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TEST REPORT

WO HING – PENTA-OCEAN JOINT VENTURE

CONTRACT NO. 9/WSD/08
LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SAI YING PUN

MONTHLY EM&A REPORT NO.24

(APRIL 2012)

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Issued Date: 05 May 2012 *Report No.: ENA20486*

ENVIRON

Ref.: WSDWHCMSEI00_0_0252L.12

7th May 2012

Water Supplies Department
Sha Tin Office
6/F Sha Tin Government Offices
1 Sheung Wo Che Road
Sha Tin, NT

By Post

Attention: Mr. Johnny Ho

Dear Sir,

Re: Contact No. 9/WSD/08
Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun
Monthly Environmental Monitoring and Audit Report No. 24

Reference is made to Environment Team's submission of the Environmental Monitoring and Audit Report No. 24 by Email on 5th May 2012 (entitled "9/WSD/08 - Draft Monthly Report (April 12)").

We are pleased to inform you that we have no comment on the captioned report.

Thank you very much for your kind attention and please do not hesitate to contact the undersigned should you have any queries.

Yours sincerely,

David Yeung
Independent Environmental Checker

c.c.	Mott MacDonald Hong Kong Limited	Mr. Kelvin Ho	Fax: 2377 2900
	Wo Hing – Penta-Ocean Joint Venture	Mr. Danny Ho	Fax: 2572 4080
	ETS-TESTCONSULT LIMITED	Mr. C.L. Lau	Fax: 2695 3944

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EXECUTIVE SUMMARY

Under the requirements of "Environmental Monitoring & Audit Manual – Agreement No. CE42/2005(WS) Laying of Western Cross Harbour Main and Associated Land Main from West Kowloon to Sai Ying Pun" (the EM&A Manual), impact noise monitoring and water quality monitoring is required to be implemented for the "Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Main from West Kowloon to Sai Ying Pun" (the Project).

This monthly Environmental Monitoring and Audit (EM&A) report No.24 was prepared by ETS-Testconsult Ltd (ET) for the Project. This report documented the findings of EM&A Works conducted during the Project in April 2012.

Site Activities

As informed by the Contractor, the site activities in this reporting month were as below:
- *Re-instatement of the vertical seawall (Portion J); and*
- *Placing of Rock Armour (Type 2) to the submarine main (Portion I).*

Environmental Monitoring Progress

The summary of the monitoring activities in this monitoring month is listed below:
- *Day-time Noise Monitoring (0700-1900 on normal weekday): 4 Occasions at KS6, 4 Occasions at KY3, CGa and RWM*
- *Evening-time Noise Monitoring (1900-2300): 4 Occasions at KS6, CGa, RWM and KY3*
- *Night-time Noise Monitoring (2300-0700 of next day): 0 Occasion at KS6, CGa, RWM and KY3*
- *Holiday-time Noise Monitoring (0700-1900 on Holiday): 5 Occasions at KS6, CGa, RWM and KY3*
- *Marine Water Quality Monitoring: 10 Occasions at 9 monitoring stations and 4 control stations*
- *Weekly-site inspection: 4 Occasions*

Noise Monitoring

No exceedance of Action and Limit Level of noise monitoring was recorded in this reporting month.

Water Quality Monitoring

No exceedance of Action and Limit levels was recorded for water quality monitoring in the reporting month.

Site Inspection

Environmental site inspections conducted in this reporting month are presented as follows:

Concerned Parties	*Dates of Audit / Inspection*
ET Weekly site inspection	*03, 11, 16 and 26 April 2012*
Monthly Joint site inspection	*16 April 2012*

In general, performance on environmental mitigation measures implemented was found to be satisfactory in this reporting month. The major findings observed during site inspections are presented in the Section 6.0.

Environmental Complaints, Notification of summons and successful prosecutions

No complaint, notification of summons and prosecution with respect to environmental issues was received in this reporting month.

Change in Environmental Aspect in this Reporting Month

No change on environmental aspect was reported in this reporting month.

Future Key Issues

Based on the forecast of engineering works in the coming month, key issues to be considered are as follows:

- *Noise and dust impact due to construction works;*
- *Use and maintain silt curtain and silt screen properly;*
- *Clean up the fill material along the barge frequently;*
- *Implement all necessary preventive measures to avoid oil leakage. In the event an oil leakage happens, the Contractor should properly remove the leaked oil and handle the contaminated soil and all materials using for this cleaning works as chemical waste; and*
- *Maintain good site practice to minimize environmental impacts at the site.*

1.0 INTRODUCTION

Wo Hing – Penta-Ocean Joint Venture (WHPOJV) appointed Environmental Team of ETS-Testconsult Limited (ETL) to undertake the Environmental Impact Monitoring for "Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Main from West Kowloon to Sai Ying Pun" (the Project) under the requirements of "Environmental Monitoring & Audit Manual – Agreement No. CE42/2005(WS) Laying of Western Cross Harbour Main and Associated Land Main from West Kowloon to Sai Ying Pun" (the EM&A Manual).

This report documented the findings of EM&A Works conducted in April 2012.

2.0 PROJECT INFORMATION

2.1 Scope of the Project

The construction works of the Project are located in West Kowloon, across the Victoria Harbour and in Sai Ying Pun.

The construction works under this Project are briefly described, without limitation, as follow:

- Laying of about 1.5km of 1200mm diameter steel fresh water mains at West Kowloon;
- Laying of about 2.1km of 1200mm diameter steel submarine pipeline from West Kowloon to Sai Ying Pun including dredging, cathodic protection system and other associated works;
- Laying of about 0.4km of 1200mm diameter steel fresh water main at Sai Ying Pun;
- Laying of about 0.5km of 800mm diameter steel salt water main at West Kowloon;
- Construction of motorized butterfly valve (MBV) and the associated facilities in the vicinity of Sun Yat Sen Memorial Park at Sai Ying Pun;
- Construction of all chambers associated with pipeworks;
- Making service connections;
- Ancillary works including but not limited to reinstatement of roads, landscaping works.

Areas of the Project present in Appendix H. Locations of environmental monitoring stations and sensitive receivers are shown in Figures 1, 2, 3, 1.2a, 1.2b and 1.2c

2.2 Work Programme

Details of work programme are shown in Appendix E.

2.3 Project Organization and Management Structure

The organization chart and lines of communication with respect to the on-site environmental management and monitoring program are shown in Appendix A.

2.4 Contact Details of Key Personnel

The key personnel contact names and telephone numbers are shown in Table 2.1.

Table 2.1 Contact Details of Key Personnel

Project Role	*Organization*	*Name of Key Staff*	*Tel. No.*	*Fax No.*
Engineer's Representative	*Mott MacDonald*	*Mr. Kelvin Ho*	*2377 2823*	*2377 2900*
IEC	*Environ*	*Mr David Yeung*	*3743 0788*	*3548 6988*
Contractor's Agent	*WHPOJV*	*Mr. Danny Ho*	*2695 8318*	*2957 8213*
ET Leader	*ET (ETL)*	*Mr C. L. Lau*	*2946 7791*	*2695 3944*

3.0 WORK PROGRESS IN THIS REPORTING MONTH

As informed by the Contractor, the activities in the reporting month include:

- *Re-instatement of the vertical seawall (Portion J); and*
- *Placing of Rock Armour (Type 2) to the submarine main (Portion I).*

4.0 IMPACT NOISE MONITORING

4.1 Monitoring Requirements

As the requirement in the EM&A Manual, impact noise monitoring was conducted for a weekly basis at designated monitoring locations.

4.2 Monitoring Equipment

Integrating Sound Level Meters used for impact noise monitoring were Type 1 sound level meters capable of giving a continuous readout of the noise level reading including equivalent continuous sound pressure level (L_{eq}) and percentile sound pressure level (Lx). They complied with International Electro technical Commission Publications 651:1979 (Type1) and speed in m/s was used to monitor the wind speed. Table 4.1 summarized the noise monitoring equipment model used during the impact monitoring. Copies of calibration certificates and Calibration Summary for noise meters and calibrators used are attached in Appendix B1.

Table 4.1 Noise Monitoring Equipment

Equipment	*Model*	*Equipment No.*	*Serial No.*	*Calibration Date.*	*Expired Date*
Sound Level Meter	*Rion NL-31 Sound Level Meter*	*ET/EN/003/06*	*00110024*	*15/04/11* *16/04/12*	*14/04/12* *15/04/13*
		ET/EN/003/10	*00531142*	*24/05/11*	*23/05/12*
		ET/EN/003/13	*00593620*	*08/09/11*	*07/09/12*
Sound Level Calibrator	*Rion NC-73 Sound Level Calibrator*	*ET/EN/002/01*	*10196943*	*07/11/11*	*06/11/12*
Anemometer	*AZ Instrument AZ 8908*	*ET/EN/001/03*	*9101259*	*10/11/11*	*09/11/12*

4.3 Monitoring Parameters, Duration and Frequency

Impact noise monitoring for the A-weighted levels L_{eq}, L_{10} and L_{90} were recorded once per week. Data obtained from impact noise monitoring was processed and presented as below:

- *Daytime: three sets of 30-minute noise level monitored between 0700-1900 hrs on normal weekdays;*
- *Evening-time*: three sets of 5-minute noise level monitored between 1900-2300 hrs ;*
- *Night-time*: three sets of 5-minute noise level monitored between 2300-0700 hrs of next day; and*
- *Holiday*: three sets of 5-minute noise level monitored between 0700-1900 hrs on holiday.*

(*): Noise monitoring to be conducted only when there is construction work.

Duration, frequencies and parameters of noise measurement are presented in Table 4.2.

Table 4.2 Duration, Frequencies and Parameters of Noise Monitoring

Time period	*Duration/min*	*No. of Set(s)*	*Parameters*
Day-time: 0700-1900 hrs on normal weekday	*30*	*1*	L_{eq}, L_{10}, L_{90}
Evening-time: 1900-2300 hrs	*5*	*3*	L_{eq}, L_{10}, L_{90}
Night-time: 2300-0700 hrs of next day	*5*	*3*	L_{eq}, L_{10}, L_{90}
Holiday-time: 0700-1900 hrs on holiday	*5*	*3*	L_{eq}, L_{10}, L_{90}

4.4 Monitoring Locations

In accordance with the EM&A Manual, the proposed noise monitoring station at the Harbourside (KS4) was cancelled since the owner of the Harbourside and nearby NSRs rejected to perform baseline and impact noise monitoring at their property. As a result, there was one noise monitoring location KS6 (The Cullinan) selected at West Kowloon to conduct impact environmental monitoring. At Sai Yung Pun, the location at the noise station CG (Connaught Garden) was unavailable for impact noise measurement because the building repairing and maintenance works was carrying out in the Connaught Garden and will be finished in June 2011. Hence, noise monitoring at noise station CG was moved to another noise station CGa (pavement in front of Connaught Garden) temporally until the completion of repairing and maintenance works at Connaught Garden) since CGa locates close to the major site activities which are likely to have noise impacts and low disturbance to the occupants was observed during the noise monitoring. As a result, there were three noise monitoring locations, CGa (Pavement in front of Connaught Garden), RWM (Roof at Richwealth Mansion) and KY3 (Roof at Kwan Yik Building Phase 3) selected to conduct impact environmental monitoring.

Beside, the locations at the noise stations, RWM (Roof at Richwealth Mansion) and KY3 (Roof at Kwan Yik Building Phase 3), were unavailable for impact evening-time and night-time noise measurement because the building owners reject ET to carry out noise monitoring during such two periods due to security. Hence, evening-time and night-time noise monitoring at noise stations, RWM and KY3 were moved to pavement in front of Richwealth Mansion and Kwan Yik Building Phase 3 The details of noise monitoring stations are summarized in Table 4.3.

Table 4.3 Noise Monitoring Stations

Daytime and Holiday-time Noise monitoring station	*Description of location*	*Type of Measurement*
KS6	*Podium at the Culliman*	*Façade*
CGa	*Pavement in front of Connaught Garden*	*Façade*
RWM	*Roof at Richwealth Mansion*	*Free Field*
KY3	*Roof at Kwan Yik Building Phase 3*	*Free Field*
Evening-time and Night-time Noise monitoring station	*Description of location*	*Type of Measurement*
KS6	*Podium at the Culliman*	*Façade*
CGa	*Pavement in front of Connaught Garden*	*Façade*
RWM	*Pavement at Richwealth Mansion*	*Façade*
KY3	*Pavement at Kwan Yik Building Phase 3*	*Façade*

4.5 Monitoring Methodology

Instrumentation

Integrating Sound Level Meters were employed for noise monitoring.

Operation/Analysis Procedures

- Sound Level Meter was set on a tripod at a height of 1.2m above the ground;
- For free field measurement, the meter was positioned away from any nearby reflective surfaces.
- The battery condition was checked to ensure the correct functioning of the meter:
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
  - Frequency weighting : A
  - Time weighting : Fast
  - Time measurement : 30 mins
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94 dB at 1000HZ. If the difference in the calibration level before and after measurement was more than 1.0 dB(A), the measurement would be considered invalid and repeat measurement would be required after re-calibration or repair of the equipment;
- During the monitoring period, the L_{eq}, L_{10} and L_{90} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet;
- 3dB(A) correction had been added to the results if noise measurements were free-field;

- Noise measurement may be paused during periods of high intrusive noise (e.g. dog baking directly towards the receiver of noise level meter). If noise measurement was paused during high intrusive noise, the noise level meter would be resumed and continued the noise measurement and the observations would also be recorded. Any pause intervals were not included in the measurement time; and
- Noise monitoring would be cancelled in the presence of fog, rain, storm, wind with a steady speed exceeding 5m/s, or wind gusts exceeding 10m/s.

Maintenance and Calibration

- The microphone head of the sound level meter and calibrator are cleaned with soft cloth at quarterly intervals; and
- The meters are sent to supplier or HOKLAS laboratory to check and calibrated at yearly intervals.

4.6 Actions and Limit Levels

The Action and Limit Levels (AL Levels) were established in accordance to the Table 4.2 of the EM&A Manual. Table 4.4 presents the AL levels for noise monitoring.

Table 4.4 Action and Limit Levels for Noise Monitoring

Time Period	*Action*	*Limit*
0700 –1900 hrs on normal weekday (Day-time)	*When one documented complaint is received*	*75 dB(A) **
1900-2300 hrs (Evening-time)		*70 dB(A)*
0700-1900 hrs on Holiday (Holiday-time)		*70 dB(A)*
Restricted hours (2300-0700 hrs of next day) (Night-time)		*55 dB(A)*

** reduce to 70dB(A) for school and 65dB(A) during school examination periods*

4.7 Event-Action Plans

Should the results of the monitoring parameters at any designated monitoring stations indicate that the noise level criteria are exceeded, the actions in accordance with the Event and Action Plan that summarized in Appendix D should be carried out.

4.8 Results

Totally 4 occasions at KS6 and 4 occasions at CGa, RWM and KY3 of day-time noise monitoring, 4 occasion of evening-time noise monitoring at KS6, CGa, RWM and KY3, 0 occasion of night-time noise monitoring and 5 occasions of holiday-time noise monitoring at KS6, CGa, RWM and KY3 were carried out in this reporting month.

No exceedance in Limit Level was recorded in this reporting month. Besides, no exceedance of Action Level of noise monitoring was recorded since no complaint on noise issue was received in this reporting month.

Table 4.5 summaries the noise daytime monitoring results in the reporting period.

Table 4.5 Summary of Noise Daytime Monitoring Results

Monitoring Parameter	*Date*	*KS6*			
		Start Time	*End Time*	*Result*	*Exceed**
Day-time	02/04/12	10:50	11:20	62.1	X
	13/04/12	17:15	17:45	64.1	X
	18/04/12	17:15	17:45	62.4	X
	24/04/12	10:15	10:45	64.1	X
Evening-time	01/04/12	20:30	20:35	63.8	X
	01/04/12	20:35	20:40	63.3	X
	01/04/12	20:40	20:45	63.5	X
	14/04/12	19:25	19:30	64.1	X
	14/04/12	19:30	19:35	63.3	X
	14/04/12	19:35	19:40	63.5	X
	21/04/12	19:25	19:30	62.4	X
	21/04/12	19:30	19:35	61.9	X
	21/04/12	19:35	19:40	62.0	X
	27/04/12	19:00	19:05	66.1	X
	27/04/12	19:05	19:10	65.8	X
	27/04/12	19:10	19:15	65.3	X

Monitoring Parameter	Date	KS6			
		Start Time	End Time	Result	Exceed*
Holiday-time	01/04/12	08:15	08:20	60.9	X
	01/04/12	08:20	08:25	60.7	X
	01/04/12	08:25	08:30	61.0	X
	06/04/12	08:50	08:55	61.8	X
	06/04/12	08:55	09:00	61.5	X
	06/04/12	09:00	09:05	61.6	X
	15/04/12	09:50	09:55	60.4	X
	15/04/12	09:55	10:00	60.9	X
	15/04/12	10:00	10:05	60.5	X
	22/04/12	09:25	09:30	61.1	X
	22/04/12	09:30	09:35	61.4	X
	22/04/12	09:35	09:40	61.2	X
	28/04/12	13:30	13:35	64.8	X
	28/04/12	13:35	13:40	65.1	X
	28/04/12	13:40	13:45	64.9	X
Monitoring Parameter	Date	CGa			
		Start Time	End Time	Result	Exceed*
Day-time	02/04/12	15:15	15:45	74.9	X
	11/04/12	11:15	11:45	74.4	X
	18/04/12	13:40	14:10	74.7	X
	25/04/12	11:15	11:45	73.8	X
Evening-time	01/04/12	19:15	19:20	69.4	X
	01/04/12	19:20	19:25	68.2	X
	01/04/12	19:25	19:30	68.5	X
	14/04/12	20:05	20:10	69.6	X
	14/04/12	20:10	20:15	69.1	X
	14/04/12	20:15	20:20	69.0	X
	21/04/12	20:15	20:20	67.7	X
	21/04/12	20:20	20:25	67.5	X
	21/04/12	20:25	20:30	67.9	X
	27/04/12	21:10	21:15	69.7	X
	27/04/12	21:15	21:20	69.9	X
	27/04/12	21:20	21:25	69.6	X
Holiday-time	01/04/12	11:45	11:50	69.8	X
	01/04/12	11:50	11:55	69.7	X
	01/04/12	11:55	12:00	69.5	X
	06/04/12	10:40	10:45	68.7	X
	06/04/12	10:45	10:50	68.9	X
	06/04/12	10:50	10:55	68.5	X
	15/04/12	10:35	10:40	68.3	X
	15/04/12	10:40	10:45	69.1	X
	15/04/12	10:45	10:50	68.5	X
	22/04/12	10:15	10:20	68.0	X
	22/04/12	10:20	10:25	67.7	X
	22/04/12	10:25	10:30	67.8	X
	28/04/12	14:30	14:35	69.8	X
	28/04/12	14:35	14:40	70.0	X
	28/04/12	14:40	14:45	69.7	X
Monitoring Parameter	Date	RWM			
		Start Time	End Time	Result	Exceed*
Day-time	02/04/12	15:50	16:20	65.0	X
	11/04/12	10:40	11:10	63.7	X
	18/04/12	14:15	14:45	65.3	X
	25/04/12	10:45	11:15	63.3	X

Monitoring Parameter	Date	RWM			
		Start Time	End Time	Result	Exceed*
Evening-time	01/04/12	19:35	19:40	67.9	X
	01/04/12	19:40	19:45	67.8	X
	01/04/12	19:45	19:50	67.4	X
	14/04/12	20:25	20:30	68.1	X
	14/04/12	20:30	20:35	68.7	X
	14/04/12	20:35	20:40	68.4	X
	21/04/12	20:35	20:40	68.1	X
	21/04/12	20:40	20:45	68.4	X
	21/04/12	20:45	20:50	68.2	X
	27/04/12	20:50	20:55	69.3	X
	27/04/12	20:55	21:00	69.5	X
	27/04/12	21:00	21:05	69.8	X
Holiday-time	01/04/12	13:00	13:05	61.1	X
	01/04/12	13:05	13:10	61.4	X
	01/04/12	13:10	13:15	61.0	X
	06/04/12	10:20	10:25	62.4	X
	06/04/12	10:25	10:30	62.2	X
	06/04/12	10:30	10:35	62.2	X
	15/04/12	10:55	11:00	62.6	X
	15/04/12	11:00	11:05	62.0	X
	15/04/12	11:05	11:10	62.5	X
	22/04/12	10:35	10:40	63.2	X
	22/04/12	10:40	10:45	62.9	X
	22/04/12	10:45	10:50	62.7	X
	28/04/12	14:50	14:55	62.5	X
	28/04/12	14:55	15:00	62.3	X
	28/04/12	15:00	15:05	62.6	X
Monitoring Parameter	Date	KY3			
		Start Time	End Time	Result	Exceed*
Day-time	02/04/12	16:25	16:55	63.7	X
	11/04/12	10:05	10:35	61.8	X
	18/04/12	14:55	15:25	64.1	X
	25/04/12	10:15	10:45	61.3	X
Evening-time	01/04/12	19:55	20:00	65.9	X
	01/04/12	20:00	20:05	65.1	X
	01/04/12	20:05	20:10	64.9	X
	14/04/12	20:45	20:50	66.0	X
	14/04/12	20:50	20:55	65.3	X
	14/04/12	20:55	21:00	65.6	X
	21/04/12	20:55	21:00	68.3	X
	21/04/12	21:00	21:05	67.8	X
	21/04/12	21:05	21:10	67.6	X
	27/04/12	20:30	20:35	67.3	X
	27/04/12	20:35	20:40	67.5	X
	27/04/12	20:40	20:45	67.1	X
Holiday-time	01/04/12	13:15	13:20	60.2	X
	01/04/12	13:20	13:25	60.1	X
	01/04/12	13:25	13:30	59.9	X
	06/04/12	10:00	10:05	60.4	X
	06/04/12	10:05	10:10	60.6	X
	06/04/12	10:10	10:15	60.3	X
	15/04/12	11:15	11:20	60.7	X
	15/04/12	11:20	11:25	60.2	X
	15/04/12	11:25	11:30	60.4	X
	22/04/12	10:55	11:00	62.6	X
	22/04/12	11:00	11:05	63.0	X
	22/04/12	11:05	11:10	63.1	X
	28/04/12	15:10	15:15	61.5	X
	28/04/12	15:15	15:20	61.2	X
	28/04/12	15:20	15:25	61.6	X

Remark (*): L = Limit Level exceedance, A = Action Level exceedance and X = not an Exceedance
(#): Since daytime and holiday-time noise measurements at monitoring stations RWM and KY3 were free-field, 3dB(A) correction had been added to the results

The summary of noise exceedances is shown in Table 4.6.

Table 4.6 Summary of Impact Noise Exceedances in this reporting month

Exceedance Level	*Daytime*	*Evening-time*	*Night-time*	*Holiday-time*
Action	*0*	*0*	*0*	*0*
Cumulative	*0*	*0*	*0*	*0*
Limit	*0*	*0*	*0*	*0*
Cumulative	*0*	*0*	*227*	*0*

5.0 WATER QUALITY MONITORING

5.1 Monitoring Requirements

In accordance with the EM&A Manual, impact water quality monitoring was conducted three days per week during the course of the marine construction works.

5.2 Monitoring Locations

In accordance with the EM&A Manual, the proposed water quality monitoring station R8 – Macau Ferry Terminal was cancelled since it is located inside the restricted area. Another monitoring location R8a was proposed to replace R8 for impact water quality monitoring. As a result, totally four control stations and nine impaction stations were selected to conduct impact water quality monitoring for the Project. Table 5.1 shows the water quality monitoring stations of the Project.

Table 5.1 Water Quality Monitoring Stations

ID	*Station*	*Easting*	*Northing*
R5	*Green Island*	*830 175.979*	*816 179.217*
R6	*Prince Philip Dental Hospital*	*833 437.625*	*816 747.640*
R7	*Tsan Yuk Hospital*	*833 461.092*	*816 744.773*
R8a	*Macau Ferry Terminal*	*833 573*	*816 885*
*R15 **	*Kowloon South Pumping Station*	*833 982.630*	*818 282.101*
R16	*Kowloon Government Offices Building*	*834 335.800*	*817 769.145*
R17	*Canton Road Government Offices Building*	*834 364.658*	*817 802.847*
R28	*WSD Kennedy Town Salt Water Pumping Station*	*830 707*	*815 983*
R29	*WSD Sheung Wan Salt Water Pumping Station*	*833 414*	*816 745*
C1	*Control Station*	*830 797.729*	*819 163.377*
C2	*Control Station*	*836 350.628*	*817 135.218*
C3	*Control Station*	*829 495.126*	*817 228.312*
C4	*Control Station*	*836 638.773*	*816 686.030*

Remark (*): Station R15 = WSD Seawater Intake

Control stations, C2 and C4, should be the upstream control station for all impact monitoring stations at mid-flood and Control Stations, C1 and C3, should be the upstream control station for all monitoring stations at mid-ebb.

5.3 Monitoring Parameters

Monitoring parameters listed in Table 5.2 shall be monitored by the ET to ensure that any deteriorating water quality could be readily detected and timely action be taken to rectify the situation. Table 5.3 shows the other relevant water quality data recorded during the impact water quality monitoring.

Table 5.2 Water Quality Monitoring Parameters

In-situ measurement	*Laboratory analysis*
Dissolved Oxygen (DO) (mg/L)	*Suspended solids (SS) (mg/L)*
Turbidity (NTU)	

Table 5.3 Other relevant water quality parameters

Water Quality Parameters	
Tidal stages	*Water depth (m)*
Dissolved Oxygen saturation (%)	*Salinity (ppt)*
Temperature (℃)	*Weather Condition*

5.4 Monitoring Frequency

The frequency of impact water quality monitoring of water quality is summarized in Table 5.4.

Table 5.4 Monitoring Frequency of Impact Water Quality Monitoring

Frequency	*Monitoring Depth*
3 days/week, 2 tides/day	*For water depth greater than 6m: Three water depths (1m below Surface, mid-depth and 1m above bottom). For water depth less than 6m but greater than 3m: Two water depths: (1m below Surface and 1m above bottom). For water depth less than 3m: One water depth (Mid-depth)*

5.5 Monitoring Methodology and Equipment Used

Refer to the requirement in Appendix D2 "General Technical Requirements of Environmental Monitoring" (TM) in the Environmental Monitoring and Audit Guidelines for Development Projects in Hong Kong published by EPD, water samples for all monitoring parameter were collected, stored, preserved and analysed according to the Standard Method APHA 19ed.. In-situ measurements at monitoring locations including DO, turbidity, salinity and water depth were collected by equipment with the characteristic and functions listed as below:

Location of the monitoring stations

A hand-held digital Global Positioning System (GPS) was used to identify the designated monitoring stations prior to water sampling.

Water Depth measurement

A portable, battery-operated echo sounder was used for the determination of water depth at each designated monitoring station.

In-situ Water Quality Monitoring Equipment

All in-situ monitoring instruments shall be checked, calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme before use, and subsequently re-calibrated at 3 monthly intervals or sometimes longer throughout all stages of the water quality monitoring. Responses of sensors and electrodes should be checked with certified standard solutions before each use. Wet bulb calibration for a DO meter shall be carried out before measurement at each monitoring location.

Dissolved Oxygen, salinity and temperature measuring equipment

A portable, weatherproof dissolved oxygen & salinity measuring instrument, which complete with cable, sensor and DC power source (e.g. YSI 85 or equivalent) was used for measuring:

- a dissolved oxygen level in the range of 0-20 mg/L and 0-200 % saturation;
- a salinity in range 0-40 ppt; and
- a temperature of 0-45 degree Celsius

A membrane electrode with automatic temperature compensation complete with a cable was installed.

Turbidity Measurement Instrument

A portable, weatherproof turbidity-measuring instrument with DC power source was used. It has a photoelectric sensor capable of measuring turbidity between 0-1000 NTU and be complete with a cable (e.g. HACH model 2100P or equivalent)

Water Sampling and Sample Analysis

In-situ monitoring was carried out at three depths: 1 meter below water surface, at mid-depth and 1 meter above the seabed. If the water depth is less than 6 m, the mid-depth station shall be omitted and if the water depth is below 3 m, only the mid depth station shall be monitored.

A water sampler comprising a transparent PVC cylinder, with a capacity of not less than 2 litres, was lowered into the water body at the predetermined depth. The opening ends of the sampler were then closed accordingly and water samples were collected.

The sample container, made by high-density polythene, was rinsed with a portion of the water sample. The water sample was then transferred to the container, labelled with a unique sample ID and sealed with a screw cap. The water samples were stored in a cool box maintained at 4°C. The water samples were then delivered to Environmental Laboratory of ETS-Testconsult Ltd (HOKLAS Registration No. 022) on the same day for analysis.

5.6 Details of site Equipment used for In-situ Measurement

All in-situ monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme before use, and subsequently re-calibrated at 3 monthly intervals or sometimes longer throughout all stages of the water quality monitoring. Wet bulb calibration for a DO meter was carried out before measurement at each monitoring location.

Table 5.5 shows the equipment used for in-situ monitoring of water quality. The calibration certificates are attached in Appendix C1.

Table 5.5 Details of Monitoring Equipment (In-site measurement)

Parameter	*Model*	*Date of Calibration*	*Due Date*	*Equipment No.*	*Serial No.*
Coordinate of Monitoring stations	*Garmin eTrex 10*	-----	-----	*ET/EW/005/04*	*2DR099626*
Dissolved Oxygen (Saturation), Temperature and Salinity	*YSI Dissolved Oxygen, Salinity & Temperature Meter, YSI 85D*	*28/01/12*	*27/04/12*	*ET/EW/008/001**	*05L1285*
	YSI Dissolved Oxygen, Salinity & Temperature Meter, YSI Pro 2030	*13/02/12*	*12/05/12*	*ET/EW/008/004 **	*10F101978*
Turbidity	*HACH Model 2100P Turbid Meter*	*13/01/12 13/04/12*	*12/04/12 12/07/12*	*ET/0505/007**	*08060C030281*
Water Depth	*Speedtech Instrument SM-5A*	-----	-----	*ET/EW/002/04*	*56657*

Remark:(*) indicates the instrument should be calibrated on use.

5.7 Quality Assurance (QA) / Quality Control (QC) results and Determination Limits

At each measurement/sampling depth, two consecutive measurements of dissolved oxygen (DO), dissolved oxygen saturation (DOS), turbidity and salinity were taken. The probes were retrieved out of the water after the first measurement and then re-deployed for the second measurement. If the difference between the first and second measurement is greater than 25% the reading was discarded and the measurements were repeated.

At the laboratory analysis of water sample, test method of test parameter as required by the EM&A Manual, with the QA/QC results in accordance with the requirement of HOKLAS or international accredited scheme is shown in Table 5.6. For the QA/QC procedures, one QC sample, one duplicate sample and one sample spike of every batch of 20 samples were analysis. The QA/QC results are summarized in Appendix C4

Table 5.6 Summary of test method

Laboratory Analysis	*Testing Procedure*	*Method Detection Limit*
Total suspended solids	*In house method based on APHA 19th ed 2540D*	*1.0 mg/L*

5.8 Action and Limit Level

The water quality criteria, namely Action and Limit (A/L) levels are presented in the table below.

Table 5.7 Water Quality Action and Limit Levels

Parameter	*Action Level*	*Limit Level*
DO (mg/L) (Surface, Middle & Bottom)	*Surface, Middle & Bottom* *WSD Seawater Intakes 2 mg/L (For R15)* *Other Impact Monitoring Stations 5.65 mg/L (For R5, R6, R7, R8a, R16, R17, R28 and R29)*	*Surface & Middle* *WSD Seawater Intakes 2 mg/L (For R15)* *Other Impact Monitoring Stations 5.51 mg/L (For R5, R6, R7, R8a, R16, R17, R28 and R29)* *Bottom* *5.11 mg/L (For R15, R5, R6, R7, R8a, R16, R17, R28 and R29)*
SS (mg/L) (Depth-averaged)	*WSD Seawater Intakes 10 mg/L (For R15)* *Other Impact Monitoring Stations 12.7 mg/L (For R5, R6, R7, R8a, R16, R17, R28 and R29)*	*WSD Seawater Intakes 10 mg/L (For R15)* *Other Impact Monitoring Stations 12.7 mg/L (For R5, R6, R7, R8a, R16, R17, R28 and R29)*
Turbidity (NTU) (Depth-averaged)	*WSD Seawater Intakes 10 NTU* *Other Impact Monitoring Stations 6.48 NTU (For R5, R6, R7, R8a, R16, R17, R28 and R29)*	*WSD Seawater Intakes 10 NTU* *Other Impact Monitoring Stations 6.82 NTU (For R5, R6, R7, R8a, R16, R17, R28 and R29)*

Notes: 1. "depth-averaged" is calculated by taking the arithmetic means of reading of all three depths.
2. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
3. For turbidity and SS, non-compliance of water quality limits occurs when monitoring result is higher than the limits.
4. All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered as necessary.

5.9 Event and Action Plan

Please refer to the Appendix D for details.

5.10 Monitoring Duration and Period In this reporting month

Daily water quality monitoring duration are detailed in Appendix C2. Below is the time schedule for the water quality monitoring conducted in this reporting month.

Table 5.8 Schedule for Impact Water Quality Monitoring

April 2012						
Sunday	*Monday*	*Tuesday*	*Wednesday*	*Thursday*	*Friday*	*Saturday*
1	*2*	*3* ▼	*4*	*5* ▼	*6*	*7*
8	*9*	*10* ▼	*11*	*12* ▼	*13*	*14* ▼
15	*16*	*17* ▼	*18*	*19* ▼	*20*	*21* ▼
22	*23*	*24* ▼	*25*	*26* ▼	*27*	*28*
29	*30*					

Remarks: (▼) = Marine water quality monitoring carried out by ET.

5.11 Results

The impact water quality measurement results are detailed in Appendix C2. Appendix C3 presents the water quality monitoring data and graphical presentations of monitoring results respectively. The summary of marine water quality exceedances is shown in Table 5.9.

Table 5.9 Summary of Impact Marine Water Quality Exceedances in this reporting month

Exceedance Level	DO		Turbidity		SS		Cumulative	
	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb
Action	0	0	0	0	0	0	0	0
Limit	0	0	0	0	0	0	0	0

According to the summary of marine water monitoring results, no exceedances of Action and Limit levels were recorded for this reporting month.

6.0 ENVIRONMENTAL SITE INSPECTION

During this reporting month, weekly site inspections were undertaken on 03, 11, 16 and 26 April 2012 by ET. Monthly joint site inspection at 16 April 2012 was carried out by Engineer's Representative, IEC, WHPOJV and ET. A summary of implementation status of mitigation measures on site inspections is presented in Appendix G.

6.1 Summary of the ET weekly site inspection finding

According to the summary of the ET weekly site inspections carried out in April 2012, it indicated that site practices of the Contractor were generally undertaken in an environmentally acceptable manner and the overall site environmental performance was satisfactory. Summary of the site inspection findings in this reporting month is shown in Table 6.1.

Table 6.1 Summary of Site Inspection Findings

Item	Aspect	Finding	Action(s) taken by the Contractor	ET Verification	Status of finding
1	Water	Standing water was noted at a steel pile in Portion J during the weekly site inspection on 11/04/2012.	Standing water was removed during the inspection.	---	Closed

6.2 Recommendations on site inspection findings in Site Inspections of this month

Based on the site inspection findings, the recommendations are as below:

- *Minimize noise and dust impact due to construction works;*
- *Use and maintain silt curtain and silt screen properly;*
- *Adequate environmental control measures shall be provided to prevent / avoid dropping of dredged materials into the sea during the transfer;*
- *Implement all necessary preventive measures to avoid oil leakage. In the event an oil leakage happens, the Contractor should properly remove the leaked oil and handle the contaminated soil and all materials using for this cleaning works as chemical waste;*
- *Checking and maintaining all the site machines to prevent black smoke emission;*
- *Providing briefing to the concerned site staff on remedial actions, such as handling method of chemicals and chemical waste;*
- *Remove all stagnant water;*
- *Apply proper treatment facilities to wastewater before discharge; and*
- *Maintain good waste management at the site.*

7.0 STATUS OF ENVIRONMENTAL PERMITS

Permits/licenses valid in this reporting month are summarized in Table 7.1.

Table 7.1 Summary of Environmental Licensing and Permit valid in this reporting month

Description	Permit No.	Valid Period		Remarks
		From	To	
Environmental Permit	EP-273/2007	31/07/07	End of Project	Whole Project
Water Discharge Licence (West Kowloon)	WT00005347-2009	07/01/10	31/01/15	Effluent and all other wastewater arising from the construction site through Screen & Sedimentation Tank
Chemical Waste Producer	5213-217-W3086-01	13/10/09	End of Project	Spent oil, surplus flammable liquid, surplus paint, soil, rags & containers contaminated with lubricating oil, diesel, flammable liquid & paint, & used batteries
Notification under APCO	Application had been submitted to EPD on 25/09/09 and approved from 29/09/09.			
Construction Noise Permit (Sai Ying Pun)	GW-RS0338-12	29/03/12	28/09/12	**Group A** One Crane, mobile (diesel) (CNP 048) One Air compressor with Noise Emission Label showing a sound power level of ≤98dB(A) One Generator, silenced, ≤108dB(A) (CNP 101) **Group B** One Air compressor with Noise Emission Label showing a sound power level of ≤98dB(A) One Generator, silenced, ≤108dB(A) (CNP 101) **Group C** One Generator, silenced, ≤108dB(A) (CNP 101) One Derrick barge (CNP 061) One Guard boat One Tug boat (CNP 221) **Group D** One Generator, silenced, ≤108dB(A) (CNP 101) One Derrick barge (CNP 061) One Guard boat One Tug boat (CNP 221)
Construction Noise Permit (West Kowloon)	GW-RE0196-12	16/03/12	15/08/12	**Goup A** One Generator, standard (CNP 101) One Derrick barge (CNP 061) One Guard boat **Group B** Two Generator, standard (CNP 101) Two Derrick barge (CNP 061) One Guard boat One Tug boat (CNP 221) **Group C** One Water pump, submersible (electric) (CNP283) One Generator, standard (CNP 101) **Goup D** One Generator, standard (CNP 101) One Dredger, grab (CNP 063) One Guard boat **Goup E** One Generator, standard (CNP 101) One Dredger, grab (CNP 063) One Guard boat One Tug boat (CNP 221)

8.0 WASTE MANAGEMENT

8.1 Monthly Waste Summary

The quantities of waste generated from the Project in this month are summarized in Table 8.1.

Table 8.1 Summary of Quantities of Waste for Disposal in this reporting month

Type of Waste		*Quantity*	*Disposal Location*	*Cumulative Quantity*
Inert C&D Materials	*Total Quantity Generated (in m^3)*	*19.34*		*17077.29*
	Broken Concrete (in m^3)	*0*	---	*0*
	Reused in the Contract (in m^3)	*0*	---	*0*
	Reused in other Projects (in m^3)	*0*	---	*0*
	Disposal as Public Fill (in m^3)	*19.34*	*SENT Landfill*	*17077.29*
C&D Waste	*Metals (in kg)*	*0*	---	*0*
	Paper/Cardboard Packaging (in kg)	*13*	*Collected by recycling company*	*169*
	Plastics (in kg)	*0*	---	*0*
	Chemical Waste (in kg)	*0*	---	*3578*
	Other, e.g. General Refuse (in m^3)	*3.86*	*SENT Landfill*	*151.53*
Dredged Materials	*Type 1 (in m^3)*	*0*	*East Ninepin Mud Disposal Ground*	*160500*
	Type 2 (in m^3)	*0*	*The East Sha Chau*	*104990*

8.2 Advice on the Solid and Liquid Waste Management Status

The Contractor should provide sufficient preventive measures during equipment maintenance works so as to avoid oil leakage on the ground. In the event of any oil leakage, the Contractor should clean up the polluted soil and handle all the materials used for this cleaning works as chemical waste.

Besides, pre-cast drip trays were provided for oil drums at several areas, such as barge and chemical storage area. The Contractor should collect and dispose of any stagnant water accumulated in the drip trays and handle them as chemical waste.

The Contractor should use suitable containers with proper labels to store chemical wastes in accordance with Code of Practice on the Packaging, Labeling and Storage of Chemical Waste. The Contractor should also advise their workers of the proper procedures in handling the chemical waste.

All the trip tickets for chemical waste disposal were properly kept in the site office. No chemical waste disposal was undertaken in the reporting month.

The Contractor was reminded to increase the frequency of inspection and cleaning of the site drainage system, including desilting facilities. Moreover, the Contractor should apply approved pesticides in the stagnant water.

9.0 ENVIRONMENTAL NON-CONFORMANCE

9.1 Summary of Noise and Water Quality

No exceedance of Action and Limit Level of marine water quality monitoring results was recorded during the reporting month.

No exceedance of Action and Limit Level of noise monitoring was recorded in this reporting month.

9.2 Summary of Environmental Complaints

No complaint was received in this reporting month.

9.3 Summary of Notification of Summons and Prosecution

There was no notification of summons respect to environmental issues registered in this reporting month.

10.0 IMPLEMENTATION STATUS

10.1 Implementation Status of Environmental Mitigation Measures

An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is presented in Appendix G. Most of the necessary mitigation measures were implemented properly. Any deficiencies were noted in the remarks of the schedule.

10.2 Implementation Status of Event and Action Plan

Since no exceedance of Action and Limit Level of water quality monitoring results was recorded in this reporting month, no further action was required to be taken.

No exceedance of Action and Limit Level of noise monitoring was recorded in this reporting month. Hence, no further action was required.

10.3 Implementation Status of Environmental Complaint, Notifications of Summons and Successful Prosecutions Handling

No complaint, notification of summons and successful prosecution were received in this reporting month. A summary of environmental complaints, notifications of summons and successful prosecutions was given in Table 10.1.

Table 10.1 Summary of Environmental Complaints and Prosecutions

Complaints logged		*Summons served*		*Successful prosecution received*	
April 2012	*Cumulative*	*April 2012*	*Cumulative*	*April 2012*	*Cumulative*
0	*1*	*0*	*0*	*0*	*0*

11.0 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Impact monitoring of noise and water quality were carried out at designated locations in accordance with the EM&A Manual in this reporting month.

No exceedance of Action and Limit Level of water quality monitoring results was recorded during the reporting month.

No exceedance of Action and Limit Level of noise monitoring was recorded in this reporting month.

According to the ET weekly site inspections carried out in this reporting month, the Contractor generally implemented sufficient environmental mitigation measures.

No complaint, prosecution or notification of summon were received in this reporting month.

Recommendations

According to the environmental site inspections performed in the reporting month, the following recommendations were provided:

Air Quality

- Ensure the frequency of water spraying on unloading areas and stockpiles to be sufficient to suppress the dust sources;
- Provide proper maintenance for the powered mechanical equipment and barges to avoid emission of dark smoke; and
- Implement the dust mitigation measures for the site activities.

Noise

- Conduct noisy activities at a farther location from the NSRs.

Water Quality

- Maintain the drainage system regularly;
- Operate and maintain the silt curtains and silt screen regularly;

- Operate the cleaning vessel regularly;
- Provide proper treatment for the wastewater discharge;
- Clean up the fill material on the barge frequently; and
- Remove the stagnant water or provide approved pesticides for the stagnant water, if any.

