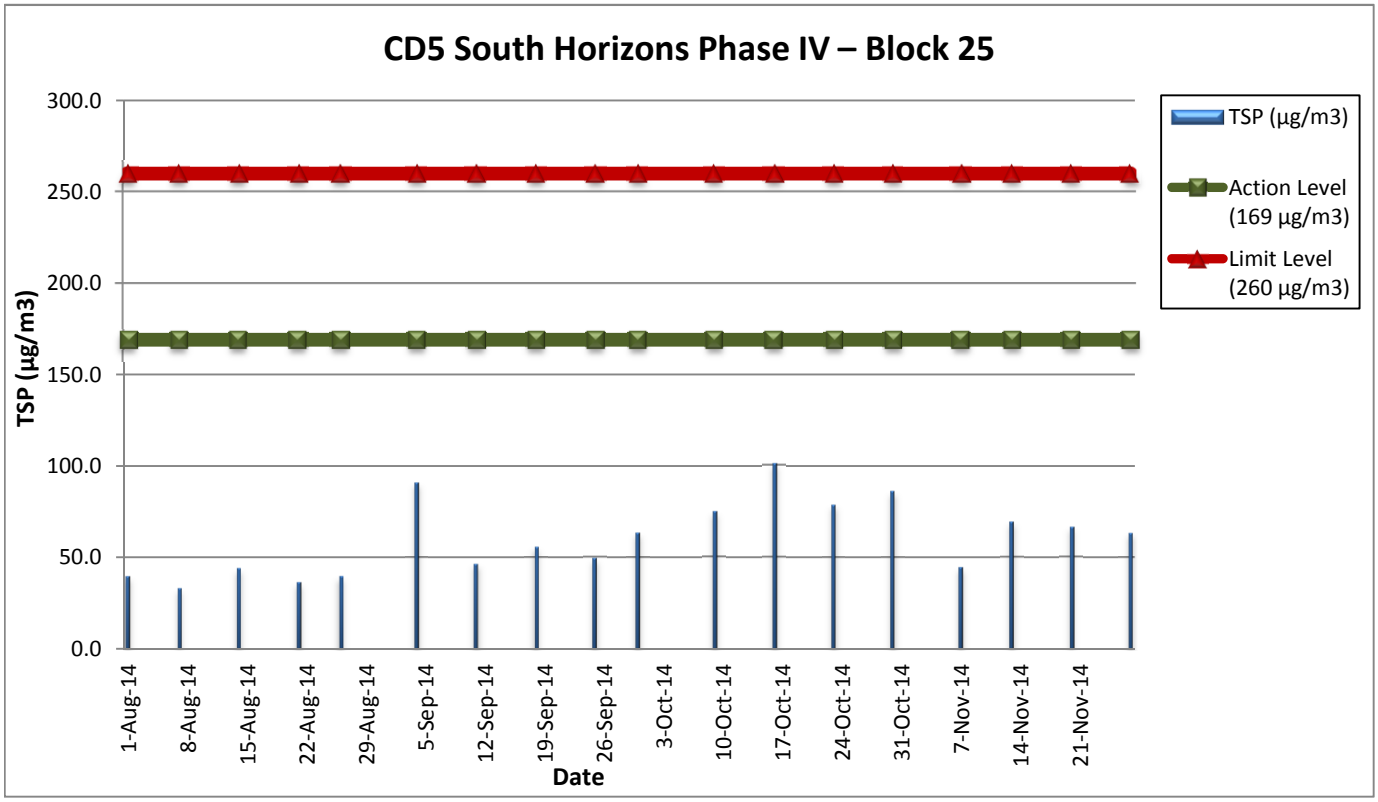



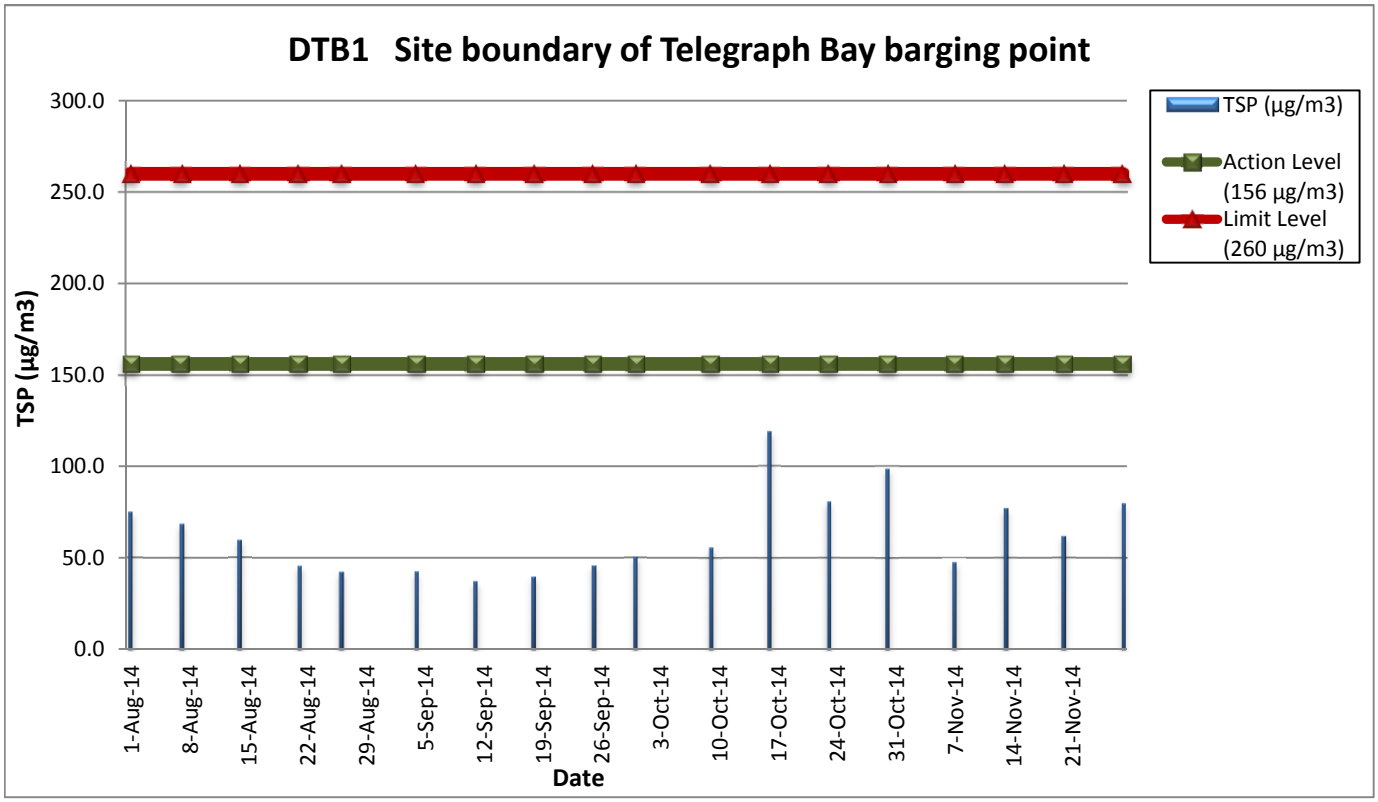
**Graphical Plots for Air Quality Monitoring Results**



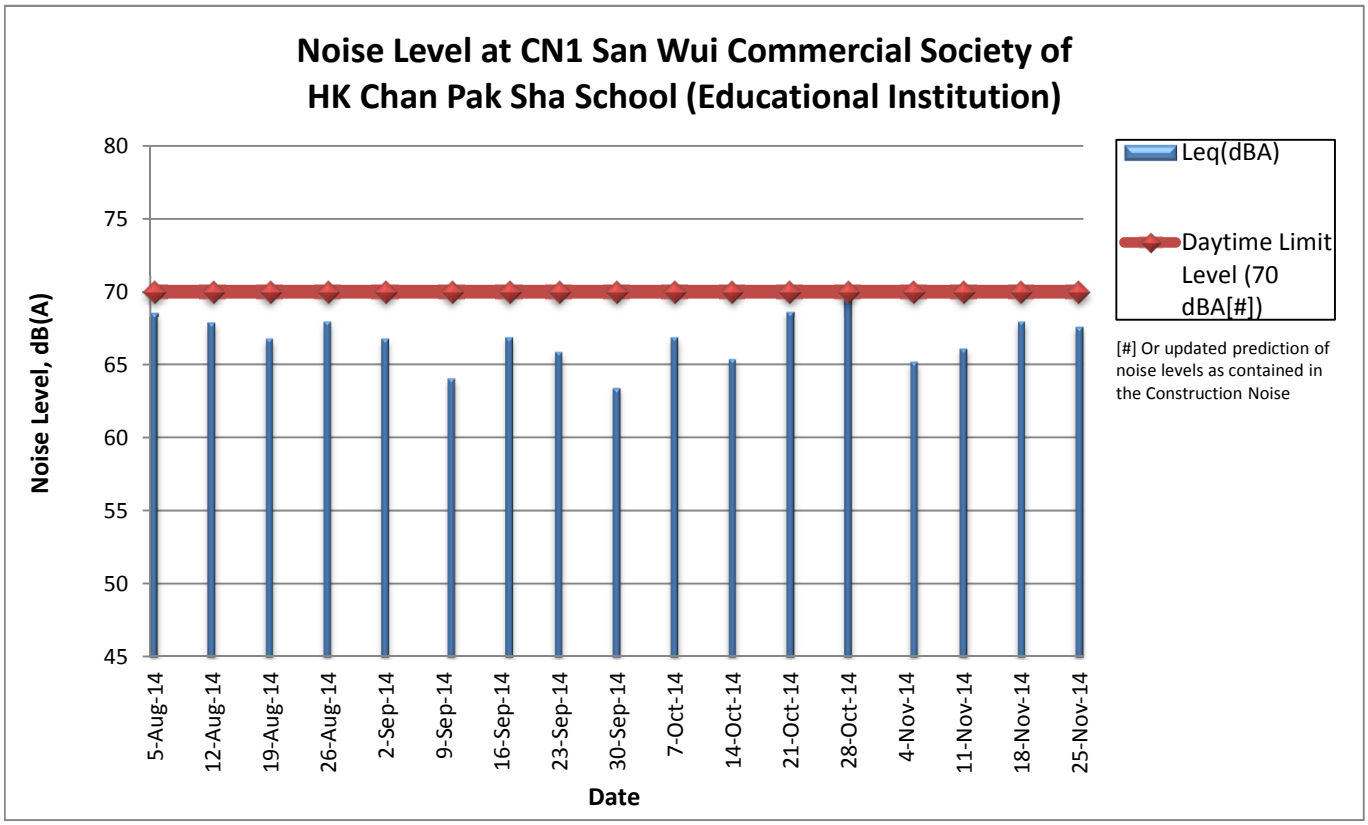



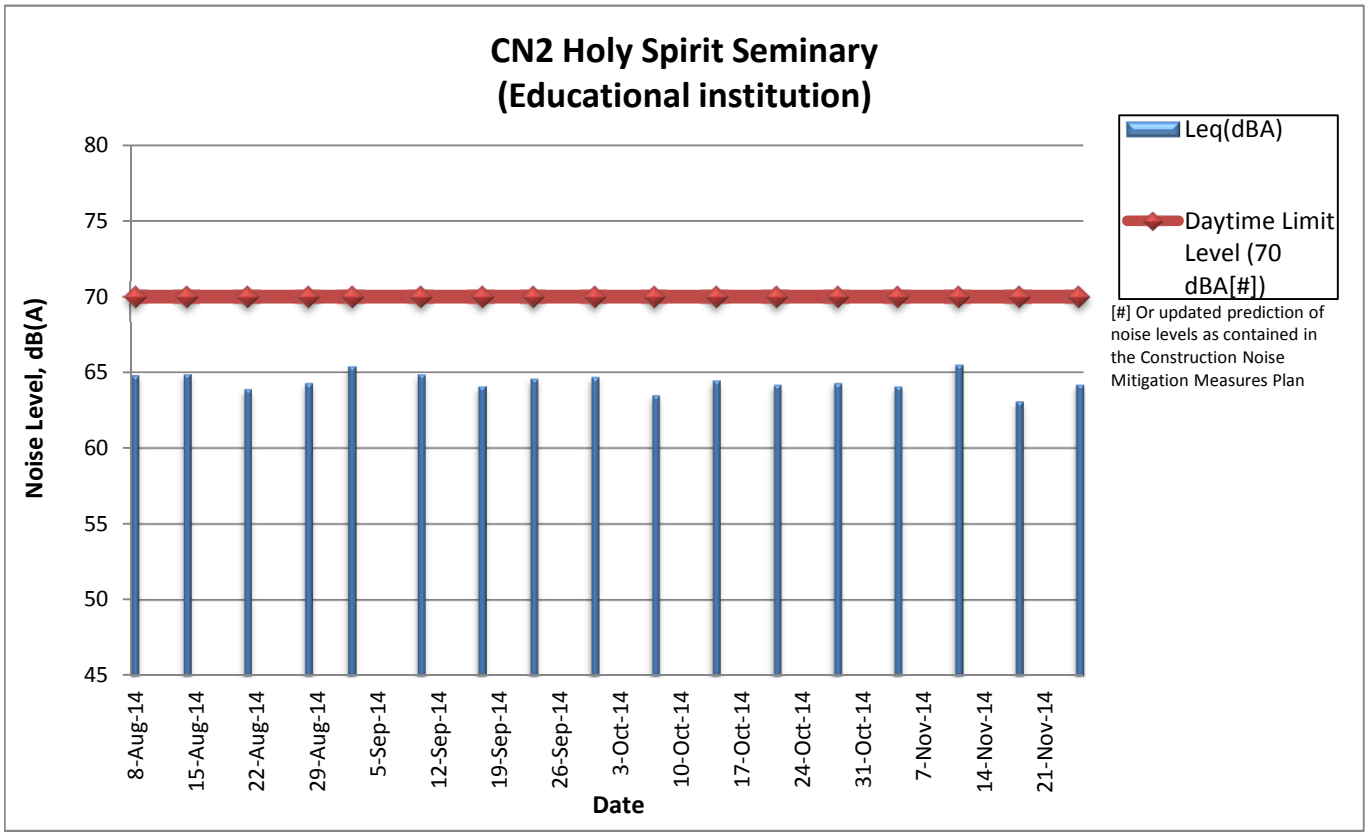
## Graphical Plots for Air Quality Monitoring Results



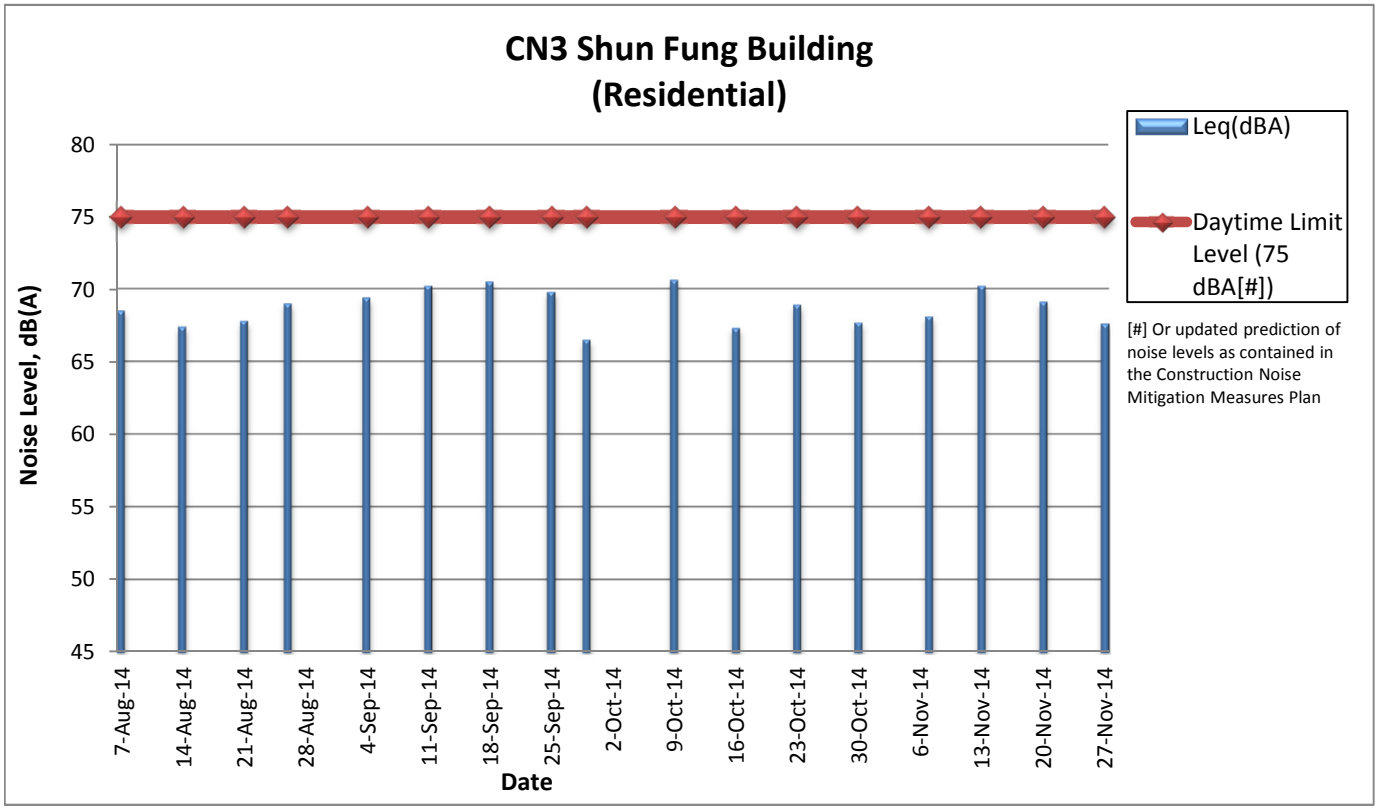



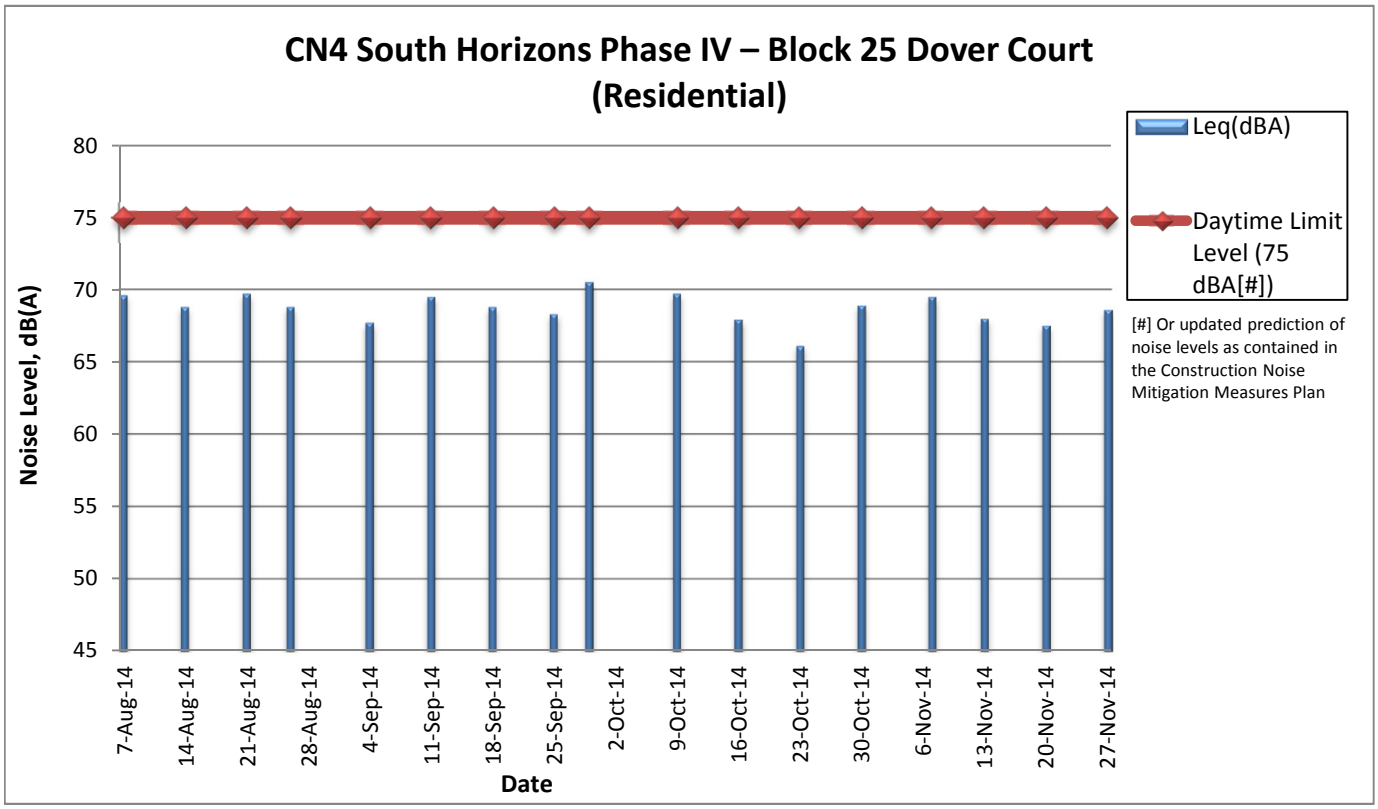
## Graphical Plots for Noise Monitoring Results



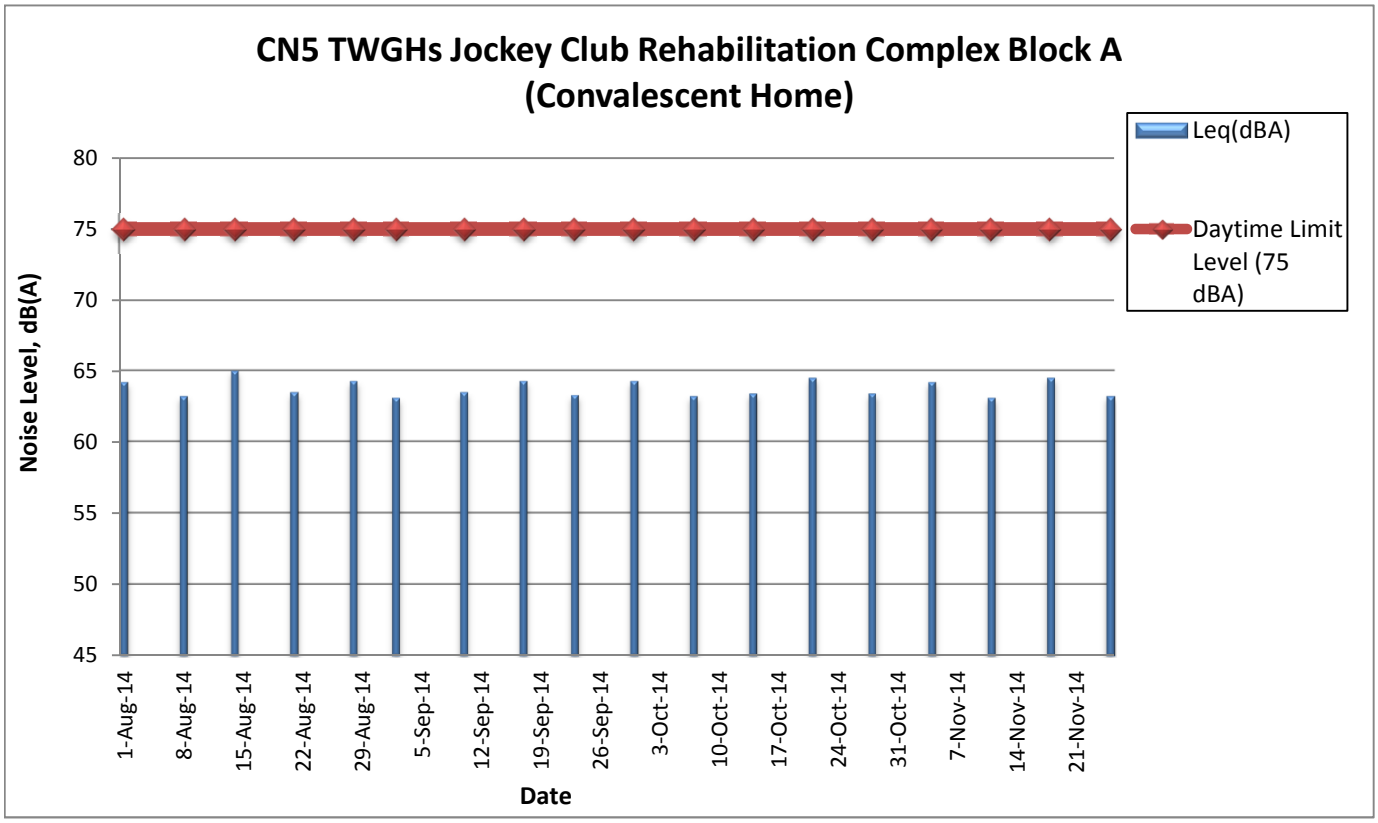



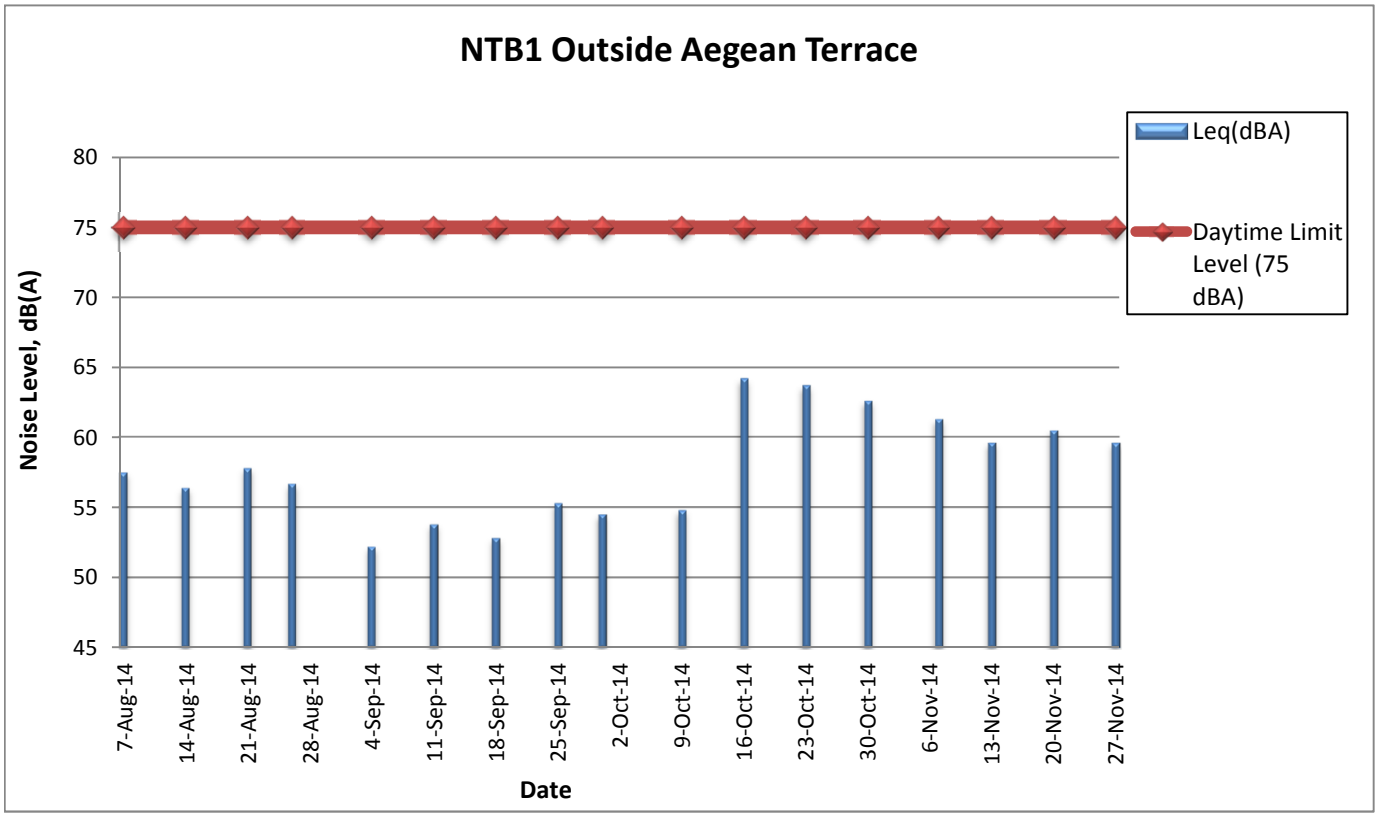
## Graphical Plots for Noise Monitoring Results



