



Our Ref.: CJO-3113

15 January 2024

The EIA Ordinance Register Office, **Environmental Protection Department,** 27th floor, Southorn Centre, 130 Hennessy Road, Wanchai, Hong Kong

CONTRACT NO. 1/WSD/19 & 6/WSD/21

IN-SITU REPROVISIONING OF SHA TIN WATER TREATMENT WORKS (SOUTH WORKS) – WATER TREATMENT WORKS AND **ANCILLARY FACILITIES Environmental Permit EP-494/2015**

We are enclosing the following information for your kind considerations of our application:

- (a) Three hard copies,
- (b) Two copies of the 94th monthly Environmental Monitoring and Audit (EM&A) Report (Rev.0). (Register No.: AEIAR-187/2015)

Please feel free to contact us should you need further information.

Yours sincerely,

Acumen Environmental Engineering and Technologies Co. Ltd.

Mr. Vega Wong 2698 8032

c.c. Water Supplies Department

c.c. AECOM





Your ref:

Our ref: CJO-3113

By hand

Chief Engineer /Project Management Water Supplies Department 46/F., Immigration Tower 7 Gloucester Road, Wanchai (Attn: Mr. H C Wong, Heinz)

15 January 2024

Dear Sir,

In-Situ Reprovisioning of Sha Tin Water Treatment Works (South Works) – Water Treatment Works and Ancillary Facilities
Environmental Permit EP-494/2015
Submission of 94th monthly EM&A Report

In accordance with the Condition 3.4 of the Environmental Permit (No. EP-494/2015), we submit herewith 3 hard copies and 2 electronic copies of the 94th monthly Environmental Monitoring and Audit (EM&A) Report (Rev.0) for your processing. I certified and confirmed the submission of this monthly EM&A Report had complied with the requirements as set out in the approved Environmental Monitoring and Audit (EM&A) Manual of the EIA Report (Register No.: AEIAR-187/2015).

Yours faithfully,

Mr. Wong, Vega, T. L.

Environmental Team Leader

c.c. Independent Environmental Checker



AECOM

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+852 3922 9797 fax

香港新界沙田鄉事會路 138 號 新城市中央廣場第 2座 12 樓

www.aecom.com

Your Ref:

Our Ref: 60479142/C/fyw2401161

By Email

Chief Engineer/Project Management Water Supplies Department 46/F., Immigration Tower 7 Gloucester Road, Wanchai

Attn: Mr. Edmund Huen

16 January 2024

Dear Sir,

Contract No.1/WSD/19

In-situ reprovisioning of Sha Tin Water Treatment Works (South Works) – Water Treatment Works and Ancillary Facilities

Contract No.6/WSD/21

In-situ reprovisioning of Sha Tin Water Treatment Works (South Works) - Administration Building

Submission of 94th Monthly EM&A Report for December 2023

Reference is made to Environmental Team (ET)'s 94th Monthly EM&A Report for December 2023 (Rev. 0) submitted on 10 and 16 January 2024.

In accordance with the Condition 3.4 of the Environmental Permit (No.EP-494/2015), I verified and confirmed the submission of this Monthly EM&A Monitoring Report as compiled with the requirements as set in the approved Environmental Monitoring and Audit (EM&A) Manual of the EIA Report (Register No.: AEIAR-187/2015).

Should you have any queries, please feel free to contact the undersigned at 3922 9366.

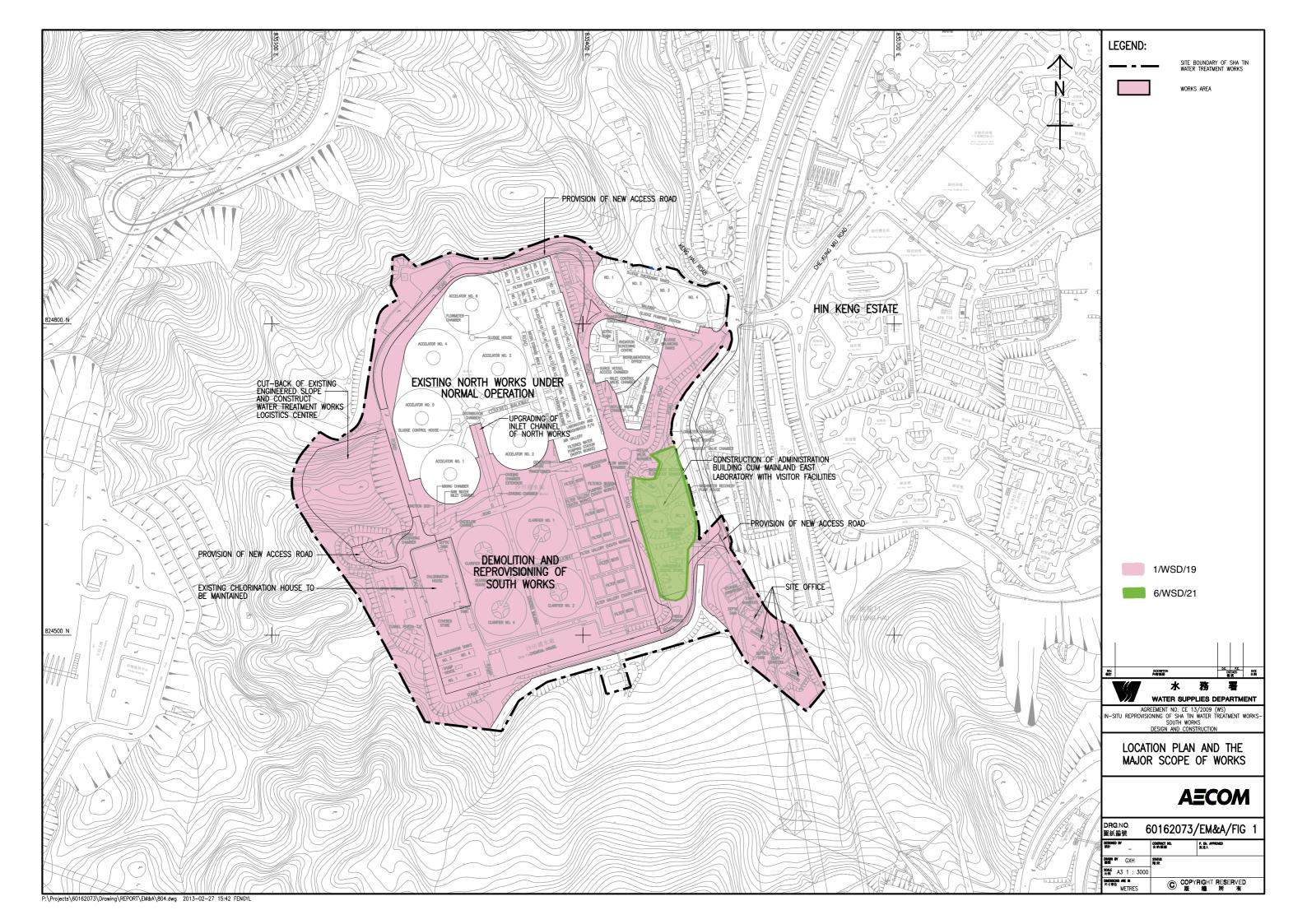
Yours faithfully, AECOM Asia Co. Ltd.

Y W Fung

Independent Environmental Checker

c.c. Environmental Team Leader (via email)

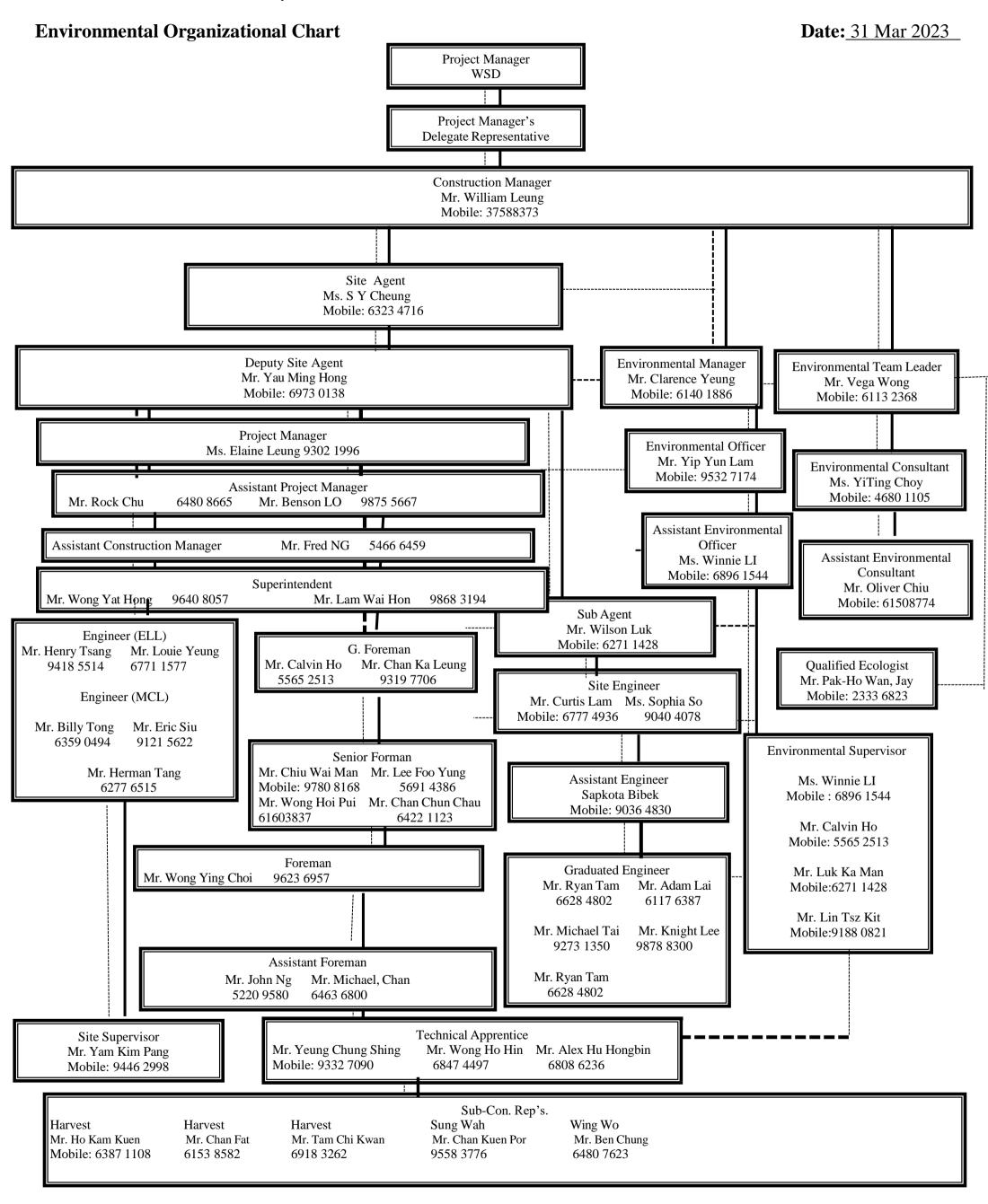
Appendix A General Layout Plan



Appendix B Project Organization

In-situ Reprovisioning of Sha Tin Water Treatment Works (South Works)

- Water Treatment Works and Ancillary Facilities

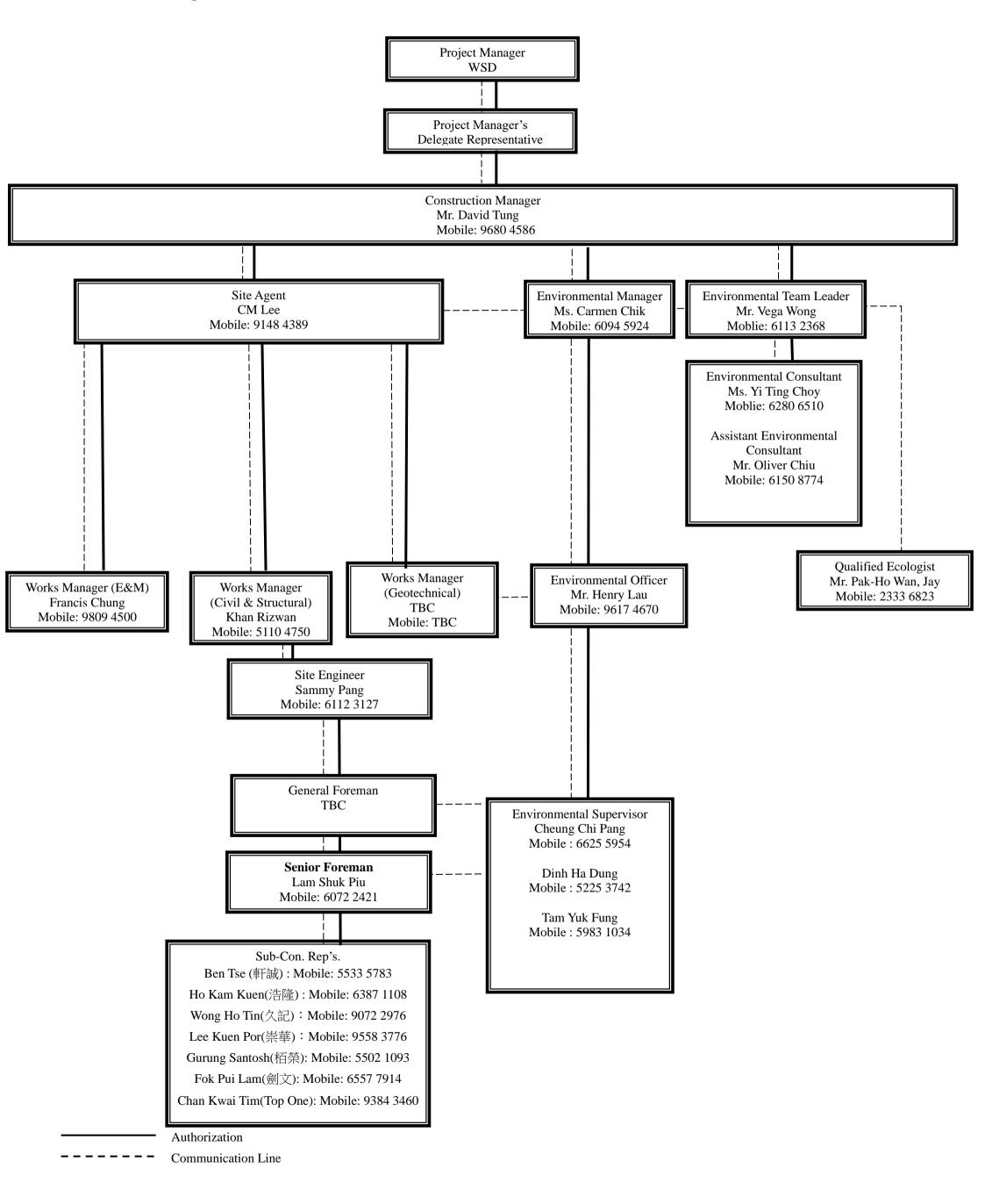


Authorization
Communication Line

In-situ Reprovisioning of Sha Tin Water Treatment Works (South Works)

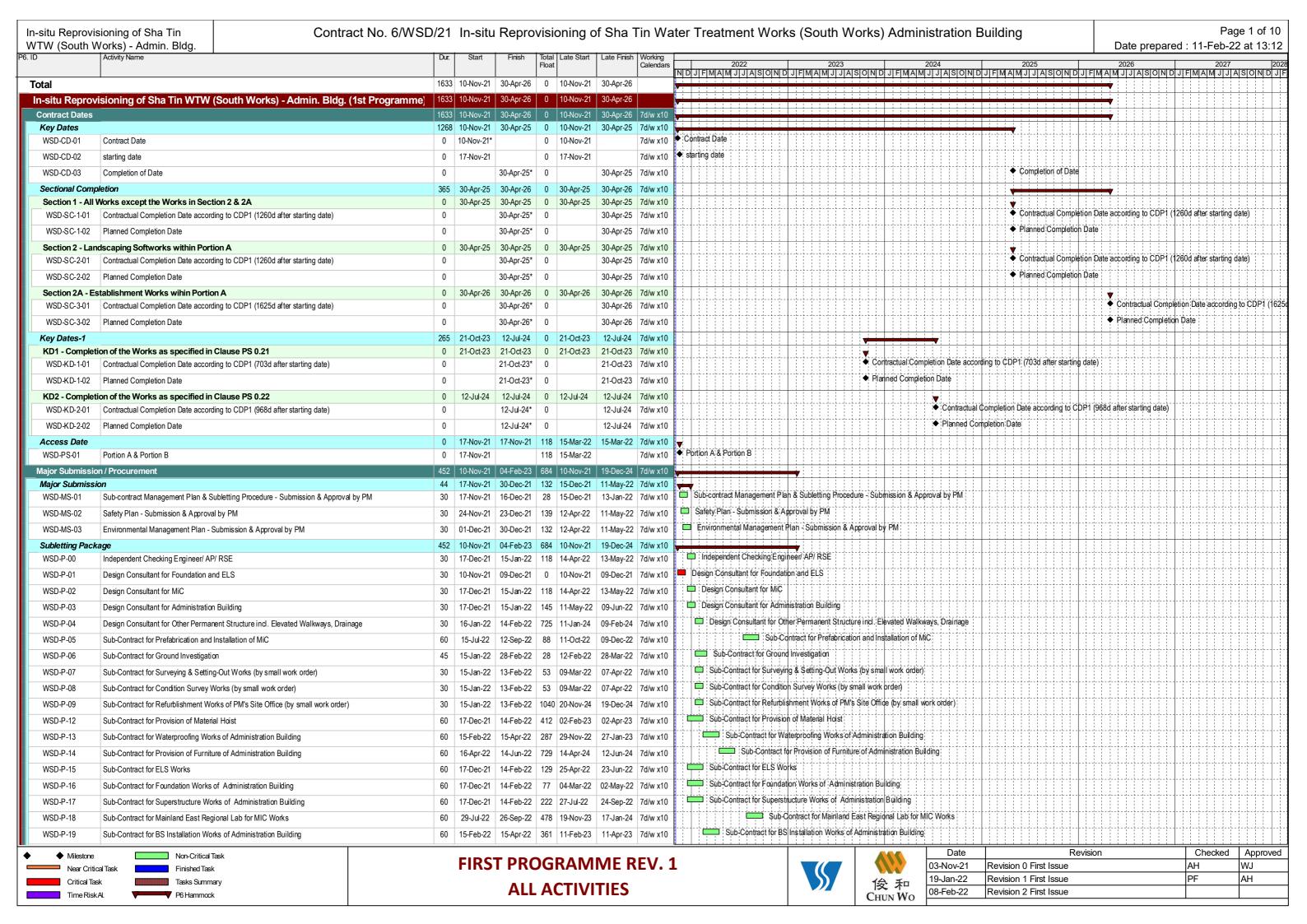
- Administration Building

Environmental Organizational Chart (2023.03)



Appendix C Latest Construction Programme





Page 2 of 10 Contract No. 6/WSD/21 In-situ Reprovisioning of Sha Tin Water Treatment Works (South Works) Administration Building In-situ Reprovisioning of Sha Tin WTW (South Works) - Admin. Bldg Date prepared: 11-Feb-22 at 13:13 NIDJIFIMAMJIJASIONIDJIFIMAMJIJASIONIDJIFIMAMJIJASIONIDJIFIMAMJIJASIONIDJIFIMAMJIJASIONIDJIFIMAMJIJASIONIDJI WSD-P-20 Sub-Contract for FS Installation Works of Administration Building 15-Apr-22 361 11-Feb-23 11-Apr-23 Sub-Contract for ABWF & Fit-out Works of Administration Building WSD-P-21 Sub-Contract for ABWF & Fit-out Works of Administration Building 60 15-Apr-22 112 07-Jun-22 05-Aug-22 7d/w x10 15-Feb-22 Sub-Contract for Cladding Installation Works of Administration Building WSD-P-22 15-Apr-22 | 112 | 07-Jun-22 Sub-Contract for Cladding Installation Works of Administration Building 60 05-Aug-22 7d/w x10 15-Feb-22 Sub-Contract for Green Roof & Landscaping Works WSD-P-23 Sub-Contract for Green Roof & Landscaping Works 60 14-Jun-22 112 06-Aug-22 04-Oct-22 7d/w x10 Sub-Contract for Irrigation System WSD-P-24 Sub-Contract for Irrigation System 60 16-Apr-22 14-Jun-22 748 03-May-24 01-Jul-24 7d/w x10 Sub-Contract for Lift Installation WSD-P-25 Sub-Contract for Lift Installation 60 15-Apr-22 557 26-Aug-23 24-Oct-23 7d/w x10 15-Feb-22 Sub-Contract for Structure Works of Elevated Walkway WSD-P-26 Sub-Contract for Structure Works of Flevated Walkway 60 06-Jun-22 63 10-Jun-22 08-Aug-22 7d/w x10 Sub-Contract for ABWF, Fitting Out, E&M Works of Elevated Walkway WSD-P-27 Sub-Contract for ABWF, Fitting Out, E&M Works of Elevated Walkway 60 03-Dec-22 63 07-Dec-22 7d/w x10 **Material Procurement** 04-Feb-23 557 11-Mar-22 29-Dec-22 271 12-Jan-23 7d/w x10 Curtain Wall/ Glazing Submission & Approval for Curtain Wall Material Sample & Shop Drawing 14-Jul-22 | 271 | 12-Jan-23 Submission & Approval for Curtain Wall Material Sample & Shop Drawing WSD-P-M-03 90 11-Apr-23 7d/w x10 Glass Fabrication & Delivery for Prototype Demo WSD-P-M-04 Glass Fabrication & Delivery for Prototype Demo 90 12-Oct-22 271 12-Apr-23 10-Jul-23 7d/w x10 Visual Prototype Installation WSD-P-M-05 Visual Prototype Installation 50 01-Dec-22 271 11-Jul-23 29-Aug-23 7d/w x10 Performance Test of Prototy 29-Dec-22 271 30-Aug-23 26-Sep-23 7d/w x10 WSD-P-M-06 Performance Test of Prototype 28 02-Dec-22 Lift E1, E2 & E3 04-Feb-23 557 25-Oct-23 Drawing Submission & Approval for Lift (E1, E2 & E3) WSD-P-M-07 Drawing Submission & Approval for Lift (E1, E2 & E3) 14-Jul-22 557 25-Oct-23 Material Submission & Approval for Lift (E1, E2 & E3) WSD-P-M-08 Material Submission & Approval for Lift (E1, E2 & E3) 45 15-Jul-22 28-Aug-22 557 23-Jan-24 07-Mar-24 7d/w x10 Material Procurement & Delivery (E1, E2 & E3 Material Procurement & Delivery (E1, E2 & E3) 04-Feb-23 557 08-Mar-24 WSD-P-M-09 160 14-Aug-24 7d/w x10 29-Aug-22 Sheetpile 12-May-22 25 11-Mar-22 7d/w x10 WSD-P-M-10 Material Submission & Approval 13-Mar-22 25 11-Mar-22 Material Procurement & Delivery WSD-P-M-11 Material Procurement & Delivery 12-May-22 25 08-Apr-22 06-Jun-22 12-May-22 71 26-Apr-22 7d/w x10 ELS Steel Member Material Submission & Approval 13-Mar-22 71 26-Apr-22 WSD-P-M-12 Material Submission & Approva 28 23-May-22 7d/w x10 Material Procurement & Delivery WSD-P-M-13 Material Procurement & Delivery 60 12-May-22 71 24-May-22 22-Jul-22 7d/w x10 Concrete 12-May-22 209 11-Sep-22 Material Submission & Approval WSD-P-M-14 Material Submission & Approva 28 13-Mar-22 209 11-Sep-22 08-Oct-22 14-Feb-22 Material Procurement & Delivery 60 12-May-22 209 09-Oct-22 07-Dec-22 7d/w x10 WSD-P-M-15 Material Procurement & Delivery 14-Mar-22 Rebar 12-May-22 209 11-Sep-22 07-Dec-22 7d/w x10 Material Submission & Approval WSD-P-M-16 Material Submission & Approval 13-Mar-22 209 11-Sep-22 Material Procurement & Delivery WSD-P-M-17 Material Procurement & Delivery 60 12-May-22 209 09-Oct-22 07-Dec-22 7d/w x10 14-Mar-22 Submission & Approval for Project Design Plan WSD-S-01 Submission & Approval for Project Design Plan 60 08-Dec-21 05-Feb-22 97 15-Mar-22 13-May-22 7d/w x10 Design for MiC 12-Sep-22 88 14-May-22 09-Dec-22 Submission & Approval for MiC Layouts Proposal (AIP) WSD-D-M01 Submission & Approval for MiC Layouts Proposal (AIP) 15-Feb-22* 15-Apr-22 88 14-May-22 12-Jul-22 7d/w x10 Submission & Approval for MiC Layouts Proposal (DDA WSD-D-M02 Submission & Approval for MiC Layouts Proposal (DDA) 90 14-Jul-22 88 13-Jul-22 10-Oct-22 7d/w x10 16-Apr-22 Submission & Approval for MiC Details (AIP WSD-D-M03 Submission & Approval for MiC Details (AIP) 90 16-Apr-22 14-Jul-22 88 13-Jul-22 10-Oct-22 7d/w x10 Submission & Approval for MiC Details (DDA) WSD-D-M04 Submission & Approval for MiC Details (DDA) 12-Sep-22 88 11-Oct-22 ninistration Building 07-Feb-22 19-Sep-23 954 07-Feb-22 7d/w x10 Design for Adr Submission & Approval for ELS Works Delson (All Submission & Approval for ELS Works Deisgn (AIP) WSD-D-AB00A 60 07-Apr-22 0 07-Feb-22 07-Apr-22 7d/w x10 07-Feb-22 Submission & Approval for ELS Works Desgn (DDA) WSD-D-AB00B Submission & Approval for ELS Works Deisgn (DDA) 60 08-Apr-22 06-Jun-22 0 08-Apr-22 06-Jun-22 7d/w x10 Submission & Approval for Foundation Desgn (AIP) Submission & Approval for Foundation Deisgn (AIP) 07-Apr-22 25 04-Mar-22 WSD-D-AB01A 02-May-22 Submission & Approval for Foundation Delson (DDA) WSD-D-AB01B Submission & Approval for Foundation Deisgn (DDA) 60 08-Apr-22 06-Jun-22 25 03-May-22 01-Jul-22 Submission & Approval for Permanent Work Structure Deisgn of Administration Building (AIP) WSD-D-AB02A Submission & Approval for Permanent Work Structure Deisgn of Administration Building (AIP) 60 06-Jun-22 63 10-Jun-22 08-Aug-22 7d/w x10 08-Apr-22 Submission & Approval for Permanent Work Structure Deisgn of Administration Building (DDA) WSD-D-AB02B Submission & Approval for Permanent Work Structure Deisgn of Administration Building (DDA) 04-Sep-22 | 110 | 25-Sep-22 | 23-Dec-22 | 7d/w x10 Submission & Approval for BS/ FS/ Security Design of Administration Building (AIP) WSD-D-AB03A Submission & Approval for BS/ FS/ Security' Design of Administration Building (AIP) 05-Aug-22 249 11-Feb-23 07-Jun-22 11-Apr-23 Submission & Approval for BS/ FS/ Security Design of Administration Building (DDA) WSD-D-AB03B Submission & Approval for BS/ FS/ Security' Design of Administration Building (DDA) 90 06-Aug-22 03-Nov-22 249 12-Apr-23 10-Jul-23 7d/w x10 Submission & Approval for Dangerous Goods Stores (AIP) WSD-D-AB04A Submission & Approval for Dangerous Goods Stores (AIP) 03-Nov-22 583 10-Apr-24 08-Jun-24 7d/w x10 Submission & Approval for Dangerous Goods Stores (DDA) WSD-D-AB04B Submission & Approval for Dangerous Goods Stores (DDA) 01-Feb-23 583 09-Jun-24 7d/w x10 Submission & Approval for Mainland East Regional Laboratory (AIP) WSD-D-AB05A Submission & Approval for Mainland East Regional Laboratory (AIP) 60 07-Jun-22 05-Aug-22 470 20-Sep-23 18-Nov-23 7d/w x10 Date Revision Checked Approved Non-Critical Task



Critical Task

Time Risk Al

Tasks Summary

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Contract No. 6/WSD/21 In-situ Reprovisioning of Sha Tin Water Treatment Works (South Works) Administration Building Page 3 of 10 In-situ Reprovisioning of Sha Tin WTW (South Works) - Admin. Bldg Date prepared: 11-Feb-22 at 13:13 UDJIFIMAMJIJASIONIDJIFIMAMJIJASIONIDJIFIMAMJIJASIONIDJIFIMAMJIJASIONIDJIFIMAMJIJASIONIDJIFIMAMJIJASIONIDJ WSD-D-AB05B Submission & Approval for Mainland East Regional Laboratory (DDA) 06-Aug-22 03-Nov-22 470 19-Nov-23 16-Feb-24 Submission & Approval for Visitor Reception Facilities (AIP) WSD-D-AB06A Submission & Approval for Visitor Reception Facilities (AIP) 60 02-Jan-23 267 29-Jul-23 26-Sep-23 7d/w x10 04-Nov-22 Submission & Approval for Visitor Reception Facilities (DDA) WSD-D-AB06B Submission & Approval for Visitor Reception Facilities (DDA) 100 12-Apr-23 267 27-Sep-23 7d/w x10 03-Jan-23 04-Jan-24 Submission & Approval for Water Treatment Training Venue (AIP WSD-D-AB07A Submission & Approval for Water Treatment Training Venue (AIP) 60 11-Jun-23 267 05-Jan-24 04-Mar-24 7d/w x10 Submission & Approval for Water Treatment Training Venue (DDA) WSD-D-AB07B Submission & Approval for Water Treatment Training Venue (DDA) 12-Jun-23 19-Sep-23 267 05-Mar-24 Submission & Approval for Main Control Room, Security Control Room, Server Rooms (AIP) WSD-D-AB08A Submission & Approval for Main Control Room, Security Control Room, Server Rooms (AIP) 60 02-Jan-23 249 11-Jul-23 08-Sep-23 7d/w x10 04-Nov-22 Submission & Approval for Main Control Room, Security Control Room, Server Rooms (DDA) WSD-D-AR08R Submission & Approval for Main Control Room, Security Control Room, Server Rooms (DDA) 02-Apr-23 249 09-Sep-23 07-Dec-23 7d/w x10 Submission & Approval for Car Parking & Electric Vehicle Charging Facilities (AIP) WSD-D-AB09A Submission & Approval for Car Parking & Electric Vehicle Charging Facilities (AIP) 01-Jun-23 974 02-Dec-25 30-Jan-26 7d/w x10 Submission & Approval for Car Parking & Electric Vehicle Charging Facilities (DDA Submission & Approval for Car Parking & Electric Vehicle Charging Facilities (DDA) WSD-D-AB09B 30-Aug-23 974 31-Jan-26 Submission & Approval for Landscape Works for the Green Roof and Coultyard incl. Irrigation System (AIP) Submission & Approval for Landscape Works for the Green Roof and Courtyard incl. Irrigation System (Alf WSD-D-AB10A 60 05-Aug-22 685 22-Apr-24 20-Jun-24 7d/w x10 Submission & Approval for Landscape Works for the Green Roof and Courtyard incl. Irrigation System (DDA) Submission & Approval for Landscape Works for the Green Roof and Courtyard incl. Irrigation System (DE WSD-D-AB10B 90 06-Aug-22 03-Nov-22 685 21-Jun-24 18-Sep-24 7d/w x10 02-Apr-23 63 10-Jun-22 7d/w x10 Submission & Approval for Permanent Works Structure Design of Elevated Walkway No.2 (AIP) WSD-D-SB02A Submission & Approval for Permanent Works Structure Design of Elevated Walkway No.2 (AIP) 08-Apr-22 06-Jun-22 63 10-Jun-22 08-Aug-22 7d/w x10 Submission & Approval for Permanent Works Structure Design of Elevated Walkway No.2 (DDA) Submission & Approval for Permanent Works Structure Design of Elevated Walkway No.2 (DDA) 04-Oct-22 63 09-Aug-22 WSD-D-SB02B 120 07-Jun-22 06-Dec-22 7d/w x10 Submission & Approval for ABWF, Fitout, E&M Design of Elevated Walkway No.2 (AIP) Submission & Approval for ABWF, Fitout, E&M Design of Elevated Walkway No.2 (AIP) WSD-D-SB03A 05-Oct-22 03-Dec-22 63 07-Dec-22 04-Feb-23 7d/w x10 Submission & Approval for ABWF. Fitout, E&M Design of Elevated Walkway No.2 (DDA WSD-D-SB03B Submission & Approval for ABWF, Fitout, E&M Design of Elevated Walkway No.2 (DDA) 02-Apr-23 63 05-Feb-23 04-Jun-23 7d/w x10 Other Major Design Packages 29-Sep-23 244 05-Jun-23 Submission & Approval for Permanent Works Structure Design of Elevated Walkway No.1 (AIP) WSD-D-OT02A Submission & Approval for Permanent Works Structure Design of Elevated Walkway No.1 (AIP) 60 01-Jun-23 63 05-Jun-23 03-Aug-23 Submission & Approval for Permanent Works Structure Design of Elevated Walkway No.1 (DDA) Submission & Approval for Permanent Works Structure Design of Elevated Walkway No.1 (DDA) 120 WSD-D-OT02B 02-Jun-23 29-Sep-23 63 04-Aug-23 01-Dec-23 7d/w x10 Submission & Approval for Overall Drainage System (AIP) WSD-D-OT03A Submission & Approval for Overall Drainage System (AIP) 21 07-Mar-22 725 10-Feb-24 7d/w x10 Submission & Approval for Overall Drainage System (DDA) WSD-D-OT03B Submission & Approval for Overall Drainage System (DDA) 90 08-Mar-22 05-Jun-22 725 02-Mar-24 Interface Management Liaison with 1/WSD/19 02-Apr-23 677 07-Mar-23 Agree the Design Requirements for Main Control Room/ Security Control Room/ Server Rooms WSD-IM-01 Agree the Design Requirements for Main Control Room/ Security Control Room/ Server Rooms Agree the Design Requirements for Elevated Walkway No.1 Agree the Design Requirements for Elevated Walkway No.1 WSD-IM-02 63 07-Mar-23 Agree the Design Requirements for Elevated Walkway No.2 WSD-IM-03 Agree the Design Requirements for Elevated Walkway No.2 04-Oct-22 857 12-Aug-24 07-Feb-25 08-Apr-22 Liaison with 3/WSD/15 120 16-Mar-22 545 16-May-23 Agree the Design Requirements of Integrated Security Management System with 3/W\$D/15 & 1/W\$D/1 WSD-IM-04 Agree the Design Requirements of Integrated Security Management System with 3/WSD/15 & 1/WSD/19 120 16-Mar-22 545 16-May-23 12-Sep-23 7d/w x10 Section 1 of the Work 12-Sep-23 961 12-May-22 Preliminary Works Refurbishment of PM's Site Office & Associated Works at Portion B WSD-W-PW01 Refurbishment of PM's Site Office & Associated Works at Portion B 26-Feb-22 25-Jun-22 | 1040 | 01-Jan-25 30-Apr-25 7d/w x10 ☐ Site Set up WSD-W-PW02 Site Set up 28-Feb-22 68 12-May-22 25-May-22 6d/w x10 Temporary Drainage Installation WSD-W-PW03 Temporary Drainage Installation 68 26-May-22 23-Jun-22 Relocation of 6/W SD/21 Site Office to High Block WSD-W-PW04 Relocation of 6/WSD/21 Site Office to High Block 12 20-Jun-22 1159 17-Apr-26 07-Jun-22 30-Apr-26 6d/w x10 12-Sep-23 542 10-Dec-22 Prefabrication Yard Setub of Prefabrication Yard WSD-W-PY-01 Setup of Prefabrication Yard 12-Oct-22 88 10-Dec-22 7d/w x10 Fabrication for Mock-up. Inspection & Approval by PM Fabrication for Mock-up, Inspection & Approval by PM WSD-W-PY-02 11-Dec-22 88 09-Jan-23 09-Mar-23 7d/w x10 Fabrication of MiC Unit for Basement Level (40nos, PR= 24no/wk WSD-W-PY-03 Fabrication of MiC Unit for Basement Level (40nos, PR= 24no/wk) 35 15-Jan-23 88 10-Mar-23 13-Apr-23 7d/w x10 12-Dec-22 Delivery of MiC Unit to Site - Batch 1 (for Basement only WSD-W-PY-04 Delivery of MiC Unit to Site - Batch 1 (for Basement only) 09-Jan-23 16-Jan-23 133 23-Jun-23 30-Jun-23 6d/w x10 Fabrication of MiC Unit for Ground Level (46nos, PR= 24no/wk WSD-W-PY-05 Fabrication of MiC Unit for Ground Level (46nos, PR= 24no/wk) 35 19-Feb-23 88 14-Apr-23 18-May-23 7d/w x10 Delivery of MiC Unit to Site - Batch 2 (for G/F only) WSD-W-PY-06 Delivery of MiC Unit to Site - Batch 2 (for G/F only) 11-Feb-23 20-Feb-23 116 05-Jul-23 13-Jul-23 Fabrication of MiC Unit for First Floor Level (46nos, PR= 24no/wk) WSD-W-PY-07 Fabrication of MiC Unit for First Floor Level (46nos, PR= 24no/wk) 35 26-Mar-23 88 22-Jun-23 20-Feb-23 19-May-23 7d/w x10 Delivery of MiC Unit to Site - Batch 3 (for 1/F only) Delivery of MiC Unit to Site - Batch 3 (for 1/F only) 27-Mar-23 94 22-Jul-23 6d/w x10 WSD-W-PY-08 18-Mar-23 14-Jul-23 Fabrication of MiC Unit for Second Floor Level & Car Park (41nos. PR= 24no/wk WSD-W-PY-09 Fabrication of MiC Unit for Second Floor Level & Car Park (41nos, PR= 24no/wk) 35 30-Apr-23 88 23-Jun-23 27-Jul-23 7d/w x10 Delivery of MiC Unit to Site - Batch 4 (for 2/F only Delivery of MiC Unit to Site - Batch 4 (for 2/F only) WSD-W-PY-10 22-Apr-23 02-May-23 73 21-Jul-23 Delivery of MiC Unit to Site - Batch 5 (for Car Park only) Delivery of MiC Unit to Site - Batch 5 (for Car Park only) WSD-W-PY-11 26-Apr-23 77 29-Jul-23 29-Jul-23 6d/w x10 26-Apr-23 Fabrication of MIC for Elevated Walkway No. 2 Incl. ABWF, fit-out, drainage system & conceal ducts Fabrication of MIC for Elevated Walkway No.2 Incl. ABWF, fit-out, drainage system & conceal ducts WSD-W-PY-13 75 14-Jul-23 542 24-Oct-24 06-Jan-25 7d/w x10 Delivery of MiC Unit to Site - Batch 6 (MiC Bridge Delivery of MiC Unit to Site - Batch 6 (MiC Bridge 12-Sep-23 542 07-Jan-25 WSD-W-PY-14 Construction of Administration Building 1072 17-Nov-21 23-Oct-24 554 15-Mar-22 30-Apr-26 Date Checked Approved Non-Critical Tas FIRST PROGRAMME REV. 1 03-Nov-21 Revision 0 First Issue 19-Jan-22 Revision 1 First Issue АН