Chemical and Waste Management

- Remove waste materials from the site to avoid accumulation regularly;
- Handle and store chemical wastes properly;
- Remove unwanted material in the existing stockpiles and avoid further dumping of such material;
- Provide and maintain sufficient drip trays for diesel drums, chemical containers, chemical waste storage drums and diesel operated generator set;
- Maintain good housekeeping at the works area; and
- Avoid soil being polluted during oil filling and equipment maintenance; hence, properly remove and store the contaminated soil, if any.

12.0 FUTURE KEY ISSUES

12.1 Work Programme for the Coming Month

As informed by the Contractor, the activities to be conducted by them in the next month included:

- *Re-instatement of the vertical seawall (Portion J); and*
- *Placing backfilling and armouring material (Portion I).*

12.2 Key Issues for the Coming Month

Key issues to be considered in the coming month include:

- *Noise and dust impact due to construction works;*
- *Use and maintain silt curtain and silt screen properly;*
- *Adequate environmental control measures shall be provided to prevent / avoid dropping of dredged materials into the sea during the transfer;*
- *Implement all necessary preventive measures to avoid oil leakage. In the event an oil leakage happens, the Contractor should properly remove the leaked oil and handle the contaminated soil and all materials using for this cleaning works as chemical waste; and*
- *Maintain good site practice to minimize environmental impacts at the site.*

Mitigation measures to be required in the coming month:

Air Quality Impact

- To ensure implementation of the dust mitigation measures for the site activities;
- To provide proper maintenance for vehicles and machines on site; and
- To investigate any other dust sources around the air sensitive receivers

Noise

- To switch off equipment if not in use;
- To operate silent equipment; and
- To re-schedule the work activities in the event of valid noise exceedance.

Water Quality Impact

- To maintain the drainage system;
- To repair, inspect and maintain the silt curtains and site screen regularly;
- To provide covers for the drip trays to avoid stagnant water due to rainfall;
- To provide proper treatment for wastewater from the area;
- To deploy a cleaning vessel to remove floating rubbish;
- To avoid dredged materials on the barge from being washed into the sea; and
- To avoid any stagnant water or provide insecticide to avoid mosquito breeding.

Chemical and Waste Management

- To remove waste from the site regularly;
- To properly store and handle chemical wastes on site;
- To implement trip ticket system for all the imported public fill and general refuse disposal;
- To provide and manage sufficiently sized drip trays for diesel drums or chemical containers;
- To maintain proper housekeeping;

- To remove the oil stains in the event of leakage and handle all materials using for this cleaning works as chemical waste; and
- To identify C&D material by packaging, labeling, storage, transportation and disposal in accordance with statutory regulations.

12.3 Monitoring Schedule for the Coming Month

The proposed EM&A program of the coming month is attached in Appendix I.

- END OF REPORT -

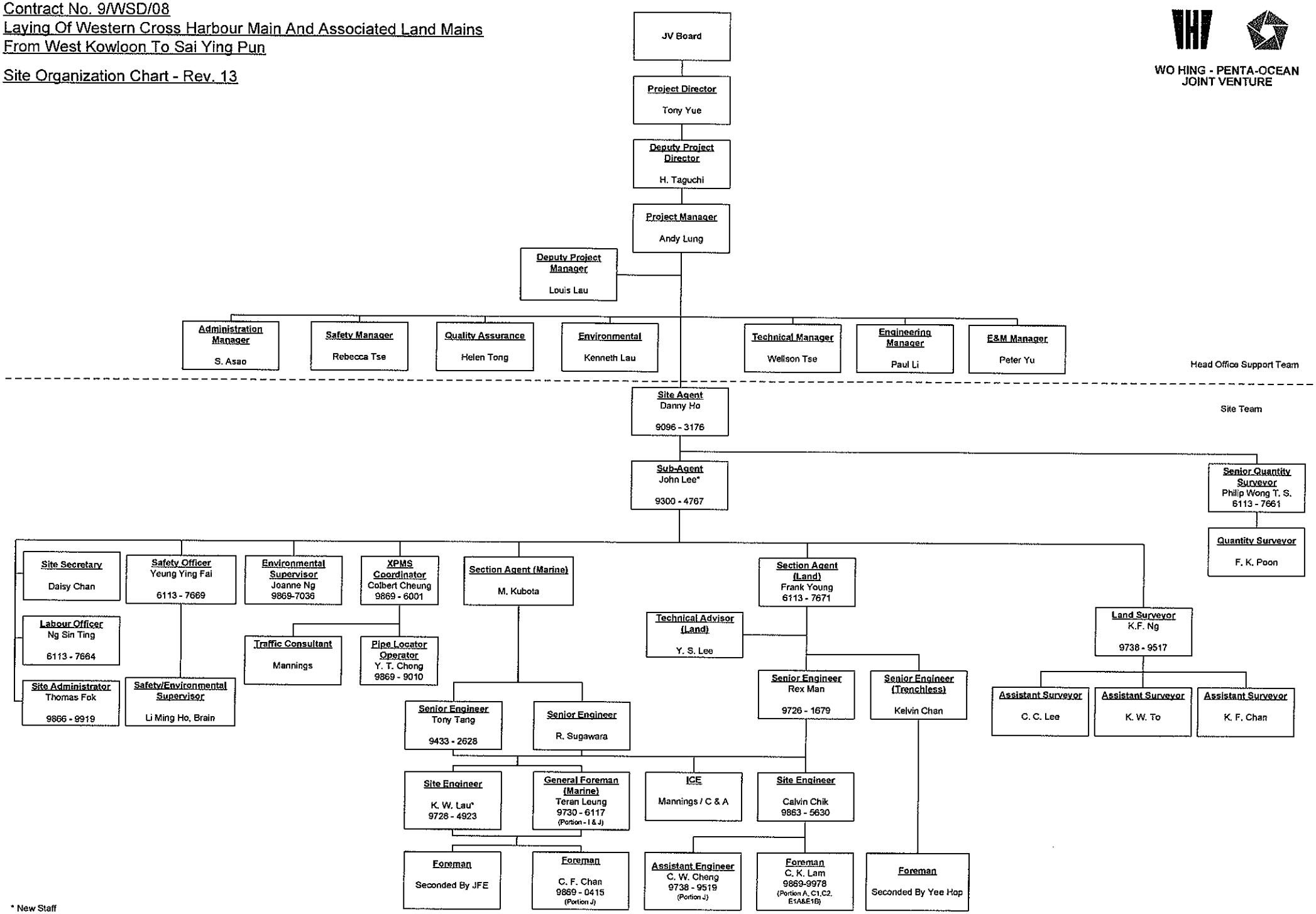
Appendix A

Organization Chart and Lines of Communication

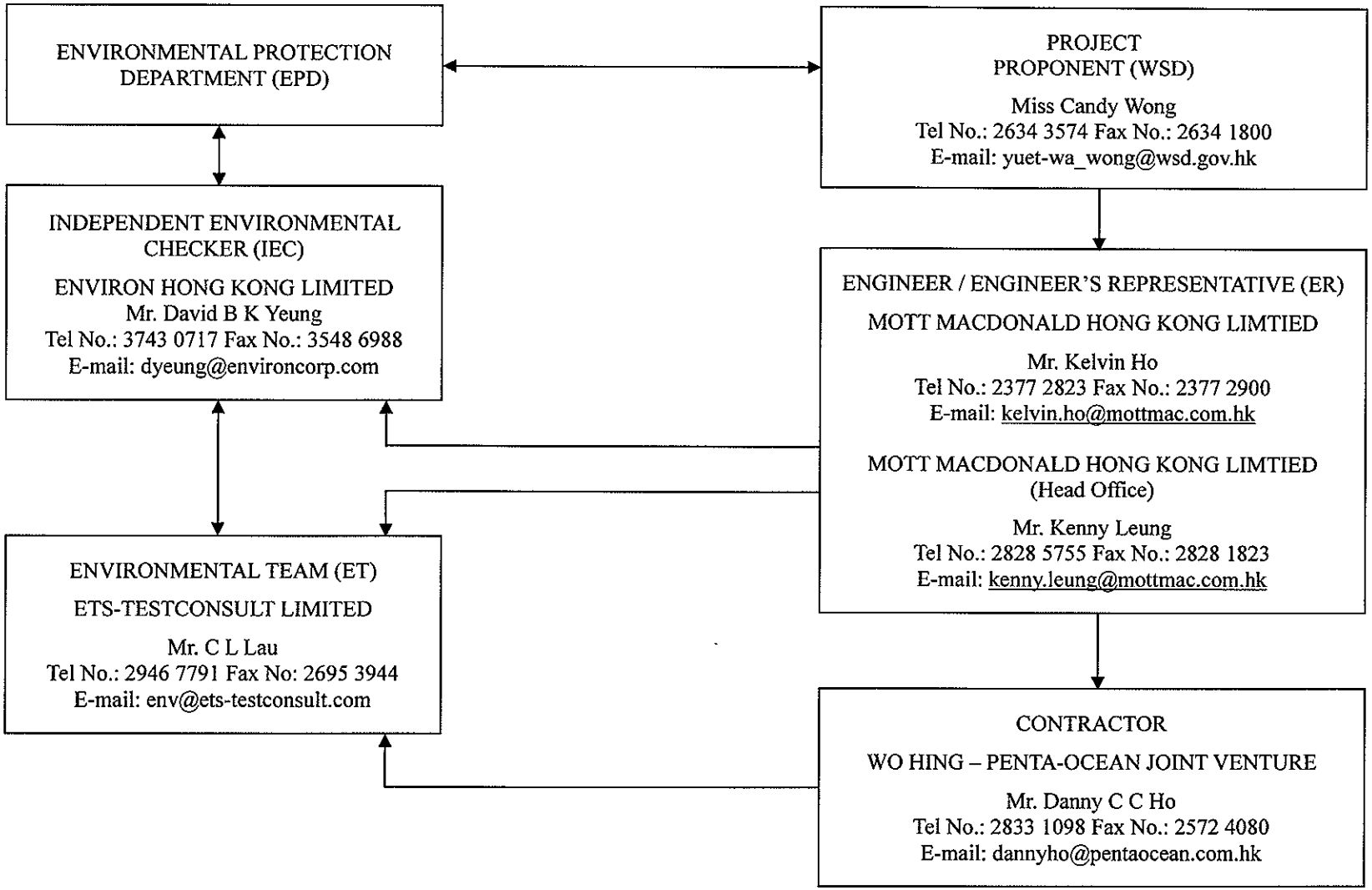
Contract No. 9/WSD/08
Laying Of Western Cross Harbour Main And Associated Land Mains
From West Kowloon To Sai Ying Pun

Site Organization Chart - Rev. 13

WO HING - PENTA-OCEAN JOINT VENTURE



* New Staff



Project	Laying of Western Cross Harbour Main and Associated Land Mains From West Kowloon to Sai Ying Pun - Investigation	Mott MacDonald
Title	Project Organization and Line of Communication	Figure 1.3a
Date Dec 2009		

Appendix B1

Calibration Certificates for Impact Noise Monitoring Equipment

Hong Kong Calibration Ltd.
香港校正有限公司

ET/EN/003/06

Calibration Certificate

Certificate No. **12016** Page 1 of 3 Pages

Customer : ETS-Testconsult Limited

Address : 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

Order No. : Q10853 **Date of receipt :** 11-Apr-11

Item Tested

Description : Precision Integrating Sound Level Meter

Manufacturer : Rion

Model : NL-31 **Serial No. :** 00110024

Test Conditions

Date of Test : 15-Apr-11 **Supply Voltage :** --

Ambient Temperature : (23 ± 3)°C **Relative Humidity :** (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : Z01.

Test Results

All results were within the IEC 651 Type 1 & IEC 804 Type 1 specification.

The results are shown in the attached page(s).

Main Test equipment used:

Equipment No.	Description	Cert. No.	Traceable to
S017	Multi-Function Generator	C101623	SCL-HKSAR
S024	Sound Level Calibrator	04062	NIM-PRC & SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance 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 measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).
The test results apply to the above Unit-Under-Test only

Calibrated by : P. F. Wong

Approved by : Dorothy Cheuk

Date: 18-Apr-11

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street,Kwai Chung, NT,Hong Kong.
Tel: 2425 8801 Fax: 2425 8646

Calibration Certificate

Results :

1. SPL Accuracy

UUT Setting			Applied Value (dB)	UUT Reading (dB)
Level Range (dB)	Weight	Response		
20 – 100	L_A	Fast	94.0	94.2
		Slow		94.2
	L_C	Fast		94.2
	Lp	Fast		94.2
30 – 120	L_A	Fast	94.0	94.1
		Slow		94.1
	L_C	Fast		94.1
	Lp	Fast		94.2
30 – 120	L_A	Fast	114.0	114.0
		Slow		114.0
	L_C	Fast		114.0
	Lp	Fast		114.1

IEC 651 Type 1 Spec. : ± 0.7 dB
Uncertainty : ± 0.2 dB

2. Level Stability : 0.0 dB

IEC 651 Type 1 Spec. : ± 0.3 dB
Uncertainty : ± 0.1 dB

3. Linearity

3.1 Level Linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec. (Primary Indicator Range)
130	114.0	114.2	+0.1	± 0.7 dB
130	104.0	104.2	+0.1	
120	94.0	94.1(Ref.)	- -	
110	84.0	84.0	-0.1	
100	74.0	74.2	+0.1	
90	64.0	64.1	0.0	
80	54.0	53.9	-0.1	

Uncertainty : ± 0.1 dB

Calibration Certificate

3.2 Differential level linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec.
120	84.0	84.1	0.0	± 0.4 dB
	94.0	94.1 (Ref.)	- -	
	95.0	95.1	0.0	± 0.2 dB

Uncertainty : ± 0.1 dB

4. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-40.0	- 39.4 dB, ± 1.5 dB
63 Hz	-26.6	- 26.2 dB, ± 1.5 dB
125 Hz	-16.5	- 16.1 dB, ± 1 dB
250 Hz	-8.9	- 8.6 dB, ± 1 dB
500 Hz	-3.4	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+1.6	+ 1.2 dB, ± 1 dB
4 kHz	+1.5	+ 1.0 dB ,± 1 dB
8 kHz	-0.7	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	-6.3	- 6.6 dB, + 3 dB ~- ∞

Uncertainty : ± 0.1 dB

5. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	40.0	40.0	--
1/10	40.0	40.0	± 0.5 dB
$1/10^2$	40.0	39.9	
$1/10^3$	40.0	40.0	± 1.0 dB
$1/10^4$	40.0	39.9	

Uncertainty : ± 0.1 dB

Remark : 1. UUT : Unit-Under-Test
2. The uncertainty claimed is for a confidence probability of not less than 95%.
3. Atmospheric Pressure : 1 010 hPa.

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

Hong Kong Calibration Ltd.
香港校正有限公司

ET/EN/003/06

Calibration Certificate

Certificate No. 22085 Page 1 of 3 Pages

Customer : ETS-Testconsult Limited

Address : 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

Order No. : Q20865 **Date of receipt :** 11-Apr-12

Item Tested

Description : Precision Integrating Sound Level Meter

Manufacturer : Rion

Model : NL-31 **Serial No. :** 00110024

Test Conditions

Date of Test : 16-Apr-12 **Supply Voltage :** --

Ambient Temperature : (23 ± 3)°C **Relative Humidity :** (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : Z01.

Test Results

All results were within the IEC 651 Type 1 & IEC 804 Type 1 specification.

The results are shown in the attached page(s).

Main Test equipment used:

Equipment No.	Description	Cert. No.	Traceable to
S017	Multi-Function Generator	C101623	SCL-HKSAR
S024	Sound Level Calibrator	15136	NIM-PRC & SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance 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 measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).
The test results apply to the above Unit-Under-Test only

Calibrated by : P. F. Wong

Approved by : Dorothy Cheuk

Date: 16-Apr-12

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street,Kwai Chung, NT,Hong Kong.
Tel: 2425 8801 Fax: 2425 8646

Calibration Certificate

Results :

1. SPL Accuracy

UUT Setting			Applied Value (dB)	UUT Reading (dB)
Level Range (dB)	Weight	Response		
20 – 100	L_A	Fast	94.0	94.0
		Slow		94.0
	L_C	Fast		94.0
	Lp	Fast		94.1
30 – 120	L_A	Fast	94.0	94.0
		Slow		94.0
	L_C	Fast		94.0
	Lp	Fast		94.0
30 – 120	L_A	Fast	114.0	114.1
		Slow		114.1
	L_C	Fast		114.1
	Lp	Fast		114.1

IEC 651 Type 1 Spec. : ± 0.7 dB
Uncertainty : ± 0.2 dB

2. Level Stability : 0.1 dB

IEC 651 Type 1 Spec. : ± 0.3 dB
Uncertainty : ± 0.1 dB

3. Linearity

3.1 Level Linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec. (Primary Indicator Range)
130	114.0	114.0	0.0	± 0.7 dB
130	104.0	104.0	0.0	
120	94.0	94.0 (Ref.)	- -	
110	84.0	84.1	+0.1	
100	74.0	74.1	+0.1	
90	64.0	64.1	+0.1	
80	54.0	54.1	+0.1	

Uncertainty : ± 0.1 dB

Calibration Certificate

3.2 Differential level linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec.
120	84.0	84.1	+0.1	± 0.4 dB
	94.0	94.0 (Ref.)	- -	
	95.0	95.0	0.0	± 0.2 dB

Uncertainty : ± 0.1 dB

4. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-39.6	- 39.4 dB, ± 1.5 dB
63 Hz	-26.0	- 26.2 dB, ± 1.5 dB
125 Hz	-16.1	- 16.1 dB, ± 1 dB
250 Hz	-8.6	- 8.6 dB, ± 1 dB
500 Hz	-3.1	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+1.4	+ 1.2 dB, ± 1 dB
4 kHz	+1.2	+ 1.0 dB ,± 1 dB
8 kHz	-1.0	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	-6.6	- 6.6 dB, + 3 dB ~ ∞

Uncertainty : ± 0.1 dB

5. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	40.0	40.0	--
1/10	40.0	39.9	± 0.5 dB
$1/10^2$	40.0	39.9	
$1/10^3$	40.0	40.0	± 1.0 dB
$1/10^4$	40.0	40.3	

Uncertainty : ± 0.1 dB

Remark : 1. UUT : Unit-Under-Test
2. The uncertainty claimed is for a confidence probability of not less than 95%.
3. Atmospheric Pressure : 1 005 hPa.

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

ET/EN/003/10

Hong Kong Calibration Ltd.
香港校正有限公司

Calibration Certificate

Certificate No. 12737 Page 1 of 4 Pages

Customer : ETS-Testconsult Limited

Address : 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

Order No. : Q11169 **Date of receipt :** 20-May-11

Item Tested

Description : Precision Integrating Sound Level Meter

Manufacturer : Rion

Model : NL-31 **Serial No. :** 00531142

Test Conditions

Date of Test : 24-May-11 **Supply Voltage :** --

Ambient Temperature : (23 ± 3)°C **Relative Humidity :** (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : Z01.

Test Results

All results were within the IEC 651 Type 1 & IEC 804 Type 1 specification.

The results are shown in the attached page(s).

Main Test equipment used:

Equipment No.	Description	Cert. No.	Traceable to
S017	Multi-Function Generator	C101623	SCL-HKSAR
S024	Sound Level Calibrator	04062	NIM-PRC & SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance 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 measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).
The test results apply to the above Unit-Under-Test only

Calibrated by : P.F. Wong

Approved by : Dorothy Cheuk

Date: 25-May-11

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street,Kwai Chung, NT,Hong Kong.
Tel: 2425 8601 Fax: 2425 8646

Calibration Certificate

Results :

1. SPL Accuracy

UUT Setting			Applied Value (dB)	UUT Reading (dB)
Level Range (dB)	Weight	Response		
20 – 100	L_A	Fast	94.0	94.0
		Slow		93.9
	L_C	Fast		94.0
	Lp	Fast		94.0
30 – 120	L_A	Fast	94.0	94.0
		Slow		93.9
	L_C	Fast		94.0
	Lp	Fast		94.0
30 – 120	L_A	Fast	114.0	114.0
		Slow		113.9
	L_C	Fast		114.0
	Lp	Fast		114.0

IEC Type 1 Spec. : ± 0.7 dB
Uncertainty : ± 0.1 dB

2. Level Stability : 0.0 dB
IEC 651 Type 1 Spec. : ± 0.3 dB
Uncertainty : ± 0.1 dB

Calibration Certificate

3. Linearity

3.1 Level Linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec. (Primary Indicator Range)
130	114.0	114.0	0.0	± 0.7 dB
130	104.0	104.0	0.0	
120	94.0	94.0 (Ref.)	--	
110	84.0	84.0	0.0	
100	74.0	74.0	0.0	
90	64.0	64.1	+0.1	
80	54.0	54.1	+0.1	

Uncertainty : ± 0.1 dB

3.2 Differential level linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec.
120	84.0	84.0	0.0	± 0.4 dB
	94.0	94.0 (Ref.)	--	
	95.0	95.0	0.0	± 0.2 dB

Uncertainty : ± 0.1 dB

4. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-39.6	- 39.4 dB, ± 1.5 dB
63 Hz	-26.2	- 26.2 dB, ± 1.5 dB
125 Hz	-16.2	- 16.1 dB, ± 1 dB
250 Hz	-8.7	- 8.6 dB, ± 1 dB
500 Hz	-3.2	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+1.3	+ 1.2 dB, ± 1 dB
4 kHz	+1.1	+ 1.0 dB ,± 1 dB
8 kHz	-1.1	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	-6.7	- 6.6 dB, + 3 dB ~- ∞

Uncertainty : ± 0.1 dB

Calibration Certificate

4. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	40.0	40.0	--
1/10	40.0	39.9	± 0.5 dB
$1/10^2$	40.0	39.9	
$1/10^3$	40.0	39.9	± 1.0 dB
$1/10^4$	40.0	39.8	

Uncertainty : ± 0.1 dB

Remark : 1. UUT : Unit-Under-Test
2. The uncertainty claimed is for a confidence probability of not less than 95%.
3. Atmospheric Pressure : 1 003 hPa.
4. The internal cal. Reference of UUT was drifted from 94.0 dB to 93.0 dB

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

Hong Kong Calibration Ltd.
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Calibration Certificate

Certificate No. 15347 Page 1 of 3 Pages

Customer : ETS-Testconsult Limited

Address : 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

Order No. : Q12215 **Date of receipt :** 7-Sep-11

Item Tested

Description : Precision Integrating Sound Level Meter (ET/EN/003/13)

Manufacturer : Rion

Model : NL-31 **Serial No. :** 00593620

Test Conditions

Date of Test : 8-Sep-11 **Supply Voltage :** --

Ambient Temperature : (23 ± 3)°C **Relative Humidity :** (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : Z01.

Test Results

All results were within the IEC 651 Type1 and IEC 804 Type2 specification.

The results are shown in the attached page(s).

Main Test equipment used:

Equipment No.	Description	Cert. No.	Traceable to
S017A	Multi-Function Generator	07279	SCL-HKSAR
S024	Sound Level Calibrator	04062	NIM-PRC & SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance 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 measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).
The test results apply to the above Unit-Under-Test only

Calibrated by : P. F. Wong

Approved by : Dorothy Cheuk

Date: 8-Sep-11

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street,Kwai Chung, NT,Hong Kong.
Tel: 2425 8801 Fax: 2425 8646

Calibration Certificate

Results :

1. SPL Accuracy

UUT Setting			Applied Value (dB)	UUT Reading (dB)
Level Range (dB)	Weight	Response		
20 – 100	L_A	Fast	94.0	93.7
		Slow		93.7
	L_C	Fast		93.9
	Lp	Fast		93.9
30 – 120	L_A	Fast	94.0	93.7
		Slow		93.7
	L_C	Fast		93.8
	Lp	Fast		93.8
30 – 120	L_A	Fast	114.0	113.6
		Slow		113.6
	L_C	Fast		113.7
	Lp	Fast		113.7

IEC 651 Type 1 Spec. : ± 0.7 dB
Uncertainty : ± 0.1 dB

2. Level Stability : 0.1 dB
IEC 651 Type 1 Spec. : ± 0.3 dB
Uncertainty : ± 0.1 dB

3. Linearity

3.1 Level Linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec. (Primary Indicator Range)
130	114.0	113.7	0.0	± 0.7 dB
130	104.0	103.7	0.0	
120	94.0	93.7(Ref.)	- -	
110	84.0	83.7	0.0	
100	74.0	73.8	+0.1	
90	64.0	63.8	+0.1	
80	54.0	53.5	-0.2	

Uncertainty : ± 0.1 dB

Calibration Certificate

3.2 Differential level linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec.
120	84.0	83.7	0.0	± 0.4 dB
	94.0	93.7 (Ref.)	- -	
	95.0	94.7	0.0	± 0.2 dB

Uncertainty : ± 0.1 dB

4. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-39.5	- 39.4 dB, ± 1.5 dB
63 Hz	-26.3	- 26.2 dB, ± 1.5 dB
125 Hz	-16.2	- 16.1 dB, ± 1 dB
250 Hz	-8.6	- 8.6 dB, ± 1 dB
500 Hz	-3.2	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+1.4	+ 1.2 dB, ± 1 dB
4 kHz	+1.2	+ 1.0 dB ,± 1 dB
8 kHz	-1.1	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	-6.6	- 6.6 dB, + 3 dB ~- ∞

Uncertainty : ± 0.1 dB

5. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	40.0	40.0	--
1/10	40.0	39.9	± 0.5 dB
$1/10^2$	40.0	39.9	
$1/10^3$	40.0	39.9	± 1.0 dB
$1/10^4$	40.0	40.0	

Uncertainty : ± 0.1 dB

Remark : 1. UUT : Unit-Under-Test
2. The uncertainty claimed is for a confidence probability of not less than 95%.
3. Atmospheric Pressure : 1 000 hPa.
4. The internal calibration reference of UUT was drifted from 94.0 dB to 94.5 dB

Hong Kong Calibration Ltd.
香港校正有限公司

ET/EN/002/01

Calibration Certificate

Certificate No. **16578** Page 1 of 2 Pages

Customer : ETS-Testconsult Limited

Address : 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

Order No. : Q12677 **Date of receipt :** 2-Nov-11

Item Tested

Description : Sound Level Calibrator
Manufacturer : Rion
Model : NC-73 **Serial No. :** 10196943

Test Conditions

Date of Test : 7-Nov-11 **Supply Voltage :** --
Ambient Temperature : (23 ± 3)°C **Relative Humidity :** (50 ± 25) %

Test Specifications

Calibration check.
Ref. Document/Procedure : F21, Z02.

Test Results

All results were within the manufacturer's specification.
The results are shown in the attached page(s).

Main Test equipment used:

Equipment No.	Description	Cert. No.	Traceable to
S014	Spectrum Analyzer	13535	NIM-PRC & SCL-HKSAR
S024	Sound Level Calibrator	15136	NIM-PRC & SCL-HKSAR
S041	Universal Counter	15610	SCL-HKSAR
S206	Sound Level Meter	04462	SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance 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 measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).
The test results apply to the above Unit-Under-Test only

Calibrated by : P. F. Wong **Approved by :** Dorothy Cheuk

Date: 7-Nov-11

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street,Kwai Chung, NT,Hong Kong.
Tel: 2425 8601 Fax: 2425 8646

E

Calibration Certificate

Results :

1. Level Accuracy (at 1 kHz)

UUT Nominal Value	Measured Value	Mfr's Spec.
94 dB	94.21 dB	± 1 dB

Uncertainty : ± 0.2 dB

2. Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's Spec.
1 kHz	0.989 kHz	± 2 %

Uncertainty : ± 0.1 %

3. Level Stability : 0.0 dB
Uncertainty : ± 0.01 dB

4. Total Harmonic Distortion : < 0.4 %
Mfr's Spec. : < 3 %
Uncertainty : ± 2.3 % of reading

Remark : 1. UUT : Unit-Under-Test
2. The uncertainty claimed is for a confidence probability of not less than 95%.
3. The above measured values were the mean of 3 measurements.
4. Atmospheric Pressure : 1 005 hPa

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

Hong Kong Calibration Ltd.
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ET/EN/001/03

Calibration Certificate

Certificate No. 16576 Page 1 of 2 Pages

Customer : ETS-Testconsult Limited

Address : 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

Order No. : Q12677 **Date of receipt :** 2-Nov-11

Item Tested

Description : Anemometer
Manufacturer : AZ Instrument
Model : AZ 8908 **Serial No. :** 9101259

Test Conditions

Date of Test : 10-Nov-11 **Supply Voltage :** --
Ambient Temperature : (23 ± 3)°C **Relative Humidity :** (50 ± 25) %

Test Specifications

Calibration check.
Ref. Document/Procedure: T03, Z04.

Test Results

A correction factor of x 1.1 applied to velocity function is required to bring the meter reading to within the manufacturer's specification.
The results are shown in the attached page(s).

Main Test equipment used:

Equipment No.	Description	Cert. No.	Traceable to
S223A	Std. Thermometer	13173	NIM-PRC
S155	Std. Anemometer	NSC20113098	NIM-PRC

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance 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 measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).
The test results apply to the above Unit-Under-Test only

Calibrated by : S. K. Tang **Approved by :** Steve Kwan

Date: 10-Nov-11

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.
Tel: 2425 8801 Fax: 2425 8646

Hong Kong Calibration Ltd.
香港校正有限公司

Calibration Certificate

Certificate No. 16576

Results :

1. Velocity

Applied Value (m/s)	UUT Reading (m/s)	Corrected Reading (UUT Reading x 1.1) (m/s)	Mfr's Spec.
2.50	2.3	2.5	± (3 % of reading + 1 dgt)
5.00	4.6	5.1	
10.00	9.4	10.3	
15.00	14.0	15.4	
20.00	18.8	20.7	

2. Temperature

Applied Value (°C)	UUT Reading (°C)	Mfr's Spec.
5.68	5.7	± 1 °C
25.98	25.7	
47.80	47.1	

Remark : 1. UUT: Unit-Under-Test
2. Uncertainty : ± (0.9% + 0.16 m/s) for Velocity, ± 0.25 °C for Temperature, for a confidence probability of not less than 95%.
3. Atmospheric Pressure : 1 002 hPa

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

Appendix B2

Impact Noise Monitoring Results

Day-time Noise Monitoring

Monitoring Station: KS6 (Podium at the Culliman)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
02/04/12	Cloudy	10:50	11:20	62.1	63.5	57.7	1.3
13/04/12	Fine	17:15	17:45	64.1	66.5	62.3	0.2
18/04/12	Cloudy	17:15	17:45	62.4	63.8	59.1	1.4
24/04/12	Cloudy	10:15	10:45	64.1	66.3	59.1	0.6

Monitoring Station: CGa (Pavement in front of Connaught Garden)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
02/04/12	Cloudy	15:15	15:45	74.9	76.9	64.1	0.4
11/04/12	Fine	11:15	11:45	74.4	76.3	66.7	0.1
18/04/12	Cloudy	13:40	14:10	74.7	77.3	65.2	0.5
25/04/12	Cloudy	11:15	11:45	73.8	77.3	64.9	0.5

Monitoring Station: RWM (Roof at Richwealth Mansion)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
02/04/12	Cloudy	15:50	16:20	65.0	67.2	61.4	0.5
11/04/12	Fine	10:40	11:10	63.7	65.2	61.1	0.2
18/04/12	Cloudy	14:15	14:45	65.3	67.4	61.7	0.6
25/04/12	Cloudy	10:45	11:15	63.3	64.5	61.1	0.8

Monitor ing Station: KY3 (Roof at Kwan Yik Building Phase 3)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
02/04/12	Cloudy	16:25	16:55	63.7	65.0	61.1	0.5
11/04/12	Fine	10:05	10:35	61.8	63.4	60.2	0.2
18/04/12	Cloudy	14:55	15:25	64.1	66.3	61.4	0.6
25/04/12	Cloudy	10:15	10:45	61.3	63.9	59.4	1.1

Evening-time Noise Monitoring

Monitoring Station: KS6 (Podium at the Culliman)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
01/04/12	Fine	20:30	20:35	63.8	65.5	57.7	0.3
01/04/12	Fine	20:35	20:40	63.3	65.1	57.4	0.3
01/04/12	Fine	20:40	20:45	63.5	65.4	57.3	0.3
14/04/12	Cloudy	19:25	19:30	64.1	66.2	57.9	0.3
14/04/12	Cloudy	19:30	19:35	63.3	65.2	57.3	0.3
14/04/12	Cloudy	19:35	19:40	63.5	65.6	57.4	0.3
21/04/12	Cloudy	19:25	19:30	62.4	63.6	57.5	0.8
21/04/12	Cloudy	19:30	19:35	61.9	62.8	56.7	0.9
21/04/12	Cloudy	19:35	19:40	62.0	63.2	57.1	1.1
27/04/12	Cloudy	19:00	19:05	66.1	68.2	62.7	1.0
27/04/12	Cloudy	19:05	19:10	65.8	67.3	62.2	1.0
27/04/12	Cloudy	19:10	19:15	65.3	67.5	62.1	1.0

Monitoring Station: CGa (Pavement in front of Connaught Garden)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
01/04/12	Cloudy	19:15	19:20	69.4	72.3	62.0	0.1
01/04/12	Cloudy	19:20	19:25	68.2	71.9	61.4	0.1
01/04/12	Cloudy	19:25	19:30	68.5	72.0	61.4	0.1
14/04/12	Cloudy	20:05	20:10	69.6	72.5	62.3	0.2
14/04/12	Cloudy	20:10	20:15	69.1	72.1	61.8	0.1
14/04/12	Cloudy	20:15	20:20	69.0	71.9	61.7	0.2
21/04/12	Cloudy	20:15	20:20	67.7	69.0	63.4	1.1
21/04/12	Cloudy	20:20	20:25	67.5	68.8	63.1	0.9
21/04/12	Cloudy	20:25	20:30	67.9	69.4	63.5	1.0
27/04/12	Cloudy	21:10	21:15	69.7	72.9	65.0	0.8
27/04/12	Cloudy	21:15	21:20	69.9	73.0	65.2	0.8
27/04/12	Cloudy	21:20	21:25	69.6	72.5	64.9	0.8

Monitoring Station: RWM (Roof at Richwealth Mansion)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
01/04/12	Cloudy	19:35	19:40	67.9	71.4	61.9	0.1
01/04/12	Cloudy	19:40	19:45	67.8	71.2	61.7	0.1
01/04/12	Cloudy	19:45	19:50	67.4	71.1	61.5	0.1
14/04/12	Cloudy	20:25	20:30	68.1	70.8	61.0	0.2
14/04/12	Cloudy	20:30	20:35	68.7	71.5	61.6	0.2
14/04/12	Cloudy	20:35	20:40	68.4	71.0	61.3	0.2
21/04/12	Cloudy	20:35	20:40	68.1	69.6	64.0	0.8
21/04/12	Cloudy	20:40	20:45	68.4	69.9	64.3	1.2
21/04/12	Cloudy	20:45	20:50	68.2	69.8	64.1	1.1
27/04/12	Cloudy	20:50	20:55	69.3	72.2	64.5	0.6
27/04/12	Cloudy	20:55	21:00	69.5	72.1	64.7	0.6
27/04/12	Cloudy	21:00	21:05	69.8	72.5	64.3	0.6

Evening-time Noise Monitoring

Monitoring Station: KY3 (Roof at Kwan Yik Building Phase 3)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
01/04/12	Cloudy	19:55	20:00	65.9	68.5	60.8	0.1
01/04/12	Cloudy	20:00	20:05	65.1	67.9	60.3	0.1
01/04/12	Cloudy	20:05	20:10	64.9	67.7	60.4	0.1
14/04/12	Cloudy	20:45	20:50	66.0	68.3	61.0	0.2
14/04/12	Cloudy	20:50	20:55	65.3	67.4	60.4	0.2
14/04/12	Cloudy	20:55	21:00	65.6	67.8	60.6	0.2
21/04/12	Cloudy	20:55	21:00	68.3	69.9	64.2	1.2
21/04/12	Cloudy	21:00	21:05	67.8	69.4	63.6	1.2
21/04/12	Cloudy	21:05	21:10	67.6	69.1	63.1	1.0
27/04/12	Cloudy	20:30	20:35	67.3	70.8	63.8	0.7
27/04/12	Cloudy	20:35	20:40	67.5	71.1	64.0	0.7
27/04/12	Cloudy	20:40	20:45	67.1	70.9	63.7	0.7

Holiday-time Noise Monitoring

Monitoring Station: KS6 (Podium at the Culliman)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
01/04/12	Cloudy	08:15	08:20	60.9	63.8	54.8	0.1
01/04/12	Cloudy	08:20	08:25	60.7	63.9	55.0	0.1
01/04/12	Cloudy	08:25	08:30	61.0	63.9	54.9	0.1
06/04/12	Cloudy	08:50	08:55	61.8	63.1	58.6	0.4
06/04/12	Cloudy	08:55	09:00	61.5	62.9	58.2	0.4
06/04/12	Cloudy	09:00	09:05	61.6	62.7	58.3	0.4
15/04/12	Fine	09:50	09:55	60.4	63.0	54.7	0.3
15/04/12	Fine	09:55	10:00	60.9	63.7	55.1	0.3
15/04/12	Fine	10:00	10:05	60.5	63.2	54.7	0.3
22/04/12	Sunny	09:25	09:30	61.1	62.7	57.3	1.1
22/04/12	Sunny	09:30	09:35	61.4	62.9	57.4	1.2
22/04/12	Sunny	09:35	09:40	61.2	62.7	57.2	1.2
28/04/12	Cloudy	13:30	13:35	64.8	66.9	62.4	1.2
28/04/12	Cloudy	13:35	13:40	65.1	67.0	62.8	1.2
28/04/12	Cloudy	13:40	13:45	64.9	66.8	62.6	1.2

Monitoring Station: CGa (Pavement in front of Connaught Garden)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
01/04/12	Cloudy	11:45	11:50	69.8	72.5	65.6	0.1
01/04/12	Cloudy	11:50	11:55	69.7	72.2	65.4	0.1
01/04/12	Cloudy	11:55	12:00	69.5	72.3	64.9	0.1
06/04/12	Cloudy	10:40	10:45	68.7	71.4	64.9	0.2
06/04/12	Cloudy	10:45	10:50	68.9	71.6	65.2	0.2
06/04/12	Cloudy	10:50	10:55	68.5	71.3	65.0	0.2
15/04/12	Fine	10:35	10:40	68.3	70.8	64.8	0.2
15/04/12	Fine	10:40	10:45	69.1	71.4	65.3	0.1
15/04/12	Fine	10:45	10:50	68.5	71.0	64.9	0.1
22/04/12	Sunny	10:15	10:20	68.0	69.4	64.2	0.9
22/04/12	Sunny	10:20	10:25	67.7	68.9	63.6	0.9
22/04/12	Sunny	10:25	10:30	67.8	69.0	63.6	0.8
28/04/12	Cloudy	14:30	14:35	69.8	73.8	63.6	0.8
28/04/12	Cloudy	14:35	14:40	70.0	74.0	63.8	0.8
28/04/12	Cloudy	14:40	14:45	69.7	74.0	63.7	0.8

Monitoring Station: RWM (Roof at Richwealth Mansion)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
01/04/12	Cloudy	13:00	13:05	61.1	63.8	59.7	0.3
01/04/12	Cloudy	13:05	13:10	61.4	63.9	59.9	0.3
01/04/12	Cloudy	13:10	13:15	61.0	63.6	59.5	0.3
06/04/12	Cloudy	10:20	10:25	62.4	65.5	60.8	0.5
06/04/12	Cloudy	10:25	10:30	62.2	65.3	60.5	0.5
06/04/12	Cloudy	10:30	10:35	62.2	65.4	60.5	0.5
15/04/12	Fine	10:55	11:00	62.6	65.1	60.5	0.2
15/04/12	Fine	11:00	11:05	62.0	64.5	59.9	0.2
15/04/12	Fine	11:05	11:10	62.5	64.9	60.3	0.2
22/04/12	Sunny	10:35	10:40	63.2	64.7	58.8	1.3
22/04/12	Sunny	10:40	10:45	62.9	64.1	58.5	1.4
22/04/12	Sunny	10:45	10:50	62.7	63.9	58.2	1.2
28/04/12	Cloudy	14:50	14:55	62.5	64.6	59.0	1.0
28/04/12	Cloudy	14:55	15:00	62.3	64.5	59.1	1.0
28/04/12	Cloudy	15:00	15:05	62.6	65.0	59.3	1.0

Holiday-time Noise Monitoring

Monitoring Station: KY3 (Roof at Kwan Yik Building Phase 3)

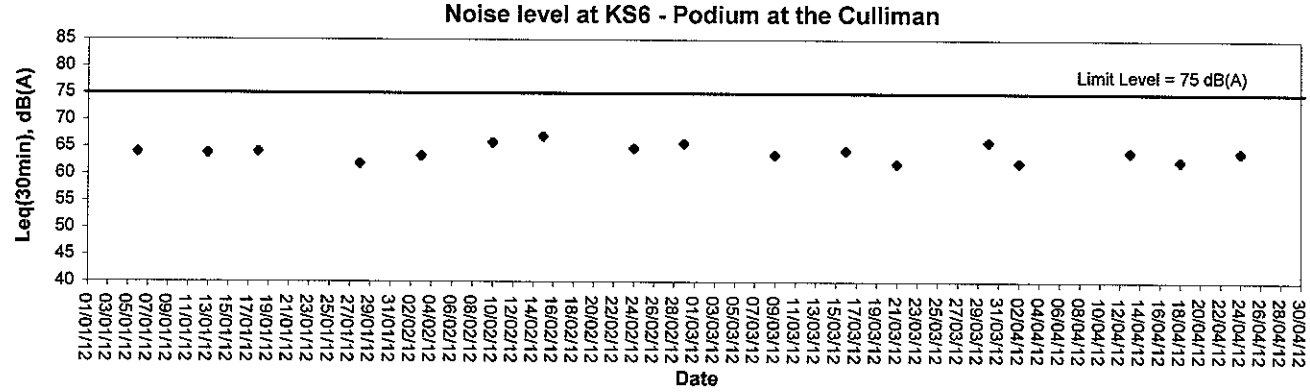
Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
01/04/12	Cloudy	13:15	13:20	60.2	62.3	58.6	0.3
01/04/12	Cloudy	13:20	13:25	60.1	62.1	58.3	0.3
01/04/12	Cloudy	13:25	13:30	59.9	61.9	58.1	0.3
06/04/12	Cloudy	10:00	10:05	60.4	61.9	58.8	0.6
06/04/12	Cloudy	10:05	10:10	60.6	62.0	59.0	0.6
06/04/12	Cloudy	10:10	10:15	60.3	61.8	58.8	0.6
15/04/12	Fine	11:15	11:20	60.7	62.3	59.1	0.2
15/04/12	Fine	11:20	11:25	60.2	61.5	58.6	0.2
15/04/12	Fine	11:25	11:30	60.4	61.8	58.7	0.2
22/04/12	Sunny	10:55	11:00	62.6	63.5	57.9	1.1
22/04/12	Sunny	11:00	11:05	63.0	64.1	58.3	1.2
22/04/12	Sunny	11:05	11:10	63.1	64.3	58.5	1.2
28/04/12	Cloudy	15:10	15:15	61.5	63.2	58.3	1.3
28/04/12	Cloudy	15:15	15:20	61.2	63.0	58.1	1.3
28/04/12	Cloudy	15:20	15:25	61.6	63.3	58.4	1.3