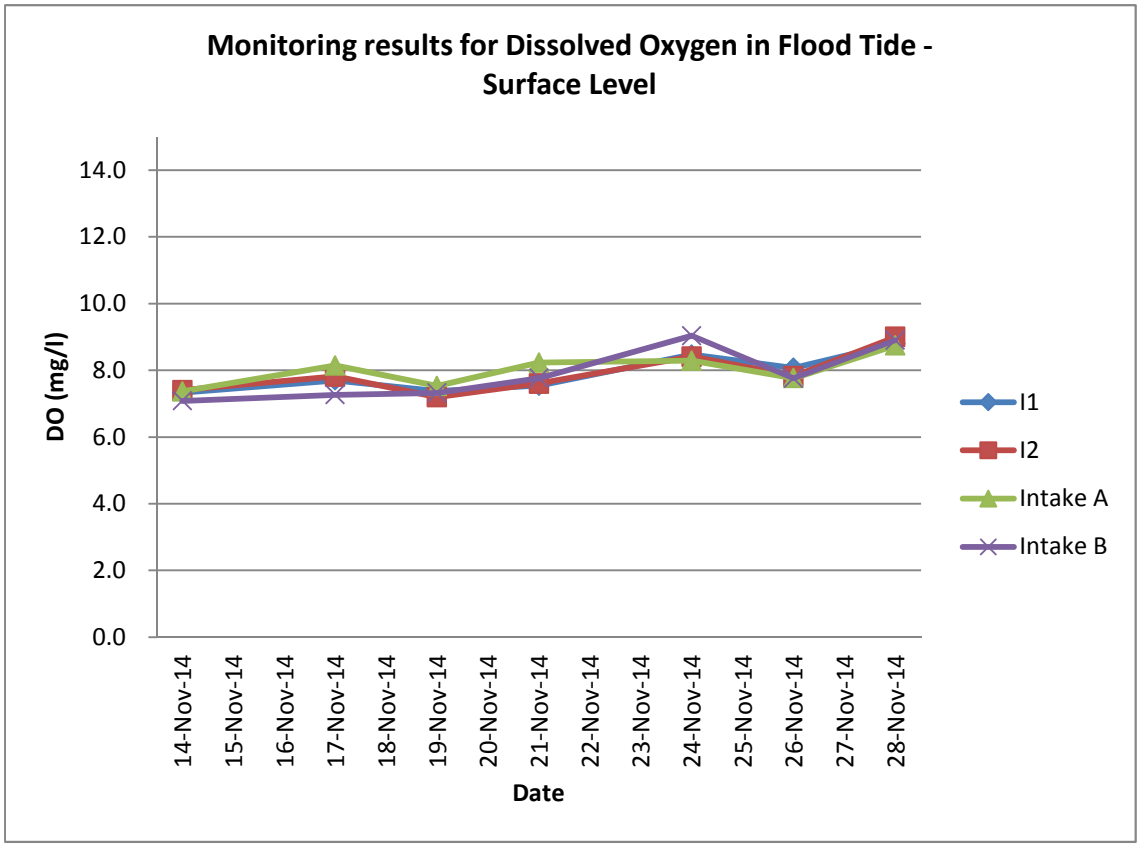



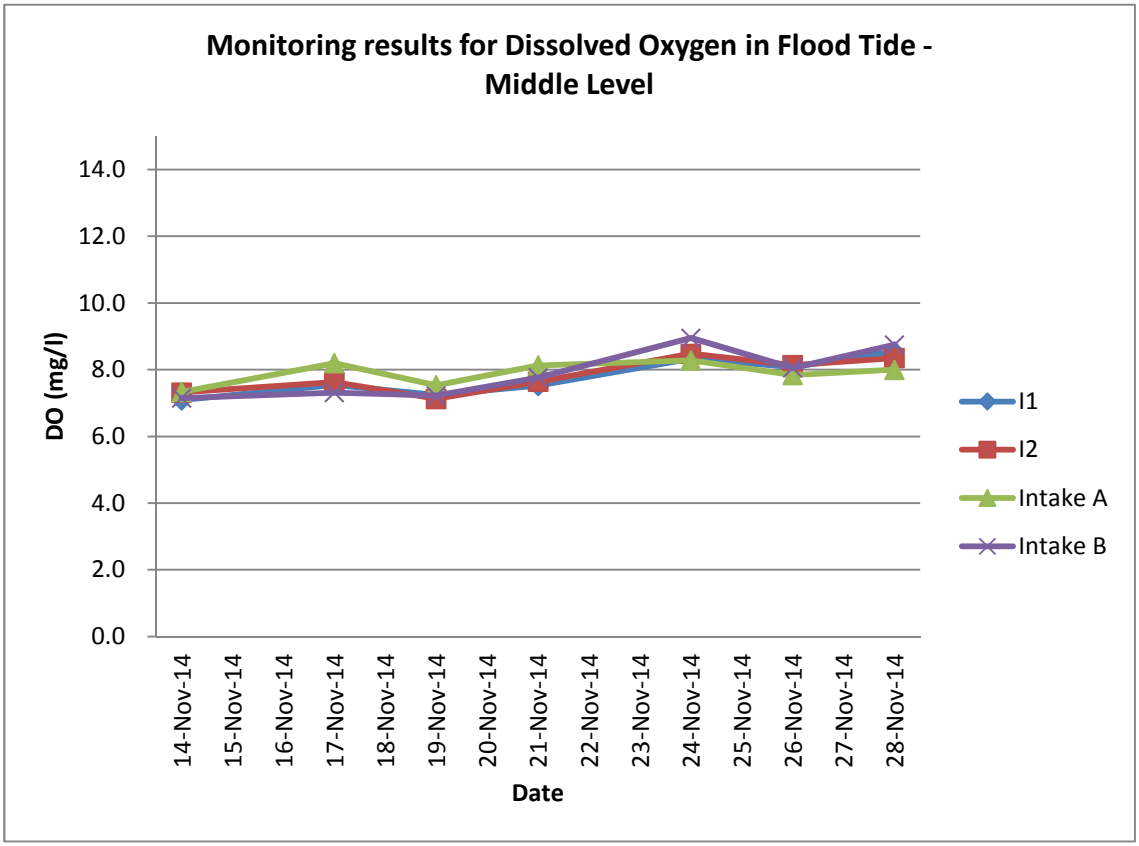
**Graphical Plots for Noise Monitoring Results**



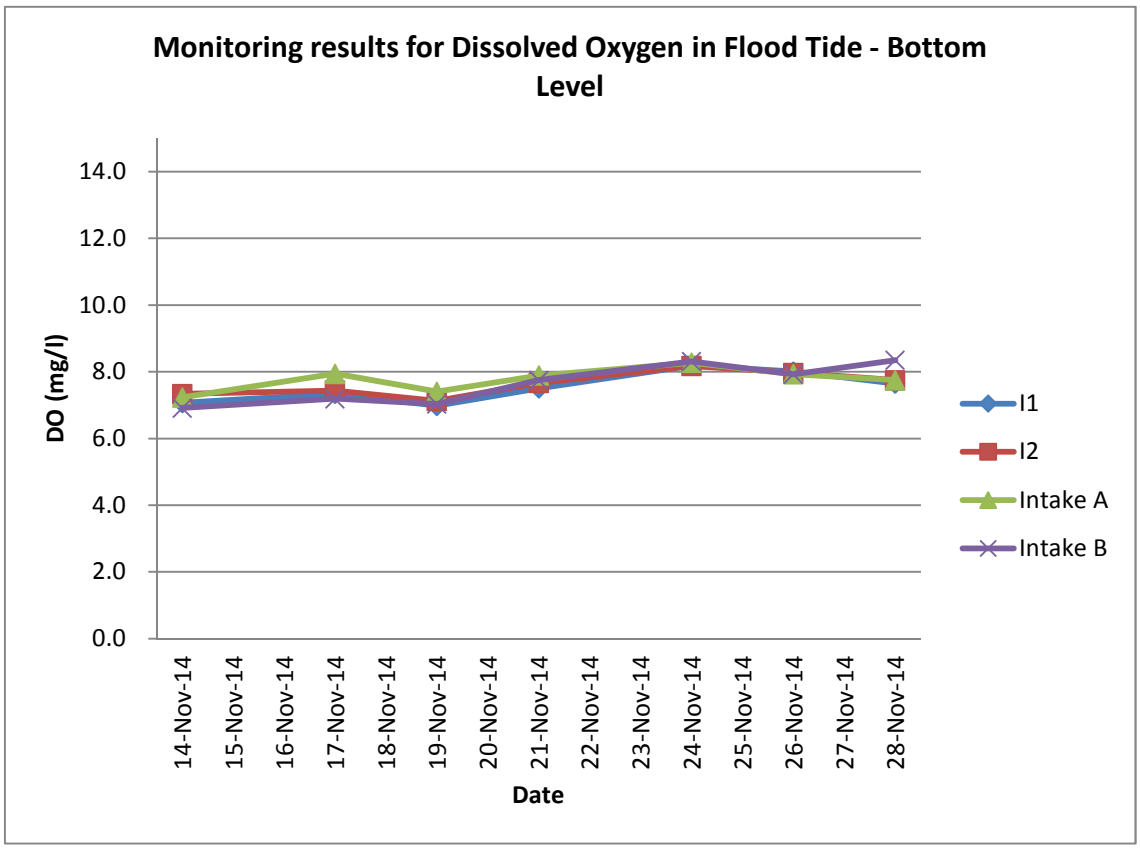



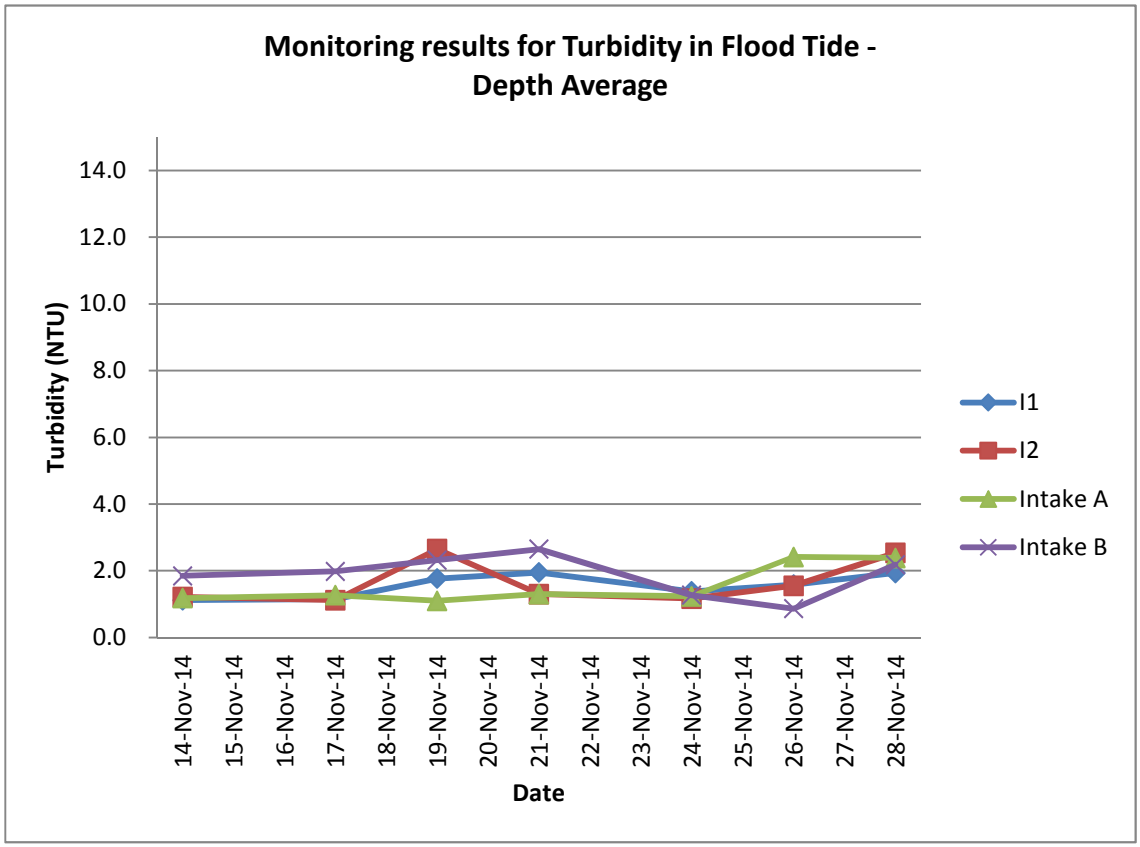
Graphical Plots of Water Quality Monitoring Results



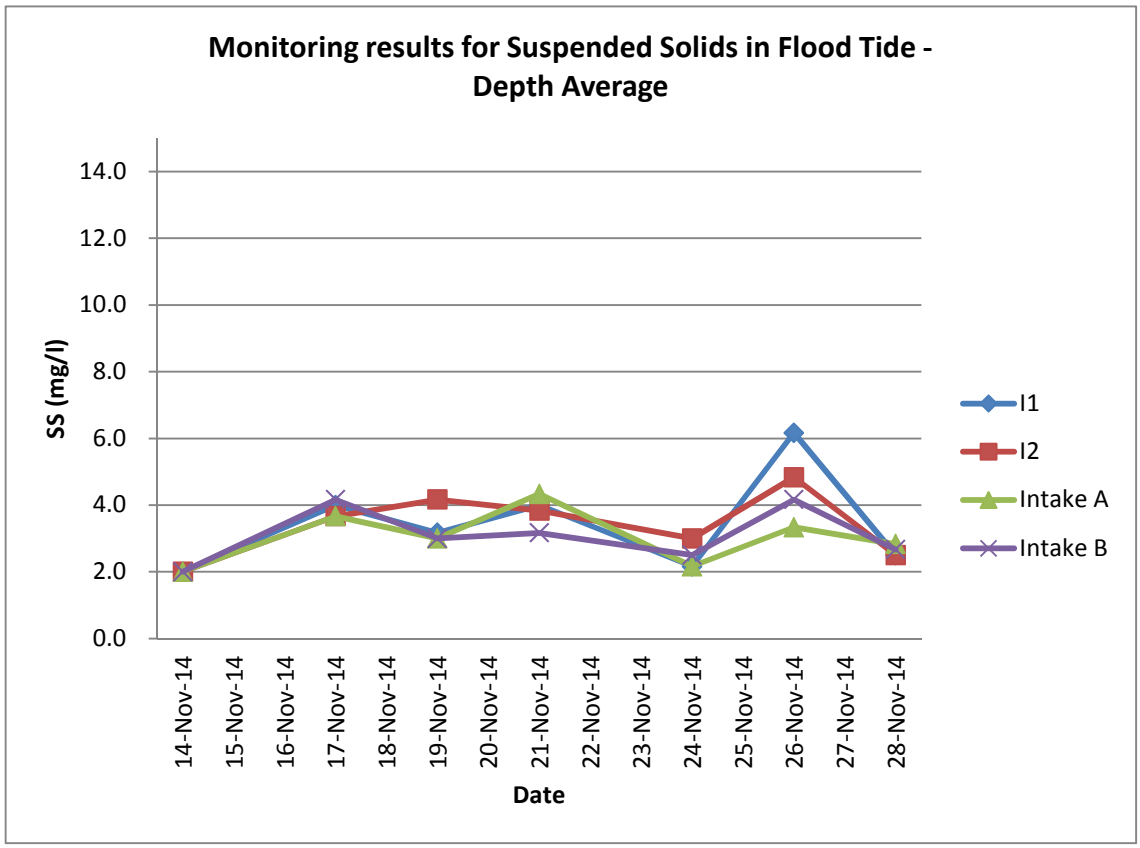



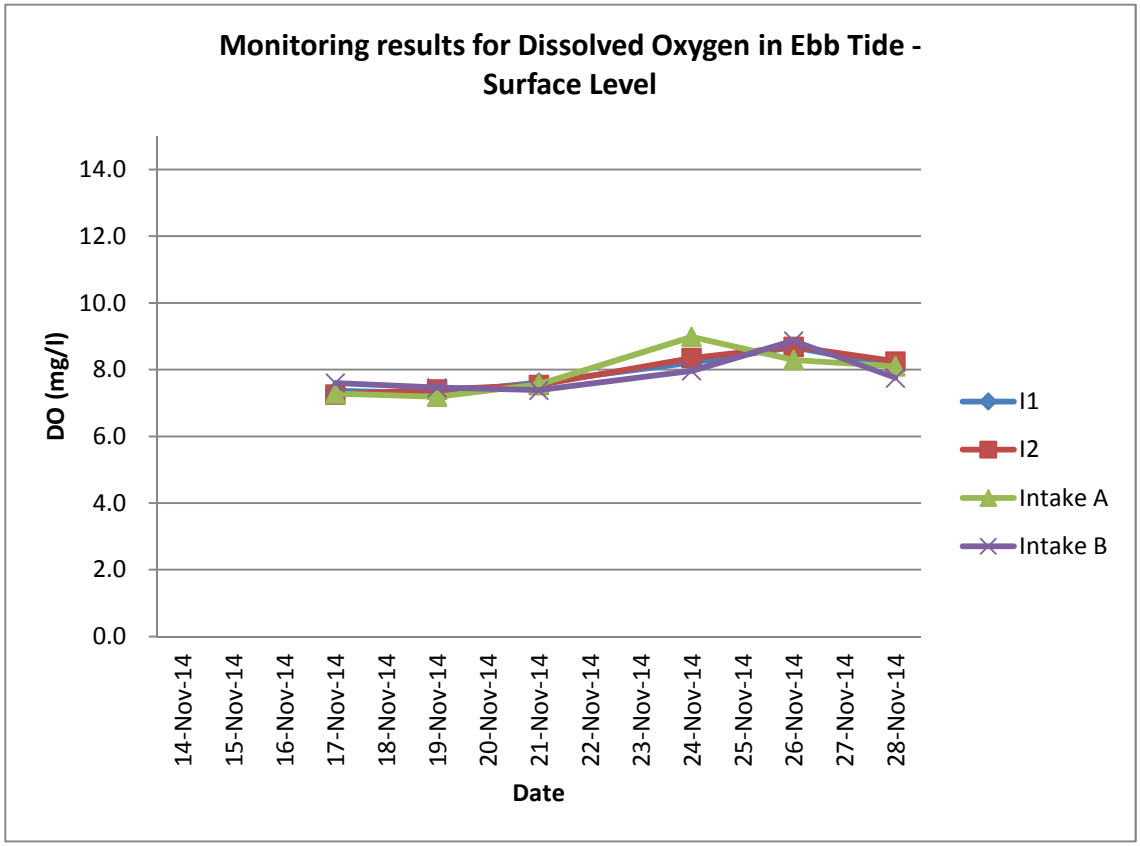
Graphical Plots of Water Quality Monitoring Results