ALL ACTIVITIES

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Revision 2 First Issue

Tasks Summar

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Contract No. 6/WSD/21 In-situ Reprovisioning of Sha Tin Water Treatment Works (South Works) Administration Building Page 4 of 10 In-situ Reprovisioning of Sha Tin WTW (South Works) - Admin. Bldg Date prepared: 11-Feb-22 at 13:13 I GINIORALIL MIAMILI GINIORALIL MINAMILI GINIORALI LUMAMILI GINIORALI CONTRA LUMAMILI Foundation 26-May-23 1070 15-Mar-22 556 **Preparation Works** 06-May-22 48 15-Mar-22 Fdn. - Surveying, Trial Pit, UU Detection, Installation of Monitoring Strumentation, Site Haul Road Fdn. - Surveying, Trial Pit, UU Detection, Installation of Monitoring Strumentation, Site Haul Road WSD-W-F01 03-May-22 42 15-Mar-22 23-Jun-22 6d/w x10 Edn. - G.I. & Instrumentation 16-Mar-22 24 31-Mar-22 14-Apr-22 6d/w x10 WSD-W-F02 12 Fdn. - Conduct Laboratory Test & Issue Preliminary Report WSD-W-F03 Fdn. - Conduct Laboratory Test & Issue Preliminary Report 15-Apr-22 31 17-Apr-22 16-May-22 7d/w x10 Fdn. - Design Review WSD-W-F04 Fdn. - Design Review 21 06-May-22 31 17-May-22 06-Jun-22 30-Sep-22 84 07-Jun-22 Phase 1 (Grid J-Q/1-7) Temporary Retaining Structure (Grid J-Q/1-7), 120m long, to be constructed by Contract 1/WSD/19 Temporary Retaining Structure (Grid J-Q/1-7), 120m long, to be constructed by Contract 1/WSD/19 WSD-W-F-101 17-Nov-21 202 07-Jun-22 7d/w x10 Install Strut and Excavation at Portion 1 from 23.3mPD to 21.5mPD (2400m³, PR=100m³/d) 22-Jul-22 0 24-Jun-22 Install Strut and Excavation at Portion 1 from 23.3mPD to 21.5mPD (2400m³, PR=100m³/d) 22-Jul-22 6d/w x10 24-Jun-22 Carry Out Plate Load Test at Portion 1 WSD-W-F-103 | Carry Out Plate Load Test at Portion 05-Aug-22 86 17-Oct-22 30-Oct-22 7d/w x10 23-Jul-22 Footing - 1m thk Footing @ +21.5mPD incl. blinding layer (7 batches @ 6d/batch) WSD-W-F-104 Footing - 1m thk Footing @ +21.5mPD incl. blinding layer (7 batches @ 6d/batch) 6d/w x10 42 24-Sep-22 70 31-Oct-22 17-Dec-22 06-Aug-22 Time Risk Allowance for Phase 1 Foundation 30-Sep-22 84 18-Dec-22 WSD-W-F-105 Time Risk Allowance for Phase 1 Foundation 25-Sep-22 23-Dec-22 7d/w x10 Phase 2 (Grid A'-J/1-9) 26-May-23 1070 07-Jun-22 ◆ Temporary Retaining Structure (Grid A'-C/1), 48m long, to be constructed by Contract 1/WSD/19 WSD-W-F-201 Temporary Retaining Structure (Grid A'-C/1), 48m long, to be constructed by Contract 1/WSD/19 17-Nov-21 1626 30-Apr-26 ◆ Temporary Retaining Structure (Grid F-J/7-9), 30m long, to be constructed by Contract 1/WSD/19 WSD-W-F-201.5 Temporary Retaining Structure (Grid F-J/7-9), 30m long, to be constructed by Contract 1/WSD/19 7d/w x10 1626 30-Apr-26 0 17-Nov-21 ■ B.Footing - Sheet Piling (GL C-J/ 1), 50m on plan/ 12m deep, PR = 12sheet/d WSD-W-F-202 B.Footing - Sheet Piling (GL C-J/1), 50m on plan/ 12m deep, PR = 12sheet/d 12 07-Jun-22 20-Jun-22 0 07-Jun-22 20-Jun-22 6d/w x10 B.Footing - Sheet Piling (GL A1-F/9), 60m on plan/ 16m deep; PR ±10sheet/o WSD-W-F-202.5 B.Footing - Sheet Piling (GL A1-F/9), 60m on plan/ 16m deep, PR =10sheet/d 0 07-Jun-22 Forming of Slope and Carry Out Excavation to + 20 mPD (11500m³, PR=100m³/d WSD-W-F-203 Forming of Slope and Carry Out Excavation to + 20 mPD (11500m³, PR=100m³/d) 115 23-Jul-22 07-Dec-22 0 23-Jul-22 07-Dec-22 Construct Partial Raft (10 batches @ 6d/batch 60 22-Feb-23 6d/w x10 WSD-W-F-204 | Construct Partial Raft (10 batches @ 6d/batch) 22-Feb-23 0 08-Dec-22 08-Dec-22 Install Raking Struts for Further Excavation WSD-W-F-205 Install Raking Struts for Further Excavation 28-Feb-23 0 23-Feb-23 28-Feb-23 6d/w x10 Excavate Slope in front of Sheetpile to +20 mPD (500m³, PR=100m³/d WSD-W-F-206 Excavate Slope in front of Sheetpile to +20 mPD (500m³, PR=100m³/d) 01-Mar-23 Construct Remaining Raft (10 batches @ 6d/batc WSD-W-F-207 Construct Remaining Raft (10 batches @ 6d/batch) 60 19-May-23 0 07-Mar-23 19-May-23 6d/w x10 07-Mar-23 ■ Time Risk Allowance for Phase 2 Foundation WSD-W-F-208 Time Risk Allowance for Phase 2 Foundation 20-May-23 26-May-23 0 20-May-23 26-May-23 7d/w x10 Structure 23-Jan-24 Phase 1 (Grid J-Q/1-7) 31-May-23 104 24-Dec-22 17-Oct-22 70 24-Dec-22 U/GR.C. - Beam / Column Construction WSD-W-UG1(U/G R.C. - Beam / Column Construction 17-Oct-22 70 24-Dec-22 Basement Level 02-Dec-22 89 11-Jan-23 03-Oct-22 WSD-W-SB101 B/F R.C. - Suspended Slab 12 18-Oct-22 31-Oct-22 70 11-Jan-23 27-Jan-23 6d/w x10 B/F R.C. - Formwork and Rebar to RC Column WSD-W-SB102 B/F R.C. - Formwork and Rebar to RC Column 6d/w x10 12 01-Nov-22 14-Nov-22 70 28-Jan-23 10-Feb-23 □ B/F R.C. - Formwork and Rebar RC Wall WSD-W-SB103 B/F R.C. - Formwork and Rebar RC Wall 6d/w x10 01-Nov-22 14-Nov-22 70 28-Jan-23 10-Feb-23 B/F.R.C.:- Formwork and Rebar RC Concrete Beam/Slab (Ground Slab) incl. Erect Scaffold WSD-W-SB104 B/F R.C. - Formwork and Rebar RC Concrete Beam/Slab (Ground Slab) incl. Erect Scaffold 25-Nov-22 70 09-Feb-23 B/F R.C. - Concreting WSD-W-SB105 B/F R.C. - Concreting 26-Nov-22 26-Nov-22 70 23-Feb-23 23-Feb-23 B/F R.C. - Haul Road Preparation for Mobilization Mobile Crane WSD-W-SB106 B/F R.C. - Haul Road Preparation for Mobilization Mobile Crane 14-Oct-22 107 13-Feh-23 23-Feh-23 6d/w x10 03-Oct-22 B/F, MiC:- Installation of MiC Module (16 units) by Mobile Crane @ Basement level << PR=6no/d WSD-W-SB107 B/F MiC - Installation of MiC Module (16 units) by Mobile Crane @ Basement level << PR=6no/d>> 30-Nov-22 70 24-Feb-23 27-Feb-23 6d/w x10 Time Risk Allowance for Structural Works @ Basement Level Phase 1 WSD-W-SB108 Time Risk Allowance for Structural Works @ Basement Level Phase 1 02-Dec-22 89 28-Feb-23 01-Mar-23 7d/w x10 07-Jan-23 85 02-Mar-23 G/F R.C. - Formwork and Rebar to RC Column WSD-W-SG101 G/F R.C. - Formwork and Rebar to RC Column 70 02-Mar-23 ☐ G/F R.C. - Formwork and Rebar to RC Wall WSD-W-SG102 G/F R.C. - Formwork and Rebar to RC Wall 16-Dec-22 70 02-Mar-23 15-Mar-23 6d/w x10 03-Dec-22 G/F R.C. - Formwork and Rebar to RC Concrete Slab (First Floor Slab) Incl. Erect Scaffold WSD-W-SG103 G/F R.C. - Formwork and Rebar to RC Concrete Slab (First Floor Slab) incl. Erect Scaffold 12 15-Dec-22 30-Dec-22 70 14-Mar-23 27-Mar-23 6d/w x10 G/F R.C. - Concreting WSD-W-SG104 G/F R.C. - Concreting 31-Dec-22 70 28-Mar-23 28-Mar-23 6d/w x10 G/F MiG - Installation of MiC Module (18 units) by Mobile Crane @ Ground Floor level <<PR=6no/d>> WSD-W-SG105 G/F MiC - Installation of MiC Module (18 units) by Mobile Crane @ Ground Floor level << PR=6no/d>> 05-Jan-23 70 29-Mar-23 I Time Risk Allowance for Structural Works @ Ground Level Phase WSD-W-SG106 Time Risk Allowance for Structural Works @ Ground Level Phase 1 2 07-Jan-23 85 01-Apr-23 06-Jan-23 02-Apr-23 7d/w x10 13-Feb-23 86 03-Apr-23 1/F R.C. + Formwork and Rebar to RC Column WSD-W-S1101 1/F R.C. - Formwork and Rebar to RC Column 21-Jan-23 69 03-Apr-23 19-Apr-23 6d/w x10 1/F R.C. - Formwork and Rebar to RC Wall WSD-W-S1102 1/F R.C. - Formwork and Rebar to RC Wall 09-Jan-23 21-Jan-23 69 03-Apr-23 19-Apr-23 6d/w x10 1/F R.C. - Formwork and Rebar to RC Concrete Slab (Secound Floor Slab) incl. Erect WSD-W-S1103 1/F R.C. - Formwork and Rebar to RC Concrete Slab (Secound Floor Slab) incl. Erect Scaffold 06-Feb-23 69 18-Apr-23 1 1/F R.C. - Concreting WSD-W-S1104 1/F R.C. - Concreting 07-Feb-23 07-Feb-23 69 03-May-23 03-May-23 6d/w x10 :I:1/F MiC - Installation of MiC:Module (24 units) by:Mobile Crane @ First Floor level <<PR=6no/d>> WSD-W-S1105 1/F MiC - Installation of MiC Module (24 units) by Mobile Crane @ First Floor level << PR=6no/d>> 4 08-Feb-23 11-Feb-23 69 04-May-23 08-May-23 6d/w x10









Date	Revision	Checked	Approved
03-Nov-21	Revision 0 First Issue	AH	WJ
19-Jan-22	Revision 1 First Issue	PF	AH
08-Feb-22	Revision 2 First Issue		

In-situ Reprovisioning of Sha Tin
WTW (South Works) - Admin. Bldg.

Contract No. 6/WSD/21 In-situ Reprovisioning of Sha Tin Water Treatment Works (South Works) Administration Building

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NDJFMAMJJASONDJFMAMJJASONDJFMAMJJASONDDJFMAMJJASONDJFMAMJJASONDJFMAMJJASONDJFMAMJJASONDJFMAMJJASONDJ Time Risk Allowance for \$tructural Works @ First Floor Level Phase 1 WSD-W-S1106 Time Risk Allowance for Structural Works @ First Floor Level Phase 1 16-Mar-23 88 11-May-23 2/F.R.C. - Formwork and Rebar to RC Column WSD-W-S2101 2/F R.C. - Formwork and Rebar to RC Column 14-Feb-23 27-Feb-23 70 | 11-May-23 | 24-May-23 | 6d/w x10 2/F.R.C. - Formwork and Rebar to RC Wall WSD-W-S2102 2/F R.C. - Formwork and Rebar to RC Wall 12 14-Feb-23 27-Feb-23 70 11-May-23 24-May-23 6d/w x10 2/F R.C. - Formwork and Rebar to RC Concrete Slab (Third Floor Slab) incl. Erect Scaffold WSD-W-S2103 2/F R.C. - Formwork and Rebar to RC Concrete Slab (Third Floor Slab) incl. Erect Scaffold 12 25-Feb-23 10-Mar-23 70 23-May-23 06-Jun-23 6d/w x10 1 2/F R.C. - Concreting WSD-W-S2104 2/F R.C. - Concreting 70 07-Jun-23 07-Jun-23 6d/w x10 1 2/F MiC - Installation of MiC Module (16 units) by Mobile Crane @ Second Floor level <<PR=6no/d>> WSD-W-S2105 2/F MiC - Installation of MiC Module (16 units) by Mobile Crane @ Second Floor level <<PR=6no/d>> 15-Mar-23 70 08-Jun-23 10-Jun-23 I : Time Risk Allowance for Structural Works @ Second Floor Level Phase 12-Jun-23 7d/w x10 WSD-W-S2106 Time Risk Allowance for Structural Works @ Second Floor Level Phase 1 16-Mar-23 16-Mar-23 88 12-Jun-23 Third Floor Level 31-May-23 104 13-Jun-23 17-Mar-23 3/F.R.C. - Formwork and Rebar to RC Column WSD-W-S3101 3/F R.C. - Formwork and Rebar to RC Column 30-Mar-23 70 13-Jun-23 27-Jun-23 6d/w x10 J 3/F.R.C. - Formwork and Rebar to RC Wall WSD-W-S3102 3/F R C - Formwork and Rebar to RC Wall 30-Mar-23 70 13-Jun-23 27-Jun-23 6d/w x10 3/F R.C. - Formwork and Rebar to RC Concrete Slab (Third Floor Slab) incl. Erect Scaffold WSD-W-S3103 3/F R.C. - Formwork and Rebar to RC Concrete Slab (Third Floor Slab) incl. Erect Scaffold 14-Apr-23 70 26-Jun-23 10-Jul-23 6d/w x10 29-Mar-23 L 3/F R C - Concreting WSD-W-S3104 3/F R.C. - Concreting 15-Apr-23 70 11-Jul-23 11-Jul-23 15-Apr-23 3/F R.C. - Roof Construction WSD-W-S3105 3/F R.C. - Roof Construction 24 15-May-23 70 12-Jul-23 08-Aug-23 6d/w x10 17-Apr-23 Time Risk Allowance for Structural Works @ Third Floor Level Phase WSD-W-S3106 Time Risk Allowance for Structural Works @ Third Floor Level Phase 1 16-May-23 19-May-23 85 09-Aug-23 12-Aug-23 7d/w x10 ■ Erect Material Hoist WSD-W-S3107 Erect Material Hoist 31-May-23 104 01-Sep-23 Phase 2 (Grid C-J/1-4) 27-May-23 28-Sep-23 945 27-May-23 Underground 24-Jun-23 0 27-May-23 U/G R.C. - Beam / Column Construction WSD-W-UG2(U/G R.C. - Beam / Column Construction 24-Jun-23 0 27-May-23 24 27-May-23 Basement Level 10-Jul-23 1025 26-Jun-23 B/F R.C. - Suspended Slab WSD-W-SB201 B/F R.C. - Suspended Slab 12 26-Jun-23 10-Jul-23 846 17-Apr-26 30-Apr-26 6d/w x10 ■ B/F MiC: - Installation of MiC Module (34 units) by Mobile Crane @ Basement level <<PR=6no/d> WSD-W-SB203 B/F MiC - Installation of MiC Module (34 units) by Mobile Crane @ Basement level << PR=6no/d>> 6 26-Jun-23 03-Jul-23 0 26-Jun-23 03-Jul-23 6d/w x10 Time Risk Allowance for MiC Installation @Basement Level WSD-W-SB204 Time Risk Allowance for MiC Installation @Basement Level 04-Jul-23 05-Jul-23 0 04-Jul-23 05-Jul-23 7d/w x10 06-Jul-23 G/F MiC - Installation of MiC Module (40 units) by Mobile Crane @ Ground level << PR=6no/d>> WSD-W-SG05 G/F MiC - Installation of MiC Module (40 units) by Mobile Crane @ Ground level << PR=6no/d>> 13-Jul-23 0 06-Jul-23 Time Risk Allowance for MiC Installation @ Ground Level WSD-W-SG06 Time Risk Allowance for MiC Installation @ Ground Level 14-Jul-23 14-Jul-23 0 14-Jul-23 14-Jul-23 7d/w x10 First Floor Level 25-Jul-23 25-Jul-23 0 15-Jul-23 15-Jul-23 1/F:MiC - Installation of MiC Module (46 units) by Mobile Crane @ First Floor level <<PR=6no/d> WSD-W-S1201 1/F MiC - Installation of MiC Module (46 units) by Mobile Crane @ First Floor level <<PR=6no/d>> 24-Jul-23 0 15-Jul-23 24-Jul-23 6d/w x10 15-Jul-23 I: Time Risk Allowance for MiC Installation @ First Floor Level WSD-W-S1202 Time Risk Allowance for MiC Installation @ First Floor Level 25-Jul-23 0 25-Jul-23 25-Jul-23 7d/w x10 25-Jul-23 Second Floor Level 29-Jul-23 0 26-Jul-23 2/F.M.C.- Installation of MiC Wodule (18 units) by Mobile Crane @ Second Floor level <<PR=6no/d> WSD-W-S2201 2/F MiC - Installation of MiC Module (18 units) by Mobile Crane @ Second Floor level <<PR=6no/d>> 26-Jul-23 28-Jul-23 0 26-Jul-23 28-Jul-23 6d/w x10 I Time Risk Allowance for MiC Installation @ Second Floor Level WSD-W-S2202 Time Risk Allowance for MiC Installation @ Second Floor Leve 29-Jul-23 29-Jul-23 0 29-Jul-23 29-Jul-23 7d/w x10 ◆ 2/F MiC - Demobilization of Mobile Crane WSD-W-S2203 2/F MiC - Demobilization of Mobile Crane 29-Jul-23 0 29-Jul-23 28-Sep-23 264 31-Jul-23 3/F R.C. -Formwork and Rebar to RC Column WSD-W-S3201 3/F R.C. - Formwork and Rebar to RC Column 12 31-Jul-23 12-Aug-23 0 31-Jul-23 12-Aug-23 6d/w x10 3/F R C - Formwork and Rebar to RC Wall WSD-W-S3202 3/F R.C. - Formwork and Rebar to RC Wall 31-Jul-23 12-Aug-23 6d/w x10 12-Aug-23 0 31-Jul-23 3/F R.C. - Formwork and Rebar to RC Concrete Slab (Third Floor Slab) incl. Erect Scaffold WSD-W-S3203 3/F R.C. - Formwork and Rebar to RC Concrete Slab (Third Floor Slab) incl. Erect Scaffold 24-Aug-23 0 11-Aug-23 11-Aug-23 24-Aug-23 6d/w x10 WSD-W-S3204 3/F R.C. - Concreting 25-Aug-23 0 25-Aug-23 3/FMIC - Installation of MiC Module (14 units) by Mobile Crane @ Second Floor level <<PR=6no/d> WSD-W-S3205 3/F MiC - Installation of MiC Module (14 units) by Mobile Crane @ Second Floor level <<PR=6no/d>> 26-Aug-23 29-Aug-23 0 26-Aug-23 29-Aug-23 6d/w x10 I Time Risk Allowance for Structural Works @ Third Floor Level Phase 2 WSD-W-S3206 Time Risk Allowance for Structural Works @ Third Floor Level Phase 2 31-Aug-23 7d/w x10 30-Aug-23 31-Aug-23 0 30-Aug-23 3/F.R.C. - Roof Construction WSD-W-S3207 3/F R C - Roof Construction 28-Sep-23 210 21-May-24 Phase 3 (Grid A'-C/1-4) 19-Dec-23 273 07-Jul-23 **Basement Floor Level** 19-Aug-23 1 07-Jul-23 20-Aug-23 WSD-W-SB301 B/F R.C. - Suspended Slab B/F R.C. - Suspended Slab 19-Jul-23 1 07-Jul-23 20-Jul-23 6d/w x10 WSD-W-SB302 B/F R.C. - Formwork and Rebar to RC Column 20-Jul-23 02-Aug-23 1 21-Jul-23 03-Aug-23 6d/w x10 B/F R.C. - Formwork and Rebar to RC Column WSD-W-SB303 B/F R C - Formwork and Rebar RC Wall 03-Aug-23 6d/w x10 B/F R C - Formwork and Rebar RC Wall 02-Aug-23 1 21-Jul-23 20-Jul-23 WSD-W-SB304 B/F R.C. - Formwork and Rebar RC Concrete Beam/Slab (Ground Slab) incl. Erect Scaffold B/F R.C. - Formwork and Rebair RC Concrete Beam/S(ab (Ground Slab) incl. Erect Scaffold 12 01-Aug-23 14-Aug-23 1 02-Aug-23 15-Aug-23 6d/w x10 WSD-W-SB305 B/F R.C. - Concreting 15-Aug-23 16-Aug-23 16-Aug-23 6d/w x10 B/F R.C. Concreting WSD-W-SB306 B/F MiC - Installation of MiC Module (8 units) by Mobile Crane @ Basement Floor level <<PR=6no/d>> B/F MiC -Installation of MiC Module (8 units) by Mobile Crane @ Basement Floor level <<PR=6no/d>> 2 16-Aug-23 17-Aug-23 1 17-Aug-23 18-Aug-23 6d/w x10 Time Risk Allowance for Structural Works @ Basement Level Phase 3 WSD-W-SB307 Time Risk Allowance for Structural Works @ Basement Level Phase 3 2 | 18-Aug-23 | 19-Aug-23 | 1 | 19-Aug-23 | 20-Aug-23 | 7d/w x10











Date	Revision	Checked	Approved
3-Nov-21	Revision 0 First Issue	AH	WJ
9-Jan-22	Revision 1 First Issue	PF	AH
)8-Feb-22	Revision 2 First Issue		

Contract No. 6/WSD/21 In-situ Reprovisioning of Sha Tin Water Treatment Works (South Works) Administration Building Page 6 of 10 In-situ Reprovisioning of Sha Tin WTW (South Works) - Admin. Bldg Date prepared: 11-Feb-22 at 13:13 NDJIFIMAM JIJASIONID JIFIMAM JIJASIONID JIFIMAM JIJASIONID JIFIMAM JIJASIONID JIFIMAM JIJASIONID JIFIMAM JIJASIONID J Ground Floor Level 28 21-Aug-23 17-Sep-23 0 21-Aug-23 G/F R.C. - Formwork and Rebar to RC Column WSD-W-SG301 G/F R C - Formwork and Rebar to RC Column 12 21-Aug-23 02-Sep-23 0 21-Aug-23 02-Sep-23 6d/w x10 ■ G/F R.C. - Formwork and Rebar to RC Wall WSD-W-SG302 G/F R.C. - Formwork and Rebar to RC Wall 02-Sep-23 0 21-Aug-23 02-Sep-23 21-Aug-23 ■ G/F R.C. - Formwork and Rebar to RC|Concrete Slab (First Floor Slab) incl. Erect Scaffold WSD-W-SG303 G/F R.C. - Formwork and Rebar to RC Concrete Slab (First Floor Slab) incl. Erect Scaffold 12 01-Sep-23 14-Sep-23 0 01-Sep-23 14-Sep-23 6d/w x10 WSD-W-SG304 G/F R.C. - Concreting 15-Sep-23 6d/w x10 15-Sen-23 15-Sen-23 0 15-Sen-23 I: G/F:MiC - Installation of MiC Module (3 units) by Mobile Crane @ Ground Floor level <<PR=6no/d> WSD-W-SG305 G/F MiC - Installation of MiC Module (3 units) by Mobile Crane @ Ground Floor level <<PR=6no/d>> 16-Sep-23 16-Sep-23 16-Sep-23 6d/w x10 Time Risk Allowance for Structural Works @ Ground Level Phase 3 WSD-W-SG306 Time Risk Allowance for Structural Works @ Ground Level Phase 3 1 17-Sep-23 17-Sep-23 0 17-Sep-23 17-Sep-23 7d/w x10 18-Sen-23 19-Dec-23 273 18-Sep-23 1/F R C - Formwork and Rebar to RC Column WSD-W-S1301 1/F R.C. - Formwork and Rebar to RC Column 03-Oct-23 0 18-Sep-23 03-Oct-23 6d/w x10 18-Sep-23 ■ 1/F R.C. - Formwork and Rebar to RC Wall WSD-W-S1302 1/F R.C. - Formwork and Rebar to RC Wall 12 18-Sep-23 03-Oct-23 0 18-Sep-23 03-Oct-23 6d/w x10 ■ 1/F R.C. - Formwork and Rebar to RC Concrete Slab (Secound Floor Slab) incl. Erect Scaffold WSD-W-S1303 1/F R.C. - Formwork and Rebar to RC Concrete Slab (Secound Floor Slab) incl. Erect Scaffold 12 29-Sep-23 14-Oct-23 0 29-Sep-23 14-Oct-23 6d/w x10 I 1/F R.C. - Concreting WSD-W-S1304 1/F R.C. - Concreting 16-Oct-23 16-Oct-23 6d/w x10 16-Oct-23 0 16-Oct-23 1 1/F MiC - Installation of MiC Module (3 units) by Mobile Crane @ First Floor level < PR = 6no/d> WSD-W-S1305 1/F MiC - Installation of MiC Module (3 units) by Mobile Crane @ First Floor level <<PR=6no/d>> 17-Oct-23 17-Oct-23 0 17-Oct-23 17-Oct-23 6d/w x10 I Time Risk Allowance for Structural Works @ First Floor Level Phase 3 WSD-W-S1306 Time Risk Allowance for Structural Works @ First Floor Level Phase 3 18-Oct-23 18-Oct-23 18-Oct-23 7d/w x10 18-Oct-23 0 1. 1/F R.C. + RC Roof Construction (Lower Roof, GL A'-E/1-4) 2 WSD-W-S1307 1/F R.C. - RC Roof Construction (Lower Roof, GL A'-E/1-4) 19-Oct-23 20-Oct-23 37 02-Dec-23 04-Dec-23 6d/w x10 1/F R.C. - Architectural Facade/ Concrete Plinth/Drainage System/Balustrade on Roof Terrage @ Second Level WSD-W-S1308 1/F R.C. - Architectural Facade/ Concrete Plinth/ Drainage System/ Balustrade on Roof Terrace @ Second 50 21-Oct-23 19-Dec-23 220 22-Jul-24 171 31-Jul-23 Phase 4 (Car Park and Ramp) 15-Dec-23 Carpark/Ramp -: Installation of MiC; Module (5; units) by Mobile Crane @ Car Park <<PR=6no/d>> Carpark/Ramp - Installation of MiC Module (5 units) by Mobile Crane @ Car Park <<PR=6no/d>> 31-Jul-23 31-Jul-23 WSD-W-CP01 31-Jul-23 0 31-Jul-23 6d/w x10 Carpark/Ramp - RC Column 5.7m x 19nos @ Basement Level (GL A-J/ 5-7) < PR = 7d/ column 7 mould> Carpark/Ramp - RC Column 5.7m x 19nos @ Basement Level (GL A'-J/ 5-7)<<PR= 7d/ column, 7 mould>> 21 01-Aug-23 24-Aug-23 0 01-Aug-23 24-Aug-23 6d/w x10 Carpark/Ramp:- RC:Concrete Slab (Ground Slab) incl. Erect Scaffold Carpark/Ramp - RC Concrete Slab (Ground Slab) incl. Erect Scaffold 16-Sep-23 0 25-Aug-23 Carpark/Ramp - RC Column fr.4.7m to 9.4m x 9nos @ Ground Level (GL A'-J/ 5-7)<<PR=14d/column, 5 moulds Carpark/Ramp - RC Column fr 4.7m to 9.4m x 9nos @ Ground Level (GL A'-J/ 5-7)<<PR= 14d/ column. 5 28 WSD-W-CP04 18-Sep-23 21-Oct-23 0 18-Sen-23 21-Oct-23 Carpark/Ramp - Concrete Structure for Ramp between G/F & 1/F including landing Carpark/Ramp - Concrete Structure for Ramp between G/F & 1/F including landing WSD-W-CP05 18 24-Oct-23 13-Nov-23 0 24-Oct-23 13-Nov-23 6d/w x10 Carpark/Ramp - Concrete Structure for Ramp between 1/F & 2/F including WSD-W-CP06 Carpark/Ramp - Concrete Structure for Ramp between 1/F & 2/F including 08-Dec-23 0 14-Nov-23 08-Dec-23 6d/w x10 Carpark/Ramp - Construction of Roadworks for Emergency Vehicle Access heading to Administration Building WSD-W-CP07 Carpark/Ramp - Construction of Roadworks for Emergency Vehicle Access heading to Administration Build 11-Nov-23 163 10-Apr-24 03-Jun-24 ◆ Carpark/Ramp - Completion of Structure for Car Park WSD-W-CP08 Camark/Ramp - Completion of Structure for Car Park 0 11-Nov-23 163 03-Jun-24 6d/w x10 ■ Time Risk Allowance for Activities WSD-D-CP01 to WSD+D-CP-06 WSD-W-CP09 Time Risk Allowance for Activities WSD-D-CP01 to WSD-D-CP-06 09-Dec-23 15-Dec-23 0 09-Dec-23 15-Dec-23 7d/w x10 Glazing/ Curtain Wall Glazing/Curtain Wall - Bracket Installation for Building <<PR=4d/storey>> WSD-W-GL01 Glazing/Curtain Wall - Bracket Installation for Building <<PR=4d/storey>> 28-Sep-23 22 27-Sep-23 Glazing/Curtain Wall - Curtain Wall Panel Installation for Building <<PR=5d/storey>> Glazing/Curtain Wall - Curtain Wall Panel Installation for Building << PR=5d/storey>> 48 27-Nov-23 22 28-Oct-23 WSD-W-GL02 29-Sep-23 22-Dec-23 6d/w x10 ■ Glazing/Curtain Wall - Bracket Installation for Ramp << PR=4d/storey>> Glazing/Curtain Wall - Bracket Installation for Ramp <<PR=4d/storey>> WSD-W-GI 03 16-Dec-23 22-Dec-23 0 16-Dec-23 22-Dec-23 6d/w x10 Glazing/Curtain Wall -: Curtain Wall Panel Installation for Ramp << PR=5d/storey>> WSD-W-GL04 Glazing/Curtain Wall - Curtain Wall Panel Installation for Ramp << PR=5d/storey>> 23-Dec-23 23-Jan-24 0 23-Dec-23 6d/w x10 Glazing/Curtain Wall + Steel Frame Installation @ Ground Floor Entrance Lobby Glazing/Curtain Wall - Steel Frame Installation @ Ground Floor Entrance Lobby WSD-W-GL05 30-Nov-23 37 10-Jan-24 I Glazing/Curtain Wall - Glazing Panel Installation Glazing/Curtain Wall - Glazing Panel Installation WSD-W-GL06 07-Dec-23 37 17-Jan-24 23-Jan-24 6d/w x10 01-Dec-23 ◆ Glazing/Curtain Wall - Completion of Building Envelope Glazing/Curtain Wall - Completion of Building Envelope WSD-W-GL07 23-Jan-24 23-Jan-24 ABWF/ MEP/ FS/ Fitout Works 110 14-Aug-23 Basement - Transformer Room/ LV Switch Room/ Utility Riser Room/ Service Tunnel & Yard 30-May-24 28 14-Aug-23 Tx & LV\$B Rooms - MiC Connection Works/ Falsework Removal/ Preparation for ABWF & MEP Works WSD-B-TR01 Tx & LVSB Rooms - MiC Connection Works/ Falsework Removal/ Preparation for ABWF & MEP Works 28-Aug-23 11 14-Aug-23 09-Sep-23 6d/w x10 Tx & LVSB Rooms - ABWF Dea1 - Dea3 WSD-B-TR02 Tx & LVSB Rooms - ABWF Deg1 - Deg3 26-Oct-23 11 11-Sep-23 08-Nov-23 6d/w x10 Tx & LVSB Rooms - BS 1st Fix - 3rd Fix WSD-B-TR03 Tx & LVSB Rooms - BS 1st Fix - 3rd Fix 22-Jan-24 11 09-Nov-23 03-Feb-24 6d/w x10 27-Oct-23 Tx & LVSB Rooms - CLP Inspection & Defect Rectificati WSD-R-TR05 Tx & LVSB Rooms - CLP Inspection & Defect Rectification 23-Jan-24 05-Feb-24 28 28-Feb-24 Tx & LVSB Rooms - Installation of Tx & Testing by CLP Tx & LVSB Rooms - Installation of Tx & Testing by CLP WSD-B-TR06 30-May-24 28 13-Mar-24 04-Jul-24 6d/w x10 Construction of Riser/Shaft/Tunnel for Cable Containmer WSD-B-TR06.5 Construction of Riser/Shaft/Tunnel for Cable Containment 46 23-Jan-24 19-Mar-24 79 03-May-24 27-Jun-24 6d/w x10

6d/w x10

04-Jul-24

24-Aug-24



WSD-B-TR08

WSD-B-EG01

Tx & LVSB Rooms - CLP Power-on Date

EGM - Concrete Plinth, Waterproofing & Test

EGM - Floor Screeding, Wall Plastering & Doors & Wall Lining

Non-Critical Tas

Tasks Summar

P6 Hammock

Basement - Emergency Generator Room

Tx & LVSB Rooms - Completion of CLP Cable Laying Leading to Administration Building (to be constructe

EGM - MiC Connection Works/ Falsework Removal/ Preparation for ABWF & MEP Works

FIRST PROGRAMME REV. 1
ALL ACTIVITIES

25-May-24 28 27-Jun-24 27-Jun-24

42 05-Feb-24

28 | 20-Feb-24 | 22-Mar-24 | 11 | 04-Mar-24 | 09-Apr-24 | 6d/w x10

05-Feb-24

30-May-24 28

06-Jul-24

02-Feb-24





Date	Revision	Checked	Approved
3-Nov-21	Revision 0 First Issue	AH	WJ
9-Jan-22	Revision 1 First Issue	PF	AH
)8-Feb-22	Revision 2 First Issue		

Tx & LVSB Rooms - Completion of CLP Cable Laying Leading to Administration Building (to be constructed by Othe