Appendix B3

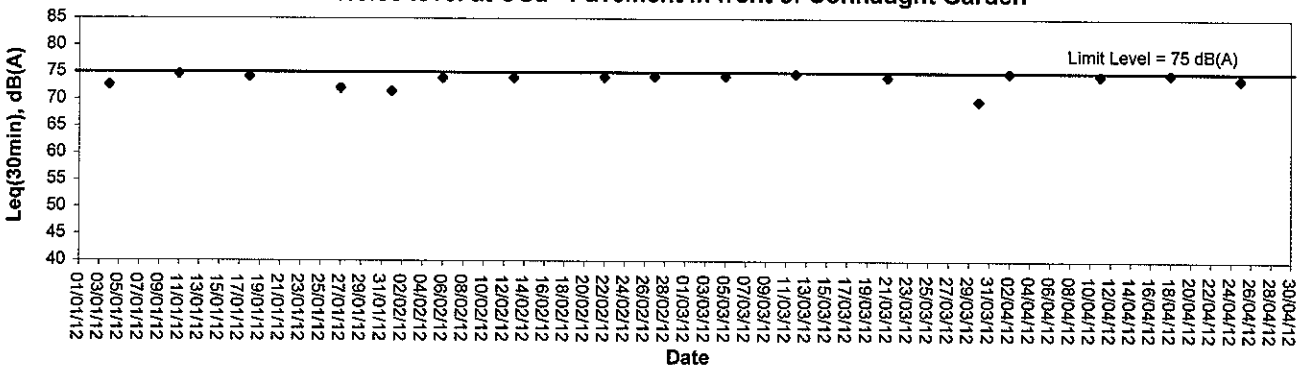
Graphical Plots of Impact Noise Monitoring Data

Noise Monitoring (Day-time)

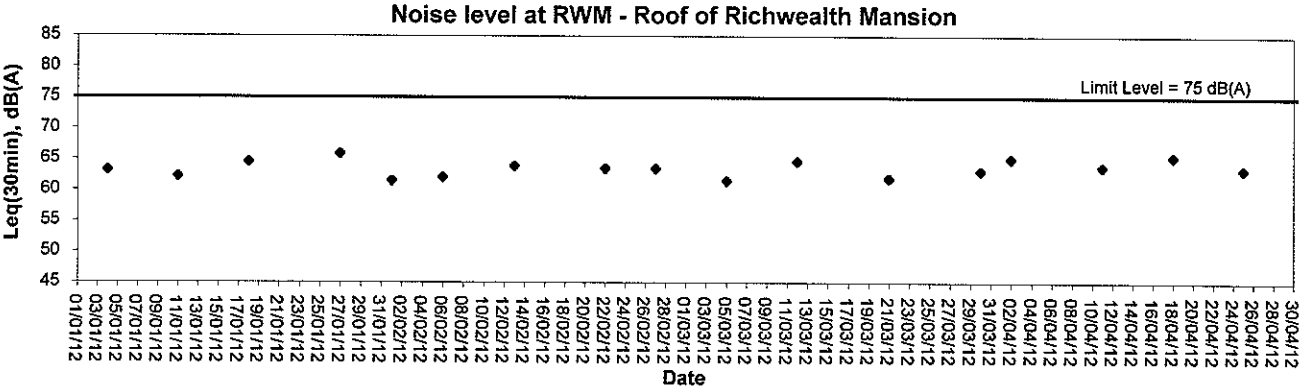
Noise level at KS6 - Podium at the Culliman



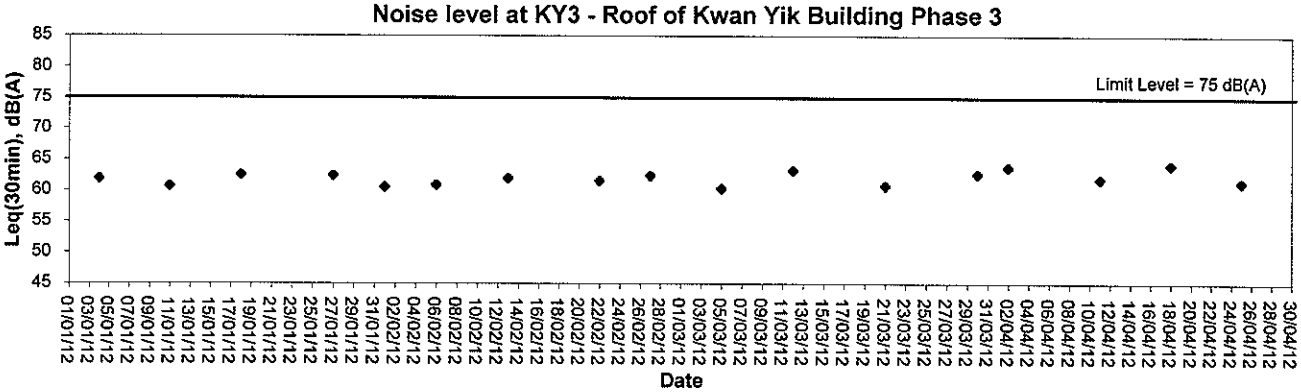
Noise level at CGa - Pavement in front of Connaught Garden



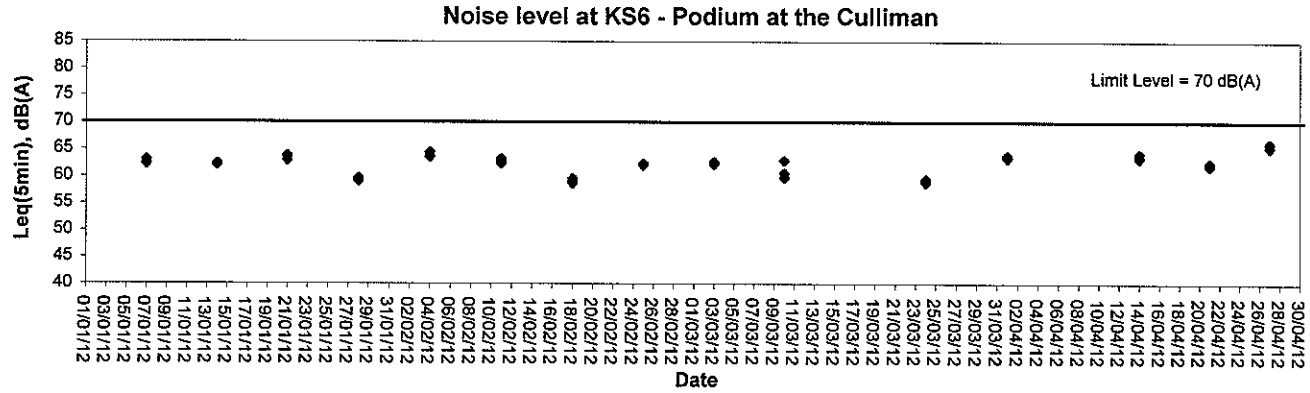
Noise level at RWM - Roof of Richwealth Mansion

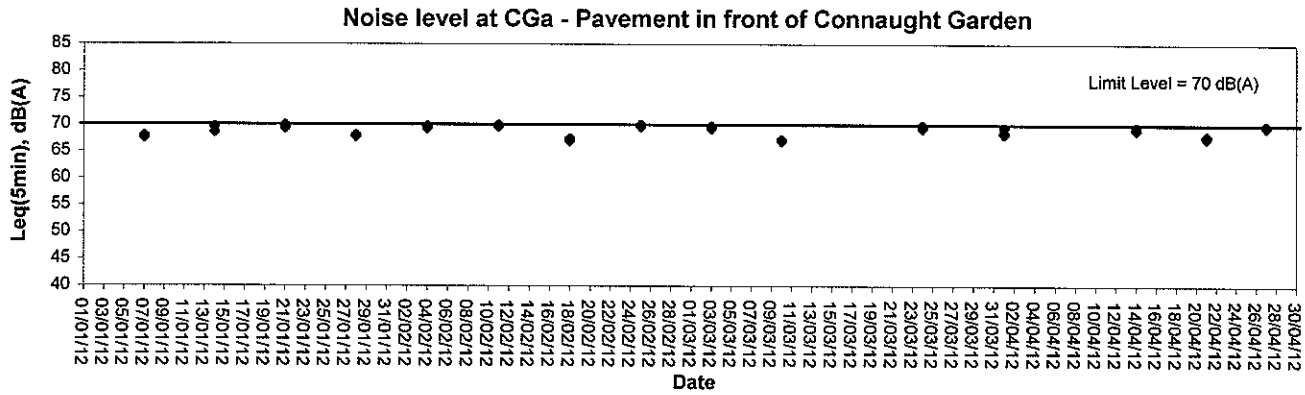


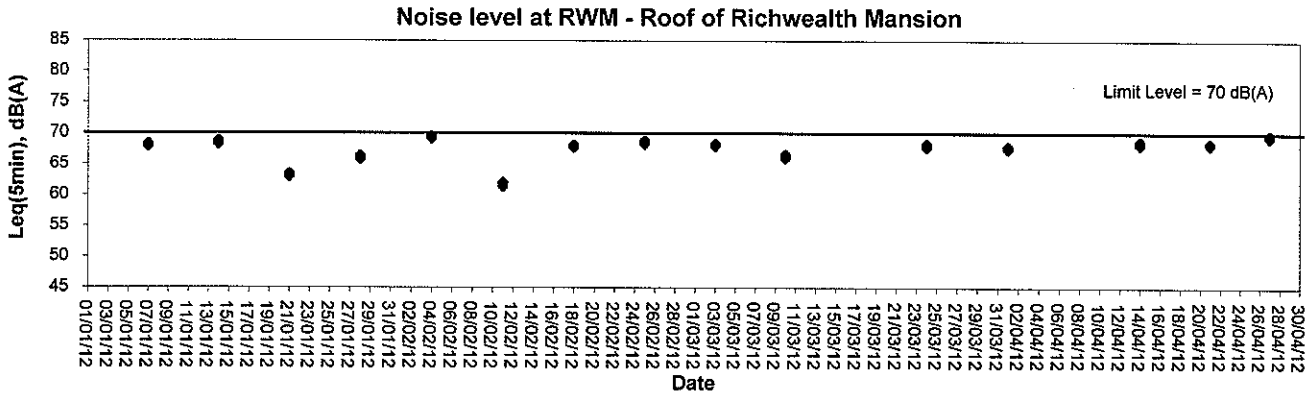
Noise level at KY3 - Roof of Kwan Yik Building Phase 3

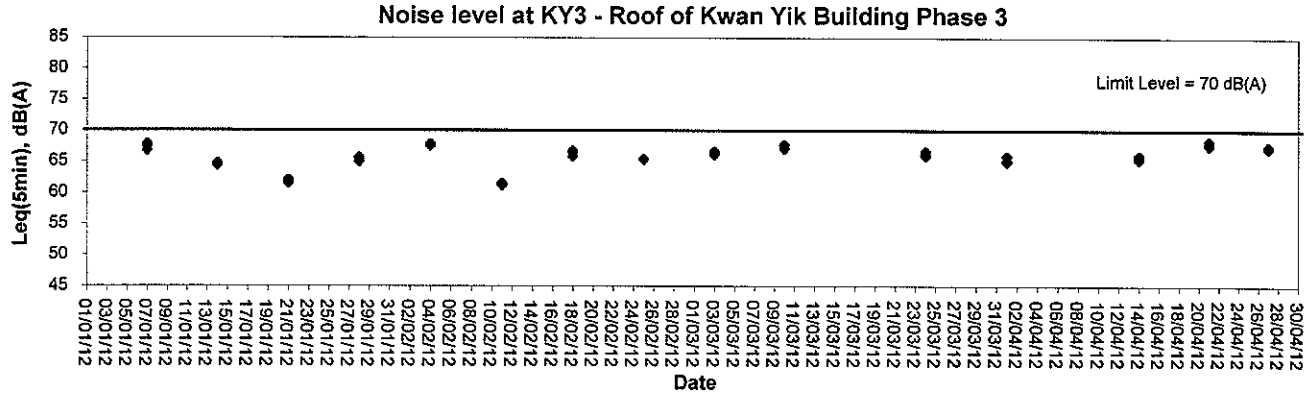


Noise Monitoring (Evening-time)

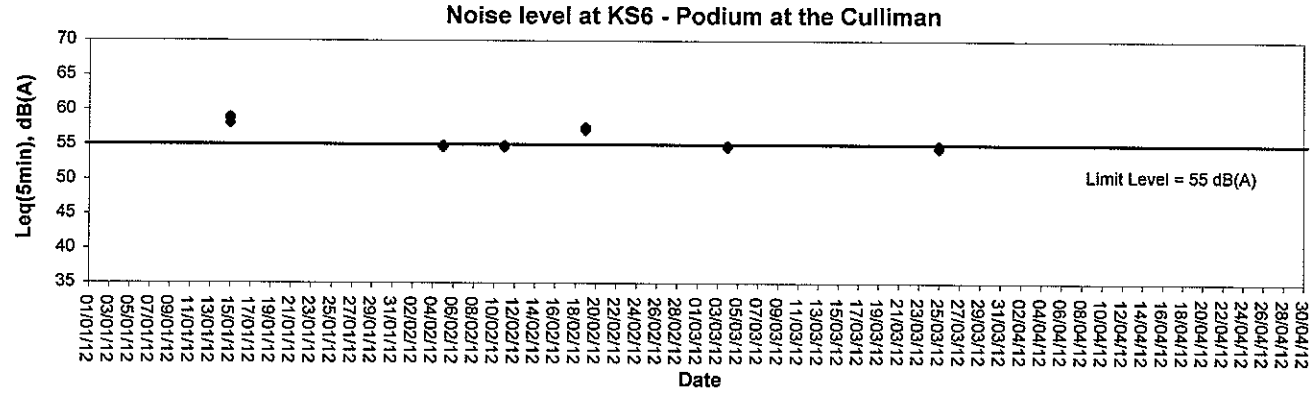


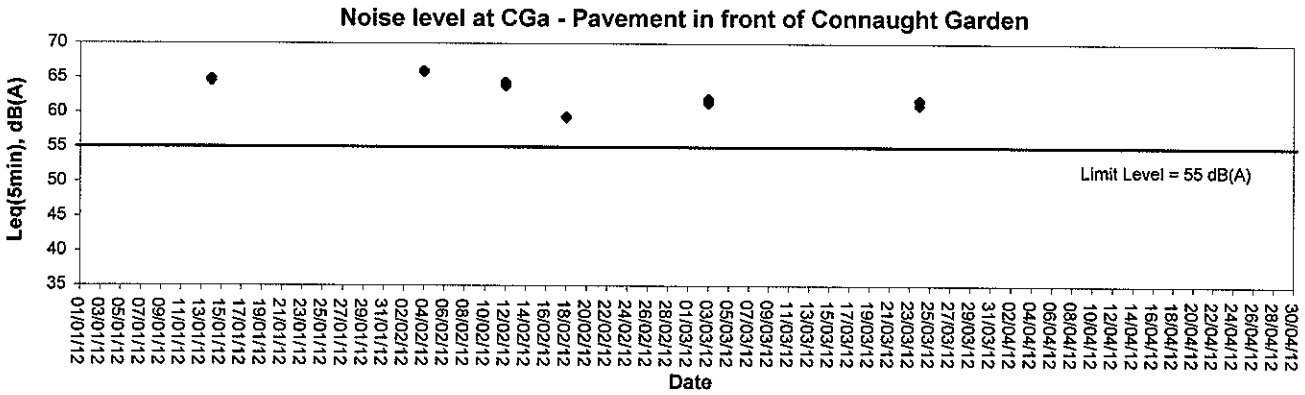


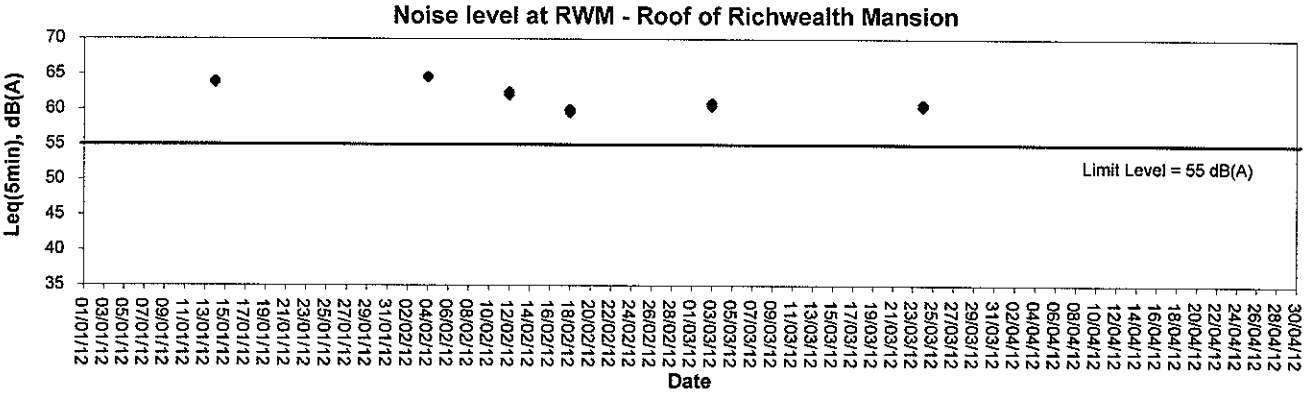


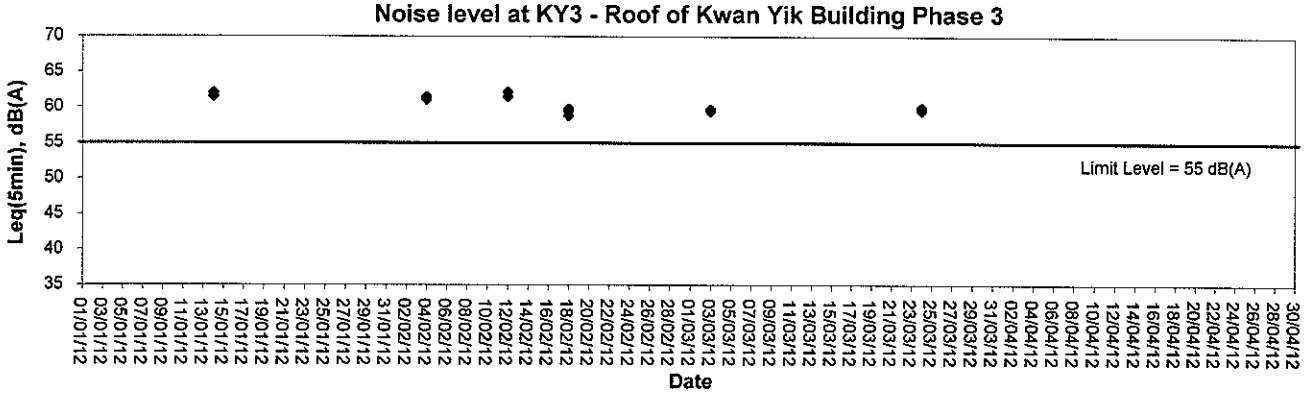


Noise Monitoring (Night-time)

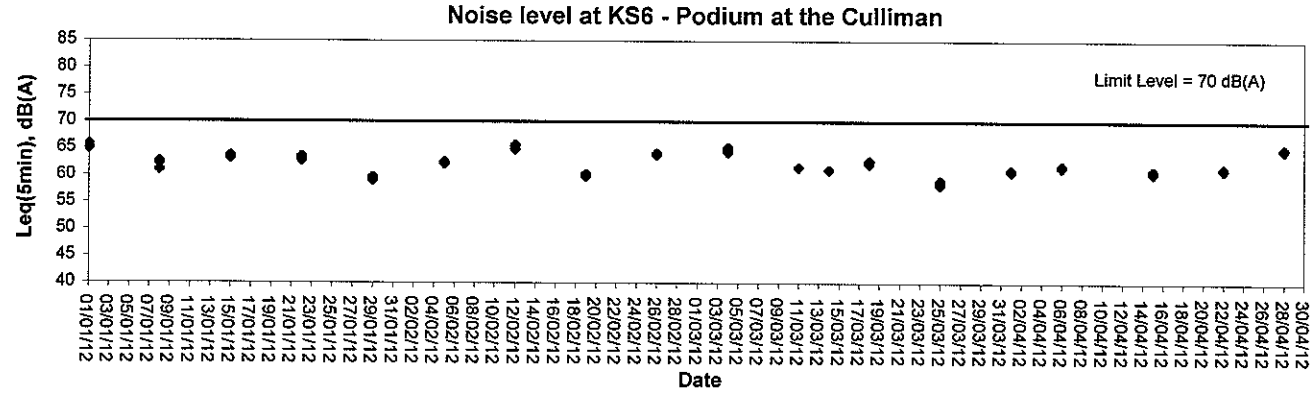


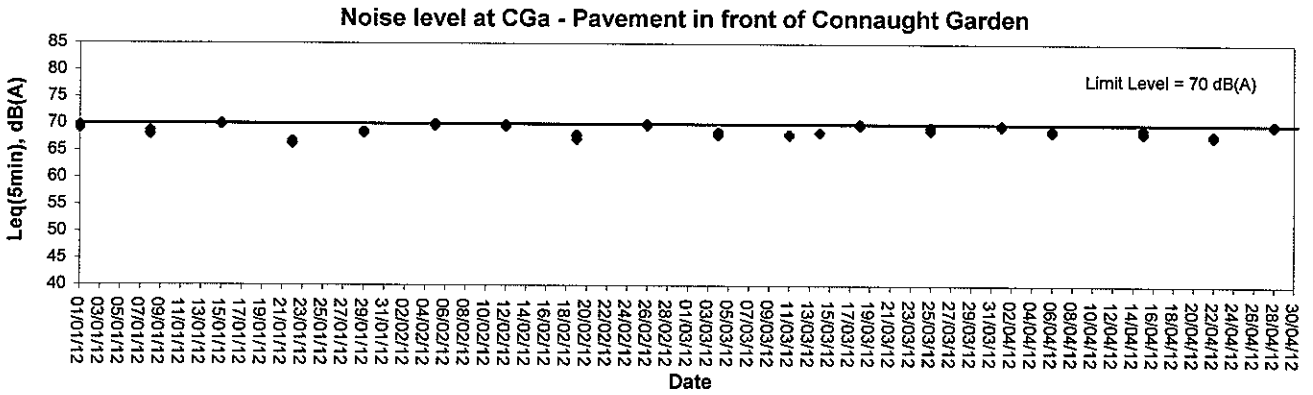


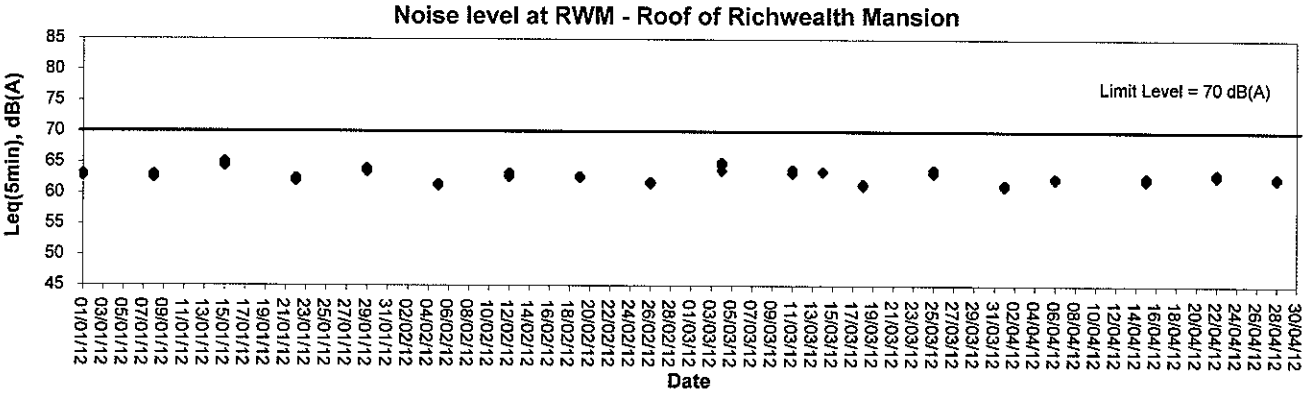


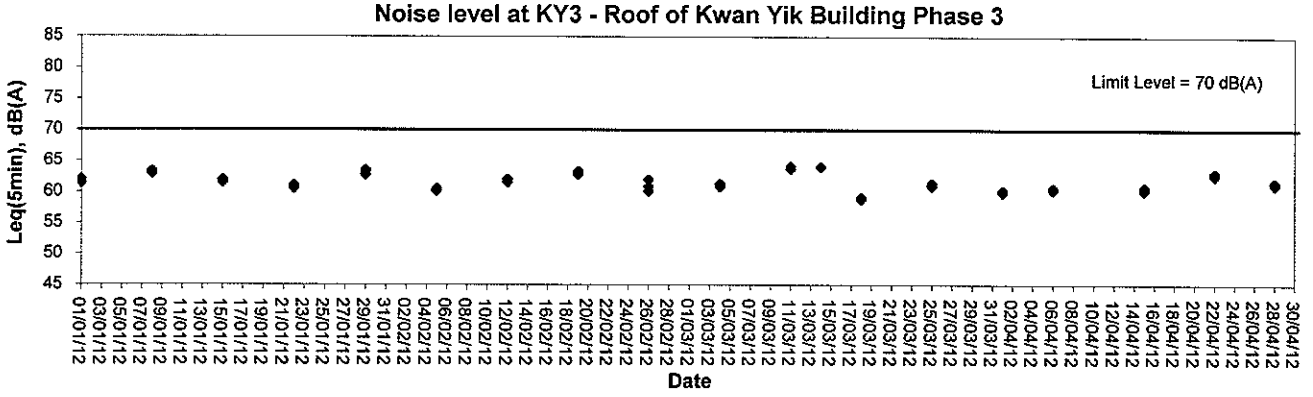


Noise Monitoring (Holiday-time)









Appendix C1

Calibration Certificates for Impact Water Quality Monitoring Equipments

東業傑勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Performance Check of Turbidimeter

Equipment Ref. No. : ET/0505/007 Manufacturer : HACH

Model No. : 2100P Serial No. : 08060 C 030281

Date of Calibration : 13/01/2012 Due Date : 12/04/2012

Gelex Vial Std	Theoretical Value (NTU)	Measured Value (NTU)	Difference %
0-10 NTU	5.34	5.26	1.50
10-100 NTU	52.5	53.1	1.14
100-1000 NTU	543	538	0.92

Acceptance Criteria

Difference : <5 %

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

Checked by : _____ Approved by : _____

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Performance Check of Turbidimeter

Equipment Ref. No. : ET/0505/007 Manufacturer : HACH

Model No. : 2100P Serial No. : 08060 C 030281

Date of Calibration : 13/04/2012 Due Date : 12/07/2012

Gelex Vial Std	Theoretical Value (NTU)	Measured Value (NTU)	Difference %
0-10 NTU	5.34	5.24	1.87
10-100 NTU	52.5	53.0	0.95
100-1000 NTU	543	536	1.29

Acceptance Criteria

Difference : <5 %

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

Checked by : Ada Lam Approved by :

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Performance Check of Salinity Meter

Equipment Ref. No. : ET/EW/008/001 Manufacturer : YSI

Model No. : 85 Serial No. : 05L 1285

Date of Calibration : 28/01/2012 Due Date : 27/04/2012

Ref. No. of Salinity Standard used (30ppt)	S/001/3

Salinity Standard (ppt)	Measured Salinity (ppt)	Difference %
30	30.5	1.67

Acceptance Criteria

Difference : <10 %

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

Checked by : Linda Lam Approved by :

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Internal Calibration Report of Dissolved Oxygen Meter

Equipment Ref. No.	:	ET/EW/008/001	Manufacturer	:	YSI
Model No.	:	85	Serial No.	:	05L 1285
Date of Calibration	:	28/01/2012	Calibration Due Date	:	27/04/2012

Temperature Verification

Ref. No. of Reference Thermometer : ET/0521/001

Ref. No. of Water Bath : ---

	Temperature (°C)			
Reference Thermometer reading	Measured	20.5	Corrected	20.2
DO Meter reading	Measured	20.0	Difference	0.2

Standardization of sodium thiosulphate ($Na_2S_2O_3$) solution

Reagent No. of $Na_2S_2O_3$ titrant	CPE/012/4.5/001/4	Reagent No. of 0.025N $K_2Cr_2O_7$	CPE/012/4.4/001/6

	Trial 1	Trial 2
Initial Vol. of $Na_2S_2O_3$ (ml)	0.00	0.00
Final Vol. of $Na_2S_2O_3$ (ml)	40.00	40.00
Vol. of $Na_2S_2O_3$ used (ml)	40.00	40.00
Normality of $Na_2S_2O_3$ solution (N)	0.02500	0.02500
Average Normality (N) of $Na_2S_2O_3$ solution (N)	0.02500	
Acceptance criteria, Deviation	Less than $\pm$ 0.001N	

Calculation: Normality of $Na_2S_2O_3$, **N** = 1 / ml $Na_2S_2O_3$ used

Lineality Checking

Determination of dissolved oxygen content by Winkler Titration *

Purging Time (min)	2		5		10	
Trial	1	2	1	2	1	2
Initial Vol. of $Na_2S_2O_3$ (ml)	0.00	10.90	21.70	0.00	7.60	12.20
Final Vol. of $Na_2S_2O_3$ (ml)	10.90	21.70	29.40	7.60	12.20	16.80
Vol. (V) of $Na_2S_2O_3$ used (ml)	10.90	10.80	7.70	7.60	4.60	4.60
Dissolved Oxygen (DO), mg/L	7.32	7.25	5.17	5.10	3.09	3.09
Acceptance criteria, Deviation	Less than + 0.3mg/L		Less than + 0.3mg/L		Less than + 0.3mg/L	

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

Purging time, min	DO meter reading, mg/L			Winkler Titration result *, mg/L			Difference (%) of DO Content
	1	2	Average	1	2	Average	
2	7.42	7.38	7.40	7.32	7.25	7.29	1.50
5	5.32	5.26	5.29	5.17	5.10	5.14	2.88
10	2.95	2.99	2.97	3.09	3.09	3.09	3.96
Linear regression coefficient				0.99831			

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Internal Calibration Report of Dissolved Oxygen Meter

Zero Point Checking

DO meter reading, mg/L	0.00

Salinity Checking

Reagent No. of NaCl (10ppt)	CPE/012/4.7/001/16	Reagent No. of NaCl (30ppt)	CPE/012/4.8/001/16

Determination of dissolved oxygen content by Winkler Titration **

Salinity (ppt)	10		30	
Trial	1	2	1	2
Initial Vol. of $Na_2S_2O_3$ (ml)	0.00	11.90	23.60	34.10
Final Vol. of $Na_2S_2O_3$ (ml)	11.90	23.60	34.10	44.70
Vol. (V) of $Na_2S_2O_3$ used (ml)	11.90	11.70	10.50	10.60
Dissolved Oxygen (DO), mg/L	7.99	7.85	7.05	7.11
Acceptance criteria, Deviation	Less than + 0.3mg/L		Less than + 0.3mg/L	

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

Salinity (ppt)	DO meter reading, mg/L			Winkler Titration result**, mg/L			Difference (%) of DO Content
	1	2	Average	1	2	Average	
10	7.82	7.76	7.79	7.99	7.85	7.92	1.65
30	7.12	7.16	7.14	7.05	7.11	7.08	0.84

Acceptance Criteria

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

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

Delete as appropriate

Calibrated by : Ade Lam

Approved by :

Internal Calibration Report of Dissolved Oxygen Meter

Equipment Ref. No.	:	ET/EW/008/004	Manufacturer	:	YSI
Model No.	:	Pro 2030	Serial No.	:	10F 101978
Date of Calibration	:	13/02/2012	Calibration Due Date	:	12/05/2012

Temperature Verification

Ref. No. of Reference Thermometer : ET/0521/001

Ref. No. of Water Bath : ---

	Temperature (°C)			
Reference Thermometer reading	Measured	20.2	Corrected	19.9
DO Meter reading	Measured	19.8	Difference	0.1

Standardization of sodium thiosulphate ($Na_2S_2O_3$) solution

Reagent No. of $Na_2S_2O_3$ titrant	CPE/012/4.5/001/4	Reagent No. of 0.025N $K_2Cr_2O_7$	CPE/012/4.4/001/7

	Trial 1	Trial 2
Initial Vol. of $Na_2S_2O_3$ (ml)	0.00	0.00
Final Vol. of $Na_2S_2O_3$ (ml)	40.00	39.50
Vol. of $Na_2S_2O_3$ used (ml)	40.00	39.50
Normality of $Na_2S_2O_3$ solution (N)	0.02500	0.02532
Average Normality (N) of $Na_2S_2O_3$ solution (N)	0.02516	
Acceptance criteria, Deviation	Less than ± 0.001N	

Calculation: Normality of $Na_2S_2O_3$, N = 1 / ml $Na_2S_2O_3$ used

Lineality Checking

Determination of dissolved oxygen content by Winkler Titration *

Purging Time (min)	2		5		10	
Trial	1	2	1	2	1	2
Initial Vol. of $Na_2S_2O_3$ (ml)	0.00	11.10	22.10	0.00	7.40	12.20
Final Vol. of $Na_2S_2O_3$ (ml)	11.10	22.10	29.60	7.40	12.20	17.10
Vol. (V) of $Na_2S_2O_3$ used (ml)	11.10	11.00	7.50	7.40	4.80	4.90
Dissolved Oxygen (DO), mg/L	7.50	7.43	5.07	5.00	3.24	3.31
Acceptance criteria, Deviation	Less than + 0.3mg/L		Less than + 0.3mg/L		Less than + 0.3mg/L	

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

Purging time, min	DO meter reading, mg/L			Winkler Titration result *, mg/L			Difference (%) of DO Content
	1	2	Average	1	2	Average	
2	7.56	7.54	7.55	7.50	7.43	7.47	1.07
5	5.22	5.20	5.21	5.07	5.00	5.04	3.32
10	3.22	3.24	3.23	3.24	3.31	3.28	1.54
Linear regression coefficient				0.99807			

Internal Calibration Report of Dissolved Oxygen Meter

Zero Point Checking

DO meter reading, mg/L	0.00

Salinity Checking

Reagent No. of NaCl (10ppt)	CPE/012/4.7/001/17	Reagent No. of NaCl (30ppt)	CPE/012/4.8/001/17

Determination of dissolved oxygen content by Winkler Titration **

Salinity (ppt)	10		30	
Trial	1	2	1	2
Initial Vol. of $Na_2S_2O_3$ (ml)	0.00	11.50	23.10	33.60
Final Vol. of $Na_2S_2O_3$ (ml)	11.50	23.10	33.60	44.00
Vol. (V) of $Na_2S_2O_3$ used (ml)	11.50	11.60	10.50	10.40
Dissolved Oxygen (DO), mg/L	7.77	7.84	7.09	7.02
Acceptance criteria, Deviation	Less than + 0.3mg/L		Less than + 0.3mg/L	

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

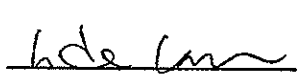
Salinity (ppt)	DO meter reading, mg/L			Winkler Titration result**, mg/L			Difference (%) of DO Content
	1	2	Average	1	2	Average	
10	7.72	7.76	7.74	7.77	7.84	7.81	0.90
30	7.10	7.08	7.09	7.09	7.02	7.06	0.42

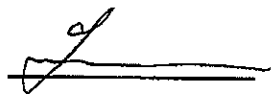
Acceptance Criteria

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

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

Delete as appropriate

Calibrated by : 

Approved by : 

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ETS-TESTCONSULT LIMITED

Performance Check of Salinity Meter

Equipment Ref. No. : ET/EW/008/004 Manufacturer : YSI

Model No. : Pro 2030 Serial No. : 10F 101978

Date of Calibration : 13/02/2012 Due Date : 12/05/2012

Ref. No. of Salinity Standard used (30ppt)	S/001/3

Salinity Standard (ppt)	Measured Salinity (ppt)	Difference %
30	30.3	1.00

Acceptance Criteria

Difference : <10 %

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

Checked by : Ade Lam Approved by :

Appendix C2

Impact Water Quality Monitoring Results

Mid-Flood Tide

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Monitoring Station : C2

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	1908-1920	23/Cloudy	Surface	1.0	19.5	27.8	27.8	7.82	7.80	100.1	99.9	3.77	3.75	3.82	6.0	5.9	5.9
						27.8		7.78		99.6		3.72			5.8		
			Middle	8.7	19.2	27.9	27.9	7.89	7.91	101.1	101.3	3.86	3.83		5.8	5.8	
						27.8		7.92		101.4		3.80			5.8		
			Bottom	16.4	18.9	27.9	28.0	7.83	7.86	100.2	100.6	3.90	3.87		6.0	5.9	
						28.0		7.89		100.9		3.84			5.8		
05/04/12	1313-1326	21/Cloudy	Surface	1.0	19.7	27.8	27.8	7.84	7.87	100.2	100.5	3.75	3.76	3.81	5.5	5.6	5.7
						27.8		7.89		100.8		3.77			5.6		
			Middle	8.9	19.7	27.8	27.9	7.76	7.78	99.2	99.5	3.72	3.76		5.6	5.7	
						27.9		7.80		99.7		3.80			5.8		
			Bottom	16.8	19.5	28.0	28.1	7.74	7.72	98.9	98.6	3.88	3.91		5.8	5.8	
						28.1		7.69		98.3		3.94			5.8		
10/04/12	1135-1153	22/Cloudy	Surface	1.0	20.5	27.7	27.7	7.60	7.62	98.8	99.0	4.57	4.61	4.81	6.5	6.6	6.8
						27.7		7.63		99.2		4.64			6.6		
			Middle	8.4	20.5	27.7	27.8	7.47	7.45	97.1	96.3	4.84	4.81		6.8	6.8	
						27.8		7.42		95.5		4.77			6.8		
			Bottom	15.8	20.5	27.7	27.7	7.24	7.23	94.1	93.9	5.04	5.01		7.0	7.0	
						27.7		7.21		93.7		4.97			7.0		
12/04/12	1245-1259	24/Fine	Surface	1.0	20.7	27.7	27.7	7.75	7.78	100.8	101.1	3.70	3.72	3.77	5.5	5.6	5.7
						27.7		7.80		101.4		3.73			5.6		
			Middle	6.0	20.7	27.7	27.8	7.71	7.70	100.3	100.1	3.76	3.78		5.6	5.7	
						27.8		7.69		99.9		3.79			5.8		
			Bottom	11.0	20.6	27.8	27.8	7.66	7.64	99.6	99.4	3.84	3.83		5.8	5.8	
						27.8		7.62		99.1		3.81			5.8		
14/04/12	1445-1500	27/Cloudy	Surface	1.0	21.6	28.1	28.1	6.91	6.94	89.8	90.2	4.13	4.15	4.28	6.0	6.1	6.3
						28.0		6.96		90.5		4.16			6.2		
			Middle	7.1	21.6	28.3	28.3	7.02	7.04	91.3	91.5	4.25	4.28		6.2	6.3	
						28.2		7.05		91.7		4.30			6.4		
			Bottom	13.2	21.6	28.4	28.4	6.86	6.88	89.2	89.5	4.40	4.43		6.4	6.5	
						28.4		6.90		89.7		4.46			6.6		
17/04/12	1753-1808	22/Drizzle	Surface	1.0	22.1	27.3	27.3	7.57	7.55	102.2	101.9	3.39	3.42	3.52	5.0	5.1	5.3
						27.3		7.52		101.6		3.44			5.2		
			Middle	6.0	22.0	27.5	27.6	7.50	7.49	101.2	101.1	3.58	3.60		5.4	5.5	
						27.6		7.48		101.0		3.61			5.6		
			Bottom	11.0	21.9	28.1	28.1	7.45	7.44	100.5	100.4	3.54	3.56		5.4	5.4	
						28.0		7.42		100.2		3.57			5.4		
19/04/12	1834-1849	21/Cloudy	Surface	1.0	21.8	27.3	27.3	7.26	7.24	96.0	96.0	3.58	3.59	3.80	5.5	5.6	5.8
						27.3		7.21		95.9		3.60			5.6		
			Middle	8.8	21.7	27.5	27.5	7.02	7.04	93.4	93.6	3.87	3.88		5.8	5.8	
						27.5		7.05		93.8		3.88			5.8		
			Bottom	16.6	21.6	27.7	27.7	7.16	7.18	95.2	95.4	3.96	3.94		6.0	5.9	
						27.6		7.19		95.6		3.92			5.8		
21/04/12	1945-1958	24/Cloudy	Surface	1.0	22.0	27.0	27.0	7.38	7.37	97.7	97.5	3.02	3.01	3.17	5.0	4.9	5.1
						26.9		7.35		97.3		2.99			4.8		
			Middle	8.2	22.0	27.2	27.2	7.17	7.19	94.9	95.1	3.14	3.13		5.2	5.1	
						27.2		7.20		95.2		3.11			5.0		
			Bottom	15.4	21.9	27.4	27.5	7.04	7.03	93.1	92.9	3.40	3.38		5.4	5.3	
						27.5		7.01		92.7		3.36			5.2		
24/04/12	2150-2205	29/Cloudy	Surface	1.0	22.8	28.1	28.2	7.45	7.47	100.9	101.3	3.60	3.58	3.71	5.5	5.5	5.6
						28.2		7.49		101.6		3.56			5.4		
			Middle	8.3	22.7	28.7	28.7	7.30	7.34	98.8	99.3	3.73	3.70		5.6	5.6	
						28.6		7.37		99.8		3.66			5.6		
			Bottom	15.6	22.4	29.7	29.7	7.21	7.24	97.3	97.9	3.82	3.86		5.8	5.8	
						29.7		7.26		98.5		3.89			5.8		
26/04/12	0952-1004	25/Fine	Surface	1.0	22.6	27.4	27.4	7.18	7.17	96.2	96.0	3.59	3.62	3.81	5.5	5.6	5.8
						27.4		7.15		95.8		3.64			5.6		
			Middle	8.8	22.2	27.5	27.5	7.11	7.09	95.2	95.0	3.94	3.92		6.0	5.9	
						27.5		7.07		94.7		3.90			5.8		
			Bottom	16.6	22.1	27.6	27.6	7.16	7.15	95.9	95.7	3.88	3.91		5.8	5.9	
						27.5		7.13		95.5		3.93			6.0		