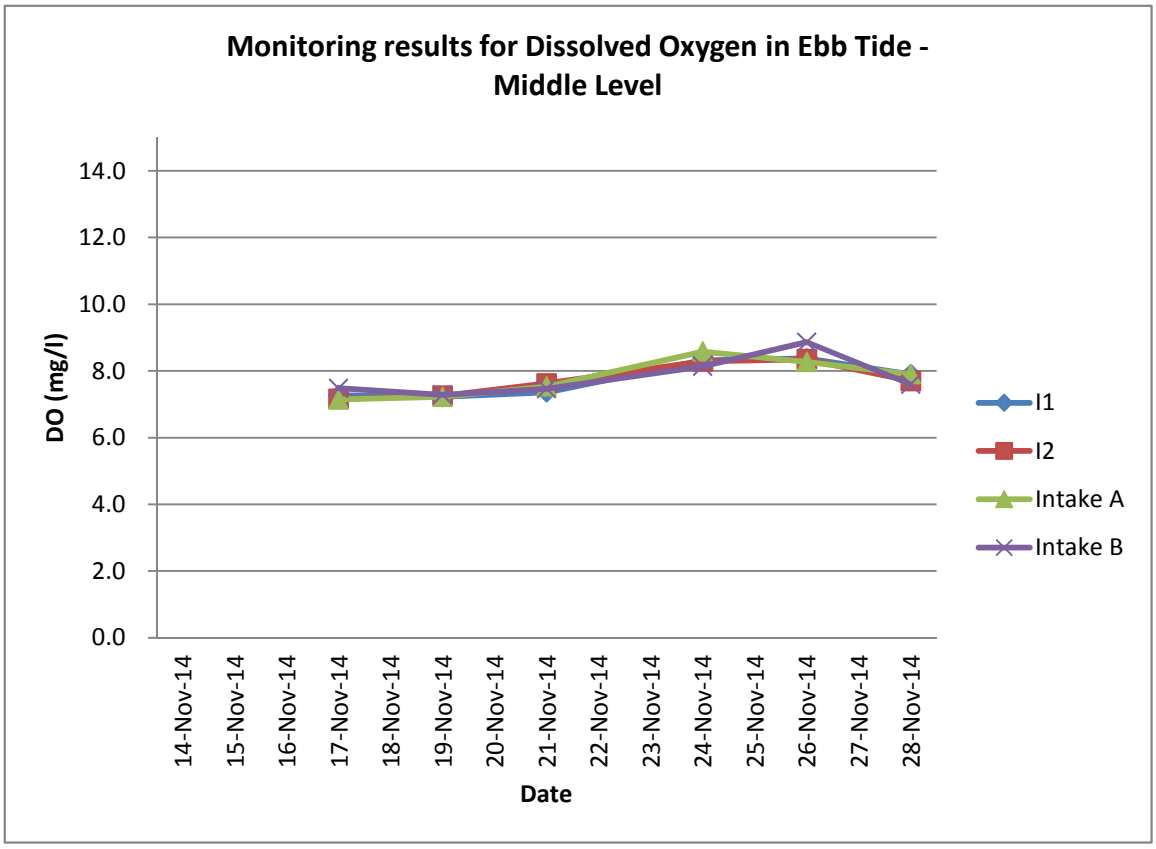



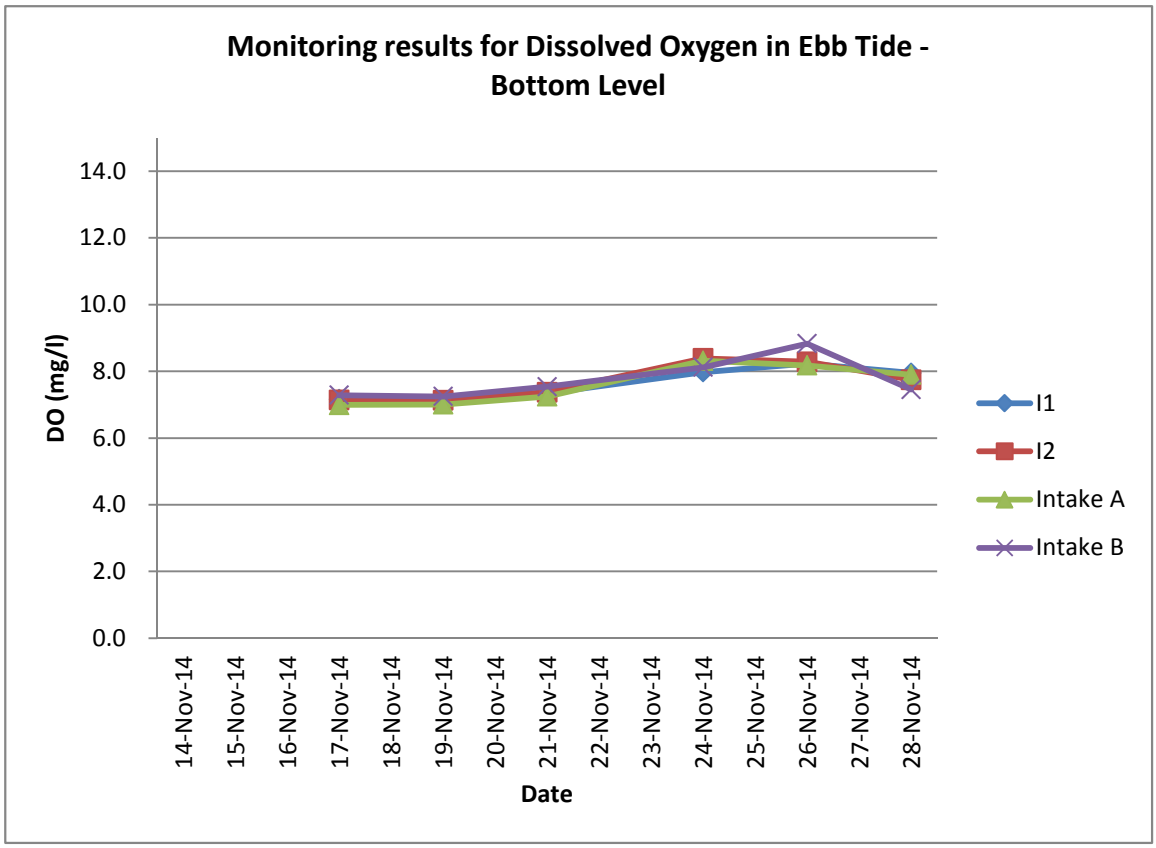
Graphical Plots of Water Quality Monitoring Results



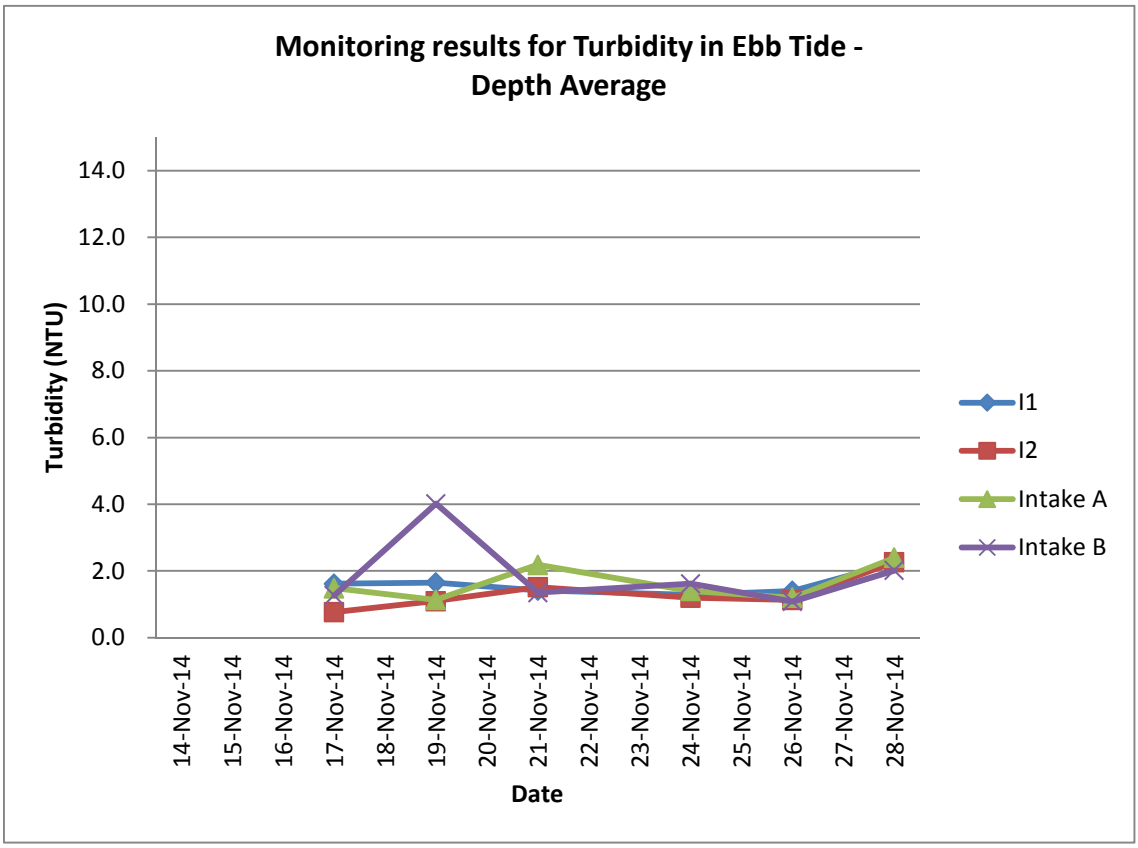



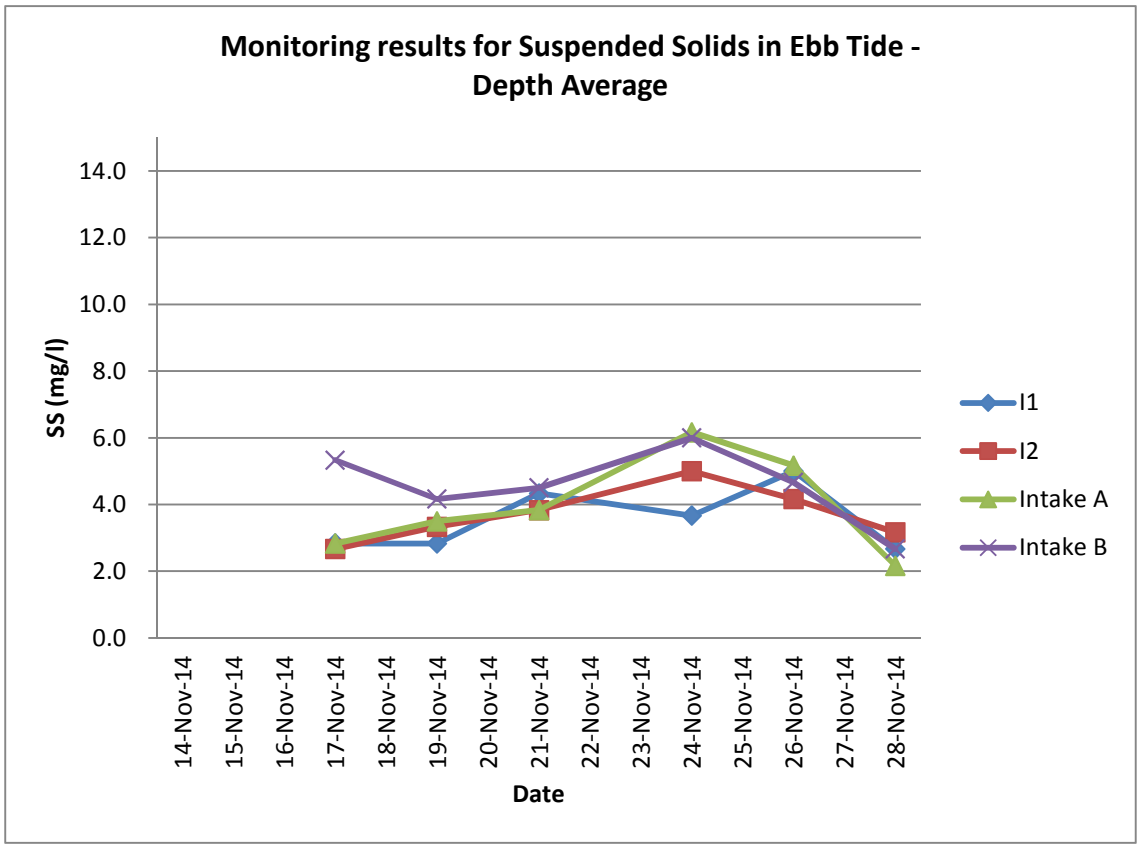
Graphical Plots of Water Quality Monitoring Results



Graphical Plots of Water Quality Monitoring Results



# SIL(E) Water Quality Monitoring Data Record Sheet

Date: 14-Nov-14

Tide: Mid-Flood

Weather: Cloudy

Sea Conditions: Moderate

Upstream Control Station: CF

| 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.** |
| **I1** | 16:21 | 13.3 | *Surface* | 24.7 | 24.8 | 24.7 | 8.4 | 8.4 | 8.4 | 33.4 | 33.3 | 33.3 | 7.3 | 7.4 | 7.3 | 105.7 | 104.5 | 105.1 | 1.0 | 1.0 | 1.0 | | 2.0 | 2.0 | 2.0 | |
| | | | *Middle* | 24.6 | 24.4 | 24.5 | 8.4 | 8.4 | 8.4 | 33.6 | 33.3 | 33.4 | 7.1 | 7.1 | 7.1 | 103.0 | 104.0 | 103.5 | 1.1 | 1.1 | 1.1 | 1.1 | 2.0 | 2.0 | 2.0 | 2.0 |
| | | | *Bottom* | 24.6 | 24.5 | 24.5 | 8.4 | 8.4 | 8.4 | 33.6 | 33.9 | 33.7 | 7.0 | 7.1 | 7.1 | 102.4 | 102.4 | 102.4 | 1.2 | 1.3 | 1.3 | | 2.0 | 2.0 | 2.0 | |
| **I2** | 16:36 | 13.5 | *Surface* | 24.7 | 24.7 | 24.7 | 8.4 | 8.4 | 8.4 | 33.6 | 33.3 | 33.4 | 7.4 | 7.4 | 7.4 | 108.1 | 106.2 | 107.2 | 1.0 | 1.0 | 1.0 | | 2.0 | 2.0 | 2.0 | |
| | | | *Middle* | 24.7 | 24.6 | 24.6 | 8.4 | 8.4 | 8.4 | 33.6 | 33.5 | 33.5 | 7.3 | 7.3 | 7.3 | 106.8 | 104.8 | 105.8 | 1.3 | 1.3 | 1.3 | 1.2 | 2.0 | 2.0 | 2.0 | 2.0 |
| | | | *Bottom* | 24.6 | 24.8 | 24.7 | 8.4 | 8.4 | 8.4 | 33.6 | 33.8 | 33.7 | 7.3 | 7.4 | 7.3 | 105.8 | 104.9 | 105.4 | 1.4 | 1.3 | 1.4 | | 2.0 | 2.0 | 2.0 | |
| **Intake A** | 16:41 | 10.6 | *Surface* | 24.7 | 24.8 | 24.8 | 8.4 | 8.4 | 8.4 | 33.7 | 34.0 | 33.8 | 7.4 | 7.3 | 7.4 | 108.4 | 108.8 | 108.6 | 1.1 | 1.0 | 1.1 | | 2.0 | 2.0 | 2.0 | |
| | | | *Middle* | 24.6 | 24.5 | 24.6 | 8.4 | 8.5 | 8.4 | 33.7 | 33.6 | 33.6 | 7.4 | 7.3 | 7.3 | 107.2 | 105.0 | 106.1 | 1.2 | 1.2 | 1.2 | 1.2 | 2.0 | 2.0 | 2.0 | 2.0 |
| | | | *Bottom* | 24.6 | 24.6 | 24.6 | 8.4 | 8.4 | 8.4 | 33.6 | 33.6 | 33.6 | 7.3 | 7.2 | 7.2 | 105.7 | 105.9 | 105.8 | 1.3 | 1.3 | 1.3 | | 2.0 | 2.0 | 2.0 | |
| **Intake B** | 16:00 | 11.3 | *Surface* | 24.8 | 24.7 | 24.7 | 8.4 | 8.4 | 8.4 | 33.6 | 33.3 | 33.5 | 7.1 | 7.1 | 7.1 | 103.2 | 103.4 | 103.3 | 2.5 | 2.4 | 2.5 | | 2.0 | 2.0 | 2.0 | |
| | | | *Middle* | 24.6 | 24.5 | 24.6 | 8.4 | 8.3 | 8.3 | 33.6 | 33.4 | 33.5 | 7.1 | 7.2 | 7.2 | 103.3 | 104.1 | 103.7 | 1.4 | 1.4 | 1.4 | 1.9 | 2.0 | 2.0 | 2.0 | 2.0 |
| | | | *Bottom* | 24.6 | 24.6 | 24.6 | 8.4 | 8.4 | 8.4 | 33.6 | 33.4 | 33.5 | 6.9 | 6.9 | 6.9 | 100.8 | 101.3 | 101.1 | 1.7 | 1.7 | 1.7 | | 2.0 | 2.0 | 2.0 | |
| **CF** | 17:02 | 12.6 | *Surface* | 24.6 | 24.7 | 24.6 | 8.4 | 8.3 | 8.3 | 33.6 | 33.8 | 33.7 | 6.9 | 6.8 | 6.8 | 99.9 | 100.5 | 100.2 | 1.5 | 1.4 | 1.5 | | 2.0 | 2.0 | 2.0 | |
| | | | *Middle* | 24.6 | 24.5 | 24.5 | 8.4 | 8.3 | 8.3 | 33.6 | 33.5 | 33.5 | 7.0 | 6.9 | 6.9 | 101.6 | 103.1 | 102.4 | 1.0 | 1.0 | 1.0 | 1.1 | 2.0 | 2.0 | 2.0 | 2.0 |
| | | | *Bottom* | 24.6 | 24.6 | 24.6 | 8.4 | 8.3 | 8.3 | 33.6 | 33.6 | 33.6 | 7.0 | 7.2 | 7.1 | 102.2 | 103.8 | 103.0 | 0.8 | 0.8 | 0.8 | | 2.0 | 2.0 | 2.0 | |

Remark or Obsevation: N/A

Note: * Average

** Depth Average

**SIL(E) Water Quality Monitoring Data Record Sheet**

| | |
|---|---|
| Date: | 14-Nov-14 |
| Tide: | Mid-Ebb |
| Weather: | |
| Sea Conditions: | |
| Upstream Control Station: | CE |

Remark or Obsevation: Mid-ebb on 14 November is beyond normal working hour; no monitoring on that tide was conducted

# SIL(E) Water Quality Monitoring Data Record Sheet

Date: 17-Nov-14

Tide: Mid-Flood

Weather: Sunny

Sea Conditions: Moderate

Upstream Control Station: CF

| 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.** |
| **I1** | 14:36 | 13.6 | *Surface* | 24.4 | 24.5 | 24.4 | 8.5 | 8.4 | 8.4 | 33.6 | 33.7 | 33.7 | 7.7 | 7.7 | 7.7 | 111.4 | 113.1 | 112.3 | 0.8 | 0.8 | 0.8 | | 3.0 | 3.0 | 3.0 | |
| | | | *Middle* | 24.3 | 24.5 | 24.4 | 8.5 | 8.4 | 8.4 | 33.6 | 33.3 | 33.5 | 7.5 | 7.6 | 7.5 | 108.2 | 107.5 | 107.9 | 1.0 | 1.0 | 1.0 | 1.2 | 3.0 | 4.0 | 3.5 | 4.0 |
| | | | *Bottom* | 24.3 | 24.3 | 24.3 | 8.5 | 8.5 | 8.5 | 33.6 | 33.6 | 33.6 | 7.3 | 7.4 | 7.3 | 105.4 | 105.7 | 105.6 | 1.6 | 1.7 | 1.7 | | 6.0 | 5.0 | 5.5 | |
| **I2** | 14:56 | 18.4 | *Surface* | 24.4 | 24.5 | 24.4 | 8.5 | 8.5 | 8.5 | 33.6 | 33.6 | 33.6 | 7.7 | 7.9 | 7.8 | 112.0 | 109.8 | 110.9 | 1.3 | 1.2 | 1.3 | | 3.0 | 4.0 | 3.5 | |
| | | | *Middle* | 24.3 | 24.4 | 24.4 | 8.5 | 8.5 | 8.5 | 33.6 | 33.8 | 33.7 | 7.7 | 7.6 | 7.6 | 110.9 | 113.2 | 112.1 | 0.9 | 0.9 | 0.9 | 1.1 | 3.0 | 4.0 | 3.5 | 3.7 |
| | | | *Bottom* | 24.3 | 24.5 | 24.4 | 8.5 | 8.5 | 8.5 | 33.6 | 33.8 | 33.7 | 7.4 | 7.5 | 7.4 | 106.9 | 105.6 | 106.3 | 1.2 | 1.2 | 1.2 | | 4.0 | 4.0 | 4.0 | |
| **Intake A** | 15:17 | 9.6 | *Surface* | 24.4 | 24.4 | 24.4 | 8.4 | 8.5 | 8.5 | 33.5 | 33.2 | 33.4 | 8.2 | 8.1 | 8.1 | 118.8 | 116.3 | 117.6 | 1.2 | 1.2 | 1.2 | | 2.0 | 2.0 | 2.0 | |
| | | | *Middle* | 24.4 | 24.5 | 24.4 | 8.5 | 8.5 | 8.5 | 33.5 | 33.6 | 33.6 | 8.2 | 8.2 | 8.2 | 118.6 | 116.6 | 117.6 | 0.9 | 0.9 | 0.9 | 1.3 | 4.0 | 3.0 | 3.5 | 3.7 |
| | | | *Bottom* | 24.4 | 24.3 | 24.3 | 8.4 | 8.5 | 8.5 | 33.5 | 33.3 | 33.4 | 8.0 | 7.9 | 7.9 | 115.5 | 117.5 | 116.5 | 1.7 | 1.7 | 1.7 | | 5.0 | 6.0 | 5.5 | |
| **Intake B** | 14:15 | 9.4 | *Surface* | 24.3 | 24.5 | 24.4 | 8.4 | 8.3 | 8.4 | 33.6 | 33.4 | 33.5 | 7.2 | 7.3 | 7.3 | 104.7 | 106.4 | 105.6 | 1.2 | 1.2 | 1.2 | | 3.0 | 3.0 | 3.0 | |
| | | | *Middle* | 24.3 | 24.2 | 24.3 | 8.4 | 8.4 | 8.4 | 33.6 | 33.5 | 33.6 | 7.2 | 7.4 | 7.3 | 104.6 | 106.7 | 105.7 | 2.0 | 1.9 | 2.0 | 2.0 | 4.0 | 5.0 | 4.5 | 4.2 |
| | | | *Bottom* | 24.3 | 24.4 | 24.4 | 8.5 | 8.4 | 8.4 | 33.6 | 33.7 | 33.7 | 7.2 | 7.2 | 7.2 | 104.1 | 102.9 | 103.5 | 2.8 | 2.8 | 2.8 | | 5.0 | 5.0 | 5.0 | |
| **CF** | 15:38 | 17.9 | *Surface* | 24.4 | 24.2 | 24.3 | 8.4 | 8.5 | 8.5 | 33.6 | 33.4 | 33.5 | 7.2 | 7.3 | 7.3 | 104.7 | 104.0 | 104.4 | 3.2 | 3.3 | 3.3 | | 4.0 | 4.0 | 4.0 | |
| | | | *Middle* | 24.3 | 24.3 | 24.3 | 8.4 | 8.4 | 8.4 | 33.6 | 33.9 | 33.8 | 7.2 | 7.2 | 7.2 | 104.8 | 105.9 | 105.4 | 1.4 | 1.4 | 1.4 | 2.0 | 4.0 | 4.0 | 4.0 | 4.2 |
| | | | *Bottom* | 24.3 | 24.2 | 24.3 | 8.5 | 8.5 | 8.5 | 33.6 | 33.9 | 33.8 | 7.2 | 7.2 | 7.2 | 104.4 | 105.3 | 104.9 | 1.4 | 1.4 | 1.4 | | 5.0 | 4.0 | 4.5 | |

Remark or Obsevation: NIL

Note: * Average

** Depth Average

**SIL(E) Water Quality Monitoring Data Record Sheet**

Date: 17-Nov-14

Tide: Mid-Ebb

Weather: Sunny

Sea Conditions: Moderate

Upstream Control Station: CE

| 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.** |
| **CE** | 07:15 | 24.9 | *Surface* | 24.3 | 24.2 | 24.2 | 8.3 | 8.4 | 8.4 | 33.4 | 33.2 | 33.3 | 7.6 | 7.6 | 7.6 | 110.2 | 112.0 | 111.1 | 1.5 | 1.4 | 1.5 | | 3.0 | 2.0 | 2.5 | |
| | | | *Middle* | 24.3 | 24.4 | 24.4 | 8.4 | 8.4 | 8.4 | 33.7 | 33.7 | 33.7 | 7.3 | 7.3 | 7.3 | 106.1 | 107.8 | 107.0 | 1.3 | 1.4 | 1.4 | 1.4 | 2.0 | 3.0 | 2.5 | 2.7 |
| | | | *Bottom* | 24.3 | 24.3 | 24.3 | 8.4 | 8.3 | 8.3 | 33.7 | 33.9 | 33.8 | 7.2 | 7.1 | 7.2 | 104.6 | 104.4 | 104.5 | 1.4 | 1.4 | 1.4 | | 3.0 | 3.0 | 3.0 | |
| **I1** | 07:58 | 13.2 | *Surface* | 24.2 | 24.3 | 24.3 | 8.4 | 8.3 | 8.4 | 33.6 | 33.4 | 33.5 | 7.3 | 7.4 | 7.4 | 106.0 | 105.9 | 106.0 | 1.8 | 1.7 | 1.8 | | 2.0 | 3.0 | 2.5 | |
| | | | *Middle* | 24.3 | 24.1 | 24.2 | 8.4 | 8.4 | 8.4 | 33.6 | 33.7 | 33.7 | 7.3 | 7.3 | 7.3 | 104.8 | 104.8 | 104.8 | 1.1 | 1.1 | 1.1 | 1.6 | 3.0 | 3.0 | 3.0 | 2.8 |
| | | | *Bottom* | 24.3 | 24.4 | 24.4 | 8.4 | 8.4 | 8.4 | 33.6 | 33.9 | 33.8 | 7.1 | 7.2 | 7.2 | 103.0 | 101.8 | 102.4 | 2.0 | 2.0 | 2.0 | | 3.0 | 3.0 | 3.0 | |
| **I2** | 08:18 | 18.5 | *Surface* | 24.2 | 24.4 | 24.3 | 8.4 | 8.4 | 8.4 | 33.6 | 33.8 | 33.7 | 7.2 | 7.3 | 7.3 | 104.2 | 102.5 | 103.4 | 0.7 | 0.7 | 0.7 | | 2.0 | 2.0 | 2.0 | |
| | | | *Middle* | 24.3 | 24.3 | 24.3 | 8.4 | 8.4 | 8.4 | 33.6 | 33.5 | 33.6 | 7.2 | 7.1 | 7.2 | 104.5 | 106.0 | 105.3 | 0.9 | 0.9 | 0.9 | 0.8 | 3.0 | 2.0 | 2.5 | 2.7 |
| | | | *Bottom* | 24.3 | 24.4 | 24.4 | 8.4 | 8.4 | 8.4 | 33.7 | 33.8 | 33.7 | 7.2 | 7.1 | 7.1 | 104.0 | 102.4 | 103.2 | 0.7 | 0.7 | 0.7 | | 4.0 | 3.0 | 3.5 | |
| **Intake A** | 08:39 | 9.3 | *Surface* | 24.3 | 24.3 | 24.3 | 8.4 | 8.5 | 8.5 | 33.7 | 33.7 | 33.7 | 7.3 | 7.3 | 7.3 | 105.2 | 104.1 | 104.7 | 1.1 | 1.1 | 1.1 | | 3.0 | 3.0 | 3.0 | |
| | | | *Middle* | 24.3 | 24.5 | 24.4 | 8.4 | 8.4 | 8.4 | 33.7 | 33.8 | 33.7 | 7.2 | 7.1 | 7.1 | 104.0 | 102.0 | 103.0 | 0.5 | 0.5 | 0.5 | 1.5 | 3.0 | 2.0 | 2.5 | 2.8 |
| | | | *Bottom* | 24.3 | 24.4 | 24.4 | 8.4 | 8.5 | 8.5 | 33.7 | 33.4 | 33.5 | 7.1 | 6.9 | 7.0 | 102.5 | 104.2 | 103.4 | 2.8 | 2.9 | 2.9 | | 3.0 | 3.0 | 3.0 | |
| **Intake B** | 07:37 | 9.3 | *Surface* | 24.2 | 24.4 | 24.3 | 8.4 | 8.5 | 8.5 | 33.6 | 33.9 | 33.8 | 7.5 | 7.7 | 7.6 | 108.4 | 110.5 | 109.5 | 1.5 | 1.5 | 1.5 | | 4.0 | 5.0 | 4.5 | |
| | | | *Middle* | 24.2 | 24.2 | 24.2 | 8.4 | 8.4 | 8.4 | 33.6 | 33.4 | 33.5 | 7.5 | 7.5 | 7.5 | 107.9 | 107.8 | 107.9 | 1.2 | 1.2 | 1.2 | 1.3 | 4.0 | 5.0 | 4.5 | 5.3 |
| | | | *Bottom* | 24.3 | 24.1 | 24.2 | 8.4 | 8.3 | 8.4 | 33.6 | 33.7 | 33.7 | 7.3 | 7.3 | 7.3 | 105.2 | 106.8 | 106.0 | 1.1 | 1.1 | 1.1 | | 8.0 | 6.0 | 7.0 | |