◆ Tx & LVSB Rooms - CLP Power-on Date

EGM - Floor Screeding, Wall Plastering & Doors & Wall Lining

EGM - Concrete Plinth, Waterproofing & Test

EGM:- MiC Connection Works/ Falsework Removal/ Preparation for ABWF & MEP Works

Contract No. 6/WSD/21 In-situ Reprovisioning of Sha Tin Water Treatment Works (South Works) Administration Building Page 7 of 10 In-situ Reprovisioning of Sha Tin WTW (South Works) - Admin. Bldg Date prepared: 11-Feb-22 at 13:13 WSD-B-EG04 EGM - MEP Works 18-May-24 29-Apr-24 42 20-Jun-24 6d/w x10 B EGM - Move In Generator Equipments WSD-B-EG05 EGM - Move-In Generator Equipments 30-Apr-24 07-May-24 42 21-Jun-24 27-Jun-24 6d/w x10 EGM - Final Coat to Wall & Sealer to Floor WSD-B-EG06 EGM - Final Coat to Wall & Sealer to Floor 29-May-24 42 28-Jun-24 19-Jul-24 6d/w x10 08-May-24 EGM - Install Generator Equipments & Testino WSD-B-FG07 EGM - Install Generator Equipments & Testing 28 03-Jul-24 42 20-Jul-24 21-Aug-24 6d/w x10 I EGM - Install Doors & Ironmogery WSD-B-EG08 EGM - Install Doors & Ironmogery 06-Jul-24 42 22-Aug-24 24-Aug-24 6d/w x10 Basement - Sprinkler/FS Water Tank 12-Aug-24 10-Apr-24 24-Aug-24 6d/w x10 Sprinkler Tank/ FS Tank Room - Waterproofing & Testing 10-Apr-24 11 10-Apr-24 23-Apr-24 6d/w x10 WSD-B-FS01 Sprinkler Tank/ FS Tank Room - Waterproofing & Testing 12 23-Mar-24 Sprinkler: Tank/ FS Tank Room - Plastering: Works Inside Tank WSD-B-FS02 Sprinkler Tank/ FS Tank Room - Plastering Works Inside Tank 24-Apr-24 11 24-Apr-24 08-May-24 6d/w x10 Sprinkler: Tank/ FS Tank Room - Wall & Floor Tiling Works WSD-B-FS03 Sprinkler Tank/ FS Tank Room - Wall & Floor Tiling Works 25-Apr-24 24-May-24 11 09-May-24 06-Jun-24 6d/w x10 Sprinkler Tank/ FS Tank Room - Install Equipment WSD-R-FS04 Sprinkler Tank/ FS Tank Room - Install Equipment 60 17-Aug-24 6d/w x10 05-Aug-24 11 07-Jun-24 25-May-24 Sprinkler Tank/ FS Tank Room - Install Cat Ladder & Hatch Cover WSD-B-FS05 Sprinkler Tank/ FS Tank Room - Install Cat Ladder & Hatch Cover 12-Aug-24 11 19-Aug-24 24-Aug-24 6d/w x10 Basement - Office Fitting-Out 17-Feb-24 62 6d/w x10 B/F Interior Decoration - Site Clearance/ Preparation for ABWF & MEP Works WSD-B-BA-01 B/F Interior Decoration - Site Clearance/ Preparation for ABWF & MEP Works 02-Nov-23 62 11-Jan-24 B/F Interior Decoration - ABWF Works incl. block wall, plastering & paint, ceiling panel, raised floor, door WSD-R-BA-02 B/F Interior Decoration - ABWF Works incl. block wall, plastering & paint, ceiling panel, raised floor, door 48 03-Nov-23 30-Dec-23 62 18-Jan-24 16-Mar-24 6d/w x10 B/F Interior Decoration: MEP Works incl. 1st fix, 2nd fix & final fix installation WSD-B-BA-03 B/F Interior Decoration - MEP Works incl. 1st fix. 2nd fix & final fix installation 17-Jan-24 62 03-Feb-24 06-Apr-24 6d/w x10 B/F Interior Decoration - Inspection/ Testing/ Defect Rectification WSD-B-BA-04 B/F Interior Decoration - Inspection/ Testing/ Defect Rectification 18-Jan-24 17-Feb-24 62 08-Apr-24 06-May-24 6d/w x10 Basement - Dangerous Goods Store Fitting Out Basement Interior Decoration - Site Clearance/ Preparation for ABWF & MEP Works WSD-R-DG01 Basement Interior Decoration - Site Clearance/ Preparation for ABWE & MEP Works 02-Nov-23 257 07-Sep-24 13-Sep-24 6d/w x10 6 27-Oct-23 Basement Interior Decoration - ABWF Works incl. block wall, plastering & paint, ceiling panel, raised floor, doo WSD-B-DG02 Basement Interior Decoration - ABWF Works incl. block wall, plastering & paint, ceiling panel, raised floor, 48 03-Nov-23 30-Dec-23 257 14-Sep-24 12-Nov-24 6d/w x10 Basement Interior Decoration - MEP Works incl. 1st fix, 2nd fix & final fix installation WSD-B-DG03 Basement Interior Decoration - MEP Works incl. 1st fix, 2nd fix & final fix installation 17-Jan-24 257 03-Oct-24 28-Nov-24 6d/w x10 Basement Interior Decoration - Inspection/ Testing/ Defect Rectification WSD-B-DG04 Basement Interior Decoration - Inspection/ Testing/ Defect Rectification 18-Jan-24 17-Feb-24 257 29-Nov-24 Time Risk Allowance for Activities from WSD-B-L1-01 to WSD-B-L1-04 Time Risk Allowance for Activities from WSD-B-L1-01 to WSD-B-L1-04 WSD-R-DG05 24-Feb-24 316 30-Dec-24 05-Jan-25 7d/w x10 18-Feb-24 Ground Floor Laboratory/ Vistory Reception Facility/ Water Treatment Training Venue 14-Feh-24 181 05-Jun-24 G/F Interior Decoration - Site Clearance/ Preparation for ABWF & MEP Works G/F Interior Decoration - Site Clearance/ Preparation for ABWF & MEP Works 181 05-Jun-24 G/F Interior Decoration - ABWF Works incl. block wall, plastering & paint, ceiling panel, raised floor, door G/F Interior Decoration - ABWF Works incl. block wall, plastering & paint, ceiling panel, raised floor, door 48 31-Oct-23 27-Dec-23 181 13-Jun-24 08-Aug-24 6d/w x10 G/F Interior Decoration - MEP Works incl. 1st fix, 2nd fix & final fix installation WSD-B-LG-03 G/F Interior Decoration - MEP Works incl. 1st fix, 2nd fix & final fix installation 13-Jan-24 181 29-Jun-24 24-Aug-24 6d/w x10 16-Nov-23 G/F Interior Decoration - Inspection/ Testing/ Defect Rectification WSD-B-LG-04 G/F Interior Decoration - Inspection/ Testing/ Defect Rectification 24 15-Jan-24 14-Feb-24 181 26-Aug-24 23-Sep-24 6d/w x10 1/F Interior Decoration - Site Clearance/ Preparation for ABWF & MEP Works WSD-B-L1-01 1/F Interior Decoration - Site Clearance/ Preparation for ABWF & MEP Works 6 24-Nov-23 30-Nov-23 0 24-Nov-23 30-Nov-23 6d/w x10 1/F Interior Decoration - ABWF Works ind ; block wall; plastering & paint, ceiling panel, raised floor, door 1/F Interior Decoration - ABWF Works incl. block wall, plastering & paint, ceiling panel, raised floor, door WSD-B-L1-02 29-Jan-24 61 17-Feb-24 17-Apr-24 6d/w x10 48 01-Dec-23 1/F Interior Decoration - MEP Works incl. 1st fix. 2nd fix & final fix installation 1/F Interior Decoration - MEP Works incl. 1st fix. 2nd fix & final fix installation WSD-B-I 1-03 48 6d/w x10 18-Dec-23 17-Feb-24 61 05-Mar-24 04-May-24 1/F Interior Decoration - Inspection/ Testing/ Defect Rectification WSD-B-L1-04 1/F Interior Decoration - Inspection/ Testing/ Defect Rectification 16-Mar-24 61 06-May-24 Time Risk Allowance for Activities from WSD-B-L1-01 to WSD-B-L1-04 Time Risk Allowance for Activities from WSD-B-L1-01 to WSD-B-L1-04 WSD1 23-Mar-24 79 04-Jun-24 Second Floor Office Fitting-Out 23-Mar-24 148 01-Dec-23 2/F Interior Decoration - Site Clearance/ Preparation for ABWF & MEP Works 2/F Interior Decoration - Site Clearance/ Preparation for ABWF & MEP Works WSD-B-L2-01 07-Dec-23 0 01-Dec-23 07-Dec-23 6d/w x10 2/F Interior Decoration - ABWF Works incl. block wall, plastering & paint, ceiling panel, raised floor, door 2/F Interior Decoration - ABWF Works incl. block wall, plastering & paint, ceiling panel, raised floor, door 48 05-Feb-24 0 08-Dec-23 2/F Interior Decoration - MEP Works incl. 1st fix 2nd fix & final fix installation 2/F Interior Decoration - MEP Works incl. 1st fix, 2nd fix & final fix installation WSD-B-L2-03 24-Feb-24 56 06-Mar-24 06-May-24 6d/w x10 27-Dec-23 2/F Interior Decoration - Inspection/ Testing/ Defect Rectification 23-Mar-24 148 26-Aug-24 WSD-B-I 2-04 2/F Interior Decoration - Inspection/ Testing/ Defect Rectification 23-Sep-24 6d/w x10 26-Feb-24 Third Floor Office Fitting-Out 30-Jan-24 13/F Interior Decoration - Site Clearance/ Preparation for ABWF & MEP Works 3/F Interior Decoration - Site Clearance/ Preparation for ABWF & MEP Works 42 30-Jan-24 3/F Interior Decoration - ABWF Works incl. block wall, plastering & paint, ceiling panel raised floor, door WSD-B-L3-02 3/F Interior Decoration - ABWF Works incl. block wall, plastering & paint, ceiling panel, raised floor, door 48 09-Apr-24 0 06-Feb-24 09-Apr-24 6d/w x10 06-Feb-24 3/F Interior Decoration - MEP Works incl. 1st fix, 2nd fix & final fix installation WSD-B-I 3-03 3/F Interior Decoration - MEP Works incl. 1st fix. 2nd fix & final fix installation 48 0 26-Feb-24 25-Apr-24 6d/w x10 26-Feb-24 25-Apr-24 3/F Interior Decoration - Inspection/ Testing/ Defect Rectification 3/F Interior Decoration - Inspection/ Testing/ Defect Rectification 05-Jun-24 6d/w x10 WSD-B-L3-04 33 05-Jun-24 0 26-Apr-24 ■ Time Risk Allowance for Third Floor Office Fitting Out WSD-B-L3-05 Time Risk Allowance for Third Floor Office Fitting Out 10-Jun-24 0 06-Jun-24 10-Jun-24 7d/w x10 MEP Lift Installation (E1) 181 25-Jul-24 Lift E1: - Erect Falsework & Builders Works inside Lift Shaft WSD-B-LT1-01 Lift E1 - Erect Falsework & Builders Works inside Lift Shaft 22-Mar-24 146 25-Jul-24 19-Sep-24 6d/w x10 Lift E1 - Install Lift including Fitting-Out WSD-B-LT1-02 Lift E1 - Install Lift including Fitting-Out 60 23-Mar-24 21-May-24 181 20-Sep-24 7d/w x10 Lift E1 - Testing after Power Energization WSD-B-LT1-03 Lift E1 - Testing after Power Energization 02-Jun-24 181 19-Nov-24 ☐ Lift E1 - Submit Form LE5 & Wait for EMSD Inspection WSD-B-LT1-04 Lift E1 - Submit Form LE5 & Wait for EMSD Inspection 16-Jun-24 181 01-Dec-24 14-Dec-24 7d/w x10 Date Checked Approved Non-Critical Tas FIRST PROGRAMME REV. 1 03-Nov-21 Revision 0 First Issue Near Critical Task 19-Jan-22 Revision 1 First Issue АН Critical Task Tasks Summary 俊 和 **ALL ACTIVITIES**

Time Risk Al

P6 Hammock

Revision 2 First Issue

08-Feb-22

Contract No. 6/WSD/21 In-situ Reprovisioning of Sha Tin Water Treatment Works (South Works) Administration Building Page 8 of 10 In-situ Reprovisioning of Sha Tin WTW (South Works) - Admin. Bldg Date prepared: 11-Feb-22 at 13:13 2022 2023 2024 2025 2026 2027 20 NDJFMAMJJASONDJFMAMJJASONDJFMAMJJASONDJFMAMJJASONDJFMAMJJASONDJFMAMJJASONDJ WSD-B-LT1-05 Lift E1 - Inspection for Lift Fitout & Issue Lift Certification LE6 17-Jun-24 14-Jul-24 181 15-Dec-24 MEP Lift Installation (F2 & F3) 28-Aug-24 136 19-Jun-24 Lift E2 & E3 (FS) - Erect Falsework & Builders Works inside Lift Shaft WSD-B-LT2-01 Lift E2 & E3 (FS) - Erect Falsework & Builders Works inside Lift Shaft 14-Aug-24 6d/w x10 22-Mar-24 | 116 | 19-Jun-24 Lift E2 & E3 (FS) - Install Lift including Fitting-Out WSD-B-LT2-02 Lift E2 & E3 (FS) - Install Lift including Fitting-Out 60 23-Mar-24 21-May-24 145 15-Aug-24 13-Oct-24 7d/w x10 Lift E2 & E3 (F\$) - Testing after Power Energization WSD-B-LT2-03 Lift E2 & E3 (FS) - Testing after Power Energization 11-Jun-24 | 136 | 14-Oct-24 Lift E2 & E3 (FS) - Submit Form LE5 & Wait for EMSD Inspection WSD-B-LT2-04 Lift E2 & E3 (FS) - Submit Form LE5 & Wait for EMSD Inspection 08-Nov-24 7d/w x10 12-Jun-24 25-Jun-24 136 26-Oct-24 Lift E2 & E3 (FS) - Inspection for Lift Fitout & Issue Lift Certification LE6 WSD-B-LT2-05 Lift E2 & E3 (FS) - Inspection for Lift Fitout & Issue Lift Certification LE6 28 23-Jul-24 136 09-Nov-24 06-Dec-24 7d/w x10 26-Jun-24 Dismantle Material Hoist 18-Dec-24 WSD-B-LT2-06 Dismantle Material Hoist 04-Aug-24 136 07-Dec-24 7d/w x10 Remaining Works at Hosit Area WSD-B-LT2-07 Remaining Works at Hosit Area 136 19-Dec-24 Other Facilities 23-Sen-24 11-Jun-24 Fit-out & Plumber Works - Water Closet Rooms WSD-B-OF-01 Fit-out & Plumber Works - Water Closet Rooms 88 23-Sep-24 11-Jun-24 0 11-Jun-24 23-Sep-24 6d/w x10 FS Sprinkler Pump Room - E&M Installation of pumping system & BS Work WSD-B-OF-02 FS Sprinkler Pump Room - E&M Installation of pumping system & BS Works 64 24-Aug-24 0 11-Jun-24 24-Aug-24 6d/w x10 Hot Water Plant/ Lab Waste Tank/ Water Sump Tank & Pump/ Foul Water Sump Pump WSD-B-OF-03 Hot Water Plant/ Lab Waste Tank/ Water Sump Tank & Pump/ Foul Water Sump Pump 23-Sep-24 0 11-Jun-24 Car Park - MEP Works 06-Jun-24 90 04-Jun-24 Car Park - Erect Falseworks for Builders & MEP Works WSD-B-CP-01 | Car Park - Erect Falseworks for Builders & MEP Works 12 13-Nov-23 25-Nov-23 163 04-Jun-24 18-Jun-24 6d/w x10 Car Park - ABWF/ MEP/ FS Works WSD-B-CP-02 | Car Park - ABWF/ MEP/ FS Works 27-Nov-23 20-Jan-24 163 19-Jun-24 10-Aug-24 6d/w x10 Car Park - Electric Vehicle Charging Facilities WSD-B-CP-03 Car Park - Electric Vehicle Charging Facilities 22-Jan-24 28-Feb-24 163 12-Aug-24 14-Sep-24 6d/w x10 Car Park - Testing & Commissioning for Electric Vehicle Charging Facilities WSD-B-CP-04 Car Park - Testing & Commissioning for Electric Vehicle Charging Facilities 6 31-May-24 06-Jun-24 90 23-Sep-24 6d/w x10 16-Sen-24 Works for KD-21-Oct-23 0 13-Sep-23 ABWF & FS Works for Server Rooms/ Security Control Room WSD-KD1-01 ABWF & FS Works for Server Rooms/ Security Control Room 05-Sep-23 38 13-Sep-23 ◆ Complete the Civil. Structure Works, ABWF & FS for Server Rooms/ Security Control Room WSD-KD1-02 Complete the Civil, Structure Works, ABWF & FS for Server Rooms/ Security Control Room 05-Sep-23 21-Oct-23 ABWF & FS Works for Main Control Room WSD-KD1-03 ABWF & FS Works for Main Control Room 32 21-Oct-23 0 13-Sep-23 21-Oct-23 6d/w x10 13-Sep-23 ◆ Complete the Civil, Structure Works, ABWF & F\$ for Main Control Room Complete the Civil, Structure Works, ABWF & FS for Main Control Room WSD-KD1-04 21-Oct-23 21-Oct-23 6d/w x10 26-Apr-24 Electrical Power System incl. testing for Basemen WSD-KD2-01 Electrical Power System incl. testing for Basement 19-Feb-24 18-Apr-24 62 07-May-24 04-Jul-24 Electrical Power System incl. testing for Second Floo WSD-KD2-02 Electrical Power System incl. testing for Second Floor 48 26-Feb-24 25-Apr-24 56 07-May-24 04-Jul-24 6d/w x10 Electrical Power System incl. testing for Third Floor WSD-KD2-03 Electrical Power System incl. testing for Third Floor 56 04-Jul-24 0 26-Apr-24 04-Jul-24 6d/w x10 ◆ Termination of Cable to Tx after Cable Laying by 1/WSD/19 WSD-KD2-04 Termination of Cable to Tx after Cable Laying by 1/WSD/19 30-May-24 28 04-Jul-24 6d/w x10 ■ Time Risk Allowance for Activities WSD-KD2-01 to WSD-KD2-04 Time Risk Allowance for Activities WSD-KD2-01 to WSD-KD2-04 05-Jul-24 12-Jul-24 0 05-Jul-24 12-Jul-24 Completion of CLP Power Supply to Main Control Room, Main Security Room and Server Rooms incl. testing WSD-KD2-06 Completion of CLP Power Supply to Main Control Room, Main Security Room and Server Rooms incl. tes 12-Jul-24 12-Jul-24 6d/w x10 0 31-Aug-24 133 31-May-24 11-Jan-25 External Works Ext. Works - Underground Utilities Works, Drainage Works & Testing WSD-W-X-01 Ext. Works - Underground Utilities Works, Drainage Works & Testing 24-Apr-24 101 31-May-24 Ext. Works - Backfilling to Ground Level WSD-W-X-02 Ext. Works - Backfilling to Ground Level 24-May-24 108 03-Sep-24 Ext. Works - Construction of Remaining Concrete Pavemen Ext. Works - Construction of Remaining Concrete Pavement WSD-W-X-03 48 22-Jul-24 108 03-Oct-24 28-Nov-24 6d/w x10 25-May-24 Ext. Works - Construction of Staircase, ABWF Ext. Works - Construction of Staircase ARWE WSD-W-X-04 48 6d/w x10 28-Jun-24 23-Aug-24 | 108 | 06-Nov-24 03-Jan-25 I Time Risk Allowance for External Works WSD-W-X-05 Time Risk Allowance for External Works 31-Aug-24 133 04-Jan-25 7d/w x10 26-Aug-24 23-Oct-24 0 26-Aug-24 Testing & Commissioning Testing & Commissioning & fixing defects (FS - Related) Testing & Commissioning & fixing defects (FS - Related) WSD-B-TC-01 23-Sen-24 0 26-Aug-24 23-Sen-24 Testing & Commissioning & fixing defects (Non-FS - Related) Testing & Commissioning & fixing defects (Non- FS - Related) 24 WSD-B-TC-02 24-Sep-24 23-Oct-24 0 24-Sep-24 23-Oct-24 6d/w x10 Elevated Walkway No.2 317 05-Oct-22 27-Oct-23 439 08-Feb-25 6d/w x10 ► EW No.2 - Completion of Structural Support at South Works Pumping Station (to be constructed by Other under 1/WSD/19) WSD-W-W2-01 EW No.2 - Completion of Structural Support at South Works Pumping Station (to be constructed by Other 05-Oct-22 696 08-Feb-25 6d/w x10 ☐ EW No.2 - Preparation Works on Structural Support at SWPS for Mic Bridge Erection EW No.2 - Preparation Works on Structural Support at SWPS for Mic Bridge Erection 18-Oct-22 696 08-Feb-25 21-Feb-25 6d/w x10 WSD-W-W2-02 05-Oct-22 ♦ EW No.2 - Completion of Structural Support at Administration Building (integrated in MiC unit) WSD-W-W2-03 EW No.2 - Completion of Structural Support at Administration Building (integrated in MiC unit) 6d/w x10 31-Jul-23 465 22-Feb-25 ■ EW No.2 - Preparation Works on Structural Support at Administration Building for Mic Bridge Erection WSD-W-W2-04 EW No.2 - Preparation Works on Structural Support at Administration Building for Mic Bridge Erection 12 12-Aug-23 465 22-Feb-25 07-Mar-25 6d/w x10 31-Jul-23 EW No.2 - MiC Bridge Installation & Associated Connection Works EW No.2 - MiC Bridge Installation & Associated Connection Works 13-Sep-23 WSD-W-W2-11 19-Sen-23 439 08-Mar-25 EW No.2 - Remaining ABWF, Fitout, BS, Works along Mic Bridge EW No.2 - Remaining ABWF, Fitout, BS Works along Mic Bridge WSD-W-W2-12 30 27-Oct-23 439 15-Mar-25 23-Apr-25 6d/w x10 20-Sep-23 Elevated Walkway No.1 (Structural Support only) 21-Oct-23 444 24-Apr-25 6d/w x10 24-Anr-25 • Completion of Structural Support at Administration Building (integrated in Structural Element, RC Slab on Second Level) Completion of Structural Support at Administration Building (integrated in Structural Element, RC Slab on S 444 24-Apr-25 6d/w x10 592 17-Sep-23 30-Apr-25 0 23-Apr-24 30-Apr-25 7d/w x10 Inspection & Approval by Government Authorities Date Checked Non-Critical Tas



Critical Task

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Page 9 of 10 In-situ Reprovisioning of Sha Tin Contract No. 6/WSD/21 In-situ Reprovisioning of Sha Tin Water Treatment Works (South Works) Administration Building WTW (South Works) - Admin. Bldg Date prepared: 11-Feb-22 at 13:13 2022 2023 2024 2025 2026 2027 20 NDJFMAMJJJASONDJFMAMJJJASONDJFMAMJJJASONDJ FSD - DG Licence 06-Jun-24 219 23-Apr-24 264 11-Jan-25 FSD - DG Drawings First Submission WSD-IA-F01 FSD - DG Drawings First Submission 15-Nov-23 219 23-Apr-24 21-Jun-24 7d/w x10 17-Sep-23 FSD - DG Drawings Second Amendmen 14-Jan-24 219 22-Jun-24 WSD-IA-F02 FSD - DG Drawings Second Amendmen 60 20-Aug-24 7d/w x10 FSD - DG Drawings Third Amendment WSD-IA-F03 FSD - DG Drawings Third Amendment 60 15-Jan-24 14-Mar-24 219 21-Aug-24 19-Oct-24 7d/w x10 FSD - DG Inspection & Rectification FSD - DG Inspection & Rectification 13-Apr-24 219 20-Oct-24 WSD-IA-F04 FSD - VD Review & Inspection/ Rectification Work WSD-IA-F05 FSD - VD Review & Inspection/ Rectification Works 42 25-May-24 219 19-Nov-24 7d/w x10 FSD - VD issue letter of compliance WSD-IA-F06 FSD - VD issue letter of compliance 31-May-24 219 31-Dec-24 05-Jan-25 7d/w x10 26-May-24 FSD - Issue of DG License WSD-IA-F07 FSD - Issue of DG License 06-Jun-24 219 06-Jan-25 11-Jan-25 7d/w x10 **EPD - Emergency Generator** 11-Aug-24 153 08-Oct-24 EPD - EPD Drawing Submission & Approv EPD - EPD Drawing Submission & Approval 06-Jul-24 153 08-Oct-24 WSD-IA-E01 60 06-Dec-24 7d/w x10 EPD - Site Inspection & Rectification Work WSD-IA-E02 05-Jan-25 7d/w x10 FPD - Site Inspection & Rectification Works 30 05-Aug-24 153 07-Dec-24 07-Jul-24 ■ EPD - Approval Issue 11-Jan-25 7d/w x10 WSD-IA-E03 EPD - Approval Issue 11-Aug-24 | 153 | 06-Jan-25 WSD - WWO 046 (FS)/(PD) 11-Jan-25 0 24-Oct-24 WSD - Submit WWO 46 Part IV (PD) & Arrange Inspection by WSD WSD - Submit WWO 46 Part IV (PD) & Arrange Inspection by WSD WSD-IA-W01 0 24-Oct-24 13-Nov-24 7d/w x10 21 13-Nov-24 WSD - Site Inspection & Rectification Works by WSD (PD) 28-Dec-24 7d/w x10 WSD - Site Inspection & Rectification Works by WSD (PD) 45 WSD-IA-W02 14-Nov-24 28-Dec-24 0 14-Nov-24 WSD - Issue WWO 46 Part V (PD) WSD-IA-W03 WSD - Issue WWO 46 Part V (PD) 14 29-Dec-24 11-Jan-25 0 29-Dec-24 11-Jan-25 7d/w x10 WSD - Submit WWO 46 Part IV (FS) & Arrange Inspection by WSD WSD-IA-W04 WSD - Submit WWO 46 Part IV (FS) & Arrange Inspection by WSD 21 14-Oct-24 30 24-Oct-24 13-Nov-24 7d/w x10 24-Sep-24 WSD - Site Inspection & Rectification Works by WSD (FS) WSD-IA-W05 WSD - Site Inspection & Rectification Works by WSD (FS) 45 28-Nov-24 30 28-Dec-24 7d/w x10 15-Oct-24 14-Nov-24 ■ WSD - Issue WWO 46 Part V (FS) WSD-IA-W06 WSD - Issue WWO 46 Part V (FS) 12-Dec-24 30 29-Dec-24 11-Jan-25 7d/w x10 FSD / OP Inspection 109 30-Apr-25 0 30-Apr-25 7d/w x10 ◆ FSD - Submit Form FS251/314/501 WSD-IA-OP01 FSD - Submit Form FS251/314/501 11-Jan-25 FSD - FSD processes Form 215/314/501 & arranging for Ir WSD-IA-OP01a FSD - FSD processes Form 215/314/501 & arranging for Inspection 14 25-Jan-25 0 12-Jan-25 25-Jan-25 7d/w x10 12-Jan-25 FSD - FS Inspection, Rectification and Reinspection WSD-IA-OP01b FSD - FS Inspection, Rectification and Reinspection 28 22-Feb-25 0 26-Jan-25 22-Feb-25 7d/w x10 FSD - FSD processes FS Certificate Form 172 WSD-IA-OP01c FSD - FSD processes FS Certificate Form 172 23-Feb-25 08-Mar-25 0 23-Feb-25 08-Mar-25 7d/w x10 ◆ FSD - Issued Form 172 Issued by FSD (Fire Certificate WSD-IA-OP01d FSD - Issued Form 172 Issued by FSD (Fire Certificate) 08-Mar-25 0 08-Mar-25 7d/w x10 ◆ BD - Submit Form BA13 WSD-IA-OP02 BD - Submit Form BA13 0 27-Feb-25 0 27-Feb-25 7d/w x10 BD - BD processes Form BA13 & Arranging for Inspection 12-Mar-25 7d/w x10 BD - BD processes Form BA13 & Arranging for Inspection WSD-IA-OP03 14 27-Feb-25 12-Mar-25 0 27-Feb-25 BD - Inspection & Rectification Works WSD-IA-OP04 BD - Inspection & Rectification Works 7d/w x10 ■ BD - Issue OP Certificate BD - Issue OP Certificate WSD-IA-OP05 10-Apr-25 23-Apr-25 0 10-Apr-25 23-Apr-25 7d/w x10 Final Inspection & Handover to Client Final Inspection & Handover to Client WSD-IA-OP06 30-Apr-25 0 24-Apr-25 30-Apr-25 7d/w x10 24-Apr-25 Green Roof at Roof Terrace (Second Level) 27-Jun-24 300 19-Sep-24 G.Roof 2/F Level - Construction of Planter Separation WSD-W2-RT01 G.Roof 2/F Level - Construction of Planter Separation 12 24-Jan-24 06-Feb-24 193 19-Sep-24 GRoof 2/F Level - Installation of Irrigation Pipeworks & Irrigation Point WSD-W2-RT02 G.Roof 2/F Level - Installation of Irrigation Pipeworks & Irrigation Point 30 15-Mar-24 213 29-Oct-24 02-Dec-24 6d/w x10 07-Feb-24 GRoof 2/F Level - Laying of Waterproof Membrane with Protection Screeding & Root Barrier G.Roof 2/F Level - Laying of Waterproof Membrane with Protection Screeding & Root Barrier WSD-W2-RT03 20 16-Mar-24 12-Apr-24 219 10-Dec-24 04-Jan-25 6d/w x10 GRoof 2/F Level - Laying of Drainage, Filter; Moisture Retention Membrane. Erosion Protection Mat WSD-W2-RT04 G.Roof 2/F Level - Laying of Drainage, Filter, Moisture Retention Membrane, Erosion Protection Mat 20 07-May-24 219 06-Jan-25 G.Roof 2/F Level - Filling of Soil Laye WSD-W2-RT05 G.Roof 2/F Level - Filling of Soil Layer 18 29-May-24 219 01-Feb-25 21-Feb-25 08-May-24 G.Roof 2/F Level - Vegetation/ Planting WSD-W2-RT06 G.Roof 2/F Level - Vegetation/ Planting 24 27-Jun-24 219 22-Feb-25 21-Mar-25 6d/w x10 GRoof 2/F Level - Installation of Paying Stones on Walkway G.Roof 2/F Level - Installation of Paving Stones on Walkway WSD-W2-RT07 60 09-May-24 193 19-Oct-24 6d/w x10 GRoof 2/F Level - Installation Lighting G.Roof 2/F Level - Installation Lighting 08-Jun-24 319 25-Mar-25 23-Apr-25 7d/w x10 WSD-W2-RT08 Green Roof at Roof Level 26-Aug-24 193 04-Oct-24 ☐ G.Roof R/F Level - Construction of Planter Separation WSD-W2-RI 01 G.Roof R/F Level - Construction of Planter Separation 12 23-Feb-24 193 04-Oct-24 18-Oct-24 6d/w x10 G.Roof R/F Level - Installation of Irrigation Pipeworks & Irrigation Poin G.Roof R/F Level - Installation of Irrigation Pipeworks & Irrigation Point 24-Apr-24 213 03-Dec-24 09-Jan-25 6d/w x10 WSD-W2-RL02 30 G.Roof R/F Level - Laying of Waterproof, Membrane with Protection Screeding & Root Barrier WSD-W2-RL03 G.Roof R/F Level - Laying of Waterproof Membrane with Protection Screeding & Root Barrier 20-May-24 213 10-Jan-25 05-Feb-25 6d/w x10 25-Apr-24 GRoof R/F Level - Laying of Drainage, Filter, Mosture Retention Membrane, Erosion Protection Mat WSD-W2-RL04 G.Roof R/F Level - Laying of Drainage, Filter, Moisture Retention Membrane, Erosion Protection Mat 20 13-Jun-24 213 06-Feb-25 28-Feb-25 G.Roof R/F Level - Filling of Soil Lave WSD-W2-RI 05 G.Roof R/F Level - Filling of Soil Layer 05-Jul-24 213 01-Mar-25 GRoof R/F Level - Turf Laying on Roof WSD-W2-RL06 G.Roof R/F Level - Turf Laying on Roof 24 06-Jul-24 02-Aug-24 213 22-Mar-25 23-Apr-25 6d/w x10 G. Roof R/F Level - Installation of Paving Stones on Walkway WSD-W2-RL07 G.Roof R/F Level - Installation of Paving Stones on Walkway 22-Jul-24 193 31-Dec-24 14-Mar-25 6d/w x10 Milestone Non-Critical Tas



FIRST PROGRAMME REV. 1 ALL ACTIVITIES





Date	Revision	Checked	Approved
3-Nov-21	Revision 0 First Issue	AH	WJ
9-Jan-22	Revision 1 First Issue	PF	AH
8-Feb-22	Revision 2 First Issue		

Page 10 of 10 Contract No. 6/WSD/21 In-situ Reprovisioning of Sha Tin Water Treatment Works (South Works) Administration Building In-situ Reprovisioning of Sha Tin WTW (South Works) - Admin. Bldg. Date prepared: 11-Feb-22 at 13:13 Activity Name NDJFMAMJJASONDJFMAMJJASONDJFMAMJJJASONDDJFMAMJJASONDJFMAMJJASONDJFMAMJJJASONDJJFMAMJJJASONDJFMAMJJJASONDJ G.Roof R/F Level - Installation Lighting WSD-W2-RL08 G.Roof R/F Level - Installation Lighting 23-Jul-24 26-Aug-24 30-Apr-25 0 24-Jan-24 Courtvard at Ground Level 24-Jan-24 G.Roof G/F Level - Formaiton of Slope profile (Grid H-M/ 5-9) 22-Mar-24 0 24-Jan-24 WSD-W2-CY01 G.Roof G/F Level - Formaiton of Slope profile (Grid H-M/ 5-9) GRoof G/F Level - Hydroseeding on Slope WSD-W2-CY02 G.Roof G/F Level - Hydroseeding on Slope 30 23-Mar-24 02-May-24 0 23-Mar-24 02-May-24 6d/w x10 G.Roof G/F Level - Concrete Structure incl. Planter/ Bearing Wall/ Bench G.Roof G/F Level - Concrete Structure incl. Planter/ Bearing Wall/ Bench WSD-W2-CY03 29-Jun-24 0 03-May-24 29-Jun-24 6d/w x10 G.Roof G/F Level - Installation of Drainage System at Courtyard WSD-W2-CY04 G.Roof G/F Level - Installation of Drainage System at Courtyard 48 26-Aug-24 6d/w x10 02-Jul-24 26-Aug-24 0 02-Jul-24 G.Roof G/F Level - Installation of Irrigation Pipeworks & Irrigation Poin 48 G.Roof G/F Level - Installation of Irrigation Pipeworks & Irrigation Point 26-Aug-24 0 02-Jul-24 26-Aug-24 6d/w x10 WSD-W2-CY05 02-Jul-24 G.Roof G/F Level - Laving of Watergroof Membrane with Protection Screeding WSD-W2-CY06 G.Roof G/F Level - Laying of Waterproof Membrane with Protection Screeding 09-Oct-24 0 27-Aug-24 09-Oct-24 6d/w x10 G.Roof G/F Level - Soil Placement in Planter (2m depth) WSD-W2-CY07 G.Roof G/F Level - Soil Placement in Planter (2m depth) 36 10-Oct-24 21-Nov-24 0 10-Oct-24 21-Nov-24 6d/w x10 GRoof G/F Level - Tree Transplant (39nos) 40 22-Nov-24 10-Jan-25 6d/w x10 WSD-W2-CY08 G.Roof G/F Level - Tree Transplant (39nos) 10-Jan-25 0 22-Nov-24 G.Roof G/F Level - G.Roof G/F Level - Shrub Planting G.Roof G/F Level - G.Roof G/F Level - Shrub Planting 48 11-Mar-25 0 11-Jan-25 11-Mar-25 6d/w x10 WSD-W2-CY09 11-Jan-25 GRoof G/F Level - Hydroseeding on Lawn WSD-W2-CY10 G.Roof G/F Level - Hydroseeding on Lawn 17-Apr-25 0 12-Mar-25 17-Apr-25 6d/w x10 ■ Time Risk Allowance for Activities from WSD-W2-CY01 to WSD-WC-CY-10 WSD-W2-CY10.5 Time Risk Allowance for Activities from WSD-W2-CY01 to WSD-WC-CY-10 18-Apr-25 23-Apr-25 0 18-Apr-25 23-Apr-25 7d/w x10 GRoof G/F Level - Architechural Works/ Balustrade Installation G.Roof G/F Level - Architechural Works/ Balustrade Installation 65 14-Sep-24 56 05-Sep-24 22-Nov-24 6d/w x10 WSD-W2-CY11 02-Jul-24 G Roof G/F Level - Installation of Lighting WSD-W2-CY12 G.Roof G/F Level - Installation of Lighting 30 16-Sep-24 23-Oct-24 56 23-Nov-24 30-Dec-24 6d/w x10 GRoof G/F Level - Installation of Paving Stones on Walkwa G.Roof G/F Level - Installation of Paving Stones on Walkway 56 31-Dec-24 WSD-W2-CY13 24-Oct-24 I G.Roof G/F Level - Waterproof, External Plaster applied to Retaining Wall WSD-W2-CY14 G.Roof G/F Level - Waterproof, External Plaster applied to Retaining Wall 12 02-Jul-24 15-Jul-24 205 08-Mar-25 21-Mar-25 6d/w x10 GRoof G/F Level - Installation of Green Climber System on Retaining Wall G.Roof G/F Level - Installation of Green Climber System on Retaining Wall 12 WSD-W2-CY15 29-Jul-24 205 | 22-Mar-25 | 05-Apr-25 | 6d/w x10 16-Jul-24