Mid-Flood Tide

Monitoring Station : C4

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	1846-1902	23/Cloudy	Surface	1.0	19.6	27.9	27.9	7.79	7.80	99.6	99.8	3.79	3.76	3.76	5.8	5.7	5.7
						27.9		7.81		99.9		3.72			5.6		
			Middle	8.8	19.2	28.1	28.1	7.83	7.81	100.1	99.8	3.73	3.71		5.6	5.6	
						28.0		7.78		99.4		3.68			5.6		
			Bottom	16.5	19.0	28.0	28.1	7.80	7.79	99.8	99.6	3.81	3.83		5.8	5.9	
						28.1		7.77		99.4		3.84			6.0		
05/04/12	1252-1308	21/Cloudy	Surface	1.0	19.7	27.7	27.8	7.85	7.83	100.3	100.0	3.78	3.81	3.87	5.6	5.7	5.8
						27.8		7.80		99.7		3.84			5.8		
			Middle	8.9	19.6	27.9	27.9	7.82	7.81	99.9	99.7	3.88	3.92		5.8	5.9	
						27.8		7.79		99.5		3.95			6.0		
			Bottom	16.8	19.5	27.9	28.0	7.68	7.70	98.1	98.3	3.86	3.88		5.8	5.9	
						28.0		7.71		98.5		3.90			6.0		
10/04/12	1115-1131	22/Cloudy	Surface	1.0	20.5	27.6	27.6	7.68	7.70	99.8	100.1	4.62	4.65	4.80	6.6	6.6	6.8
						27.6		7.72		100.4		4.67			6.6		
			Middle	8.5	20.5	27.7	27.7	7.52	7.54	97.8	98.1	4.75	4.77		6.8	6.8	
						27.7		7.56		98.3		4.79			6.8		
			Bottom	15.9	20.4	27.7	27.7	7.35	7.37	95.6	95.8	5.01	4.97		7.0	7.0	
						27.7		7.38		95.9		4.93			7.0		
12/04/12	1225-1240	24/Fine	Surface	1.0	20.7	27.7	27.8	7.90	7.89	102.7	102.5	3.79	3.77	3.77	5.8	5.7	5.7
						27.8		7.87		102.3		3.75			5.6		
			Middle	10.2	20.6	27.8	27.9	7.76	7.78	100.9	101.1	3.76	3.78		5.6	5.7	
						27.9		7.79		101.3		3.80			5.8		
			Bottom	19.4	20.5	27.9	28.0	7.68	7.70	99.8	100.0	3.74	3.76		5.6	5.6	
						28.0		7.71		100.2		3.77			5.5		
14/04/12	1427-1442	27/Cloudy	Surface	1.0	21.6	28.1	28.1	6.95	6.98	90.4	90.7	4.26	4.28	4.43	6.2	6.2	6.4
						28.1		7.00		91.0		4.30			6.2		
			Middle	9.3	21.7	28.3	28.4	6.89	6.87	89.6	89.4	4.38	4.42		6.4	6.4	
						28.4		6.85		89.1		4.45			6.4		
			Bottom	17.6	21.6	28.4	28.5	6.68	6.71	86.8	87.2	4.56	4.58		6.6	6.6	
						28.5		6.73		87.5		4.60			6.5		
17/04/12	1729-1744	22/Drizzle	Surface	1.0	22.1	27.2	27.3	7.52	7.54	101.5	101.7	3.45	3.47	3.49	5.2	5.3	5.4
						27.3		7.55		101.9		3.49			5.4		
			Middle	10.0	22.0	27.7	27.8	7.46	7.48	100.8	101.0	3.40	3.42		5.2	5.3	
						27.8		7.49		101.1		3.43			5.4		
			Bottom	19.0	21.9	28.3	28.3	7.42	7.40	100.1	99.9	3.56	3.58		5.6	5.6	
						28.3		7.38		99.7		3.60			5.5		
19/04/12	1811-1826	21/Cloudy	Surface	1.0	21.8	27.3	27.3	7.34	7.32	97.6	97.4	3.89	3.90	3.92	5.8	5.8	5.9
						27.2		7.30		97.1		3.91			5.8		
			Middle	8.9	21.7	27.3	27.4	7.22	7.21	96.0	95.8	3.94	3.96		5.8	5.9	
						27.4		7.19		95.6		3.98			6.0		
			Bottom	16.8	21.7	27.6	27.6	7.09	7.11	94.3	94.5	3.90	3.89		5.8	5.9	
						27.6		7.12		94.7		3.88			6.0		
21/04/12	1926-1941	24/Cloudy	Surface	1.0	22.1	27.0	27.0	7.45	7.47	98.6	98.8	3.12	3.14	3.23	5.2	5.2	5.3
						27.0		7.48		98.9		3.15			5.2		
			Middle	8.1	22.1	27.1	27.2	7.26	7.24	96.1	95.8	3.22	3.25		5.4	5.3	
						27.2		7.21		95.4		3.27			5.2		
			Bottom	15.2	21.9	27.4	27.4	6.96	6.95	92.1	91.9	3.29	3.30		5.4	5.5	
						27.3		6.93		91.7		3.31			5.5		
24/04/12	2126-2141	29/Cloudy	Surface	1.0	22.8	28.1	28.1	7.51	7.54	101.4	102.1	3.52	3.55	3.71	5.4	5.4	5.6
						28.1		7.57		102.8		3.57			5.4		
			Middle	8.3	22.6	28.9	29.0	7.41	7.43	100.1	100.5	3.65	3.68		5.6	5.6	
						29.0		7.44		100.9		3.71			5.6		
			Bottom	15.5	22.4	30.1	30.1	7.33	7.31	99.3	99.1	3.92	3.90		5.8	5.9	
						30.0		7.28		98.9		3.88			6.0		
26/04/12	0932-0944	25/Fine	Surface	1.0	22.6	27.3	27.4	7.20	7.19	96.4	96.3	3.67	3.71	3.79	5.6	5.6	5.7
						27.4		7.18		96.1		3.74			5.6		
			Middle	8.8	22.2	27.5	27.5	7.14	7.16	95.6	95.9	3.76	3.74		5.6	5.6	
						27.4		7.18		96.2		3.71			5.6		
			Bottom	16.6	22.1	27.6	27.6	7.22	7.21	96.7	96.5	3.91	3.94		5.8	5.9	
						27.6		7.19		96.3		3.96			6.0		

Mid-Flood Tide

東業檢驗測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : R5

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	1547-1602	23/Cloudy	Surface	1.0	19.7	27.8	27.9	7.57	7.61	97.0	97.5	3.69	3.72	3.78	5.5	5.7	5.7
						27.9		7.64		97.9		3.75			5.8		
			Middle	8.7	19.4	27.9	27.9	7.66	7.68	98.2	98.5	3.86	3.89		5.8	5.8	
						27.9		7.70		98.7		3.91			5.8		
			Bottom	16.4	19.1	27.9	28.0	7.81	7.79	100.0	99.8	3.72	3.74		5.6	5.6	
						28.0		7.77		99.6		3.75			5.6		
05/04/12	1043-1058	21/Cloudy	Surface	1.0	19.7	27.8	27.8	7.62	7.60	97.4	97.2	3.59	3.61	3.69	5.5	5.6	5.7
						27.7		7.58		96.9		3.63			5.6		
			Middle	8.8	19.7	27.7	27.8	7.54	7.56	96.3	96.5	3.69	3.67		5.6	5.6	
						27.8		7.57		96.7		3.65			5.6		
			Bottom	16.6	19.6	27.9	27.9	7.56	7.53	96.6	96.2	3.77	3.79		5.8	5.8	
						27.8		7.49		95.7		3.80			5.8		
10/04/12	0915-0931	22/Cloudy	Surface	1.0	20.5	27.6	27.7	7.53	7.56	97.9	98.3	4.73	4.76	4.95	6.5	6.7	6.9
						27.7		7.59		98.7		4.79			6.8		
			Middle	8.8	20.5	27.7	27.7	7.38	7.41	95.9	96.3	4.97	4.94		6.8	6.8	
						27.7		7.43		96.6		4.91			6.8		
			Bottom	16.6	20.4	27.8	27.8	7.18	7.15	93.3	93.0	5.16	5.14		7.2	7.2	
						27.8		7.12		92.6		5.11			7.2		
12/04/12	1016-1032	24/Fine	Surface	1.0	20.6	27.7	27.7	7.76	7.78	100.9	101.2	3.64	3.62	3.65	5.5	5.6	5.6
						27.7		7.80		101.4		3.60			5.6		
			Middle	8.8	20.5	27.8	27.8	7.54	7.53	98.0	97.8	3.62	3.64		5.4	5.5	
						27.7		7.51		97.6		3.66			5.6		
			Bottom	16.6	20.4	27.8	27.9	7.38	7.37	95.9	95.8	3.68	3.70		5.6	5.6	
						27.9		7.35		95.6		3.72			5.6		
14/04/12	1220-1235	26/Cloudy	Surface	1.0	21.5	28.0	28.0	6.78	6.76	88.1	87.8	4.41	4.43	4.53	7.0	6.7	6.6
						28.0		6.73		87.5		4.45			6.4		
			Middle	8.7	21.5	28.2	28.3	6.75	6.73	87.8	87.5	4.51	4.54		6.4	6.5	
						28.3		6.70		87.1		4.56			6.6		
			Bottom	16.4	21.6	28.5	28.5	6.80	6.82	88.4	88.6	4.62	4.64		6.6	6.6	
						28.4		6.83		88.8		4.65			6.6		
17/04/12	1533-1546	22/Drizzle	Surface	1.0	22.1	27.3	27.3	7.30	7.29	98.6	98.8	3.70	3.67	3.75	5.5	5.6	5.7
						27.3		7.28		98.9		3.64			5.6		
			Middle	8.8	22.1	27.6	27.6	7.16	7.17	96.6	96.8	3.82	3.79		5.8	5.7	
						27.5		7.18		96.9		3.76			5.6		
			Bottom	16.6	21.7	28.1	28.2	7.11	7.12	95.9	96.1	3.77	3.79		5.6	5.7	
						28.2		7.13		96.2		3.81			5.8		
19/04/12	1618-1633	22/Rainy	Surface	1.0	21.8	27.4	27.4	7.30	7.30	97.1	97.1	4.12	4.14	4.22	6.5	6.4	6.3
						27.3		7.29		97.0		4.15			6.2		
			Middle	8.6	21.7	27.4	27.4	7.23	7.22	96.2	96.1	4.26	4.24		6.4	6.3	
						27.3		7.21		95.9		4.22			6.2		
			Bottom	16.2	21.7	27.5	27.5	7.33	7.32	97.5	97.4	4.28	4.29		6.2	6.2	
						27.5		7.31		97.2		4.30			6.2		
21/04/12	1726-1742	24/Cloudy	Surface	1.0	22.1	27.1	27.2	7.13	7.16	94.4	94.7	3.25	3.23	3.39	5.0	5.1	5.3
						27.2		7.18		95.0		3.21			5.2		
			Middle	8.4	22.0	27.3	27.4	7.04	7.03	93.2	93.0	3.39	3.41		5.2	5.3	
						27.4		7.01		92.8		3.42			5.4		
			Bottom	15.8	21.9	27.5	27.5	6.94	6.97	91.8	92.2	3.50	3.52		5.4	5.5	
						27.5		6.99		92.5		3.54			5.6		
24/04/12	1921-1934	29/Cloudy	Surface	1.0	22.8	28.0	28.0	7.42	7.41	100.6	100.4	3.49	3.52	3.63	5.5	5.6	5.6
						28.0		7.39		100.1		3.55			5.6		
			Middle	8.8	22.7	28.8	28.8	7.28	7.30	98.5	99.0	3.60	3.64		5.6	5.6	
						28.7		7.32		99.4		3.67			5.6		
			Bottom	16.6	22.2	30.0	30.0	7.17	7.20	97.3	97.5	3.75	3.74		5.8	5.7	
						29.9		7.22		97.7		3.73			5.6		
26/04/12	0740-0751	25/Fine	Surface	1.0	22.5	27.3	27.3	7.25	7.27	96.8	97.1	3.44	3.48	3.49	5.5	aa	5.5
						27.3		7.29		97.4		3.51			5.6		
			Middle	8.7	22.2	27.5	27.5	7.18	7.17	96.2	96.0	3.37	3.40		5.4	5.4	
						27.4		7.15		95.8		3.42			5.4		
			Bottom	164.0	22.1	27.6	27.6	7.15	7.13	95.8	95.5	3.58	3.61		5.6	5.6	
						27.6		7.11		95.2		3.63			5.6		

Mid-Flood Tide

Monitoring Station : R6

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	1746-1800	23/Cloudy	Surface	1.0	19.7	27.8	27.8	7.81	7.80	99.0	98.8	3.76	3.80	3.91	5.6	5.7	5.8
						27.8		7.78		98.6		3.84			5.8		
			Middle	8.5	19.4	27.9	27.9	7.68	7.71	97.3	97.8	3.95	3.91		5.8	5.7	
						27.9		7.74		98.2		3.87			5.6		
			Bottom	16.0	19.0	27.9	28.0	7.94	7.92	100.4	100.8	3.99	4.01		5.8	5.9	
						28.0		7.90		101.2		4.03			6.0		
05/04/12	1150-1204	21/Cloudy	Surface	1.0	19.8	27.7	27.8	7.84	7.86	100.2	100.5	3.65	3.67	3.79	5.4	5.5	5.7
						27.8		7.88		100.7		3.69			5.6		
			Middle	8.6	19.7	27.8	27.8	7.75	7.77	99.0	99.3	3.78	3.80		5.6	5.7	
						27.8		7.79		99.6		3.81			5.8		
			Bottom	16.2	19.6	28.0	28.0	7.72	7.69	98.7	98.3	3.86	3.89		5.8	5.9	
						27.9		7.66		97.9		3.92			6.0		
10/04/12	1012-1028	22/Cloudy	Surface	1.0	20.5	27.8	27.8	7.64	7.62	99.3	99.0	4.66	4.62	4.76	6.4	6.5	6.6
						27.8		7.59		98.7		4.58			6.6		
			Middle	8.4	20.5	27.8	27.8	7.47	7.50	97.1	97.5	4.71	4.75		6.6	6.6	
						27.8		7.52		97.8		4.78			6.6		
			Bottom	15.8	20.5	27.7	27.8	7.29	7.26	94.8	94.4	4.94	4.90		6.8	6.8	
						27.8		7.23		94.0		4.86			6.8		
12/04/12	1123-1137	24/Fine	Surface	1.0	20.6	27.7	27.8	7.79	7.78	101.3	101.1	3.75	3.74	3.72	5.8	5.7	5.6
						27.8		7.76		100.9		3.72			5.6		
			Middle	8.7	20.6	27.8	27.8	7.53	7.55	97.9	98.1	3.73	3.75		5.6	5.7	
						27.8		7.56		98.3		3.76			5.8		
			Bottom	16.4	20.5	27.8	27.9	7.31	7.30	95.0	94.8	3.69	3.68		5.6	5.5	
						27.9		7.28		94.6		3.66			5.4		
14/04/12	1325-1340	26/Cloudy	Surface	1.0	21.5	28.1	28.1	6.99	7.01	90.9	91.2	4.16	4.18	4.31	6.2	6.2	6.4
						28.1		7.03		91.4		4.20			6.2		
			Middle	8.3	21.6	28.3	28.4	6.93	6.92	90.1	89.9	4.31	4.34		6.4	6.4	
						28.4		6.90		89.7		4.36			6.4		
			Bottom	15.6	21.6	28.5	28.5	6.82	6.84	88.7	89.0	4.42	4.40		6.6	6.5	
						28.5		6.86		89.2		4.38			6.4		
17/04/12	1626-1639	22/Drizzle	Surface	1.0	22.1	27.4	27.4	7.53	7.52	101.7	101.5	3.63	3.62	3.78	5.6	5.6	5.7
						27.4		7.50		101.3		3.60			5.6		
			Middle	8.6	21.9	27.7	27.7	7.46	7.44	100.7	100.5	3.82	3.84		5.8	5.8	
						27.7		7.42		100.2		3.86			5.8		
			Bottom	16.2	21.6	28.2	28.2	7.32	7.30	98.8	98.6	3.85	3.88		5.8	5.8	
						28.1		7.28		98.3		3.90			5.8		
19/04/12	1712-1727	22/Rainy	Surface	1.0	22.0	27.2	27.2	7.07	7.06	94.0	93.8	3.94	3.97	4.21	5.8	5.9	6.1
						27.1		7.04		93.6		3.99			6.0		
			Middle	8.3	21.7	27.3	27.4	6.94	6.95	92.3	92.5	4.19	4.20		6.0	6.1	
						27.4		6.96		92.6		4.21			6.2		
			Bottom	15.6	21.5	27.4	27.5	7.17	7.18	95.4	95.5	4.45	4.47		6.4	6.4	
						27.5		7.19		95.6		4.48			6.4		
21/04/12	1827-1841	24/Cloudy	Surface	1.0	22.1	27.1	27.1	7.38	7.40	97.7	97.9	3.03	3.01	3.11	5.0	4.9	5.0
						27.1		7.41		98.0		2.99			4.8		
			Middle	7.9	22.0	27.3	27.3	7.15	7.16	94.6	94.8	3.07	3.09		5.0	5.0	
						27.2		7.17		94.9		3.10			5.0		
			Bottom	14.8	21.9	27.3	27.3	7.02	7.00	92.8	92.6	3.22	3.23		5.2	5.2	
						27.3		6.98		92.4		3.24			5.2		
24/04/12	2019-2032	29/Cloudy	Surface	1.0	22.8	27.9	28.0	7.40	7.43	100.1	100.5	3.55	3.57	3.72	5.4	5.4	5.6
						28.0		7.45		100.8		3.58			5.4		
			Middle	8.7	22.7	28.9	28.9	7.27	7.30	98.1	98.5	3.79	3.75		5.8	5.7	
						28.9		7.32		98.9		3.71			5.6		
			Bottom	16.4	22.4	29.8	29.9	7.17	7.20	96.9	97.4	3.87	3.85		5.8	5.7	
						29.9		7.22		97.8		3.83			5.6		
26/04/12	0834-0845	25/Fine	Surface	1.0	22.6	27.2	27.2	7.30	7.32	97.8	98.1	3.83	3.86	3.95	5.8	5.8	5.9
						27.2		7.34		98.3		3.88			5.8		
			Middle	8.4	22.1	27.5	27.5	7.14	7.12	95.6	95.4	3.97	3.94		6.0	5.9	
						27.5		7.10		95.1		3.91			5.8		
			Bottom	15.8	22.1	27.6	27.6	7.21	7.23	96.6	96.8	4.02	4.06		6.0	6.0	
						27.5		7.24		97.0		4.09			6.0		

Mid-Flood Tide

Monitoring Station : R7

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	1805-1820	23/Cloudy	Surface	1.0	19.6	27.9	27.9	7.69	7.71	97.5	97.8	3.77	3.80	3.88	5.6	5.7	5.8
						27.8		7.73		98.0		3.83			5.8		
			Middle	9.2	19.5	27.9	28.0	7.73	7.75	97.6	97.8	3.88	3.91		5.8	5.8	
						28.0		7.76		97.9		3.94			5.8		
			Bottom	17.4	19.2	28.0	28.1	7.85	7.88	99.1	99.5	3.90	3.94		5.8	5.9	
						28.1		7.91		99.8		3.97			6.0		
05/04/12	1210-1225	21/Cloudy	Surface	1.0	19.8	27.8	27.8	7.81	7.83	99.8	100.0	3.74	3.76	3.81	5.6	5.7	5.7
						27.8		7.84		100.2		3.78			5.8		
			Middle	9.1	19.7	27.9	27.9	7.82	7.79	99.9	99.6	3.75	3.78		5.6	5.7	
						27.8		7.76		99.2		3.80			5.8		
			Bottom	17.2	19.6	27.9	28.0	7.67	7.68	98.0	98.2	3.87	3.90		5.8	5.8	
						28.0		7.69		98.3		3.93			5.8		
10/04/12	1031-1047	22/Cloudy	Surface	1.0	20.5	27.7	27.7	7.75	7.74	100.8	100.7	4.49	4.51	4.68	6.4	6.4	6.6
						27.7		7.73		100.5		4.53			6.4		
			Middle	9.5	20.5	27.7	27.7	7.55	7.58	98.2	98.6	4.71	4.67		6.6	6.6	
						27.7		7.61		98.9		4.63			6.6		
			Bottom	17.9	20.4	27.8	27.8	7.32	7.30	95.2	94.9	4.84	4.87		6.8	6.8	
						27.8		7.27		94.5		4.89			6.8		
12/04/12	1143-1158	24/Fine	Surface	1.0	20.7	27.8	27.8	7.86	7.85	102.2	102.1	3.77	3.75	3.76	5.6	5.6	5.7
						27.8		7.84		101.9		3.73			5.6		
			Middle	9.2	20.6	27.8	27.9	7.77	7.75	101.0	100.8	3.75	3.78		5.8	5.8	
						27.9		7.73		100.5		3.80			5.8		
			Bottom	17.4	20.5	27.9	27.9	7.66	7.64	99.6	99.3	3.72	3.75		5.6	5.6	
						27.9		7.61		98.9		3.78			5.6		
14/04/12	1347-1402	26/Cloudy	Surface	1.0	21.6	28.1	28.2	7.01	7.03	91.1	91.4	4.24	4.26	4.35	6.2	6.3	6.4
						28.2		7.05		91.7		4.28			6.4		
			Middle	9.2	21.6	28.4	28.4	6.87	6.90	89.3	89.7	4.38	4.40		6.6	6.6	
						28.3		6.92		90.0		4.42			6.6		
			Bottom	17.4	21.5	28.6	28.6	6.80	6.82	88.4	88.6	4.35	4.38		6.4	6.4	
						28.5		6.83		88.8		4.40			6.4		
17/04/12	1644-1658	22/Drizzle	Surface	1.0	22.1	27.3	27.4	7.49	7.47	101.1	100.9	3.54	3.56	3.65	5.4	5.4	5.5
						27.4		7.45		100.6		3.58			5.4		
			Middle	9.0	21.8	27.8	27.8	7.39	7.37	99.8	99.5	3.67	3.66		5.6	5.6	
						27.7		7.34		99.1		3.64			5.6		
			Bottom	17.0	21.6	28.2	28.3	7.30	7.29	98.5	98.4	3.76	3.74		5.6	5.6	
						28.3		7.27		98.2		3.71			5.6		
19/04/12	1731-1745	22/Rainy	Surface	1.0	21.9	27.1	27.1	7.14	7.17	94.9	95.3	3.76	3.74	3.93	5.6	5.6	5.8
						27.1		7.19		95.6		3.71			5.6		
			Middle	9.0	21.8	27.2	27.3	7.28	7.26	96.8	96.6	3.94	3.96		5.8	5.8	
						27.3		7.24		96.3		3.97			5.8		
			Bottom	17.0	21.6	27.4	27.4	7.20	7.18	95.8	95.5	4.07	4.09		6.0	6.0	
						27.4		7.16		95.2		4.11			6.0		
21/04/12	1846-1901	24/Cloudy	Surface	1.0	22.1	27.2	27.2	7.33	7.35	97.0	97.2	3.27	3.26	3.35	5.2	5.3	5.3
						27.1		7.36		97.4		3.24			5.4		
			Middle	8.9	22.0	27.3	27.3	7.35	7.33	97.2	97.0	3.34	3.32		5.4	5.3	
						27.3		7.31		96.7		3.30			5.2		
			Bottom	16.8	21.9	27.4	27.4	7.19	7.17	95.1	94.9	3.44	3.46		5.4	5.4	
						27.4		7.15		94.6		3.48			5.4		
24/04/12	2039-2054	29/Cloudy	Surface	1.0	22.8	28.2	28.2	7.40	7.38	100.0	99.7	3.69	3.67	3.81	5.6	5.6	5.8
						28.1		7.36		99.4		3.64			5.6		
			Middle	9.0	22.7	28.9	28.9	7.25	7.26	97.9	98.2	3.78	3.80		5.8	5.8	
						28.9		7.27		98.4		3.82			5.8		
			Bottom	16.9	22.4	29.9	29.9	7.23	7.21	97.9	97.5	3.91	3.95		5.8	5.9	
						29.9		7.19		97.0		3.99			6.0		
26/04/12	0850-0903	25/Fine	Surface	1.0	22.6	27.3	27.3	7.24	7.23	97.0	96.8	3.70	3.73	3.81	5.6	5.6	5.7
						27.2		7.21		96.6		3.76			5.6		
			Middle	9.1	22.1	27.5	27.5	7.32	7.33	98.0	98.2	3.75	3.77		5.6	5.7	
						27.5		7.34		98.3		3.79			5.8		
			Bottom	17.2	22.1	27.6	27.6	7.35	7.33	98.3	98.1	3.96	3.94		5.8	5.8	
						27.6		7.31		97.9		3.91			5.8		

Mid-Flood Tide

東業檢驗測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : R8a

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	1826-1841	23/Cloudy	Surface	1.0	19.6	27.8	27.9	7.72	7.75	98.7	99.1	3.55	3.52	3.68	5.4	5.5	5.6
						27.9		7.78		99.5		3.49			5.5		
			Middle	6.3	19.3	27.9	27.9	7.81	7.78	99.8	99.8	3.76	3.72		5.5	5.6	
						27.9		7.74		99.8		3.67			5.6		
			Bottom	12.6	19.1	27.9	27.9	7.78	7.81	99.6	100.0	3.77	3.80		5.6	5.7	
						27.8		7.84		100.3		3.82			5.8		
05/04/12	1232-1245	21/Cloudy	Surface	1.0	19.8	27.8	27.8	7.86	7.84	100.4	100.1	3.54	3.56	3.68	5.4	5.5	5.6
						27.7		7.81		99.8		3.58			5.5		
			Middle	6.9	19.7	27.8	27.8	7.78	7.77	99.4	99.3	3.62	3.64		5.5	5.6	
						27.7		7.76		99.2		3.66			5.6		
			Bottom	12.8	19.5	27.9	27.9	7.73	7.74	98.8	98.9	3.87	3.85		5.8	5.8	
						27.9		7.75		99.0		3.83			5.8		
10/04/12	1050-1108	22/Cloudy	Surface	1.0	20.5	27.8	27.8	7.84	7.81	101.9	101.5	4.51	4.48	4.61	6.4	6.5	6.5
						27.7		7.78		101.1		4.45			6.5		
			Middle	6.9	20.4	27.8	27.8	7.70	7.72	100.1	100.3	4.57	4.61		6.5	6.6	
						27.8		7.73		100.5		4.65			6.6		
			Bottom	12.8	20.5	27.7	27.8	7.48	7.51	97.2	97.6	4.71	4.73		6.6	6.6	
						27.8		7.54		98.0		4.75			6.6		
12/04/12	1205-1219	24/Fine	Surface	1.0	20.7	27.6	27.7	7.98	7.97	103.8	103.7	3.67	3.70	3.77	5.6	5.6	5.6
						27.7		7.96		103.5		3.72			5.5		
			Middle	7.1	20.7	27.7	27.7	7.94	7.93	103.2	103.0	3.76	3.79		5.5	5.7	
						27.7		7.91		102.8		3.81			5.8		
			Bottom	13.2	20.6	27.7	27.8	7.79	7.82	101.3	101.6	3.79	3.82		5.6	5.7	
						27.8		7.84		101.9		3.84			5.8		
14/04/12	1408-1423	27/Cloudy	Surface	1.0	21.6	28.1	28.1	6.85	6.87	89.1	89.3	4.15	4.17	4.32	6.2	6.1	6.4
						28.0		6.88		89.4		4.19			6.0		
			Middle	6.7	21.6	28.1	28.1	6.79	6.81	88.3	88.5	4.22	4.24		6.5	6.5	
						28.1		6.82		88.7		4.26			6.4		
			Bottom	12.4	21.5	28.2	28.3	6.70	6.73	87.1	87.5	4.68	4.55		6.4	6.5	
						28.3		6.75		87.8		4.41			6.6		
17/04/12	1706-1719	22/Drizzle	Surface	1.0	22.1	27.2	27.2	7.48	7.47	100.9	100.8	3.31	3.33	3.48	5.2	5.1	5.4
						27.2		7.46		100.7		3.35			5.0		
			Middle	6.7	22.1	27.5	27.5	7.28	7.30	98.3	98.6	3.41	3.43		5.5	5.5	
						27.6		7.32		98.8		3.44			5.4		
			Bottom	12.4	22.0	28.2	28.3	7.25	7.24	97.8	97.7	3.66	3.69		5.6	5.6	
						28.3		7.22		97.5		3.71			5.6		
19/04/12	1750-1805	21/Cloudy	Surface	1.0	21.8	27.2	27.2	7.10	7.09	94.4	94.3	3.87	3.89	3.99	5.8	5.9	6.0
						27.2		7.08		94.2		3.90			6.0		
			Middle	6.4	21.7	27.4	27.4	7.17	7.19	95.4	95.6	3.98	3.97		6.0	6.0	
						27.4		7.20		95.8		3.96			6.0		
			Bottom	11.8	21.6	27.6	27.6	7.15	7.13	95.1	94.9	4.10	4.11		6.2	6.2	
						27.5		7.11		94.6		4.12			6.2		
21/04/12	1907-1921	24/Cloudy	Surface	1.0	22.1	27.0	27.1	7.56	7.58	100.0	100.2	2.85	2.87	3.01	4.8	4.9	5.0
						27.1		7.59		100.4		2.88			5.0		
			Middle	6.4	22.0	27.1	27.1	7.38	7.40	97.7	98.0	2.96	2.94		5.0	4.9	
						27.1		7.42		98.2		2.92			4.8		
			Bottom	11.8	21.9	27.2	27.3	7.12	7.15	94.2	94.5	3.23	3.22		5.2	5.2	
						27.3		7.17		94.8		3.20			5.2		
24/04/12	2103-2117	29/Cloudy	Surface	1.0	22.8	28.1	28.2	7.51	7.49	101.8	101.4	3.52	3.55	3.63	5.4	5.5	5.6
						28.2		7.46		100.9		3.57			5.5		
			Middle	6.9	22.6	28.6	28.6	7.36	7.39	99.6	100.2	3.72	3.70		6.0	5.8	
						28.6		7.42		100.8		3.68			5.6		
			Bottom	12.8	22.4	29.6	29.7	7.25	7.28	98.0	98.6	3.61	3.64		5.6	5.6	
						29.7		7.30		99.1		3.67			5.6		
26/04/12	0911-0923	25/Fine	Surface	1.0	22.6	27.3	27.3	7.15	7.17	95.8	96.0	3.84	3.88	3.95	5.8	5.9	5.9
						27.3		7.18		96.2		3.92			6.0		
			Middle	6.7	22.2	27.5	27.5	7.07	7.06	94.6	94.4	3.95	3.93		6.0	5.9	
						27.5		7.04		94.2		3.90			5.8		
			Bottom	12.4	22.1	27.6	27.6	7.19	7.17	96.3	96.1	4.02	4.05		6.0	6.0	
						27.5		7.15		95.8		4.07			6.0		

Mid-Flood Tide

東業環勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : R15

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	1443-1457	23/Cloudy	Surface	1.0	19.7	27.8	27.8	7.78	7.75	99.5	99.1	3.32	3.35	3.45	5.2	5.2	5.4
						27.8		7.72		98.7		3.38			5.2		
			Middle	5.9	19.5	27.9	27.9	7.86	7.84	100.5	100.3	3.48	3.50		5.4	5.4	
						27.8		7.82		100.0		3.51			5.4		
			Bottom	10.8	19.1	27.9	27.9	7.88	7.90	100.8	101.1	3.56	3.50		5.6	5.5	
						27.9		7.92		101.3		3.44			5.4		
05/04/12	0940-0953	21/Cloudy	Surface	1.0	19.7	27.7	27.8	7.82	7.84	99.9	100.2	3.46	3.44	3.55	5.4	5.4	5.5
						27.8		7.86		100.4		3.42			5.4		
			Middle	6.1	19.6	27.8	27.9	7.74	7.76	98.9	99.2	3.56	3.58		5.6	5.6	
						27.9		7.78		99.4		3.59			5.6		
			Bottom	11.2	19.5	27.8	27.9	7.71	7.69	98.5	98.2	3.61	3.62		5.6	5.6	
						27.9		7.66		97.9		3.63			5.6		
10/04/12	0808-0822	22/Cloudy	Surface	1.0	20.5	27.6	27.6	7.63	7.60	99.2	98.8	4.54	4.58	4.73	6.4	6.5	6.6
						27.6		7.57		98.4		4.61			6.6		
			Middle	5.9	20.5	27.8	27.8	7.48	7.45	97.2	96.9	4.74	4.70		6.6	6.5	
						27.8		7.42		96.5		4.66			6.4		
			Bottom	10.8	20.5	27.7	27.7	7.21	7.24	93.7	94.1	4.89	4.92		6.8	6.9	
						27.7		7.26		94.4		4.95			7.0		
12/04/12	0912-0926	24/Fine	Surface	1.0	20.5	27.7	27.7	7.89	7.87	102.6	102.4	3.62	3.63	3.68	5.6	5.5	5.5
						27.6		7.85		102.1		3.64			5.4		
			Middle	6.3	20.5	27.7	27.7	7.72	7.74	100.4	100.7	3.69	3.67		5.6	5.5	
						27.7		7.76		100.9		3.65			5.4		
			Bottom	11.6	20.4	27.7	27.8	7.48	7.51	97.3	97.6	3.72	3.74		5.6	5.6	
						27.8		7.53		97.9		3.75			5.6		
14/04/12	1110-1125	26/Cloudy	Surface	1.0	21.5	28.0	28.0	6.76	6.78	87.9	88.2	4.40	4.42	4.49	6.6	6.6	6.6
						28.0		6.80		88.4		4.44			6.6		
			Middle	5.7	21.4	28.0	28.1	6.83	6.81	88.8	88.6	4.36	4.39		6.4	6.4	
						28.1		6.79		88.3		4.41			6.4		
			Bottom	10.4	21.5	28.1	28.2	6.69	6.70	87.0	87.1	4.62	4.65		6.8	6.8	
						28.2		6.70		87.2		4.68			6.8		
17/04/12	1437-1449	22/Drizzle	Surface	1.0	22.1	27.2	27.2	7.42	7.45	100.2	100.5	3.62	3.64	3.76	5.6	5.6	5.7
						27.2		7.47		100.8		3.66			5.6		
			Middle	6.2	21.9	27.7	27.7	7.38	7.36	99.6	99.4	3.77	3.75		5.6	5.6	
						27.7		7.34		99.1		3.72			5.6		
			Bottom	11.4	21.8	28.3	28.4	7.17	7.20	96.8	97.1	3.89	3.91		5.8	5.8	
						28.4		7.22		97.4		3.92			5.8		
19/04/12	1512-1527	22/Rainy	Surface	1.0	21.8	27.1	27.1	7.28	7.27	96.8	96.6	3.62	3.64	3.92	5.6	5.6	5.9
						27.1		7.25		96.4		3.65			5.6		
			Middle	6.0	21.7	27.4	27.4	7.11	7.09	94.6	94.3	3.84	3.86		5.8	5.8	
						27.4		7.06		93.9		3.88			5.8		
			Bottom	11.0	21.6	27.4	27.5	7.19	7.17	95.6	95.4	4.24	4.26		6.2	6.2	
						27.5		7.15		95.1		4.27			6.2		
21/04/12	1624-1638	24/Cloudy	Surface	1.0	22.0	27.3	27.3	7.27	7.29	96.3	96.6	3.12	3.11	3.23	5.0	5.0	5.2
						27.3		7.31		96.8		3.09			5.0		
			Middle	5.3	22.0	27.4	27.5	7.18	7.21	95.1	95.4	3.16	3.19		5.2	5.2	
						27.5		7.23		95.7		3.21			5.2		
			Bottom	9.6	21.9	27.6	27.6	7.11	7.10	94.1	94.0	3.40	3.39		5.4	5.4	
						27.6		7.08		93.8		3.37			5.4		
24/04/12	1823-1837	29/Cloudy	Surface	1.0	22.9	28.2	28.2	7.41	7.43	100.4	100.7	3.77	3.76	3.88	5.6	5.6	5.8
						28.2		7.45		101.0		3.74			5.6		
			Middle	6.1	22.6	28.8	28.8	7.32	7.34	99.1	99.5	3.82	3.84		5.8	5.8	
						28.7		7.35		99.9		3.86			5.8		
			Bottom	11.2	22.5	29.7	29.8	7.17	7.14	97.5	96.8	4.02	4.06		6.0	6.0	
						29.8		7.11		96.0		4.09			6.0		
26/04/12	0637-0648	25/Fine	Surface	1.0	22.4	27.3	27.3	7.19	7.17	96.3	96.1	3.67	3.70	3.80	5.6	5.6	5.7
						27.3		7.15		95.8		3.72			5.6		
			Middle	6.1	22.2	27.5	27.5	7.22	7.21	96.7	96.5	3.74	3.78		5.6	5.7	
						27.4		7.19		96.3		3.81			5.8		
			Bottom	11.2	22.1	27.6	27.6	7.17	7.16	96.0	95.8	3.90	3.94		5.8	5.8	
						27.6		7.14		95.6		3.97			5.8		

Mid-Flood Tide

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : R16

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	1420-1436	23/Cloudy	Surface	1.0	19.8	27.9	27.9	7.70	7.73	98.6	99.0	2.98	3.05	3.29	4.8	4.9	5.2
						27.8		7.76		99.3		3.12			5.0		
			Middle	6.6	19.4	27.9	27.9	7.89	7.86	107.0	103.5	3.39	3.43		5.4	5.4	
						27.9		7.82		100.0		3.46			5.4		
			Bottom	12.2	19.0	27.9	27.9	7.88	7.86	100.9	100.6	3.36	3.40		5.4	5.4	
						27.9		7.83		100.2		3.44			5.4		
05/04/12	0918-0932	21/Cloudy	Surface	1.0	19.7	27.7	27.8	7.73	7.76	98.8	99.2	3.17	3.20	3.30	5.2	5.2	5.3
						27.8		7.79		99.5		3.22			5.2		
			Middle	6.7	19.6	27.8	27.8	7.72	7.70	98.6	98.4	3.29	3.32		5.2	5.2	
						27.8		7.68		98.2		3.34			5.2		
			Bottom	12.4	19.6	27.9	27.9	7.62	7.64	97.3	97.5	3.38	3.40		5.4	5.4	
						27.8		7.65		97.7		3.42			5.4		
10/04/12	0749-0803	22/Cloudy	Surface	1.0	20.5	27.8	27.8	7.81	7.79	101.5	101.3	4.27	4.29	4.41	6.2	6.2	6.4
						27.8		7.77		101.0		4.31			6.2		
			Middle	6.7	20.4	27.8	27.8	7.70	7.68	100.1	99.8	4.38	4.41		6.4	6.4	
						27.8		7.65		99.5		4.43			6.4		
			Bottom	12.4	20.4	27.8	27.8	7.49	7.50	97.4	97.5	4.51	4.53		6.4	6.5	
						27.8		7.51		97.6		4.55			6.6		
12/04/12	0850-0904	24/Fine	Surface	1.0	20.6	27.7	27.7	7.76	7.78	100.9	101.2	3.58	3.57	3.64	5.4	5.4	5.5
						27.7		7.80		101.4		3.55			5.4		
			Middle	6.7	20.5	27.7	27.8	7.58	7.56	98.6	98.4	3.61	3.64		5.6	5.6	
						27.8		7.54		98.1		3.67			5.6		
			Bottom	12.4	20.5	27.8	27.8	7.37	7.36	95.8	95.6	3.73	3.71		5.6	5.5	
						27.8		7.34		95.4		3.69			5.4		
14/04/12	1047-1105	26/Cloudy	Surface	1.0	21.5	27.9	28.0	6.95	6.93	90.4	90.1	4.32	4.34	4.37	6.2	6.2	6.3
						28.0		6.90		89.7		4.36			6.2		
			Middle	6.5	21.5	28.0	28.0	6.87	6.86	89.3	89.2	4.29	4.32		6.2	6.3	
						28.0		6.85		89.1		4.34			6.4		
			Bottom	12.0	21.5	28.2	28.2	6.72	6.75	87.4	87.7	4.43	4.45		6.4	6.5	
						28.2		6.77		88.0		4.47			6.6		
17/04/12	1419-1432	22/Drizzle	Surface	1.0	22.1	27.1	27.2	7.45	7.47	100.6	100.8	3.68	3.67	3.76	5.6	5.5	5.6
						27.2		7.49		101.0		3.65			5.4		
			Middle	6.4	22.0	27.7	27.7	7.33	7.32	98.9	98.8	3.73	3.72		5.6	5.6	
						27.7		7.31		98.7		3.70			5.6		
			Bottom	11.8	21.7	28.2	28.3	7.21	7.20	97.3	97.1	3.86	3.89		5.8	5.8	
						28.3		7.18		96.9		3.91			5.8		
19/04/12	1450-1505	22/Rainy	Surface	1.0	21.8	27.2	27.2	7.10	7.12	94.4	94.7	3.81	3.83	3.99	5.6	5.7	6.0
						27.2		7.14		94.9		3.84			5.8		
			Middle	6.4	21.8	27.3	27.4	7.09	7.06	94.3	93.9	3.96	3.97		6.0	6.0	
						27.4		7.02		93.4		3.98			6.0		
			Bottom	11.8	21.7	27.4	27.4	7.17	7.16	95.4	95.3	4.14	4.17		6.2	6.2	
						27.4		7.15		95.1		4.19			6.2		
21/04/12	1605-1619	24/Cloudy	Surface	1.0	21.9	27.3	27.3	7.29	7.32	96.6	96.9	3.02	3.04	3.09	5.0	5.0	5.1
						27.3		7.34		97.2		3.05			5.0		
			Middle	6.6	21.9	27.4	27.4	7.11	7.13	94.2	94.4	3.01	3.03		5.0	5.0	
						27.3		7.14		94.6		3.04			5.0		
			Bottom	12.2	21.9	27.5	27.6	7.03	7.05	93.1	93.3	3.23	3.21		5.2	5.2	
						27.6		7.06		93.4		3.19			5.2		
24/04/12	1805-1818	29/Cloudy	Surface	1.0	22.8	28.2	28.2	7.32	7.34	99.0	99.5	3.69	3.67	3.78	5.6	5.5	5.6
						28.1		7.36		99.9		3.65			5.4		
			Middle	6.6	22.7	28.9	28.9	7.21	7.24	97.4	98.1	3.71	3.73		5.6	5.6	
						28.9		7.26		98.7		3.75			5.6		
			Bottom	12.1	27.3	30.1	30.1	7.10	7.13	96.2	96.6	3.92	3.95		5.8	5.8	
						30.1		7.15		97.0		3.97			5.8		
26/04/12	0618-0629	25/Fine	Surface	1.0	22.4	27.2	27.2	7.07	7.06	94.7	94.5	3.59	3.61	3.80	5.4	5.5	5.7
						27.2		7.04		94.3		3.63			5.6		
			Middle	6.4	22.1	27.4	27.5	7.10	7.12	95.1	95.4	3.90	3.94		5.8	5.9	
						27.5		7.14		95.6		3.98			6.0		
			Bottom	11.8	22.1	27.6	27.6	7.18	7.17	96.2	96.0	3.84	3.86		5.8	5.8	
						27.5		7.15		95.8		3.88			5.8		