Remark or Obsevation: NIL

Note: * Average

** Depth Average

# SIL(E) Water Quality Monitoring Data Record Sheet

Date: 19-Nov-14

Tide: Mid-Flood

Weather: Sunny

Sea Conditions: Moderate

Upstream Control Station: CF

| 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.** |
| **I1** | 15:51 | 13.5 | *Surface* | 24.1 | 24.0 | 24.0 | 8.4 | 8.3 | 8.4 | 33.7 | 33.9 | 33.8 | 7.4 | 7.4 | 7.4 | 106.0 | 103.9 | 105.0 | 1.9 | 1.9 | 1.9 | | 3.0 | 3.0 | 3.0 | |
| | | | *Middle* | 24.0 | 24.0 | 24.0 | 8.4 | 8.4 | 8.4 | 33.6 | 33.9 | 33.8 | 7.2 | 7.3 | 7.2 | 103.3 | 102.3 | 102.8 | 1.6 | 1.6 | 1.6 | 1.8 | 3.0 | 3.0 | 3.0 | 3.2 |
| | | | *Bottom* | 24.0 | 24.0 | 24.0 | 8.4 | 8.5 | 8.5 | 33.6 | 33.5 | 33.6 | 7.1 | 6.9 | 7.0 | 101.6 | 102.6 | 102.1 | 1.8 | 1.8 | 1.8 | | 4.0 | 3.0 | 3.5 | |
| **I2** | 16:11 | 18.1 | *Surface* | 24.0 | 24.0 | 24.0 | 8.4 | 8.4 | 8.4 | 33.7 | 33.6 | 33.6 | 7.2 | 7.2 | 7.2 | 103.7 | 101.5 | 102.6 | 4.5 | 4.6 | 4.6 | | 5.0 | 4.0 | 4.5 | |
| | | | *Middle* | 24.0 | 24.0 | 24.0 | 8.4 | 8.5 | 8.5 | 33.7 | 33.9 | 33.8 | 7.2 | 7.1 | 7.1 | 103.0 | 100.9 | 102.0 | 1.6 | 1.7 | 1.7 | 2.7 | 4.0 | 4.0 | 4.0 | 4.2 |
| | | | *Bottom* | 24.0 | 23.9 | 23.9 | 8.4 | 8.5 | 8.5 | 33.7 | 33.7 | 33.7 | 7.1 | 7.2 | 7.1 | 101.6 | 102.5 | 102.1 | 1.8 | 1.7 | 1.8 | | 4.0 | 4.0 | 4.0 | |
| **Intake A** | 16:32 | 9.5 | *Surface* | 24.1 | 24.0 | 24.0 | 8.5 | 8.5 | 8.5 | 33.8 | 33.9 | 33.8 | 7.6 | 7.5 | 7.5 | 109.1 | 108.9 | 109.0 | 0.9 | 0.9 | 0.9 | | 2.0 | 3.0 | 2.5 | |
| | | | *Middle* | 24.1 | 23.9 | 24.0 | 8.5 | 8.4 | 8.4 | 33.7 | 33.8 | 33.8 | 7.6 | 7.5 | 7.5 | 109.1 | 108.7 | 108.9 | 1.1 | 1.1 | 1.1 | 1.1 | 3.0 | 3.0 | 3.0 | 3.0 |
| | | | *Bottom* | 24.0 | 24.1 | 24.1 | 8.4 | 8.4 | 8.4 | 33.7 | 33.7 | 33.7 | 7.5 | 7.3 | 7.4 | 108.3 | 109.0 | 108.7 | 1.3 | 1.3 | 1.3 | | 4.0 | 3.0 | 3.5 | |
| **Intake B** | 15:30 | 9.6 | *Surface* | 24.0 | 24.1 | 24.0 | 8.4 | 8.5 | 8.5 | 33.7 | 33.5 | 33.6 | 7.3 | 7.4 | 7.3 | 104.5 | 103.4 | 104.0 | 2.3 | 2.4 | 2.4 | | 3.0 | 3.0 | 3.0 | |
| | | | *Middle* | 24.0 | 24.1 | 24.0 | 8.4 | 8.4 | 8.4 | 33.7 | 33.9 | 33.8 | 7.1 | 7.3 | 7.2 | 102.9 | 101.8 | 102.4 | 1.9 | 2.0 | 2.0 | 2.3 | 3.0 | 2.0 | 2.5 | 3.0 |
| | | | *Bottom* | 24.0 | 23.8 | 23.9 | 8.4 | 8.4 | 8.4 | 33.7 | 33.9 | 33.8 | 7.1 | 7.0 | 7.0 | 101.8 | 101.6 | 101.7 | 2.7 | 2.6 | 2.7 | | 3.0 | 4.0 | 3.5 | |
| **CF** | 16:53 | 17.8 | *Surface* | 24.0 | 23.9 | 24.0 | 8.4 | 8.4 | 8.4 | 33.5 | 33.4 | 33.4 | 7.3 | 7.3 | 7.3 | 105.3 | 106.9 | 106.1 | 1.0 | 1.0 | 1.0 | | 3.0 | 4.0 | 3.5 | |
| | | | *Middle* | 24.0 | 24.0 | 24.0 | 8.4 | 8.4 | 8.4 | 33.6 | 33.8 | 33.7 | 7.3 | 7.4 | 7.3 | 104.3 | 106.1 | 105.2 | 1.0 | 1.0 | 1.0 | 1.0 | 3.0 | 4.0 | 3.5 | 3.5 |
| | | | *Bottom* | 24.0 | 24.1 | 24.1 | 8.4 | 8.4 | 8.4 | 33.6 | 33.7 | 33.6 | 7.2 | 7.2 | 7.2 | 104.0 | 103.3 | 103.7 | 1.1 | 1.1 | 1.1 | | 3.0 | 4.0 | 3.5 | |

Remark or Obsevation: NIL

Note: * Average

** Depth Average

# SIL(E) Water Quality Monitoring Data Record Sheet

Date: 19-Nov-14

Tide: Mid-Ebb

Weather: Sunny

Sea Conditions: Moderate

Upstream Control Station: CE

| 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.** |
| **CE** | 09:30 | 24.4 | *Surface* | 23.9 | 23.8 | 23.9 | 8.4 | 8.3 | 8.4 | 33.6 | 33.8 | 33.7 | 7.2 | 7.2 | 7.2 | 103.1 | 101.3 | 102.2 | 1.3 | 1.3 | 1.3 | | 3.0 | 4.0 | 3.5 | |
| | | | *Middle* | 23.9 | 24.0 | 24.0 | 8.4 | 8.4 | 8.4 | 33.4 | 33.3 | 33.4 | 7.0 | 6.8 | 6.9 | 100.0 | 100.1 | 100.1 | 1.9 | 1.9 | 1.9 | 3.0 | 4.0 | 5.0 | 4.5 | 4.3 |
| | | | *Bottom* | 23.9 | 23.9 | 23.9 | 8.4 | 8.5 | 8.5 | 33.5 | 33.4 | 33.4 | 6.9 | 6.8 | 6.9 | 99.3 | 100.4 | 99.9 | 5.7 | 5.8 | 5.8 | | 5.0 | 5.0 | 5.0 | |
| **I1** | 10:13 | 13.0 | *Surface* | 23.9 | 24.1 | 24.0 | 8.4 | 8.5 | 8.5 | 33.5 | 33.5 | 33.5 | 7.3 | 7.3 | 7.3 | 104.7 | 105.1 | 104.9 | 2.4 | 2.3 | 2.4 | | 2.0 | 3.0 | 2.5 | |
| | | | *Middle* | 23.9 | 23.8 | 23.9 | 8.4 | 8.3 | 8.4 | 33.6 | 33.5 | 33.5 | 7.1 | 7.3 | 7.2 | 102.6 | 102.6 | 102.6 | 1.3 | 1.3 | 1.3 | 1.7 | 3.0 | 2.0 | 2.5 | 2.8 |
| | | | *Bottom* | 23.9 | 23.8 | 23.9 | 8.4 | 8.5 | 8.5 | 33.6 | 33.4 | 33.5 | 7.1 | 7.0 | 7.0 | 101.5 | 101.5 | 101.5 | 1.3 | 1.3 | 1.3 | | 3.0 | 4.0 | 3.5 | |
| **I2** | 10:33 | 18.2 | *Surface* | 23.9 | 23.8 | 23.9 | 8.4 | 8.3 | 8.4 | 33.7 | 33.8 | 33.7 | 7.4 | 7.4 | 7.4 | 106.7 | 108.8 | 107.8 | 1.3 | 1.3 | 1.3 | | 4.0 | 3.0 | 3.5 | |
| | | | *Middle* | 24.0 | 24.1 | 24.0 | 8.4 | 8.4 | 8.4 | 33.6 | 33.9 | 33.7 | 7.3 | 7.2 | 7.3 | 105.2 | 104.9 | 105.1 | 1.0 | 1.0 | 1.0 | 1.1 | 3.0 | 3.0 | 3.0 | 3.3 |
| | | | *Bottom* | 23.9 | 24.1 | 24.0 | 8.4 | 8.4 | 8.4 | 33.5 | 33.6 | 33.6 | 7.2 | 7.1 | 7.1 | 103.1 | 104.8 | 104.0 | 1.0 | 1.0 | 1.0 | | 4.0 | 3.0 | 3.5 | |
| **Intake A** | 10:54 | 9.1 | *Surface* | 24.0 | 23.9 | 23.9 | 8.4 | 8.4 | 8.4 | 33.7 | 33.9 | 33.8 | 7.2 | 7.2 | 7.2 | 103.4 | 101.6 | 102.5 | 0.3 | 0.3 | 0.3 | | 4.0 | 3.0 | 3.5 | |
| | | | *Middle* | 23.9 | 23.8 | 23.9 | 8.4 | 8.4 | 8.4 | 33.7 | 33.8 | 33.8 | 7.1 | 7.3 | 7.2 | 102.8 | 101.4 | 102.1 | 0.9 | 0.9 | 0.9 | 1.1 | 3.0 | 4.0 | 3.5 | 3.5 |
| | | | *Bottom* | 23.9 | 23.8 | 23.9 | 8.4 | 8.5 | 8.5 | 33.7 | 34.0 | 33.9 | 7.0 | 7.0 | 7.0 | 100.9 | 102.6 | 101.8 | 2.2 | 2.2 | 2.2 | | 3.0 | 4.0 | 3.5 | |
| **Intake B** | 09:52 | 9.2 | *Surface* | 24.0 | 24.1 | 24.0 | 8.4 | 8.5 | 8.5 | 33.7 | 33.6 | 33.7 | 7.4 | 7.5 | 7.5 | 106.9 | 108.4 | 107.7 | 10.1 | 10.4 | 10.3 | | 3.0 | 5.0 | 4.0 | |
| | | | *Middle* | 24.0 | 24.1 | 24.0 | 8.4 | 8.4 | 8.4 | 33.5 | 33.4 | 33.5 | 7.4 | 7.2 | 7.3 | 106.0 | 105.7 | 105.9 | 0.9 | 0.9 | 0.9 | 4.0 | 4.0 | 5.0 | 4.5 | 4.2 |
| | | | *Bottom* | 23.9 | 24.1 | 24.0 | 8.4 | 8.4 | 8.4 | 33.5 | 33.3 | 33.4 | 7.3 | 7.2 | 7.2 | 104.7 | 103.0 | 103.9 | 0.9 | 0.9 | 0.9 | | 4.0 | 4.0 | 4.0 | |

Remark or Obsevation: NIL

Note: * Average

** Depth Average

# SIL(E) Water Quality Monitoring Data Record Sheet

Date: 21-Nov-14

Tide: Mid-Flood

Weather: Sunny

Sea Conditions: Moderate

Upstream Control Station: CF

| 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.** |
| **I1** | 16:51 | 13.8 | *Surface* | 23.9 | 23.9 | 23.9 | 8.5 | 8.4 | 8.4 | 33.7 | 33.9 | 33.8 | 7.6 | 7.5 | 7.5 | 108.9 | 109.1 | 109.0 | 1.4 | 1.5 | 1.5 | | 4.0 | 4.0 | 4.0 | |
| | | | *Middle* | 23.8 | 23.7 | 23.8 | 8.5 | 8.5 | 8.5 | 33.8 | 34.0 | 33.9 | 7.5 | 7.5 | 7.5 | 108.4 | 110.0 | 109.2 | 1.8 | 1.9 | 1.9 | 2.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| | | | *Bottom* | 23.8 | 23.9 | 23.9 | 8.5 | 8.5 | 8.5 | 33.8 | 34.0 | 33.9 | 7.5 | 7.5 | 7.5 | 108.0 | 106.8 | 107.4 | 2.5 | 2.6 | 2.6 | | 4.0 | 4.0 | 4.0 | |
| **I2** | 17:11 | 18.2 | *Surface* | 23.9 | 24.0 | 23.9 | 8.5 | 8.4 | 8.4 | 33.8 | 34.0 | 33.9 | 7.6 | 7.6 | 7.6 | 109.5 | 110.9 | 110.2 | 1.4 | 1.3 | 1.4 | | 4.0 | 4.0 | 4.0 | |
| | | | *Middle* | 23.9 | 23.9 | 23.9 | 8.5 | 8.5 | 8.5 | 33.7 | 33.8 | 33.8 | 7.7 | 7.6 | 7.6 | 110.3 | 110.7 | 110.5 | 1.4 | 1.3 | 1.4 | 1.3 | 4.0 | 3.0 | 3.5 | 3.8 |
| | | | *Bottom* | 23.9 | 23.7 | 23.8 | 8.5 | 8.4 | 8.4 | 33.7 | 33.7 | 33.7 | 7.6 | 7.7 | 7.7 | 109.8 | 110.9 | 110.4 | 1.2 | 1.2 | 1.2 | | 4.0 | 4.0 | 4.0 | |
| **Intake A** | 17:32 | 9.8 | *Surface* | 24.1 | 24.0 | 24.0 | 8.4 | 8.5 | 8.5 | 33.9 | 34.2 | 34.0 | 8.2 | 8.3 | 8.2 | 117.9 | 120.3 | 119.1 | 0.4 | 0.4 | 0.4 | | 2.0 | 2.0 | 2.0 | |
| | | | *Middle* | 24.1 | 24.0 | 24.0 | 8.4 | 8.4 | 8.4 | 33.9 | 34.0 | 33.9 | 8.2 | 8.1 | 8.1 | 117.8 | 116.1 | 117.0 | 1.6 | 1.6 | 1.6 | 1.3 | 4.0 | 3.0 | 3.5 | 4.3 |
| | | | *Bottom* | 24.0 | 23.9 | 24.0 | 8.4 | 8.4 | 8.4 | 33.8 | 33.6 | 33.7 | 8.0 | 7.8 | 7.9 | 115.0 | 112.5 | 113.8 | 1.9 | 1.9 | 1.9 | | 8.0 | 7.0 | 7.5 | |
| **Intake B** | 16:30 | 9.5 | *Surface* | 23.9 | 23.8 | 23.8 | 8.5 | 8.4 | 8.4 | 33.7 | 34.0 | 33.9 | 7.7 | 7.8 | 7.8 | 111.2 | 113.2 | 112.2 | 0.9 | 0.9 | 0.9 | | 3.0 | 3.0 | 3.0 | |
| | | | *Middle* | 23.9 | 23.9 | 23.9 | 8.5 | 8.5 | 8.5 | 33.7 | 33.9 | 33.8 | 7.7 | 7.8 | 7.8 | 111.1 | 112.9 | 112.0 | 1.1 | 1.1 | 1.1 | 2.7 | 3.0 | 2.0 | 2.5 | 3.2 |
| | | | *Bottom* | 23.9 | 23.9 | 23.9 | 8.5 | 8.6 | 8.5 | 33.7 | 33.9 | 33.8 | 7.7 | 7.8 | 7.8 | 110.6 | 112.5 | 111.6 | 6.0 | 5.9 | 6.0 | | 4.0 | 4.0 | 4.0 | |
| **CF** | 17:53 | 17.5 | *Surface* | 23.9 | 24.0 | 23.9 | 8.5 | 8.5 | 8.5 | 33.7 | 33.8 | 33.8 | 7.6 | 7.5 | 7.5 | 108.7 | 107.3 | 108.0 | 2.1 | 2.1 | 2.1 | | 3.0 | 3.0 | 3.0 | |
| | | | *Middle* | 23.9 | 24.0 | 23.9 | 8.5 | 8.4 | 8.4 | 33.7 | 33.5 | 33.6 | 7.6 | 7.7 | 7.6 | 109.0 | 109.7 | 109.4 | 0.9 | 0.9 | 0.9 | 1.3 | 4.0 | 4.0 | 4.0 | 3.7 |
| | | | *Bottom* | 23.9 | 24.0 | 23.9 | 8.5 | 8.5 | 8.5 | 33.8 | 33.7 | 33.7 | 7.6 | 7.7 | 7.6 | 108.5 | 108.6 | 108.6 | 0.9 | 0.9 | 0.9 | | 4.0 | 4.0 | 4.0 | |

Remark or Obsevation: NIL

Note: * Average

** Depth Average

# SIL(E) Water Quality Monitoring Data Record Sheet

Date: 21-Nov-14

Tide: Mid-Ebb

Weather: Sunny

Sea Conditions: Moderate

Upstream Control Station: CE

| 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.** |
| **CE** | 10:45 | 23.9 | *Surface* | 23.9 | 23.8 | 23.8 | 8.4 | 8.4 | 8.4 | 33.7 | 33.8 | 33.7 | 7.6 | 7.7 | 7.6 | 108.5 | 106.2 | 107.4 | 1.5 | 1.5 | 1.5 | | 4.0 | 4.0 | 4.0 | |
| | | | *Middle* | 23.8 | 23.8 | 23.8 | 8.4 | 8.4 | 8.4 | 33.7 | 33.4 | 33.6 | 7.4 | 7.5 | 7.5 | 106.6 | 105.5 | 106.1 | 1.3 | 1.4 | 1.4 | 1.3 | 4.0 | 4.0 | 4.0 | 4.2 |
| | | | *Bottom* | 23.8 | 23.8 | 23.8 | 8.4 | 8.3 | 8.3 | 33.7 | 33.8 | 33.8 | 7.4 | 7.3 | 7.3 | 105.9 | 105.2 | 105.6 | 1.1 | 1.1 | 1.1 | | 5.0 | 4.0 | 4.5 | |
| **I1** | 11:28 | 13.1 | *Surface* | 23.9 | 24.0 | 24.0 | 8.4 | 8.5 | 8.5 | 33.7 | 33.9 | 33.8 | 7.6 | 7.6 | 7.6 | 109.7 | 108.6 | 109.2 | 1.2 | 1.3 | 1.3 | | 4.0 | 4.0 | 4.0 | |
| | | | *Middle* | 23.8 | 23.9 | 23.9 | 8.4 | 8.5 | 8.5 | 33.5 | 33.7 | 33.6 | 7.4 | 7.3 | 7.4 | 106.4 | 106.4 | 106.4 | 1.3 | 1.3 | 1.3 | 1.4 | 4.0 | 4.0 | 4.0 | 4.3 |
| | | | *Bottom* | 23.8 | 23.7 | 23.8 | 8.4 | 8.4 | 8.4 | 33.5 | 33.4 | 33.5 | 7.3 | 7.4 | 7.3 | 104.4 | 103.0 | 103.7 | 1.7 | 1.7 | 1.7 | | 5.0 | 5.0 | 5.0 | |
| **I2** | 11:48 | 18.0 | *Surface* | 24.0 | 24.0 | 24.0 | 8.5 | 8.5 | 8.5 | 33.6 | 33.6 | 33.6 | 7.5 | 7.6 | 7.5 | 107.8 | 109.8 | 108.8 | 1.5 | 1.5 | 1.5 | | 3.0 | 3.0 | 3.0 | |
| | | | *Middle* | 23.9 | 24.0 | 23.9 | 8.5 | 8.5 | 8.5 | 33.6 | 33.9 | 33.7 | 7.6 | 7.7 | 7.6 | 108.5 | 109.9 | 109.2 | 1.4 | 1.5 | 1.5 | 1.5 | 4.0 | 4.0 | 4.0 | 3.8 |
| | | | *Bottom* | 23.8 | 23.8 | 23.8 | 8.5 | 8.5 | 8.5 | 33.6 | 33.8 | 33.7 | 7.4 | 7.4 | 7.4 | 105.4 | 104.8 | 105.1 | 1.6 | 1.6 | 1.6 | | 4.0 | 5.0 | 4.5 | |
| **Intake A** | 12:09 | 9.3 | *Surface* | 24.0 | 23.9 | 23.9 | 8.5 | 8.5 | 8.5 | 33.5 | 33.5 | 33.5 | 7.5 | 7.6 | 7.6 | 108.3 | 110.4 | 109.4 | 2.1 | 2.1 | 2.1 | | 3.0 | 3.0 | 3.0 | |
| | | | *Middle* | 23.8 | 23.7 | 23.8 | 8.5 | 8.5 | 8.5 | 33.6 | 33.9 | 33.7 | 7.5 | 7.6 | 7.5 | 107.2 | 106.2 | 106.7 | 1.3 | 1.3 | 1.3 | 2.2 | 3.0 | 4.0 | 3.5 | 3.8 |
| | | | *Bottom* | 23.8 | 23.9 | 23.9 | 8.5 | 8.4 | 8.4 | 33.6 | 33.5 | 33.5 | 7.3 | 7.2 | 7.2 | 104.6 | 103.3 | 104.0 | 3.1 | 3.2 | 3.2 | | 5.0 | 5.0 | 5.0 | |
| **Intake B** | 11:07 | 9.5 | *Surface* | 24.0 | 23.9 | 23.9 | 8.4 | 8.5 | 8.5 | 33.6 | 33.8 | 33.7 | 7.4 | 7.4 | 7.4 | 106.0 | 106.6 | 106.3 | 1.7 | 1.6 | 1.7 | | 3.0 | 4.0 | 3.5 | |
| | | | *Middle* | 23.9 | 24.0 | 23.9 | 8.5 | 8.4 | 8.4 | 33.6 | 33.8 | 33.7 | 7.4 | 7.5 | 7.5 | 106.7 | 105.4 | 106.1 | 1.1 | 1.1 | 1.1 | 1.4 | 4.0 | 5.0 | 4.5 | 4.5 |
| | | | *Bottom* | 23.8 | 23.9 | 23.9 | 8.4 | 8.4 | 8.4 | 33.6 | 33.5 | 33.6 | 7.5 | 7.6 | 7.5 | 107.4 | 106.6 | 107.0 | 1.3 | 1.3 | 1.3 | | 6.0 | 5.0 | 5.5 | |