16-Apr-25 6d/w x10

23-Apr-25 6d/w x10

30-Apr-25 7d/w x10

30-Apr-25 7d/w x10

30-Jul-24

06-Aug-24

24-Apr-25

0

05-Aug-24 | 205 | 07-Apr-25

12-Aug-24 205 17-Apr-25

30-Apr-25 0 24-Apr-25

365 01-May-25 30-Apr-26 0 01-May-25 30-Apr-26 7d/w x10

6 25-Apr-26 30-Apr-26 0 25-Apr-26 30-Apr-26 7d/w x10

30-Apr-25 0

* *	Milestone		Non-Critical Task
	Near Critical Task		Finished Task
	Critical Task		Tasks Summary
	Time Risk Al.	—	P6 Hammock

G.Roof G/F Level - Soil Placement around Retaining Wall

G.Roof G/F Level - Vertical Planting on Climber System

G.Roof G/F Level - Final Inspection & Handover to Client

Planned Project Completion

Final Inspection & Handover to Client

Establishment Works

WSD-W2-CY16

WSD-W2-CY17

WSD-W2-CY18

WSD-W2-CY19

WSD-W2A-01

WSD-W2A-02







Date	Revision	Checked	Approved
03-Nov-21	Revision 0 First Issue	AH	WJ
19-Jan-22	Revision 1 First Issue	PF	AH
08-Feb-22	Revision 2 First Issue		

I G.Roof G/F Level - Soil Placement around Retaining Wall

GRoof G/F Level - Vertical Planting on Climber System

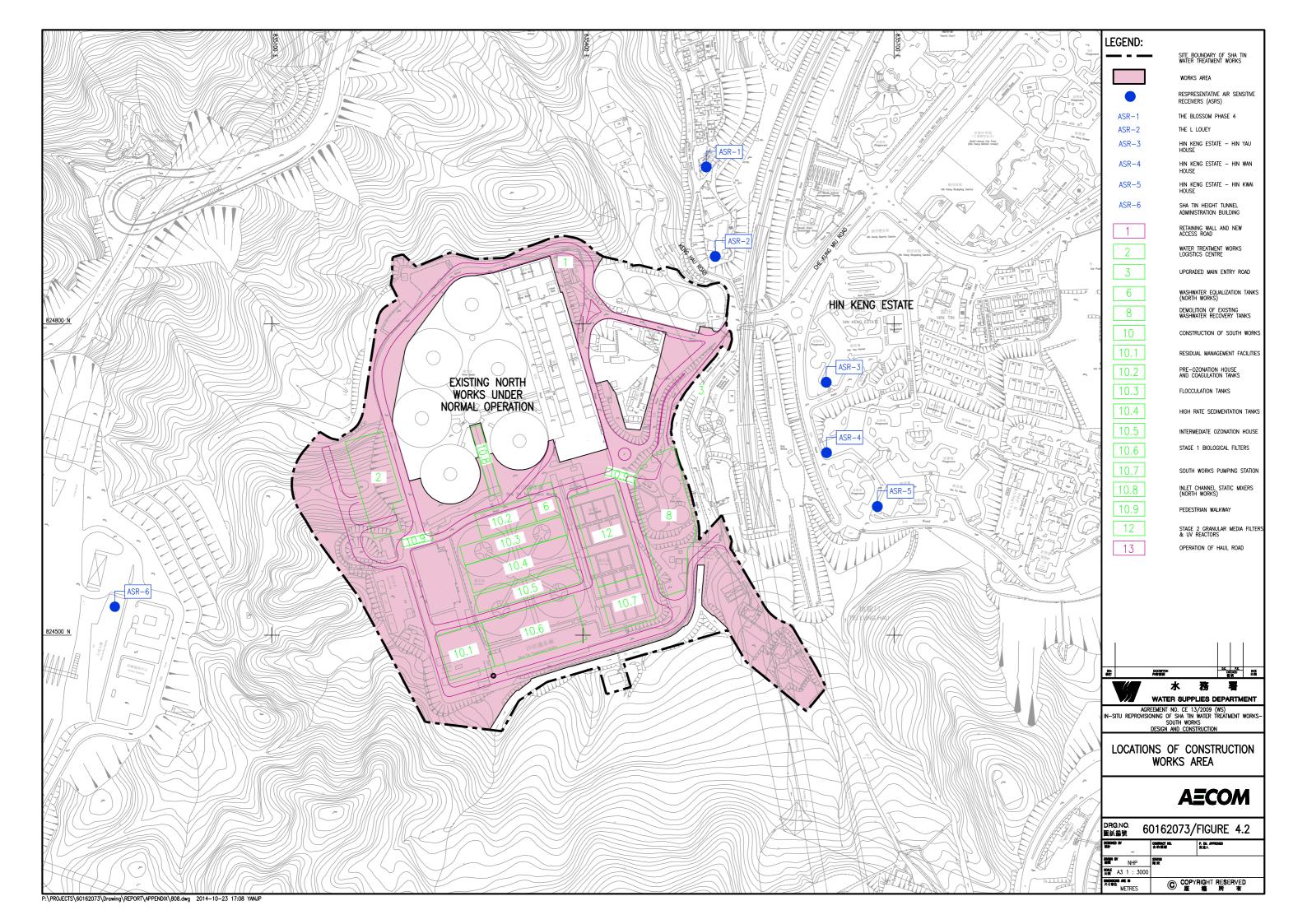
Planned Project Completion

GRoof G/F Level - Final Inspection & Handover to Client

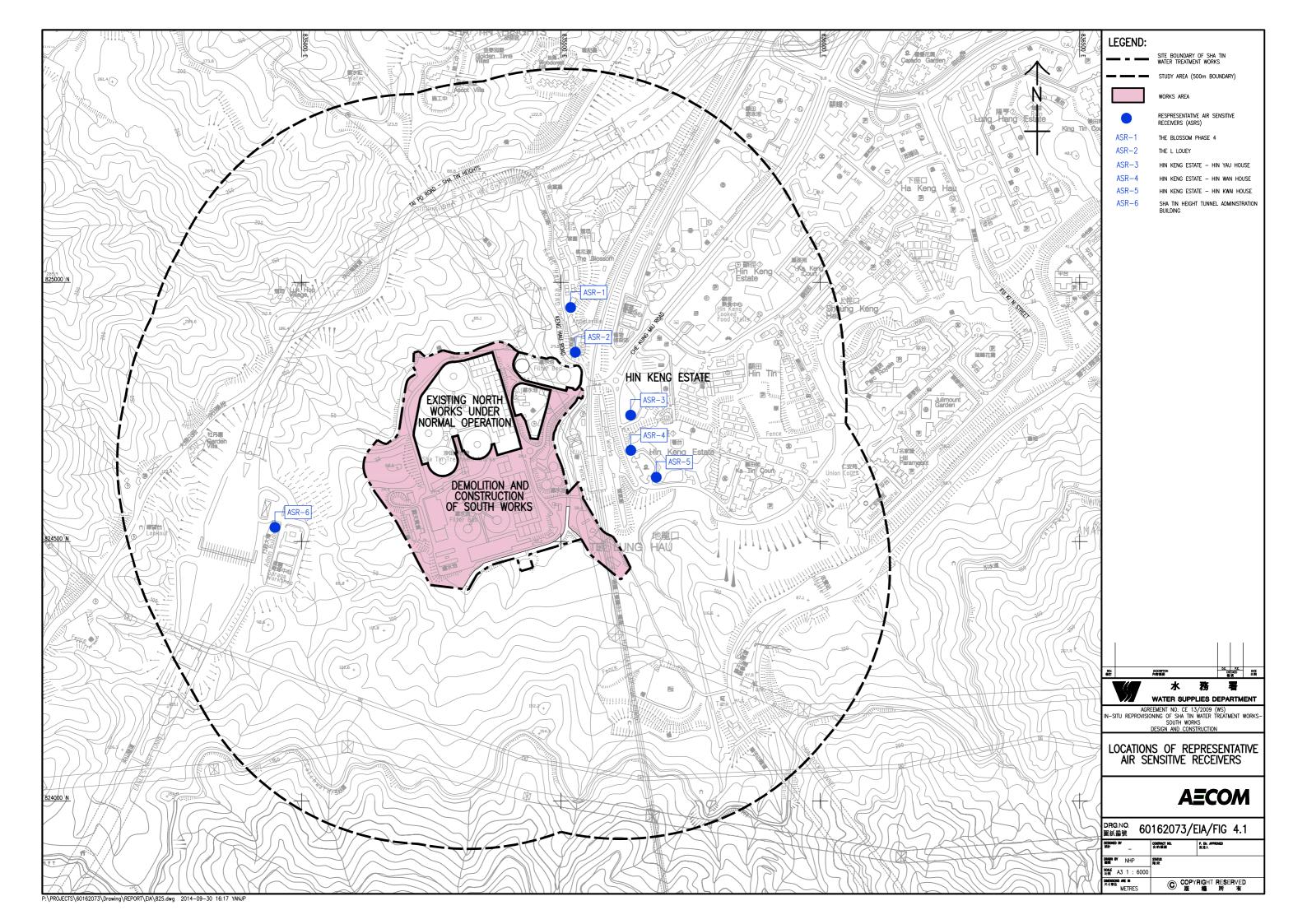
Establishment Works

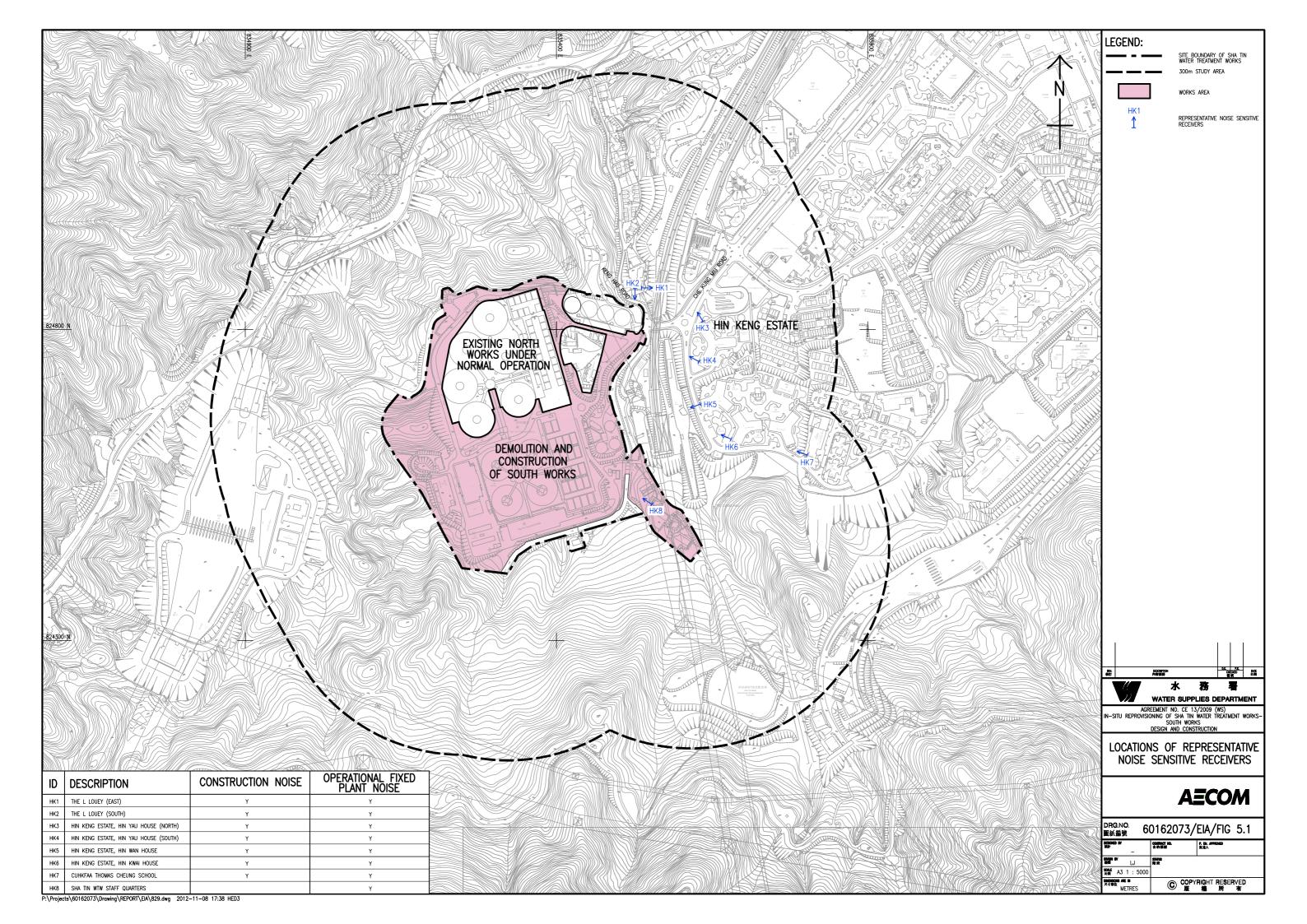
Final Inspection & Handover to Client

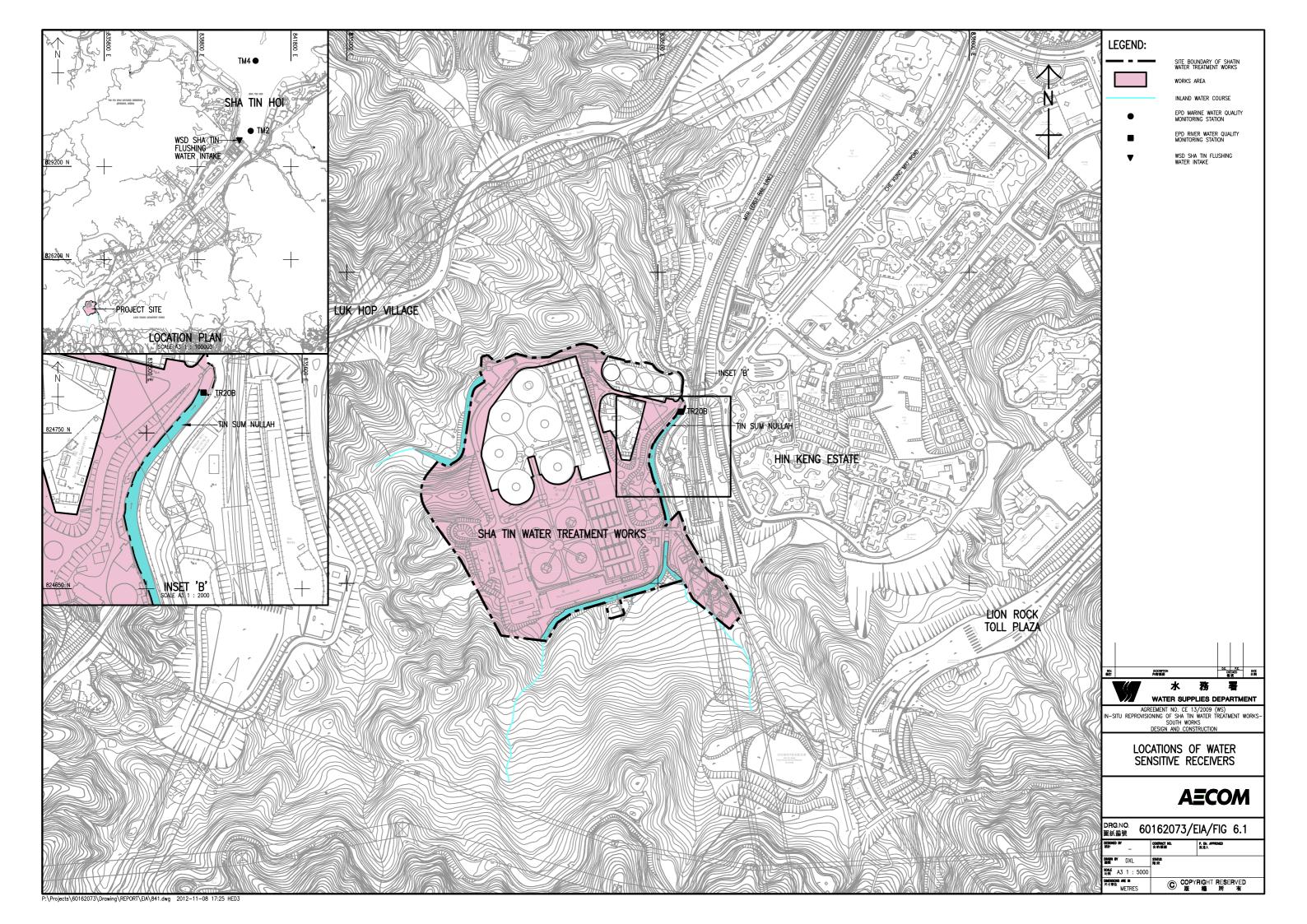
Appendix D Location of Construction Activities



Appendix E Environmental Sensitive Receivers in the Vicinity of the Projects







Appendix F Summary of Action and Limit Levels

Determination of Action and Limit Levels for Air Quality

Monitoring Locations	Action Level 1-hour TSP, (μg/m³)	Limit Level 1-hour TSP, (μg/m³)	
AM1	357	500	
AM2	334	500	

Determination of Action and Limit Levels for Noise

Monitoring	Action Level	Limit Level in dB(A)			
Location	0700-1900 hours on normal weekdays				
NM1		For domestic premises: 75 dB(A) for			
NM2	When one documented	NM1 & NM2			
NM3	complaint is received	For schools: 70dB(A) during normal teaching periods and 65 dB(A) during examination periods for NM3			

Determination of Action and Limit Levels for Water Quality

Water	(mg/L) (mg/L)		•		(NTU)	p]	Н	
monitoring stations	Action	Limit	Action	Limit	Action	Limit	Action	Limit
Stations	Level	Level	Level	Level	Level	Level	Level	Level
C1	7.51	7.44	4.19	6.73	3.99	4.00	Beyond the range 6.6 to 7.9	Beyond the range 6.5 to 8.0
C2	8.10	7.98	4.33	8.16	3.13	3.28	Beyond the range 6.6 to 8.8	Beyond the range 6.5 to 8.9
C3*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
M1	8.90	8.89	3.30	3.56	4.36	4.48	Beyond the range 6.6 to 8.2	Beyond the range 6.6 to 8.3
M2	8.92	8.91	18.84	26.80	12.64	13.72	Beyond the range 6.6 to 11.0	Beyond the range 6.6 to 11.0
M3	9.16	9.15	1.00	1.00	1.10	1.18	Beyond the range 6.6 to 8.6	Beyond the range 6.6 to 8.7

Remark: For DO, action should be taken when monitoring result of either one of the surface, middle or bottom DO is lower than the proposed Action/Limit Levels.

Appendix G Event/Action Plan

Air Quality

FV/FNT		ACT	TION	
EVENT	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one	1. Inform the Contractor, IEC	Check monitoring data	1. Confirm receipt of	1. Identify source(s),
sample	and ER;	submitted by the ET;	notification of exceedance	investigate the causes of
	2. Discuss with the	2. Check Contractor's	in writing.	exceedance and propose
	Contractor on the remedial	working method; and		remedial measures;
	measures required;	3. Review and advise the ET		2. Implement remedial
	3. Repeat measurement to	and ER on the effectiveness		measures; and
	confirm findings; and	of the proposed remedial		3. Amend working methods
	4. Increase monitoring	measures.		agreed with the ER as
	frequency.			appropriate.
2. Exceedance for two or	1. Inform the Contractor, IEC	Check monitoring data	1. Confirm receipt of	1. Identify source and
more consecutive samples	and ER;	submitted by the ET;	notification of exceedance	investigate the causes
	2. Discuss with the ER and	2. Check Contractor's	in writing;	of exceedance;
	Contractor on the remedial	working method; and	2. Review and agree on the	2. Submit proposals for
	measures required;	3. Review and advise the ET	remedial measures proposed	remedial measures to
	3. Repeat measurements to	and ER on the effectiveness	by the Contractor; and	the ER with a copy to
	confirm findings;	of the proposed remedial	3. Supervise implementation	ET and IEC within three
	4. Increase monitoring	measures.	of remedial measures.	working days of notification;
	frequency to daily;			3. Implement the agreed
	5. If exceedance continues,			proposals; and

	arrange meeting with the			4. Amend proposal as
	IEC, ER and Contractor; and			appropriate.
	6. If exceedance stops,			
	cease additional monitoring.			
LIMIT LEVEL				
Event	ET	IEC	ER	CONTRACTOR
1. Exceedance for one	1. Inform the Contractor,	Check monitoring data	1. Confirm receipt of	1. Identify source(s) and
sample	IEC, EPD and ER;	submitted by the ET;	notification of exceedance	investigate the causes
	2. Repeat measurement to	2. Check the Contractor's	in writing;	of exceedance;
	confirm findings;	working method;	2. Review and agree on the	2. Take immediate action to
	3. Increase monitoring	3. Discuss with the ET, ER	remedial measures proposed	avoid further exceedance;
	frequency to daily; and	and Contractor on possible	by the Contractor; and	3. Submit proposals for
	4. Discuss with the ER, IEC	remedial measures; and	3. Supervise implementation	remedial measures to ER
	and contractor on the	4. Review and advise the ER	of remedial measures.	with a copy to ET and IEC
	remedial measures and	and ET on the effectiveness		within three working days of
	assess the effectiveness.	of Contractor's remedial		notification;
		measures.		4. Implement the agreed
				proposals; and
				5. Amend proposal if
				appropriate.

	ET	IEC	ER	CONTRACTOR
2. Exceedance for two or	1. Notify Contractor, IEC, EPD	1. Check monitoring data	1. Confirm receipt of	1. Identify source(s) and
more consecutive samples	and ER;	submitted by the ET;	notification of exceedance	investigate the causes of
	2. Repeat measurement to	2. Check the Contractor's	in writing;	exceedance;
	confirm findings;	working method;	2. In consultation with the ET	2. Take immediate action
	3. Increase monitoring	3. Discuss with ET, ER, and	and IEC, agree with the	to avoid further exceedance;
	frequency to daily;	Contractor on the potential	Contractor on the remedial	3. Submit proposals for
	4. Carry out analysis of the	remedial measures; and	measures to be	remedial measures to the ER
	Contractor's working procedures	4. Review and advise the ER	implemented;	with a copy to the IEC and
	with the ER to determine	and ET on the effectiveness	3. Supervise the	ET within three working days
	possible mitigation to be	of Contractor's remedial	implementation of remedial	of notification;
	implemented;	measures.	measures; and	4. Implement the agreed
	5. Arrange meeting with the IEC		4. If exceedance continues,	proposals;
	and ER to discuss the remedial		consider what portion of the	5. Revise and resubmit
	measures to be taken;		work is responsible and	proposals if problem still not
	6. Review the effectiveness of		instruct the Contractor to	under control; and
	the Contractor's remedial		stop that portion of work	6. Stop the relevant portion
	measures and keep IEC, EPD		until the exceedance is	of works as determined by
	and ER informed of the results;		abated.	the ER until the exceedance
	and			is abated.
	7. If exceedance stops, cease			
	additional monitoring.			

Noise

EVENT	ACTION				
	ET	IEC	ER	CONTRACTOR	
ACTION LEVEL	1. Notify the Contractor, IEC	Review the investigation	1. Confirm receipt of	Investigate the complaint	
	and ER;	results submitted by the	notification of complaint in	and propose remedial	
	2. Discuss with the ER and	Contractor; and	writing;	measures;	
	Contractor on the remedial	2. Review and advise the ET	2. Review and agree on the	2. Report the results of	
	measures required; and	and ER on the effectiveness	remedial measures proposed	investigation to the IEC, ET	
	3. Increase monitoring	of the remedial measures	by the Contractor; and	and ER;	
	frequency to check mitigation	proposed by the Contractor.	3. Supervise implementation	3. Submit noise mitigation	
	effectiveness.		of remedial measures.	proposals to the ER with	
				copy to the IEC and ET	
				within three working days of	
				notification; and	
				4. Implement noise mitigation	
				proposals.	
LIMIT LEVEL	1. Notify the Contractor, IEC,	Check monitoring data	1. Confirm receipt of	Identify source and	
	EPD and ER;	submitted by the ET;	notification of failure in	investigate the causes of	
	2. Repeat measurement to	2. Check the Contractor's	writing;	exceedance;	
	confirm findings;	working method;	2. In consultation with the ET	2. Take immediate action to	
	3. Increase monitoring	3. Discuss with the ER, ET	and IEC, agree with the	avoid further exceedance;	
	frequency;	and Contractor on the	Contractor on the remedial	3. Submit proposals for	
	4. Carry out analysis of	potential remedial measures;	measures to be	remedial measures to the ER	

Contractor's working	and	implemented;	with copy to the IEC and ET
procedures to determine	4. Review and advise the ET	3. Supervise the	within three working days of
possible mitigation to be	and ER on the effectiveness	implementation of remedial	notification;
implemented;	of the remedial measures	measures; and	4. Implement the agreed
5. Arrange meeting with the	proposed by the Contractor.	4. If exceedance continues,	proposals;
IEC and ER to discuss the		consider what portion of the	5. Revise and resubmit
remedial measures to be		work is responsible and	proposals if problem still not
taken;		instruct the Contractor to	under control; and
6. Review the effectiveness		stop that portion of work until	6. Stop the relevant portion
of Contractor's remedial		the exceedance is abated.	of works as determined by
measures and keep IEC,			the ER until the exceedance
EPD and ER informed of the			is abated.
results; and			
7. If exceedance stops,			
cease			

Water Quality

FVENT				ACT	TION			
EVENT		ET Leader		IEC		ER		CONTRACTOR
Action level being exceeded	•	Repeat in situ	•	Discuss with ET and	•	Discuss with IEC on the	•	Inform the ER and
by one sampling day		measurement to		Contractor on the		proposed mitigation		confirm notification of
		confirm findings;		mitigation measures;		measures;		the non-compliance in
	•	Identify reasons for	•	Review proposals on	•	Make agreement on the		writing;
		non-compliance and		mitigation measures		mitigation measures to	•	Rectify unacceptable
		source(s) of impact;		submitted by		be implemented.		practice;
	•	Inform IEC and		Contractor and advise	•	Assess the	•	Check all plant and
		Contractor;		the ER accordingly;		effectiveness of the		equipment;
	•	Check monitoring data,	•	Assess the		implemented mitigation	•	Consider changes of
		all plant, equipment		effectiveness of the		measures.		working methods;
		and Contractor's		Implemented mitigation			•	Discuss with ET and
		working methods;		measures.				IEC and propose
	•	Discuss mitigation						mitigation measures to
		measures with IEC and						IEC and ER;
		Contractor;					•	Implement the agreed
	•	Repeat measurement						mitigation measures.
		on next day of						
		exceedance.						

		ET Leader		IEC		ER		CONTRACTOR
Action level being exceeded	•	Repeat in situ	•	Discuss with ET and	•	Discuss with IEC on the	•	Inform the ER and
by more than one		measurement to		Contractor on the		proposed mitigation		confirm notification of
consecutive sampling day		confirm findings;		mitigation measures;		measures;		the non-compliance in
	•	Identify reasons for	•	Review proposals on	•	Make agreement on the		writing;
		non-compliance and		mitigation measures		mitigation measures to	•	Rectify unacceptable
		source(s) of impact;		submitted by		be implemented;		practice;
	•	Inform IEC and		Contractor and advise	•	Assess the	•	Check all plant and
		Contractor;		the ER accordingly;		effectiveness of the		equipment;
	•	Check monitoring data,	•	Assess the		implemented mitigation	•	Consider changes of
		all plant, equipment		effectiveness of the		measures.		working methods;
		and Contractor's		implemented mitigation			•	Discuss with ET and
		working methods;		measures.				IEC and propose
	•	Discuss mitigation						mitigation measures to
		measures with IEC and						IEC and ER within
		Contractor;						three working days;
	•	Ensure mitigation					•	Implement the agreed
		measures are						mitigation measures.
		implemented;						
	•	Prepare to increase the						
		monitoring frequency to						
		daily;						

	Repeat measurement			
	on next day of			
	exceedance.			
	ET Leader	IEC	ER	CONTRACTOR
Limit level being	Repeat in situ	Discuss with ET and	Discuss with IEC, ET	Inform the ER and
exceeded by one	measurement to	Contractor on the	and Contractor on the	confirm notification of
sampling day	confirm findings;	mitigation measures;	proposed mitigation	the non-compliance in
	 Identify reasons for 	Review proposals on	measures;	writing;
	non-compliance and	mitigation measures	Request Contractor to	Rectify unacceptable
	source(s) of impact;	submitted by	critically review the	practice;
	Inform IEC Contractor	Contractor and advise	working methods;	Check all plant and
	and EPD;	the ER accordingly;	Make agreement on the	equipment;
	Check monitoring data,	Assess the	mitigation measures to	Consider changes of
	all plant, equipment	effectiveness of the	be implemented;	working methods;
	and Contractor's	implemented mitigation	Assess the	Discuss with ET, IEC
	working methods;	measures.	effectiveness of the	and ER and propose
	Discuss mitigation		implemented mitigation	mitigation measures to
	measures with IEC, ER		measures.	IEC and ER within
	and Contractor;			three working days;
	Ensure mitigation			Implement the agreed
	measures are			mitigation measures.
	implemented;			

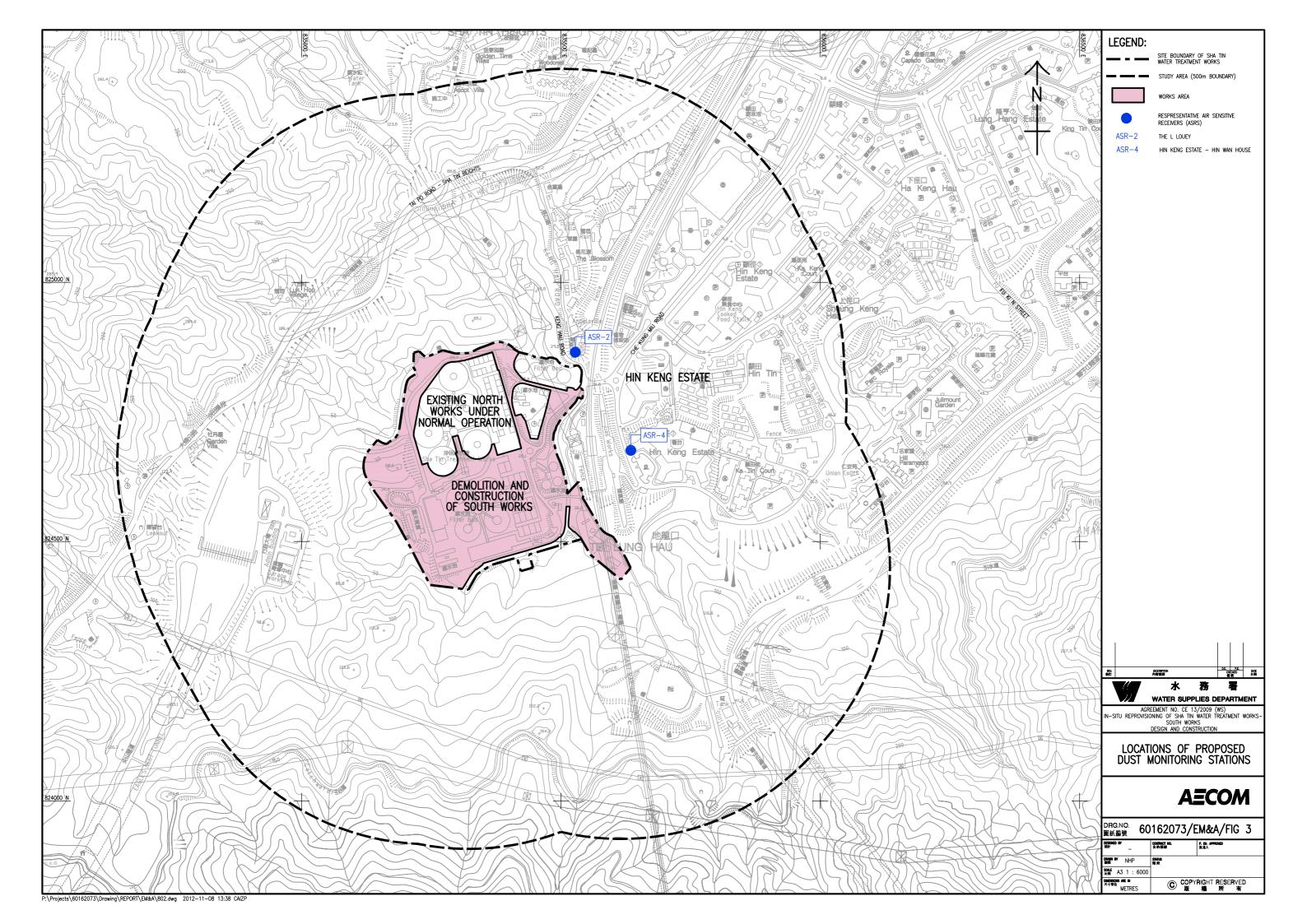
	Increase the monitoring frequency to daily until no exceedance of Limit level.			
	ET Leader	IEC	ER	CONTRACTOR
Limit level being	Repeat in situ	Discuss with ET and	 Discuss with IEC, ET 	 Inform the ER and
exceeded by more	measurement to	Contractor on the	and Contractor on the	confirm notification of
than one	confirm findings;	mitigation measures;	proposed mitigation	the non-compliance in
consecutive	 Identify reasons for 	Review proposals on	measures;	writing;
sampling day	non-compliance and	mitigation measures	Request Contractor to	Rectify unacceptable
	source(s) of impact;	submitted by	critically review the	practice;
	Inform IEC Contractor	Contractor and advise	working methods;	Check all plant and
	and EPD;	the ER accordingly;	Make agreement on the	equipment;
	 Check monitoring data, 	Assess the	mitigation measures to	Consider changes of
	all plant, equipment	effectiveness of the	be implemented;	working methods;
	and Contractor's	implemented mitigation	Assess the	Discuss with ET, IEC
	working methods;	measures.	effectiveness of the	and ER and propose
	Discuss mitigation		implemented mitigation	mitigation measures to
	measures with IEC, ER		measures;	IEC and ER within
	and Contractor;		Consider and instruct, if	three working days;
	Ensure mitigation		necessary, the	Implement the agreed
	measures are		Contractor to slow	mitigation measures;

implemented; Increase	down or to stop all or	As directed by the ER,
the monitoring	part of the construction	to slow down or to stop
frequency to daily until	activities until no	all or part of the
no exceedance of Limit	exceedance of Limit	construction activities.
level for two	level.	
consecutive days.		

Appendix H Impact Monitoring Schedules

			Impact Monitoring Schedule for	STWTW		
Sun	Mon	Tue	Dec-23 Wed	Thu	Fri	Sat
Cult	IVIOIT	140	- VVCG	Thu .	1	2
					Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3 Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3	
3	4	5	6	7	8	9
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	Impact Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	
10	11	12	13	14	15	16
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3 Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	
17	18	19	20	21	22	23
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	Impact Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3 Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3	
24	25	26	27	28	29	30
				Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3 Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3
31						

Appendix I Location Plan of Air Quality Monitoring Station



Appendix J Calibration Certificates (Air Monitoring)





This instrument was produced under rigorous factory production control and documented standard procedures. It was individually visually inspected, leak tested and function tested for display, backlight, button and software performance. The accuracy of each of its primary measurements was individually calibrated and/or tested against standards traceable to the National Institute of Standards and Technology ("NIST") or calibrated intermediary standards. This instrument is certified to have performed at the time of manufacture in compliance with the following specifications as they apply to this meter's specific model, measurements and features.

Methods Used in Calibration and Testing

Wind Speed:

The Kestrel Pocket Weather Meter impeller installed in this unit was individually tested in a subsonic wind tunnel operating at approximately 300 fpm (1.5 m/s) and 1200 fpm (6.1 m/s) monitored by a Gill Instruments Model 1350 ultrasonic time-of-flight anemometer. The Standard's maximum combined uncertainty is +/-1.04% within the airspeed range 706.6 to 3923.9 fpm (3.59 to 19.93 m/s), and +/-1.66% within the airspeed range 166.6 to 706.6 fpm (0.85 to 3.59 m/s).