Mid-Flood Tide

東森檢驗測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : R17

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	1400-1415	23/Cloudy	Surface	1.0	19.7	27.7	27.8	7.85	7.83	100.4	100.1	3.17	3.14	3.46	5.2	5.1	5.4
						27.8		7.80		99.8		3.11			5.0		
			Middle	6.2	19.3	27.8	27.8	7.71	7.73	98.6	98.9	3.61	3.59		5.6	5.6	
						27.8		7.75		99.1		3.56			5.5		
			Bottom	11.4	19.0	27.9	28.0	7.92	7.91	101.2	101.1	3.61	3.64		5.5	5.6	
						28.0		7.90		101.0		3.67			5.6		
05/04/12	0900-0915	21/Cloudy	Surface	1.0	19.6	27.7	27.7	7.72	7.74	98.7	98.9	3.48	3.45	3.55	5.4	5.4	5.5
						27.7		7.75		99.0		3.42			5.4		
			Middle	6.4	19.5	27.7	27.8	7.78	7.76	99.4	99.2	3.57	3.55		5.6	5.6	
						27.8		7.74		98.9		3.53			5.5		
			Bottom	11.8	19.4	27.7	27.8	7.62	7.64	97.4	97.7	3.64	3.66		5.5	5.6	
						27.8		7.66		97.9		3.68			5.6		
10/04/12	0730-0746	22/Cloudy	Surface	1.0	20.5	27.7	27.8	7.72	7.74	100.4	100.6	4.41	4.37	4.52	6.4	6.3	6.4
						27.8		7.75		100.8		4.33			6.2		
			Middle	6.5	20.5	27.7	27.7	7.67	7.65	99.7	99.5	4.47	4.51		6.4	6.5	
						27.7		7.63		99.2		4.54			6.5		
			Bottom	11.9	20.4	27.7	27.8	7.47	7.46	97.1	97.0	4.73	4.70		6.5	6.6	
						27.8		7.45		96.9		4.66			6.6		
12/04/12	0830-0845	24/Fine	Surface	1.0	20.6	27.6	27.7	7.74	7.76	100.7	101.0	3.56	3.59	3.66	5.4	5.5	5.6
						27.7		7.78		101.2		3.62			5.6		
			Middle	6.6	20.6	27.6	27.7	7.65	7.63	99.5	99.3	3.68	3.66		5.6	5.6	
						27.7		7.61		99.0		3.64			5.5		
			Bottom	12.2	20.5	27.7	27.7	7.38	7.37	96.0	95.8	3.71	3.73		5.5	5.7	
						27.7		7.35		95.6		3.74			5.8		
14/04/12	1025-1042	26/Cloudy	Surface	1.0	21.5	27.9	27.9	6.92	6.94	89.9	90.2	4.24	4.27	4.31	6.2	6.2	6.4
						27.9		6.96		90.5		4.30			6.2		
			Middle	6.1	21.4	27.9	28.0	6.88	6.91	89.4	89.8	4.27	4.25		6.4	6.5	
						28.0		6.93		90.1		4.22			6.5		
			Bottom	11.2	21.5	28.3	28.3	6.81	6.82	88.5	88.7	4.44	4.42		6.5	6.5	
						28.2		6.83		88.8		4.40			6.4		
17/04/12	1400-1414	22/Drizzle	Surface	1.0	22.1	27.1	27.1	7.58	7.57	102.3	102.2	3.56	3.54	3.67	5.4	5.4	5.5
						27.1		7.56		102.1		3.51			5.4		
			Middle	6.4	22.0	27.5	27.6	7.49	7.48	101.1	100.9	3.64	3.66		5.6	5.6	
						27.6		7.46		100.7		3.67			5.5		
			Bottom	11.8	21.8	28.1	28.2	7.32	7.34	98.8	99.0	3.78	3.81		5.5	5.7	
						28.2		7.35		99.2		3.83			5.8		
19/04/12	1430-1445	22/Rainy	Surface	1.0	22.0	27.1	27.1	7.20	7.20	95.8	95.8	3.72	3.73	3.92	5.6	5.6	5.8
						27.1		7.19		95.7		3.74			5.6		
			Middle	6.1	21.7	27.3	27.4	7.12	7.12	94.7	94.7	3.91	3.93		5.8	5.9	
						27.4		7.11		94.6		3.94			6.0		
			Bottom	11.2	21.7	27.4	27.5	7.02	7.04	93.4	93.6	4.10	4.12		6.0	6.0	
						27.5		7.05		93.8		4.13			6.0		
21/04/12	1545-1559	24/Cloudy	Surface	1.0	22.0	27.3	27.3	7.26	7.24	96.2	96.0	2.94	2.97	2.97	4.8	4.9	4.9
						27.3		7.22		95.7		2.99			5.0		
			Middle	5.9	22.0	27.4	27.5	7.29	7.27	96.6	96.4	2.87	2.89		4.8	4.9	
						27.5		7.25		96.1		2.91			5.0		
			Bottom	10.8	21.9	27.7	27.7	7.13	7.12	94.5	94.3	3.04	3.06		5.0	5.0	
						27.6		7.10		94.1		3.07			5.0		
24/04/12	1745-1759	29/Cloudy	Surface	1.0	22.9	27.8	27.9	7.50	7.49	101.6	101.4	3.45	3.48	3.63	5.4	5.4	5.5
						27.9		7.47		101.2		3.51			5.4		
			Middle	6.5	22.8	28.8	28.8	7.36	7.39	99.7	100.3	3.60	3.62		5.6	5.6	
						28.8		7.42		100.8		3.64			5.5		
			Bottom	12.0	22.4	22.9	22.9	7.20	7.23	97.5	98.0	3.76	3.79		5.5	5.7	
						22.9		7.25		98.5		3.82			5.8		
26/04/12	0600-0612	25/Fine	Surface	1.0	22.4	27.2	27.2	7.10	7.12	95.1	94.5	3.43	3.45	3.62	5.4	5.4	5.5
						27.2		7.14		93.9		3.47			5.4		
			Middle	6.2	22.2	27.3	27.4	7.09	7.07	95.0	94.7	3.69	3.65		5.6	5.6	
						27.4		7.05		94.4		3.60			5.5		
			Bottom	11.4	22.1	27.6	27.6	7.14	7.13	95.6	95.4	3.77	3.76		5.5	5.6	
						27.6		7.11		95.2		3.74			5.6		

Mid-Flood Tide

Monitoring Station : R28

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	1707-1721	23/Cloudy	Surface	1.0	19.6	27.8	27.8	7.62	7.64	97.6	97.9	3.72	3.75	3.77	5.6	5.7	5.7
						27.8		7.66		98.1		3.77			5.8		
			Middle	5.9	19.3	27.8	27.9	7.82	7.80	100.2	100.0	3.65	3.67		5.6	5.6	
						27.9		7.78		99.8		3.69			5.6		
			Bottom	10.7	19.0	28.0	28.1	7.84	7.83	100.5	100.3	3.92	3.90		5.8	5.8	
						28.1		7.81		100.0		3.88			5.8		
05/04/12	1106-1120	21/Cloudy	Surface	1.0	19.7	27.7	27.8	7.75	7.79	99.0	99.5	3.68	3.67	3.77	5.6	5.6	5.7
						27.8		7.82		99.9		3.65			5.6		
			Middle	6.0	19.7	27.8	27.8	7.76	7.74	99.1	98.8	3.75	3.77		5.6	5.7	
						27.8		7.71		98.5		3.79			5.8		
			Bottom	11.0	19.6	27.9	28.0	7.70	7.67	98.4	98.0	3.85	3.87		5.8	5.8	
						28.0		7.63		97.5		3.88			5.8		
10/04/12	0935-0949	22/Cloudy	Surface	1.0	20.4	27.8	27.8	7.71	7.70	100.2	100.0	4.50	4.53	4.65	6.4	6.4	6.6
						27.7		7.68		99.8		4.55			6.4		
			Middle	6.0	20.4	27.8	27.8	7.61	7.62	98.9	99.1	4.66	4.64		6.6	6.6	
						27.8		7.63		99.2		4.62			6.6		
			Bottom	11.0	20.5	27.8	27.8	7.47	7.46	97.1	96.9	4.74	4.77		6.6	6.7	
						27.8		7.44		96.7		4.80			6.8		
12/04/12	1040-1055	24/Fine	Surface	1.0	20.6	27.6	27.7	8.03	8.05	104.4	104.6	3.65	3.68	3.70	5.6	5.6	5.7
						27.7		8.06		104.8		3.70			5.6		
			Middle	5.9	20.6	27.6	27.7	7.83	7.84	101.8	102.0	3.63	3.66		5.6	5.6	
						27.7		7.85		102.1		3.68			5.6		
			Bottom	10.8	20.5	27.7	27.7	7.52	7.50	97.8	97.5	3.75	3.77		5.8	5.8	
						27.7		7.47		97.1		3.79			5.8		
14/04/12	1241-1255	26/Cloudy	Surface	1.0	21.5	27.9	28.0	6.90	6.92	89.7	89.9	4.29	4.31	4.42	6.2	6.3	6.5
						28.0		6.93		90.1		4.33			6.4		
			Middle	5.9	21.4	28.0	28.0	6.96	6.92	90.5	90.0	4.39	4.41		6.4	6.5	
						28.0		6.88		89.4		4.43			6.6		
			Bottom	10.8	21.5	28.2	28.2	6.94	6.96	90.2	90.5	4.55	4.53		6.8	6.8	
						28.1		6.98		90.7		4.50			6.8		
17/04/12	1551-1603	22/Drizzle	Surface	1.0	22.1	27.1	27.2	7.42	7.40	100.2	99.9	3.59	3.57	3.63	5.4	5.4	5.5
						27.2		7.37		99.5		3.55			5.4		
			Middle	5.9	21.9	27.5	27.5	7.29	7.27	98.4	98.2	3.60	3.59		5.6	5.5	
						27.5		7.25		97.9		3.57			5.4		
			Bottom	10.8	21.8	28.0	28.1	7.17	7.20	96.8	97.1	3.76	3.75		5.6	5.6	
						28.1		7.22		97.4		3.73			5.6		
19/04/12	1639-1654	22/Rainy	Surface	1.0	21.8	27.3	27.3	7.20	7.22	95.8	96.1	3.84	3.86	4.05	5.8	5.8	6.0
						27.3		7.24		96.3		3.88			5.8		
			Middle	5.9	21.7	27.3	27.4	7.03	7.06	93.5	93.9	4.04	4.06		6.0	6.0	
						27.4		7.09		94.3		4.07			6.0		
			Bottom	10.8	21.6	27.5	27.5	7.38	7.35	98.2	97.8	4.23	4.25		6.4	6.3	
						27.4		7.32		97.4		4.26			6.2		
21/04/12	1747-1801	24/Cloudy	Surface	1.0	22.1	27.2	27.2	7.31	7.30	96.7	96.5	2.86	2.88	3.08	4.8	4.8	5.0
						27.2		7.28		96.3		2.90			4.8		
			Middle	5.4	22.1	27.3	27.4	7.27	7.25	96.2	96.0	3.03	3.05		5.0	5.0	
						27.4		7.23		95.7		3.07			5.0		
			Bottom	9.8	21.9	27.4	27.4	7.15	7.17	94.6	94.9	3.34	3.32		5.4	5.3	
						27.4		7.19		95.1		3.29			5.2		
24/04/12	1941-1953	29/Cloudy	Surface	1.0	22.8	28.2	28.2	7.36	7.34	99.4	99.2	3.57	3.59	3.75	5.4	5.5	5.7
						28.2		7.32		98.9		3.61			5.6		
			Middle	6.1	22.6	28.6	28.7	7.33	7.31	99.2	99.1	3.72	3.75		5.6	5.7	
						28.7		7.29		98.9		3.77			5.8		
			Bottom	11.1	22.4	29.5	29.6	7.11	7.13	96.1	96.5	3.88	3.91		5.8	5.9	
						29.6		7.15		96.9		3.93			6.0		
26/04/12	0755-0807	25/Fine	Surface	1.0	22.5	27.3	27.3	7.19	7.17	96.3	96.1	3.59	3.55	3.70	5.4	5.4	5.6
						27.2		7.15		95.8		3.51			5.4		
			Middle	6.2	22.1	27.4	27.4	7.10	7.12	94.9	95.2	3.64	3.67		5.6	5.6	
						27.4		7.14		95.5		3.69			5.6		
			Bottom	11.4	22.1	27.6	27.6	7.17	7.19	96.0	96.2	3.92	3.90		5.8	5.8	
						27.6		7.20		96.4		3.87			5.8		

Mid-Flood Tide

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : R29

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	1727-1742	23/Cloudy	Surface	1.0	19.5	27.8	27.9	7.86	7.84	100.6	100.2	3.91	3.93	3.94	5.8	5.8	5.9
						27.9		7.81		99.8		3.95			5.8		
			Middle	8.8	19.2	27.9	28.0	7.88	7.92	100.9	101.4	3.92	3.95		6.0	6.0	
						28.0		7.96		101.9		3.97			6.0		
			Bottom	16.6	19.0	28.0	28.0	8.00	8.00	102.4	102.2	3.90	3.93		5.8	5.9	
						27.9		7.99		101.9		3.96			6.0		
05/04/12	1128-1145	21/Cloudy	Surface	1.0	19.7	27.8	27.8	7.87	7.85	100.6	100.4	3.86	3.88	3.95	5.8	5.8	5.9
						27.7		7.83		100.1		3.90			5.8		
			Middle	9.0	19.6	27.9	27.9	7.78	7.76	99.4	99.2	3.98	3.96		6.0	6.0	
						27.9		7.74		98.9		3.93			6.0		
			Bottom	17.0	19.5	28.0	28.1	7.72	7.74	98.6	98.9	4.03	4.00		6.0	5.9	
						28.1		7.76		99.2		3.97			5.8		
10/04/12	0956-1010	22/Cloudy	Surface	1.0	20.5	27.7	27.7	7.50	7.53	97.5	97.9	4.76	4.72	4.88	6.8	6.7	6.8
						27.7		7.55		98.2		4.68			6.6		
			Middle	9.0	20.4	27.7	27.8	7.31	7.34	95.0	95.4	4.83	4.86		6.8	6.8	
						27.8		7.36		95.7		4.89			6.8		
			Bottom	16.9	20.4	27.7	27.8	7.09	7.12	92.2	92.5	5.07	5.05		7.0	7.0	
						27.8		7.14		92.8		5.02			7.0		
12/04/12	1103-1118	24/Fine	Surface	1.0	20.6	27.7	27.8	8.08	8.07	105.1	104.9	3.68	3.70	3.66	5.6	5.6	5.5
						27.8		8.05		104.7		3.72			5.6		
			Middle	9.0	20.6	27.8	27.8	7.87	7.90	102.3	102.7	3.62	3.64		5.4	5.4	
						27.7		7.93		103.1		3.66			5.4		
			Bottom	17.0	20.5	27.8	27.9	7.72	7.71	100.4	100.3	3.64	3.63		5.6	5.6	
						27.9		7.70		100.1		3.61			5.6		
14/04/12	1302-1318	26/Cloudy	Surface	1.0	21.5	28.0	28.1	6.80	6.82	88.4	88.7	4.38	4.41	4.53	6.4	6.4	6.6
						28.1		6.84		88.9		4.43			6.4		
			Middle	8.9	21.6	28.3	28.3	6.73	6.75	87.5	87.7	4.52	4.51		6.6	6.6	
						28.3		6.76		87.9		4.50			6.6		
			Bottom	16.8	21.6	28.5	28.5	6.89	6.87	89.6	89.4	4.66	4.68		6.8	6.8	
						28.5		6.85		89.1		4.70			6.8		
17/04/12	1608-1621	22/Drizzle	Surface	1.0	22.0	27.2	27.2	7.48	7.47	101.0	100.8	3.71	3.73	3.78	5.6	5.6	5.7
						27.2		7.45		100.6		3.74			5.6		
			Middle	8.9	21.9	27.4	27.5	7.39	7.41	99.8	100.1	3.75	3.77		5.6	5.6	
						27.5		7.43		100.3		3.79			5.6		
			Bottom	16.8	21.7	28.1	28.2	7.27	7.25	98.1	97.9	3.86	3.85		5.8	5.8	
						28.2		7.23		97.6		3.83			5.8		
19/04/12	1657-1710	22/Rainy	Surface	1.0	21.9	27.4	27.4	7.15	7.17	95.1	95.4	4.05	4.06	4.20	6.0	6.0	6.2
						27.3		7.19		95.6		4.07			6.0		
			Middle	8.5	21.7	27.4	27.5	7.10	7.11	94.4	94.6	4.12	4.14		6.2	6.2	
						27.5		7.12		94.7		4.15			6.2		
			Bottom	16.0	21.6	27.6	27.6	7.28	7.27	96.8	96.6	4.41	4.40		6.4	6.4	
						27.5		7.25		96.4		4.39			6.4		
21/04/12	1806-1822	24/Cloudy	Surface	1.0	22.1	27.2	27.2	7.24	7.23	95.8	95.6	3.11	3.10	3.33	5.2	5.1	5.3
						27.1		7.21		95.4		3.09			5.0		
			Middle	8.6	22.0	27.3	27.3	7.03	7.05	93.0	93.3	3.29	3.31		5.2	5.3	
						27.3		7.07		93.5		3.33			5.4		
			Bottom	16.2	21.9	27.4	27.5	6.87	6.85	90.9	90.6	3.59	3.57		5.6	5.5	
						27.5		6.82		90.3		3.55			5.4		
24/04/12	1959-2012	29/Cloudy	Surface	1.0	22.9	28.0	28.1	7.47	7.45	101.2	100.9	3.67	3.65	3.82	5.6	5.6	5.8
						28.1		7.43		100.6		3.62			5.6		
			Middle	8.8	22.8	28.9	29.0	7.33	7.36	99.2	99.6	3.88	3.86		5.8	5.8	
						29.0		7.38		100.0		3.83			5.8		
			Bottom	16.6	22.4	30.0	30.0	7.27	7.26	98.4	98.3	3.98	3.96		6.0	5.9	
						30.0		7.25		98.1		3.93			5.8		
26/04/12	0814-0826	25/Fine	Surface	1.0	22.5	27.3	27.3	7.34	7.32	98.3	98.1	3.67	3.70	3.83	5.6	5.6	5.8
						27.3		7.30		97.8		3.72			5.6		
			Middle	8.6	22.2	27.5	27.5	7.27	7.26	97.4	97.2	3.88	3.86		5.8	5.8	
						27.5		7.24		97.0		3.84			5.8		
			Bottom	16.2	22.1	27.5	27.5	7.26	7.25	97.2	97.0	3.98	3.95		6.0	6.0	
						27.5		7.23		96.8		3.91			6.0		

Mid-Flood Tide

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : C1

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	1503-1518	23/Cloudy	Surface	1.0	19.8	27.7	27.8	7.75	7.78	99.1	99.5	3.45	3.43	3.41	5.4	5.4	5.4
						27.8		7.80		99.8		3.41			5.4		
			Middle	7.2	19.3	27.9	28.0	7.79	7.82	98.9	99.3	3.32	3.30		5.2	5.2	
						28.0		7.85		99.6		3.27			5.2		
			Bottom	13.3	18.9	28.0	28.1	7.90	7.92	101.0	101.3	3.53	3.50		5.4	5.5	
						28.1		7.94		101.6		3.46			5.5		
05/04/12	1001-1015	21/Cloudy	Surface	1.0	19.7	27.7	27.7	7.84	7.82	100.2	100.0	3.54	3.52	3.53	5.4	5.3	5.4
						27.7		7.80		99.7		3.50			5.2		
			Middle	7.3	19.7	27.8	27.8	7.74	7.73	98.9	98.7	3.52	3.50		5.4	5.4	
						27.7		7.71		98.5		3.47			5.4		
			Bottom	13.6	19.5	27.9	27.9	7.73	7.70	98.7	98.4	3.56	3.58		5.6	5.6	
						27.8		7.67		98.0		3.59			5.5		
10/04/12	0830-0845	22/Cloudy	Surface	1.0	20.4	27.8	27.8	7.61	7.64	98.9	99.3	4.48	4.46	4.61	6.4	6.4	6.6
						27.7		7.66		99.6		4.43			6.4		
			Middle	7.6	20.5	27.8	27.8	7.50	7.52	97.5	97.8	4.56	4.60		6.6	6.6	
						27.7		7.54		98.0		4.63			6.6		
			Bottom	14.1	20.5	27.8	27.8	7.33	7.31	95.3	95.1	4.83	4.79		6.8	6.9	
						27.8		7.29		94.8		4.75			7.0		
12/04/12	0933-0948	24/Fine	Surface	1.0	20.5	27.7	27.7	7.92	7.94	103.0	103.3	3.57	3.56	3.63	5.4	5.4	5.5
						27.6		7.96		103.5		3.54			5.4		
			Middle	7.4	20.5	27.7	27.7	7.81	7.83	101.5	101.8	3.63	3.65		5.6	5.6	
						27.6		7.85		102.1		3.67			5.6		
			Bottom	13.8	20.4	27.7	27.8	7.70	7.68	100.1	99.8	3.65	3.67		5.4	5.5	
						27.8		7.65		99.5		3.69			5.5		
14/04/12	1132-1148	26/Cloudy	Surface	1.0	21.4	28.0	28.1	6.98	7.01	90.7	91.1	4.16	4.18	4.33	6.0	6.1	6.3
						28.1		7.03		91.4		4.20			6.2		
			Middle	7.4	21.5	28.1	28.2	6.96	6.94	90.5	90.2	4.28	4.30		6.2	6.3	
						28.2		6.91		89.8		4.31			6.4		
			Bottom	13.8	21.5	28.3	28.4	6.88	6.86	89.5	89.2	4.49	4.51		6.4	6.5	
						28.4		6.84		88.9		4.52			6.5		
17/04/12	1455-1508	22/Drizzle	Surface	1.0	22.0	27.2	27.2	7.39	7.38	99.7	99.6	3.76	3.78	3.86	5.6	5.6	5.8
						27.1		7.36		99.4		3.79			5.6		
			Middle	7.0	21.9	27.6	27.7	7.30	7.29	98.5	98.3	3.82	3.84		5.8	5.8	
						27.7		7.27		98.1		3.85			5.8		
			Bottom	13.0	21.7	28.4	28.4	7.08	7.10	95.6	95.9	3.94	3.96		6.0	6.0	
						28.3		7.12		96.1		3.98			6.0		
19/04/12	1536-1549	22/Rainy	Surface	1.0	21.7	27.1	27.1	7.08	7.10	94.2	94.5	3.68	3.69	3.89	5.6	5.6	5.8
						27.1		7.12		94.7		3.70			5.5		
			Middle	7.1	21.7	27.3	27.3	7.02	7.04	93.4	93.6	3.89	3.90		5.8	5.8	
						27.3		7.05		93.8		3.91			5.8		
			Bottom	13.2	21.7	27.4	27.4	7.20	7.18	95.8	95.5	4.08	4.07		6.0	6.0	
						27.4		7.16		95.2		4.05			6.0		
21/04/12	1643-1658	24/Cloudy	Surface	1.0	22.1	27.2	27.2	7.46	7.48	98.8	99.0	3.02	3.00	3.06	5.0	4.9	4.9
						27.1		7.49		99.2		2.98			4.8		
			Middle	7.1	22.0	27.2	27.2	7.24	7.22	95.9	95.7	2.99	2.97		4.8	4.8	
						27.2		7.20		95.4		2.95			4.8		
			Bottom	13.2	21.9	27.4	27.4	7.18	7.17	95.1	94.9	3.22	3.20		5.2	5.1	
						27.4		7.15		94.7		3.17			5.0		
24/04/12	1844-1858	29/Cloudy	Surface	1.0	22.8	28.0	28.0	7.33	7.31	99.3	99.0	3.77	3.80	3.91	5.6	5.7	5.8
						27.9		7.29		98.6		3.82			5.8		
			Middle	7.1	22.7	28.8	28.9	7.17	7.19	97.0	97.4	3.93	3.91		5.8	5.8	
						28.9		7.21		97.8		3.89			5.8		
			Bottom	13.2	22.4	30.0	30.0	7.09	7.06	96.1	95.6	4.06	4.04		6.0	6.0	
						30.0		7.02		95.0		4.01			6.0		
26/04/12	0658-0710	25/Fine	Surface	1.0	22.5	27.3	27.3	7.25	7.27	97.1	97.3	3.82	3.78	3.88	5.8	5.7	5.8
						27.3		7.28		97.5		3.74			5.6		
			Middle	7.2	22.2	27.5	27.5	7.17	7.16	96.0	95.9	3.88	3.91		5.8	5.8	
						27.4		7.15		95.7		3.93			5.8		
			Bottom	13.4	22.1	27.6	27.6	7.09	7.08	94.8	94.6	3.91	3.95		5.8	5.9	
						27.5		7.06		94.4		3.98			6.0		

Mid-Flood Tide

Monitoring Station : C3

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	1526-1540	23/Cloudy	Surface	1.0	19.7	27.8	27.8	7.59	7.62	97.0	97.4	3.14	3.19	3.27	5.0	5.1	5.2
						27.8		7.64		97.7		3.23			5.2		
			Middle	6.7	19.4	27.9	27.9	7.75	7.77	99.1	99.4	3.39	3.36		5.4	5.4	
						27.8		7.79		99.6		3.33			5.4		
			Bottom	12.4	19.0	27.9	27.9	7.77	7.79	99.4	99.6	3.24	3.27		5.2	5.2	
						27.9		7.81		99.8		3.29			5.2		
05/04/12	1022-1036	21/Cloudy	Surface	1.0	19.7	27.8	27.8	7.77	7.75	99.3	99.0	3.36	3.33	3.32	5.4	5.3	5.3
						27.8		7.72		98.6		3.29			5.2		
			Middle	6.8	19.6	27.9	27.9	7.75	7.72	99.0	98.6	3.32	3.35		5.2	5.3	
						27.8		7.69		98.2		3.38			5.4		
			Bottom	12.6	19.6	27.9	28.0	7.66	7.64	97.9	97.6	3.31	3.29		5.2	5.2	
						28.0		7.61		97.2		3.27			5.2		
10/04/12	0852-0907	22/Cloudy	Surface	1.0	20.5	27.7	27.7	7.52	7.53	97.8	97.9	4.45	4.41	4.57	6.4	6.4	6.5
						27.7		7.54		98.0		4.36			6.4		
			Middle	6.9	20.5	27.7	27.8	7.41	7.44	96.3	96.7	4.50	4.55		6.4	6.5	
						27.8		7.47		97.1		4.59			6.6		
			Bottom	12.7	20.5	27.7	27.7	7.23	7.21	94.0	93.8	4.78	4.75		6.8	6.7	
						27.7		7.19		93.5		4.72			6.6		
12/04/12	0954-1008	24/Fine	Surface	1.0	20.6	27.7	27.8	7.72	7.71	100.4	100.3	3.69	3.70	3.74	5.6	5.6	5.7
						27.8		7.70		100.1		3.71			5.6		
			Middle	7.1	20.5	27.8	27.8	7.50	7.47	97.5	97.1	3.76	3.78		5.6	5.7	
						27.8		7.44		96.7		3.79			5.8		
			Bottom	13.2	20.5	27.8	27.8	7.36	7.34	95.7	95.5	3.73	3.76		5.6	5.7	
						27.8		7.32		95.2		3.78			5.8		
14/04/12	1155-1212	26/Cloudy	Surface	1.0	21.5	28.0	28.0	6.87	6.85	89.3	89.1	4.24	4.26	4.34	6.2	6.2	6.3
						27.9		6.83		88.8		4.28			6.2		
			Middle	6.8	21.5	28.0	28.1	6.91	6.88	89.8	89.5	4.30	4.33		6.2	6.3	
						28.1		6.85		89.1		4.35			6.4		
			Bottom	12.6	21.4	28.2	28.2	6.80	6.79	88.4	88.2	4.41	4.43		6.4	6.4	
						28.2		6.77		88.0		4.45			6.4		
17/04/12	1513-1527	22/Drizzle	Surface	1.0	22.1	27.2	27.3	7.46	7.45	100.7	100.5	3.74	3.76	3.88	5.6	5.6	5.8
						27.3		7.43		100.3		3.77			5.6		
			Middle	6.7	21.9	27.6	27.7	7.33	7.35	98.9	99.2	3.92	3.91		5.8	5.8	
						27.7		7.37		99.5		3.89			5.8		
			Bottom	12.4	21.7	28.3	28.3	7.16	7.18	96.7	97.0	3.97	3.99		6.0	6.0	
						28.3		7.20		97.2		4.01			6.0		
19/04/12	1555-1610	22/Rainy	Surface	1.0	21.8	27.1	27.2	7.30	7.27	97.1	96.7	3.72	3.73	3.91	5.6	5.6	5.8
						27.2		7.24		96.3		3.74			5.6		
			Middle	6.6	21.6	27.3	27.4	7.28	7.27	96.8	96.6	3.80	3.82		5.8	5.8	
						27.4		7.25		96.4		3.84			5.8		
			Bottom	12.2	21.6	27.4	27.5	7.16	7.17	95.2	95.3	4.16	4.18		6.0	6.1	
						27.5		7.17		95.4		4.20			6.2		
21/04/12	1704-1720	24/Cloudy	Surface	1.0	22.1	27.2	27.2	7.47	7.45	98.9	98.6	3.14	3.12	3.30	5.2	5.1	5.3
						27.2		7.42		98.3		3.10			5.0		
			Middle	6.5	22.0	27.2	27.2	7.33	7.35	97.1	97.3	3.27	3.25		5.2	5.2	
						27.2		7.36		97.4		3.23			5.2		
			Bottom	12.0	22.0	27.4	27.4	7.16	7.17	94.8	94.9	3.54	3.52		5.6	5.6	
						27.3		7.18		95.0		3.49			5.6		
24/04/12	1904-1915	29/Cloudy	Surface	1.0	22.7	28.1	28.2	7.35	7.36	99.2	99.5	3.86	3.83	3.94	5.8	5.8	5.9
						28.2		7.37		99.8		3.80			5.8		
			Middle	6.8	22.6	28.9	28.9	7.25	7.27	98.2	98.6	3.91	3.93		5.8	5.9	
						28.9		7.29		99.0		3.95			6.0		
			Bottom	12.6	22.4	30.1	30.1	7.11	7.13	96.3	96.6	4.01	4.05		6.0	6.0	
						30.1		7.15		96.9		4.08			6.0		
26/04/12	0718-0730	25/Fine	Surface	1.0	22.6	27.2	27.2	7.21	7.20	96.6	96.4	3.77	3.80	3.79	5.6	5.7	5.7
						27.2		7.18		96.2		3.82			5.8		
			Middle	6.8	22.2	27.5	27.5	7.24	7.26	97.0	97.2	3.67	3.71		5.6	5.6	
						27.5		7.27		97.4		3.74			5.6		
			Bottom	12.6	22.1	27.5	27.6	7.18	7.17	96.2	96.0	3.85	3.87		5.8	5.8	
						27.6		7.15		95.8		3.89			5.8		

Mid-Ebb Tide

Monitoring Station : C2

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	1240-1250	20/Cloudy	Surface	1.0	19.5	27.9	27.9	7.65	7.63	97.9	97.7	3.91	3.94	4.01	6.0	5.9	6.0
						27.9		7.61		97.4		3.97			5.8		
			Middle	8.4	18.9	28.2	28.2	7.70	7.69	98.5	98.4	4.01	4.04		5.8	5.9	
						28.2		7.68		98.2		4.06			6.0		
			Bottom	15.8	18.8	28.2	28.2	7.69	7.68	98.4	98.2	4.08	4.05		6.2	6.1	
						28.1		7.66		98.0		4.01			6.0		
05/04/12	1838-1848	21/Rainy	Surface	1.0	19.6	27.2	27.2	7.58	7.60	96.9	97.2	3.61	3.62	3.62	5.5	5.6	5.6
						27.2		7.62		97.4		3.62			5.6		
			Middle	8.3	19.4	27.3	27.4	7.49	7.51	95.7	96.0	3.67	3.69		5.6	5.7	
						27.4		7.53		96.2		3.70			5.8		
			Bottom	15.6	19.2	27.5	27.6	7.92	7.74	96.1	96.3	3.58	3.56		5.4	5.4	
						27.6		7.55		96.5		3.54			5.4		
10/04/12	1703-1718	27/Cloudy	Surface	1.0	20.8	27.8	27.8	8.02	8.05	104.3	104.7	4.41	4.40	4.57	6.5	6.5	6.6
						27.7		8.08		105.0		4.39			6.4		
			Middle	5.9	20.6	27.7	27.7	7.92	7.93	102.9	103.1	4.54	4.56		6.4	6.5	
						27.7		7.94		103.2		4.58			6.6		
			Bottom	10.8	20.6	27.8	27.8	7.86	7.85	102.2	102.0	4.72	4.74		6.6	6.7	
						27.7		7.83		101.8		4.75			6.8		
12/04/12	1748-1800	28/Fine	Surface	1.0	20.7	27.7	27.8	7.42	7.44	96.5	96.7	3.93	3.92	4.07	6.0	6.0	6.2
						27.8		7.46		96.9		3.91			6.0		
			Middle	5.9	20.6	27.8	27.8	7.56	7.53	98.3	97.9	4.11	4.10		6.2	6.2	
						27.8		7.50		97.5		4.09			6.2		
			Bottom	10.8	20.6	27.7	27.8	7.41	7.44	96.3	96.6	4.17	4.18		6.4	6.4	
						27.8		7.46		96.9		4.18			6.4		
14/04/12	1930-1945	27/Cloudy	Surface	1.0	21.4	28.2	28.2	6.68	6.66	86.8	86.6	4.62	4.64	4.81	6.5	6.7	6.8
						28.2		6.64		86.3		4.65			6.8		
			Middle	5.7	21.3	28.4	28.4	6.52	6.53	84.8	84.9	4.84	4.85		6.8	6.8	
						28.3		6.54		85.0		4.85			6.8		
			Bottom	10.4	21.3	28.4	28.4	6.50	6.51	84.5	84.6	4.95	4.96		7.0	7.0	
						28.4		6.51		84.6		4.97			7.0		
17/04/12	1225-1240	22/Rainy	Surface	1.0	22.5	27.4	27.4	7.38	7.39	100.4	100.6	3.61	3.63	3.71	5.5	5.6	5.6
						27.4		7.40		100.7		3.65			5.6		
			Middle	5.9	22.3	27.8	27.8	7.32	7.31	99.5	99.3	3.71	3.72		5.6	5.6	
						27.7		7.29		99.0		3.73			5.6		
			Bottom	10.8	22.0	28.4	28.5	7.20	7.18	97.8	97.5	3.77	3.79		5.6	5.7	
						28.5		7.15		97.1		3.80			5.8		
19/04/12	1304-1315	22/Rainy	Surface	1.0	21.9	27.4	27.4	7.34	7.36	97.6	97.9	3.79	3.82	3.96	5.5	5.7	5.9
						27.3		7.38		98.1		3.84			5.8		
			Middle	8.7	21.7	27.6	27.7	7.44	7.42	98.9	98.7	3.98	3.97		6.0	5.9	
						27.7		7.40		98.4		3.95			5.8		
			Bottom	16.4	21.5	27.6	27.6	7.37	7.36	98.0	97.9	4.13	4.10		6.2	6.1	
						27.6		7.35		97.7		4.07			6.0		
21/04/12	1419-1431	22/Cloudy	Surface	1.0	22.1	26.9	27.0	7.16	7.18	94.5	94.7	3.17	3.20	3.40	5.5	5.4	5.4
						27.0		7.19		94.9		3.23			5.2		
			Middle	8.1	22.1	27.2	27.3	7.09	7.08	93.5	93.4	3.38	3.40		5.2	5.3	
						27.3		7.06		93.2		3.42			5.4		
			Bottom	15.2	22.0	27.5	27.5	6.81	6.83	89.9	90.2	3.57	3.60		5.4	5.5	
						27.5		6.85		90.4		3.62			5.6		
24/04/12	1616-1630	28/Cloudy	Surface	1.0	23.0	28.1	28.1	7.30	7.33	98.9	99.3	3.75	3.77	3.90	5.5	5.6	5.8
						28.0		7.35		99.6		3.79			5.6		
			Middle	8.1	22.8	28.6	28.6	7.22	7.21	97.6	97.5	3.87	3.90		5.6	5.7	
						28.6		7.20		97.3		3.92			5.8		
			Bottom	10.8	22.4	29.7	29.7	7.12	7.10	96.0	95.7	4.03	4.04		6.0	6.0	
						29.6		7.08		95.4		4.05			6.0		
26/04/12	1541-1553	25/Fine	Surface	1.0	23.0	27.0	27.0	7.15	7.17	96.5	96.8	3.86	3.88	4.07	5.5	5.7	6.0
						27.0		7.19		97.0		3.90			5.8		
			Middle	8.7	23.0	27.0	27.1	7.23	7.22	97.6	97.5	4.15	4.14		6.2	6.1	
						27.1		7.20		97.3		4.12			6.0		
			Bottom	16.4	22.9	27.0	27.1	7.05	7.03	95.2	95.0	4.17	4.19		6.2	6.2	
						27.1		7.01		94.7		4.21			6.2		

Mid-Ebb Tide

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : C4

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	1221-1232	20/Cloudy	Surface	1.0	19.5	27.8	27.8	7.69	7.68	98.4	98.2	3.87	3.90	3.89	5.8	5.8	5.8
						27.8		7.66		98.0		3.93			5.8		
			Middle	8.4	18.9	28.1	28.1	7.72	7.70	98.8	98.6	3.79	3.82		5.6	5.7	
						28.1		7.68		98.3		3.85			5.8		
			Bottom	15.8	18.8	28.1	28.1	7.75	7.73	99.1	98.8	3.97	3.94		5.8	5.9	
						28.1		7.70		98.5		3.91			6.0		
05/04/12	1822-1833	21/Rainy	Surface	1.0	19.6	27.1	27.2	7.61	7.63	97.3	97.6	3.65	3.66	3.66	5.6	5.6	5.6
						27.2		7.65		97.8		3.66			5.6		
			Middle	8.5	19.4	27.2	27.3	7.58	7.60	96.9	97.2	3.71	3.72		5.8	5.8	
						27.3		7.62		97.4		3.73			5.8		
			Bottom	16.0	19.3	27.5	27.6	7.49	7.52	95.7	96.1	3.58	3.60		5.4	5.5	
						27.6		7.54		96.4		3.62			5.5		
10/04/12	1644-1659	27/Cloudy	Surface	1.0	20.7	27.7	27.7	7.99	7.97	103.9	103.7	4.34	4.32	4.48	6.2	6.2	6.4
						27.7		7.95		103.4		4.30			6.2		
			Middle	10.1	20.6	27.7	27.8	7.80	7.83	101.4	101.8	4.42	4.43		6.4	6.4	
						27.8		7.85		102.1		4.44			6.4		
			Bottom	19.2	20.5	27.8	27.8	7.52	7.52	97.8	97.7	4.67	4.68		6.6	6.6	
						27.8		7.51		97.6		4.69			6.5		
12/04/12	1734-1746	28/Fine	Surface	1.0	20.8	27.8	27.8	7.62	7.63	99.1	99.2	3.82	3.85	3.94	5.8	5.8	5.9
						27.7		7.64		99.3		3.88			5.8		
			Middle	10.0	20.7	27.7	27.7	7.60	7.59	98.8	98.6	3.90	3.92		5.8	5.9	
						27.7		7.57		98.4		3.94			6.0		
			Bottom	19.0	20.5	27.8	27.8	7.39	7.41	96.1	96.3	4.06	4.05		6.0	6.0	
						27.8		7.42		96.5		4.03			6.0		
14/04/12	1906-1923	27/Cloudy	Surface	1.0	21.4	28.1	28.2	6.72	6.71	87.4	87.3	4.72	4.71	4.82	6.6	6.6	6.8
						28.2		6.70		87.1		4.70			6.6		
			Middle	9.9	21.4	28.3	28.3	6.65	6.64	86.5	86.3	4.81	4.82		6.8	6.8	
						28.3		6.62		86.1		4.82			6.8		
			Bottom	18.8	21.3	28.3	28.4	6.49	6.51	84.4	84.6	4.91	4.92		6.8	6.9	
						28.4		6.52		84.8		4.93			7.0		
17/04/12	1201-1215	22/Rainy	Surface	1.0	22.5	27.3	27.4	7.30	7.29	99.2	99.0	3.52	3.54	3.63	5.4	5.4	5.5
						27.4		7.27		98.8		3.56			5.4		
			Middle	9.3	22.2	27.8	27.8	7.20	7.19	97.9	97.7	3.62	3.64		5.6	5.6	
						27.8		7.17		97.5		3.66			5.6		
			Bottom	17.6	21.8	28.7	28.8	7.11	7.09	96.7	96.5	3.70	3.72		5.6	5.6	
						28.8		7.07		96.2		3.73			5.5		
19/04/12	1244-1256	22/Rainy	Surface	1.0	21.9	27.3	27.3	7.39	7.38	98.2	98.0	3.87	3.90	3.94	5.8	5.8	5.9
						27.3		7.36		97.8		3.93			5.8		
			Middle	8.7	21.7	27.5	27.5	7.28	7.27	96.8	96.6	3.91	3.89		6.0	5.9	
						27.4		7.25		96.4		3.87			5.8		
			Bottom	16.4	21.6	27.4	27.5	7.31	7.29	97.2	96.9	3.99	4.03		5.8	5.9	
						27.5		7.27		96.6		4.06			6.0		
21/04/12	1400-1415	22/Cloudy	Surface	1.0	22.2	26.9	26.9	7.21	7.20	95.2	95.0	3.24	3.22	3.36	5.2	5.2	5.3
						26.9		7.18		94.8		3.20			5.2		
			Middle	7.9	22.1	27.2	27.2	7.01	7.03	92.6	92.9	3.31	3.34		5.2	5.3	
						27.2		7.05		93.1		3.36			5.4		
			Bottom	14.8	22.0	27.5	27.5	6.72	6.74	88.7	88.9	3.49	3.52		5.4	5.5	
						27.4		6.75		89.1		3.55			5.5		
24/04/12	1551-1606	28/Cloudy	Surface	1.0	23.0	28.0	28.1	7.42	7.40	93.0	96.5	3.71	3.74	3.90	5.6	5.7	5.8
						28.1		7.38		99.9		3.77			5.8		
			Middle	8.1	22.8	28.8	28.9	7.30	7.28	98.6	98.4	3.84	3.87		5.8	5.8	
						28.9		7.26		98.1		3.90			5.8		
			Bottom		22.4	29.9	30.0	7.18	7.17	96.8	96.6	4.04	4.08		6.0	6.0	
						30.0		7.15		96.3		4.11			6.0		
26/04/12	1521-1534	25/Fine	Surface	1.0	23.1	26.9	27.0	7.24	7.22	97.7	97.5	4.05	4.07	4.11	6.0	6.0	6.1
						27.0		7.20		97.2		4.08			6.0		
			Middle	8.6	23.1	27.1	27.1	7.15	7.13	96.5	96.2	4.14	4.17		6.2	6.2	
						27.0		7.10		95.9		4.19			6.2		
			Bottom	16.2	22.9	27.0	27.1	7.03	7.05	94.9	95.2	4.12	4.11		6.2	6.1	
						27.1		7.07		95.4		4.09			6.0		