Remark or Obsevation: NIL

Note: * Average

** Depth Average

# SIL(E) Water Quality Monitoring Data Record Sheet

Date: 24-Nov-14

Tide: Mid-Flood

Weather: Sunny

Sea Conditions: Moderate

Upstream Control Station: CF

| 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.** |
| **I1** | 17:45 | 14.0 | *Surface* | 23.9 | 23.7 | 23.8 | 8.5 | 8.5 | 8.5 | 33.8 | 33.6 | 33.7 | 8.4 | 8.5 | 8.5 | 121.5 | 120.9 | 121.2 | 1.6 | 1.5 | 1.6 | | 2.0 | 2.0 | 2.0 | |
| | | | *Middle* | 23.9 | 23.7 | 23.8 | 8.5 | 8.6 | 8.5 | 33.8 | 33.6 | 33.7 | 8.4 | 8.3 | 8.3 | 120.1 | 119.1 | 119.6 | 1.2 | 1.2 | 1.2 | 1.4 | 2.0 | 2.0 | 2.0 | 2.2 |
| | | | *Bottom* | 23.9 | 24.0 | 23.9 | 8.5 | 8.4 | 8.4 | 33.8 | 34.0 | 33.9 | 8.3 | 8.1 | 8.2 | 118.9 | 120.6 | 119.8 | 1.4 | 1.4 | 1.4 | | 2.0 | 3.0 | 2.5 | |
| **I2** | 18:28 | 18.1 | *Surface* | 23.9 | 24.1 | 24.0 | 8.5 | 8.5 | 8.5 | 33.8 | 33.9 | 33.9 | 8.3 | 8.5 | 8.4 | 119.8 | 122.1 | 121.0 | 1.4 | 1.4 | 1.4 | | 2.0 | 2.0 | 2.0 | |
| | | | *Middle* | 23.9 | 23.8 | 23.8 | 8.5 | 8.5 | 8.5 | 33.8 | 33.9 | 33.9 | 8.5 | 8.5 | 8.5 | 121.7 | 124.1 | 122.9 | 1.1 | 1.1 | 1.1 | 1.2 | 3.0 | 2.0 | 2.5 | 3.0 |
| | | | *Bottom* | 23.8 | 23.9 | 23.9 | 8.5 | 8.5 | 8.5 | 33.8 | 34.0 | 33.9 | 8.3 | 8.1 | 8.2 | 118.7 | 116.5 | 117.6 | 1.0 | 1.0 | 1.0 | | 5.0 | 4.0 | 4.5 | |
| **Intake A** | 18:48 | 9.5 | *Surface* | 23.9 | 23.8 | 23.8 | 8.4 | 8.4 | 8.4 | 33.8 | 33.8 | 33.8 | 8.3 | 8.3 | 8.3 | 119.0 | 119.3 | 119.2 | 1.2 | 1.2 | 1.2 | | 2.0 | 2.0 | 2.0 | |
| | | | *Middle* | 23.9 | 23.9 | 23.9 | 8.5 | 8.5 | 8.5 | 33.8 | 34.0 | 33.9 | 8.3 | 8.3 | 8.3 | 118.8 | 120.9 | 119.9 | 1.3 | 1.3 | 1.3 | 1.2 | 2.0 | 2.0 | 2.0 | 2.2 |
| | | | *Bottom* | 23.9 | 23.7 | 23.8 | 8.5 | 8.4 | 8.4 | 33.8 | 33.9 | 33.8 | 8.3 | 8.3 | 8.3 | 118.7 | 119.0 | 118.9 | 1.2 | 1.2 | 1.2 | | 2.0 | 3.0 | 2.5 | |
| **Intake B** | 19:09 | 9.6 | *Surface* | 24.1 | 23.9 | 24.0 | 8.6 | 8.6 | 8.6 | 33.7 | 33.7 | 33.7 | 9.1 | 9.0 | 9.0 | 130.9 | 129.2 | 130.1 | 0.7 | 0.7 | 0.7 | | 2.0 | 2.0 | 2.0 | |
| | | | *Middle* | 24.1 | 24.0 | 24.0 | 8.5 | 8.5 | 8.5 | 33.7 | 33.9 | 33.8 | 8.9 | 9.0 | 9.0 | 128.3 | 130.2 | 129.3 | 0.6 | 0.6 | 0.6 | 1.3 | 3.0 | 2.0 | 2.5 | 2.5 |
| | | | *Bottom* | 23.9 | 24.1 | 24.0 | 8.5 | 8.6 | 8.6 | 33.7 | 34.0 | 33.9 | 8.3 | 8.3 | 8.3 | 119.6 | 121.5 | 120.6 | 2.5 | 2.5 | 2.5 | | 3.0 | 3.0 | 3.0 | |
| **CF** | 18:07 | 17.6 | *Surface* | 23.9 | 23.7 | 23.8 | 8.5 | 8.6 | 8.5 | 33.8 | 33.9 | 33.8 | 8.0 | 8.1 | 8.0 | 114.6 | 113.1 | 113.9 | 0.3 | 0.3 | 0.3 | | 2.0 | 3.0 | 2.5 | |
| | | | *Middle* | 23.9 | 23.9 | 23.9 | 8.5 | 8.5 | 8.5 | 33.7 | 33.7 | 33.7 | 8.3 | 8.3 | 8.3 | 118.8 | 120.2 | 119.5 | 0.9 | 0.9 | 0.9 | 0.7 | 2.0 | 3.0 | 2.5 | 2.5 |
| | | | *Bottom* | 24.0 | 24.0 | 24.0 | 8.5 | 8.5 | 8.5 | 33.7 | 33.5 | 33.6 | 8.4 | 8.5 | 8.4 | 120.4 | 121.7 | 121.1 | 0.9 | 0.9 | 0.9 | | 2.0 | 3.0 | 2.5 | |

Remark or Obsevation: NIL

Note: * Average

** Depth Average

# SIL(E) Water Quality Monitoring Data Record Sheet

Date: 24-Nov-14

Tide: Mid-Ebb

Weather: Sunny

Sea Conditions: Moderate

Upstream Control Station: CE

| 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.** |
| **CE** | 13:06 | 24.6 | *Surface* | 23.9 | 24.0 | 24.0 | 8.3 | 8.4 | 8.4 | 33.8 | 33.8 | 33.8 | 8.1 | 8.1 | 8.1 | 116.4 | 116.3 | 116.4 | 1.2 | 1.2 | 1.2 | | 3.0 | 3.0 | 3.0 | |
| | | | *Middle* | 23.8 | 23.7 | 23.8 | 8.4 | 8.4 | 8.4 | 33.8 | 34.1 | 33.9 | 7.9 | 8.0 | 7.9 | 113.0 | 114.3 | 113.7 | 1.9 | 1.9 | 1.9 | 1.6 | 3.0 | 4.0 | 3.5 | 3.5 |
| | | | *Bottom* | 23.8 | 23.9 | 23.9 | 8.4 | 8.4 | 8.4 | 33.8 | 34.1 | 34.0 | 7.7 | 7.9 | 7.8 | 111.0 | 108.7 | 109.9 | 1.5 | 1.6 | 1.6 | | 4.0 | 4.0 | 4.0 | |
| **I1** | 13:26 | 13.2 | *Surface* | 23.9 | 23.9 | 23.9 | 8.5 | 8.4 | 8.4 | 33.8 | 33.7 | 33.8 | 8.2 | 8.2 | 8.2 | 118.4 | 117.2 | 117.8 | 1.2 | 1.3 | 1.3 | | 3.0 | 3.0 | 3.0 | |
| | | | *Middle* | 23.8 | 23.6 | 23.7 | 8.5 | 8.5 | 8.5 | 33.8 | 33.7 | 33.8 | 8.2 | 8.4 | 8.3 | 118.4 | 116.1 | 117.3 | 1.3 | 1.3 | 1.3 | 1.3 | 4.0 | 4.0 | 4.0 | 3.7 |
| | | | *Bottom* | 23.8 | 23.9 | 23.9 | 8.5 | 8.4 | 8.4 | 33.8 | 33.8 | 33.8 | 8.1 | 7.9 | 8.0 | 115.6 | 113.3 | 114.5 | 1.3 | 1.3 | 1.3 | | 4.0 | 4.0 | 4.0 | |
| **I2** | 13:47 | 18.3 | *Surface* | 23.9 | 23.9 | 23.9 | 8.5 | 8.5 | 8.5 | 33.8 | 33.5 | 33.7 | 8.4 | 8.3 | 8.4 | 120.8 | 122.1 | 121.5 | 1.1 | 1.1 | 1.1 | | 4.0 | 4.0 | 4.0 | |
| | | | *Middle* | 23.9 | 23.9 | 23.9 | 8.5 | 8.5 | 8.5 | 33.8 | 33.7 | 33.8 | 8.4 | 8.2 | 8.3 | 120.4 | 122.3 | 121.4 | 1.2 | 1.2 | 1.2 | 1.2 | 4.0 | 4.0 | 4.0 | 5.0 |
| | | | *Bottom* | 23.9 | 23.8 | 23.9 | 8.5 | 8.4 | 8.4 | 33.8 | 33.9 | 33.9 | 8.4 | 8.4 | 8.4 | 120.7 | 122.7 | 121.7 | 1.3 | 1.3 | 1.3 | | 8.0 | 6.0 | 7.0 | |
| **Intake A** | 12:45 | 9.5 | *Surface* | 24.2 | 24.0 | 24.1 | 8.5 | 8.5 | 8.5 | 33.8 | 34.0 | 33.9 | 9.0 | 9.0 | 9.0 | 129.6 | 128.2 | 128.9 | 2.1 | 2.1 | 2.1 | | 4.0 | 3.0 | 3.5 | |
| | | | *Middle* | 24.0 | 24.0 | 24.0 | 8.5 | 8.5 | 8.5 | 33.7 | 33.8 | 33.8 | 8.7 | 8.5 | 8.6 | 124.9 | 125.2 | 125.1 | 0.9 | 0.9 | 0.9 | 1.4 | 6.0 | 7.0 | 6.5 | 6.2 |
| | | | *Bottom* | 23.9 | 23.7 | 23.8 | 8.5 | 8.5 | 8.5 | 33.7 | 33.5 | 33.6 | 8.3 | 8.3 | 8.3 | 119.8 | 117.9 | 118.9 | 1.2 | 1.2 | 1.2 | | 8.0 | 9.0 | 8.5 | |
| **Intake B** | 14:08 | 9.2 | *Surface* | 23.9 | 23.9 | 23.9 | 8.4 | 8.4 | 8.4 | 33.8 | 33.6 | 33.7 | 7.9 | 8.0 | 8.0 | 114.1 | 112.1 | 113.1 | 1.2 | 1.2 | 1.2 | | 4.0 | 3.0 | 3.5 | |
| | | | *Middle* | 23.9 | 23.9 | 23.9 | 8.4 | 8.3 | 8.4 | 33.8 | 33.5 | 33.6 | 8.1 | 8.2 | 8.1 | 116.2 | 117.7 | 117.0 | 0.9 | 0.9 | 0.9 | 1.6 | 6.0 | 7.0 | 6.5 | 6.0 |
| | | | *Bottom* | 23.9 | 23.9 | 23.9 | 8.4 | 8.5 | 8.5 | 33.8 | 34.0 | 33.9 | 8.1 | 8.1 | 8.1 | 117.1 | 119.4 | 118.3 | 2.8 | 2.7 | 2.8 | | 8.0 | 8.0 | 8.0 | |

Remark or Obsevation: NIL

Note: * Average

** Depth Average

# SIL(E) Water Quality Monitoring Data Record Sheet

Date: 26-Nov-14

Tide: Mid-Flood

Weather: Sunny

Sea Conditions: Moderate

Upstream Control Station: CF

| 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.** |
| **I1** | 09:06 | 13.9 | *Surface* | 23.9 | 23.9 | 23.9 | 8.5 | 8.4 | 8.5 | 33.5 | 33.7 | 33.6 | 8.1 | 8.0 | 8.1 | 117.0 | 116.8 | 116.9 | 1.5 | 1.4 | 1.5 | | 7.0 | 6.0 | 6.5 | |
| | | | *Middle* | 23.9 | 23.8 | 23.8 | 8.5 | 8.6 | 8.6 | 33.5 | 33.5 | 33.5 | 8.1 | 8.1 | 8.1 | 115.7 | 114.5 | 115.1 | 1.5 | 1.5 | 1.5 | 1.6 | 6.0 | 6.0 | 6.0 | 6.2 |
| | | | *Bottom* | 23.9 | 23.9 | 23.9 | 8.5 | 8.5 | 8.5 | 33.5 | 33.4 | 33.5 | 8.0 | 8.0 | 8.0 | 115.1 | 112.9 | 114.0 | 1.8 | 1.8 | 1.8 | | 6.0 | 6.0 | 6.0 | |
| **I2** | 09:26 | 17.9 | *Surface* | 23.9 | 23.8 | 23.9 | 8.5 | 8.5 | 8.5 | 33.6 | 33.4 | 33.5 | 7.8 | 7.9 | 7.8 | 111.5 | 113.9 | 112.7 | 1.9 | 2.0 | 2.0 | | 5.0 | 5.0 | 5.0 | |
| | | | *Middle* | 23.9 | 23.9 | 23.9 | 8.5 | 8.5 | 8.5 | 33.6 | 33.9 | 33.8 | 8.1 | 8.2 | 8.1 | 116.1 | 117.0 | 116.6 | 1.3 | 1.2 | 1.3 | 1.6 | 4.0 | 5.0 | 4.5 | 4.8 |
| | | | *Bottom* | 23.9 | 23.7 | 23.8 | 8.5 | 8.5 | 8.5 | 33.6 | 33.4 | 33.5 | 8.0 | 7.9 | 8.0 | 115.5 | 114.9 | 115.2 | 1.4 | 1.5 | 1.5 | | 5.0 | 5.0 | 5.0 | |
| **Intake A** | 09:47 | 9.3 | *Surface* | 24.0 | 23.8 | 23.9 | 8.4 | 8.5 | 8.5 | 33.6 | 33.8 | 33.7 | 7.8 | 7.7 | 7.8 | 112.6 | 111.6 | 112.1 | 1.9 | 1.8 | 1.9 | | 3.0 | 3.0 | 3.0 | |
| | | | *Middle* | 24.0 | 24.1 | 24.0 | 8.5 | 8.6 | 8.5 | 33.6 | 33.5 | 33.6 | 7.9 | 7.8 | 7.8 | 113.3 | 115.0 | 114.2 | 2.7 | 2.8 | 2.8 | 2.4 | 4.0 | 4.0 | 4.0 | 3.3 |
| | | | *Bottom* | 23.9 | 24.0 | 24.0 | 8.5 | 8.4 | 8.4 | 33.7 | 33.8 | 33.7 | 8.0 | 7.9 | 7.9 | 114.3 | 116.4 | 115.4 | 2.7 | 2.6 | 2.7 | | 3.0 | 3.0 | 3.0 | |
| **Intake B** | 08:45 | 9.5 | *Surface* | 23.9 | 23.8 | 23.9 | 8.5 | 8.6 | 8.6 | 33.5 | 33.2 | 33.4 | 7.8 | 7.7 | 7.8 | 112.3 | 113.2 | 112.8 | 0.6 | 0.6 | 0.6 | | 4.0 | 4.0 | 4.0 | |
| | | | *Middle* | 23.9 | 23.9 | 23.9 | 8.5 | 8.5 | 8.5 | 33.5 | 33.7 | 33.6 | 8.0 | 8.1 | 8.1 | 114.8 | 112.8 | 113.8 | 0.9 | 0.9 | 0.9 | 0.9 | 4.0 | 2.0 | 3.0 | 4.2 |
| | | | *Bottom* | 23.8 | 23.9 | 23.9 | 8.5 | 8.5 | 8.5 | 32.9 | 32.8 | 32.9 | 8.0 | 7.9 | 7.9 | 113.7 | 112.9 | 113.3 | 1.1 | 1.1 | 1.1 | | 6.0 | 5.0 | 5.5 | |
| **CF** | 10:08 | 17.8 | *Surface* | 24.0 | 23.9 | 23.9 | 8.5 | 8.5 | 8.5 | 33.5 | 33.4 | 33.4 | 8.3 | 8.3 | 8.3 | 119.9 | 118.4 | 119.2 | 6.0 | 5.8 | 5.9 | | 4.0 | 2.0 | 3.0 | |
| | | | *Middle* | 23.9 | 24.0 | 24.0 | 8.5 | 8.4 | 8.5 | 33.5 | 33.6 | 33.5 | 8.4 | 8.3 | 8.3 | 120.0 | 122.0 | 121.0 | 1.1 | 1.1 | 1.1 | 2.6 | 5.0 | 3.0 | 4.0 | 3.5 |
| | | | *Bottom* | 23.9 | 24.0 | 23.9 | 8.5 | 8.5 | 8.5 | 33.5 | 33.6 | 33.5 | 8.3 | 8.2 | 8.2 | 118.6 | 117.7 | 118.2 | 0.9 | 0.9 | 0.9 | | 4.0 | 3.0 | 3.5 | |

Remark or Obsevation: NIL

Note: * Average

** Depth Average

# SIL(E) Water Quality Monitoring Data Record Sheet

Date: 26-Nov-14

Tide: Mid-Ebb

Weather: Sunny

Sea Conditions: Moderate

Upstream Control Station: CE

| 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.** |
| **CE** | 15:00 | 24.2 | *Surface* | 23.9 | 23.9 | 23.9 | 8.5 | 8.5 | 8.5 | 33.5 | 33.6 | 33.6 | 8.3 | 8.2 | 8.2 | 118.5 | 119.4 | 119.0 | 1.7 | 1.7 | 1.7 | | 5.0 | 5.0 | 5.0 | |
| | | | *Middle* | 23.9 | 23.7 | 23.8 | 8.5 | 8.6 | 8.6 | 33.5 | 33.6 | 33.6 | 8.2 | 8.3 | 8.3 | 118.3 | 116.1 | 117.2 | 1.9 | 2.0 | 2.0 | 2.0 | 5.0 | 6.0 | 5.5 | 5.0 |
| | | | *Bottom* | 23.9 | 23.9 | 23.9 | 8.5 | 8.6 | 8.6 | 33.5 | 33.8 | 33.7 | 8.2 | 8.1 | 8.2 | 118.0 | 118.0 | 118.0 | 2.2 | 2.2 | 2.2 | | 4.0 | 5.0 | 4.5 | |
| **I1** | 15:43 | 13.5 | *Surface* | 24.0 | 24.0 | 24.0 | 8.5 | 8.5 | 8.5 | 33.5 | 33.2 | 33.4 | 8.6 | 8.7 | 8.7 | 124.3 | 122.3 | 123.3 | 1.4 | 1.5 | 1.5 | | 4.0 | 6.0 | 5.0 | |
| | | | *Middle* | 23.7 | 23.7 | 23.7 | 8.5 | 8.6 | 8.6 | 33.5 | 33.7 | 33.6 | 8.4 | 8.4 | 8.4 | 119.5 | 122.0 | 120.8 | 1.3 | 1.3 | 1.3 | 1.4 | 5.0 | 5.0 | 5.0 | 5.0 |
| | | | *Bottom* | 23.7 | 23.6 | 23.6 | 8.5 | 8.5 | 8.5 | 33.5 | 33.4 | 33.5 | 8.3 | 8.2 | 8.2 | 118.3 | 118.6 | 118.5 | 1.5 | 1.4 | 1.5 | | 5.0 | 5.0 | 5.0 | |
| **I2** | 16:03 | 18.1 | *Surface* | 24.0 | 24.0 | 24.0 | 8.5 | 8.6 | 8.6 | 33.5 | 33.6 | 33.6 | 8.6 | 8.8 | 8.7 | 123.4 | 122.5 | 123.0 | 1.0 | 1.0 | 1.0 | | 4.0 | 3.0 | 3.5 | |
| | | | *Middle* | 23.8 | 23.6 | 23.7 | 8.5 | 8.6 | 8.6 | 33.5 | 33.3 | 33.4 | 8.4 | 8.3 | 8.4 | 120.4 | 122.2 | 121.3 | 1.2 | 1.1 | 1.2 | 1.1 | 5.0 | 3.0 | 4.0 | 4.2 |
| | | | *Bottom* | 23.7 | 23.7 | 23.7 | 8.5 | 8.5 | 8.5 | 33.5 | 33.8 | 33.7 | 8.3 | 8.3 | 8.3 | 118.4 | 116.1 | 117.3 | 1.3 | 1.2 | 1.3 | | 6.0 | 4.0 | 5.0 | |
| **Intake A** | 16:24 | 9.3 | *Surface* | 23.7 | 23.8 | 23.8 | 8.5 | 8.5 | 8.5 | 33.6 | 33.7 | 33.6 | 8.4 | 8.2 | 8.3 | 120.1 | 119.6 | 119.9 | 1.1 | 1.1 | 1.1 | | 4.0 | 4.0 | 4.0 | |
| | | | *Middle* | 23.7 | 23.7 | 23.7 | 8.5 | 8.5 | 8.5 | 33.6 | 33.7 | 33.6 | 8.3 | 8.2 | 8.3 | 119.5 | 117.5 | 118.5 | 1.1 | 1.1 | 1.1 | 1.2 | 5.0 | 6.0 | 5.5 | 5.2 |
| | | | *Bottom* | 23.7 | 23.6 | 23.6 | 8.5 | 8.5 | 8.5 | 33.5 | 33.3 | 33.4 | 8.3 | 8.1 | 8.2 | 118.1 | 116.1 | 117.1 | 1.4 | 1.4 | 1.4 | | 5.0 | 7.0 | 6.0 | |
| **Intake B** | 15:22 | 9.4 | *Surface* | 24.1 | 24.0 | 24.0 | 8.6 | 8.6 | 8.6 | 33.5 | 33.5 | 33.5 | 8.9 | 8.8 | 8.9 | 128.7 | 126.0 | 127.4 | 0.8 | 0.8 | 0.8 | | 3.0 | 5.0 | 4.0 | |
| | | | *Middle* | 24.0 | 23.8 | 23.9 | 8.6 | 8.5 | 8.5 | 33.5 | 33.2 | 33.4 | 8.9 | 8.8 | 8.9 | 128.5 | 127.8 | 128.2 | 1.6 | 1.5 | 1.6 | 1.1 | 5.0 | 5.0 | 5.0 | 4.7 |
| | | | *Bottom* | 24.0 | 24.0 | 24.0 | 8.5 | 8.5 | 8.5 | 33.5 | 33.8 | 33.7 | 8.8 | 8.9 | 8.8 | 126.0 | 124.4 | 125.2 | 0.9 | 0.9 | 0.9 | | 5.0 | 5.0 | 5.0 | |

Remark or Obsevation: NIL

Note: * Average

** Depth Average

# SIL(E) Water Quality Monitoring Data Record Sheet

Date: 28-Nov-14

Tide: Mid-Flood

Weather: Sunny

Sea Conditions: Moderate

Upstream Control Station: CF

| 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.** |
| **I1** | 11:06 | 14.1 | *Surface* | 24.3 | 24.2 | 24.3 | 8.5 | 8.6 | 8.6 | 33.5 | 33.6 | 33.6 | 8.9 | 8.7 | 8.8 | 128.3 | 126.2 | 127.3 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | |
| | | | *Middle* | 24.2 | 24.0 | 24.1 | 8.5 | 8.5 | 8.5 | 33.5 | 33.4 | 33.5 | 8.5 | 8.6 | 8.6 | 123.2 | 123.5 | 123.4 | 2.2 | 2.2 | 2.2 | 1.9 | 3.0 | 3.0 | 3.0 | 2.5 |
| | | | *Bottom* | 24.2 | 24.1 | 24.2 | 8.5 | 8.6 | 8.6 | 33.6 | 33.5 | 33.5 | 7.7 | 7.6 | 7.7 | 110.6 | 109.0 | 109.8 | 1.6 | 1.6 | 1.6 | | 3.0 | 2.0 | 2.5 | |
| **I2** | 11:26 | 18.0 | *Surface* | 24.3 | 24.3 | 24.3 | 8.5 | 8.5 | 8.5 | 33.6 | 33.8 | 33.7 | 9.1 | 8.9 | 9.0 | 131.2 | 131.5 | 131.4 | 2.6 | 2.6 | 2.6 | | 3.0 | 2.0 | 2.5 | |
| | | | *Middle* | 24.2 | 24.1 | 24.2 | 8.5 | 8.6 | 8.6 | 33.6 | 33.4 | 33.5 | 8.4 | 8.3 | 8.4 | 121.7 | 120.8 | 121.3 | 2.8 | 2.9 | 2.9 | 2.5 | 3.0 | 3.0 | 3.0 | 2.5 |
| | | | *Bottom* | 24.2 | 24.1 | 24.2 | 8.5 | 8.4 | 8.5 | 33.6 | 33.9 | 33.8 | 7.8 | 7.7 | 7.8 | 112.9 | 113.4 | 113.2 | 2.1 | 2.2 | 2.2 | | 2.0 | 2.0 | 2.0 | |
| **Intake A** | 11:47 | 9.5 | *Surface* | 24.3 | 24.4 | 24.4 | 8.5 | 8.4 | 8.4 | 33.7 | 33.7 | 33.7 | 8.8 | 8.7 | 8.8 | 126.8 | 128.6 | 127.7 | 2.5 | 2.5 | 2.5 | | 3.0 | 3.0 | 3.0 | |
| | | | *Middle* | 24.2 | 24.0 | 24.1 | 8.5 | 8.5 | 8.5 | 33.7 | 33.5 | 33.6 | 8.0 | 8.0 | 8.0 | 116.2 | 115.2 | 115.7 | 2.6 | 2.5 | 2.6 | 2.4 | 3.0 | 2.0 | 2.5 | 2.8 |
| | | | *Bottom* | 24.2 | 24.4 | 24.3 | 8.5 | 8.5 | 8.5 | 33.6 | 33.4 | 33.5 | 7.8 | 7.7 | 7.8 | 113.3 | 111.7 | 112.5 | 2.1 | 2.1 | 2.1 | | 4.0 | 2.0 | 3.0 | |
| **Intake B** | 10:45 | 9.5 | *Surface* | 24.3 | 24.2 | 24.3 | 8.5 | 8.5 | 8.5 | 33.5 | 33.5 | 33.5 | 8.9 | 8.9 | 8.9 | 129.2 | 128.0 | 128.6 | 1.8 | 1.8 | 1.8 | | 3.0 | 2.0 | 2.5 | |
| | | | *Middle* | 24.2 | 24.0 | 24.1 | 8.5 | 8.5 | 8.5 | 33.5 | 33.6 | 33.5 | 8.7 | 8.8 | 8.8 | 125.1 | 127.5 | 126.3 | 2.6 | 2.7 | 2.7 | 2.2 | 3.0 | 3.0 | 3.0 | 2.7 |
| | | | *Bottom* | 24.2 | 24.3 | 24.3 | 8.5 | 8.5 | 8.5 | 33.5 | 33.5 | 33.5 | 8.3 | 8.4 | 8.4 | 120.0 | 122.0 | 121.0 | 2.1 | 2.1 | 2.1 | | 3.0 | 2.0 | 2.5 | |
| **CF** | 12:08 | 18.0 | *Surface* | 24.3 | 24.5 | 24.4 | 8.6 | 8.5 | 8.5 | 33.5 | 33.3 | 33.4 | 8.9 | 8.7 | 8.8 | 128.9 | 130.4 | 129.7 | 1.4 | 1.5 | 1.5 | | 3.0 | 3.0 | 3.0 | |
| | | | *Middle* | 24.2 | 24.3 | 24.3 | 8.5 | 8.5 | 8.5 | 33.5 | 33.7 | 33.6 | 8.5 | 8.5 | 8.5 | 123.0 | 124.7 | 123.9 | 1.7 | 1.8 | 1.8 | 1.6 | 3.0 | 3.0 | 3.0 | 3.0 |
| | | | *Bottom* | 24.2 | 24.2 | 24.2 | 8.5 | 8.5 | 8.5 | 33.5 | 33.6 | 33.5 | 8.0 | 8.2 | 8.1 | 115.6 | 115.5 | 115.6 | 1.6 | 1.6 | 1.6 | | 3.0 | 3.0 | 3.0 | |