Temperature:

Temperature response is verified in comparison with a Eutechnics 4600 Precision Thermometer or a standard Kestrel 4000 Weather and Environmental Meter calibrated weekly against the Eutechnics 4600. The Eutechnics 4600 is calibrated annually and is traceable to NIST with a system accuracy of +/- 0.05 °C.

Direction / Heading

The sensitivity of the magnetic directional sensor is verfied at the component level by applying a magnetic field to the sensor and measuring the signal output at 4 points, as well as after assembly by orienting the unit to the cardinal directions and measuring the magnetic field output. In both cases the compass output must be accurate to within +/- 5 degrees.

Relative Humidity:

Relative humidity receives a two-point calibration in humidity and temperature controlled chambers at 75.3% RH and 32.8% RH at 25° C. The calibration tanks are monitored with an Edgetech Model 2002 DewPrime II Standard Chilled Mirror Hygrometer. Following calibration, performance is further verified at an RH of approximately 43.2% against the Edgetech Hygrometer. The Edgetech Hygrometer is calibrated annually and is traceable to NIST with a maximum relative expanded uncertainty of +/- 0.2% RH.

Barometric Pressure:

Pressure response is verified against a Mensor Series 6000 Digital Barometer or a standard Kestrel 4000 Weather and Environmental Meter calibrated weekly against the Mensor Barometer. The Mensor Barometer is calibrated annually and is traceable to NIST with a maximum relative expanded uncertainty of +/- 0.02% F.S.

Approved By:

Michael Naughton, Engineering Manager

SENSOR	1000	2000	2500	3000	3500	3500	4000	4200	4250	4300	4400	4500	4500	ACCURACY (+/-)*	SENSO	SPECIFICATION RANGE	OPERATIONAL RANGE	NOTES
Wind Speed Air Flow	•	•	•	•	•	•			•		•	•	HOR	Larger of 3% of reading, least significant digit or 20 ft/min	0.1 m/s 1 ft/min 0.1 km/h 0.1 mph 0.1 knots 1 B	0.6 to 40.0 m/s 118 to 7,874 ft/min 2.2 to 144.0 km/h 1.3 to 89.5 mph 1.2 to 77.8 knots 0 to 12 B	0.6 to 60.0 m/s 118 to 11,811 ft/min 2.2 to 216.0 km/h 1.3 to 134.2 mph 1.2 to 116.6 knots 0 to 12.8	Inch/25 mm diameter impeller with precision axis and low-friction Zystell bearings. Startup is stated as lower limit, readings may be taken down to 0.4 mis [78 ftmm] [1.5 kmh] [9 mph], after impeller startup, Off-asis accuracy -1% @ 5° off-axis; 2% @ 10° -35% @ 15° -Cabrid off-arity -15 kmh [1.5 kmh], after impeller startup, Off-axis accuracy -1% @ 5° off-axis; 2% @ 10° -35% @ 15° -Cabrid off-arity -15 kmh [1.5 kmh], after impeller startup -15 kmh [1.5 kmh], after impeller startup alto utility off-arity after accuracy and the startup alto utility and the startu
Ambient Temperature					٠	•	٠			•			•	0.9*F 0.5*C	0.1 *F 0.1 *C	-20.0 to 158.0 °F -29.0 to 70.0 °C	14,0.0 to 131.0 °F -10.0 to 55.0 °C	Hermitically-sealed, practision thermition mounted externally and thermally isolated. US Pair 5.358.665 for rapid response. Aufflow of 2.2 mpc/1 mis or greater provides fastest response fastest response fastest reproduced in the properties of the
Globe Temperature - Tg														*F 1.4 *C	0.1 °F 0.1 °C	-20.0 to 140.0 °F -29.0 to 60.0 °C	14.0 to 131.0 °F -10.0 to 55.0 °C	Temperature inside 1in 25 mm black powder coated copper globe converted to Tg equivalen standard 6 in 150 mm globe. Closest equivalence obtained with airflow greater than 2.2 mph, m/s.
Relative Humidity								•			•			3.0 %RH	0.1 %RH	5 to 95% non-condensing	0 to 100%	Polymer capacitive humidity sensor mounted in thin-walled chamber external to case for rap accurate response (US Patert 6,257,074). To achieve stated accuracy, unit must be premit qualibate to external temperature when exposed to large, rapid temperature changes and to out of direct suright. Calibration drift +0-2% over 24 months. RIM: PRIVATION sensor may be recall at factory or index dusing Kestell furthing Calibration file. RIM: PRIVATION of the control of the control of th
Pressure	**		٠	23.5			•		•	•			•	0.03 inHg 1.0 hPalmbar 0.01 PSI	0.01 inHg 0.1 hPa mbar 0.01 PSI	8.86 to 32.49 inHg 300.0 to 1100.0 hPajmbar 4.35 to 15.95 PSI and 32.0 to 185.0 °F 0.0 to 85.0 °C	0.30 to 48.87 inHg 10.0 to 1654.7 hPalmbar 0.14 to 24.00 PSI and 14.0 to 131.0 °F -10.0 to 55.0 °C	Monofilhic silicon piezoresistive pressure sensor with second-order temperature correction. Pressure sensor may be reclaimbed of factory in field. Adjustate interiore attitude as display of station pressure or transmitic pressure connected to MSL. Kestelle 4200 displays station pressure or a dedicated screen. Relatele 2500 and 3500 displays station pressure or an edicated screen. Relatele 2500 and 3500 displays continuously update three-hour later matter pressure the related to relating station. Post displays pressure trend through graphing function. POI display on Kestel 4000 berlies only.
Compass												٠		5*	1* 1/16th Cardinal Scale	0 to 360°	0 to 360*	2-axis solid-state magnetoresistive sensor mounted perpendicular to unit plane. Accuracy of sensor dependent upon units vertical position. Self-calibration routine eliminates magnetic e from batteries or unit and must be run after every full power-down (batter) removal or charge. Readout indicates direction to which the back of the unit is pointed when held in a vertical orientation. Declarations have also adjustable for Tun North readout.
														CALCUL	ATED ME	ASUREMENTS		
MEASUREMENT	1000	2000	2500	3000	3500	3500 DT	4000	4200	4250	4300	4400	4500	4500 HOR	ACCURACY (+/-)*	RESOLUTION	SPECIFICATION RANGE	SENSORS EMPLOYED	NOTES
Air Density	i jen	491		W	133	17	ded	٠	•		133			0.0002 lb/ft ³ 0.0033 kg/m ³	0.001 lbs/ft ³ 0.001 kg/m ³	Refer to Ranges for Sensors Employed	Temperature Relative Humidity Pressure	Mass of air per unit volume
Air Flow														6.71%	1 cfm 1 m²/hr 1 m²/m 0.1m²/s 1 L/s	Refer to Ranges for Sensors Employed	Air Flow User Input (Duct Shape & Size)	Volume of air flowing through an opening. Automatically calculated from Air Velocity measure and user-specified duct shape (circle or rectangle) and dimensions (units: in, ft, cm or m). Maximum duct dimension input: 258.0 in 21.5 ft 655.3 cm 6.55 m.
Altitude														typical: 23.6 ft 7.2 m max: 48.2 ft	1 ft 1 m	typical: 750 to 1100 mBar max: 300 to 750 mBar	Pressure User Input (Reference Pressure)	Height above Mean Sea Level ("MSL"). Temperature compensated pressure (barometric) altimeter requires accurate reference barometric pressure to produce maximum absolute accuracy. Both accuracy specs corresponds to a reference pressure anywhere from 850 to mBar.
Barometric Pressure														14.7 m 0.07 inHg 2.4 hPa mbar 0.03 PSI	0.01 inHg 0.1 hPa mbar 0.01 PSI	Refer to Ranges for Sensors Employed	Pressure User Input (Reference Altitude)	imbar. Air pressure that would be present in identical conditions at MSL. Station pressure compens for local elevation provided by reference altitude. Requires accurate reference altitude to premaximum absolute accuracy.
Crosswind & Headwind/Tailwind												•		7.1%	1 mph 1 ft/min 0.1 km/h 0.1 m/s 0.1 knots	Refer to Ranges for Sensors Employed	Wind Speed Compass	Effective wind relative to a target or travel direction. Auto-switching headwindstallwind indicate
Delta T														3.2 °F	0.1 °F 0.1 °C	Refer to Ranges for	Temperature Relative Humidity	Difference between dry bulb temperature and wet bulb temperature. When spraying, indicat
	1XIII	Bysle:	0.0	708	13/3	1200								1.8 °C	1ft	Sensors Employed Refer to Ranges for	Pressure Temperature	evaporation rate and droplet lifetime. Safe range for pesticide spraying is 4 to 16 °F / 2 to 9 Local air density converted to equivalent elevation above sea level in a uniform layer consist
Density Altitude														69 m	1 m	Sensors Employed	Relative Humidity Pressure	the International Standard Atmosphere. Temperature that a volume of air must be cooled to at constant pressure for the water vaporation.
Dewpoint				•	•	•	•	•	•	•	٠	•	•	3.4 °F 1.9 °C	0.1 °F 0.1 °C	Refer to Range for Temperature Sensor	Temperature Relative Humidity	present to condense into dewand form on a solid surface. Can also be considered to be the water-to-air saturation temperature.
Evaporation Rate										•				0.01 lb/ft²/hr 0.06 kg/m2/hr	0.01 b/ft²/hr 0.01 kg/m²/hr	Refer to Ranges for Sensors Employed	Wind Speed Temperature Relative Humidity Pressure User Input (Concrete Temperature)	The rate at which moisture is lost from the surface of curing concrete. Requires user measurement and entry of concrete temperature obtained with an accurate IR or probe the contracter of For *C**, not included, Readings should be taken 20 inches above pour surface with the thermister shaded, and averaged for 610 seconds using fusil-in averaging functions.
Heat Index			•	•	٠	-3379	•	•	•	•	•	•	•	7.1 °F 4.0 °C	0.1 °F 0.1 °C	Refer to Ranges for Sensors Employed	Temperature Relative Humidity	Perceived temperature resulting from the combined effect of temperature and relative humic Calculated based on NWS Heat Index (HI) tables. Measurement range limited by extent of published tables.
Moisture Content Humidity Ratio ("Grains")									•					.3 gpp .04 g/kg	0.1 gpp 0.01 g/kg	Refer to Ranges for Sensors Employed	Temperature Relative Humidity Pressure	Mass of water vapor in a mass of air.
Relative Air Density					247	127	1 11						100	0.3%	0.1%	Refer to Ranges for Sensors Employed	Temperature Relative Humidity	The ratio, expressed as a percentage, of measured air density to the air density of a standa atmosphere as defined by the ICAO.
hermal Work Limit (TWL)						La P	197-1		1 01					10.9 W/m²	0.1 W/m²	Refer to Ranges for Sensors Employed	Pressure Wind Speed Temperature Globe Temperature Relative Humidity Pressure	armospere as connect or excession of the Control of the Control of the Conditions and coloring factors. Based off of estimated metabolic cutput of typical human. O screen zone varings.
Outdoor Wet Bulb Globe Temperature (WBGT)								148						1.3 °F 0.7 °C	0.1 °F 0.1 °C	Refer to Ranges for Sensors Employed	Wind Speed Temperature Globe Temperature Relative Humidity	Measure of human heat stress defined as the combination of effects due to radiation, convi and conduction. Outdoor WBGT is calculated from a veighted sum of natural web bull. Or the globe temperature (Tg), and dry bulb temperature (Td). User setable on-screen varning zo
Wet Bulb Temperature - aturally Aspirated (Tnwb)			1872			1100	18	B R	i te	25 kg	•	10		1.4 °F 0.8 °C	0.1 °F 0.1 °C	Refer to Ranges for Sensors Employed	Pressure Wind Speed Temperature Globe Temperature Relative Humidity	Similar to psychrometric wer-bubl temporature (see below). However, Trivib only undergoes convection from the arrisent air velocity. Trivib is a measure of the evaporative cooling that will allow. This is accounted for by combining the effects of, mainly, relative humidity and windspeed.
Wet Bulb Temperature - Psychrometric	57	TELL S	5 10							•				3.2 °F 1.8 °C	0.1 °F 0.1 °C	Refer to Ranges for Sensors Employed	Pressure Temperature Relative Humidity	Temperature indicated by a sing psychrometer. Due to nature of the psychrometric ratio for water-air system, this approximates the thermodynamic wet-bulb temperature. The thermody wet-bulb temperature is the temperature a parcel of air would have if cooled adiabatically to
Wind Chill	W.		•				•					•	•	1.6 °F 0.9 °C	0.1 °F 0.1 °C	Refer to Ranges for Sensors Employed	Pressure Wind Speed Temperature	saturation temperature vis water evaporating into it. Perceived temperature resulting from combined effect of wind speed and temperature. Calc based on the NWS Wind Chill Temperature (WCT) Index, revised 2001, with wind speed by a factor of 1.5 to yield equivalent results to wind speed measured at 10 m above ground.
			0.1		133	901	1233	253	MA					ADDITIO	ONAL SEE	CIFICATIONS		Measurement range limited by extent of published tables.
Display & Backlight				•									SCHOOL STATE	Reflective 3 1/2 digit LC	D. Digit height 0:38 in	9 mm. Aviation green electrol	luminescent backlight. Manual activation	on with auto-off. urninescent backlight. Manual activation with auto-off.
Response Time				1,1039	SIXE	SI-N	٠	٠	٠	•	•	•	•	Multifunction, multi-digit	monochrome dot-matri	x display. Choice of aviation	green or visible red (NV models only) e	uminescent backlight. Manual activation with auto-on: hectroluminescent backlight. Automatic or manual activation. nd all measurements which include RH in their calculation may require as long as 1 minute to f
& Display Update						:	•	•	•	•	•	•	•	equilibrate to a large cha	ange in the measurement start of Max Wind Gus	ent environment. Display updat it and Average Wind measure	tes every 1 second. ment.	ed lavel inacogmog act to balliev.
Max/Avg Wind							•	•	•	•	•	٠	•					with all other wind-related functions: air velocity, crosswind, headwind/tailwind, wind chill, WBC
ata Storage & Graphical Display, Min/Max/Avg History									3200 points					Minimum, maximum, ave independently. Auto-stor	erage and logged histo re interval settable from	ry stored and displayed for ew n 2 seconds to 12 hours, over	ery measured value. Large capacity da write on or off. Logs even when display	ata logger with graphical display. Manual and auto data storage. Min/Max/Avg history may be re y off except for 2 and 5 second intervals (code version 4.18 and later). Data capacity shown.
ata Upload & Bluetooth® Data Connect Option							•	•	•	•		•		Bluetooth Data Trans	fer Option: Adjustable	32) or Bluetooth data transfer e power consumption and radi rial Port Protocol for data tran	o range from up to 30 ft 9 meters. Inc	dividual unit ID and 4-digit PIN code preprogrammed for easy identification and data security w
Clock / Calendar			•	•	•	•								Requires optional PC in	terface (USB or RS-23	32) or Bluetooth data transfer 32) or Bluetooth data transfer	option and provided software.	18GPTO CANADOMO A LIBERTAL AND
Auto Shutdown	٠	•	•	•	•	•		•						Requires optional PC in Requires optional PC in	terface (USB or RS-23 terface (USB or RS-23	32) or Bluetooth data transfer 32) or Bluetooth data transfer	option and provided software.	
Languages Certifications	•	•	•			•				•				English, French, Germa CE certified, RoHS and	WEEE compliant. Indi	vidually tested to NIST-traceat	ole standards (written certificate of test	ts available at additional charge).
Origin Battery Life	•		•	•			•	•	٠	•	•	•	•	Designed and manufact CR2032, one, included.	ured in the USA from I Average life, 300 hour	JS and imported components. s. Battery life reduced by back	Complies with Regional Value Content slight use in 2000 to 3500 models.	t and Tariff Code Transformation requirements for NAFTA Preference Criterion B.
Shock Resistance	•	•	•			•	•					:		MIL-STD-810g, Transit	Shock, Method 516.5	d. Average life, 400 hours of u Procedure IV; unit only; impact	use, reduced by backlight or Bluetooth t may damage replaceable impeller.	radio transmission use.
Sealing Operational Temperature														Waterproof (IP67 and N 14° F to 131° F -10 °C	to 55 °C Measureme	nts may be taken beyond the li	imits of the operational temperature rai	nge of the display and batteries by maintaining the unit within the operational range and exposi
Limits Storage Temperature	•		•	•	•	•	•	•	•		•		•	-22.0 °F to 140.0 °F -3	0.0 °C to 60.0 °C	num time necessary to take rea		
														48 x 1 0 - 4 4 1- 1400	48 x 2 0 cm 44	102 g (including slip-on cover)		

^{*} NOTE: Accuracy calculated as uncertainty of the measurement derived from statistical analysis considering the comined effects from primary sensor specifications, circuit conversions, and all other sources of error using a coverage factor of k=2, or two standard deviations (2Σ).





PC-3A(E) K-Factor Verification Test by Total Suspended Particulates HVS Test Report

Information of Calibrated Equipement

Verification Test Date:	1-Mar-23	to	2-Mar-23		Next Verification Test Date:	2-Mar-24
Jnit-under-Test- Model No.:		PC-3A(E)		_		
Unit-under-Test Serial No.:		JC-2002223				
Our Report Refrence No.:	RF	PT-23-HVS-00)48	_		
Calibration Location:				Emax		

Standard Equipment Information

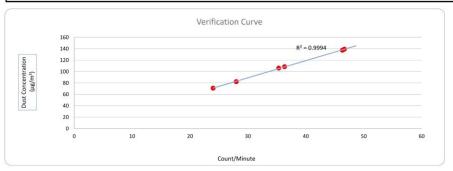
Verification Equipment Type:	Tisch TSP HVS	Tisch HVS Calibrator
Standard Equipment Model No.:	TE-5170X	TE-5025A
Equipment serial no.:	1049	3465
Last Calibration Date:	1-Mar-23	28-Jun-22
Next Calibration Date:	30-Apr-23	27-Jun-23

Equipement Vertification Result

Verification Test No.			Duration		Results from C	alibrated Equipement	Results from Standard Equipment	
	Date	Start-time	End-time	Elapsed Time (in min)	Total Counts	Counts/ Minute x-axis	Dust Concentration (μg/m³) y-axis	
1	1/3/2023	5013.27	5016.34	184.20	8596	47	139	
2	1/3/2023	5016.34	5019.34	180.00	6540	36	109	
3	1/3/2023	5019.34	5022.34	180.00	8340	46	137	
4	2/3/2023	5022.34	5025.34	180.00	5040	28	82	
5	2/3/2023	5025.34	5028.34	180.00	4320	24	71	
6	2/3/2023	5028.34	5031.34	180.00	6360	35	106	

Linear Regression of y on x





Operated By:

Andy Li Project Technician, Environmental

Date: 02-03-2023

Checked By:

Tandy Tse
Senior Consultant, Environmental

Date: 02-03-2023





PC-3A(E) K-Factor Verification Test by Total Suspended Particulates HVS Test Report

Information of Calibrated Equipement

Verification Test Date:	8-Apr-23	to	9-Apr-23		Next Verification Test Date:	8-Apr-24
Unit-under-Test- Model No.:		PC-3A(E)		_	_	
Unit-under-Test Serial No.:		JC-2105804		_		
Our Report Refrence No.:	RI	PT-23-HVS-00	132	_		
Calibration Location:				Emax		

Standard Equipment Information

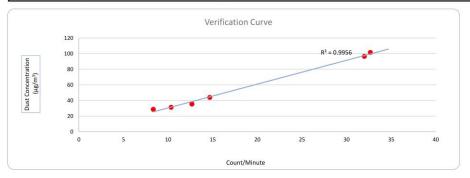
	Verification Equipment Type:	Tisch TSP HVS	Tisch HVS Calibrator	
1	Standard Equipment Model No.:	TE-5170X	TE-5028A	
1	Equipment serial no.:	1049	3702	
1	Last Calibration Date:	8-Apr-23	31-Mar-23	
1	Next Calibration Date:	7-Jun-23	30-Mar-24	

Equipement Vertification Result

Verification			Duration		Results from C	Calibrated Equipement	Results from Standard Equipmen	
Test No.	Date	Start-time	End-time	Elapsed Time (in min)	Total Counts	Counts/ Minute x-axis	Dust Concentration (μg/m³) y-axis	
1	8/4/2023	7339.85	7342.85	180.00	2640	15	44	
2	8/4/2023	7342.85	7345.85	180.00	2280	13	36	
3	8/4/2023	7345.85	7348.85	180.00	5760	32	97	
4	9/4/2023	7349.74	7352.74	180.00	1500	8	29	
5	9/4/2023	7352.76	7355.76	180.00	1860	10	31	
6	9/4/2023	7355.77	7358.77	180.00	5880	33	102	

Linear Regression of y on x

Slope, K factor: <u>3.0528</u>	Intercept:	-0.0510	*Correlation Coefficient,R:	0.9978
Verification Test Result: Strong Correlation, Resul	ts were accepted.	* If	the Correlation Coefficient, R is <0.5. Checkin	ng and Re-verification are required.



Operated By:

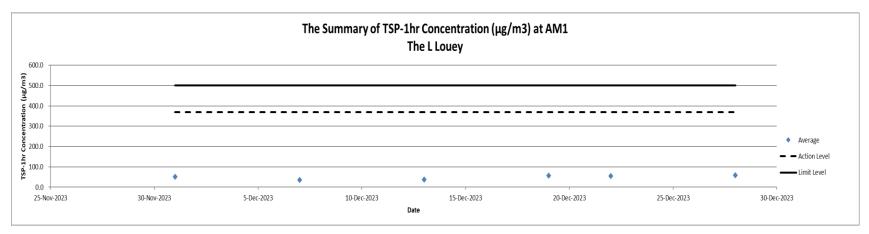
Andy Li Project Technician, Environmental Date: 10-04-2023

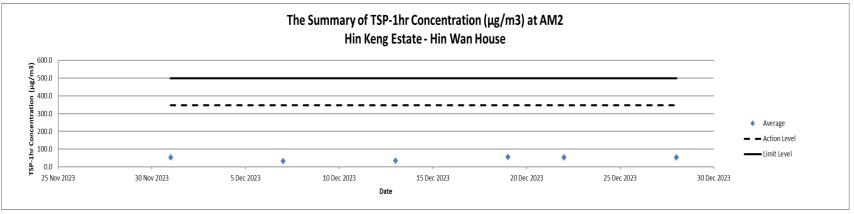
Checked By:

Tandy Tse Senior Consultant, Environmenta

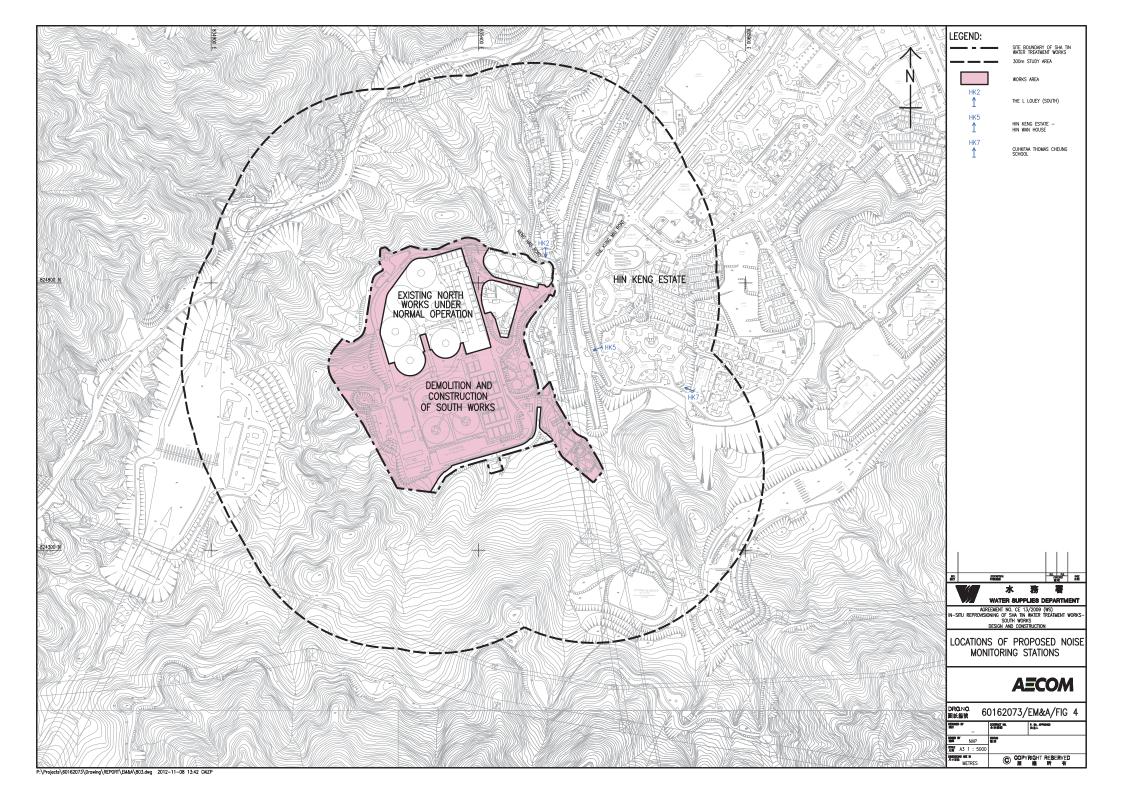
Date: 10-04-2023

Appendix K Impact Air Quality Monitoring Results and Graphical Presentation





Appendix L Location Plan of Noise Monitoring Station



Appendix M Calibration Certificates (Noise)

Certificate No. D224645E



CALIBRATION CERTIFICATE

Product

SOUND CALIBRATOR

Type

NC-75

Serial number

35124528

Manufacturer

RION CO., LTD.

Calibration quantities : Sound pressure level (with reference standard microphone)

Calibration method

: Measured by specified secondary standard microphone

according to JCSS calibration procedure specified by RION.

Ambient conditions

Temperature 23.9 °C, Relative humidity 49 %,

Static pressure 100.6 kPa

Calibration date

: 02/11/2022 (DD/MM/YYYY)

Calibration location

: 3-20-41 Higashimotomachi, Kokubunji, Tokyo 185-8533, Japan

RION CO., LTD. Calibration Room

We hereby certify that the results of this calibration were as follows.

Issue date: 09/11/2022 (DD/MM/YYYY)

Junichi Kawamura

Manager

Quality Assurance Section, Quality Assurance Department, Environmental Instrument Division,

RION CO., LTD.

3-20-41 Higashimotomachi, Kokubunji,

Tokyo 185-8533, Japan

This certificate is based on article 144 of the Measurement Law and indicates the result of calibration in accordance with measurement standards traceable to Primary Measurement Standards (National Standards) which realizes the physical units of measurement according to the International System of Units (SI).

The accreditation symbol is attestation of which the result of calibration is traceable to Primary Measurement Standards (National Standards).

The certificate shall not be reproduced except in full, without the written approval of the issuing laboratory.

The calibration laboratory who issued this calibration certificate conforms to ISO/IEC 17025:2017.

This calibration certificate was issued by the calibration laboratory accredited by IAJapan who is a signatory to the Mutual Recognition Arrangement (MRA) of International Laboratory Accreditation Cooperation (ILAC) and Asia Pacific Accreditation Cooperation (APAC). This (These) calibration result(s) may be accepted internationally through ILAC/APAC



Certificate No. D224645E

CALIBRATION RESULT

1. Sound pressure level (with reference standard microphone)

Measured	Expanded
value	uncertainty *
93.99 dB	0.09 dB

Specified secondary standard microphone:

Type

:4160

Serial number : 2973341

Reference Sound pressure : 2×10^{-5} Pa

*1 Defines an interval estimated to have a level of confidence of approximately 95 %.

Coverage factor k=2

Calibration result is the calibration value in ambient conditions during calibration.

BE OUT OF JCSS CALIBRATION

1. Frequency

Measured value	Measurement uncertainty (k=2)
1000.0 Hz	$2.7 \times 10^{-4} \mathrm{Hz}$

Working measurement standard universal counter:

Type

: 53132A

Serial number : MY40005574

(JCSS Calibration Certificate No. 2208001889940)

2. Total distortion

Measured	
value	
0.2 %	

Working measurement standard distortion meter:

: VA-2230A

Serial number : 11076061

(A2LA Calibration Certificate No. 1502-03109)

- closing -







This instrument was produced under rigorous factory production control and documented standard procedures. It was individually visually inspected, leak tested and function tested for display, backlight, button and software performance. The accuracy of each of its primary measurements was individually calibrated and/or tested against standards traceable to the National Institute of Standards and Technology ("NIST") or calibrated intermediary standards. This instrument is certified to have performed at the time of manufacture in compliance with the following specifications as they apply to this meter's specific model, measurements and features.

Methods Used in Calibration and Testing

Wind Speed:

The Kestrel Pocket Weather Meter impeller installed in this unit was individually tested in a subsonic wind tunnel operating at approximately 300 fpm (1.5 m/s) and 1200 fpm (6.1 m/s) monitored by a Gill Instruments Model 1350 ultrasonic time-of-flight anemometer. The Standard's maximum combined uncertainty is +/-1.04% within the airspeed range 706.6 to 3923.9 fpm (3.59 to 19.93 m/s), and +/-1.66% within the airspeed range 166.6 to 706.6 fpm (0.85 to 3.59 m/s).

Temperature:

Temperature response is verified in comparison with a Eutechnics 4600 Precision Thermometer or a standard Kestrel 4000 Weather and Environmental Meter calibrated weekly against the Eutechnics 4600. The Eutechnics 4600 is calibrated annually and is traceable to NIST with a system accuracy of +/- 0.05 °C.

Direction / Heading

The sensitivity of the magnetic directional sensor is verfied at the component level by applying a magnetic field to the sensor and measuring the signal output at 4 points, as well as after assembly by orienting the unit to the cardinal directions and measuring the magnetic field output. In both cases the compass output must be accurate to within +/- 5 degrees.

Relative Humidity:

Relative humidity receives a two-point calibration in humidity and temperature controlled chambers at 75.3% RH and 32.8% RH at 25° C. The calibration tanks are monitored with an Edgetech Model 2002 DewPrime II Standard Chilled Mirror Hygrometer. Following calibration, performance is further verified at an RH of approximately 43.2% against the Edgetech Hygrometer. The Edgetech Hygrometer is calibrated annually and is traceable to NIST with a maximum relative expanded uncertainty of +/- 0.2% RH.

Barometric Pressure:

Pressure response is verified against a Mensor Series 6000 Digital Barometer or a standard Kestrel 4000 Weather and Environmental Meter calibrated weekly against the Mensor Barometer. The Mensor Barometer is calibrated annually and is traceable to NIST with a maximum relative expanded uncertainty of +/- 0.02% F.S.

Approved By:

Michael Naughton, Engineering Manager

SENSOR	1000	2000	2500	3000	3500	3500	4000	4200	4250	4300	4400	4500	4500	ACCURACY (+/-)*	SENSO	SPECIFICATION RANGE	OPERATIONAL RANGE	NOTES
Wind Speed Air Flow	•	•	•	•	•	•			•		•	•	HOR	Larger of 3% of reading, least significant digit or 20 ft/min	0.1 m/s 1 ft/min 0.1 km/h 0.1 mph 0.1 knots 1 B	0.6 to 40.0 m/s 118 to 7,874 ft/min 2.2 to 144.0 km/h 1.3 to 89.5 mph 1.2 to 77.8 knots 0 to 12 B	0.6 to 60.0 m/s 118 to 11,811 ft/min 2.2 to 216.0 km/h 1.3 to 134.2 mph 1.2 to 116.6 knots 0 to 12.8	Inch/25 mm diameter impeller with precision axis and low-friction Zystell bearings. Startup is stated as lower limit, readings may be taken down to 0.4 mis [78 ftmm] [1.5 kmh] [9 mph], after impeller startup, Off-asis accuracy -1% @ 5° off-axis; 2% @ 10° -35% @ 15° -Cabrid off-arity -15 kmh [1.5 kmh], after impeller startup, Off-axis accuracy -1% @ 5° off-axis; 2% @ 10° -35% @ 15° -Cabrid off-arity -15 kmh [1.5 kmh], after impeller startup -15 kmh [1.5 kmh], after impeller startup alto utility off-arity after accuracy and the startup alto utility and the startu
Ambient Temperature					٠	•	٠			•			•	0.9*F 0.5*C	0.1 *F 0.1 *C	-20.0 to 158.0 °F -29.0 to 70.0 °C	14,0.0 to 131.0 °F -10.0 to 55.0 °C	Hermitically-sealed, practision thermition mounted externally and thermally isolated. US Pair 5.358.665 for rapid response. Aufflow of 2.2 mpc/1 mis or greater provides fastest response fastest response fastest reproduced in the properties of the
Globe Temperature - Tg														*F 1.4 *C	0.1 °F 0.1 °C	-20.0 to 140.0 °F -29.0 to 60.0 °C	14.0 to 131.0 °F -10.0 to 55.0 °C	Temperature inside 1in 25 mm black powder coated copper globe converted to Tg equivalen standard 6 in 150 mm globe. Closest equivalence obtained with airflow greater than 2.2 mph, m/s.
Relative Humidity								•			•			3.0 %RH	0.1 %RH	5 to 95% non-condensing	0 to 100%	Polymer capacitive humidity sensor mounted in thin-walled chamber external to case for rap accurate response (US Patert 6,257,074). To achieve stated accuracy, unit must be premit qualibate to external temperature when exposed to large, rapid temperature changes and to out of direct suright. Calibration drift +0-2% over 24 months. RIM: PRIVATION sensor may be recall at factory or index dusing Kestell furthing Calibration file. RIM: PRIVATION of the control of the control of th
Pressure	**		٠	23.5			•		•	•			•	0.03 inHg 1.0 hPalmbar 0.01 PSI	0.01 inHg 0.1 hPa mbar 0.01 PSI	8.86 to 32.49 inHg 300.0 to 1100.0 hPajmbar 4.35 to 15.95 PSI and 32.0 to 185.0 °F 0.0 to 85.0 °C	0.30 to 48.87 inHg 10.0 to 1654.7 hPalmbar 0.14 to 24.00 PSI and 14.0 to 131.0 °F -10.0 to 55.0 °C	Monofilhic silicon piezoresistive pressure sensor with second-order temperature correction. Pressure sensor may be reclaimbed of factory in field. Adjustate interiore attitude as display of station pressure or transmitic pressure connected to MSL. Kestelle 4200 displays station pressure or a dedicated screen. Relatele 2500 and 3500 displays station pressure or an edicated screen. Relatele 2500 and 3500 displays continuously update three-hour later matter pressure the related to relating station. Post displays pressure trend through graphing function. POI display on Kestel 4000 berlies only.
Compass												٠		5*	1* 1/16th Cardinal Scale	0 to 360°	0 to 360*	2-axis solid-state magnetoresistive sensor mounted perpendicular to unit plane. Accuracy of sensor dependent upon units vertical position. Self-calibration routine eliminates magnetic e from batteries or unit and must be run after every full power-down (batter) removal or charge. Readout indicates direction to which the back of the unit is pointed when held in a vertical orientation. Declarations have also adjustable for Tun North readout.
														CALCUL	ATED ME	ASUREMENTS		
MEASUREMENT	1000	2000	2500	3000	3500	3500 DT	4000	4200	4250	4300	4400	4500	4500 HOR	ACCURACY (+/-)*	RESOLUTION	SPECIFICATION RANGE	SENSORS EMPLOYED	NOTES
Air Density	i jen	491		W	133	17	ded	٠	•		133			0.0002 lb/ft ³ 0.0033 kg/m ³	0.001 lbs/ft ³ 0.001 kg/m ³	Refer to Ranges for Sensors Employed	Temperature Relative Humidity Pressure	Mass of air per unit volume
Air Flow														6.71%	1 cfm 1 m²/hr 1 m²/m 0.1m²/s 1 L/s	Refer to Ranges for Sensors Employed	Air Flow User Input (Duct Shape & Size)	Volume of air flowing through an opening. Automatically calculated from Air Velocity measure and user-specified duct shape (circle or rectangle) and dimensions (units: in, ft, cm or m). Maximum duct dimension input: 258.0 in 21.5 ft 655.3 cm 6.55 m.
Altitude														typical: 23.6 ft 7.2 m max: 48.2 ft	1 ft 1 m	typical: 750 to 1100 mBar max: 300 to 750 mBar	Pressure User Input (Reference Pressure)	Height above Mean Sea Level ("MSL"). Temperature compensated pressure (barometric) altimeter requires accurate reference barometric pressure to produce maximum absolute accuracy. Both accuracy specs corresponds to a reference pressure anywhere from 850 to mBar.
Barometric Pressure														14.7 m 0.07 inHg 2.4 hPa mbar 0.03 PSI	0.01 inHg 0.1 hPa mbar 0.01 PSI	Refer to Ranges for Sensors Employed	Pressure User Input (Reference Altitude)	imbar. Air pressure that would be present in identical conditions at MSL. Station pressure compens for local elevation provided by reference altitude. Requires accurate reference altitude to premaximum absolute accuracy.
Crosswind & Headwind/Tailwind												•		7.1%	1 mph 1 ft/min 0.1 km/h 0.1 m/s 0.1 knots	Refer to Ranges for Sensors Employed	Wind Speed Compass	Effective wind relative to a target or travel direction. Auto-switching headwindstallwind indicate
Delta T														3.2 °F	0.1 °F 0.1 °C	Refer to Ranges for	Temperature Relative Humidity	Difference between dry bulb temperature and wet bulb temperature. When spraying, indicat
	1XIII	Bysle:	0.0	708	13/3	1200			200					1.8 °C	1ft	Sensors Employed Refer to Ranges for	Pressure Temperature	evaporation rate and droplet lifetime. Safe range for pesticide spraying is 4 to 16 °F / 2 to 9 Local air density converted to equivalent elevation above sea level in a uniform layer consist
Density Altitude			na:											69 m	1 m	Sensors Employed	Relative Humidity Pressure	the International Standard Atmosphere. Temperature that a volume of air must be cooled to at constant pressure for the water vaporation.
Dewpoint				•	•	•	•	•	•	•	٠	•	•	3.4 °F 1.9 °C	0.1 °F 0.1 °C	Refer to Range for Temperature Sensor	Temperature Relative Humidity	present to condense into dewand form on a solid surface. Can also be considered to be the water-to-air saturation temperature.
Evaporation Rate										•				0.01 lb/ft²/hr 0.06 kg/m2/hr	0.01 b/ft²/hr 0.01 kg/m²/hr	Refer to Ranges for Sensors Employed	Wind Speed Temperature Relative Humidity Pressure User Input (Concrete Temperature)	The rate at which moisture is lost from the surface of curing concrete. Requires user measurement and entry of concrete temperature obtained with an accurate IR or probe the contracter of For *C**, not included, Readings should be taken 20 inches above pour surface with the thermister shaded, and averaged for 610 seconds using fusil-in averaging functions.
Heat Index			•	•	٠	-3379	•	•	•	•	•	•	•	7.1 °F 4.0 °C	0.1 °F 0.1 °C	Refer to Ranges for Sensors Employed	Temperature Relative Humidity	Perceived temperature resulting from the combined effect of temperature and relative humic Calculated based on NWS Heat Index (HI) tables. Measurement range limited by extent of published tables.
Moisture Content Humidity Ratio ("Grains")									•					.3 gpp .04 g/kg	0.1 gpp 0.01 g/kg	Refer to Ranges for Sensors Employed	Temperature Relative Humidity Pressure	Mass of water vapor in a mass of air.
Relative Air Density					247	177	1 11						100	0.3%	0.1%	Refer to Ranges for Sensors Employed	Temperature Relative Humidity	The ratio, expressed as a percentage, of measured air density to the air density of a standa atmosphere as defined by the ICAO.
hermal Work Limit (TWL)						La P	197-1		1 01					10.9 W/m²	0.1 W/m²	Refer to Ranges for Sensors Employed	Pressure Wind Speed Temperature Globe Temperature Relative Humidity Pressure	armospere as connect or excession of the Control of the Control of the Conditions and coloring factors. Based off of estimated metabolic cutput of typical human. O screen zone varings.
Outdoor Wet Bulb Globe Temperature (WBGT)								148						1.3 °F 0.7 °C	0.1 °F 0.1 °C	Refer to Ranges for Sensors Employed	Wind Speed Temperature Globe Temperature Relative Humidity	Measure of human heat stress defined as the combination of effects due to radiation, convi and conduction. Outdoor WBGT is calculated from a veighted sum of natural web bull. Or the globe temperature (Tg), and dry bulb temperature (Td). User setable on-screen varning zo
Wet Bulb Temperature - aturally Aspirated (Tnwb)			1872			1100	18	B R	i te	25 kg	•	10		1.4 °F 0.8 °C	0.1 °F 0.1 °C	Refer to Ranges for Sensors Employed	Pressure Wind Speed Temperature Globe Temperature Relative Humidity	Similar to psychrometric wer-bubl temporature (see below). However, Trivib only undergoes convection from the arrisent air velocity. Trivib is a measure of the evaporative cooling that will allow. This is accounted for by combining the effects of, mainly, relative humidity and windspeed.
Wet Bulb Temperature - Psychrometric	57	TELL S	5 10							•				3.2 °F 1.8 °C	0.1 °F 0.1 °C	Refer to Ranges for Sensors Employed	Pressure Temperature Relative Humidity	Temperature indicated by a sing psychrometer. Due to nature of the psychrometric ratio for water-air system, this approximates the thermodynamic wet-bulb temperature. The thermody wet-bulb temperature is the temperature a parcel of air would have if cooled adiabatically to
Wind Chill	W.		•				•					•	•	1.6 °F 0.9 °C	0.1 °F 0.1 °C	Refer to Ranges for Sensors Employed	Pressure Wind Speed Temperature	saturation temperature vis water evaporating into it. Perceived temperature resulting from combined effect of wind speed and temperature. Calc based on the NWS Wind Chill Temperature (WCT) Index, revised 2001, with wind speed by a factor of 1.5 to yield equivalent results to wind speed measured at 10 m above ground.
			0.1		133	901	1233	253	MA					ADDITIO	ONAL SEE	CIFICATIONS		Measurement range limited by extent of published tables.
Display & Backlight				•									SCHOOL STATE	Reflective 3 1/2 digit LC	D. Digit height 0:38 in	9 mm. Aviation green electrol	luminescent backlight. Manual activation	on with auto-off. urninescent backlight. Manual activation with auto-off.
Response Time				1,1039	SIXE	SI-N	٠	٠	٠	•	•	•	•	Multifunction, multi-digit	monochrome dot-matri	x display. Choice of aviation	green or visible red (NV models only) e	uminescent backlight. Manual activation with auto-on: hectroluminescent backlight. Automatic or manual activation. nd all measurements which include RH in their calculation may require as long as 1 minute to f
& Display Update						:	•	•	•	•	•	•	•	equilibrate to a large cha	ange in the measurement start of Max Wind Gus	ent environment. Display updat it and Average Wind measure	tes every 1 second. ment.	ed lavel inacogmog act to balliev.
Max/Avg Wind							•	•	•	•	•	٠	•					with all other wind-related functions: air velocity, crosswind, headwind/tailwind, wind chill, WBC
ata Storage & Graphical Display, Min/Max/Avg History									3200 points					Minimum, maximum, ave independently. Auto-stor	erage and logged histo re interval settable from	ry stored and displayed for ew n 2 seconds to 12 hours, over	ery measured value. Large capacity da write on or off. Logs even when display	ata logger with graphical display. Manual and auto data storage. Min/Max/Avg history may be re y off except for 2 and 5 second intervals (code version 4.18 and later). Data capacity shown.
ata Upload & Bluetooth® Data Connect Option							•	•	•	•		•		Bluetooth Data Trans	fer Option: Adjustable	32) or Bluetooth data transfer e power consumption and radi rial Port Protocol for data tran	o range from up to 30 ft 9 meters. Inc	dividual unit ID and 4-digit PIN code preprogrammed for easy identification and data security w
Clock / Calendar			•	•	•	•								Requires optional PC in	terface (USB or RS-23	32) or Bluetooth data transfer 32) or Bluetooth data transfer	option and provided software.	18GPTO CANADOMO A LIBERTAL AND
Auto Shutdown	٠	•	•	•	•	•		•						Requires optional PC in Requires optional PC in	terface (USB or RS-23 terface (USB or RS-23	32) or Bluetooth data transfer 32) or Bluetooth data transfer	option and provided software.	
Languages Certifications	•	•	•			•				•				English, French, Germa CE certified, RoHS and	WEEE compliant. Indi	vidually tested to NIST-traceat	ole standards (written certificate of test	ts available at additional charge).
Origin Battery Life	•		•	•			•	•	٠	•	•	•	•	Designed and manufact CR2032, one, included.	ured in the USA from I Average life, 300 hour	JS and imported components. s. Battery life reduced by back	Complies with Regional Value Content slight use in 2000 to 3500 models.	t and Tariff Code Transformation requirements for NAFTA Preference Criterion B.
Shock Resistance	•	•	•			•	•					:		MIL-STD-810g, Transit	Shock, Method 516.5	d. Average life, 400 hours of u Procedure IV; unit only; impact	use, reduced by backlight or Bluetooth t may damage replaceable impeller.	radio transmission use.
Sealing Operational Temperature														Waterproof (IP67 and N 14° F to 131° F -10 °C	to 55 °C Measureme	nts may be taken beyond the li	imits of the operational temperature rai	nge of the display and batteries by maintaining the unit within the operational range and exposi
Limits Storage Temperature	•		•	•	•	•	•	•	•		•		•	-22.0 °F to 140.0 °F -3	0.0 °C to 60.0 °C	num time necessary to take rea		
														48 x 1 0 - 4 4 1- 1400	48 x 2 0 cm 44	102 g (including slip-on cover)		

^{*} NOTE: Accuracy calculated as uncertainty of the measurement derived from statistical analysis considering the comined effects from primary sensor specifications, circuit conversions, and all other sources of error using a coverage factor of k=2, or two standard deviations (2Σ).

Certificate of Calibration

for

Description:

Sound Level Meter

Manufacturer:

Svantek

Type No.:

971 (Serial No.: 103449)

Microphone:

ACO 7052E (Serial No.: 78092)

Preamplifier:

SV 18 (Serial No.:78763)

Submitted by:

Customer:

Acuity Sustainability Consulting Limited

Address:

Unit E, 12/F, Ford Glory Plaza,

Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon,

Hong Kong

Upon receipt for calibration, the instrument was found to be:

Within (31.5Hz – 8kHz)

☐ Outside

the allowable tolerance.

The test equipment used for calibration are traceable to National Standards via:

The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory

Date of receipt: 2 February 2023

Date of calibration: 6 February 2023

Date of NEXT calibration: 5 February 2024

Calibrated by:_

Calibration Technician

Certified by:

Mr. Ng Yan Wa Laboratory Manager

Date of issue: 6 February 2023

Certificate No.: APJ22-136-CC001

Page 1 of 4

Room 422, Leader Industrial Centre, 57-59 Au Pui Wan Street , Fo Tan, Shatin, N.T., Hong Kong
Tel: (852) 2668 3423 Fax: (852) 2668 6946

Homepage: http://www.aa-lab.com

E-mail: inquiry@aa-lab.com



1. Calibration Precaution:

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
- The results presented are the mean of 3 measurements at each calibration point.

2. Calibration Conditions:

Air Temperature:

23.9°C

Air Pressure:

1006 hPa

Relative Humidity:

47.9 %

3. Calibration Equipment:

Type

Serial No.

Calibration Report Number

Traceable to

Multifunction Calibrator

B&K 4226 2288467 AV220061

HOKLAS

4. Calibration Results

Sound Pressure Level

Reference Sound Pressure Level

Sett	ing of Un	it-under-t	est (UUT)	App	lied value	UUT Reading.	IEC 61672 Class 1 Specification, dB	
Range, dB	Freq. W	eighting	Time Weighting	Level, dB	Frequency, Hz	1000		
25-124.3	dBA	SPL	Fast	94	1000	94.0	±0.4	

Linearity

Sett	ing of Uni	it-under-t	est (UUT)	App	lied value	UUT Reading.	IEC 61672 Class
Range, dB Freq. W		eighting	Time Weighting	Level, dB	Frequency, Hz	1	Specification, dB
25.12.12			Fast	94	1000	94.0	Ref
25-124.3	dBA	SPL		104		104.0	±0.3
				114		114.0	±0.3

Time Weighting

Sett	ing of Ur	nit-under-t	est (UUT)	App	lied value	UUT Reading.	IEC 61672 Class 1	
Range, dB	Freq. V	Veighting	Time Weighting	Level, dB Frequency, Hz		1	Specification, dB	
25-124.3	dBA	SPL	Fast			94.0	Ref	
20 124.5	uDA	SFL	Slow	94	1000	94.0	±0.3	

Certificate No.: APJ22-136-CC001

Page 2 of 4

Room 422, Leader Industrial Centre, 57-59 Au Pui Wan Street , Fo Tan, Shatin, N.T., Hong Kong Tel: (852) 2668 3423 Fax:(852) 2668 6946

Homepage: http://www.aa-lab.com

E-mail:inquiry@aa-lab.com

Acoustics and Air Testing Laboratory Co. Ltd. 聲學及空氣測試實驗室有限公司

Frequency Response

Linear Response

Sett	ing of Uni	t-under-t	est (UUT)	App	lied value	UUT Reading	IEC 61672 Class	
Range, dB	Freq. W	eighting	Time Weighting	ime Weighting Level, dB Frequency, Hz			Specification, dB	
	14		Fast	94	31.5	94.2	±2.0	
					63	94.1	±1.5	
					125	94.1	±1.5	
25-124.3	ID	one			250	94.1	±1.4	
23-124.5	dB	SPL			500	94.0	±1.4	
					1000	94.0	Ref	
					2000	93.9	±1.6	
					4000	93.6	±1.6	
-:-1-4:					8000	90.9	+2.1; -3.1	

A-weighting

Sett	ing of Uni	t-under-t	est (UUT)	Арр	lied value	UUT Reading.	IEC 61672 Class
Range, dB	Freq. W	req. Weighting Time Weighting Level, dB Frequency, Hz			Specification, dB		
					31.5	54.8	-39.4 ±2.0
		SPL	Fast		63	68.0	-26.2 ±1.5
				94	125	78.0	-16.1±1.5
25 1242	ID 4				250	85.4	-8.6±1.4
25-124.3	dBA				500	90.8	-3.2 ±1.4
					1000	94.0	Ref
					2000	95.1	+1.2 ±1.6
				-	4000	94.6	+1.0±1.6
					8000	90.0	-1.1+2.1; -3.1

C-weighting

Sett	ing of Uni	it-under-t	est (UUT)	App	lied value	UUT Reading.	IEC 61672 Class	
Range, dB	Freq. W	eighting	Time Weighting	Time Weighting Level, dB Frequency, Hz			Specification, dB	
		SPL	Fast		31.5	91.2	-3.0 ±2.0	
					63	93.3	-0.8 ±1.5	
				94	125	93.9	-0.2 ±1.5	
25-124.3	Inc				250	94.0	-0.0 ±1.4	
23-124.3	dBC				500	94.1	-0.0 ±1.4	
					1000	94.0	Ref	
					2000	93.7	-0.2 ±1.6	
						92.9	-0.8 ±1.6	
					8000	88.1	-3.0 +2.1: -3.1	

Certificate No.: APJ22-136-CC001





5. Calibration Results Applied

The results apply to the particular unit-under-test only. All calibration points are within manufacture's specification as IEC 61672 Class 1.

Uncertainties of Applied Value:

94 dB	31.5 Hz	± 0.10
	63 Hz	± 0.05
	125 Hz	± 0.05
	250 Hz	± 0.10
	500 Hz	± 0.05
	1000 Hz	± 0.05
	2000 Hz	± 0.05
	4000 Hz	± 0.05
	8000 Hz	± 0.10
104 dB	1000 Hz	± 0.05
114 dB	1000 Hz	± 0.05

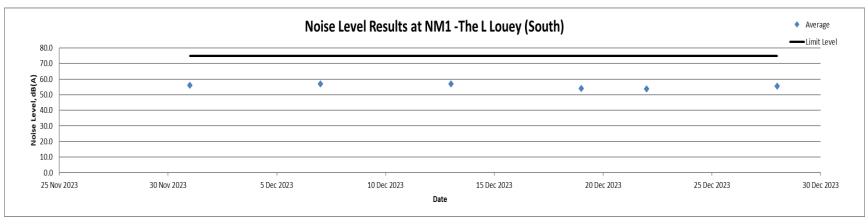
The uncertainties are evaluated for a 95% confidence level.

Note:

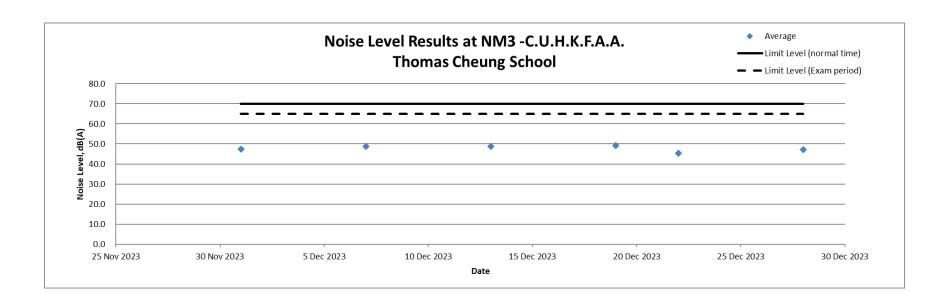
The values given in this certification only related to the values measured at the time of the calibration and any uncertainties quoted will not allow for the equipment long-term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the calibration. (A+A)*L shall not be liable for any loss or damage resulting from the use of the equipment.



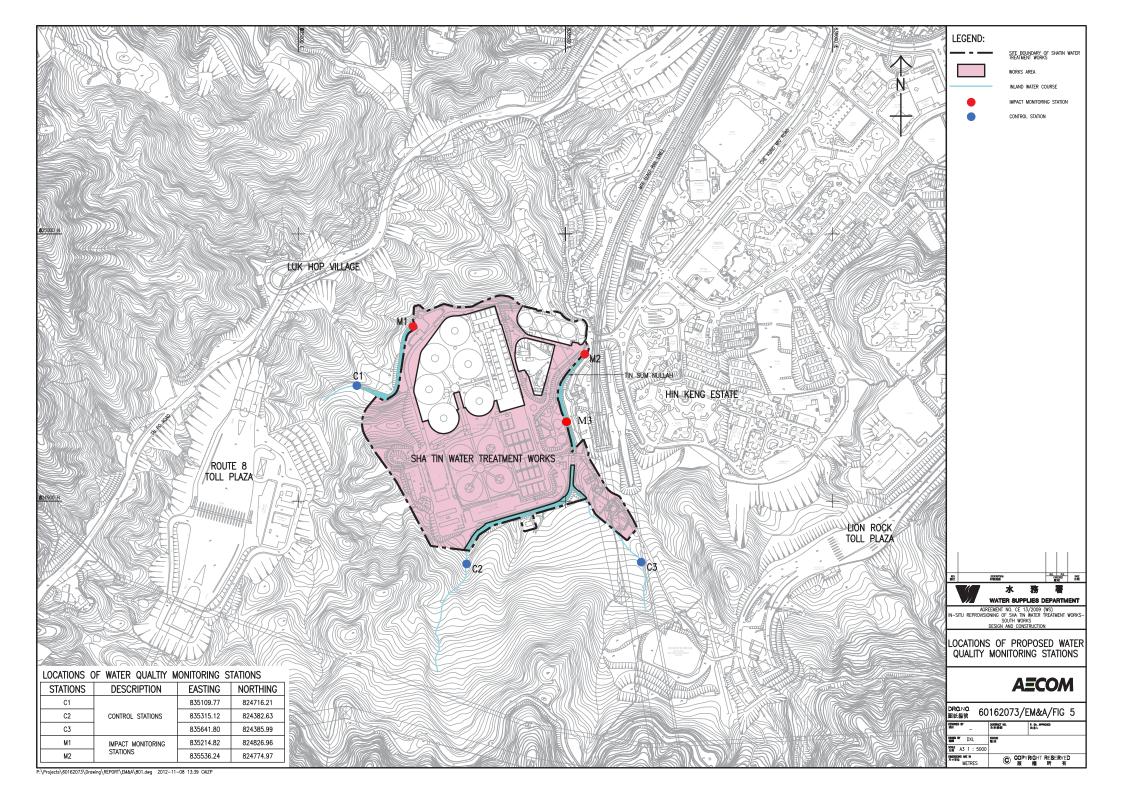
Appendix N Impact Noise Monitoring Results and Graphical Presentation







Appendix O Location Plan of Water Quality Monitoring Station



Appendix P Calibration Certificate (Water Quality)

Tel: (852) 3956 8717; Fax: (852) 3956 3928

REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No.

: R-BC100051

Date of Issue

: 24 October 2023

Page No.

: 1 of 2

PART A - CUSTOMER INFORMATION

Acuity Sustainability Consulting Limited

Unit E, 12/F, Ford Glory Plaza 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong

PART B - SAMPLE INFORMATION

Name of Equipment:

YSI ProDSS (Multi-Parameters)

Manufacturer:

YSI (a xylem brand)

Serial Number:

22C106561

Date of Received:

19 October 2023

Date of Calibration:

24 October 202323 January 2024

Date of Next Calibration: Request No.:

D-BC100051

PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Test Parameter

Reference Method

pH value

APHA 21e 4500-H+ B

Temperature

Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March

2008: Working Thermometer Calibration Procedure

Salinity

APHA 21e 2520 B

Dissolved oxygen

APHA 23e 4500-O G (Membrane Electrode Method)

Turbidity

APHA 21e 2130 B (Nephelometric Method)

PART D - CALIBRATION RESULT

(1) pH value

Target (pH unit)	Display Reading (pH unit)	Tolerance	Result
4.00	4.09	0.09	Satisfactory
7.42	7.46	0.04	Satisfactory
10.01	10.08	0.07	Satisfactory

Tolerance of pH value should be less than \pm 0.2 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Display Reading (°C)	Tolerance	Result
16	15.6	-0.4	Satisfactory
23	22.1	-0.9	Satisfactory
38	36.9	-1.1	Satisfactory

Tolerance of Temperature should be less than ± 2.0 (°C)

(3) Salinity

Expected Reading (g/L)	Display Reading (g/L)	Tolerance (%)	Result
10	10.01	0.10	Satisfactory
20	20.63	3.15	Satisfactory
30	31.63	5.43	Satisfactory

Tolerance of Salinity should be less than \pm 10.0 (%)

--- CONTINUED ON NEXT PAGE ---

AUTHORIZED SIGNATORY:

Assistant Manager

REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No.

: R-BC100051

Date of Issue

: 24 October 2023

Page No.

: 2 of 2

(4) Dissolved oxygen

Expected Reading (mg/L)	Display Reading (mg/L)	Tolerance	Result
8.17	8.55	0.38	Satisfactory
5.47	5.83	0.36	Satisfactory
1.43	1.21	-0.22	Satisfactory
0.05	0.27	0.22	Satisfactory

Tolerance of Dissolved oxygen should be less than \pm 0.5 (mg/L)

(5) Turbidity

Expected Reading (NTU)	Display Reading (NTU)	Tolerance (%)	Result
0	0.79		Satisfactory
10	9.66	-3.4	Satisfactory
20	18.21	-9.0	Satisfactory
100	97.55	-2.5	Satisfactory
800	753.80	-5.8	Satisfactory

Tolerance of Turbidity should be less than ± 10.0 (%)

Remark(s)

- 'The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted form relevant international standards.
- ·The results relate only to the calibrated equipment as received
- 'The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.
- "Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.
- 'The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted form relevant international standards.

--- END OF REPORT ---

Appendix Q The Certification of Laboratory with HOKLAS accredited Analytical Tests

Project no.: CJO-3113



Hong Kong Accreditation Service 香港認可處

Certificate of Accreditation

認可證書

This is to certify that 特此證明

ACUMEN LABORATORY AND TESTING LIMITED

浩科檢測中心有限公司

Flat/Rm D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong

香港九龍長沙灣永康街37-39號福源廣場12樓D室

is accredited by the Hong Kong Accreditation Service (HKAS) to ISO/IEC 17025:2017 for performing specific laboratory activities as listed in the scope of accreditation within the test category of 獲香港認可應根據ISO/IEC 17025:2017認可 進行載於認可範圍內下透測試類別中的指定實驗所活動

Environmental Testing

環境測試

This accreditation to ISO/IEC 17025:2017 demonstrates technical competence for a defined scope and the implementation of a management system relevant to laboratory operation (see joint IAF-ILAC-ISO Communiqué).
此項 ISO/IEC 17025:2017 的認可資格證明此實驗所具備指定範疇內所須的技術能力並實施一套與實驗所運作相關的管理體系 (見國際認可論壇、國際實驗所認可合作組織及國際標準化組織的聯合公報)。

The common seal of HKAS is affixed hereto by the authority of the HKAS Executive 現經香港認可處執行機關授權在此蓋上香港認可處的印章

SHUM Wai-leung, Executive Administrator

執行幹事 沈偉良

Issue Date: 15 November 2021

簽發日期:二零二一年十一月十五日

Registration Number HOKLAS 241 註冊號碼:

Date of First Registration: 16 July 2014 首次註冊日期:二零一四年七月十六日

Appendix R Impact Water Quality Monitoring Results

Project no.: CJO-3113



Flat/Rm D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong Tel: (852) 2333 6823 Fax: (852) 2333 1316

Test Report

Report Number

Q230002aR231976

Job Number

R231976

Issue Date

06/12/2023

Applicant Name

: Acumen Environmental Engineering and Technologies Co. Ltd.

Page 1 of 2

Applicant Address

Unit D, 12/F, Ford Glory Plaza, No.37-39 Wing Hong Street.

Cheung Sha Wan, Kowloon, Hong Kong

Project Name

CJO-3113-1234

Test Required

Total Suspended Solids (TSS)

Sampling Date

01/12/2023

Date Samples Received

01/12/2023

Sample Nature

Water

Number of Samples Received

E

Condition Received

Sample(s) arrived laboratory in chilled condition

Type of Container

HDPE Plastic Bottles

Laboratory ID

R231976/1-5

Test Period

01/12/2023 - 02/12/2023

Method Used

In-house Method, QPL-15e for Total Suspended Solids

Test Result

Refer to the results on page 2

For and on behalf of

Acumen Laboratory and Testing Limited

Authorized Signature

Hui Wai Fung, Huntington

Laboratory Manager



Flat/Rm D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong

Tel: (852) 2333 6823 Fax: (852) 2333 1316

Test Report

Page 2 of 2

Report Number

Q230002aR231976

Job Number

R231976

Issue Date

06/12/2023

Test Result:

Lab ID	Sampling Date	Client Sample ID	Total Suspended Solids (TSS), mg/L
R231976/1	01/12/2023	C1	<1
R231976/2	01/12/2023	C2	<1
R231976/3	01/12/2023	M1	<1
R231976/4	01/12/2023	M2	1.0
R231976/5	01/12/2023	M3	<1

Note:

- mg/L indicates milligram per liter
- < indicates less than.
- 2. 3. 4. Reporting limit is 2.5mg/L for 1L sample
- Reporting limit is 1 mg/L for 2.5L sample
- Applicant name, applicant address, project name, sampling date, sample ID and sample nature are provided by applicant.
- The result(s) relate only to the item(s) tested.
- The result(s) are applied only to the sample(s) received.



Flat/Rm D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong

Tel: (852) 2333 6823 Fax: (852) 2333 1316

Test Report

Report Number

Q230002aR232008

Job Number

R232008

Issue Date

12/12/2023

Applicant Name

Acumen Environmental Engineering and Technologies Co, Ltd.

Page 1 of 2

Applicant Address

Unit D, 12/F, Ford Glory Plaza, No.37-39 Wing Hong Street,

Cheung Sha Wan, Kowloon, Hong Kong

Project Name

CJO-3113-1235

Test Required

Total Suspended Solids (TSS)

Sampling Date

04/12/2023

Date Samples Received

04/12/2023

Sample Nature

Water

Number of Samples Received

5

Condition Received

Sample(s) arrived laboratory in chilled condition

Type of Container

HDPE Plastic Bottles

Laboratory ID

R232008/1-5

Test Period

04/12/2023 - 05/12/2023

Method Used

In-house Method, QPL-15e for Total Suspended Solids

Test Result

Refer to the results on page 2

For and on behalf of

Acumen Laboratory and Testing Limited

Authorized Signature

Hui Wai Fung, Huntington

Laboratory Manager



Acumen Laboratory and Testing Limited Flat/Rm D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong

Tel: (852) 2333 6823 Fax: (852) 2333 1316

Test Report

Page 2 of 2

Report Number

Q230002aR232008

Job Number

R232008

Issue Date

12/12/2023

Test Result:

Lab ID	Sampling Date	Client Sample ID	Total Suspended Solids (TSS), mg/L
R232008/1	04/12/2023	C1	2.5
R232008/2	04/12/2023	C2	<1
R232008/3	04/12/2023	M1	2.8
R232008/4	04/12/2023	M2	1.0
R232008/5	04/12/2023	М3	<1

Note:

- mg/L indicates milligram per liter
- 2. 3. 4. 5. 6. < indicates less than.
- Reporting limit is 2.5mg/L for 1L sample
- Reporting limit is 1 mg/L for 2.5L sample
- Applicant name, applicant address, project name, sampling date, sample ID and sample nature are provided by applicant.
- The result(s) relate only to the item(s) tested.
- The result(s) are applied only to the sample(s) received.



Flat/Rm D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong Tel: (852) 2333 6823 Fax: (852) 2333 1316

Test Report

Report Number

Q230002aR232026

Job Number

R232026

Issue Date

14/12/2023

Applicant Name

Acumen Environmental Engineering and Technologies Co, Ltd.

Page 1 of 2

Applicant Address

Unit D, 12/F, Ford Glory Plaza, No.37-39 Wing Hong Street,

Cheung Sha Wan, Kowloon, Hong Kong

Project Name

CJO-3113-1236

Test Required

Total Suspended Solids (TSS)

Sampling Date

06/12/2023

Date Samples Received

06/12/2023

Sample Nature

Water

Number of Samples Received

vvalci

Condition Received

Sample(s) arrived laboratory in chilled condition

Type of Container

HDPE Plastic Bottles

Laboratory ID

R232026/1-5

Test Period

06/12/2023 - 07/12/2023

Method Used

In-house Method, QPL-15e for Total Suspended Solids

Test Result

Refer to the results on page 2

For and on behalf of

Acumen Laboratory and Testing Limited

Authorized Signature

Hui Wai Fung, Huntingtor

Laboratory Manager

Chemical and Microbiological Division

Hong Kong Accreditation Service (HKAS) has accredited Acumen Laboratory and Testing Limited (Reg. No. HOKLAS 241 - TEST) under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. This report is issued subject to Acumen Laboratory and Testing Limited standard TERMS AND CONDITIONS, and shall not be reproduced except in full or with written approval by Acumen Laboratory and Testing Limited.



Acumen Laboratory and Testing Limited Flat/Rm D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong

Tel: (852) 2333 6823 Fax: (852) 2333 1316

Test Report

Page 2 of 2

Report Number

Q230002aR232026

Job Number

R232026

Issue Date

14/12/2023

Test Result:

Lab ID	Sampling Date	Client Sample ID	Total Suspended Solids (TSS), mg/L
R232026/1	06/12/2023	C1	<1
R232026/2	06/12/2023	C2	<1
R232026/3	06/12/2023	M1	<1
R232026/4	06/12/2023	M2	<1
R232026/5	06/12/2023	М3	<1

Note:

- mg/L indicates milligram per liter
- 2. 3. 4. 5. < indicates less than.
- Reporting limit is 2.5mg/L for 1L sample
- Reporting limit is 1 mg/L for 2.5L sample
- Applicant name, applicant address, project name, sampling date, sample ID and sample nature are provided by applicant.
- The result(s) relate only to the item(s) tested.
- The result(s) are applied only to the sample(s) received.



Flat/Rm D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong Tel: (852) 2333 6823 Fax: (852) 2333 1316

Test Report

Report Number

Q230002aR232047

Job Number

R232047

Issue Date

20/12/2023

Applicant Name

Acumen Environmental Engineering and Technologies Co, Ltd.

Page 1 of 2

Applicant Address

Unit D, 12/F, Ford Glory Plaza, No.37-39 Wing Hong Street.

Cheung Sha Wan, Kowloon, Hong Kong

Project Name

CJO-3113-1237

Test Required

Total Suspended Solids (TSS)

Sampling Date

08/12/2023

Date Samples Received

08/12/2023

Sample Nature

Water

Number of Samples Received

Condition Received

Sample(s) arrived laboratory in chilled condition

Type of Container

HDPE Plastic Bottles

Laboratory ID

R232047/1-5

Test Period

08/12/2023 - 09/12/2023

Method Used

In-house Method, QPL-15e for Total Suspended Solids

Test Result

Refer to the results on page 2

For and on behalf of

Acumen Laboratory and Testing Limited

Authorized Signature

Hui Wai Fung, Huntington

Laboratory Manager



Acumen Laboratory and Testing Limited Flat/Rm D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong

Fax: (852) 2333 1316 Tel: (852) 2333 6823

Test Report

Page 2 of 2

Report Number

Q230002aR232047

Job Number

R232047

Issue Date

20/12/2023

Test Result:

Lab ID	Sampling Date	Client Sample ID	Total Suspended Solids (TSS), mg/L
R232047/1	08/12/2023	C1	<1
R232047/2	08/12/2023	C2	<1
R232047/3	08/12/2023	М1	1.1
R232047/4	08/12/2023	M2	<1
R232047/5	08/12/2023	M3	<1

Note:

- mg/L indicates milligram per liter
- 2. 3. 4. < indicates less than.
- Reporting limit is 2.5mg/L for 1L sample
- Reporting limit is 1 mg/L for 2.5L sample
- Applicant name, applicant address, project name, sampling date, sample ID and sample nature are provided by applicant.
- The result(s) relate only to the item(s) tested.
- The result(s) are applied only to the sample(s) received.



Flat/Rm D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong Tel: (852) 2333 6823 Fax: (852) 2333 1316

Test Report

Report Number

Q230002aR232048

Job Number

R232048

Issue Date

20/12/2023

Applicant Name

Acumen Environmental Engineering and Technologies Co, Ltd.

Page 1 of 2

Applicant Address

Unit D, 12/F, Ford Glory Plaza, No.37-39 Wing Hong Street,

Cheung Sha Wan, Kowloon, Hong Kong

Project Name

CJO-3113-1238

Test Required

Total Suspended Solids (TSS)

Sampling Date

11/12/2023

Date Samples Received

11/12/2023

Sample Nature

Water

Number of Samples Received

.....

Condition Received

Sample(s) arrived laboratory in chilled condition

Type of Container

HDPE Plastic Bottles

Laboratory ID

R232048/1-5

Test Period

11/12/2023 - 12/12/2023

Method Used

In-house Method, QPL-15e for Total Suspended Solids

Test Result

Refer to the results on page 2

For and on behalf of

Acumen Laboratory and Testing Limited

Authorized Signature

Hui Wai Fung, Huntington

Laboratory Manager



Flat/Rm D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong Tel: (852) 2333 6823 Fax: (852) 2333 1316

Test Report

Page 2 of 2

Report Number

Q230002aR232048

Job Number

R232048

Issue Date

20/12/2023

Test Result:

Lab ID	Sampling Date	Client Sample ID	Total Suspended Solids (TSS), mg/L
R232048/1	11/12/2023	C1	2.1
R232048/2	11/12/2023	C2	<1
R232048/3	11/12/2023	M1	1.4
R232048/4	11/12/2023	M2	<1
R232048/5	11/12/2023	M3	<1

Note:

- 1. mg/L indicates milligram per liter
- 2. < indicates less than.
- Reporting limit is 2.5mg/L for 1L sample
 Reporting limit is 1 mg/L for 2.5L sample
- 5. Applicant name, applicant address, project name, sampling date, sample ID and sample nature are provided by applicant.
- 6. The result(s) relate only to the item(s) tested.
- 7. The result(s) are applied only to the sample(s) received.



Flat/Rm D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong Tel: (852) 2333 6823 Fax: (852) 2333 1316

Test Report

Report Number

Q230002aR232049

Job Number

R232049

Issue Date

20/12/2023

Applicant Name

Acumen Environmental Engineering and Technologies Co, Ltd.

Page 1 of 2

Applicant Address

Unit D, 12/F, Ford Glory Plaza, No.37-39 Wing Hong Street,

Cheung Sha Wan, Kowloon, Hong Kong

Project Name

CJO-3113-1239

Test Required

Total Suspended Solids (TSS)

Sampling Date

13/12/2023

Date Samples Received

13/12/2023

Sample Nature

Water

Number of Samples Received

.