Mid-Ebb Tide

Monitoring Station : R5

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	1022-1034	20/Cloudy	Surface	1.0	19.4	27.9	27.9	7.51	7.49	95.3	95.1	4.01	4.05	4.04	6.0	6.0	6.0
						27.9		7.47		94.8		4.08			6.0		
			Middle	8.4	18.9	28.0	28.1	7.58	7.56	96.2	96.0	4.13	4.11		6.2	6.1	
						28.1		7.54		95.7		4.09			6.0		
			Bottom	15.8	18.8	28.2	28.2	7.64	7.62	97.7	97.5	3.94	3.96		5.8	5.8	
						28.1		7.60		97.2		3.98			5.8		
05/04/12	1621-1635	21/Rainy	Surface	1.0	19.8	27.2	27.2	7.52	7.50	96.1	95.8	3.38	3.40	3.48	5.0	5.1	5.3
						27.1		7.47		95.5		3.41			5.2		
			Middle	8.3	19.4	27.3	27.4	7.53	7.55	96.2	96.4	3.45	3.47		5.4	5.3	
						27.4		7.56		96.6		3.49			5.2		
			Bottom	15.6	19.1	27.4	27.5	7.61	7.62	97.3	97.4	3.56	3.57		5.4	5.4	
						27.5		7.62		97.4		3.57			5.4		
10/04/12	1446-1501	28/Cloudy	Surface	1.0	20.7	27.7	27.7	7.87	7.85	102.3	102.0	4.42	4.41	4.62	6.5	6.5	6.6
						27.7		7.82		101.7		4.40			6.4		
			Middle	8.6	20.6	27.8	27.8	7.65	7.64	99.5	99.3	4.59	4.61		6.6	6.6	
						27.7		7.62		99.1		4.62			6.6		
			Bottom	16.2	20.5	27.8	27.8	7.42	7.44	96.5	96.7	4.82	4.86		6.8	6.8	
						27.8		7.46		96.9		4.89			6.8		
12/04/12	1553-1608	28/Fine	Surface	1.0	20.8	27.8	27.8	7.52	7.56	97.8	98.3	3.81	3.83	3.97	6.0	5.9	6.0
						27.8		7.59		98.7		3.85			5.8		
			Middle	8.6	20.6	27.8	27.8	7.32	7.35	95.2	95.6	3.92	3.95		5.8	5.9	
						27.8		7.38		95.9		3.97			6.0		
			Bottom	16.2	20.6	27.9	27.9	7.12	7.14	92.6	92.8	4.13	4.14		6.2	6.2	
						27.8		7.15		92.9		4.14			6.2		
14/04/12	1710-1726	28/Cloudy	Surface	1.0	21.4	28.1	28.2	6.79	6.80	88.3	88.4	4.65	4.63	4.74	7.0	6.8	6.8
						28.2		6.81		88.5		4.61			6.6		
			Middle	8.4	21.3	28.1	28.1	6.59	6.61	85.7	86.0	4.76	4.78		6.6	6.7	
						28.1		6.63		86.2		4.79			6.8		
			Bottom	15.8	21.2	28.1	28.1	6.52	6.51	84.8	84.7	4.80	4.81		6.8	6.8	
						28.1		6.50		84.5		4.82			6.8		
17/04/12	1002-1014	22/Rainy	Surface	1.0	22.4	27.3	27.3	7.04	7.06	95.8	96.0	3.80	3.83	3.91	5.5	5.7	5.8
						27.2		7.07		96.2		3.86			5.8		
			Middle	8.6	22.1	27.6	27.7	6.95	6.94	94.5	94.4	3.90	3.92		5.8	5.8	
						27.7		6.93		94.2		3.93			5.8		
			Bottom	16.2	21.7	28.4	28.5	6.88	6.87	93.6	93.4	3.97	3.99		6.0	6.0	
						28.5		6.85		93.2		4.01			6.0		
19/04/12	1036-1049	22/Rainy	Surface	1.0	21.9	27.3	27.3	7.39	7.37	98.2	98.0	4.09	4.12	4.25	6.0	6.1	6.2
						27.2		7.35		97.7		4.15			6.2		
			Middle	8.4	21.7	27.4	27.4	7.17	7.16	94.6	94.4	4.34	4.32		6.4	6.3	
						27.4		7.14		94.2		4.30			6.2		
			Bottom	15.8	21.6	27.4	27.5	7.22	7.20	95.3	95.0	4.29	4.31		6.2	6.3	
						27.5		7.18		94.7		4.33			6.4		
21/04/12	1159-1215	22/Cloudy	Surface	1.0	22.1	27.0	27.1	6.98	7.01	92.1	92.4	3.40	3.43	3.57	5.5	5.6	5.6
						27.1		7.03		92.7		3.46			5.6		
			Middle	8.2	21.9	27.4	27.4	6.77	6.80	89.4	89.7	3.60	3.58		5.6	5.5	
						27.4		6.82		90.0		3.56			5.4		
			Bottom	15.4	22.0	27.5	27.6	6.66	6.68	87.9	88.2	3.74	3.71		5.6	5.6	
						27.6		6.70		88.4		3.68			5.6		
24/04/12	1348-1401	28/Cloudy	Surface	1.0	23.0	27.9	27.9	7.14	7.12	96.7	96.5	3.92	3.90	4.03	6.0	5.9	6.0
						27.9		7.10		96.2		3.88			5.8		
			Middle	8.6	22.8	28.7	28.7	6.97	6.99	94.2	94.5	4.01	4.03		6.0	6.0	
						28.7		7.01		94.7		4.05			6.0		
			Bottom	16.2	22.4	29.8	29.9	6.85	6.87	92.3	92.6	4.12	4.15		6.0	6.1	
						29.9		6.89		92.9		4.17			6.2		
26/04/12	1311-1325	25/Fine	Surface	1.0	23.1	27.0	27.0	7.35	7.37	99.3	99.5	4.13	4.15	4.25	6.0	6.1	6.2
						26.9		7.38		99.6		4.17			6.2		
			Middle	8.4	23.0	27.0	27.0	7.26	7.27	98.0	98.1	4.29	4.32		6.2	6.3	
						26.9		7.28		98.2		4.34			6.4		
			Bottom	15.8	22.9	27.1	27.1	7.24	7.22	97.7	97.5	4.30	4.29		6.2	6.2	
						27.0		7.20		97.2		4.27			6.2		

Mid-Ebb Tide

東業檢驗測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : R6

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	1120-1132	20/Cloudy	Surface	1.0	19.4	27.9	27.9	7.61	7.60	97.4	97.2	3.88	3.91	4.02	5.8	5.8	6.0
						27.9		7.58		97.0		3.94			5.8		
			Middle	8.1	18.9	28.0	28.1	7.54	7.52	95.7	95.5	4.01	4.04		6.0	6.0	
						28.1		7.50		95.2		4.07			6.0		
			Bottom	15.2	18.8	28.1	28.1	7.71	7.70	98.6	98.5	4.15	4.10		6.2	6.1	
						28.1		7.69		98.3		4.05			6.0		
05/04/12	1721-1733	21/Rainy	Surface	1.0	19.7	27.1	27.2	7.61	7.59	97.3	97.0	3.78	3.76	3.84	5.6	5.6	5.8
						27.2		7.57		96.7		3.74			5.6		
			Middle	8.0	19.4	27.3	27.4	7.50	7.53	95.9	95.6	3.82	3.83		5.8	5.8	
						27.4		7.56		95.3		3.84			5.8		
			Bottom	15.0	19.2	27.5	27.5	7.42	7.41	94.8	94.7	3.91	3.92		6.0	6.0	
						27.5		7.40		94.5		3.92			6.0		
10/04/12	1543-1558	28/Cloudy	Surface	1.0	20.6	27.6	27.6	7.71	7.73	100.2	100.4	4.55	4.54	4.77	6.4	6.4	6.7
						27.6		7.74		100.6		4.52			6.4		
			Middle	8.5	20.5	27.7	27.7	7.52	7.51	97.8	97.7	4.82	4.85		6.8	6.8	
						27.6		7.50		97.5		4.88			6.8		
			Bottom	16.0	20.5	27.7	27.7	7.32	7.35	95.2	95.6	4.92	4.92		6.8	6.8	
						27.7		7.38		95.9		4.91			6.8		
12/04/12	1651-1704	28/Fine	Surface	1.0	20.8	27.6	27.7	7.45	7.46	96.9	97.0	3.97	3.96	4.11	6.0	5.9	6.1
						27.7		7.47		97.1		3.94			5.8		
			Middle	8.5	20.6	27.7	27.8	7.29	7.27	94.8	94.5	4.12	4.15		6.2	6.2	
						27.8		7.24		94.1		4.17			6.2		
			Bottom	16.0	20.6	27.9	27.9	7.05	7.05	91.7	91.6	4.20	4.22		6.2	6.3	
						27.8		7.04		91.5		4.23			6.4		
14/04/12	1806-1822	28/Cloudy	Surface	1.0	21.5	28.2	28.2	6.63	6.66	86.2	86.5	4.41	4.44	4.55	6.4	6.4	6.5
						28.2		6.68		86.8		4.46			6.4		
			Middle	8.3	21.4	28.1	28.1	6.50	6.53	84.5	84.9	4.54	4.55		6.6	6.6	
						28.1		6.55		85.2		4.56			6.6		
			Bottom	15.6	21.4	28.1	28.1	6.44	6.46	83.7	83.9	4.65	4.67		6.6	6.6	
						28.1		6.47		84.1		4.68			6.6		
17/04/12	1055-1109	22/Rainy	Surface	1.0	22.3	27.3	27.3	7.22	7.24	98.1	98.4	3.85	3.87	3.96	5.8	5.8	5.9
						27.2		7.26		98.7		3.88			5.8		
			Middle	8.4	22.1	27.6	27.7	7.17	7.15	97.5	97.2	3.94	3.96		5.8	5.9	
						27.7		7.13		96.9		3.97			6.0		
			Bottom	15.8	21.8	28.4	28.5	7.05	7.04	95.8	95.6	4.03	4.05		6.0	6.1	
						28.5		7.02		95.4		4.06			6.2		
19/04/12	1136-1148	22/Rainy	Surface	1.0	21.9	27.2	27.3	7.19	7.18	94.9	94.8	3.74	3.76	3.96	5.6	5.7	5.9
						27.3		7.17		94.6		3.78			5.8		
			Middle	8.1	21.8	27.5	27.5	7.10	7.12	93.7	94.0	3.98	3.95		6.0	5.9	
						27.4		7.14		94.2		3.91			5.8		
			Bottom	15.2	21.5	27.6	27.6	7.14	7.12	94.2	94.0	4.20	4.18		6.2	6.2	
						27.6		7.10		93.7		4.16			6.2		
21/04/12	1258-1312	22/Cloudy	Surface	1.0	22.1	27.1	27.1	7.15	7.18	94.4	94.7	3.11	3.14	3.35	5.0	5.1	5.3
						27.0		7.20		95.0		3.16			5.2		
			Middle	7.7	22.0	27.3	27.3	6.99	6.96	92.3	91.9	3.34	3.36		5.2	5.3	
						27.3		6.93		91.5		3.38			5.4		
			Bottom	14.4	21.9	27.4	27.4	6.71	6.74	88.6	88.9	3.52	3.54		5.4	5.5	
						27.4		6.76		89.2		3.56			5.6		
24/04/12	1444-1457	28/Cloudy	Surface	1.0	23.0	27.9	27.9	7.19	7.21	97.4	97.6	3.79	3.81	3.95	5.8	5.8	5.9
						27.9		7.22		97.8		3.82			5.8		
			Middle	8.4	22.8	28.9	28.9	7.10	7.08	95.9	95.7	3.93	3.96		5.8	5.9	
						28.8		7.06		95.4		3.99			6.0		
			Bottom	15.8	22.4	29.9	29.9	6.94	6.93	93.6	93.4	4.07	4.09		6.0	6.1	
						29.9		6.91		93.1		4.11			6.2		
26/04/12	1412-1425	25/Fine	Surface	1.0	23.0	26.8	26.9	7.16	7.18	96.6	96.9	3.82	3.80	3.99	5.8	5.8	6.0
						26.9		7.20		97.2		3.78			5.8		
			Middle	8.2	22.9	27.0	27.0	7.21	7.20	97.3	97.1	4.07	4.05		6.0	6.0	
						27.0		7.18		96.9		4.03			6.0		
			Bottom	15.4	22.9	27.1	27.1	7.13	7.11	96.2	96.0	4.13	4.12		6.2	6.1	
						27.0		7.09		95.7		4.10			6.0		

Mid-Ebb Tide

東華德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : R7

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	1135-1147	20/Cloudy	Surface	1.0	19.4	27.9	27.9	7.57	7.56	96.1	95.9	3.97	3.94	4.01	5.8	5.8	5.9
						27.9		7.54		95.7		3.91			5.8		
			Middle	8.9	18.9	28.1	28.1	7.59	7.58	96.3	96.2	3.99	4.03		5.8	5.9	
						28.1		7.56		96.0		4.06			6.0		
			Bottom	16.8	18.8	28.1	28.2	7.68	7.66	98.3	98.0	4.01	4.05		6.0	6.0	
						28.2		7.64		97.7		4.09			6.0		
05/04/12	1736-1748	21/Rainy	Surface	1.0	19.6	27.2	27.2	7.59	7.61	97.0	97.3	3.81	3.83	3.85	5.8	5.8	5.8
						27.1		7.63		97.5		3.85			5.8		
			Middle	8.8	19.3	27.3	27.4	7.54	7.53	96.4	96.3	3.96	3.97		6.0	6.0	
						27.4		7.52		96.1		3.98			6.0		
			Bottom	16.6	19.2	27.5	27.6	7.48	7.46	95.6	95.4	3.74	3.76		5.6	5.6	
						27.6		7.44		95.1		3.78			5.6		
10/04/12	1603-1618	28/Cloudy	Surface	1.0	20.7	27.7	27.7	7.65	7.64	99.5	99.3	4.34	4.36	4.67	6.2	6.2	6.5
						27.6		7.62		99.1		4.37			6.2		
			Middle	9.0	20.6	27.7	27.7	7.46	7.48	96.9	97.2	4.76	4.78		6.6	6.6	
						27.7		7.49		97.4		4.79			6.6		
			Bottom	17.0	20.5	27.8	27.8	7.32	7.33	95.2	95.3	4.88	4.87		6.8	6.8	
						27.7		7.34		95.4		4.85			6.8		
12/04/12	1706-1718	28/Fine	Surface	1.0	20.8	27.7	27.8	7.63	7.65	99.2	99.4	3.75	3.74	3.92	5.6	5.6	5.8
						27.8		7.66		99.6		3.72			5.6		
			Middle	9.0	20.7	27.7	27.7	7.50	7.51	97.6	97.7	3.96	3.95		5.8	5.8	
						27.7		7.52		97.8		3.94			5.8		
			Bottom	17.0	20.6	27.8	27.8	7.36	7.34	95.7	95.5	4.10	4.08		6.2	6.1	
						27.8		7.32		95.2		4.05			6.0		
14/04/12	1825-1842	28/Cloudy	Surface	1.0	21.5	28.1	28.2	6.70	6.72	87.1	87.4	4.39	4.40	4.54	6.2	6.3	6.4
						28.2		6.74		87.6		4.41			6.4		
			Middle	8.9	21.4	28.1	28.2	6.67	6.66	86.7	86.6	4.48	4.47		6.4	6.4	
						28.2		6.65		86.5		4.45			6.4		
			Bottom	16.8	21.3	28.1	28.1	6.51	6.53	84.6	84.9	4.72	4.75		6.6	6.6	
						28.1		6.55		85.2		4.77			6.6		
17/04/12	1115-1129	22/Rainy	Surface	1.0	22.4	27.2	27.2	7.21	7.23	98.0	98.2	3.75	3.74	3.83	5.6	5.6	5.8
						27.2		7.24		98.4		3.72			5.6		
			Middle	8.8	22.1	27.7	27.7	7.14	7.13	97.1	96.9	3.81	3.83		5.8	5.8	
						27.7		7.12		96.7		3.85			5.8		
			Bottom	16.6	21.8	28.5	28.6	7.01	7.00	95.3	95.1	3.91	3.93		5.8	5.9	
						28.6		6.98		94.8		3.94			6.0		
19/04/12	1157-1210	22/Rainy	Surface	1.0	21.9	27.2	27.2	7.26	7.25	96.5	96.3	3.90	3.94	4.00	5.8	5.9	6.0
						27.2		7.23		96.1		3.98			6.0		
			Middle	8.8	21.7	27.4	27.4	7.33	7.31	97.4	97.2	3.97	3.94		6.0	5.9	
						27.4		7.29		96.9		3.91			5.8		
			Bottom	16.6	21.6	27.5	27.5	7.21	7.23	95.8	96.0	4.15	4.11		6.2	6.1	
						27.5		7.24		96.2		4.07			6.0		
21/04/12	1317-1332	22/Cloudy	Surface	1.0	22.0	27.1	27.2	7.09	7.07	93.6	93.3	3.39	3.38	3.53	5.4	5.4	5.5
						27.2		7.04		92.9		3.36			5.4		
			Middle	8.8	22.0	27.4	27.4	7.10	7.12	93.7	93.9	3.48	3.51		5.4	5.5	
						27.3		7.13		94.1		3.54			5.6		
			Bottom	16.6	21.9	27.5	27.5	6.92	6.94	91.3	91.5	3.73	3.70		5.6	5.7	
						27.5		6.95		91.7		3.67			5.8		
24/04/12	1504-1518	28/Cloudy	Surface	1.0	23.0	28.1	28.1	7.24	7.26	98.1	98.4	3.87	3.89	4.02	5.8	5.8	6.0
						28.0		7.28		98.7		3.91			5.8		
			Middle	8.8	22.7	28.8	28.9	7.17	7.15	96.9	96.5	4.02	4.03		6.0	6.0	
						28.9		7.12		96.1		4.04			6.0		
			Bottom	16.6	22.4	30.0	30.0	7.00	6.98	94.4	94.1	4.10	4.13		6.0	6.1	
						29.9		6.95		93.7		4.16			6.2		
26/04/12	1434-1448	25/Fine	Surface	1.0	23.1	26.8	26.9	7.18	7.16	96.9	96.6	3.96	3.99	4.09	5.8	5.9	6.1
						26.9		7.13		96.3		4.01			6.0		
			Middle	8.9	23.0	27.1	27.1	7.20	7.19	97.1	97.0	4.06	4.08		6.0	6.1	
						27.0		7.17		96.8		4.10			6.2		
			Bottom	16.8	22.9	27.1	27.1	7.10	7.08	95.8	95.6	4.18	4.21		6.2	6.2	
						27.1		7.06		95.3		4.23			6.2		

Mid-Ebb Tide

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : R8a

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	1154-1206	20/Cloudy	Surface	1.0	19.4	27.8	27.8	7.62	7.64	97.5	97.7	3.62	3.66	3.82	5.6	5.6	5.8
						27.8		7.65		97.9		3.69			5.5		
			Middle	6.4	18.9	28.1	28.1	7.57	7.56	96.1	95.9	3.86	3.84		6.0	5.9	
						28.1		7.54		95.7		3.82			5.8		
			Bottom	11.8	18.8	28.2	28.2	7.67	7.66	98.1	97.9	3.95	3.97		6.0	6.0	
						28.2		7.64		97.7		3.99			6.0		
05/04/12	1754-1806	21/Rainy	Surface	1.0	19.7	27.2	27.3	7.60	7.57	97.1	96.8	3.68	3.70	3.73	5.6	5.6	5.5
						27.3		7.54		96.4		3.72			5.5		
			Middle	6.3	19.4	27.4	27.5	7.59	7.61	97.0	97.2	3.81	3.82		5.5	5.6	
						27.5		7.62		97.4		3.83			5.6		
			Bottom	11.6	19.3	27.6	27.6	7.51	7.52	96.0	96.1	3.70	3.68		5.6	5.5	
						27.6		7.53		96.2		3.66			5.4		
10/04/12	1623-1638	27/Cloudy	Surface	1.0	20.7	27.8	27.8	7.32	7.34	95.2	95.4	4.47	4.49	4.71	6.4	6.5	6.7
						27.7		7.35		95.6		4.50			6.5		
			Middle	6.9	20.7	27.8	27.8	7.21	7.24	93.7	94.1	4.74	4.73		7.0	6.9	
						27.8		7.26		94.4		4.71			6.8		
			Bottom	12.8	20.6	27.8	27.8	7.20	7.19	93.6	93.5	4.93	4.92		6.8	6.8	
						27.7		7.18		93.3		4.90			6.8		
12/04/12	1720-1732	28/Fine	Surface	1.0	20.7	27.7	27.8	7.71	7.73	100.2	100.4	3.71	3.73	3.94	5.6	5.6	6.0
						27.8		7.74		100.6		3.74			5.5		
			Middle	6.9	20.6	27.7	27.8	7.62	7.64	99.1	99.3	3.95	3.96		6.0	6.0	
						27.8		7.65		99.5		3.97			6.0		
			Bottom	12.8	20.5	27.8	27.8	7.42	7.46	96.5	97.0	4.14	4.12		6.4	6.3	
						27.8		7.49		97.4		4.10			6.2		
14/04/12	1845-1903	27/Cloudy	Surface	1.0	21.5	28.2	28.2	6.83	6.84	88.8	88.9	4.78	4.79	4.75	6.8	6.9	6.8
						28.2		6.84		88.9		4.79			7.0		
			Middle	6.7	21.4	28.3	28.3	6.69	6.68	86.9	86.8	4.72	4.70		7.0	6.9	
						28.3		6.66		86.6		4.68			6.8		
			Bottom	12.4	21.3	28.3	28.3	6.34	6.37	82.4	82.8	4.76	4.77		6.6	6.7	
						28.3		6.40		83.2		4.78			6.8		
17/04/12	1138-1151	22/Rainy	Surface	1.0	22.5	27.2	27.3	7.26	7.24	98.4	98.1	3.66	3.68	3.75	5.4	5.5	5.6
						27.3		7.21		97.8		3.69			5.5		
			Middle	6.6	22.3	27.7	27.8	7.17	7.16	97.2	97.1	3.72	3.74		5.5	5.6	
						27.8		7.14		97.0		3.76			5.6		
			Bottom	12.2	21.9	28.5	28.5	7.06	7.04	95.9	95.7	3.81	3.83		5.8	5.8	
						28.5		7.02		95.4		3.84			5.8		
19/04/12	1219-1232	22/Rainy	Surface	1.0	21.9	27.3	27.3	7.17	7.16	94.6	94.5	3.92	3.90	4.10	5.8	5.7	6.1
						27.3		7.15		94.3		3.87			5.5		
			Middle	6.8	21.8	27.5	27.5	7.21	7.19	95.1	94.9	4.21	4.26		6.5	6.5	
						27.5		7.17		94.6		4.30			6.4		
			Bottom	11.6	21.6	27.6	27.6	7.19	7.17	94.9	94.6	4.18	4.15		6.2	6.2	
						27.5		7.15		94.3		4.11			6.2		
21/04/12	1339-1354	22/Cloudy	Surface	1.0	22.1	26.9	27.0	7.30	7.27	96.4	96.0	3.06	3.09	3.25	5.0	5.0	5.2
						27.0		7.24		95.6		3.11			5.0		
			Middle	6.2	22.1	27.1	27.2	7.20	7.18	95.0	94.8	3.19	3.22		5.0	5.1	
						27.2		7.16		94.5		3.24			5.2		
			Bottom	11.4	22.0	27.4	27.4	6.95	6.92	91.7	91.3	3.40	3.44		5.4	5.4	
						27.3		6.88		90.8		3.47			5.4		
24/04/12	1528-1542	28/Cloudy	Surface	1.0	23.0	28.1	28.1	7.36	7.35	99.7	99.5	3.76	3.78	3.85	5.6	5.6	5.8
						28.1		7.33		99.3		3.79			5.5		
			Middle	6.7	22.7	28.7	28.7	7.25	7.23	97.9	97.7	3.91	3.95		6.0	6.0	
						28.6		7.21		97.4		3.98			6.0		
			Bottom	12.4	22.5	29.7	29.7	7.13	7.12	96.1	95.9	3.82	3.84		5.8	5.8	
						29.7		7.10		95.7		3.85			5.8		
26/04/12	1456-1508	25/Fine	Surface	1.0	23.1	26.9	26.9	7.08	7.06	95.5	95.2	4.11	4.09	4.23	6.0	6.0	6.3
						26.9		7.03		94.9		4.07			6.0		
			Middle	6.3	23.0	27.0	27.1	7.11	7.10	95.9	95.8	4.26	4.28		6.5	6.5	
						27.1		7.09		95.7		4.29			6.4		
			Bottom	11.6	22.9	27.1	27.2	7.02	7.04	94.8	95.0	4.32	4.34		6.2	6.3	
						27.2		7.05		95.1		4.35			6.4		

Mid-Ebb Tide

Monitoring Station : R15

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	0904-0915	20/Cloudy	Surface	1.0	19.3	27.8	27.8	7.60	7.59	97.2	97.0	3.59	3.55	3.66	5.6	5.5	5.6
						27.8		7.57		96.8		3.51			5.4		
			Middle	5.6	18.9	27.9	27.9	7.72	7.70	98.8	98.6	3.72	3.71		5.6	5.6	
						27.9		7.68		98.3		3.70			5.6		
			Bottom	10.2	18.8	28.0	28.0	7.68	7.66	98.3	98.0	3.77	3.73		5.8	5.7	
						28.0		7.64		97.7		3.68			5.6		
05/04/12	1503-1514	21/Rainy	Surface	1.0	19.8	27.0	27.0	7.56	7.54	96.6	96.4	3.32	3.34	3.38	5.2	5.2	5.3
						27.0		7.52		96.1		3.36			5.2		
			Middle	5.6	19.3	27.1	27.2	7.46	7.44	95.3	95.1	3.34	3.36		5.2	5.3	
						27.2		7.42		94.8		3.38			5.4		
			Bottom	10.2	19.1	27.3	27.4	7.53	7.54	96.2	96.3	3.42	3.44		5.4	5.4	
						27.4		7.54		96.4		3.46			5.4		
10/04/12	1342-1357	28/Cloudy	Surface	1.0	20.6	27.6	27.7	7.62	7.66	99.1	99.6	4.42	4.45	4.63	6.4	6.4	6.6
						27.7		7.69		100.0		4.47			6.4		
			Middle	6.0	20.6	27.7	27.8	7.46	7.47	96.9	97.1	4.67	4.66		6.6	6.6	
						27.8		7.48		97.2		4.65			6.6		
			Bottom	11.0	20.5	27.7	27.8	7.24	7.25	94.1	94.3	4.78	4.79		6.8	6.8	
						27.8		7.26		94.4		4.80			6.8		
12/04/12	1440-1455	28/Fine	Surface	1.0	20.8	27.7	27.7	7.62	7.63	99.1	99.2	3.87	3.88	3.99	5.8	5.8	6.0
						27.7		7.63		99.2		3.89			5.8		
			Middle	6.0	20.6	27.6	27.7	7.51	7.53	97.6	97.9	3.94	3.96		5.8	5.9	
						27.7		7.55		98.2		3.97			6.0		
			Bottom	11.0	20.6	27.8	27.8	7.29	7.30	94.8	94.9	4.13	4.15		6.2	6.3	
						27.8		7.30		94.9		4.16			6.4		
14/04/12	1616-1627	28/Cloudy	Surface	1.0	21.6	28.1	28.1	6.62	6.63	86.1	86.2	4.72	4.74	4.89	6.8	6.7	6.8
						28.1		6.64		86.3		4.75			6.6		
			Middle	5.8	21.4	28.2	28.3	6.52	6.54	84.7	85.0	4.87	4.90		6.6	6.7	
						28.3		6.56		85.3		4.93			6.8		
			Bottom	10.6	21.4	28.3	28.3	6.47	6.48	84.1	84.3	5.02	5.03		7.0	7.0	
						28.3		6.49		84.4		5.03			7.0		
17/04/12	0906-0918	22/Rainy	Surface	1.0	22.4	27.1	27.2	7.25	7.23	98.6	98.3	3.87	3.89	3.97	5.6	5.6	5.8
						27.2		7.21		98.0		3.90			5.6		
			Middle	6.0	22.1	27.6	27.7	7.16	7.15	97.3	97.2	3.96	3.98		5.8	5.9	
						27.7		7.14		97.0		3.99			6.0		
			Bottom	11.0	21.9	28.4	28.5	7.06	7.04	96.0	95.7	4.07	4.06		6.0	6.0	
						28.5		7.02		95.4		4.05			6.0		
19/04/12	0933-0944	22/Rainy	Surface	1.0	21.8	27.1	27.1	7.24	7.22	96.2	96.0	3.94	3.96	3.99	6.0	6.0	6.0
						27.1		7.20		95.7		3.98			6.0		
			Middle	5.8	21.7	27.2	27.3	7.15	7.17	94.3	94.6	3.87	3.84		5.8	5.8	
						27.3		7.19		94.9		3.81			5.8		
			Bottom	10.6	21.6	27.5	27.5	7.22	7.24	96.0	96.2	4.21	4.18		6.2	6.1	
						27.5		7.25		96.4		4.15			6.0		
21/04/12	1056-1110	22/Cloudy	Surface	1.0	22.0	27.2	27.3	7.02	7.00	92.7	92.4	3.30	3.28	3.39	5.0	5.1	5.2
						27.3		6.97		92.0		3.25			5.2		
			Middle	5.2	22.0	27.3	27.3	7.06	7.09	93.2	93.6	3.33	3.36		5.0	5.0	
						27.3		7.11		93.9		3.39			5.0		
			Bottom	9.4	22.0	27.5	27.6	6.82	6.84	90.0	90.2	3.52	3.55		5.4	5.4	
						27.6		6.85		90.4		3.57			5.4		
24/04/12	1252-1305	28/Cloudy	Surface	1.0	22.9	28.1	28.1	7.27	7.26	98.8	98.5	3.91	3.90	4.04	5.8	5.8	6.0
						28.1		7.25		98.2		3.89			5.8		
			Middle	5.9	22.7	28.7	28.8	7.18	7.17	97.0	96.9	4.00	4.03		6.0	6.0	
						28.8		7.16		96.7		4.05			6.0		
			Bottom	10.8	22.4	29.8	29.9	7.07	7.04	95.3	94.9	4.16	4.18		6.2	6.2	
						29.9		7.01		94.5		4.20			6.2		
26/04/12	1205-1217	25/Fine	Surface	1.0	23.2	26.9	27.0	7.21	7.19	97.3	97.1	3.97	4.00	4.04	5.8	5.9	6.0
						27.0		7.17		96.8		4.02			6.0		
			Middle	5.9	23.1	27.1	27.1	7.15	7.14	96.5	96.4	3.95	3.97		5.8	5.8	
						27.0		7.12		96.2		3.98			5.8		
			Bottom	10.8	23.0	27.1	27.2	7.16	7.18	96.6	96.8	4.14	4.17		6.2	6.2	
						27.2		7.19		97.0		4.20			6.2		

Mid-Ebb Tide

東業環境測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : R16

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	0845-0856	20/Cloudy	Surface	1.0	19.2	27.8	27.8	7.58	7.56	96.2	96.0	3.28	3.30	3.52	5.2	5.2	5.4
						27.8		7.54		95.7		3.32			5.2		
			Middle	6.3	18.9	27.9	27.9	7.65	7.63	97.9	97.7	3.60	3.64		5.6	5.6	
						27.9		7.61		97.4		3.68			5.6		
			Bottom	11.6	18.8	28.0	28.1	7.74	7.72	99.0	98.8	3.66	3.62		5.6	5.5	
						28.1		7.70		98.5		3.57			5.4		
05/04/12	1445-1456	21/Rainy	Surface	1.0	19.7	27.1	27.1	7.61	7.59	97.3	97.0	3.17	3.19	3.44	5.2	5.2	5.4
						27.1		7.57		96.7		3.21			5.2		
			Middle	6.0	19.3	27.3	27.4	7.50	7.49	95.9	95.8	3.44	3.46		5.4	5.4	
						27.4		7.48		95.6		3.48			5.4		
			Bottom	11.0	19.2	27.4	27.5	7.60	7.61	97.1	97.3	3.66	3.67		5.6	5.6	
						27.5		7.62		97.4		3.68			5.6		
10/04/12	1320-1335	28/Cloudy	Surface	1.0	20.5	27.7	27.7	7.86	7.85	102.2	102.1	4.37	4.39	4.60	6.2	6.3	6.5
						27.6		7.84		101.9		4.40			6.4		
			Middle	6.5	20.5	27.7	27.7	7.62	7.64	99.1	99.4	4.57	4.57		6.4	6.4	
						27.7		7.66		99.6		4.56			6.4		
			Bottom	12.0	20.5	27.8	27.8	7.51	7.53	97.6	97.9	4.82	4.84		6.8	6.8	
						27.8		7.55		98.2		4.85			6.8		
12/04/12	1420-1435	28/Fine	Surface	1.0	20.8	27.6	27.7	7.50	7.50	97.5	97.5	3.63	3.64	3.85	5.4	5.5	5.8
						27.7		7.49		97.4		3.65			5.6		
			Middle	6.5	20.7	27.7	27.7	7.31	7.33	95.0	95.3	3.89	3.87		5.8	5.8	
						27.7		7.35		95.6		3.85			5.8		
			Bottom	12.0	20.6	27.8	27.8	7.17	7.15	93.2	92.9	4.01	4.04		6.0	6.0	
						27.7		7.12		92.6		4.07			6.0		
14/04/12	1558-1608	28/Cloudy	Surface	1.0	21.5	28.2	28.2	6.81	6.82	88.5	88.7	4.63	4.65	4.84	6.6	6.6	6.8
						28.2		6.83		88.8		4.67			6.6		
			Middle	6.3	21.3	28.3	28.3	6.70	6.68	87.1	86.9	4.88	4.87		6.8	6.8	
						28.3		6.66		86.6		4.85			6.8		
			Bottom	11.6	21.4	28.4	28.4	6.54	6.56	85.0	85.2	4.99	5.00		7.0	7.0	
						28.4		6.57		85.4		5.01			7.0		
17/04/12	0847-0900	22/Rainy	Surface	1.0	22.4	27.2	27.2	7.21	7.20	98.1	98.0	3.79	3.81	3.89	5.6	5.6	5.8
						27.2		7.18		97.8		3.82			5.6		
			Middle	10.6	22.2	27.7	27.7	7.11	7.10	96.8	96.7	3.88	3.90		5.8	5.8	
						27.6		7.09		96.5		3.91			5.8		
			Bottom	11.6	21.9	28.4	28.4	7.00	6.99	95.3	95.1	3.97	3.98		6.0	6.0	
						28.4		6.97		94.9		3.99			6.0		
19/04/12	0915-0927	22/Rainy	Surface	1.0	21.9	27.2	27.2	7.07	7.06	92.6	92.5	3.67	3.71	3.89	5.6	5.6	6.1
						27.2		7.05		92.3		3.74			5.6		
			Middle	6.2	21.6	27.4	27.4	7.12	7.11	93.6	93.5	3.94	3.92		6.8	6.8	
						27.4		7.10		93.3		3.89			6.8		
			Bottom	11.4	21.6	27.4	27.5	7.07	7.06	92.5	92.3	4.03	4.06		6.0	6.0	
						27.5		7.04		92.1		4.09			6.0		
21/04/12	1035-1050	22/Cloudy	Surface	1.0	22.0	27.2	27.2	7.13	7.12	94.4	94.1	3.24	3.27	3.29	5.2	5.2	5.2
						27.2		7.10		93.7		3.29			5.2		
			Middle	6.4	22.0	27.2	27.3	7.04	7.03	92.9	92.7	3.11	3.14		5.0	5.1	
						27.3		7.01		92.5		3.16			5.2		
			Bottom	11.8	21.9	27.6	27.6	6.84	6.87	90.3	90.6	3.43	3.46		5.4	5.4	
						27.6		6.89		90.9		3.48			5.4		
24/04/12	1234-1247	28/Cloudy	Surface	1.0	22.8	28.1	28.1	7.18	7.20	97.1	97.4	3.83	3.81	3.96	5.8	5.7	5.9
						28.0		7.21		97.7		3.79			5.6		
			Middle	6.4	22.6	28.8	28.9	7.12	7.11	96.2	96.0	3.92	3.95		5.8	5.8	
						28.9		7.09		95.8		3.97			5.8		
			Bottom	11.8	22.4	30.0	30.0	7.00	6.98	94.4	94.1	4.10	4.12		6.0	6.1	
						30.0		6.96		93.8		4.13			6.2		
26/04/12	1148-1200	25/Fine	Surface	1.0	23.1	27.0	27.0	7.09	7.11	95.8	96.0	3.64	3.67	3.91	5.6	5.6	5.9
						26.9		7.12		96.1		3.69			5.6		
			Middle	6.1	23.0	27.0	27.1	7.10	7.12	95.9	96.2	3.98	3.97		6.0	6.0	
						27.1		7.14		96.4		3.95			6.0		
			Bottom	11.2	22.9	27.1	27.1	7.06	7.07	95.3	95.4	4.07	4.09		6.0	6.1	
						27.0		7.08		95.5		4.11			6.2		

Mid-Ebb Tide

東業德勘測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : R17

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	0830-0842	20/Cloudy	Surface	1.0	19.3	27.7	27.7	7.67	7.66	98.1	97.9	3.37	3.40	3.74	5.2	5.3	5.7
						27.7		7.64		97.7		3.42			5.4		
			Middle	5.9	18.9	27.9	27.9	7.53	7.55	95.6	95.9	3.87	3.91		5.8	5.9	
						27.9		7.57		96.1		3.94			6.0		
			Bottom	10.8	18.8	28.0	28.0	7.64	7.62	97.7	97.5	3.94	3.92		6.0	5.9	
						28.0		7.60		97.2		3.90			5.8		
05/04/12	1430-1442	21/Rainy	Surface	1.0	19.8	27.1	27.2	7.58	7.60	96.9	97.2	3.42	3.43	3.60	5.4	5.4	5.5
						27.2		7.62		97.4		3.44			5.4		
			Middle	5.8	19.2	27.4	27.4	7.47	7.44	95.5	95.1	3.58	3.60		5.6	5.6	
						27.4		7.41		94.7		3.61			5.5		
			Bottom	10.6	19.1	27.5	27.5	7.52	7.54	96.1	96.3	3.74	3.76		5.5	5.6	
						27.5		7.55		96.5		3.78			5.6		
10/04/12	1300-1315	28/Cloudy	Surface	1.0	20.6	27.7	27.7	7.93	7.92	103.1	102.9	4.28	4.26	4.43	6.2	6.2	6.4
						27.7		7.90		102.7		4.24			6.2		
			Middle	6.4	20.5	27.8	27.8	8.02	8.06	104.3	104.8	4.36	4.38		6.2	6.4	
						27.7		8.10		105.3		4.40			6.5		
			Bottom	11.8	20.4	27.8	27.8	7.82	7.85	101.7	102.1	4.62	4.65		6.5	6.6	
						27.7		7.88		102.4		4.67			6.6		
12/04/12	1400-1415	28/Fine	Surface	1.0	20.8	27.7	27.7	7.47	7.45	97.1	96.8	3.72	3.76	3.84	5.6	5.6	5.8
						27.7		7.42		96.5		3.79			5.6		
			Middle	6.4	20.6	27.7	27.8	7.30	7.27	94.9	94.5	3.84	3.83		5.8	5.9	
						27.8		7.24		94.1		3.81			6.0		
			Bottom	11.8	20.5	27.8	27.8	7.02	7.04	91.3	91.6	3.96	3.95		6.0	5.9	
						27.8		7.06		91.8		3.94			5.8		
14/04/12	1546-1554	28/Cloudy	Surface	1.0	21.5	28.1	28.1	6.74	6.73	87.6	87.5	4.79	4.81	4.90	6.6	6.7	7.0
						28.1		6.72		87.4		4.82			6.8		
			Middle	6.2	21.4	28.3	28.3	6.52	6.54	84.8	85.0	4.93	4.95		6.8	6.9	
						28.3		6.55		85.2		4.96			7.0		
			Bottom	11.4	21.3	28.3	28.3	6.50	6.50	84.5	84.5	4.95	4.94		7.0	7.4	
						28.2		6.49		84.4		4.92			7.8		
17/04/12	0830-0843	22/Rainy	Surface	1.0	22.4	27.1	27.2	7.31	7.32	99.3	99.5	3.70	3.72	3.80	5.6	5.6	5.8
						27.2		7.33		99.6		3.73			5.6		
			Middle	6.2	22.1	27.6	27.6	7.25	7.24	98.5	98.3	3.78	3.80		5.6	5.8	
						27.6		7.22		98.1		3.81			6.0		
			Bottom	11.4	21.8	28.4	28.5	7.14	7.12	97.0	96.8	3.88	3.90		6.0	5.9	
						28.5		7.10		96.5		3.92			5.8		
19/04/12	0900-0912	22/Rainy	Surface	1.0	21.9	27.2	27.2	7.12	7.14	93.9	94.1	3.89	3.93	4.10	5.8	5.9	6.1
						27.2		7.15		94.3		3.96			6.0		
			Middle	5.9	21.7	27.4	27.5	7.04	7.06	92.9	93.2	4.02	4.06		6.0	6.0	
						27.5		7.08		93.4		4.10			6.0		
			Bottom	10.8	21.6	27.5	27.5	7.11	7.09	93.8	93.6	4.27	4.31		6.5	6.5	
						27.5		7.07		93.3		4.34			6.4		
21/04/12	1015-1030	22/Cloudy	Surface	1.0	21.9	27.2	27.3	7.04	7.07	92.9	93.2	3.12	3.14	3.18	5.2	5.2	5.2
						27.3		7.09		93.5		3.16			5.2		
			Middle	5.7	21.9	27.5	27.6	7.13	7.15	94.1	94.4	3.02	3.04		5.0	5.0	
						27.6		7.17		94.6		3.06			5.0		
			Bottom	10.4	22.0	27.7	27.7	7.00	6.98	92.4	92.2	3.34	3.37		5.5	5.5	
						27.6		6.96		91.9		3.39			5.4		
24/04/12	1215-1528	28/Cloudy	Surface	1.0	22.9	27.9	28.0	7.26	7.24	98.4	98.1	3.71	3.74	3.89	5.6	5.6	5.8
						28.0		7.22		97.8		3.77			5.6		
			Middle	6.2	22.6	28.8	28.9	7.15	7.14	96.6	96.5	3.86	3.88		5.8	5.9	
						28.9		7.13		96.3		3.90			6.0		
			Bottom	11.4	22.3	29.9	30.0	7.05	7.03	95.0	94.8	4.02	4.04		6.0	6.0	
						30.0		7.01		94.5		4.06			6.0		
26/04/12	1130-1143	28/Fine	Surface	1.0	23.1	27.0	27.0	7.14	7.15	96.3	96.5	3.77	3.80	4.04	5.6	5.7	5.9
						27.0		7.16		96.6		3.83			5.8		
			Middle	5.9	23.0	27.1	27.1	7.06	7.05	95.3	95.1	4.04	4.03		6.0	6.0	
						27.0		7.03		94.9		4.01			6.0		
			Bottom	10.8	22.9	27.1	27.1	7.12	7.11	96.1	95.9	4.28	4.31		6.0	6.1	
						27.1		7.09		95.7		4.33			6.2		