Remark or Obsevation: NIL

Note: * Average

** Depth Average

# SIL(E) Water Quality Monitoring Data Record Sheet

Date: 28-Nov-14

Tide: Mid-Ebb

Weather: Sunny

Sea Conditions: Moderate

Upstream Control Station: CE

| 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.** |
| **CE** | 16:45 | 23.9 | *Surface* | 23.9 | 23.9 | 23.9 | 8.5 | 8.5 | 8.5 | 33.2 | 33.3 | 33.3 | 8.0 | 7.9 | 8.0 | 115.0 | 116.6 | 115.8 | 1.2 | 1.2 | 1.2 | | 3.0 | 2.0 | 2.5 | |
| | | | *Middle* | 23.9 | 24.0 | 23.9 | 8.5 | 8.5 | 8.5 | 33.3 | 33.0 | 33.2 | 7.9 | 7.8 | 7.9 | 113.2 | 113.6 | 113.4 | 1.5 | 1.5 | 1.5 | 1.4 | 2.0 | 2.0 | 2.0 | 2.3 |
| | | | *Bottom* | 23.9 | 23.8 | 23.8 | 8.5 | 8.5 | 8.5 | 33.2 | 33.1 | 33.2 | 7.7 | 7.5 | 7.6 | 109.8 | 110.2 | 110.0 | 1.5 | 1.5 | 1.5 | | 3.0 | 2.0 | 2.5 | |
| **I1** | 17:28 | 13.3 | *Surface* | 24.0 | 24.0 | 24.0 | 8.5 | 8.6 | 8.6 | 33.2 | 33.5 | 33.4 | 8.0 | 8.2 | 8.1 | 115.6 | 116.4 | 116.0 | 2.1 | 2.1 | 2.1 | | 3.0 | 2.0 | 2.5 | |
| | | | *Middle* | 23.8 | 23.7 | 23.8 | 8.5 | 8.6 | 8.6 | 33.3 | 33.6 | 33.5 | 7.8 | 8.0 | 7.9 | 112.0 | 112.1 | 112.1 | 2.0 | 2.1 | 2.1 | 2.2 | 2.0 | 4.0 | 3.0 | 2.7 |
| | | | *Bottom* | 23.7 | 23.8 | 23.7 | 8.5 | 8.4 | 8.5 | 33.2 | 33.5 | 33.4 | 7.9 | 8.0 | 8.0 | 113.1 | 113.6 | 113.4 | 2.5 | 2.6 | 2.6 | | 2.0 | 3.0 | 2.5 | |
| **I2** | 17:48 | 18.0 | *Surface* | 24.0 | 23.8 | 23.9 | 8.5 | 8.5 | 8.5 | 33.2 | 33.0 | 33.1 | 8.2 | 8.3 | 8.3 | 117.6 | 119.4 | 118.5 | 2.5 | 2.5 | 2.5 | | 4.0 | 3.0 | 3.5 | |
| | | | *Middle* | 23.9 | 23.8 | 23.9 | 8.5 | 8.5 | 8.5 | 33.3 | 33.6 | 33.5 | 7.7 | 7.7 | 7.7 | 110.1 | 108.8 | 109.5 | 2.2 | 2.2 | 2.2 | 2.3 | 3.0 | 2.0 | 2.5 | 3.2 |
| | | | *Bottom* | 23.7 | 23.6 | 23.7 | 8.5 | 8.5 | 8.5 | 33.2 | 33.0 | 33.1 | 7.7 | 7.8 | 7.8 | 110.3 | 112.4 | 111.4 | 2.1 | 2.1 | 2.1 | | 3.0 | 4.0 | 3.5 | |
| **Intake A** | 18:09 | 9.4 | *Surface* | 23.7 | 23.9 | 23.8 | 8.5 | 8.5 | 8.5 | 33.2 | 33.4 | 33.3 | 8.1 | 8.1 | 8.1 | 116.3 | 118.7 | 117.5 | 2.3 | 2.3 | 2.3 | | 2.0 | 2.0 | 2.0 | |
| | | | *Middle* | 23.7 | 23.6 | 23.7 | 8.5 | 8.6 | 8.5 | 33.2 | 32.9 | 33.1 | 7.9 | 7.9 | 7.9 | 113.2 | 114.8 | 114.0 | 2.7 | 2.7 | 2.7 | 2.4 | 3.0 | 2.0 | 2.5 | 2.2 |
| | | | *Bottom* | 23.7 | 23.8 | 23.7 | 8.5 | 8.5 | 8.5 | 33.3 | 33.0 | 33.2 | 7.9 | 7.9 | 7.9 | 113.0 | 113.2 | 113.1 | 2.2 | 2.2 | 2.2 | | 2.0 | 2.0 | 2.0 | |
| **Intake B** | 17:07 | 9.3 | *Surface* | 24.0 | 24.0 | 24.0 | 8.5 | 8.5 | 8.5 | 33.3 | 33.3 | 33.3 | 7.7 | 7.8 | 7.8 | 110.2 | 109.8 | 110.0 | 1.9 | 2.0 | 2.0 | | 2.0 | 3.0 | 2.5 | |
| | | | *Middle* | 24.0 | 24.2 | 24.1 | 8.5 | 8.6 | 8.6 | 33.2 | 33.3 | 33.3 | 7.6 | 7.6 | 7.6 | 109.9 | 108.6 | 109.3 | 2.0 | 2.1 | 2.1 | 2.0 | 3.0 | 4.0 | 3.5 | 2.7 |
| | | | *Bottom* | 24.0 | 24.1 | 24.0 | 8.5 | 8.6 | 8.6 | 33.2 | 33.5 | 33.4 | 7.5 | 7.4 | 7.5 | 107.6 | 109.5 | 108.6 | 2.1 | 2.0 | 2.1 | | 2.0 | 2.0 | 2.0 | |

Remark or Obsevation: NIL

Note: * Average

** Depth Average

# APPENDIX E

## Review of Exceedance in Environmental Monitoring

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# APPENDIX F

# Implementation of Environmental Mitigation Measures

| EIA Ref. | EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measure & Main Concerns to address | Who to implement the measure? | Location of the measure | When to implement the measure? | What requirements or standards for the measure to achieve? | Implementation status |
|---|---|---|---|---|---|---|---|---|
| **Noise Impact (Construction Phase)** | | | | | | | | |
| | | *Airborne* | | | | | | |
| 3.4.1.4 | 2 | **Adoption of Quieter PME**<br>The recommended quieter PME adopted in the assessment were taken from the BS5228: Part 1:2009 and are presented in **Table 3.20**. It should be noted that the silenced PME selected for assessment can be found in Hong Kong. | To minimize the construction air-borne noise impact | Contractors | Construction Work Sites | During Construction | EIAO and NCO | Being implemented |
| 3.4.1.4 | 2 | **Use of Movable Noise Barrier**<br>The use of movable barrier for certain PME can further alleviate the construction noise impacts. In general, a 5 dB(A) reduction for movable PME and 10 dB(A) for stationary PME can be achieved depending on the actual design of the movable noise barrier. The Contractor shall be responsible for design of the movable noise barrier with due consideration given to the size of the PME and the requirement for intercepting the line of sight between the NSRs and PME. Barrier material with surface mass in excess of 7 $kg/m^2$ is recommended to achieve the predicted screening effect. | To minimize the construction air-borne noise impact | Contractors | Construction Work Sites | During Construction | EIAO and NCO | Being implemented |
| 3.4.1.4 | 2 | **Use of Noise Enclosure/ Acoustic Shed**<br>The use of noise enclosure or acoustic shed is to cover stationary PME such as air compressor and concrete pump. With the adoption of the noise enclosure, the PME could be completely screened, and noise reduction of 15 dB(A) can be achieved according to the GW-TM. | To minimize the construction air-borne noise impact | Contractors | Construction Work Sites | During Construction | EIAO and NCO | Being implemented |
| 3.4.1.4 | 2 | **Use of Silencer**<br>To reduce noise emission from the ventilation fans, silencers are also recommended to be used in fan ventilation system to attenuate noise generated during fan operation to achieve a noise reduction of 15 dB(A). | To minimize the construction air-borne noise impact | Contractors | Construction Work Sites | During Construction | EIAO and NCO | Being implemented |

| EIA Ref. | EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measure & Main Concerns to address | Who to implement the measure? | Location of the measure | When to implement the measure? | What requirements or standards for the measure to achieve? | Implementation status |
|---|---|---|---|---|---|---|---|---|
| 3.4.1.4 | 2 | **Use of Noise Insulating Fabric**<br>Noise insulating fabric (the Fabric) can also be adopted for certain PME (e.g. drill rig, pilling auger etc). The Fabric should be lapped such that there are no openings or gaps on the joints. Technical data from manufacturers state that by using the Fabric, a noise reduction of over 10 dB(A) can be achieved on noise level. | To minimize the construction air-borne noise impact | Contractors | Construction Work Sites | During Construction | EIAO and NCO | Being implemented |
| 3.4.1.4 | 2 | **Good Site Practice**<br>The good site practices listed below should be followed during each phase of construction:<br>• Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme;<br>• Silencers or mufflers on construction equipment should be utilized and properly maintained during the construction programme;<br>• Mobile plant, if any, should be sited as far from NSRs as possible;<br>• Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;<br>• Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and<br>• Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities. | To minimize the construction air-borne noise impact | Contractors | Construction Work Sites | During Construction | EIAO and NCO | Being implemented |
| | | *Ground-borne* | | | | | | |
| 3.4.2.5 | 2 | PME that is in intermittent use should be shut down between work periods or should be throttled down to a minimum. | To minimize the construction ground-borne noise impact | Contractors | Tunnel site near Lei Tung Station | During Construction | NCO | To be implemented as per construction programme |

| EIA Ref. | EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measure & Main Concerns to address | Who to implement the measure? | Location of the measure | When to implement the measure? | What requirements or standards for the measure to achieve? | Implementation status |
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| **Noise Impact (Operation Phase)** | | | | | | | | |
| | | *Airborne* | | | | | | |
| | | Railway Noise | | | | | | |
| 3.5.1.1 | 2 | Erection of noise barrier/ enclosure along the viaduct section as shown in **Table 3.52** and illustrated in **Figures 3.25** to **3.27**.<br><br>For the 'Further Mitigation Measures for Existing and Planned NSRs', additional noise barriers/semi-enclosures have been recommended for viaduct sections shown in **Table 3.57** and illustrated in **Figure 3.28** to **3.30**. The viaduct structure should allow further installation of noise barrier or enclosure at the later commissioning stage, if required. | To minimize the railway airborne noise along the viaduct section of SIL(E) | MTRC / Contractor | West of ex-Canadian Hospital site, West of Ocean Park G/IC site, East and West of Wong Chuk Hang Residential Zone, along Wong Chuk Hang Nullah and along Ap Lei Chau Bridge as shown in Figure 3.25 to Figure 3.30. | Before Operation | EIAO and NCO | To be implemented as per construction programme |
| | | Fixed Plant Noise | | | | | | |
| 3.5.1.2 | 2 | The following noise reduction measures shall be considered as far as practicable during construction:<br>• Choose quieter plant such as those which have been effectively silenced;<br>• Include noise levels specification when ordering new plant (including chillier and E/M equipment);<br>• Locate fixed plant/louver away from any NSRs as far as practicable;<br>• Locate fixed plant in walled plant rooms or in specially designed enclosures;<br>• Locate noisy machines in a basement or a completely separate building;<br>• Install direct noise mitigation measures including silencers, acoustic louvers and acoustic enclosure where necessary; and<br>• Develop and implement a regularly scheduled plant maintenance programme so that equipment is properly operated and serviced in order to maintain a controlled level of noise. | To minimize the fixed plant noise impact | MTRC | All stations, entrances, and ventilation buildings | Before Operation | EIAO and NCO | To be implemented as per construction programme |

| EIA Ref. | EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measure & Main Concerns to address | Who to implement the measure? | Location of the measure | When to implement the measure? | What requirements or standards for the measure to achieve? | Implementation status |
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| | | *Ground-borne* | | | | | | |
| 3.5.2.3 | 2 | Using of incline turnout (a 5 dB(A) reduction in turnout and crossing vibration) and Type 1a resilient baseplated trackform within the SOH station. | To minimize the railway ground-borne noise impact | MTRC / Contractor | South Horizons Station | Before Operation | EIAO and NCO | To be implemented as per construction programme |
| **Ecological Impact (Construction Phase)** | | | | | | | | |
| | | *Habitat Loss* | | | | | | |
| 4.7.1 | 3 | Minimise habitat loss particularly woodland as far as possible. | Minimize habitat loss | Contractors | Construction Work Sites | During Construction | Annex 16 of EIAO-TM | Being implemented |
| 4.7.1 | 3 | Temporary disturbed woodland should be reinstated in full after the completion of works | To reinstate disturbed woodland habitats | Contractors | Construction Work Sites | After completion of construction works | Annex 16 of EIAO-TM; ETWB TCW No. 2/2004 (for maintenance arrangement of vegetation) | To be implemented as per construction programme |
| 4.7.1 | 3 | Degraded woodland and shrubland should be reinstated after the completion of works as far as possible. | To reinstate disturbed habitats | Contractors | Construction Work Sites | After completion of construction works | Annex 16 of EIAO-TM; ETWB TCW No. 2/2004 (for maintenance arrangement of vegetation) | To be implemented as per construction programme |
| 4.7.1 | 3 | Habitat Compensation of permanent loss of woodland in full in terms of area. | To compensate permanent loss of woodland | Contractors | Construction Work Sites | After completion of construction works | Annex 16 of EIAO-TM; ETWB TCW No. 2/2004 (for maintenance arrangement of vegetation) | To be implemented as per construction programme |
| | | *Ardeid Night Roost* | | | | | | |
| 4.7.2.1 | 3 | **Avoidance of Site Clearance and Tree Felling Works at Wintering Season** Site clearance and tree felling works at the existing ardeid night roost (location described in **Figure 4.15**) should only be carried out at non-wintering season (March to November inclusive). Demarcating clearly the works area and ensuring good site practise to avoid unnecessary disturbance to the ardeids during construction phase. | Avoid and minimize impact on peak period of ardeid roosting | Contractor | Construction Work Sites | During Construction | Annex 16 of EIAO-TM | Being implemented |

| EIA Ref. | EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measure & Main Concerns to address | Who to implement the measure? | Location of the measure | When to implement the measure? | What requirements or standards for the measure to achieve? | Implementation status |
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| 4.7.2.1 and 4.7.2.4 | 3 | **Compensate for loss of roosting trees with replanting of suitable trees**<br>The compensatory planting with suitable, heavy standard trees should be located at the lower course of the WCH Nullah approximately 200m west of the existing night roost (location shown in **Figure 4.15**). Trees should be replanted after construction alongside the nullah to provide a substrate for roosting. | To compensate for permanent loss of roosting trees | Contractors, advised by Ecologist | Construction Work Site at Wong Chuk Hang | After completion of construction works | Annex 16 of EIAO-TM; ETWB TCW No. 2/2004 (for maintenance arrangement of vegetation) | To be implemented as per construction programme |
| 4.7.2.1 | 3 | **Inspection of ardeid night roost for active ardeid nests**<br>When conducting site clearance works at the existing ardeid night roost, the area should be inspected to confirm no active ardeid nest are present. If any active bird nest is observed, suitably sized buffer area should be established to minimize human or machinery disturbance until the nest is abandoned. Also the site should be monitored monthly to check the updated status. | Ensure no impact on active ardeid nests | Contractors, advised by Ecologist | Construction Work Site at Wong Chuk Hang | During Construction | Wild Animals Protection Ordinance (Cap. 170) | Being implemented |
| 4.7.2.2 | 3 | **Avoidance of Construction Activities at Sunset Time**<br>Construction activities using PME at the potential ardeid night roost (location shown in **Figure 4.13**) should be ceased at 18:00 – 06:00 to avoid disturbance to the night roost ardeids. | Minimize noise impact on ardeid roosting and foraging | Contractor | Construction Work Sites | During Construction | Annex 16 of EIAO-TM | Being implemented |
| 4.7.2.4 | 3 | **Coloured Panels on Noise Barriers**<br>The acoustic enclosure/ barrier should be designed with coloured panels to minimize the chance of bird collision. | To minimise the potential for bird strike | Contractors | Construction Work Sites | During Construction | Annex 16 of EIAO-TM; | To be implemented as per construction programme |
| 4.7.3 | 3 | **Magazine Site**<br>Implement good site practice including containment of silt runoff within the site boundary, containment of contaminated soils, appropriate storage of chemicals and wastes. | Avoid impacts to fauna species and water pollution | Contractor | Chung Hom Shan Magazine Site | During Construction | ProPECC Note PN 1/94 Waste Disposal Ordinance (Cap.354) | Implemented |

| EIA Ref. | EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measure & Main Concerns to address | Who to implement the measure? | Location of the measure | When to implement the measure? | What requirements or standards for the measure to achieve? | Implementation status |
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| 4.7.4 | 3 | **Coral Community at Aberdeen Channel**<br>A bridge pier construction method in which a cofferdam would be installed to create a confined dredging environment should be implemented to minimise potential impacts from suspended solid release. Good site practices should be applied to land-based construction works including containment of silt runoff within the site boundary, the containment of contaminated soils for removal from the site and appropriate storage of chemicals and chemical waste. | Avoid release of suspended solid and contaminated runoff to Aberdeen Channel | Contractors | Dredging/ excavation area required for installation of the pier/pier foundations of bridge in Aberdeen Channel | During marine construction works | WQOs & ProPECC Note PN 1/94 | Implemented |
| 4.7.5 | 3 | **Floral Species of Conservation Interest**<br>Transplanting all affected floral species of conservation interest identified in the EcoIA. *In-situ* preservation should be re-considered throughout all stages of the project. | Mitigate the removal impact on floral species of conservation interest | Contractors | Construction Work Sites | During Construction | Annex 16 of EIAO-TM; | Being implemented |
| **Water Quality Impact (Construction)** | | | | | | | | |
| 5.7.1.1 | 4 | **Dredging/ Excavation and Seawall modification for construction of piers/pier foundations of bridge in Aberdeen Channel**<br>To minimise the loss of fine sediment to suspension, steel pile casing and watertight cofferdam should be installed and seawater trapped inside the casing and cofferdam should be pumped out to generate a dry working environment prior to carrying out sediment dredging/ excavation. The water from the dewatering should be appropriately treated with desilting or sedimentation device before discharge. Silt curtains should be deployed to completely enclose the cofferdam installation and removal works and the seawall modification and pile installation works respectively. | Avoid spillage of sediment | MTRC / Contractor | Dredging/ excavation area required for installation of the pier/pier foundations of bridge in Aberdeen Channel | During marine construction works | WQOs & ProPECC Note PN 1/94 | Implemented |

| EIA Ref. | EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measure & Main Concerns to address | Who to implement the measure? | Location of the measure | When to implement the measure? | What requirements or standards for the measure to achieve? | Implementation status |
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| 5.7.1.2 | 4 | **Barging Facilities and Activities**<br>To minimise the release of suspended solids to marine waters, silt curtain should be deployed to completely enclose the marine piles works during installation and decommissioning. Good site practices for operation of barging points should be followed, including appropriate sizing of vessels to ensure adequate clearance between the vessel and the seabed, controlled loading and unloading of barges and hoppers to prevent splash, installing tight fitting seals to the bottom openings to prevent leakage, and measures to prevent foam, oil, grease, scum or litter on the water within the site. | To minimize suspended solids and water quality impacts | MTRC / Contractor | Barging point marine works area | During marine construction works | WQOs & ProPECC Note PN 1/94 | Being implemented |
| 5.7.1.3 | 4 | **Sewage Effluent from Construction Workforce**<br>Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site where necessary to handle sewage from the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance. | To minimize water quality impacts | MTRC / Contractor | All works areas with on-site sanitary facilities | During Construction | Water Pollution Control Ordinance | Being implemented |
| 5.7.1.4 | 4 | **Wastewater Discharge from Tunnelling and Open Cut Excavation**<br>Wastewater with a high level of suspended solids should be treated before discharge by settlement in tanks with sufficient retention time. Oil interceptors would be required to remove the oil, lubricants and grease from wastewater. Should the level of suspended solids be very high, an on-site pre-packaged treatment plant might be required with the addition of flocculants to improve the settlement of solids. A discharge licence under the WPCO would be required for discharge to stormwater drain. | To minimize water quality impacts | MTRC / Contractor | All works areas | During Construction | Water Pollution Control Ordinance | Being implemented |
| 5.7.1.5 | 4 | **Construction Site Runoff and Drainage**<br>The site practices outlined in ProPECC Note PN 1/94 should be followed as far as practicable in order to minimise surface runoff and the chance of erosion. The following measures are recommended to protect water quality and sensitive uses of the coastal area i.e. WSD seawater intakes along the Aberdeen Channel: | To minimize water quality impacts | MTRC / Contractor | All works areas | During Construction | ProPECC Note PN 1/94 | Being implemented |

| EIA Ref. | EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measure & Main Concerns to address | Who to implement the measure? | Location of the measure | When to implement the measure? | What requirements or standards for the measure to achieve? | Implementation status |
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| | | • At the start of site establishment (including the barging facilities), perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system should be undertaken by the Contractor prior to the commencement of construction.<br>• The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into stormwater drainage system through a sediment/silt trap. The sediment/silt traps should be incorporated in the permanent drainage channels to enhance deposition rates, if practical.<br>• Sand/silt removal facilities such as sand/silt traps and sediment basins should be provided to remove sand/silt particles from runoff to meet the requirements of the TM standards under the WPCO. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC Note PN 1/94. Sizes may vary depending upon the flow rate. The detailed design of the sand/silt traps should be undertaken by the Contractor prior to the commencement of construction. | | | | | | |

| EIA Ref. | EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measure & Main Concerns to address | Who to implement the measure? | Location of the measure | When to implement the measure? | What requirements or standards for the measure to achieve? | Implementation status |
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| | | • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly during rainstorms. Deposited silt and grit should be regularly removed, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.<br>• Measures should be taken to minimize the ingress of site drainage into excavations. If excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from foundation excavations should be discharged into storm drains via silt removal facilities.<br>• If surface excavation works cannot be avoided during the wet season (April to September), temporarily exposed slope/soil surfaces should be covered by tarpaulin or other means, as far as practicable, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds. Interception channels should be provided (e.g. along the crest/edge of the excavation) to prevent storm runoff from washing across exposed soil surfaces.<br>• The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows. | | | | | | |

| EIA Ref. | EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measure & Main Concerns to address | Who to implement the measure? | Location of the measure | When to implement the measure? | What requirements or standards for the measure to achieve? | Implementation status |
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| | | • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facility should be provided at construction site exit where practicable. Wash-water should have sand and silt settled out and removed regularly to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.<br>• Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.<br>• Manholes (including newly constructed ones) should be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and stormwater runoff being directed into foul sewers.<br>• Precautions should be taken at any time of the year when rainstorms are likely. Actions should be taken when a rainstorm is imminent or forecasted and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC Note PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes. | | | | | | |

| EIA Ref. | EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measure & Main Concerns to address | Who to implement the measure? | Location of the measure | When to implement the measure? | What requirements or standards for the measure to achieve? | Implementation status |
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| | | • Bentonite slurries used in piling or slurry walling should be reconditioned and reused wherever practicable. Temporary enclosed storage locations should be provided on-site for any unused bentonite that needs to be transported away after all the related construction activities are completed. The requirements in ProPECC Note PN 1/94 should be adhered to in the handling and disposal of bentonite slurries. | | | | | | |
| 5.7.1.6 | 4 | **General Construction Activities**<br>Construction solid waste, debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering any nearby stormwater drain. Stockpiles of cement and other construction materials should be kept covered when not being used.<br>Oils and fuels should only be stored in designated areas which have pollution prevention facilities. To prevent spillage of fuels and solvents to any nearby stormwater drain, all fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. The bund should be drained of rainwater after a rain event. | To minimize water quality impacts | MTRC / Contractor | All works areas | During Construction | EIA Recommendation | Being implemented |
| **Water Quality Impact (Operation)** | | | | | | | | |
| 5.7.2.1 | 4 | **Change in flow regime and hydrology in Aberdeen Channel (Typhoon Shelter) (ATS) due to railway bridge**<br>Streamline shaped bridge pier to reduce friction to the tidal flows across the Aberdeen Channel should been considered in the conceptual design of the bridge form. | To minimize water quality impacts | MTRC / Detailed Design Consultant | Pier/pier foundations of bridge in Aberdeen Channel | During Detailed Design | EIA Recommendation | Implemented |

| EIA Ref. | EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measure & Main Concerns to address | Who to implement the measure? | Location of the measure | When to implement the measure? | What requirements or standards for the measure to achieve? | Implementation status |
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| 5.7.2.3 | 4 | **Sewage and wastewater effluents from stations and depot**<br>• Runoff and spillage prevention measures should conform to relevant engineering and design standards. Any opportunities for the recycling of water within the automatic washing facilities should be sought to minimise discharge requirements. Bio-degradable detergents should be selected to minimise the impact on water quality and associated ecosystems of the receiving water bodies.<br>• Plant maintenance areas should be bunded and constructed on an impermeable floor, and provided with petrol interceptors. Traps and interceptors should be regularly cleaned and maintained, especially after any accidental spillages. Layers of sawdust, sand or equivalent material should be laid underneath and around any plant and equipment that may possibly leak oil.<br>• An emergency spillage action plan should be developed for the Depot to ensure that any accidental spillage event is treated immediately and does not impact on any water bodies.<br>• All fuel tanks and storage areas within the Depot should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent the escape of spilled fuel oils.<br>• Waste oil and other chemicals must be disposed by a licensed contractor to either the approved Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation (Cap 354). | To minimize water quality impacts | MTRC | SIL(E) Stations & WCH Depot | During Operation | WPCO | To be implemented as per construction programme |