Condition Received

Sample(s) arrived laboratory in chilled condition

Type of Container

HDPE Plastic Bottles

Laboratory ID

R232049/1-5

Test Period

13/12/2023 - 14/12/2023

Method Used

In-house Method, QPL-15e for Total Suspended Solids

Test Result

Refer to the results on page 2

For and on behalf of

Acumen Laboratory and Testing Limited

Authorized Signature

Hui Wai Fung, Huntington

Laboratory Manager



Acumen Laboratory and Testing Limited
Flat/Rm D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong Fax: (852) 2333 1316 Tel: (852) 2333 6823

Test Report

Page 2 of 2

Report Number

Q230002aR232049

Job Number

R232049

Issue Date

20/12/2023

Test Result:

Lab ID	Sampling Date	Client Sample ID	Total Suspended Solids (TSS), mg/L
R232049/1	13/12/2023	C1	<1
R232049/2	13/12/2023	C2	<1
R232049/3	13/12/2023	M1	1.1
R232049/4	13/12/2023	M2	<1
R232049/5	13/12/2023	M3	<1

Note:

- mg/L indicates milligram per liter
- < indicates less than.
- 2. 3. 4. 5. Reporting limit is 2.5mg/L for 1L sample
- Reporting limit is 1 mg/L for 2.5L sample
- Applicant name, applicant address, project name, sampling date, sample ID and sample nature are provided by applicant.
- The result(s) relate only to the item(s) tested.
- The result(s) are applied only to the sample(s) received.



Flat/Rm D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong Tel: (852) 2333 6823 Fax: (852) 2333 1316

Test Report

Report Number

Q230002aR240066

Job Number

R240066

Issue Date

04/01/2024

Applicant Name

Acumen Environmental Engineering and Technologies Co, Ltd.

Page 1 of 2

Applicant Address

Unit D, 12/F, Ford Glory Plaza, No.37-39 Wing Hong Street,

Cheung Sha Wan, Kowloon, Hong Kong

Project Name

CJO-3113-1240

Test Required

Total Suspended Solids (TSS)

Sampling Date

15/12/2023

Date Samples Received

15/12/2023

Sample Nature

Water

Number of Samples Received

vvale

Condition Received

Sample(s) arrived laboratory in chilled condition

Type of Container

HDPE Plastic Bottles

Laboratory ID

R240066/1-5

Test Period

15/12/2023 - 15/12/2023

Method Used

In-house Method, QPL-15e for Total Suspended Solids

Test Result

Refer to the results on page 2

For and on behalf of

Acumen Laboratory and Testing Limited

Authorized Signature

Hui Wai Fung, Huntington

Laboratory Manager



Flat/Rm D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong Fax: (852) 2333 1316

Tel: (852) 2333 6823

Test Report

Page 2 of 2

Report Number

Q230002aR240066

Job Number

R240066

Issue Date

04/01/2024

Test Result:

Lab ID	Sampling Date	Client Sample ID	Total Suspended Solids (TSS), mg/L
R240066/1	15/12/2023	C1	<1
R240066/2	15/12/2023	C2	<1
R240066/3	15/12/2023	M1	<1
R240066/4	15/12/2023	M2	<1
R240066/5	15/12/2023	M3	<1

Note:

- mg/L indicates milligram per liter
- < indicates less than.
- Reporting limit is 2.5mg/L for 1L sample
- Reporting limit is 1 mg/L for 2.5L sample
- Applicant name, applicant address, project name, sampling date, sample ID and sample nature are provided by applicant.
- The result(s) relate only to the item(s) tested.
- The result(s) are applied only to the sample(s) received.



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Test Report

Report Number

Q230002aR240067

Job Number

R240067

Issue Date

04/01/2024

Applicant Name

Acumen Environmental Engineering and Technologies Co, Ltd.

Page 1 of 2

Applicant Address

Unit D, 12/F, Ford Glory Plaza, No.37-39 Wing Hong Street,

Cheung Sha Wan, Kowloon, Hong Kong

Project Name

CJO-3113-1241

Test Required

Total Suspended Solids (TSS)

Sampling Date

18/12/2023

Date Samples Received

18/12/2023

Sample Nature

Water

Number of Samples Received

vvalci

5

Condition Received

Sample(s) arrived laboratory in chilled condition

Type of Container

HDPE Plastic Bottles

Laboratory ID

R240067/1-5

Test Period

18/12/2023 - 19/12/2023

Method Used

In-house Method, QPL-15e for Total Suspended Solids

Test Result

Refer to the results on page 2

For and on behalf of

Acumen Laboratory and Testing Limited

Authorized Signature

Hui Wai Fung, Huntington

Laboratory Manager



Acumen Laboratory and Testing Limited Flat/Rm D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong

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Test Report

Page 2 of 2

Report Number

Q230002aR240067

Job Number

R240067

Issue Date

04/01/2024

Test Result:

Lab ID	Sampling Date	Client Sample ID	Total Suspended Solids (TSS), mg/L
R240067/1	18/12/2023	C1	<1
R240067/2	18/12/2023	C2	<1
R240067/3	18/12/2023	M1	<1
R240067/4	18/12/2023	M2	<1
R240067/5	18/12/2023	M3	<1

Note:

- mg/L indicates milligram per liter
- 1. 2. 3. 4. 5. < indicates less than.
- Reporting limit is 2.5mg/L for 1L sample
- Reporting limit is 1 mg/L for 2.5L sample
- Applicant name, applicant address, project name, sampling date, sample ID and sample nature are provided by applicant.
- The result(s) relate only to the item(s) tested.
- The result(s) are applied only to the sample(s) received.



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Test Report

Report Number

Q230002aR240068

Job Number

R240068

Issue Date

04/01/2024

Applicant Name

Acumen Environmental Engineering and Technologies Co, Ltd.

Page 1 of 2

Applicant Address

Unit D, 12/F, Ford Glory Plaza, No.37-39 Wing Hong Street,

Cheung Sha Wan, Kowloon, Hong Kong

Project Name

CJO-3113-1242

Test Required

Total Suspended Solids (TSS)

Sampling Date

20/12/2023

Date Samples Received

20/12/2023

Sample Nature

Water

Number of Samples Received

_

Condition Received

Sample(s) arrived laboratory in chilled condition

Type of Container

HDPE Plastic Bottles

Laboratory ID

R240068/1-5

Test Period

20/12/2023 - 21/12/2023

Method Used

In-house Method, QPL-15e for Total Suspended Solids

Test Result

Refer to the results on page 2

For and on behalf of

Acumen Laboratory and Testing Limited

Authorized Signature

Hui Wai Fung, Huntington

Laboratory Manager

Chemical and Microbiological Division

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Test Report

Page 2 of 2

Report Number

Q230002aR240068

Job Number

R240068

Issue Date

04/01/2024

Test Result:

Lab ID	Sampling Date	Client Sample ID	Total Suspended Solids (TSS), mg/L
R240068/1	20/12/2023	C1	<1
R240068/2	20/12/2023	C2	<1
R240068/3	20/12/2023	M1	<1
R240068/4	20/12/2023	M2	<1
R240068/5	20/12/2023	М3	<1

Note:

- mg/L indicates milligram per liter
- < indicates less than. 2. 3. 4. 5.
- Reporting limit is 2.5mg/L for 1L sample
- Reporting limit is 1 mg/L for 2.5L sample
- Applicant name, applicant address, project name, sampling date, sample ID and sample nature are provided by applicant.
- The result(s) relate only to the item(s) tested.
- The result(s) are applied only to the sample(s) received.



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Test Report

Page 1 of 2

Report Number

Q240002aR240135

Job Number

R240135

Issue Date

09/01/2024

Applicant Name

Acumen Environmental Engineering and Technologies Co, Ltd.

Applicant Address

Unit D, 12/F, Ford Glory Plaza, No.37-39 Wing Hong Street,

Cheung Sha Wan, Kowloon, Hong Kong

Project Name

CJO-3113-1243

Test Required

Total Suspended Solids (TSS)

Sampling Date

22/12/2023

Date Samples Received

22/12/2023

Sample Nature

Water

Number of Samples Received

5

Condition Received

Sample(s) arrived laboratory in chilled condition

Type of Container

HDPE Plastic Bottles

Laboratory ID

R240135/1-5

Test Period

22/12/2023 - 23/12/2023

Method Used

In-house Method, QPL-15e for Total Suspended Solids

Test Result

Refer to the results on page 2

For and on behalf of

Acumen Laboratory and Testing Limited

Authorized Signature

Hui Wai Fung, Huntington

Laboratory Manager



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Test Report

Page 2 of 2

Report Number

Q240002aR240135

Job Number

R240135

Issue Date

09/01/2024

Test Result:

Lab ID	Sampling Date	Client Sample ID	Total Suspended Solids (TSS), mg/L
R240135/1	22/12/2023	C1	1.4
R240135/2	22/12/2023	C2	<1
R240135/3	22/12/2023	М1	<1
R240135/4	22/12/2023	M2	<1
R240135/5	22/12/2023	M3	<1

Note:

- mg/L indicates milligram per liter
- < indicates less than.
- 2. 3. 4. 5. Reporting limit is 2.5mg/L for 1L sample
- Reporting limit is 1 mg/L for 2.5L sample
- Applicant name, applicant address, project name, sampling date, sample ID and sample nature are provided by applicant.
- The result(s) relate only to the item(s) tested.
- The result(s) are applied only to the sample(s) received.



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Test Report

Report Number

Q240002aR240136

Job Number

R240136

Issue Date

09/01/2024

Applicant Name

Acumen Environmental Engineering and Technologies Co. Ltd.

Page 1 of 2

Applicant Address

Unit D, 12/F, Ford Glory Plaza, No.37-39 Wing Hong Street,

Cheung Sha Wan, Kowloon, Hong Kong

Project Name

CJO-3113-1244

Test Required

Total Suspended Solids (TSS)

Sampling Date

28/012/2023

Date Samples Received

28/012/2023

Sample Nature

Water

Number of Samples Received

Condition Received

5

Type of Container

Sample(s) arrived laboratory in chilled condition **HDPE Plastic Bottles**

Laboratory ID

R240136/1-5

Test Period

28/012/2023 - 29/12/2023

Method Used

In-house Method, QPL-15e for Total Suspended Solids

Test Result

Refer to the results on page 2

For and on behalf of

Acumen Laboratory and Testing Limited

Authorized Signature

Hui Wai Fung, Huntington

Laboratory Manager

Chemical and Microbiological Division

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Test Report

Page 2 of 2

Report Number

Q240002aR240136

Job Number

R240136

Issue Date

09/01/2024

Test Result:

Lab ID	Sampling Date	Client Sample ID	Total Suspended Solids (TSS), mg/L
R240136/1	28/012/2023	C1	<1
R240136/2	28/012/2023	C2	<1
R240136/3	28/012/2023	M1	<1
R240136/4	28/012/2023	M2	<1
R240136/5	28/012/2023	M3	<1

Note:

- mg/L indicates milligram per liter
- < indicates less than. 2. 3. 4. 5. 6.
- Reporting limit is 2.5mg/L for 1L sample
- Reporting limit is 1 mg/L for 2.5L sample
- Applicant name, applicant address, project name, sampling date, sample ID and sample nature are provided by applicant.
- The result(s) relate only to the item(s) tested.
- The result(s) are applied only to the sample(s) received.



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Test Report

Page 1 of 2

Report Number : Q230002aR240071

Job Number : R240071

Issue Date : 15/01/2024

Applicant Name : Acumen Environmental Engineering and Technologies Co, Ltd.

Applicant Address : Unit D, 12/F, Ford Glory Plaza, No.37-39 Wing Hong Street,

Cheung Sha Wan, Kowloon, Hong Kong

Project Name : CJO-3113-1245

Test Required : Total Suspended Solids (TSS)

Sampling Date : 30/12/2023 Date Samples Received : 30/12/2023

Sample Nature : Water

Number of Samples Received : 5

Condition Received : Sample(s) arrived laboratory in chilled condition

Type of Container : HDPE Plastic Bottles

Laboratory ID : R240071/1-5

Test Period : 30/12/2023 – 31/12/2023

Method Used : In-house Method, QPL-15e for Total Suspended Solids

Test Result : Refer to the results on page 2

For and on behalf of

Acumen Laboratory and Testing Limited

Authorized Signature :

Hui Wai Fung, Huntington

Laboratory Manager



Flat/Rm D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong

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Test Report

Page 2 of 2

Report Number Q230002aR240071

R240071 Job Number

Issue Date 15/01/2024

Test Result:

Lab ID	Sampling Date	Client Sample ID	Total Suspended Solids (TSS), mg/L
R240071/1	30/12/2023	C1	<1
R240071/2	30/12/2023	C2	<1
R240071/3	30/12/2023	M1	<1
R240071/4	30/12/2023	M2	<1
R240071/5	30/12/2023	М3	<1

Note:

- mg/L indicates milligram per liter
- < indicates less than.
- Reporting limit is 2.5mg/L for 1L sample
- 2. 3. 4. 5. Reporting limit is 1 mg/L for 2.5L sample
- Applicant name, applicant address, project name, sampling date, sample ID and sample nature are provided by applicant.
- The result(s) relate only to the item(s) tested.
- The result(s) are applied only to the sample(s) received.

Doto		Timo	Woothor	Logotion	Co-ordinates		Water Depth Sample Depth		Temp.		DO con.		Turbidity		рН		SS	
Date	<u>L</u>	Time	Weather	Location	East	North		m	m		°C		mg/L	NT	TU	ι	ınit	mg/L
1/12/2023		9:31	Fine	C1	835110	824716		0.04	0.02	18.6	1 17	8 10.	59 10.2	3 0	(6.88	6.80	6 <1
		9:56	Fine	C2	835403	824470		0.02	0.01	17.6	9 17.5	2 11.	78 11.6	4 0	(7.07	7.0	5 <1
	N/A		Fine	C3	835642	824386	N/A	١	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		9:36	Fine	M1	835215	824827		0.8	0.4	17.	7 17.7	7 11.:	22 11.69	9 0	(7.56	7.58	8 <1
		9:51	Fine	M2	835536	824775		0.05	0.025	17.5	8 17.5	5 11.	11.5	8 0	(7.49	7.5	5 1.0
		9:53	Fine	M3	835501	824648		0.02	0.01	17.3	5 17.3	9 11.3	37 10.7	1 0	(7.23	7.10	6 <1
4/12/2023		9:37	Fine	C1	835110	824716		0.04	0.02					4 0	(6.72	6.8	1 2.5
		10:02	Fine	C2	835403	824470		0.02	0.01	17.4	17.5	6 11.	73 11.69	9 0	(6.97	6.89	
	N/A		Fine	C3	835642	824386	N/A	Γ	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A
		9:42	Fine	M1	835215	824827		0.8	0.4	17.6	5 17.3			8 0	(7.06	7.09	9 2.8
		9:57	Fine	M2	835536	824775		0.05	0.025	17.5	2 17.5	3 11.	56 12.0	8 0	(7.17	7.1	1.0
		9:59	Fine	M3	835501	824648		0.02	0.01	17.3	5 17.4	8 10	.7 11.49	9 0	(7.13	7.1	4 <1
6/12/2023		9:41	Fine	C1	835110	824716		0.04	0.02						(7.2	7.3	<1
		10:04	Fine	C2	835403	824470		0.02	0.01	17.4					(7.34	7.3	
	N/A		Fine	C3	835642		N/A	Γ	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A
		9:46	Fine	M1	835215	824827		0.8	0.4						(7.5		V 1
		10:01	Fine	M2	835536	824775		0.05	0.025						(7.8	7.6	5 <1
		10:03	Fine	M3	835501	824648		0.02	0.01	17.	4 17.3	7 12.	77 12.73	3 0	(7.23	7.3	2 <1
8/12/2023		9:35	Fine	C1	835110	824716		0.04	0.02						(7.14		
		10:00	Fine	C2	835403	824470		0.02	0.01		-				(7.22		
	N/A		Fine	C3	835642		N/A		N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A
		9:40	Fine	M1	835215	824827		0.8	0.4						(7.74		1.1
		9:55	Fine	M2	835536	824775		0.05	0.025						(7.9	7.3	
		9:57	Fine	M3	835501	824648		0.02	0.01	16.9	9 17	1 12.	11.79	9 0	(7.69	7.5	5 <1
		10.01			00=110	20.47.4												
11/12/2023		13:01	Fine	C1	835110	824716		0.04	0.02						(7.36		
	1	13:26	Fine	C2	835403	824470	N1/2	0.02	0.01					-	(7.26	7.0	
	N/A	10.00	Fine	C3	835642		N/A		N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A
	1	13:06	Fine	M1	835215	824827		0.8	0.4						(7.63		
		13:21	Fine	M2	835536	824775	<u> </u>	0.05	0.025						(7	7.08	
		13:23	Fine	M3	835501	824648		0.02	0.01	18.6	18.4	9 10.9	98 10.4	5 0	(7.46	7.4	6 <1
40/40/6000		0.41	Fine	C1	025110	004716		0.04	0.00	177	2] 47/	El 10.	7.1	ol ol		7.00	7.0	
13/12/2023	1	9:41	Fine	C1	835110	824716		0.04	0.02						(7.06		
	NI/A	10:04	Fine	C2	835403	824470	NI/A	0.02	0.01						NI/A	6.85		
	N/A	0:40	Fine	C3	835642		N/A		N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A
	1	9:46	Fine	M1	835215	824827	-	0.8	0.4						(7.48		
		10:01	Fine	M2	835536	824775	<u> </u>	0.05	0.025						(7.04		
		10:03	Fine	M3	835501	824648		0.02	0.01	17.7	9 17.7	5 12.3	32 12.7	2 0	(7.36	7.23	8 <1

15/12/2023		9:37	Fine	C1	835110	824716		0.04	0.02	18.19	18.2	12.03	3 11.09	5 0		6.9	6	.96 <1	
		10:02	Fine	C2	835403	824470		0.02	0.01	18.12	18.09	11.3	4 10.34	4 0	(6.9	9 7	.04 <1	
	N/A		Fine	C3	835642	824386	N/A	N/A	A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		9:42	Fine	M1	835215	824827		0.8	0.4	18.24	18.24	12.79	9 12.32	2 0	(7.3	37 7.	.36 <1	
		9:57	Fine	M2	835536	824775		0.05	0.025	18.02	17.92	11.93	2 11.0	6 0	(7.	7	.27 <1	
		9:59	Fine	M3	835501	824648		0.02	0.01	18.22	18.2	12.3	1 12.4	4 ((7.3	35 7.	.31 <1	
10/12/2022		9:40	Fine	C1	835110	824716		0.04	0.02	15.64	15.20	10.3	8 11.0°	11 (7.9	[8] 7	.69 <1	
18/12/2023		10:05	Fine	C2	835403	824470		0.02	0.02							7.0		.01 <1	
	N/A	10.00	Fine	C3	835642		N/A	N/A			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	,	9:45	Fine	M1	835215	824827		0.8	0.4) (7.7		.72 <1	
		10:00	Fine	M2	835536	824775		0.05	0.025) (7.5		.57 <1	-
		10:02	Fine	M3	835501	824648		0.02	0.01	15.83	16.04	11.3	10.39	9 0)	7.3	7	.29 <1	
20/12/2023		9:35	Fine	<u>C1</u>	835110	824716		0.04	0.02	14.32	13.94	11.2	7 11.98	8) 	6.7	13	.77] <1	
20/12/2023		10:00	Fine	C2	835403	824470		0.02	0.01							6.8		.86 <1	
	N/A	10.00	Fine	C3	835642		N/A	N/A		•	N/A	N/A	N/A		N/A	N/A	N/A	N/A	
	,	9:42	Fine	M1	835215	824827		0.8	0.4) (7.4		.47 <1	
		9:55	Fine	M2	835536	824775		0.05	0.025							6.9		.88 <1	
		9:57	Fine	M3	835501	824648		0.02	0.01) (7.		.21 <1	
		0.00		04	005110	004740		0.04	2.22	10.40	40.5		0.14					70	
22/12/2023		9:39	cloudy	C1	835110	824716	ļ	0.04	0.02							6.7		.73 1.4	
	NI/A	10:04	cloudy	C2	835403	824470	NI/A	0.02	0.01						NI/A	6.8		.76 <1	
	N/A	9:44	cloudy	C3 M1	835642 835215	824386 824827	N/A	0.8	0.4		N/A 12.5	N/A	N/A		N/A	N/A	N/A	N/A	
		9:44	cloudy	M2	835536	824775		0.05	0.025							6.9		.95 <1 .89 <1	
		10:01	cloudy cloudy	M3	835501	824648	+	0.03	0.025							7.		.89 <1 .08 <1	
		10.01	cloudy	IVIS	033301	024040		0.02	0.01	12.02	12.12	10.	10.43			7.	7	.00	
28/12/2023		9:48	Fine	C1	835110	824716		0.04	0.02	15.7	15.72	11.0	7 11.54	4 0		6.6	65	.65 <1	
		9:34	Fine	C2	835403	824470		0.02	0.01	15.66	15.66	10.63	3 10.2	2 0	(6.8	85 6	.85 <1	
	N/A		Fine	C3	835642	824386	N/A	N/A	Ą	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		9:53	Fine	M1	835215	824827		8.0	0.4		15.72					7.5		.48 <1	
		9:29	Fine	M2	835536	824775		0.05	0.025	•						7.3		.26 <1	
		9:31	Fine	M3	835501	824648		0.02	0.01	15.76	15.77	10.73	3 11.08	8 (7.7	71 7	.69 <1	
30/12/2023		15:30	Cloudy	C1	835110	824716		0.04	0.02	16.5	16.4	10.4	5 10.32	2		6.7	79 6	.81 <1	
		15:47	Cloudy	C2	835403	824470		0.02	0.01) (7.5		.55 <1	
	N/A		Cloudy	C3	835642		N/A	N/A		N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	
		15:59	Cloudy	M1	835215	824827		0.8	0.4	16.4		10.7	5 10.69		(7.	4 7	.18 <1	
		16:10	Cloudy	M2	835536	824775		0.05	0.025	17	17.	10.5	6 10.49	9 0	(7.5	7.	.46 <1	
		16:23	Cloudy	M3	835501	824648		0.02	0.01	17.2	17.2	10.6	3 10.7	1 0)	7.4	14 7.	.48 <1	

Remark 1: Values that are <1 is assumed to be 1 during calculation.

There were 0 exceedances of Action Level and 0 exceedances of Limit Level

Appendix S Impact Monitoring report for Ecology

Project no.: CJO-3113

Post-Transplantation Monitoring Report

for Agreement No. CE 13/2009 (WS)
IN-SITU REPROVISIONING OF SHA TIN WATER TREATMENT WORKS – SOUTH WORKS

Report No. 112 Dec 2023

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1. INTRODUCTION

- Pursuant to the Environmental Impact Assessment (EIA) Ordinance, the Director of Environmental Protection (DEP) granted the Environmental Permit (No. EP- 494/2015) to the Water Supplies Department (WSD) to construct and operate the designated project for "In-situ Reprovisioning of Sha Tin Water Treatment Works South Works" ("The Project").
- 1.2 Upon the requirement of the Environmental Permit, a detailed vegetation report presenting the baseline vegetation condition for flora species with conservation interest, transplanting and monitoring programme for the Project has been prepared and approved by DEP in February 2016.
- 1.3 There were 4 flora species of conservation importance were recorded in the woodland habitat within project site including Ailanthus (*Ailanthus fordii*), Incense Tree (*Aquilaria sinensis*), Lamb of Tartary (*Cibotium barometz*) and Hong Kong Eagle's Claw (*Artabotrys hongkongensis*). In total, 2 nos. of Incense Tree (*Aquilaria sinensis*), 1 no. of Ailanthus (*Ailanthus fordii*) tree, 5 colonies of Lamb of Tartary (*Cibotium barometz*) and 1 no. Hong Kong Eagle's Claw (*Artabotrys hongkongensis*) were recommended to be transplanted in the approved detailed vegetation survey report.
- 1.4 As planned in the detailed vegetation report, Incense Tree (*Aquilaria sinensis*) and Ailanthus (*Ailanthus fordii*) trees would be transplanted within existing Sha Tin Water Treatment Works (STWTW). All other shrubs including Lamb of Tartary (*Cibotium barometz*) and Hong Kong Eagle's Claw (*Artabotrys hongkongensis*) would be transplanted to the hillside slope at Sha Tin South Fresh Water Service Reservoir (STSFWSR).
- 1.2 Upon the requirement of the Environmental Permit, a qualified Ecologist was commissioned to prepare a post-transplantation monitoring report to present the status (health condition and survival rate) of transplanted vegetation and submitted to the DEP.
- 1.3 Monitoring of transplanted flora was conducted after the transplantation. The monitoring will be conducted at twice per month during the first year and once per month during the course of planting works. The parameters to be monitoring will include the health condition and survival rate of the transplanted flora. Any observations and recommendations will be reported in monthly EM&A reports.
- 1.3 This Tree Report presents survey findings on 7 December 2023. It contains the following information:
 - Introduction (Section 1);
 - Description of Tree Monitoring Area (Section 2);
 - Monitoring Methodology (Section 3);
 - Result (Section 4);
 - Mitigation Measures (Section 5);
 - Summary (Section 6);
 - Photos (Annex I);
 - Summary table (Annex II); and
 - Typhoon information (Annex III).

2. DESCRIPTION OF TREE MONITORING SITE

2.1 Incense Tree (*Aquilaria sinensis*) and Ailanthus (*Ailanthus fordii*) tree were transplanted to the extended compensatory plantation area within existing Sha Tin Water Treatment Works (STWTW). The area was flat and without covering with concrete.

- 2.2 Lamb of Tartary (*Cibotium barometz*) will be transplanted to the Sha Tin South Fresh Water Service Reservoir (STSFWSR). Ploughing is required before planting on to this open corner of short grassland.
- 2.3 Other compensatory trees have been planted at STWTW and STSFWSR.

3. MONITORING METHODOLOGY

- 3.1 Site inspection was carried out by walking through the transplanting area. Health condition and survival rate were observed during inspection.
- 3.4 Health condition of all transplanted vegetation including trees/shrubs surveyed was evaluated according to the following criteria:
 - Transplanted vegetation with good health is classified as good;
 - Transplanted vegetation with few or no visible defects or health problems is classified as being **fair**; and
 - Transplanted vegetation that was badly damaged or clearly suffering from decay die back or the effects of very heavy vine growth is classified as **poor**.
- 3.5 Survival rate for each of transplanted vegetation species will be calculated based on site observation.

4. RESULT

- 4.1 The monthly monitoring inspection was conducted on 7 December 2023.
- 4.2 Three trees TA572, TA326 and TA327 were transplanted to tree compensation area within the Sha Tin Water Treatment Works (STWTW) on 20 June 2016.
- 4.3 The condition of TA572 was observed in fair health despite in poor form due to the damage of the two main trunks. TA327 was in fair condition. The already dead tree TA326 collapsed due to big hit by the Signal No.10 typhoon Mangkhut on 16 September 2018. Tree guying cables have been installed to provide external support to the remaining two transplanted trees.
- 4.4 The joint site meeting with our ecologist, Project Manager, Contractor and Landscape Contractor on 20 October 2020 revealed that the designated recipient site at STSFWSR was under excessive exposure of direct sunlight, strong winds, far from riparian zone/ moist valley and low in soil moisture. This was not a favourable microhabitat for *Cibotium barometz* to be transplanted back. Two best portions within this recipient site would be a corner with shading canopy from trees on a man-made feature nearby; as well as understory zone of an existing tree. Mitigation measures are proposed in Section 5 to enhance a sustainable survival of *Cibotium barometz* during the post-transplantation stage.
- 4.5 All 27 nos. of *Cibotium barometz* transplanted from the nursery at Shui Mei Tsuen, Kam Tin were generally in fair condition at their current location at STSFWSR.
- 4.6 The Hong Kong Eagle's Claw (*Artabotrys hongkongensis*) was observed dead during inspection on 20 August 2016.
- 4.7 The transplantation of the 27 nos. of *Cibotium barometz* and the compensatory planting of TA326 and the climber *Artabotrys hongkongensis* have been conducted as detailed in Section 5.

4.8 Rapid recolonization/ invasion of weeds/ exotic species/ climbers on the transplanted plants has been observed since past few monitoring. Climbers on TA327 and one of the *Celtis sinensis* should be removed, including the roots, to reduce rapid colonization covering the canopy. Weeding within the two protection zones of *Cibotium barometz* at Portion E of STSFWSR shall only be conducted by hand-held tools rather than grass cutting machine. No fire/ chemical weeding shall be allowed.

5. MITIGATION MEASURE

5.1 In order to compensate for the loss of the transplanted *Artabotrys hongkongensis* which is in climber growing form, it is recommended to plant an individual of native climber species at the compensatory planting site together with compensatory tree planting. Recommended list of species is given in the Table 1 below. It is suggested that about 1 species of climber to be selected from the following list according to availability of the nursery source. The recommended plant species have been recorded from adjacent secondary woodland in an approved EIA Report (AEIAR-187/2015). These species would have certain ecological value in terms of plant ecology and the associated wildlife including birds.

Table 1. Table for Recommended native climber species list to be planted

Common Name	Latin Name	Chinese Name	Growing Form
Climbing Bauhinia	Bauhinia glauca	粉葉羊蹄甲	Climber
Spiny-fruited Vine	Byttneria aspera	刺果藤	Climber
Bentham's Rose-wood	Dalbergia benthamii	兩廣黃檀	Climber
Desmos	Desmos chinensis	假鷹爪	Climber
Glaucescent Diploclisia	Diploclisia glaucescens	蒼白秤鈎風	Climber
Luofushan Joint-fir	Gnetum luofuense	羅浮買麻藤	Climber
Australian Cow-plant	Gymnema sylvestre	匙羹藤	Climber
Shining Hypserpa	Hypserpa nitida	夜花藤	Climber
Large-flowered	Lonicera macrantha	大花忍冬	Climber
Honeysuckle	Lonicera macranina		
Splash-of-white	Mussaenda pubescen	玉葉金花	Climber
Rusty-haired Raspberry	Rubus reflexus	鏽毛莓	Climber
Sandpaper Vine	Tetracera asiatica	錫葉藤	Climber
Hong Kong Eagle's Claw	Artabotrys hongkongensis	鷹爪花	Climber

- 5.2 Desmos chinensis has been finalized as the candidate. Two individuals were planted at Wall C in STWTW on 1 April 2021 (Annex I).
- 5.3 New small sprouts keep emerging from the two *Desmos chinensis* that have been reported dead previously. Construction materials was also found too close to the planter. An eye-catching protective fence shall be set up as a protection zone. No construction materials shall be placed near/within the protection zone.
- 5.4 All 27 nos. Lamb of Tartary (*Cibotium barometz*) were transplanted successfully back to Portion E of STSFWSR on 23 April 2021 (Annex I). In order to enhance a sustainable survival during the post-transplantation stage, a shelter (such as 遮光網) has been installed to reduce intensity of direct sunlight received and avoid direct hit of rainstorm/typhoon.
- 5.5 Transplanted *Cibotium barometz* shall be watered at least once in the morning and once in the afternoon; before irrigation spray head has been installed to facilitate watering frequency whenever necessary.
- An eye-catching protective net has been set up to enclose the 27 nos. transplanted *Cibotium barometz* (in groups when planted together) to avoid disturbance/ damage from works activities. Any collapsed shelter and fencing shall be rectified promptly.
- 5.7 Sign of disturbance by wild boar(s) were found at the two groups of transplanted *Cibotium barometz* previously. A robust fencing was installed so as to prevent them from any further disturbance.
- 5.8 Weeding within the two protection zones of *Cibotium barometz* shall only be conducted by handheld tools rather than grass cutting machine. No fire/ chemical weeding shall be allowed.
- 5.9 The 27 nos. transplanted *Cibotium barometz* shall be maintained with proposed mitigated measures mentioned for 12 months for establishment. A 12-month post-transplantation monitoring period helps to assess their survival during the establishment period.
- 5.10 Any dead individuals/ those in poor condition before transplant back to STSFWSR or during the post-transplantation period shall be replaced by planting healthy individuals of *Cibotium barometz*.

Other possible fern candidate such as *Brainea insignis*, which is more adaptive to more exposed habitat under direct sunlight, can be sourced for compensatory planting.

- 5.11 Root ball of TA572 and TA327 tree should be kept moisture especially during non-raining day.
- 5.12 The Incense Tree (*Aquilaria sinensis*) tagged as TA326 was observed dead during inspection on 10 August 2017. Its DBH was measured as 346mm. In accordance with the Tree Preservation, Development Bureau Technical Circular (Works) No. 7/2015, the compensatory planting aimed to achieve the compensatory planting ratio of 1:1 in terms of aggregated DBH.
- 5.13 In total, 3 individual of native tree species with heavy standard size were planted with 2.5-3 meters (center to center) spacing at compensatory planting site. Recommended list of species was given in the Table 2 below. It was suggested that at least 1 tree species to be selected from the following list according to availability of the nursery source. The recommended plant species was recorded from adjacent secondary woodland in an approved EIA Report (AEIAR-187/2015). These species would have certain ecological value in terms of plant ecology and the associated wildlife including birds.

Table 2. Table for recommended native tree species list to be planted

Common Name	Latin Name	Chinese Name	Growing Form
Ivy Tree	Schefflera heptaphylla	鴨腳木	Tree
Levine's Syzygium	Syzygium levinei	山蒲桃	Tree
Chekiang Machilus	Machilus chekiangensis	浙江潤楠	Tree
Aporusa	Aporusa dioica	銀柴	Tree
Mountain Tallow Tree	Sapium discolor	山烏桕	Tree
Fragrant Litsea	Litsea cubeba	山蒼樹	Tree
Chinese Apea Ear-ring	Archidendron lucidum	亮葉猴耳環	Tree
Chinese Hackberry	Celtis sinensis	朴樹	Tree
Turn-in-the-wind	Mallotus paniculatus	白楸	Tree
Acronychia	Acronychia pedunculata	降真香	Tree

- 5.14 Based on the Tree Survey Report, the following trees transplanted under Contract No. 3/WSD/15 were found dead. In accordance with GS 3.97 (3), replacement planting of TB0054, B0056, TB0101 and TC0138 was completed on 25 March 2021 (Annex I).
- 5.15 Two *Syzygium levinei* and one *Schefflera heptaphylla* were chosen from Table 2 as compensation for the loss of TA0326.
- 5.16 However, the two native *Syzygium levinei* (山蒲桃) were mis-planted by two exotic *Syzygium jambos* (蒲桃), of which both of their Chinese names and Scientific names are different by one word.
- 5.17 The two mis-planted *Syzygium jambos* were then replaced by another native tree species *Celtis sinensis* chosen from Table 2 due to market availability at that time. Replacement work was conducted on 31 May 2021.
 - Table 3. Summary table compensatory planting.

Tree No.	Species	Compensatory/ Replacement Planting
TA0326	Aquilaria sinensis 土沉香	Compensated by 1 no. of <i>Schefflera heptaphylla</i> and 2 nos. of <i>Celtis sinensis</i>

- 5.18 With completion of compensatory planting for the loss of *Artabotrys hongkongensis* and TA0326 (*Aquilaria sinensis*), the survival of the replaced species has been monitored since then (i.e. 2 nos. of *Desmos chinensis*; 1 no. of *Schefflera heptaphylla* and 2 nos. of *Celtis sinensis*).
- 5.19 Survival of the 27 nos. of Lamb of Tartary (*Cibotium barometz*) transplanted back to STSFWSR has also been monitored too. No more individual was stored at the nursery.
- 5.20 Health condition and survival rate are shown in Annex II.

6. SUMMARY

- 6.1 The condition of TA572 was observed in fair health despite in poor form. TA327 was in fair condition; while already dead TA326 collapsed under Signal No. 10 typhoon Mangkhut in September 2018. Tree guying cables have been installed to provide external support to the two remaining transplanted trees. Climbing vines on TA327 should be removed, including the roots, to reduce rapid colonization covering the canopy.
- 6.2 Compensatory planting of TA326 has been completed on 25 March 2020 by planting two *Syzygium levinei* and one *Schefflera heptaphylla*. However, the two native *Syzygium levinei* were mis-planted by two exotic *Syzygium jambos*, which have been replaced by another native tree species *Celtis sinensis* on 31 May 2021. Climbing vines on one of the *Celtis sinensis* should be removed, including the roots, to reduce rapid colonization covering the canopy.
- 6.3 Desmos chinensis has been finalized as the candidate to compensate for the loss of Artabotrys hongkongensis. Two individuals were planted at Wall C in STWTW on 1 April 2021.
- New small sprouts keep emerging from the two *Desmos chinensis* that have been reported dead previously. Construction materials was also found too close to the planter. An eye-catching protective fence shall be set up as a protection zone. No construction materials shall be placed near/within the protection zone.
- 6.5 In order to enhance a sustainable survival during the post-transplantation stage, a shelter (such as 遮光網) has been installed to reduce intensity of direct sunlight received and avoid direct hit of rainstorm/typhoon to the 27 nos. of transplanted *Cibotium barometz* at Portion E of STSFWSR.
- 6.6 Weeding by hand held tools within protection zone of *Cibotium barometz* is urgently needed.
- 6.7 Root ball of TA572 and TA327 tree should be kept moisture especially during dry and non-raining day.
- 6.8 Signs of ploughed soil by wild boar(s) at the two groups of transplanted *Cibotium barometz* were reported in previous monitoring. A robust fencing was recently installed to protect the group of *Cibotium barometz* from further damage caused by wild boars.
- 6.9 Given that leftover/ garbage was observed nearby, illegal feeding of wild pigs or other wild animals was also suspected to occur. Warning signs of illegal feeding and plant protection zone may be put along the receptor site to remind the hikers. Reporting the case to the relevant government department, i.e. AFCD, is suggested to prevent further aggregation of wild boars in the area.