Mid-Ebb Tide

東華運動測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : R28

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	1041-1052	20/Cloudy	Surface	1.0	19.4	27.9	27.9	7.44	7.42	93.7	93.5	3.97	3.95	3.99	6.0	5.9	5.9
						27.9		7.40		93.2		3.92			5.8		
			Middle	5.6	18.9	28.1	28.2	7.62	7.61	97.5	97.3	3.87	3.90		5.8	5.8	
						28.2		7.59		97.1		3.93			5.8		
			Bottom	10.2	18.7	28.1	28.1	7.57	7.59	96.8	97.0	4.09	4.11		6.0	6.1	
						28.1		7.60		97.2		4.13			6.2		
05/04/12	1641-1652	21/Rainy	Surface	1.0	19.7	27.2	27.2	7.41	7.42	94.7	94.9	3.64	3.66	3.66	5.6	5.6	5.5
						27.1		7.43		95.0		3.68			5.6		
			Middle	5.7	19.5	27.3	27.4	7.58	7.60	96.9	97.1	3.59	3.57		5.4	5.4	
						27.4		7.61		97.3		3.55			5.4		
			Bottom	10.4	19.3	27.4	27.4	7.55	7.56	96.5	96.6	3.72	3.74		5.6	5.6	
						27.4		7.56		96.6		3.76			5.6		
10/04/12	1506-1521	28/Cloudy	Surface	1.0	20.7	27.7	27.7	7.98	7.99	103.7	103.8	4.24	4.26	4.40	6.2	6.2	6.4
						27.6		7.99		103.9		4.28			6.2		
			Middle	5.8	20.5	27.7	27.7	7.72	7.75	100.4	100.8	4.41	4.40		6.4	6.4	
						27.7		7.78		101.1		4.38			6.4		
			Bottom	10.6	20.5	27.8	27.8	7.59	7.58	98.7	98.5	4.58	4.55		6.6	6.5	
						27.7		7.56		98.3		4.52			6.4		
12/04/12	1613-1628	28/Fine	Surface	1.0	20.7	27.7	27.7	7.82	7.84	101.7	101.9	3.76	3.78	4.03	5.6	5.7	6.0
						27.7		7.85		102.1		3.80			5.8		
			Middle	5.8	20.6	27.7	27.8	7.67	7.65	99.7	99.4	4.02	4.05		6.0	6.0	
						27.8		7.62		99.1		4.08			6.0		
			Bottom	10.6	20.6	27.8	27.8	7.10	7.13	92.3	92.7	4.27	4.25		6.4	6.4	
						27.8		7.16		93.1		4.23			6.4		
14/04/12	1730-1746	28/Cloudy	Surface	1.0	21.4	28.1	28.2	6.82	6.80	88.7	88.4	4.54	4.53	4.64	6.6	6.6	6.7
						28.2		6.78		88.1		4.52			6.6		
			Middle	5.6	21.3	28.2	28.2	6.71	6.70	87.2	87.0	4.65	4.67		6.6	6.6	
						28.2		6.68		86.8		4.68			6.6		
			Bottom	10.2	21.3	28.1	28.1	6.61	6.62	85.9	86.1	4.75	4.74		6.8	6.8	
						28.0		6.63		86.2		4.72			6.8		
17/04/12	1019-1032	22/Rainy	Surface	1.0	22.4	27.1	27.1	7.14	7.16	97.1	97.3	3.71	3.72	3.81	5.4	5.5	5.7
						27.1		7.17		97.5		3.73			5.6		
			Middle	5.8	22.2	27.5	27.5	7.08	7.10	96.3	96.6	3.77	3.79		5.6	5.7	
						27.4		7.12		96.8		3.81			5.8		
			Bottom	10.6	21.8	28.3	28.4	7.00	6.98	95.2	94.9	3.90	3.91		5.8	5.8	
						28.4		6.96		94.6		3.92			5.8		
19/04/12	1056-1108	22/Rainy	Surface	1.0	21.9	27.3	27.3	7.30	7.28	97.0	96.7	3.98	3.97	4.15	5.8	5.8	6.1
						27.3		7.25		96.4		3.96			5.8		
			Middle	5.7	21.7	27.4	27.4	7.10	7.12	93.7	94.0	4.24	4.21		6.2	6.2	
						27.4		7.14		94.2		4.17			6.2		
			Bottom	10.4	21.6	27.5	27.5	7.19	7.18	94.9	94.8	4.30	4.28		6.4	6.3	
						27.5		7.17		94.6		4.26			6.2		
21/04/12	1220-1235	22/Cloudy	Surface	1.0	22.0	27.1	27.2	7.06	7.08	93.2	93.5	2.98	3.02	3.22	4.8	4.8	5.1
						27.2		7.10		93.7		3.05			4.8		
			Middle	5.3	22.0	27.2	27.2	7.14	7.16	94.2	94.4	3.17	3.21		5.2	5.2	
						27.2		7.17		94.6		3.24			5.2		
			Bottom	9.6	22.0	27.4	27.4	6.98	6.95	92.1	91.7	3.41	3.44		5.4	5.4	
						27.3		6.92		91.3		3.47			5.4		
24/04/12	1406-1418	28/Cloudy	Surface	1.0	23.0	28.1	28.1	7.23	7.24	98.0	98.2	3.84	3.82	3.94	5.8	5.8	5.9
						28.0		7.25		98.3		3.80			5.8		
			Middle	5.9	22.7	28.6	28.6	7.14	7.13	96.5	96.3	3.93	3.95		5.8	5.9	
						28.6		7.11		96.1		3.96			6.0		
			Bottom	10.8	22.4	29.5	29.5	6.99	6.98	94.2	94.1	4.03	4.05		6.0	6.0	
						29.5		6.97		94.0		4.06			6.0		
26/04/12	1331-1343	25/Fine	Surface	1.0	23.0	27.0	27.0	7.27	7.30	98.1	98.5	4.02	4.01	4.17	6.0	6.0	6.2
						26.9		7.32		98.8		3.99			6.0		
			Middle	5.8	23.0	27.0	27.0	7.24	7.23	97.8	97.6	4.19	4.21		6.2	6.2	
						27.0		7.21		97.4		4.23			6.2		
			Bottom	10.6	22.9	27.1	27.2	7.20	7.18	97.1	96.9	4.28	4.31		6.2	6.3	
						27.2		7.16		96.7		4.33			6.4		

Mid-Ebb Tide

Monitoring Station : R29

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	1106-1117	20/Cloudy	Surface	1.0	19.4	27.9	27.9	7.59	7.57	96.3	96.1	4.08	4.05	4.09	6.0	6.0	6.1
						27.9		7.55		95.8		4.01			6.0		
			Middle	8.4	18.9	28.0	28.1	7.67	7.68	98.1	98.3	4.17	4.13		6.2	6.1	
						28.1		7.69		98.4		4.09			6.0		
			Bottom	15.8	18.8	28.1	28.1	7.75	7.73	99.3	99.0	4.06	4.10		6.0	6.1	
						28.1		7.71		98.7		4.13			6.2		
05/04/12	1705-1716	21/Rainy	Surface	1.0	19.6	27.2	27.2	7.55	7.57	96.5	96.7	3.71	3.73	3.69	5.6	5.6	5.6
						27.1		7.58		96.9		3.74			5.6		
			Middle	8.5	19.5	27.2	27.3	7.64	7.65	97.6	97.8	3.69	3.71		5.6	5.6	
						27.3		7.66		97.9		3.72			5.6		
			Bottom	16.0	19.3	27.4	27.5	7.70	7.71	98.4	98.6	3.66	3.65		5.6	5.5	
						27.5		7.72		98.7		3.64			5.4		
10/04/12	1525-1540	28/Cloudy	Surface	1.0	20.6	27.7	27.7	8.07	8.06	104.9	104.8	4.32	4.34	4.55	6.2	6.3	6.5
						27.6		8.05		104.7		4.36			6.4		
			Middle	8.8	20.6	27.7	27.8	7.92	7.93	103.0	103.1	4.54	4.55		6.4	6.5	
						27.8		7.94		103.2		4.56			6.6		
			Bottom	16.6	20.4	27.8	27.8	7.74	7.72	100.6	100.4	4.77	4.75		6.6	6.6	
						27.8		7.70		100.1		4.73			6.6		
12/04/12	1634-1649	28/Fine	Surface	1.0	20.8	27.7	27.7	7.93	7.91	103.1	102.8	3.82	3.85	4.01	5.8	5.8	6.0
						27.7		7.89		102.5		3.88			5.8		
			Middle	8.8	20.7	27.7	27.8	7.71	7.73	100.2	100.4	4.09	4.06		6.0	6.0	
						27.8		7.74		100.6		4.03			6.0		
			Bottom	16.6	20.5	27.8	27.8	7.53	7.55	97.9	98.1	4.12	4.11		6.2	6.2	
						27.8		7.56		98.3		4.10			6.2		
14/04/12	1748-1803	28/Cloudy	Surface	1.0	21.5	28.2	28.2	6.75	6.73	87.8	88.5	4.50	4.51	4.64	6.4	6.4	6.6
						28.2		6.70		89.1		4.52			6.4		
			Middle	8.6	21.4	28.2	28.2	6.65	6.64	86.5	86.3	4.61	4.62		6.6	6.6	
						28.1		6.62		86.1		4.63			6.6		
			Bottom	16.2	21.4	28.1	28.1	6.52	6.53	84.8	84.9	4.79	4.78		6.8	6.8	
						28.1		6.54		85.0		4.76			6.8		
17/04/12	1038-1051	22/Rainy	Surface	1.0	22.3	27.2	27.2	7.24	7.25	98.5	98.6	3.96	3.97	3.93	6.0	6.0	5.9
						27.1		7.26		98.7		3.98			6.0		
			Middle	8.7	22.1	27.6	27.6	7.20	7.18	97.9	97.6	3.89	3.88		5.8	5.7	
						27.5		7.15		97.3		3.86			5.6		
			Bottom	16.4	21.8	28.5	28.5	7.07	7.06	96.1	95.9	3.92	3.95		5.8	5.9	
						28.5		7.04		95.7		3.98			6.0		
19/04/12	1114-1127	22/Rainy	Surface	1.0	21.9	27.2	27.2	7.22	7.24	96.0	96.2	4.11	4.09	4.08	6.2	6.1	6.0
						27.2		7.25		96.4		4.06			6.0		
			Middle	8.3	21.7	27.5	27.5	7.24	7.22	96.2	96.0	4.06	4.04		6.0	5.9	
						27.5		7.20		95.7		4.01			5.8		
			Bottom	15.6	21.6	27.5	27.6	7.30	7.32	97.0	97.3	4.09	4.12		6.0	6.1	
						27.6		7.34		97.6		4.14			6.2		
21/04/12	1239-1254	22/Cloudy	Surface	1.0	22.0	27.1	27.1	6.91	6.93	90.5	91.1	3.27	3.29	3.52	5.2	5.2	5.5
						27.1		6.95		91.7		3.31			5.2		
			Middle	8.4	22.0	27.3	27.4	6.80	6.78	89.8	89.5	3.53	3.56		5.6	5.6	
						27.4		6.75		89.1		3.58			5.6		
			Bottom	15.8	21.9	27.5	27.5	6.63	6.62	87.5	87.3	3.70	3.73		5.6	5.7	
						27.5		6.60		87.1		3.75			5.8		
24/04/12	1424-1437	28/Cloudy	Surface	1.0	23.1	28.1	28.1	7.30	7.29	98.9	98.7	3.83	3.80	3.80	5.8	5.7	5.7
						28.1		7.27		98.5		3.77			5.6		
			Middle	8.6	22.9	28.9	28.9	7.15	7.14	96.6	96.4	3.71	3.70		5.6	5.6	
						28.8		7.12		96.2		3.68			5.6		
			Bottom	16.2	22.5	30.0	30.0	7.03	7.01	94.8	94.5	3.90	3.91		5.8	5.8	
						29.9		6.98		94.1		3.92			5.8		
26/04/12	1348-1402	28/Fine	Surface	1.0	23.1	26.9	26.9	7.24	7.27	97.8	98.1	4.08	4.09	4.13	6.0	6.0	6.1
						26.9		7.29		98.4		4.10			6.0		
			Middle	8.4	23.0	27.0	27.0	7.31	7.29	98.6	98.3	4.13	4.12		6.2	6.1	
						26.9		7.26		98.0		4.11			6.0		
			Bottom	15.8	22.9	27.1	27.1	7.22	7.56	97.4	97.3	4.15	4.18		6.2	6.2	
						27.1		7.90		97.1		4.20			6.2		

Mid-Ebb Tide

Monitoring Station : C1

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	0930-0942	20/Cloudy	Surface	1.0	19.3	27.9	27.9	7.54	7.52	95.7	95.5	3.60	3.59	3.55	5.6	5.6	5.5
						27.9		7.50		95.2		3.57			5.6		
			Middle	6.8	18.9	28.0	28.0	7.59	7.58	96.3	96.2	3.43	3.41		5.4	5.4	
						28.0		7.56		96.0		3.39			5.4		
			Bottom	12.6	18.8	28.0	28.1	7.60	7.62	97.2	97.5	3.64	3.66		5.6	5.6	
						28.1		7.64		97.7		3.68			5.5		
05/04/12	1530-1543	21/Rainy	Surface	1.0	19.8	27.1	27.1	7.49	7.51	95.7	95.9	3.40	3.43	3.54	5.4	5.4	5.5
						27.0		7.52		96.1		3.45			5.4		
			Middle	6.7	19.5	27.2	27.3	7.53	7.54	96.2	96.4	3.52	3.54		5.4	5.5	
						27.3		7.55		96.5		3.56			5.6		
			Bottom	12.4	19.3	27.3	27.4	7.61	7.62	97.3	97.4	3.61	3.65		5.6	5.6	
						27.4		7.62		97.4		3.68			5.5		
10/04/12	1402-1417	28/Cloudy	Surface	1.0	20.7	27.6	27.6	8.02	8.02	104.3	104.2	4.52	4.54	4.71	6.4	6.5	6.7
						27.6		8.01		104.1		4.56			6.6		
			Middle	7.2	20.6	27.8	27.8	7.91	7.90	102.8	102.6	4.73	4.72		6.6	6.6	
						27.7		7.88		102.4		4.70			6.6		
			Bottom	13.4	20.5	27.7	27.7	7.80	7.82	101.4	101.6	4.89	4.87		6.8	6.9	
						27.7		7.83		101.8		4.84			7.0		
12/04/12	1502-1517	28/Fine	Surface	1.0	20.8	27.7	27.8	7.69	7.71	99.9	100.2	3.62	3.62	3.76	5.6	5.6	5.7
						27.8		7.72		100.4		3.61			5.6		
			Middle	7.2	20.5	27.7	27.7	7.42	7.45	96.4	96.8	3.72	3.74		5.6	5.7	
						27.7		7.47		97.1		3.75			5.8		
			Bottom	13.4	20.6	27.8	27.8	7.37	7.36	95.8	95.7	3.92	3.93		5.8	5.9	
						27.7		7.35		95.6		3.94			6.0		
14/04/12	1632-1648	28/Cloudy	Surface	1.0	21.6	28.2	28.2	6.79	6.77	88.3	88.0	4.80	4.79	4.85	6.8	6.7	6.8
						28.1		6.74		87.6		4.77			6.6		
			Middle	7.1	21.5	28.2	28.2	6.47	6.50	84.1	84.5	4.85	4.84		6.8	6.8	
						28.2		6.52		84.8		4.82			6.8		
			Bottom	13.2	21.4	28.4	28.4	6.40	6.39	83.2	83.1	4.92	4.93		6.8	6.9	
						28.4		6.38		82.9		4.93			7.0		
17/04/12	0924-0937	22/Rainy	Surface	1.0	22.4	27.2	27.3	7.17	7.19	97.5	97.7	3.94	3.93	4.01	6.0	5.9	5.9
						27.3		7.20		97.9		3.91			5.8		
			Middle	6.9	22.1	27.7	27.7	7.10	7.09	96.5	96.3	3.99	4.01		6.0	5.9	
						27.6		7.07		96.1		4.02			5.8		
			Bottom	12.7	21.8	28.5	28.5	6.99	6.97	95.0	94.7	4.07	4.09		6.0	6.0	
						28.5		6.95		94.4		4.10			6.0		
19/04/12	0954-1005	22/Rainy	Surface	1.0	21.8	27.1	27.2	7.29	7.27	96.9	96.7	4.02	4.07	4.15	6.0	6.0	6.2
						27.2		7.25		96.4		4.11			6.0		
			Middle	6.9	21.7	27.3	27.3	7.21	7.23	95.8	96.0	4.14	4.16		6.2	6.2	
						27.3		7.24		96.2		4.17			6.2		
			Bottom	12.8	21.6	27.4	27.4	7.18	7.17	94.7	94.5	4.25	4.22		6.4	6.5	
						27.4		7.15		94.3		4.19			6.5		
21/04/12	1116-1130	22/Cloudy	Surface	1.0	22.1	27.1	27.1	7.21	7.20	95.2	95.0	3.08	3.11	3.25	5.0	5.0	5.2
						27.1		7.18		94.8		3.13			5.0		
			Middle	6.9	22.0	27.1	27.2	7.08	7.11	93.5	93.8	3.19	3.22		5.2	5.2	
						27.2		7.13		94.1		3.25			5.2		
			Bottom	12.8	22.0	27.4	27.4	6.92	6.90	91.3	91.1	3.40	3.42		5.4	5.5	
						27.3		6.88		90.8		3.44			5.5		
24/04/12	1312-1325	28/Cloudy	Surface	1.0	23.0	27.9	27.9	7.20	7.18	97.6	97.3	3.94	3.92	4.05	5.8	5.8	6.0
						27.9		7.16		97.0		3.90			5.8		
			Middle	6.9	22.7	28.8	28.8	7.09	7.08	95.8	95.6	4.03	4.05		6.0	6.0	
						28.8		7.06		95.4		4.07			6.0		
			Bottom	12.8	22.5	30.0	30.0	6.97	6.95	94.0	93.7	4.15	4.17		6.2	6.1	
						29.9		6.92		93.3		4.18			6.0		
26/04/12	1227-1240	25/Fine	Surface	1.0	23.2	26.9	26.9	7.23	7.25	97.6	97.8	4.12	4.10	4.18	6.2	6.1	6.3
						26.9		7.26		98.0		4.07			6.0		
			Middle	6.8	23.1	27.0	27.0	7.19	7.21	97.1	97.3	4.20	4.19		6.2	6.2	
						27.0		7.22		97.4		4.17			6.2		
			Bottom	12.6	23.0	27.1	27.1	7.16	7.14	96.7	96.5	4.28	4.27		6.4	6.5	
						27.1		7.12		96.2		4.25			6.5		

Mid-Ebb Tide

東業環勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

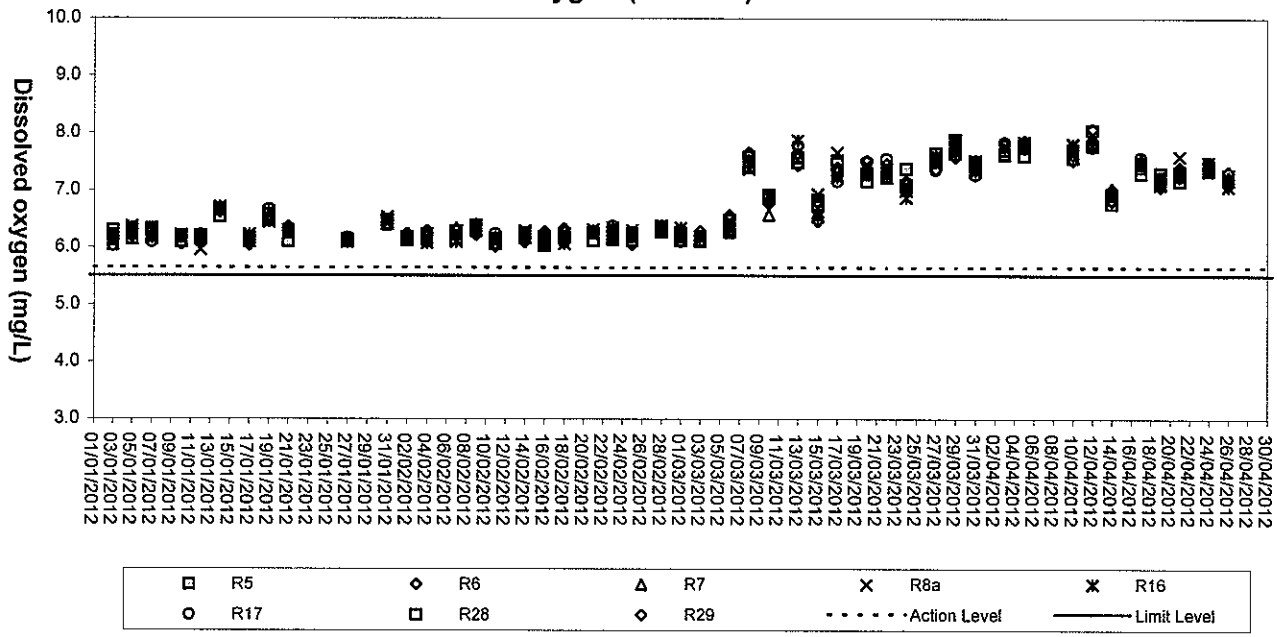
Monitoring Station : C3

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/04/12	0955-1007	20/Cloudy	Surface	1.0	19.3	27.9	27.9	7.49	7.48	94.3	94.1	3.44	3.41	3.52	5.4	5.4	5.5
						27.9		7.46		93.9		3.37			5.4		
			Middle	6.4	18.9	28.0	28.1	7.61	7.60	97.4	97.2	3.57	3.60		5.4	5.5	
						28.1		7.58		97.0		3.63			5.6		
			Bottom	11.8	18.8	28.0	28.0	7.63	7.61	97.8	97.5	3.50	3.54		5.4	5.5	
						28.0		7.59		97.1		3.58			5.6		
05/04/12	1556-1608	21/Rainy	Surface	1.0	19.7	27.1	27.2	7.53	7.55	96.2	96.4	3.46	3.48	3.54	5.4	5.4	5.5
						27.2		7.56		96.6		3.49			5.4		
			Middle	6.3	19.4	27.4	27.4	7.63	7.62	97.5	97.4	3.58	3.60		5.6	5.6	
						27.3		7.61		97.3		3.62			5.6		
			Bottom	11.6	19.3	27.4	27.5	7.48	7.51	95.6	95.9	3.53	3.54		5.4	5.4	
						27.5		7.53		96.2		3.55			5.4		
10/04/12	1425-1440	28/Cloudy	Surface	1.0	20.6	27.7	27.7	7.94	7.93	103.2	103.2	4.49	4.45	4.68	6.4	6.4	6.6
						27.7		7.92		103.1		4.41			6.4		
			Middle	6.8	20.5	20.7	20.7	7.74	7.76	100.6	100.8	4.62	4.62		6.6	6.6	
						20.7		7.77		101.0		4.61			6.6		
			Bottom	12.6	20.5	20.8	20.8	7.57	7.56	98.4	98.2	4.95	4.97		6.8	6.8	
						20.8		7.54		98.0		4.99			6.8		
12/04/12	1532-1547	28/Fine	Surface	1.0	20.8	27.7	27.7	7.44	7.46	96.7	96.9	3.78	3.77	3.90	5.6	5.6	5.8
						27.7		7.47		97.1		3.75			5.6		
			Middle	6.8	20.6	27.7	27.8	7.12	7.14	92.6	92.8	3.88	3.89		5.8	5.8	
						27.8		7.15		92.9		3.89			5.8		
			Bottom	12.6	20.5	27.8	27.8	7.02	7.03	91.3	91.4	4.04	4.06		6.0	6.0	
						27.8		7.04		91.5		4.08			6.0		
14/04/12	1651-1707	28/Cloudy	Surface	1.0	21.5	28.2	28.2	6.69	6.70	86.9	87.1	4.65	4.67	4.76	6.6	6.6	6.7
						28.2		6.71		87.2		4.69			6.6		
			Middle	6.4	21.5	28.3	28.3	6.54	6.56	85.0	85.3	4.75	4.76		6.6	6.7	
						28.3		6.58		85.5		4.77			6.8		
			Bottom	11.8	21.4	28.5	28.5	6.45	6.44	83.9	83.7	4.84	4.85		6.8	6.8	
						28.4		6.42		83.5		4.86			6.8		
17/04/12	0943-0956	22/Rainy	Surface	1.0	23.4	27.3	27.3	7.23	7.25	98.3	98.5	3.95	3.96	4.05	6.0	6.0	6.1
						27.2		7.26		98.7		3.97			6.0		
			Middle	6.6	22.1	27.6	27.6	7.18	7.16	97.6	97.3	4.04	4.05		6.0	6.0	
						27.6		7.14		97.0		4.07			6.0		
			Bottom	12.2	21.8	28.4	28.5	7.04	7.03	95.7	95.5	4.16	4.15		6.2	6.2	
						28.5		7.01		95.3		4.13			6.2		
19/04/12	1013-1026	22/Rainy	Surface	1.0	21.9	27.2	27.3	7.18	7.17	94.7	94.5	3.97	3.94	4.19	5.8	5.8	6.1
						27.3		7.15		94.3		3.91			5.8		
			Middle	6.4	21.7	27.4	27.4	7.19	7.17	94.9	94.6	4.39	4.35		6.4	6.3	
						27.3		7.15		94.3		4.30			6.2		
			Bottom	11.8	21.6	27.5	27.5	7.30	7.32	97.0	97.3	4.27	4.28		6.2	6.3	
						27.4		7.34		97.6		4.29			6.4		
21/04/12	1137-1152	22/Cloudy	Surface	1.0	22.1	27.1	27.1	7.22	7.24	95.3	95.5	3.32	3.30	3.44	5.2	5.2	5.4
						27.0		7.25		95.7		3.28			5.2		
			Middle	6.4	22.0	27.1	27.1	7.19	7.18	94.9	94.8	3.36	3.38		5.4	5.4	
						27.1		7.17		94.7		3.40			5.4		
			Bottom	11.8	22.0	27.3	27.3	6.96	6.98	91.8	92.1	3.61	3.64		5.6	5.6	
						27.3		7.00		92.4		3.66			5.6		
24/04/12	1331-1342	28/Cloudy	Surface	1.0	22.9	28.0	28.0	7.22	7.23	97.8	98.0	3.97	3.99	4.08	5.8	5.9	6.0
						28.0		7.24		98.1		4.01			6.0		
			Middle	6.6	22.7	28.9	28.9	7.13	7.15	96.3	96.5	4.06	4.08		6.0	6.0	
						28.8		7.16		96.7		4.09			6.0		
			Bottom	12.2	22.4	30.0	30.0	7.06	7.05	95.2	95.0	4.17	4.18		6.2	6.2	
						30.0		7.03		94.8		4.19			6.2		
26/04/12	1248-1301	25/Fine	Surface	1.0	23.1	27.0	27.0	7.15	7.13	96.5	96.3	4.02	4.04	4.26	6.0	6.0	6.2
						26.9		7.11		96.0		4.05			6.0		
			Middle	6.4	23.0	27.1	27.1	7.21	7.20	97.2	97.1	4.38	4.40		6.4	6.4	
						27.1		7.18		97.0		4.42			6.4		
			Bottom	11.8	22.9	27.1	27.2	7.26	7.25	97.9	97.8	4.36	4.34		6.4	6.3	
						27.2		7.23		97.6		4.31			6.2		

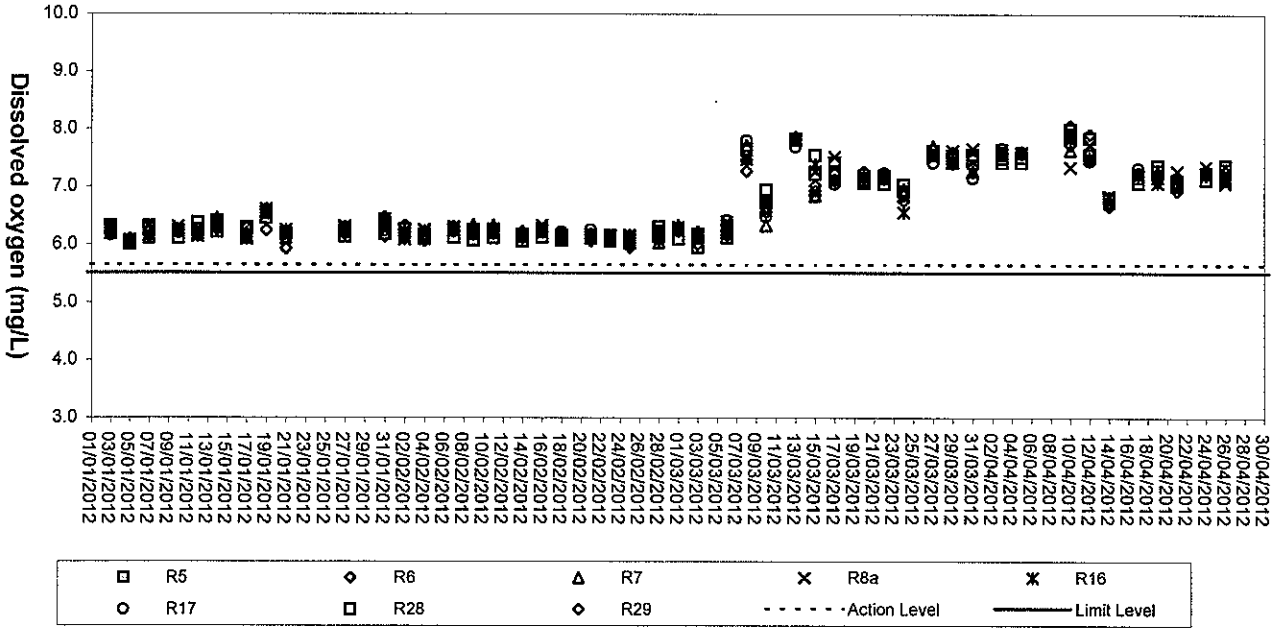
Appendix C3

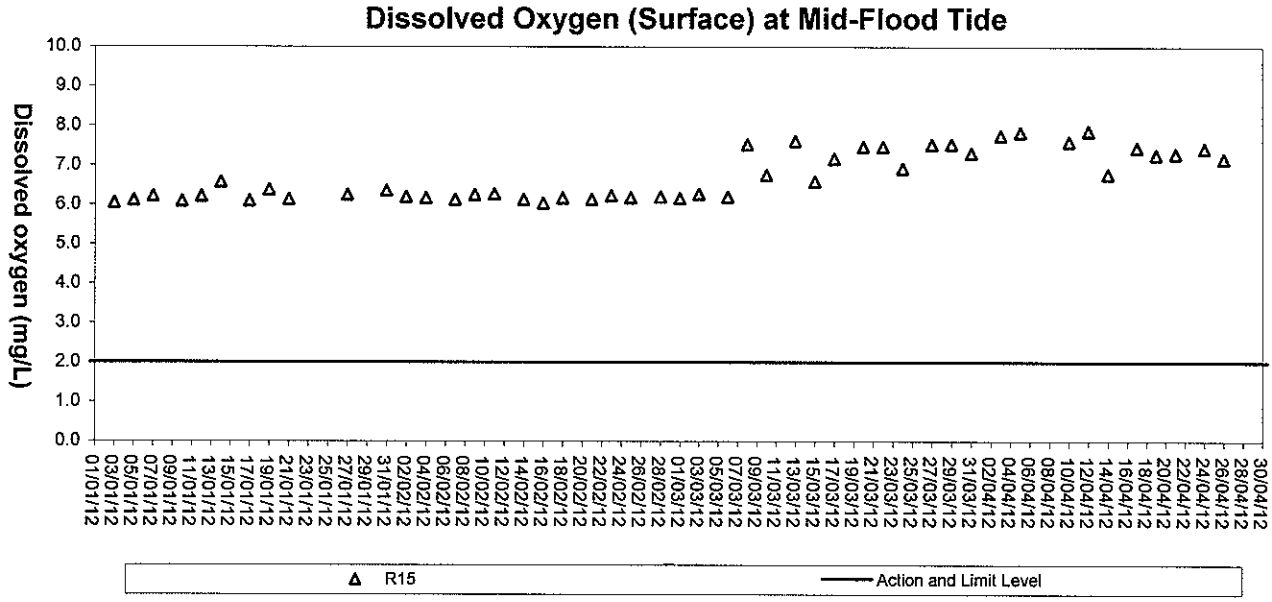
Graphical Plots of Impact Water Quality Monitoring Data

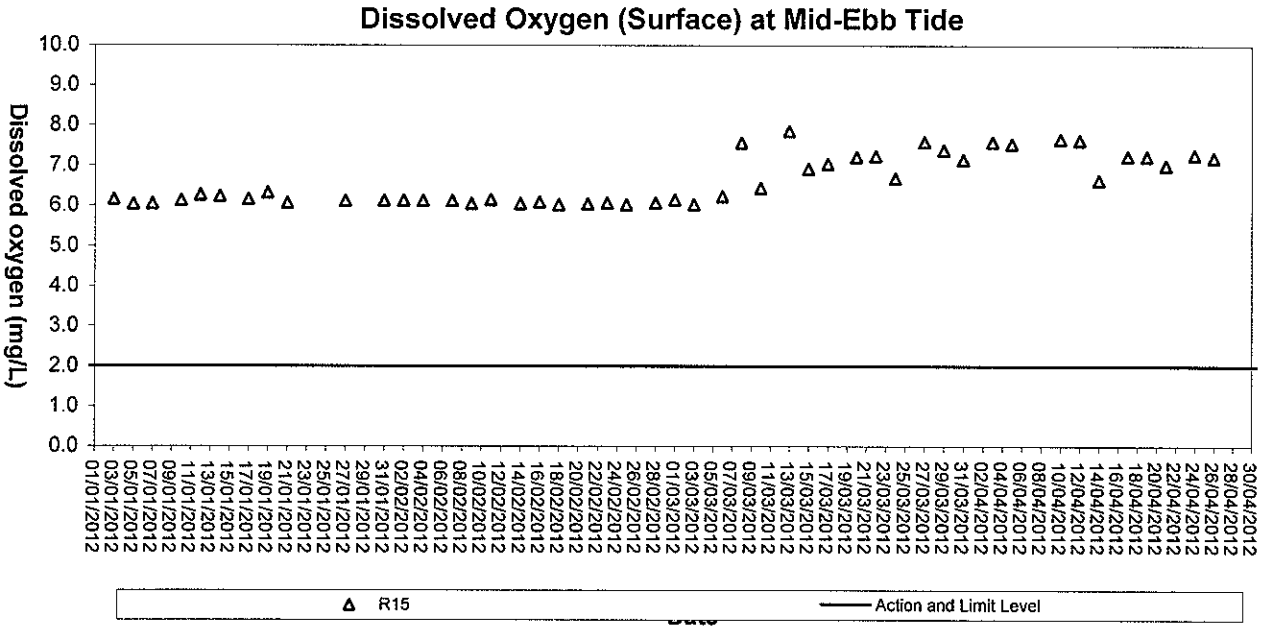
Dissolved Oxygen (Surface) at Mid-Flood Tide



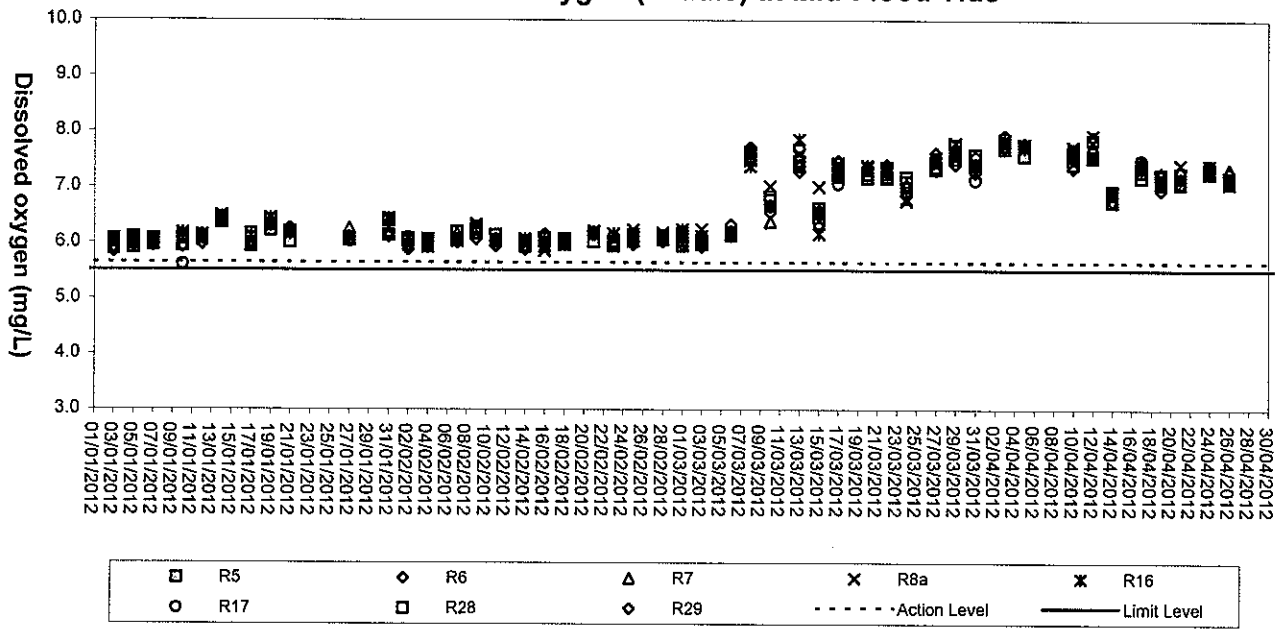
Dissolved Oxygen (Surface) at Mid-Ebb Tide



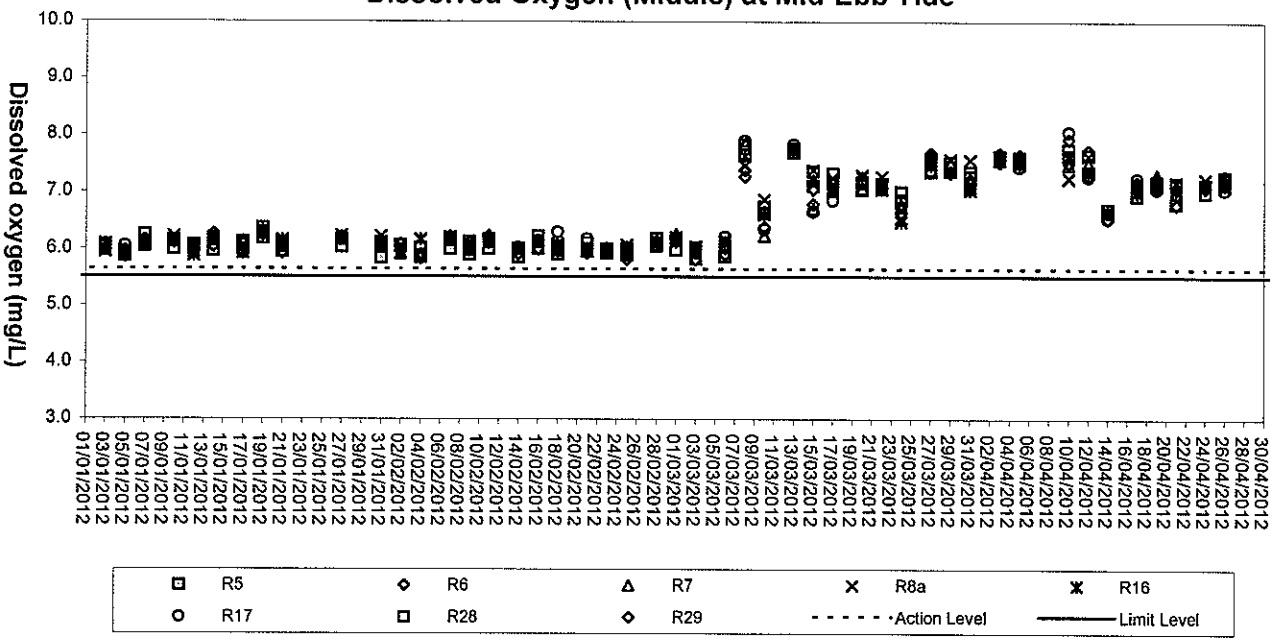

Dissolved Oxygen (Surface) at Mid-Flood Tide
Dissolved oxygen (mg/L)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
01/01/12
03/01/12
05/01/12
07/01/12
09/01/12
11/01/12
13/01/12
15/01/12
17/01/12
19/01/12
21/01/12
23/01/12
25/01/12
27/01/12
29/01/12
31/01/12
02/02/12
04/02/12
06/02/12
08/02/12
10/02/12
12/02/12
14/02/12
16/02/12
18/02/12
20/02/12
22/02/12
24/02/12
26/02/12
28/02/12
01/03/12
03/03/12
05/03/12
07/03/12
09/03/12
11/03/12
13/03/12
15/03/12
17/03/12
19/03/12
21/03/12
23/03/12
25/03/12
27/03/12
29/03/12
31/03/12
02/04/12
04/04/12
06/04/12
08/04/12
10/04/12
12/04/12
14/04/12
16/04/12
18/04/12
20/04/12
22/04/12
24/04/12
26/04/12
28/04/12
30/04/12
R15
Action and Limit Level

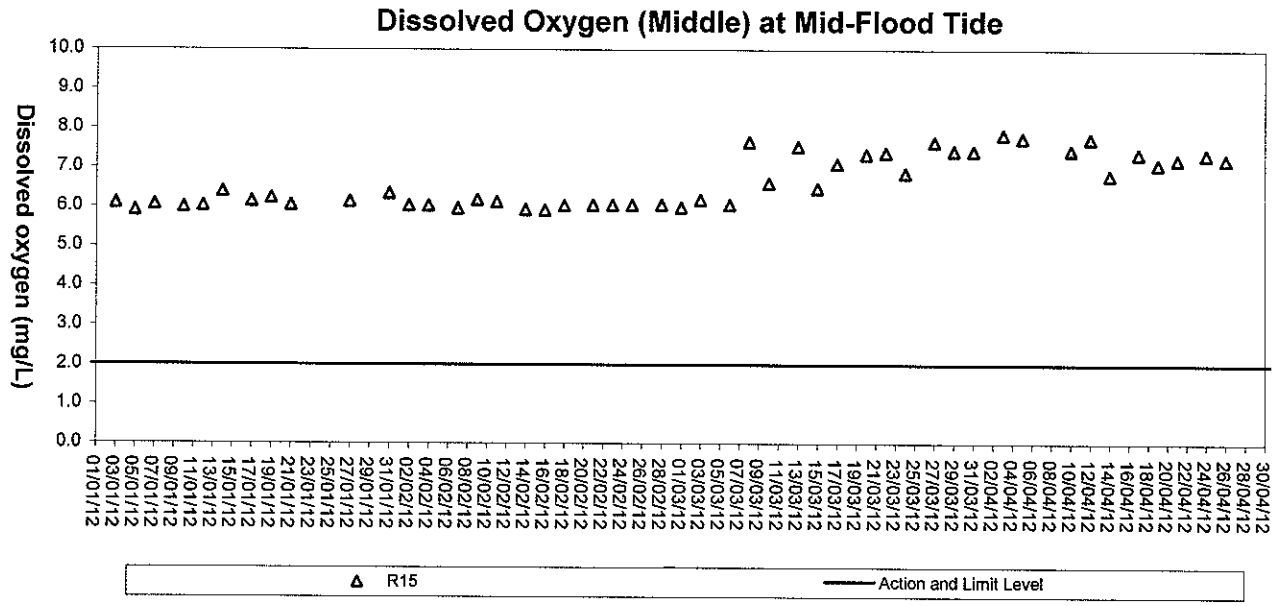

Dissolved Oxygen (Surface) at Mid-Ebb Tide
Dissolved oxygen (mg/L)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
01/01/2012
03/01/2012
05/01/2012
07/01/2012
09/01/2012
11/01/2012
13/01/2012
15/01/2012
17/01/2012
19/01/2012
21/01/2012
23/01/2012
25/01/2012
27/01/2012
29/01/2012
31/01/2012
02/02/2012
04/02/2012
06/02/2012
08/02/2012
10/02/2012
12/02/2012
14/02/2012
16/02/2012
18/02/2012
20/02/2012
22/02/2012
24/02/2012
26/02/2012
28/02/2012
01/03/2012
03/03/2012
05/03/2012
07/03/2012
09/03/2012
11/03/2012
13/03/2012
15/03/2012
17/03/2012
19/03/2012
21/03/2012
23/03/2012
25/03/2012
27/03/2012
29/03/2012
31/03/2012
02/04/2012
04/04/2012
06/04/2012
08/04/2012
10/04/2012
12/04/2012
14/04/2012
16/04/2012
18/04/2012
20/04/2012
22/04/2012
24/04/2012
26/04/2012
28/04/2012
30/04/2012
R15
Action and Limit Level