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| 5.7.2.4 | 4 | **Runoff from rail tracks**<br>• Track drainage channels discharge should pass through oil/grit interceptors/chambers to remove oil, grease and sediment before being pumped to the public stormwater drainage system.<br>• Silt traps and oil interceptors should be cleaned and maintained regularly.<br>• Oily contents of the oil interceptors should be transferred to an appropriate disposal facility, or to be collected for reuse, if possible. | To minimize water quality impacts | MTRC | Along the SIL(E) tracks | During Operation | WPCO | To be implemented as per construction programme |
| **Landscape and Visual Impact (Construction Phase)** | | | | | | | | |
| Table 6-13 | | **Preservation of Existing Vegetation** | | | | | | |
| CP1.1 | 5 | To retain trees, which have high amenity or ecology value and contribute most to the landscape and visual amenity of the site and its immediate environs. | To minimise the disturbance to the existing landscape resources. | Project Landscape Architect (Detailed Design Consultants)/ Contractor | Site | Throughout design phase | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004 | Implemented |
| CP1.2 | 5 | Creation of precautionary area around trees to be retained equal to half of the trees canopy diameter. Precautionary area to be fenced. | To ensure the success of the tree preservation proposals. | Contractor | Site | Before construction phase commence | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004 | Implemented |
| CP1.3 | 5 | Prohibition of the storage of materials including fuel, the movement of construction vehicles, and the refuelling and washing of equipment including concrete mixers within the precautionary area. | To ensure the success of the tree preservation proposals. | Contractor | Site | Throughout construction phase | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004 | Being implemented |
| CP1.4 | 5 | Phased segmental root pruning for trees to be retained and transplanted over a suitable period (determined by species and size) prior to lifting or site formation works which affect the existing rootball of trees identified for retention. The extent of the pruning will be based on the size and the species of the tree in each case. | To ensure the success of the tree preservation proposals. | Contractor | Site | Throughout construction phase | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004 | Being implemented |
| CP1.5 | 5 | Pruning of the branches of existing trees identified for transplantation and retention to be based on the principle of crown thinning maintaining their form and amenity value. | To ensure the success of the tree preservation proposals. | Contractor | Site | Throughout construction phase | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004 | Being implemented |

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| CP1.6 | 5 | The watering of existing vegetation particularly during periods of excavation when the water table beneath the existing vegetation is lowered. | To ensure the success of the tree preservation proposals. | Contractor | Site | Throughout construction phase | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004 | Being implemented |
| CP1.7 | 5 | The rectification and repair of damaged vegetation following the construction phase to it's original condition prior to the commencement of the works or replacement using specimens of the same species, size and form where appropriate to the design intention of the area affected | To ensure the success of the tree preservation proposals. | Contractor | Site | Throughout construction phase | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004 | To be implemented as per construction programme |
| CP1.8 | 5 | All works affecting the trees identified for retention and transplantation will be carefully monitored. This includes the key stages in the preparation of the trees, the implementation of protection measures and health monitoring through out the construction period | To ensure the success of the tree preservation proposals. | Contractor | Site | Throughout construction phase | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004 | Being implemented |
| CP1.9 | 5 | Detailed landscape and tree preservation proposals will be submitted to the relevant government departments for approval under the lease conditions and in accordance with ETWB TCW No. 2/2004 and 3/2006. | To ensure the tree preservation and planting proposals are integrated with the existing landscape context and that the landscape resources are preserved where appropriate. | Project Landscape Architect (Detailed Design Consultants) | Site | Throughout design phase | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004 | Implemented |
| CP1.10 | 5 | The tree preservation works should be implemented. A tree protection specification would be included within the contract documents. | To ensure the tree preservation and planting proposals are integrated with the existing landscape context and that the landscape resources are preserved where appropriate. | Project Proponent | Site | Throughout design and construction phases | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004 | Implemented |
| Table 6-13 | | **Works Area and Temporary Works Areas** | | | | | | |
| CP2.1 | 5 | Where appropriate to the final design the landscape of these works areas should be restored following the completion of the construction phase. | To minimise the disturbance to existing landscape resources and change of visual amenity. | Contractor | Site | Through out construction phase | TM-EIA Annex 18 | To be implemented as per construction programme |

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| CP2.2 | 5 | Construction site controls should be enforced including the storage of materials, the location and appearance of site accommodation and the careful design of site lighting to prevent light spillage. | To minimise the disturbance to existing landscape resources and change of visual amenity. | Contractor | Site | Through out construction phase | TM-EIA Annex 18 | Being implemented |
| CP2.3 | 5 | Screen the works area during the construction phase through the use of decorative hoarding along the site boundary facing adjacent VSRs | To minimise the disturbance to existing landscape resources and change of visual amenity. | Contractor | Site | Through out construction phase | TM-EIA Annex 18 | Being implemented |
| Table 6-13 | | **Implementation of Mitigation Planting and planting species selection** | | | | | | |
| CP3.1 | 5 | Replanting of disturbed vegetation should be undertaken at the earliest possible stage of the construction phase. | To minimise the disturbance to existing landscape resources and minimize the impacts on the visual amenity of the area. | Contractor | Site | After the site formation and on completion of planting area. | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004 | Being implemented |
| CP3.2 | 5 | Use of native plant species predominantly in the planting design for the buffer areas. | To enhance the local landscape and ecological value. | Project Landscape Architect (Detailed Design Consultants) | Site | After the site formation and on completion of planting area. | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004 | Being implemented |
| CP3.3 | 5 | Proposed mitigation planting shall not only limit to conventional amenity planting, but also considered alternative greening measures such as vertical greening for screening or soften the built structures. Small shrubs, climbing plants, grass and groundcovers shall be used in specific locations according to site condition and at where would not interfere the operation of railway and its associated facilities. | To maximise the planting opportunities | Project Landscape Architect (Detailed Design Consultants) | Site | Throughout design and construction phases | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004 | Being implemented |
| CP3.4 | 5 | The tree planting works should be implemented by approved Landscape Contractors and inspected and approved on site by a qualified Landscape Architect. A tree planting specification would be included within the contract documents. | To ensure the tree preservation and planting proposals are integrated with the existing landscape context and that valuable landscape | Project Proponent | Site | Throughout design and construction phases | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004 | Being implemented |

| EIA Ref. | EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measure & Main Concerns to address | Who to implement the measure? | Location of the measure | When to implement the measure? | What requirements or standards for the measure to achieve? | Implementation status |
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| Table 6-13 | | **Transplantation of Existing Trees** | | | | | | |
| CP4.1 | 5 | The tree transplanting works should be implemented by approved Landscape Contractors and inspected and approved on site by a qualified Landscape Architect. A tree protection / transplanting specification would be included within the contract documents. | To ensure the tree preservation and planting proposals are integrated with the existing landscape context and that valuable landscape resources are preserved where appropriate to the final design. | Project Proponent / Contractor | Site | Throughout design and construction phases | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004 | Being implemented |
| CP4.2 | 5 | Approximately 437 existing trees to be transplanted, majority of them shall be relocated to off-site planting areas. The final recipient sites should be, as far as space allows, adjacent to their current locations alongside of the alignment. | To retain their contribution to the local landscape context. | Project Landscape Architect (Detailed Design Consultants)/ Contractor / Project Proponent (planting areas associated with station and alignment)/ LCSD (roadside and park areas) | Site | Throughout design and construction phases | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004 | Being implemented |
| CP4.3 | 5 | Tree to be transplanted to planting areas identified in the “Southern District Greening Master Plan” shall be, as far as programme allows, directly relocated to their final recipient sites. | To minimise the disturbance to the landscape resources. | Project Landscape Architect (Detailed Design Consultants)/ Contractor / Project Proponent (planting areas associated with station and alignment)/ LCSD (roadside and park areas) | Site | Throughout design and construction phases | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004 | Being implemented |
| CP4.4 | 5 | Tree to be replanted along the alignment shall be kept in the temporary holding nurseries which closely monitoring by landscape contractor. | To enhance the survivals of the transplanted trees | Project Landscape Architect (Detailed Design Consultants)/ Contractor | Site | Throughout design and construction phases | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004 | Being implemented |

| EIA Ref. | EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measure & Main Concerns to address | Who to implement the measure? | Location of the measure | When to implement the measure? | What requirements or standards for the measure to achieve? | Implementation status |
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| CP4.5 | 5 | The implementation programme for the proposed works should reserve enough time for the advance tree transplanting preparation works. | To enhance the survivals of the transplanted trees | Project Proponent/ Project Landscape Architect (Detailed Design Consultants)/ Contractor | Site | Throughout design and construction phases | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004 | Being implemented |
| CP4.6 | 5 | The implementation programme for the proposed works should reserve enough time for the advance tree transplanting preparation works. | To enhance the survivals of the transplanted trees | Project Proponent/ Project Landscape Architect (Detailed Design Consultants)/ Contractor | Site | Throughout design and construction phases | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004 | Being implemented |
| CP4.7 | 5 | The tree transplanting works should be implemented by approved Landscape Contractors and inspected and approved on site by a qualified Landscape Architect. A tree protection specification would be included within the contract documents. | To enhance the survivals of the transplanted trees | Project Proponent/ Project Landscape Architect (Detailed Design Consultants)/ Contractor | Site | Throughout design and construction phases | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004 | Being implemented |
| Table 6-13 | | **Coordination with Concurrent Projects** | | | | | | |
| CP5.1 | 5 | Coordinated implementation programme with concurrent projects | To minimise potential impact where possible reduce the period of disturbance. | Project Proponent / Project Landscape Architect (Detailed Design Consultants)/ Contractor | Site | Throughout design and construction phases | TM-EIA Annex 18. | Being implemented |
| **Landscape and Visual Impact (Operation Phase)** | | | | | | | | |
| Table 6-14 | | **Design of Engineering and Building Structures** | | | | | | |
| OP1.1 | 5 | Where possible integrate the engineering and building structures, as far as technically feasible, with existing built structures. Select responsive The locations for the associated facilities away from landscape and visually sensitive areas. | To ensure the proposals are integrated with the existing landscape and visual context, and avoid cluster effect. | Project Engineer and Architect (Detailed Design Consultants)/ NA | Site | Throughout design phase | TM-EIA Annex 18 and BD | To be implemented as per construction programme |

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| OP1.2 | 5 | Use of a responsive design for the disposition of the main elements including the locations of the proposed above ground structures. | To ensure the proposals are integrated with the existing landscape and visual context, and avoid cluster effect. | Project Engineer and Architect (Detailed Design Consultants)/ NA | Site | Throughout Design phase | TM-EIA Annex 18 and BD | To be implemented as per construction programme |
| OP1.3 | 5 | The disposition and height profile of the proposed ground structures should respond to the existing context. | To enhance the sense of visual integration with the existing context, avoid abrupt transitions between the existing and proposed built environment and reduce the apparent visual mass of the proposed developments. | Project Engineer and Architect (Detailed Design Consultants)/ NA | Site | Throughout design phase | TM-EIA Annex 18 and BD | To be implemented as per construction programme |
| OP1.4 | 5 | Creation of setbacks, articulating the development frontage, maintenance of view corridors and the utilisation of stepped or articulated height profile. | To enhance the sense of visual integration with the existing context, avoid abrupt transitions between the existing and proposed built environment and reduce the apparent visual mass of the proposed developments. | Project Engineer and Architect (Detailed Design Consultants)/ NA | Site | Throughout design phase | TM-EIA Annex 18 and BD | Implemented |
| OP1.5 | 5 | Use of natural materials such as colour blocking, innovative surface treatments and vertical greening. | To reduce the apparent visual mass of the facilities. | Project Engineer and Architect (Detailed Design Consultants)/ NA | Site | Throughout design phase | TM-EIA Annex 18, HKPSG and BD | Implemented |
| OP1.6 | 5 | Use of natural materials such as colour blocking, innovative surface treatments and vertical greening. | To reduce the apparent visual mass of the facilities. | Project Engineer and Architect (Detailed Design Consultants)/ Project Proponent | Site | Throughout design phase | TM-EIA Annex 18, HKPSG and BD | Implemented |
| OP1.7 | 5 | Use of natural tones colour palette and non-reflective materials for outward facing building facades finishes. | To reduce the potential glare effect. | Project Engineer and Architect (Detailed Design Consultants)/ NA | Site | Throughout design phase | TM-EIA Annex 18, HKPSG and BD | Implemented |

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| OP1.8 | 5 | Incorporation of landscaped terraced edges where conditions allow particularly those fronting the public realm. | To reduce the apparent visual mass of the structure and create a more subtle transition with the pedestrian level streetscape. | Project Engineer and Architect (Detailed Design Consultants)/ NA | Site | Throughout design phase | TM-EIA Annex 18, HKPSG and BD | Implemented |
| OP1.9 | 5 | Aesthetic design of architectural and track lighting sign shall follow the following design intention.<br>- Directional and full cut off lighting is recommended particularly for recreation and roadside areas;<br>- Minimize geographical spread of lighting, only applied for safety at the key access points and staircases;<br>- Limited lighting intensity to meet the minimum safety and operational requirement; and<br>- High-pressure sodium road lighting is recommended for more stringent light control. | To reduce the night-time glare effect to the surrounding environs, reducing spillage and thus visual impacts. | Project Engineer and Architect (Detailed Design Consultants)/ NA | Site | Through out operation phase | TM-EIA Annex 18 | To be implemented as per construction programme |
| Table 6-14 | | **Roadside and Amenity Planting** | | | | | | |
| OP2.1 | 5 | Utilise large ornamental trees to maximise the area of visible greenery, soften the interface between the proposed scheme and adjacent urban fabric and enhance the thermal comfort of adjacent spaces. | Provide a linkage with the existing landscape creating a more coherent landscape framework. | Project Landscape Architect(Detailed Design Consultants)/ Project Proponent | Site | Through out design phase | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004, HKPSG and BD | To be implemented as per construction programme |
| OP2.2 | 5 | Planting proposals should respond to the need for visual access in the views from the adjacent neighbourhoods to the roadside or rural landscape. Whereas dense foliage plants shall be provided at other locations to screen and frame views, provide a more shaded environment for pedestrians and provide accents within the existing roadside planting. | Conserve and enhance the landscape interest. | Project Landscape Architect(Detailed Design Consultants)/ Project Proponent | Site | Through out design phase | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004, HKPSG and BD | Implemented |
| OP2.3 | 5 | The planting on sloping ground and areas adjacent to existing woodland shall utilise native species. | Improving the ecological connectivity between existing woodland habitats and creating a more unified and coherent landscape framework. | Project Landscape Architect(Detailed Design Consultants)/ Project Proponent | Site | Through out design phase | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004, HKPSG and BD | Implemented |

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| Table 6-14 | | **Compensatory Planting Proposals** | | | | | | |
| OP3.1 | 5 | Utilise all available spaces for new tree and shrub planting to screen views of the proposals and where this is not possible soften their architectural form. | To soften the architectural form and enhance their visual integration within the future landscape context. | Project Landscape Architect (IDC Consultants) / LCSD | Site | Through out design phase | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004, HKPSG and BD | Implemented |
| OP3.2 | 5 | New tree planting will be concentrated in the proposed amenity areas along the alignment and surrounding the stations, and providing infill planting between the retained and transplanted trees; and on the disturbed slope areas. | To restore and enhance existing landscape context. | Project Proponent / NA | Site | Through out design phase | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004, HKPSG and BD | Implemented |
| OP3.3 | 5 | The preliminary planting proposals for the proposed works shall adopt a compensatory planting ratio of 1:1 (new planting: trees recommended for felling) utilising a combination of mature to light standard sized stock in general roadside and planting areas adjacent to proposed stations and above ground structures. | To compensate the loss of existing trees. | Project Proponent / Project Landscape Architect (IDC Consultants) | Site | Through out design phase | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004, HKPSG | Implemented |
| OP3.4 | 5 | The retention of existing trees through their preservation in-situ, the transplantation of trees found to be in conflict with the proposed works and the successful establishment of the newly planted trees will form part of the roadside and slope planting enhancing the amenity of the local areas and providing for the thermal comfort of pedestrians. | To compensate the loss of existing trees. | Project Proponent / Project Landscape Architect (IDC Consultants) | Site | Through out design phase | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004, HKPSG | Implemented |
| OP3.5 | 5 | The proposed compensatory and new tree planting will utilise a combination of species native to Hong Kong and ornamental feature trees for the slope areas and those alongside the infrastructure corridors. The species selection for the areas adjacent to proposed stations and within the main urban areas will utilise a range of amenity tree species. These proposals will be subject to further development during the detailed design stage of the project. | To compensate the loss of existing trees. | Project Proponent / Project Landscape Architect (IDC Consultants) | Site | Through out design phase | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004, HKPSG | Implemented |

| EIA Ref. | EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measure & Main Concerns to address | Who to implement the measure? | Location of the measure | When to implement the measure? | What requirements or standards for the measure to achieve? | Implementation status |
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| OP3.6 | 5 | The preliminary planting proposals for the proposed works shall adopt a compensatory planting ratio of 1:1 (new planting: trees recommended for felling) utilising a combination of mature to light standard sized stock in general roadside and planting areas adjacent to proposed stations and above ground structures. . | To compensate the loss of existing trees. | Project Proponent / Project Landscape Architect (IDC Consultants) | Site | Through out design phase | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004, HKPSG | Implemented |
| OP3.7 | 5 | The retention of existing trees through their preservation in-situ, the transplantation of trees found to be in conflict with the proposed works and the successful establishment of the newly planted trees will form part of the roadside and slope planting enhancing the amenity of the local areas and providing for the thermal comfort of pedestrians. | To compensate the loss of existing trees. | Project Proponent / Project Landscape Architect (IDC Consultants) | Site | Through out design phase | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004, HKPSG | Implemented |
| OP3.8 | 5 | The proposed compensatory and new tree planting will utilise a combination of species native to Hong Kong and ornamental feature trees for the slope areas and those alongside the infrastructure corridors. The species selection for the areas adjacent to proposed stations and within the main urban areas will utilise a range of amenity tree species. These proposals will be subject to further development during the detailed design stage of the project. | To compensate the loss of existing trees. | Project Proponent / Project Landscape Architect (IDC Consultants) | Site | Through out design phase | TM-EIA Annex 18, ETWB TCW No. 3/2006 & 2/2004, HKPSG | Implemented |

| EIA Ref. | EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measure & Main Concerns to address | Who to implement the measure? | Location of the measure | When to implement the measure? | What requirements or standards for the measure to achieve? | Implementation status |
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| Table 6-14 OP4.1 | 5 | **Treatment of Retaining Wall and Slopes**<br>The proposed treatment of Retaining Wall and Slopes should be aesthetically enhanced through the use of soft landscape works including tree and shrub planting to give man-made slopes a more natural appearance blending into the local rural landscape. | The design seeks to visually integrate the engineered slope feature within the local landscape context. | Project Landscape Architect(Detailed Design Consultants)/ / LCSD or HyD | Site | Through out design phase | TM-EIA Annex 18, HKPSG and BD GEO Publication No. 1/2000 "Technical Guidelines on Landscape Treatment and Bio-engineering for Man-made Slopes and Retaining Walls" For HyD SIMAR slopes refer to Standard Requirements for Handover of Vegetation on to Highways Department (Rev.B). | Implemented |

| EIA Ref. | EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measure & Main Concerns to address | Who to implement the measure? | Location of the measure | When to implement the measure? | What requirements or standards for the measure to achieve? | Implementation status |
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| OP4.2 | 5 | Whip sized tree planting is preferred on the face of soil cut slopes and at the crest and toe of the slope, and within berm planters. The smaller, younger plant stock will adapt to their new growing conditions more quickly than larger sized stock and establish a naturalistic effect more rapidly. | The design seeks to visually integrate the engineered slope feature within the local landscape context. | Project Landscape Architect(Detailed Design Consultants)/ / LCSD or HyD | Site | Through out design phase | TM-EIA Annex 18, HKPSG and BD GEO Publication No. 1/2000 "Technical Guidelines on Landscape Treatment and Bio-engineering for Man-made Slopes and Retaining Walls" For HyD SIMAR slopes refer to Standard Requirements for Handover of Vegetation on to Highways Department (Rev.B). | Implemented |
| Table 6-14 | | **Design of Noise Mitigation Structures** | | | | | | |
| OP5.1 | 5 | Noise mitigation structures installed along the trackside should not be limited to the functional requirements of mitigating train noise. It should also include a requirement that these structures make a positive contribution to the urban / semi-rural landscape character of this area and by doing so improve the perceived landscape quality of the area. These barriers would be visible from some VSRs identified in the study. | To ensure the proposals are integrated with the existing landscape and visual context, and avoid cluster effect. | Project Engineer and Architect (Detailed Design Consultants)/ NA | Site | Throughout design phase | TM-EIA Annex 18 and BD | Implemented |
| OP5.2 | 5 | Promote the innovative use of materials, such as Plexiglas, fibreglass, reinforced concrete etc, whilst remaining aware of the design life span of each of the elements incorporated in the design. | To ensure the proposals are integrated with the existing landscape and visual context, and avoid cluster effect. | Project Engineer and Architect (Detailed Design Consultants)/ NA | Site | Throughout design phase | TM-EIA Annex 18 and BD | Implemented |