ANNEX I Photo



202 - 0

Photo 1. Collapsed protection zone of *Cibotium barometz* shall be rectified.

Photo 2. A protective fence for another patch of *Cibotium barometz*.



Photo 3. Fast-growing weeds and climbers shall be cleared including the roots, otherwise it recolonizes quickly after recent clearance.



Photo 4. The protective fence provides half-shade for the *Cibotium barometz*.





Photo 5 & 6. Despite the *Cibotium barometz* (red) are growing in satisfactory condition, it has already been hidden by weeds and climbers, which may deplete their health/growth condition.

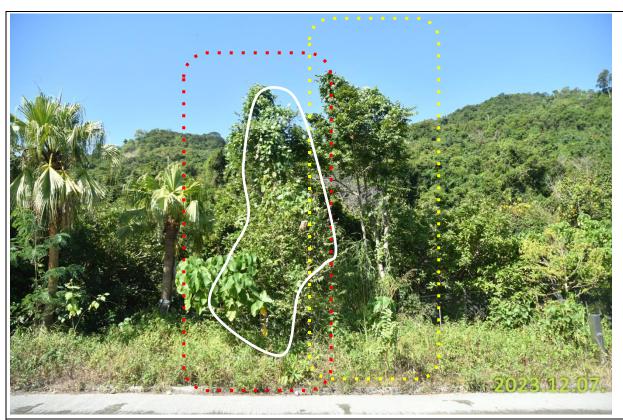


Photo 7. Transplanted Incense Tree (*Aquilaria sinensis*) – TA327 (red); and Ailanthus (*Ailanthus fordii*) – TA572 (yellow). Climber (white) should be removed, including the roots, to relieve the canopy



Photo 8. Sprouts at lower trunk of TA327 (*Aquilaria sinensis*). Climber (red) should be removed, including the roots, to relieve the canopy



Photo 9. TA572 (*Ailanthus fordii*) was found vigorous and in generally good condition. Surrounding weeds/ grass should be removed



Photo 10. New sprouts keep emerging from the *Desmos chinensis* that reported dead previously. Sign of dehydration detected.



Photo 11. *Schefflera heptaphylla* as compensatory planting of TA326.

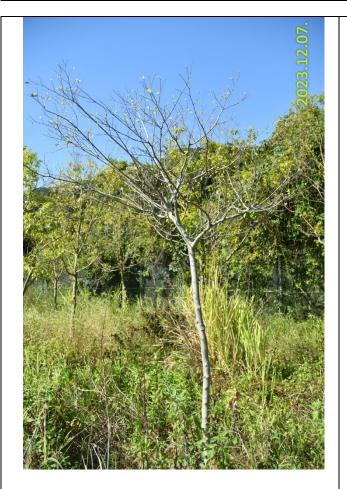
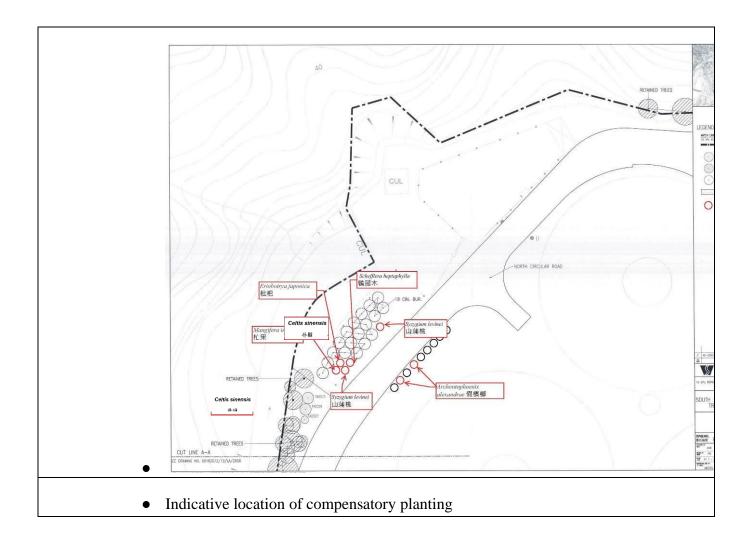




Photo 12 and 13. The two exotic *Syzygium jambos* (mis-treated as the native *Syzygium levinei*) are replaced by another native tree *Celtis sinensis* (due to market availability) as compensatory planting of TA326. Note: *Celtis sinensis* is a deciduous species.

Fast-growing climber was observed in one of the *Celtis sinensis* (right; compared to the left). The climber should be removed immediately otherwise it will affect the health of the tree. Root removal is necessary when recolonization of weeds is fast after recent routine maintenance work.



ANNEX II

Table for condition of transplanted plant

Fern Cibotium barometz and climber Desmos chinensis

No.	Species	Condition	Alive/Dead	Remark
1	Cibotium barometz	Fair	Alive	
2	Cibotium barometz	Fair	Alive	
3	Cibotium barometz	Fair	Alive	27 individuals were
4	Cibotium barometz	Fair	Alive	transplanted back to
5	Cibotium barometz	Fair	Alive	STSFWSR on 23 April
6	Cibotium barometz	Fair	Alive	2021.
7	Cibotium barometz	Fair	Alive	
8	Cibotium barometz	Fair	Alive	The shelter has been
9	Cibotium barometz	Fair	Alive	repeatedly damaged by
10	Cibotium barometz	Fair	Alive	wild boars, resulting the
11	Cibotium barometz	Fair	Alive	plants vulnerable to
12	Cibotium barometz	Fair	Alive	uprooting. Some
13	Cibotium barometz	Fair	Alive	individuals were exposed
14	Cibotium barometz	Fair	Alive	under direct sunlight due
15	Cibotium barometz	Fair	Alive	to the damage of shelter.
16	Cibotium barometz	Fair	Alive	A robust protection zone
17	Cibotium barometz	Fair	Alive	was recently set up in
18	Cibotium barometz	Fair	Alive	February 2023 which
19	Cibotium barometz	Fair	Alive	should prevent the plants
20	Cibotium barometz	Fair	Alive	from further disturbance
21	Cibotium barometz	Fair	Alive	by the wild boars. Any
22	Cibotium barometz	Fair	Alive	illegal feeding by hikers
23	Cibotium barometz	Fair	Alive	shall be reported to
24	Cibotium barometz	Fair	Alive	AFCD/ hotline 1823.
25	Cibotium barometz	Fair	Alive	
26	Cibotium barometz	Fair	Alive	
27	Cibotium barometz	Fair	Alive	
	The shelter (such as 遮光	台網) has been set u	p to provide shadii	ng and against direct hit of
		rainstorm/ typho	on on the plants.	

28	Desmos chinensis	Poor-Fair	Alive	Two individuals were
				planted at Wall C in
				STWTW on 1 April 2021;
				Resprouted since
				monitoring made on 30
				November 2022.
				Dehydration
		Survival rate (%)	100	

Transplanted/ compensatory Trees

No.	Species	Condition	Alive/Dead	Remark
TA572	Ailanthus fordii	Fair	Alive	Two main trunks were broken during typhoon on 23 August 2017. Cracks and wounds observed in one of the trunks. Canopy formed by sprouts.
TA327	Aquilaria sinensis	Fair	Alive	Tree crown of TA327 was thinner after transplantation. Water sprouts, cracks on tree bark and would at trunk base observed. Climber should be cleared to relieve the canopy.
N/A	Celtis sinensis	Fair	Alive	Compensate for TA326; Syzygium jambos replaced by Celtis sinensis on 31 May 2021.
N/A	Celtis sinensis	Fair	Alive	Compensate for TA326; Syzygium jambos replaced by Celtis sinensis on 31 May 2021. Climber should be cleared to relieve the canopy.
N/A	Schefflera heptaphylla	Fair	Alive	Compensate for TA326; old leaved replaced by new leaf buds
		Survival rate (%)	100%	

Appendix T Monthly Summary of Waste Flow Table

Monthly Summary Waste Flow Table for 2023

Contract No.: 1/WSD/19 Contract Title: In-situ Reprovisioning of Sha Tin Water Treatment Works (South Works)

-Water Treatment Works and Ancillary Facilities

	A	Actual Quantities of Iner	t C&D Materials C	enerated / Imported	(in '000m3)			Actual Qua	ntities of C&D Wastes (Generated	
		Broken Concrete							Plastics		
M41.		(including rock for				Imported		Paper/	(bottles/containers,plas		Others, e.g.
Month	Total Quantity	recycling into	Reused in the	Reused in other	Disposed as	C&D		cardboard	tic sheets/foam	Chemical	general
	Generated	aggregates)	Contract	Projects	Public Fill	Material	Metals	packaging	package material)	Waste	refuse
	(a+b+c+d)	(a)	(b)	(c)	(d)		(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)	(in '000m ³)
Jan	29.38182	0.14400	0.00000	28.90055	0.33727	0.45850	0.0000	0.00000	0.00000	0.00000	0.01788
Feb	20.99489	0.17365	0.00000	20.69526	0.12598	0.14700	52.3700	0.00000	0.00000	0.00000	0.03906
Mar	25.42917	1.30078	0.00000	24.07151	0.05688	1.25313	100.8400	0.00000	0.00000	0.00000	0.02243
Apr	16.76824	2.55390	1.02564	12.46633	0.72238	0.07514	9.1200	0.00000	0.00000	0.00000	0.03613
May	23.46874	0.62600	0.00000	22.28436	0.55838	2.49430	0.0000	0.00000	0.00000	0.00000	0.03846
Jun	8.60790	0.00000	0.00000	8.23532	0.37258	0.07696	34.0300	0.00000	0.00000	0.00000	0.04152
Sub-total	124.65074	4.79833	1.02564	116.65331	2.17346	4.50503	196.3600	0.00000	0.00000	0.00000	0.19548
Jul	11.97417	0.11118	0.00000	11.55559	0.30740	1.40670	0.0000	0.00000	0.00000	0.00000	0.08802
Aug	9.52968	0.10462	0.00000	9.29376	0.13130	0.76460	0.0000	0.00000	0.00000	0.00000	0.04487
Sep	8.25255	0.02177	0.00000	8.14904	0.08174	0.85210	0.0000	0.00000	0.00000	0.00000	0.04164
Oct	7.16179	0.04551	0.00000	7.05738	0.05891	1.93500	0.0000	0.00000	0.00000	0.00000	0.10916
Nov	7.70437	0.23198	0.00000	7.46203	0.01037	1.79960	0.0000	0.00000	0.00000	0.00000	0.12170
Dec	1.88930	0.00000	0.00000	1.88930	0.00000	0.81530	0.0000	0.00000	0.00000	0.00000	0.07181
Total	171.16261	5.31338	1.02564	162.06041	2.76318	12.07833	196.36000	0.00000	0.00000	0.00000	0.67268

SUMMARY TABLE FOR WORK PROCESSES OR ACTIVITIES REQUIRING TIMBER FOR TEMPORARY WORKS

Contract No.: 1/WSD/19

Monthly/Year: 12/2023

Contract Title: In-situ Reprovisioning of Sha Tin Water Treatment Works (South Works) - Water Treatment Works and Ancillary Facilities

Item No.	Description of Works Process or Activity [see note (a) below]	Justifications for Using Timber in Temporary Construction Works	Est. Quantities of Timber Used (000m ³)	Actual Quantities Used (000m ³)	Remarks
1	S1F, S2F, RMF, SWPS, WET & OZONE	Concreting formwork	3.6	3.3	
		Total Estimated Quantity of Timber Used	3.6		

Notes: (a) The Contractor shall list out all the work items requiring timber for use in temporary construction works. Several minor work items may be grouped into one for ease of updating.



Name of Department: WSD	Contract No.: 6/WSD/21
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Monthly Summary Waste Flow Table for 2023 (year)

		Actual Quantities	of Inert C&D N	laterials Generate	ed Monthly		Actua	l Quantities of	f C&D Wastes	Generated Mo	onthly
Month	Total Quantity Generated	II arde Broken	Reused in the Contract	Reused in other Projects	l •	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemicai	Others, e.g. general refuse
	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)	(in tonnes)
2022	13254.17	0.00	0.00	10000.02	2695.72	207.15	19.43	0.19	0.01	0.00	35.90
Jan-23	964.64	0.00	0.00	957.42	0.00	0.00	0.00	0.02	0.00	0.00	7.20
Feb-23	9404.28	0.00	0.00	7518.52	1880.86	0.00	2.73	0.00	0.00	0.00	2.17
Mar-23	910.01	0.00	0.00	540.37	0.00	332.17	29.73	0.00	0.00	0.00	7.74
Apr-23	5806.90	0.00	0.00	1724.82	2665.37	1404.55	4.12	0.09	0.01	0.00	7.93
May-23	2484.77	0.00	0.00	1301.97	601.63	569.10	0.00	0.00	0.00	0.00	12.07
Jun-23	2813.62	0.00	0.00	46.96	1754.73	994.78	6.23	0.05	0.00	0.00	10.86
Sub-total	22384.21	0	0	12090.06	6902.59	3300.603	42.8123	0.1632	0.0197	0	47.97
Jul-23	2798.10	0.00	0.00	616.79	1972.09	190.99	5.2	0.0464	0.0083	0	12.98
Aug-23	2615.24	0.00	0.00	846.52	1400.97	344.10	8.54	0	0	0	15.11
Sep-23	525.62	0.00	0.00	0.00	0.00	505.21	4.52	0	0	0	14.74
Oct-23	3840.03	0	0	754.90	2356.18	698.29	0	0.04	0.007	0	30.61
Nov-23	1579.30	0	0	1132.17	428.72	0	0	0.097	0	0	18.31
Dec-23	18.09	0	0	0.00	0.00	0	0	0.016	0	0	18.07
Total	46681.36	0.00	0.00	25440.46	15756.27	5246.34	80.51	0.44	0.04	0.00	157.31

Notes:

- (1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
- (2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material
- (3) All recyclable materials, including metals, paper / carboard packaging, plastics, etc. will be collected by registered collector for recycling.
- (4) Conversion factors for reporting purpose:

in-situ: rock = 2.5 tonnes/m3; soil = 2.0 tonnes/m3

excavated: rock = 2.0 tonnes/m3; soil = 1.8 tonnes/m3; broken concrete and bitumen = 2.4 tonnes/m3

C&D Waste = 0.9 tonnes/m3; bentonite slurry = 2.8 tonnes/m3

Appendix U Implementation Schedule of Environmental Mitigation Measures (EMIS)

<u>Environmental Mitigation and Enhancement Measure Implementation Schedule at Construction Stage</u>

EIA Ref.	Recommended Mitigation Measures	Location of the	Implementation	Relevant Legislation	5.000 5 000	ement Phase	32-171-921-111	Status
	G	Measures	Agent	and Guidelines	D	С	О	
Air Quality								
4.7.1	Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.	All works areas	Contractor	Air Pollution Control		1		Υ
4.7.1	Side enclosure and covering of any aggregate or stockpiling of dusty material to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines.	All works areas	Contractor	Ordinance and Air Pollution Control (Construction		1		Υ
4.7.1	Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.	All works areas	Contractor	Dust) Regulation EM&A Manual		1		Υ
4.7.1	Establishment and use of vehicle wheel and body washing facilities at the exit points of the site.	All works areas	Contractor	EIVIQA IVIANUAI		1		Υ
4.7.1	Imposition of speed controls for vehicles on site haul roads.	All works areas	Contractor			1		Υ
4.7.1	Implement EM&A program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.	All works areas / Monitoring points	Contractor			V		Υ
Noise								
5.6.4	Implement good site practices to reduce noise level	All works areas	Contractor	Noise Control Ordinance		1		Y
5.6.5	Adoption of Quiet PME	All works areas	Contractor			1		N/A
5.6.6	Use of Movable Noise Barrier	All works areas	Contractor			1		N/A
5.8	Noise monitoring	Monitoring points	Contractor			V		Y
Water Quality	, /							
6.8.1	Surface run-off from construction sites should be discharged into storm drains via adequately designed sand/silt removal facilities such as sand	All works areas	Contractor	ProPECC PN 1/94 Construction		1		Υ

	traps, silt traps and sedimentation basins. Channels or earth bunds or			Site Drainage		
	sand bag barriers should be provided on site to properly direct					
	stormwater to such silt removal facilities. Perimeter channels at site			TM-DSS		
	boundaries should be provided where necessary to intercept storm			PROVED THE TRACE SHARES		
	run-off from outside the site so that it will not wash across the site.			Water Pollution		
	Catchpits and perimeter channels should be constructed in advance of			Control		
	site formation works and earthworks.			Ordinance		
6.8.2	Silt removal facilities, channels and manholes should be maintained and	All works areas	Contractor			
	the deposited silt and grit should be removed regularly, at the onset of				1	Y
	and after each rainstorm to prevent local flooding.					
6.8.3	Temporary exposed slope surfaces should be covered and temporary	All works area	Contractor			
	access roads should be protected by crushed stone or gravel, as					Y
	excavation proceeds. Intercepting channels should be provided to					1
	prevent storm run-off from washing across exposed soil surfaces.					
6.8.4	Earthworks final surfaces should be well compacted and the subsequent	All works areas	Contractor			
	permanent work or surface protection should be carried out immediately				0000	
	after the final surfaces are formed to prevent erosion caused by				1	N/A
	rainstorms. Appropriate drainage like intercepting channels should be					
	provided where necessary.					
6.8.5	Rainwater pumped out from trenches or foundation excavations should	All works areas	Contractor		1	Y
	be discharged into storm drains via silt removal facilities.				\ \ \ \ \ \	Y
6.8.6	Open stockpiles of construction materials (e.g. aggregates, sand and fill	All works areas	Contractor			
	material) on sites should be covered with tarpaulin or similar fabric				√	Y
	during rainstorms.					
6.8.7	Manholes (including newly constructed ones) should always be	All works areas	Contractor		7,000	
	adequately covered and temporarily sealed so as to prevent silt,				√	Y
	construction materials or debris from getting into the drainage system.					
6.8.8	Good site practices should be adopted to remove rubbish and litter from	All works areas	Contractor			
	construction sites so as to prevent the rubbish and litter from spreading				√	Y
	from the site area.					
6.8.9	All vehicles and plant should be cleaned before they leave a construction	All works areas	Contractor			
	site to minimize the deposition of earth, mud, debris on roads. A wheel		5.70-90.00.000			
	washing bay should be provided at every site exit if practicable and				√	Y
	wash-water should have sand and silt settled out or removed before					
	discharging into storm drains.					
6.8.10	Before commencing any demolition works, all drainage connections	All works areas	Contractor			
	should be sealed to prevent building debris, soil, sand etc. from entering				√	N/A

	drains.		
6.8.11	Wastewater generated from building construction activities including concreting, plastering, internal decoration, cleaning of works and similar activities should not be discharged into the stormwater drainage system. If the wastewater is to be tankered off site for disposal into foul sewers, it should undergo the removal of settleable solids in a silt removal facility, and pH adjustment as necessary.	All works areas	Contractor
6.8.12	Acidic wastewater generated from acid cleaning, etching, pickling and similar activities should be neutralized to within the pH range of 6 to 10. The neutralized wastewater should be tankered off site for disposal into foul sewers or treated to a standard acceptable to storm drains and the receiving waters.	All works areas	Contractor
6.8.13	All surface run-off must proper collected and discharge at designated location. The discharge quality must meet the requirements specified in the discharge license.	All works areas	Contractor
6.8.15	Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	All works areas	Contractor
6.8.16	Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges	All works areas	Contractor
6.8.17	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance.	All works areas	Contractor
6.8.18	Sewage generated from the workforce should be properly treated by interim treatment facilities, such as chemical toilets which are properly maintained with the employment of licensed collectors for the collection and disposal on a regular basis.	All works areas	Contractor
6.8.19	Adopt relevant measures stated in ETWB TC (Works) No. 5/2005 "Protection of Natural Streams/rivers from Adverse Impacts arising from Construction Works" to minimize the potential water quality impacts from the construction works near any water courses.	All works areas	Contractor
6.10	Water quality monitoring	Monitoring points	Contractor

7.6.1	Appropriate waste handling, transportation and disposal methods for all waste arisings generated during the construction works for the Project	All works areas	Contractor	Waste Disposal Ordinance	√	Υ
	should be implemented to ensure that construction wastes do not enter the nearby streams or drainage channel.			DEVB TCW No.		
7.6.2	Implementation of good site practices for waste management	All works areas	Contractor	6/2010,	√	Υ
7.6.3	Implementation of trip ticket system to control waste disposal	All works areas	Contractor			33
				ETWB TCW No.	1	Υ
7.6.4	Implementation of good site practices to reduce waste generations	All works areas	Contractor	19/2005 Land	V	Υ
7.6.5	Re-use of excavated C&D materials on site as far as practical. A suitable	All works areas	Contractor	(Miscellaneous		
	area should be designated within the site for temporary stockpiling of			Provisions)	$\sqrt{}$	Υ
	C&D material and to facilitate the sorting process.			Ordinance		
7.6.8	General refuse should be stored in enclosed bins or compaction units	All works areas	Contractor			
	separate from C&D material. A reputable waste collector should be			Code of Practice	V	Υ
	employed by the contractor to remove general refuse from the site,			on the Packaging,	v	1
	separately from C&D material.			Labelling and		
7.6.9	All storage of asbestos waste should be carried out properly in a secure	All works areas	Contractor	Storage of		
	place isolated from other substances so as to prevent any possible			Chemical Wastes		2000200
	release of asbestos fibres into the atmosphere and contamination of				1	N/A
	other substances. The storage area should bear warning panels to alert					
	people of the presence of asbestos waste.	4/4***********************************	1	_		
7.6.10	A licensed asbestos waste collector will be appointed to collect the	All works areas	Contractor		1	
	asbestos waste and deliver to the designated landfill for disposal.				1	N/A
	Application should be submitted to EPD.			_		-
7.6.11	If chemical wastes were to be produced at the construction site, the	All works areas	Contractor			
	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				V	γ
	container indicating the corresponding chemical characteristics of the				V	
	waste, such as explosive,					
	flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The					
	Contractor shall use a licensed collector to transport the chemical wastes.					
	The licensed collector shall deliver the waste to the Chemical Waste					
	Treatment Centre at Tsing Yi, or other licenced facility, in accordance with					

	the Waste Disposal (Chemical Waste) (General) Regulation.					
Ecology		1				
8.8.1	Ecological impacts on important habitats and the associated wildfile caused by the proposed development should be mitigated and compensation approaches to the maximum practical extent	All works areas in particular important	The Engineer/ Contractor	EIAO-TM EM&A Manual	1	Y
8.8.2	Reduce the amount of vegetation removal required and thereby minimize the footprint of the slope at the woodland habitat	habitats All works areas	The Engineer/ Contractor		V	Υ
8.8.3	Conduct detailed vegetation survey and implement suggested measures for species of conservation importance.		The Engineer/ Contractor		V	Υ
8.8.4	The affected Incense Tree and Ailanthus as mentioned in the detailed vegetation survey report within the works area will be transplanted		The Engineer/ Contractor		√	Y
8.8.5	To avoid impacts on Short-nosed Fruit Bat, the tree with records of an active roost and trees showing evidence of roosting activity should be retained where possible. Where Chinese Fan-palm (Livistona chinensis) removal is required, these should be checked by suitably qualified ecologist with over 7 years relevant experience for roosting bats prior to their removal. If roosting bats are observed, a strategy for passive removal will be agreed with the AFCD and implemented. This could include undertaking the works just after the bats have left the roost (i.e. dusk).		The Engineer/ Contractor		V	N/A
8.8.6	The inclusion of Chinese Fan-palm of similar size as the affected plant within the areas of compensatory planting or other suitable areas is recommended to replace affected specimens, and compensate for the impact to roosting opportunities for this bat species		The Engineer/ Contractor		1	N/A
8.8.7	Implement good site measures to minimize the disturbance impacts to terrestrial habitat and associated wildlife arising from the land-based construction activities.		The Engineer/ Contractor		V	Υ
8.8.8	To minimize the contamination of wastewater discharge, accidental chemical spillage and construction site run-off to the receiving water bodies, mitigation measures such as diverting the site runoff to silt trap facilities before discharging into storm drain, proper waste and dumping management and standard good site practice for land-based construction.		The Engineer/ Contractor		V	Y
8.8.9-8.8.11	Implement woodland compensation		The Engineer/ Contractor		V	N/A

andscape and		Allanka ana	Combination	DEVID TOW No	T 1	
.8.1	Existing tress to be retained on site shall be carefully protected during construction. Trees unavoidably affected by the works shall be transplanted as far as possible.	All works areas	Contractor	DEVB TCW No. 10/2013	√	Y
	Compensatory Planting shall be provided in accordance with DEVB TCW No. 10/2013 – Tree Preservation.	All works areas	Contractor	EIAO TM	√	Y
	Control of night-time lighting glare.	All works areas	Contractor		√	Y
	Erection of decorative screen hoarding compatible with the surrounding setting.	All works areas	Contractor		√	Y
	Management of facilities on work sites which give control on the height and disposition/arrangement of all facilities on the works site to minimize visual impact to adjacent VSRs.	All works areas	Contractor		1	Y
ultural Herita	ge					
0.6.2	Vibration monitoring at Ex KCR Beacon Hill Tunnel during piling works of Administration Building	Work site	The Engineer /Contractor		1	N/A
and Contamir	nation			· ·	-	
1.7	Identify contamination and implement appropriate remedial measures on site. Provide relevant submission and obtain approval from EPD if necessary.	All works areas	Contractor	Guidance Note for Contaminated Land Assessment and Remediation Guidance Manual for Use of Risk based Remediation Goals for Contaminated Land Management (Guidance Manual)	V	N/A
lazard to Life			T	T		
able 12.22	Ensure speed limit enforcement is specified in the contractor's Method Statement to limit the speed of construction vehicles on site	All works areas	The Engineer	EIAO-TM	√	Y
	Develop an audit procedure to ensure enforcement of speed limits and to ensure adequate site access control	All works areas	The Engineer		√	Y
	Ensure construction method statement is endorsed by the Engineer	All works areas	The Engineer		V	Υ

Ensure designated manoeuvring area for the new access road construction is away from the Chlorination House	New access road area	Contractor/ The Engineer	√	Υ
Ensure that the emergency response plan and procedures (including drills) cover the reprovisioning activities	All works areas	Contractor/ The Engineer	1	Υ
Safety training to be provided to construction workers and WSD/Engineer staff regarding evacuation procedures	All works area	Contractor/ The Engineer	√	Y
Ensure communication protocol is in place between construction and operation staff with regard to the change of chlorine delivery route and the switchover from the existing to new chlorinated water piping;	All works areas	Contractor/ The Engineer	√	N/A
Ensure temporary suspension of crane operation and construction truck movements during chlorine delivery	All works areas	Contractor/ The Engineer	1	Υ
Provide a crash barrier between the construction site and the north side of the Chlorination House.	Chlorination House area	Contractor	1	Υ
Conduct vibration monitoring at the Chlorination House during piling activities to ensure vibration levels are acceptable and will not lead to any damage of the Chlorination House	Chlorination House area	Contractor	√	Υ
Civil engineering calculation to be performed to confirm differential settlement from excavation work is within acceptable limits for the Chlorination House	Chlorination House area	Contractor	√	Y
Provide settlement monitoring for the Chlorination House to ensure no subsidence occurs from nearby excavation works.	Chlorination House area	Contractor	√	Υ
Confirm the chlorine concentration for the chlorinated water before the switchover from the existing to new piping. This is to avoid the potential for chlorine gas vapours being released if the concentration is too high and there is spillage during switchover	Chlorinated water piping	WSD	1	N/A
Develop an operating procedure for performing the chlorinated water switchover from the existing piping to new piping.	All works areas	Contractor/ The Engineer / WSD	1	N/A
Ensure the location/height of the lifting equipment is such there is no impact on Chlorination House/chlorine delivery route in case of falling, swinging or dropped load.	Chlorination House area	Contractor/ The Engineer	√	Υ
Implement the controlled demolition of the existing E&M workshop to ensure that any steel structural elements can only fall away from the Chlorination House	Existing E&M Workshop and Chlorination House	Contractor/ The Engineer	V	N/A

		1	_	 	
	areas				
Stop any construction activities which may lead to vibrations and potential slope/boulder disturbance during the chlorine deliveries	All works areas	Contractor			\ \lambda
Installation of Chlorine gas monitors with audible alarms in the relevant reprovisioning works area	Reprovisioning works areas	Contractor/ The Engineer		\ \	√
Provision of an accompanying vehicle for the chlorine truck on the WTW site and ensuring that during the chlorine drums delivery construction works are stopped and the construction workers moved away from Chlorination House	All works areas	Contractor		V	V
Establish a liaison between the contractor and HKCG and develop a chlorine/town gas emergency plan to ensure gas safety during the Construction Phase	Beacon Hill North Gas Offtake Station and Gas Pipelines in Old Beacon Hill Tunnel	The Engineer / Contractor / HKCG		N	V
Temporary suspend chlorine delivery during the short period of construction of the concerned section of elevated walkway to avoid mobile crane impact on the chlorine truck		The Engineer / Contractor			$\sqrt{}$
Provide clear road signs for site vehicles	Chlorine delivery route and reprovisioning works access roads	The Engineer / Contractor		√	V
Large equipment/plant movement should be controlled by Permit-to-move' system	All works areas	The Engineer / Contractor / WSD		V	\display
Define restricted zone for the equipment (i.e. keep the equipment from the Chlorination House at a safe distance). The extent of the restricted zone would be determined by the size of the equipment	Chlorination House area	The Engineer / Contractor		V	√
Locate the construction site office at or near property boundary away from the Chlorination House as far as possible	Construction Office area	The Engineer / Contractor			√
Entry of non-authorized personnel to the construction site to be prohibited	All works areas	Contractor		V	√

12.15.4, 12.18.1, 12.22.9	GPS fleet management system with driver training to help enforce truck speeds	Chlorine delivery trucks, fleet management	WSD / Chlorine Supply Contractor	EIAO-TM	√	k	k.i.v.	
		centre Chlorine	-		2.77	1		
	Improved clamps with independent checks to prevent load shedding	delivery trucks			1	F	F	
	Installation of fire screen and larger fire extinguishers to prevent engine and wheel fires from spreading to the cargo area	activety tractic			√	F	F	
	Adoption of the chlorine delivery route from Sham Shui Kok Dock to Sha Tin WTW				√	F	F	
	Provision of emergency repair kit				V	F	F	
12.34.3 Table 12.37	Ban the use of retreaded tyres and perform regular visual checks on the tyres.				√	F	F	
& 12.38	A vehicle accompanying chlorine truck along critical road sections in Sha Tin. The truck should be equipped with emergency kit, fire extinguisher, radio set for communication. The accompanying vehicle will be ahead of the chlorine truck after the vehicles entering the water treatment works site – An accompanying vehicle may provide rapid response to an incident but any action would be limited to containing a small leak.				٧	F	F	
	Limit fuel tanks capacity at the beginning of the Project (Item 2.3 of Table 12.37 – advance measure).					√	F	F
	Review the practicality of reducing combustible materials or use of fire retardant materials in the cab. (Item 2.3 of Table 12.37 – further measure)				1	k	k.i.v.	
	Annual periodic radiography or ultrasonic test inspections of the chlorine drums should be considered for implementation as soon as feasible (Item 3.8 of Table 12.37).	Chlorine drums			V	k	k.i.v.	
	Implement side, front and rear crash guards with high energy absorption in coordination and accordance with the relevant authorities.	Chlorine delivery trucks			√	k	k.i.v.	
	Implement a sturdy steel frame to minimize the potential for chlorine release due to truck rollover				1	k	k.i.v.	
12.34.4	WSD will continue to keep under review the latest development of use of alternative disinfectants in water supply industry to aim at minimising on-site chlorine storage.4	Chlorine delivery Route	WSD		V	k	k.i.v.	

Training should be provided for the use of the GPS fleet management and improved safe driving.	V	k.i.\
Ensured that independent checks are performed to ensure proper chlorine drum latching and clamping.	√	F
Chlorine truck drivers or driver attendants should be further trained to check and detect potential chlorine leaks during transport. This should include the timely application of the emergency kit.	√	k.i
Training should be provided to driver and driver attendant for the emergency use of the new 2 × 9L AFFF extinguishers.	√	F
Induction training for new drivers and driver attendant should include familiarisation with the route, familiarisation with chlorine risks, defensive driving, application of emergency kits, use of fire extinguishers and emergency response	V	k.i
Provision of a fire screen between the cab and cargo as well as fire retardant materials for the wheel arches on the chlorine truck should be planned and provided	√	F
To keep under review alternate chlorine receiving dock in Sha Tin/Tai Po area for chlorine delivery to STWTW.	√	k.i

Legend

- D Design Phase
- C Construction Phase
- O Operation Phase
- Y Compliance of Mitigation Measures
- N/A Not Applicable in Reporting Period
- k.i.v Keep In View
- F Completed

Appendix V Cumulative Statistics on Exceedances, Complaints, Notifications of Summons and Successful Prosecutions

Statistical Summary of Exceedances (December 2023)

				Ai	r Quality	7			
Location	A	ction Lev	el		I		Total		
AM1		0				0			0
AM2		0				0			0
Noise									
Location	A	ction Lev	el		I	Limit Leve	el		Total
NM1		0				0			0
NM2	0				0				0
NM3	0				0				0
				Wa	ter Qualit	•			
Location		Action Level				Limit	Level	_	Total
Location	DO	Turbidity	SS	pН	DO	Turbidity	SS	pН	Total
C1	0	0	0	0	0	0	0	0	0
C2	0	0	0	0	0	0	0	0	0
C3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0
M1	0	0	0	0	0	0	0	0	0
M2	0	0	0	0	0	0	0	0	0
M3	0	0	0	0	0	0	0	0	0

M3 0 0 0 0 0 0 0 0 0 0 0 0 There was 0 exceedances of Action Level and 0 exceedance of Limit Level in November 2023

Statistical Summary of Exceedances (Cumulative)

			•	Ai	r Quality	7			
Location	A	ction Lev	el		Limit Level				
AM1		0				0			0
AM2		0				0			0
Noise									
Location	A	ction Lev	el		I	Limit Leve	el		Total
NM1		0				0			0
NM2		0	0					0	
NM3	3 0				0				0
				Wa	ter Qualit	•			
Location	Action Level					Limit	Level		Total
Location	DO	Turbidity	SS	pН	DO	Turbidity	SS	pН	Totai
C1	0	0	18	4	1	10	8	3	44
C2	0	1	12	1	5	9	6	1	35
C3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0
M1	0	1	7	1	7	6	26	7	55
M2	0	0	0	0	9	3	2	0	14
M3	0	0	0	2	10	22	46	0	80

Statistical Summary of Environmental Complaints

Reporting	Environmental Complaint Statistics						
Period	Frequency	Complaint Nature	Cumulative				
1 December— 31 December 2023	0	N/A	4				

Statistical Summary of Environmental Summons

Reporting	Environmental Summons Statistics						
Period	Frequency	Details	Cumulative				
1 December— 31 December 2023	0	N/A	0				

Statistical Summary of Environmental Prosecution

Reporting	Er	Environmental Prosecution Statistics							
Period	Frequency	Details	Cumulative						
1 December— 31 December 2023	0	N/A	0						

Appendix W Tentative Schedule of Impact Monitoring

Tentative Impact Monitoring Schedule for STWTW							
Jan-24							
Sun	Mon		Wed			Sat	
	1	2	3	4	5	6	
		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3 Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	
7	8	9	10	11	12	13	
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3 Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		
14	15	16	17	18	19	20	
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	Impact Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		
21	22	23	24	25	26	27	
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3 Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	Impact Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3	
28	29	30	31				
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3				

Tentative Impact Monitoring Schedule for STWTW						
Sun Mon Tue Wed				ITh		Sat
Sun	IVIOIT	rue	vvea	Thu 1	Fri	
4	Impact	6	Impact Water Quality monitoring for C1, C2,	Impact Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3 Impact Water Quality monitoring for C1, C2,	10
11	Water Quality monitoring for C1, C2, C3, M1, M2 & M3	13	C3, M1, M2 & M3 Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3	15	C3, M1, M2 & M3 Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3	17
			Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	Impact Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	
18	19	20	21	22	23	24
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3 Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	
25	26	27	28	29		
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	Impact Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3			

Tentative Impact Monitoring Schedule for STWTW Mar-24							
Sup	Mon	Tue		Thu	Fri	Sat	
Sun	IVIOIT	rue	I vveu	T TIU	F	2	
					Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		
2	4	5	6	7	8	9	
3	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3 Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	Impact Air monitoring for AM1 & AM2	
10	11	12	13	14	15	16	
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3 Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3		
17	18	19	20	21	22	23	
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3	Impact Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		
24	25	26	27	28	29	30	
	Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3		Impact Water Quality monitoring for C1, C2, C3, M1, M2 & M3 Air monitoring for AM1 & AM2 Noise monitoring for NM1, NM2 & NM3				
31							