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| OP5.3 | 5 | Reduce the visual effect of the structure through the use of form, materials, textures colours and tones. | To ensure the proposals are integrated with the existing landscape and visual context, and avoid cluster effect. | Project Engineer and Architect (Detailed Design Consultants)/ NA | Site | Throughout design phase | TM-EIA Annex 18 and BD | Implemented |
| OP5.4 | 5 | Incorporation of articulation in the façade of the noise barriers / enclosures through the use of some transparent sections near the upper portion of the proposed structure. | To ensure the proposals are integrated with the existing landscape and visual context, and avoid cluster effect. | Project Engineer and Architect (Detailed Design Consultants)/ NA | Site | Throughout design phase | TM-EIA Annex 18 and BD | Implemented |
| OP5.5 | 5 | Reflect the chromatic context of the surrounding urban landscape through the use of colour panels in the proposed noise barrier. | To ensure the proposals are integrated with the existing landscape and visual context, and avoid cluster effect. | Project Engineer and Architect (Detailed Design Consultants)/ NA | Site | Throughout design phase | TM-EIA Annex 18 and BD | Implemented |
| OP5.6 | 5 | Utilise materials, which are non-reflective avoiding glare from incident sunlight. | To ensure the proposals are integrated with the existing landscape and visual context, and avoid cluster effect. | Project Engineer and Architect (Detailed Design Consultants)/ NA | Site | Throughout design phase | TM-EIA Annex 18 and BD | Implemented |
| Table 6-14 | | **Design of Engineering Structures** | | | | | | |
| OP6.1 | 5 | The landscape consultants have worked in unison with the engineers on the aesthetic aspects of the structures and their relationship with the landscape. | To ensure the proposals are integrated with the existing landscape and visual context, and avoid cluster effect. | Project Engineer and Architect and Landscape Architects (Detailed Design Consultants)/ NA | Site | Throughout design phase | TM-EIA Annex 18 and BD, ACABAS | Implemented |
| OP6.2 | 5 | The structures shall aim to “touch” the ground as lightly as possible in order to minimise disturbance to the existing landscape and vegetation below the structures. This would be achieved by designing slender, rounded columns spaced the maximum distance apart. The viaducts would be constructed using pre-cast methods and launched from columns rather than scaffolding. The viaduct should be designed to achieve where appropriate a graceful, curving alignment. | To ensure the proposals are integrated with the existing landscape and visual context, and avoid cluster effect. | Project Engineer and Architect (Detailed Design Consultants)/ NA | Site | Throughout design phase | TM-EIA Annex 18 and BD, ACABAS | Implemented |

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| OP6.3 | 5 | Landform and vegetation in areas disturbed by construction works would be reinstated to blend with the existing landscape patterns or as discussed above. | To ensure the proposals are integrated with the existing landscape and visual context, and avoid cluster effect. | Project Engineer and Architect (Detailed Design Consultants)/ NA | Site | Throughout design phase | TM-EIA Annex 18 and BD, ACABAS | Implemented |
| OP6.4 | 5 | Wherever light levels, the water regime and the requirements of the ecological mitigation measures permit, vegetation would be reinstated below the structures. Irrigation may be required in some locations and hard landscape solutions considered where the clearance is low. Planting would be used wherever possible to minimise the apparent height of structures and to soften their appearance in medium and long distance views. | To ensure the proposals are integrated with the existing landscape and visual context, and avoid cluster effect. | Project Engineer and Architect (Detailed Design Consultants)/ NA | Site | Throughout design phase | TM-EIA Annex 18 and BD, ACABAS | Implemented |
| OP6.2 | 5 | The design of the proposed structures should avoid unnecessary visual clutter, this would be achieved through the co-ordination of the various engineering disciplines involved to arrive at innovative design solutions. | To ensure the proposals are integrated with the existing landscape and visual context, and avoid cluster effect. | Project Engineer and Architect (Detailed Design Consultants)/ NA | Site | Throughout design phase | TM-EIA Annex 18 and BD, ACABAS | Implemented |
| OP6.5 | 5 | Fair faced concrete would not be used for parapets to minimise glare from the structure and to avoid the visually detracting effect of staining. | To ensure the proposals are integrated with the existing landscape and visual context, and avoid cluster effect. | Project Engineer and Architect (Detailed Design Consultants)/ NA | Site | Throughout design phase | TM-EIA Annex 18 and BD, ACABAS | Implemented |
| OP6.6 | 5 | Drainage structures would where possible be concealed within the structure of the proposed viaducts. | To ensure the proposals are integrated with the existing landscape and visual context, and avoid cluster effect. | Project Engineer and Architect (Detailed Design Consultants)/ NA | Site | Throughout design phase | TM-EIA Annex 18 and BD, ACABAS | Implemented |
| Table 6-14 | | **Reinstatement and Creation of Open Spaces and Gardens** | | | | | | |
| OP7.1 | 5 | The landscape consultants have worked in unison with the engineers on the aesthetic aspects for Reinstatement and Creation of Open Spaces and Gardens | To ensure the proposals are integrated with the existing landscape and visual context, and avoid cluster effect. | Project Engineer and Architect and Landscape Architects (Detailed Design Consultants)/ NA | Site | Throughout Design and Construction phases | TM-EIA Annex 18 and BD, ACABAS | Implemented |

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| **Hazard to Life** | | | | | | | | |
| A7A | 6 | Improved truck design to reduce the amount of combustibles in, front exhaust spark arrester, 1 x 9 kg water based and 1 x 9 kg dry chemical powder fire extinguishers for a vehicle with gross weight up to 9 tonnes, and 2 x 2.5kg dry powder and 2 x 10-litre foam fire extinguishers to be provided for a vehicle of 9 tonnes and above, and a hand-held lightning detector to be provided in the vehicle. This should be combined with monthly vehicle inspection. | To meet the ALARP requirement | MTRC/ Contractor | Explosive Magazine | Construction phase | | To be implemented as per construction programme |
| A7A | 6 | Blasting activities including storage and transport of explosives should be supervised and audited by competent site staff to ensure strict compliance with the blasting permit conditions. | To ensure that the risks from the proposed explosives storage and transport would not be unacceptable | MTRC / Contractor | Works areas at which explosives would be stored and/or used | Construction phase | Dangerous Goods Ordinance | To be implemented as per construction programme |
| A7A | 6 | Only the required quantity of explosives for a particular blast should be transported to avoid the return of unused explosives to the magazine.<br>The number of return trips to the magazine with the full load of explosives or partial load should be minimised by proper co-ordination between blasting and delivery.<br>If disposal is required for small quantities, disposal should be made in a controlled and safe manner by a Registered Shotfirer. | To reduce the risk during explosives transport | MTRC/ Contractor | Works areas at which explosives would be stored and/ or used | Construction phase | | To be implemented as per construction programme |
| A7A | 6 | The explosive truck accident frequency should be minimized by implementing a dedicated training programme for both the driver and his attendants, including regular briefing sessions, implementation of a defensive driving attitude. In addition, drivers should be selected based on good safety record, and medical checks. | To meet the ALARP requirement. | MTRC/ Contractor | - | Construction phase | | To be implemented as per construction programme |
| A7A | 6 | The contractor should as far as practicable combine the explosive deliveries for a given work area. | To meet the ALARP requirement. | MTRC/ Contractor | - | Construction phase | | To be implemented as per construction programme |

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| A7A | 6 | The explosive truck fire involvement frequency should be minimized by implementing a better emergency response and training to make sure the adequate fire extinguishers are used and attempt is made to evacuate the area of the incident or securing the explosive load if possible. All explosive vehicles should also be equipped with bigger capacity AFFF-type extinguishers. | To meet the ALARP requirement. | MTRC/ Contractor | - | Construction phase | | To be implemented as per construction programme |
| A7A | 6 | A minimum headway between two consecutive trucks conveys of at least 10 min is recommended. | To ensure that the risk from the proposed explosives transport would not be unacceptable | MTRC/ Contractor | Along explosives transport route | Construction phase | | To be implemented as per construction programme |
| A7A | 6 | Use only experienced driver(s) with good safety record for explosive vehicle(s). Training should be provided to ensure it covers all major safety subjects. | To ensure safe transport of explosives | MTRC/ Contractor | At suitable location | Construction phase | | To be implemented as per construction programme |
| A7A | 6 | Develop procedure to ensure that parking space on the site is available for the explosive truck. Confirmation of parking space should be communicated to truck drivers before delivery. | To ensure that the risks from the proposed explosives storage and transport would not be unacceptable | MTRC/ Contractor | Explosive magazine | Construction phase | | To be implemented as per construction programme |
| A7A | 6 | Delivery vehicles shall not be permitted to remain unattended within the magazine site (or appropriately wheel-locked). | To reduce the risk of fire within the magazine | MTRC / Contractor | Explosive Magazine | Construction phase | | To be implemented as per construction programme |
| A7A | 6 | Good house-keeping within and outside of the magazine to ensure that combustible materials (including vegetation) are removed and not allowed to accumulate. | To reduce the risk of fire within the magazine | MTRC / Contractor | Explosive Magazine | Construction phase | | To be implemented as per construction programme |
| A7A | 6 | Detonators shall not be transported in the same vehicle with other Class 1 explosives. | To reduce the risk of explosion during the transport of cartridged emulsion | MTRC / Contractor | | Construction phase | | To be implemented as per construction programme |
| A7A | 6 | Emergency plan (i.e. magazine operational manual) shall be developed to address uncontrolled fire in magazine area. The case of fire near an explosive carrying truck in jammed traffic should also be covered. Drill of the emergency plan should be carried out at regular intervals. | To reduce the risk of fire | MTRC/ Contractor | Explosive Magazine and along explosives transport route | Construction phase | | To be implemented as per construction programme |
| A7A | 6 | Adverse weather working guideline should be developed to clearly define procedure for transport explosives during thunderstorm. | To ensure safe transport of explosives | MTRC/ Contractor | Along explosives transport route | Construction phase | | To be implemented as per construction programme |

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| A7A | 6 | During transport of the explosives within the tunnel, hot work should not be permitted. | To ensure safe transport of explosives | MTRC/ Contractor | Along explosives transport route | Construction phase | | To be implemented as per construction programme |
| A7A | 6 | Ensure that UN 1.4B packaging of detonators remains intact until handed over at blasting site. | To reduce the risk of explosion during the transport of detonator | MTRC/ Contractor | - | Construction phase | | To be implemented as per construction programme |
| A7A | 6 | Contractor to ensure that any electro-explosive devices are sufficiently shielded from radio frequency radiation hazards. | To reduce the risk of explosion during the transport of detonators | MTRC/ Contractor | - | Construction phase | | To be implemented as per construction programme |
| A7A | 6 | Steel vehicle tray welded to a steel vertical fire screen should be mounted at least 150 mm behind the drivers cab and 100 mm from the steel cargo compartment, the vertical screen shall protrude 150 mm in excess of all three (3) sides of the steel cargo compartment. | To reduce the risk during explosives transport. | MTRC/ Contractor | - | Construction phase | | To be implemented as per construction programme |
| A7A | 6 | Ensure cartridged emulsion with high water content should be preferred. Also, the emulsion with perchlorate formulation should be avoided. | To ensure safe explosives to be used | MTRC/ Contractor | - | Construction phase | | To be implemented as per construction programme |
| A7A | 6 | Traffic Management should be implemented within the temporary magazine site, to ensure that no more than 1 vehicle will be loaded at any time, in order to avoid accidents involving multiple vehicles within the site boundary. Based on the construction programme, considering that 6 trucks could be loaded over a peak 2 hour period, this is considered feasible. | To ensure that the risks from the proposed explosives storage and transport would not be unacceptable | MTRC/ Contractor | - | Construction phase | | To be implemented as per construction programme |
| A7A | 6 | The design of the fill slope close to the temporary magazine site should consider potential washout failures and incorporate engineering measures to prevent a washout causing damage to the temporary magazine stores | To ensure that the risks from the proposed explosives storage would not be unacceptable | MTRC/ Contractor | - | Construction phase | | To be implemented as per construction programme |
| A7A | 6 | The security plan should address different alert security level to reduce opportunity for arson / deliberate initiation of explosives. The corresponding security procedure should be implemented with respect to prevailing security alert status announced by the Government. | To ensure that the risks from the proposed explosives storage would not be unacceptable | MTRC/ Contractor | - | Construction phase | | To be implemented as per construction programme |

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| A7A | 6 | A suitable work control system should be introduced, such as an operational manual including Permit-to-Work system. | To ensure that the risks from the proposed explosives storage would not be unacceptable | MTRC/ Contractor | - | Construction phase | | To be implemented as per construction programme |
| A7A | 6 | The magazine building shall be regularly checked for water seepage through the roof, walls or floor. | To ensure that the risks from the proposed explosives storage would not be unacceptable | MTRC/ Contractor | - | Construction phase | | To be implemented as per construction programme |
| **Waste Management (Construction Phase)** | | | | | | | | |
| 8.5.1.1 | 7 | **Good Site Practices**<br>Recommendations for good site practices during the construction activities include:<br>• Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site<br>• Training of site personnel in proper waste management and chemical handling procedures<br>• Provision of sufficient waste disposal points and regular collection of waste<br>• Appropriate measures to minimise windblown litter and dust/odour during transportation of waste by either covering trucks or by transporting wastes in enclosed containers<br>• Provision of wheel washing facilities before the trucks leaving the works area so as to minimise dust introduction from public road<br>• Well planned delivery programme for offsite disposal such that adverse environmental impact from transporting the C&D material is not anticipated<br>• Provision of cover for the stockpile material, sand bag or earth bund as barrier to prevent material from washing away and entering the drains | To reduce waste generation | MTRC / Contractor | Construction Work Sites (General) | During Construction | Waste Disposal Ordinance (Cap.354);<br><br>Waste Disposal (Chemical Wastes) (General) Regulation (Cap 354) and<br><br>ETWBTC No. 15/2003, Waste Management on Construction Site | Being implemented |

| EIA Ref. | EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measure & Main Concerns to address | Who to implement the measure? | Location of the measure | When to implement the measure? | What requirements or standards for the measure to achieve? | Implementation status |
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| 8.5.1.2 | 7 | **Waste Reduction Measures**<br>Recommendations to achieve waste reduction include:<br>• Sort C&D material from demolition and decommissioning of the existing facilities to recover recyclable portions such as metals<br>• Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal<br>• Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force<br>• Proper storage and site practices to minimise the potential for damage or contamination of construction materials<br>• Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste. | For perform waste reduction | MTRC / Contractor | Construction Work Sites (General) | During Construction | Waste Disposal Ordinance (Cap.354);<br><br>Waste Disposal (Chemical Wastes) (General) Regulation; Land (Miscellaneous Provisions) Ordinance (Cap. 28) | Being implemented |

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| 8.5..1.3 | 7 | **C&D Material**<br>In order to minimise impacts resulting from collection and transportation of C&D material for off-site disposal, the excavated materials should be reused on-site as backfilling material as far as practicable. In addition, C&D material generated from excavation works could be reused as rock material in local projects that require public fill for reclamation and earth filling purposes, say, 'Hong Kong – Zhuhai – Macao Bridge' in association with Hong Kong Boundary Crossing Facilities and Hong Kong Link Road, Central-Wanchai Bypass and Wanchai Development Phase II project (subject to further coordination). The surplus rock and other inert C&D material should be disposed of at the Government's Public Fill Reception Facilities (PFRFs), for beneficial use by other projects in the HKSAR, or transported to Mainland China via CEDD for use by other suitable projects in the Mainland. C&D waste generated from general site clearance and tree felling works would require disposal to the designated landfill site. Other mitigation requirements are listed below:<br>• A Waste Management Plan should be prepared and<br>• In order to monitor the disposal of C&D material and solid wastes at public filling facilities and landfills, and to control fly-tipping, a trip-ticket system (e.g. ETWB TCW No. 31/2004) should be included. | To minimize impacts resulting from collection and transportation of C&D material for off-site disposal | MTRC / Contractor | Construction Work Sites (General) | During Construction | ETWB TCW No. 31/2004 | Being implemented |
| 8.5.1.4 | 7 | **General Refuse**<br>General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material. | To minimize impacts resulting from collection and transportation of general refuse for off-site disposal | MTRC / Contractor | Construction Work Sites (General) | During Construction | Public Health and Municipal Services Ordinance (Cap. 132) - Public Cleansing and Prevention of Nuisances Regulation | Being implemented |

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| 8.5.1.5 | 7 | **Chemical Waste**<br>If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the *Code of Practice on the Packaging Labelling and Storage of Chemical Wastes*. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor should use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. | To minimize impacts resulting from collection and transportation of chemical waste for off-site disposal | MTRC / Contractor | Construction Work Sites (General) | During Construction | Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes, Waste Disposal (Chemical Waste) (General) Regulation | Being implemented |
| 8.5.1.6 | 7 | **Marine Dredged Sediment**<br>The sediment at the pier site would be dredged and transferred to barges for subsequent disposal. Release of dredged sediment into the surrounding water should be avoided. It is recommended that the distance between the barge and the dredging point be shortened as far as possible to avoid dropping of sediment from the close grab to the seawater. | To minimise potential impacts on water quality | MTRC/ Contractor | Dredging/ excavation area required for installation of the pier/pier structure in Aberdeen Channel | During marine construction works | ETWB TCW No. 34/2002 | Implemented |
| 8.5.1.6 | 7 | Category H material was identified at the grab sampling location at the dredging/excavation site. As there was no exceedance of 10xLCEL for the tested parameters, the sediment to be dredged at this location should be disposed of at a confined marine disposal site. The Project Proponent should agree with MFC on the allocation of disposal site and the Contractor should apply a dumping permit from EPD prior to the dredging / excavation works. | To prevent cross contamination of waste. | MTRC/ Contractor | Dredging/ excavation area with Category H material | During marine construction works | ETWB TCW No. 34/2002 | Implemented |

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| **Waste Management (Operation Phase)** | | | | | | | | |
| 8.5.2.1 | 7 | **General Refuse**<br>General refuse should be collected on daily basis and delivered to the refuse collection point accordingly. A reputable waste collector should be employed to remove general refuse regularly to avoid odour nuisance or pest and vermin problem. Recycling containers are recommended to be provided to encourage recycling aluminium cans and waste paper. | To minimize impacts resulting from collection and transportation of general refuse for off-site disposal | MTRC | Stations and depot | During Operation | Public Health and Municipal Services Ordinance (Cap. 132) - Public Cleansing and Prevention of Nuisances Regulation | To be implemented as per construction programme |
| 8.5.2.2 | 7 | **Industrial Waste**<br>Similar to general refuse, a reputable waste collector should be employed to remove industrial waste regularly to avoid accumulation. Scrap materials such as metals can be recycled if uncontaminated. | To minimize impacts resulting from collection and transportation of industrial waste for off-site disposal | MTRC | Stations and depot | During Operation | Public Health and Municipal Services Ordinance (Cap. 132) - Public Cleansing and Prevention of Nuisances Regulation | To be implemented as per construction programme |
| 8.5.2.3 | 7 | **Chemical Waste**<br>• Register with the EPD as a chemical waste producer should be obtained and guidelines stated in the *Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes* should be followed.<br>• Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. Licensed collector should be deployed to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. | To minimize impacts resulting from collection and transportation of chemical waste for off-site disposal | MTRC | Stations and depot | During Operation | Waste Disposal (Chemical Waste) (General) Regulation<br>Code of Practice on the Packaging, Labelling and Storage of Chemical Waste | To be implemented as per construction programme |
| **Land Contamination (Construction Phase)** | | | | | | | | |

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| 9.7.1 | 8 | The following measures should be implemented for contaminated material excavation and transportation (if any):<br>• To minimize the chance for construction workers' to come into contact with contaminated materials, bulk earth-moving excavation equipment should be employed;<br>• Contact with contaminated materials can be minimised by wearing appropriate clothing and personal protective equipment such as gloves and masks (especially when interacting directly with contaminated material), provision of washing facilities and prohibition of smoking and eating on site;<br>• Stockpiling of contaminated excavated materials on site should be avoided as far as possible;<br>• The use of contaminated soil for landscaping purpose should be avoided unless pre-treatment was carried out;<br>• Vehicles containing any excavated materials should be suitably covered to reduce dust emissions and/or release of contaminated wastewater;<br>• Truck bodies and tailgates should be sealed to stop any discharge;<br>• Only licensed waste haulers should be used to collect and transport contaminated material to treatment/disposal site and with the implementation of tracking system to avoid fly tipping;<br>• Speed control for trucks carrying contaminated materials should be carried out;<br>• Observe all relevant regulations in relation to waste handling, such as Waste Disposal Ordinance (Cap 354), Waste Disposal (Chemical Waste) (General) Regulation (Cap 354) and obtain all necessary permits where required; and<br>• Maintain records of waste generation and disposal quantities and disposal arrangements. | To minimize as much as possible any nuisance generated in relation to land remediation activities. At the same time, to protect all personnel from possible risk associated with land remediation activities. | MTRC / Contractor | All site areas | During Construction | EIA Recommendations | Being implemented |

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| **Land Contamination (Operation Phase)** | | | | | | | | |
| 9.7.2 | 8 | Defined procedures in handling chemicals should be implemented as part of MTRCL company policy. All relevant operational procedures should be strictly followed to avoid land contamination. | To minimize as much as possible any risk in association with land contamination during operation of the Project | MTRC | All areas within the Project | During Operation | EIA Recommendations | To be implemented as per construction programme |
| **Air Quality Impact (Construction Phase)** | | | | | | | | |
| 10.6.2 | 9 | **Specific Dust Control Measures** | To minimize adverse dust emission generated from various construction activities of the works sites | Contractor | Construction Works Sites | During Construction | EIA Recommendations | Being implemented |
| | | • For the unloading of spoil from trucks at barging point, installation of 3-sided screen with top and the provision of water sprays at the discharge point should be provided | | | | | | |
| | | • Watering every working hour for 12 hours a day on exposed soil areas on active works areas and paved haul roads to reduce dust emissions | | | | | | |
| | | • The rock crushing facilities with maximum daily output of over 1000$m^3$ per day should be enclosed including unloading locations and a fabric baghouse/cartridge filter type dust extraction and collection system or equivalent system with 99% or more dust removal efficiency should be installed for the treatment of the emissions from rock crushing and screening processes. | | | | | | |
| 10.6.2 | 9 | Best practices for dust control are required. A control programme can be instigated to monitor the construction process in order to enforce dust controls and modify methods of works where feasible to reduce the dust emission down to acceptable levels. The following best practices for dust control should be implemented throughout the construction period:<br>**Disturbed Parts of the Roads**<br>• Each and every main temporary access should be paved with concrete, bituminous hardcore materials or metal plates and kept clear of dusty materials; or | To minimize adverse dust emission generated from various construction activities of the works sites | Contractor | Construction Works Sites | During Construction | Air Pollution Control (Construction Dust) Regulation, EPD's Best Practicable Means and EIA Recommendat-ions | |

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| | | • Unpaved parts of the road would be sprayed with water or a dust suppression chemical so as to keep the entire road surface wet.<br>**Exposed Earth**<br>• Exposed earth should be properly treated by compaction, hydroseeding, vegetation planting or seating with latex, vinyl, bitumen within six months after the last construction activity on the site or part of the site where the exposed earth lies.<br>**Loading, Unloading or Transfer of Dusty Materials**<br>• All dusty materials should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.<br>**Debris Handling**<br>• Any debris should be covered entirely by impervious sheeting or stored in a debris collection area sheltered on the top and the three sides.<br>• Before debris is dumped into a chute, water should be sprayed so that it remains wet when it is dumped.<br>▪ For the minor blasting at WCH Depot, tarpaulin covers would be provided on the steel screens to prevent the dust from spreading out, and the whole blasting area would be watered before and after each blast in order to help contain the dust and fumes.<br>**Transport of Dusty Materials**<br>• Vehicle used for transporting dusty materials/ spoil should be covered with tarpaulin or similar material. The cover should extend over the edges of the sides and tailboards.<br>**Wheel Washing**<br>• Vehicle wheel washing facilities should be provided at each construction site exit. | | | | | | |

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| | | **Stone Crushing Plant**<br>• The control measures listed in EPD's A Guidance Note on the Best Practicable Means for Mineral Works (Stone Crushing Plants) BPM 11/1) should be followed, where appropriate.<br>**Concrete Batching Plant**<br>• The loading, unloading, handling, transfer or storage of dusty materials should be carried in a totally enclosed system. All dust-laden air or waste gas generated by the process operations should be properly extracted and vented to fabric filtering system. The control measures listed in EPD's A guidance note on the best practicable means for cement works (concrete batching plant) (BPM 3/2) should be followed, where appropriate.<br>**Good Site Management**<br>• The Contractor should maintain high standard of housekeeping to prevent emission of fugitive dust emission. Loading, unloading, handling and storage of raw materials, wastes or by-products should be carried out in a manner so as to minimize the release of visible dust emission. Any piles of materials accumulated on or around the work areas should be cleaned up regularly. Cleaning, repair and maintenance of all plant facilities within the work areas should be carried out in a manner minimizing generation of fugitive dust emissions. The material should be handled properly to prevent fugitive dust emission before cleaning. | | | | | | |

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| **Cultural Heritage Impact (Construction Phase)** | | | | | | | | |
| 11.7.1.1 | 10 | Archaeological watching brief during the construction phase is recommended for areas highlighted as having some archaeological potential (The works sites that will require archaeological watching brief can be found in the following figures in the main report: Harcourt Garden (Figure 11.22 of EIA Report), Wong Chuk Hang San Wai (WS10) in Figure 11.35 of EIA Report and Works Sites S7, S7c, S7d and S7e (Figure 11.28 of EIA Report) | To identify and record any archaeological material or features revealed during the excavation phase of the works schedule | MTRC/ Contractor | Admiralty: Harcourt Garden Works Site; Wong Chuk Hang: Works Sites S7c,d,e, Works Site S7, Pier Columns within Works Site S10 | During Construction | Antiquities and Monuments Ordinance | Implemented |