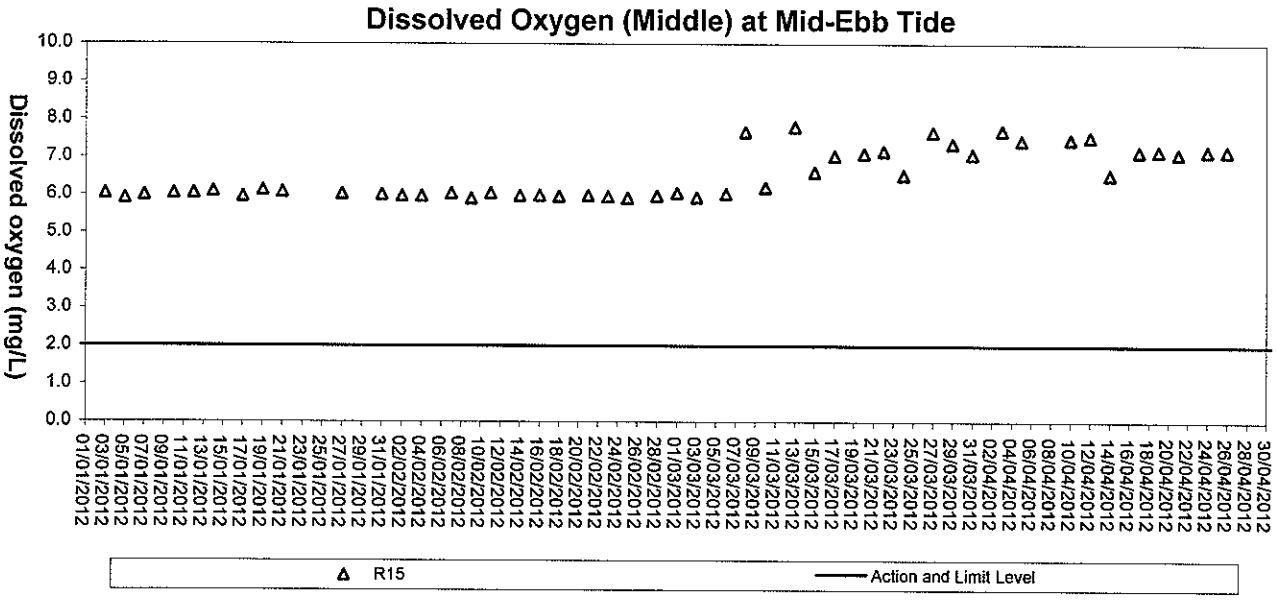
Dissolved Oxygen (Middle) at Mid-Flood Tide



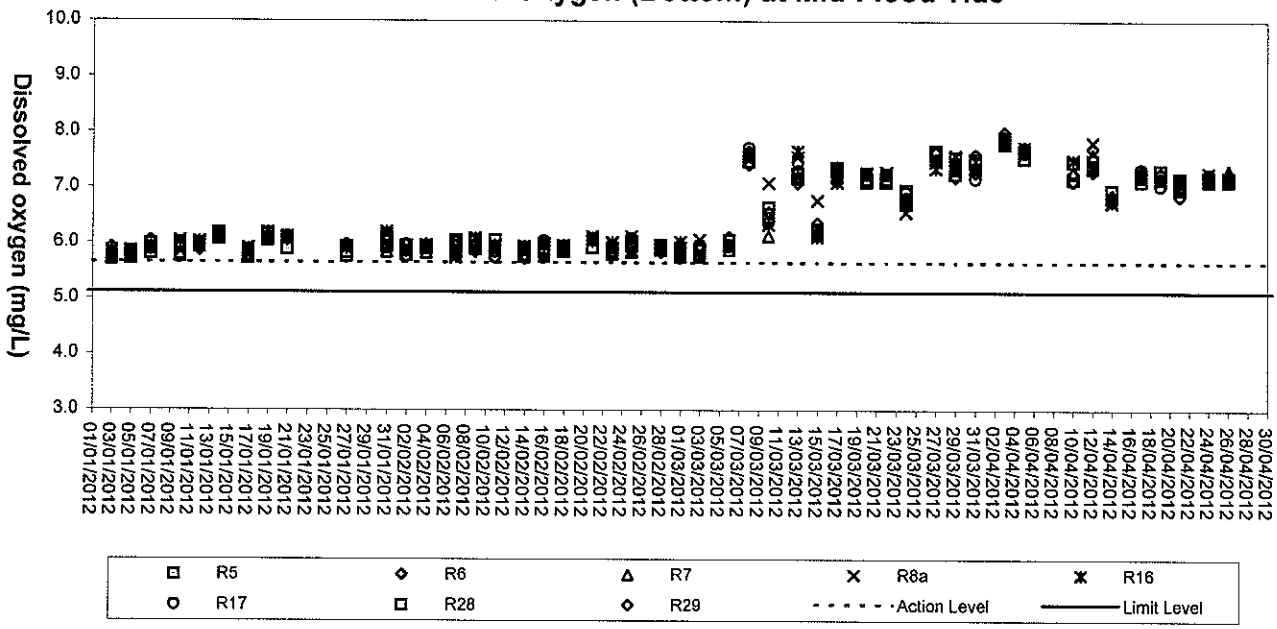
Dissolved Oxygen (Middle) at Mid-Ebb Tide



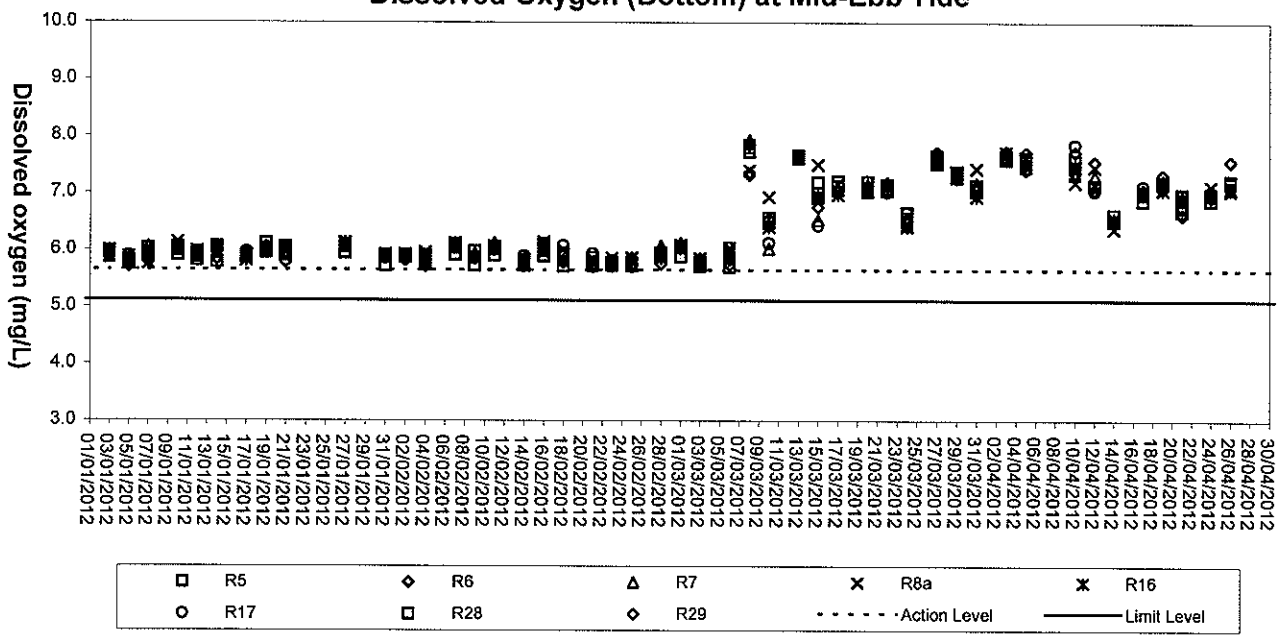

Dissolved Oxygen (Middle) at Mid-Flood Tide
Dissolved oxygen (mg/L)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
01/01/12
03/01/12
05/01/12
07/01/12
09/01/12
11/01/12
13/01/12
15/01/12
17/01/12
19/01/12
21/01/12
23/01/12
25/01/12
27/01/12
29/01/12
31/01/12
02/02/12
04/02/12
06/02/12
08/02/12
10/02/12
12/02/12
14/02/12
16/02/12
18/02/12
20/02/12
22/02/12
24/02/12
26/02/12
28/02/12
01/03/12
03/03/12
05/03/12
07/03/12
09/03/12
11/03/12
13/03/12
15/03/12
17/03/12
19/03/12
21/03/12
23/03/12
25/03/12
27/03/12
29/03/12
31/03/12
02/04/12
04/04/12
06/04/12
08/04/12
10/04/12
12/04/12
14/04/12
16/04/12
18/04/12
20/04/12
22/04/12
24/04/12
26/04/12
28/04/12
30/04/12
R15
Action and Limit Level

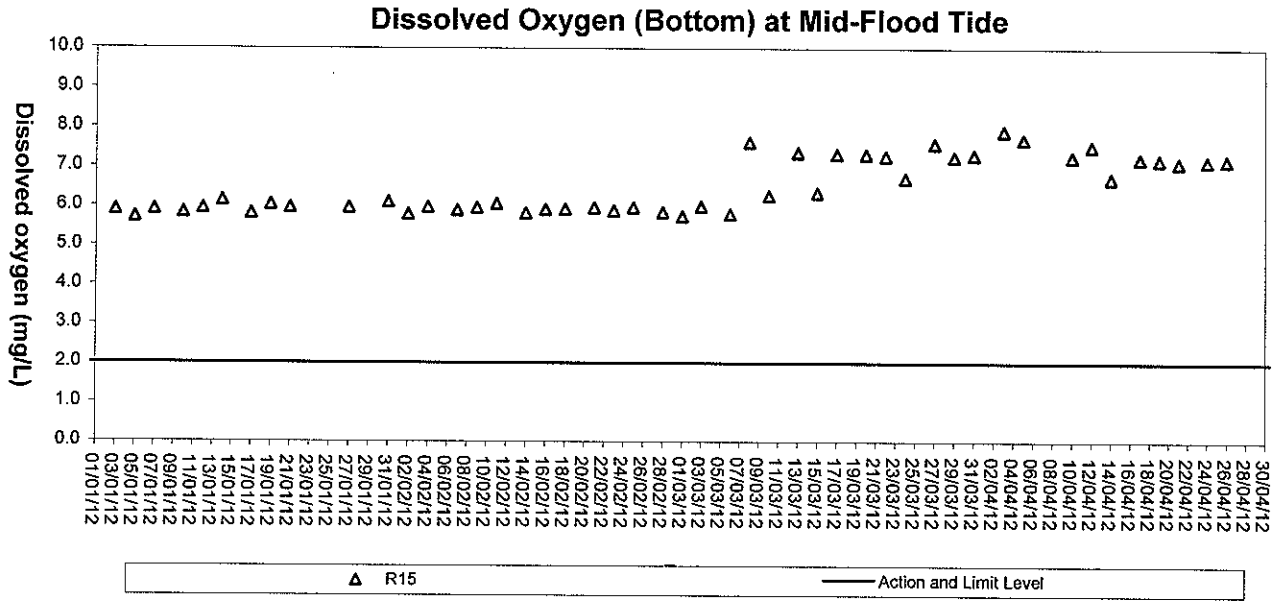

Dissolved Oxygen (Middle) at Mid-Ebb Tide
Dissolved oxygen (mg/L)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
01/01/2012
03/01/2012
05/01/2012
07/01/2012
09/01/2012
11/01/2012
13/01/2012
15/01/2012
17/01/2012
19/01/2012
21/01/2012
23/01/2012
25/01/2012
27/01/2012
29/01/2012
31/01/2012
02/02/2012
04/02/2012
06/02/2012
08/02/2012
10/02/2012
12/02/2012
14/02/2012
16/02/2012
18/02/2012
20/02/2012
22/02/2012
24/02/2012
26/02/2012
28/02/2012
01/03/2012
03/03/2012
05/03/2012
07/03/2012
09/03/2012
11/03/2012
13/03/2012
15/03/2012
17/03/2012
19/03/2012
21/03/2012
23/03/2012
25/03/2012
27/03/2012
29/03/2012
31/03/2012
02/04/2012
04/04/2012
06/04/2012
08/04/2012
10/04/2012
12/04/2012
14/04/2012
16/04/2012
18/04/2012
20/04/2012
22/04/2012
24/04/2012
26/04/2012
28/04/2012
30/04/2012
R15
Action and Limit Level

Dissolved Oxygen (Bottom) at Mid-Flood Tide



Dissolved Oxygen (Bottom) at Mid-Ebb Tide




Dissolved Oxygen (Bottom) at Mid-Flood Tide
Dissolved oxygen (mg/L)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
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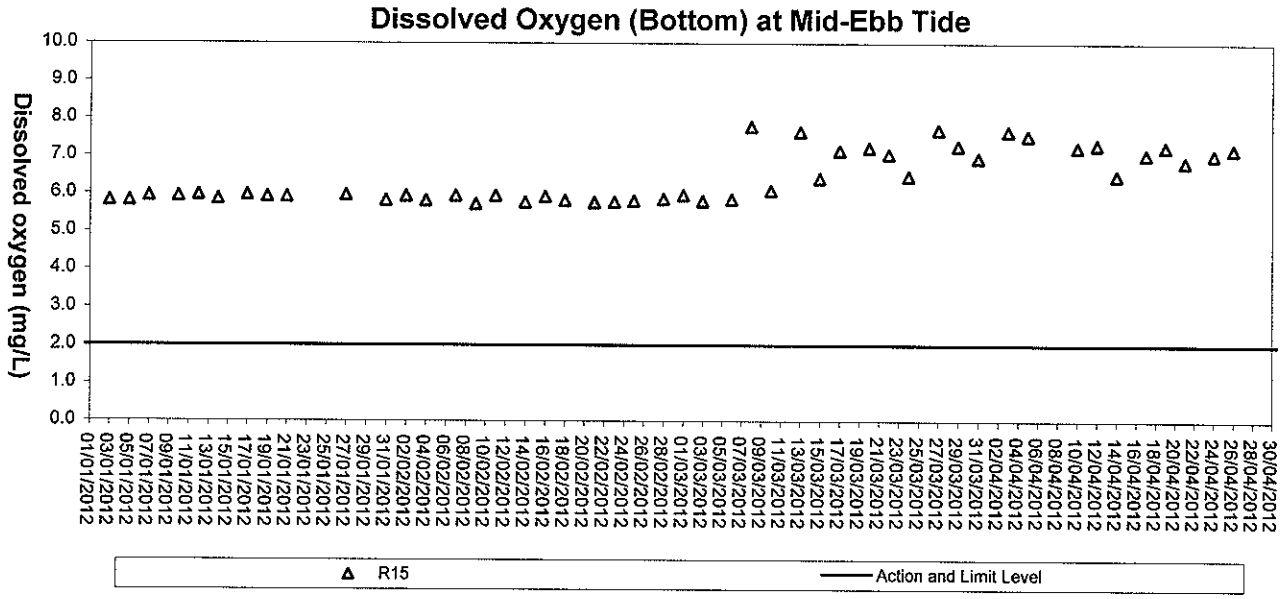
30/04/12
R15
Action and Limit Level


Dissolved Oxygen (Bottom) at Mid-Ebb Tide
Dissolved oxygen (mg/L)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
01/01/2012
03/01/2012
05/01/2012
07/01/2012
09/01/2012
11/01/2012
13/01/2012
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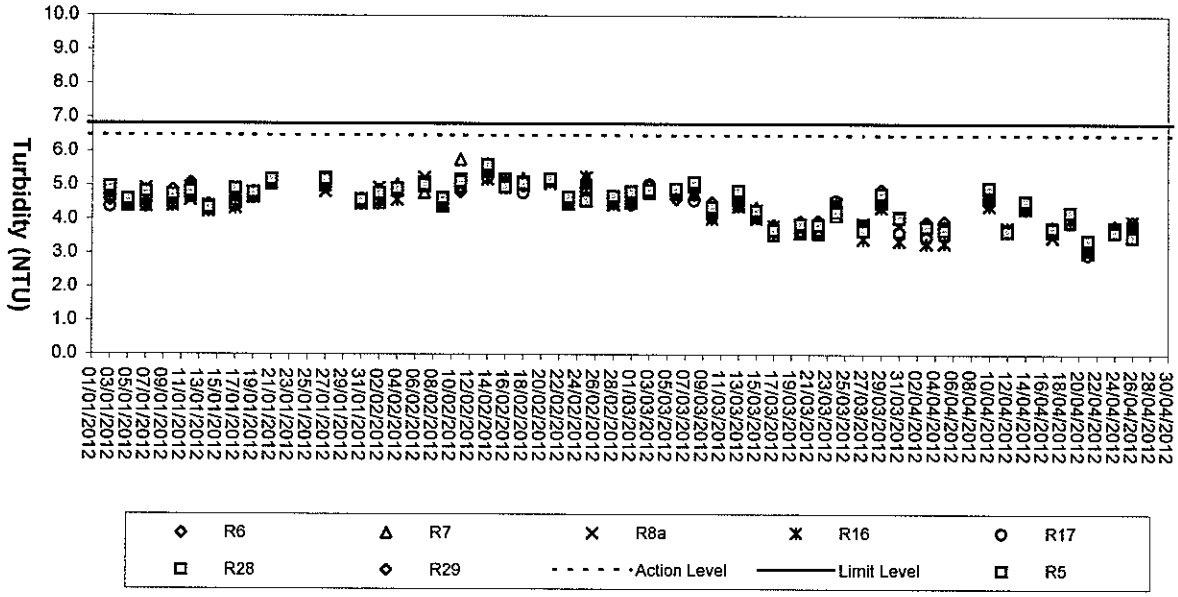
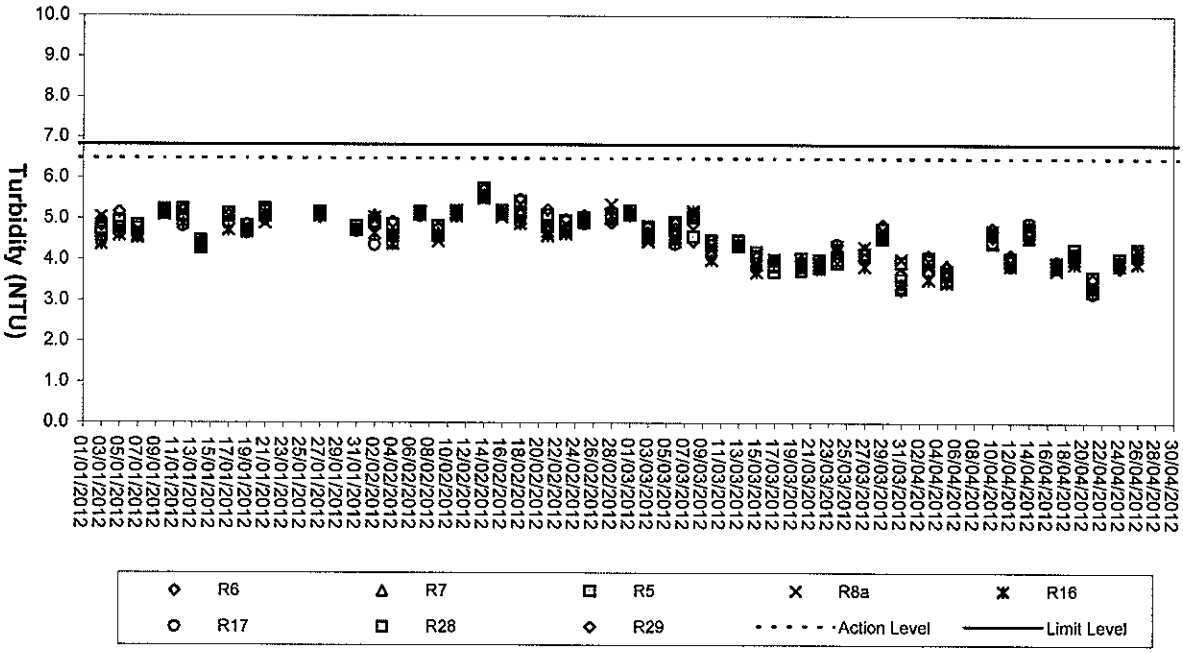
28/04/2012
30/04/2012
R15
Action and Limit Level

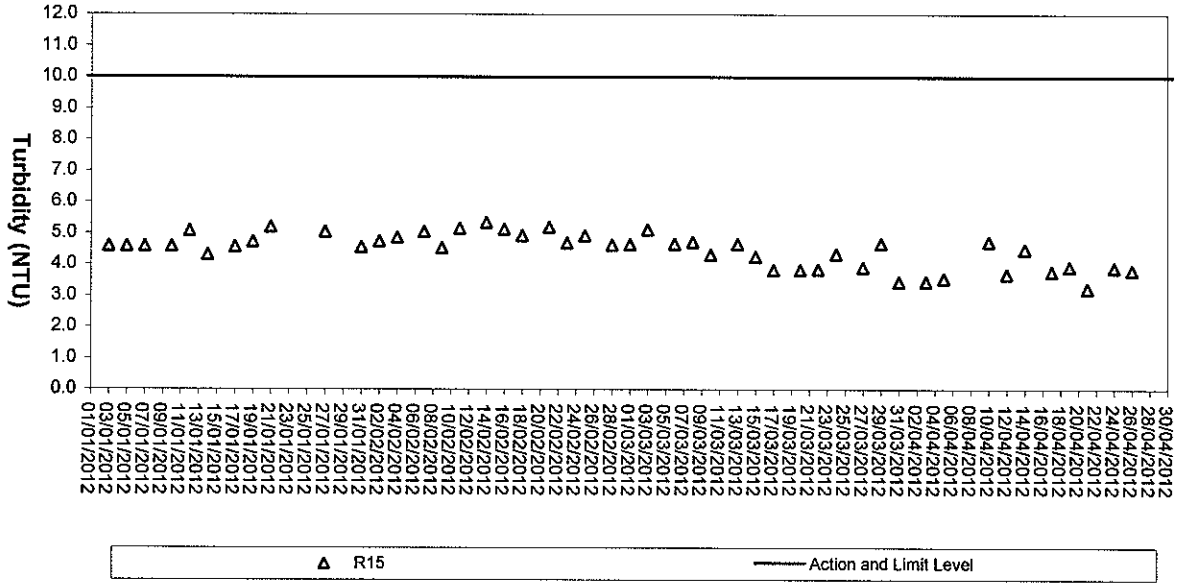
Turbidity (Depth-average) at Mid-Flood Tide



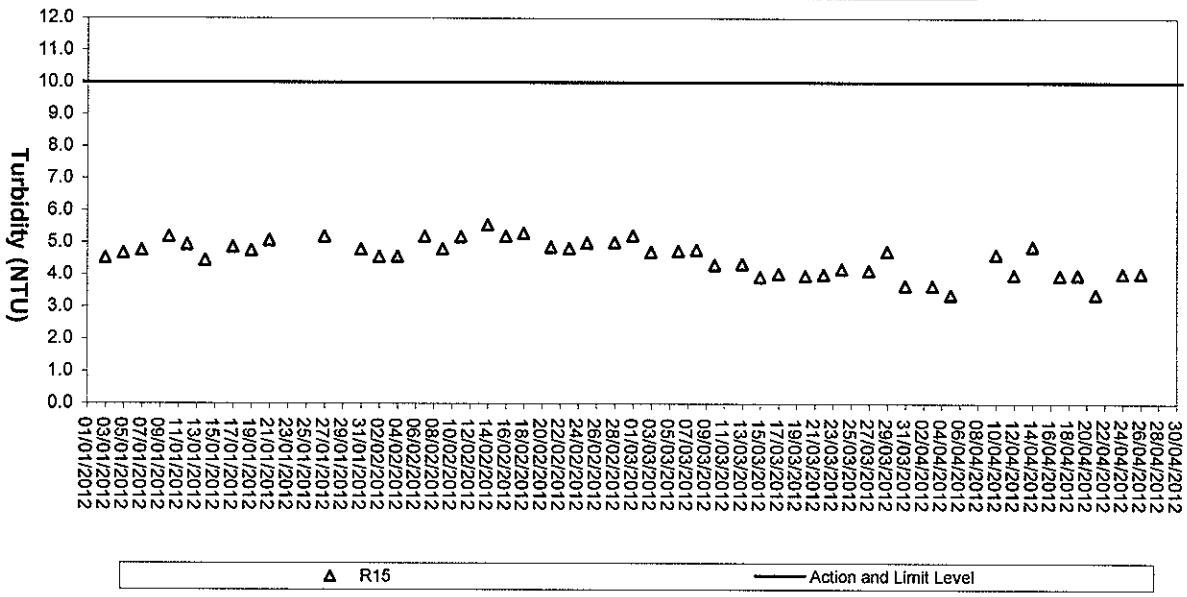
Turbidity(Depth-average) at Mid-Ebb Tide



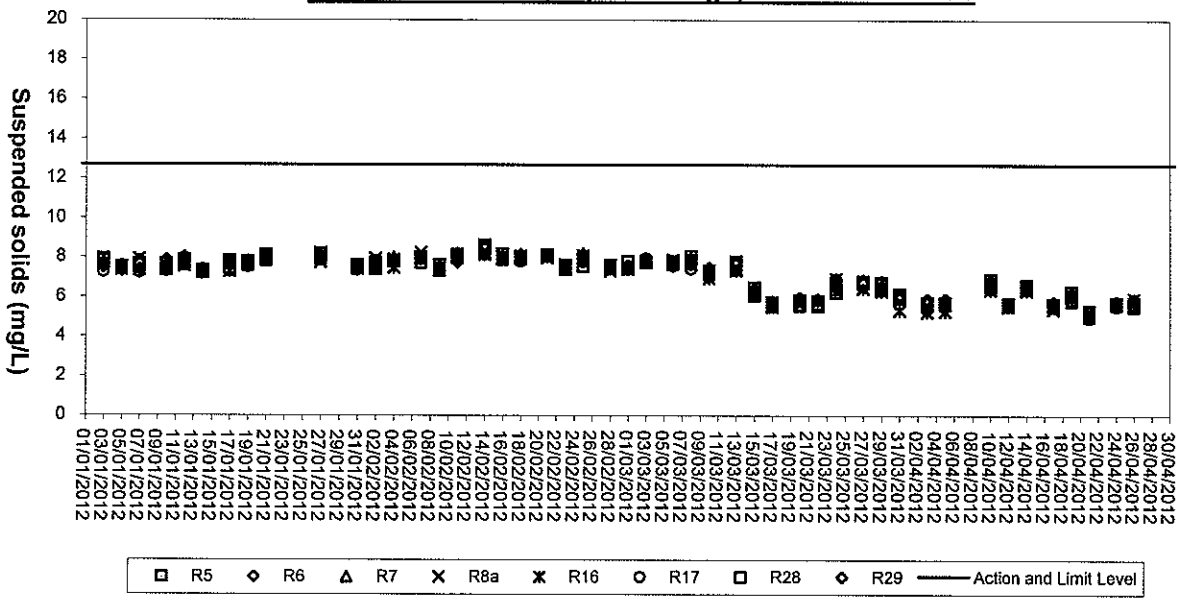
Turbidity (Depth-average) of R15 at Mid-Flood Tide



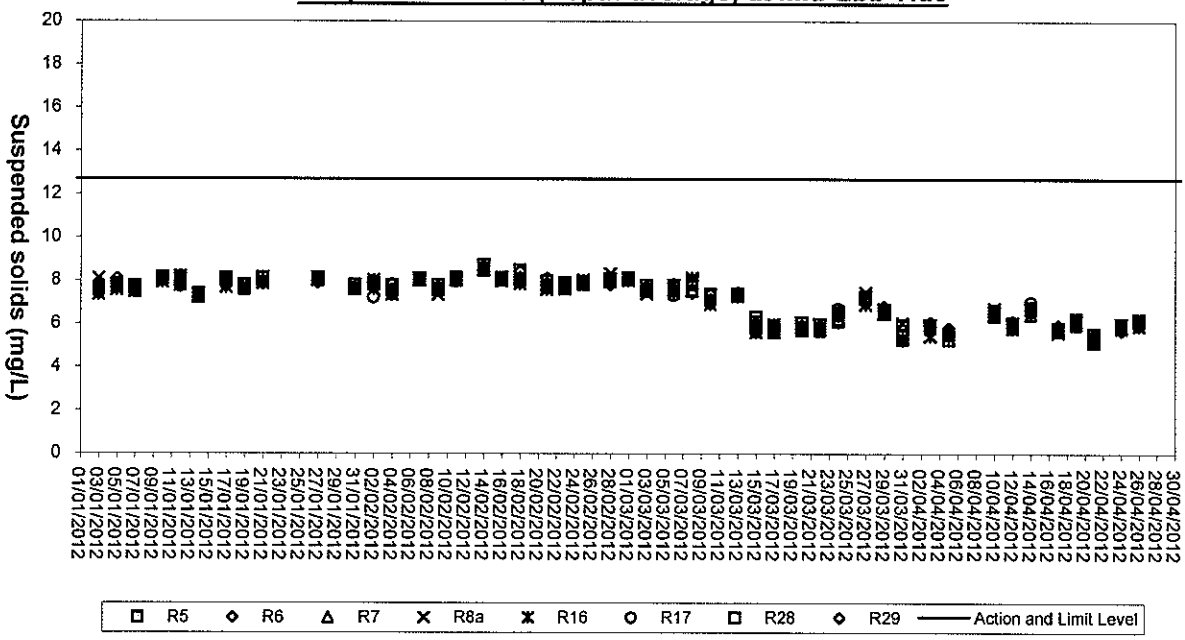
Turbidity(Depth-average) of R15 at Mid-Ebb Tide



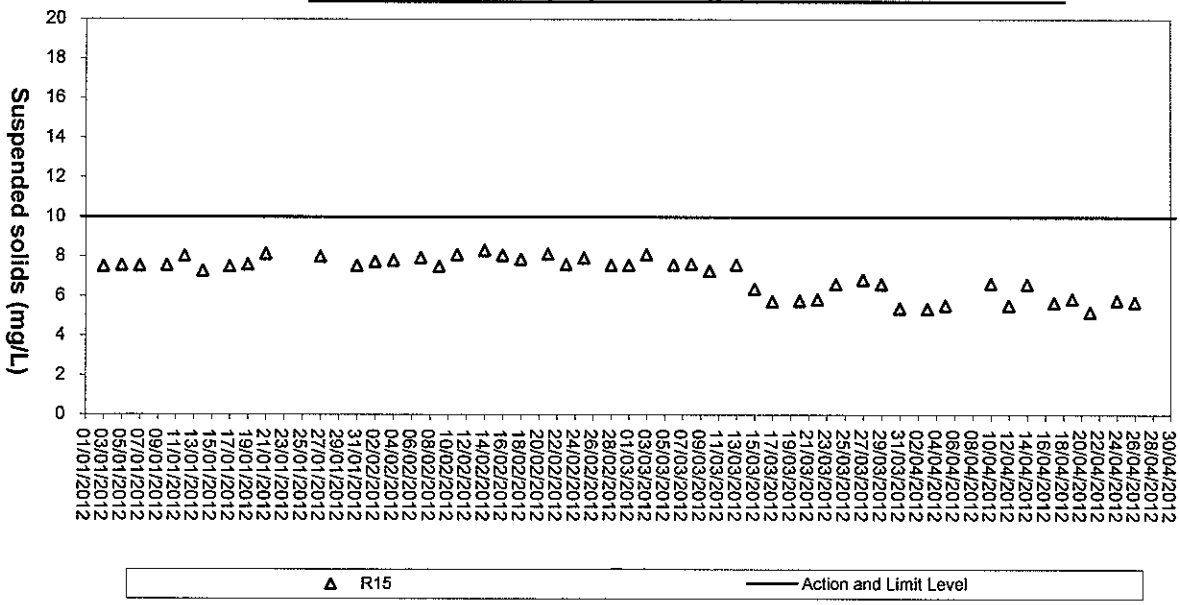
Suspended solids (Depth-average) at Mid-Flood Tide



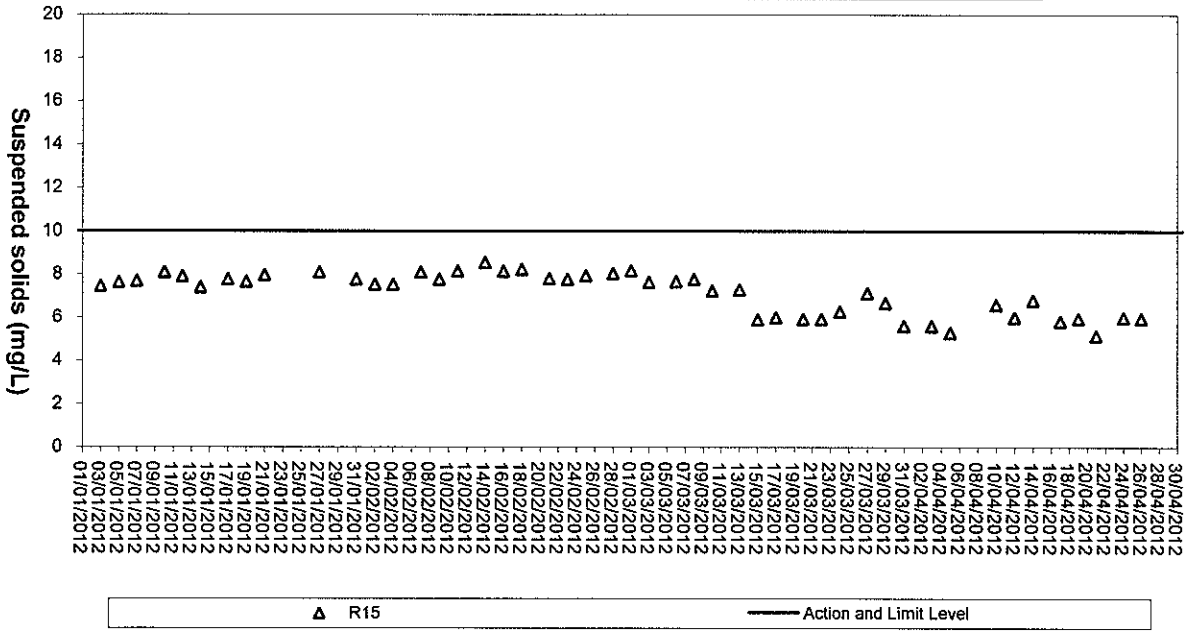
Suspended Solids (Depth-average) at Mid-Ebb Tide



Suspended solids (Depth-average) of R15 at Mid-Flood Tide



Suspended Solids (Depth-average) of R15 at Mid-Ebb Tide



Appendix C4

QA/QC Results of Laboratory Analysis for Water Samples

QA/QC Results of Laboratory Analysis of Total Suspended Solids

Sampling Date	QC Sample	Sample Duplicate		Sample Spike	
	% Recovery *	Sample ID	% Error #	Sample ID	% Recovery @
03/04/12	94.9	R5FS	0.0	R8FS	92.3
	93.7	R8FM	8.7	R17FM	103.9
	107.8	R17FB	0.0	C1FB	105.9
	93.6	C2FS	8.7	C4FB	103.8
	107.4	R5ES	8.0	R8ES	104.3
	101.3	R8EM	0.0	R17EM	100.0
	100.4	R17EB	0.0	C1EB	92.5
	94.3	C2ES	0.0	C4EB	104.0
05/04/12	104.4	R5FS	0.0	R8FS	107.8
	102.3	R8FM	0.0	R17FM	94.2
	103.3	R17FB	8.7	C1FB	94.0
	108.0	C2FS	0.0	C4FB	104.1
	102.9	R5ES	0.0	R8ES	102.0
	92.8	R8EM	0.0	R17EM	106.0
	101.8	R17EB	0.0	C1EB	104.0
	106.0	C2ES	0.0	C4EB	94.0
10/04/12	106.1	R5FS	7.4	R8FS	94.1
	107.5	R8FM	0.0	R17FM	103.8
	105.9	R17FB	0.0	C1FB	100.0
	92.7	C2FS	0.0	C4FB	104.2
	93.2	R5ES	8.0	R8ES	103.8
	96.9	R8EM	0.0	R17EM	97.9
	92.8	R17EB	0.0	C1EB	94.1
	96.9	C2ES	0.0	C4EB	97.9
12/04/12	93.4	R5FS	0.0	R8FS	94.3
	108.1	R8FM	0.0	R17FM	94.1
	106.3	R17FB	8.7	C1FB	98.0
	95.3	C2FS	0.0	C4FB	93.8
	101.6	R5ES	8.0	R8ES	96.0
	101.0	R8EM	0.0	R17EM	92.5
	101.4	R17EB	0.0	C1EB	104.0
	104.8	C2ES	8.0	C4EB	97.9
14/04/12	97.5	R5FS	7.4	R8FS	94.1
	107.4	R8FM	0.0	R17FM	102.0
	95.4	R17FB	0.0	C1FB	98.0
	104.1	C2FS	0.0	C4FB	93.8
	107.9	R5ES	7.4	R8ES	93.8
	105.1	R8EM	0.0	R17EM	96.2
	97.3	R17EB	6.9	C1EB	98.1
	105.5	C2ES	0.0	C4EB	97.9
17/04/12	98.0	R5FS	0.0	R8FS	98.0
	100.6	R8FM	0.0	R17FM	104.1
	105.9	R17FB	8.0	C1FB	104.2
	104.6	C2FS	0.0	C4FB	98.1
	106.1	R5ES	0.0	R8ES	96.2
	93.2	R8EM	0.0	R17EM	106.3
	104.4	R17EB	8.7	C1EB	96.0
	94.1	C2ES	0.0	C4EB	96.0

Note: (*)% Recovery of QC sample should be between 80% to 120%.
(#) % Error of Sample Duplicate should be between -10% to 10%.
(@) % Recovery of Sample Spike should be between 80% to 120%.

QA/QC Results of Laboratory Analysis of Total Suspended Solids

Sampling Date	QC Sample	Sample Duplicate		Sample Spike	
	% Recovery *	Sample ID	% Error #	Sample ID	% Recovery @
19/04/12	106.7	R5FS	8.0	R8FS	100.0
	105.0	R8FM	0.0	R17FM	103.8
	101.1	R17FB	0.0	C1FB	106.4
	100.6	C2FS	0.0	C4FB	92.3
	94.7	R5ES	0.0	R8ES	96.0
	97.1	R8EM	8.0	R17EM	100.0
	94.2	R17EB	0.0	C1EB	102.0
	94.1	C2ES	0.0	C4EB	93.9
21/04/12	97.9	R5FS	0.0	R8FS	98.1
	95.8	R8FM	0.0	R17FM	105.7
	93.7	R17FB	0.0	C1FB	105.8
	107.8	C2FS	0.0	C4FB	106.4
	99.4	R5ES	8.7	R8ES	91.7
	107.4	R8EM	0.0	R17EM	103.9
	100.4	R17EB	0.0	C1EB	98.0
	101.7	C2ES	0.0	C4EB	94.0
24/04/12	92.9	R5FS	0.0	R8FS	98.0
	102.9	R8FM	8.7	R17FM	104.1
	93.2	R17FB	0.0	C1FB	101.9
	94.3	C2FS	0.0	C4FB	106.2
	96.5	R5ES	8.0	R8ES	105.7
	105.6	R8EM	0.0	R17EM	92.2
	98.6	R17EB	8.0	C1EB	104.1
	93.9	C2ES	0.0	C4EB	96.1
26/04/12	100.4	R5FS	0.0	R8FS	100.0
	105.8	R8FM	8.0	R17FM	100.0
	94.3	R17FB	0.0	C1FB	95.7
	101.2	C2FS	0.0	C4FB	100.0
	97.1	R5ES	8.0	R8ES	105.9
	97.8	R8EM	0.0	R17EM	96.1
	96.2	R17EB	0.0	C1EB	100.0
	106.9	C2ES	0.0	C4EB	104.2

Note: (*) % Recovery of QC sample should be between 80% to 120%.
(#) % Error of Sample Duplicate should be between –10% to 10%.
(@) % Recovery of Sample Spike should be between 80% to 120%.

Appendix D

Event-Action Plans

Event and Action Plan for Construction Noise

Event	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Action Level	1. Notify IEC and the Contractor. 2. Carry out investigation. 3. Report the results of investigation to IEC and the Contractor. 4. Discuss with the Contractor and formulate remedial measures. 5. Increase monitoring frequency to check mitigation measures.	1. Review with analysed results submitted by ET. 2. Review the proposed remedial measures by the Contractor and advise ER accordingly. 3. Supervise the implement of remedial measures.	1. Confirm receipt of notification of exceedance in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented.	1. Submit noise mitigation proposals to IEC. 2. Implement noise mitigation proposals.
Limit Level	1. Identify the source. 2. Notify IEC, ER, EPD and the Contractor. 3. Repeat measurement to confirm findings. 4. Increase monitoring frequency. 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented. 6. Inform IEC, ER, and EPD the causes & actions taken for the exceedances. 7. Assess effectiveness of the Contractor's remedial actions and keep IEC, EPD and ER informed of the results. 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET Leader and the Contractor on the potential remedial actions. 2. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise ER accordingly. 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. 5. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial actions to IEC within 3 working days of notification. 3. Implement the agreed proposals. 4. Resubmit proposals if problem still not under control. 5. Stop the relevant activity of works as determined by the ER until the exceedance is abated.

Event and Action Plan for Water Quality for Construction Phase

Event	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Action Level				
Exceedance for one sample	1. Repeat in-situ measurement to confirm finding; 2. Identify source(s) of impact; 3. Inform IEC and Contractor; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC and Contractor; and 6. Repeat measurement on next day of exceedance.	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; and 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with IEC on the proposed mitigation measures; and 2. Make agreement on the mitigation measures to be implemented.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with ET and IEC and propose mitigation measures to IEC and ER; and 6. Implement the agreed mitigation measures.
Exceedance for two or more consecutive samples	1. Repeat in-situ measurement to confirm finding; 2. Identify source(s) of impact; 3. Inform IEC and Contractor; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC and Contractor; 6. Ensure mitigation measures are implemented; 7. Prepare to increase the monitoring frequency to daily; and 8. Repeat measurement on next day of exceedance.	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; and 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with IEC on the proposed mitigation measures; 2. Make agreement on the mitigation measures to be implemented; and 3. Assess the effectiveness of the implemented mitigation measures.	1. Inform the Engineer and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with ET and IEC and propose mitigation measures to IEC and ER within 3 working days; and 6. Implement the agreed mitigation measures.

Event and Action Plan for Water Quality for Construction Phase

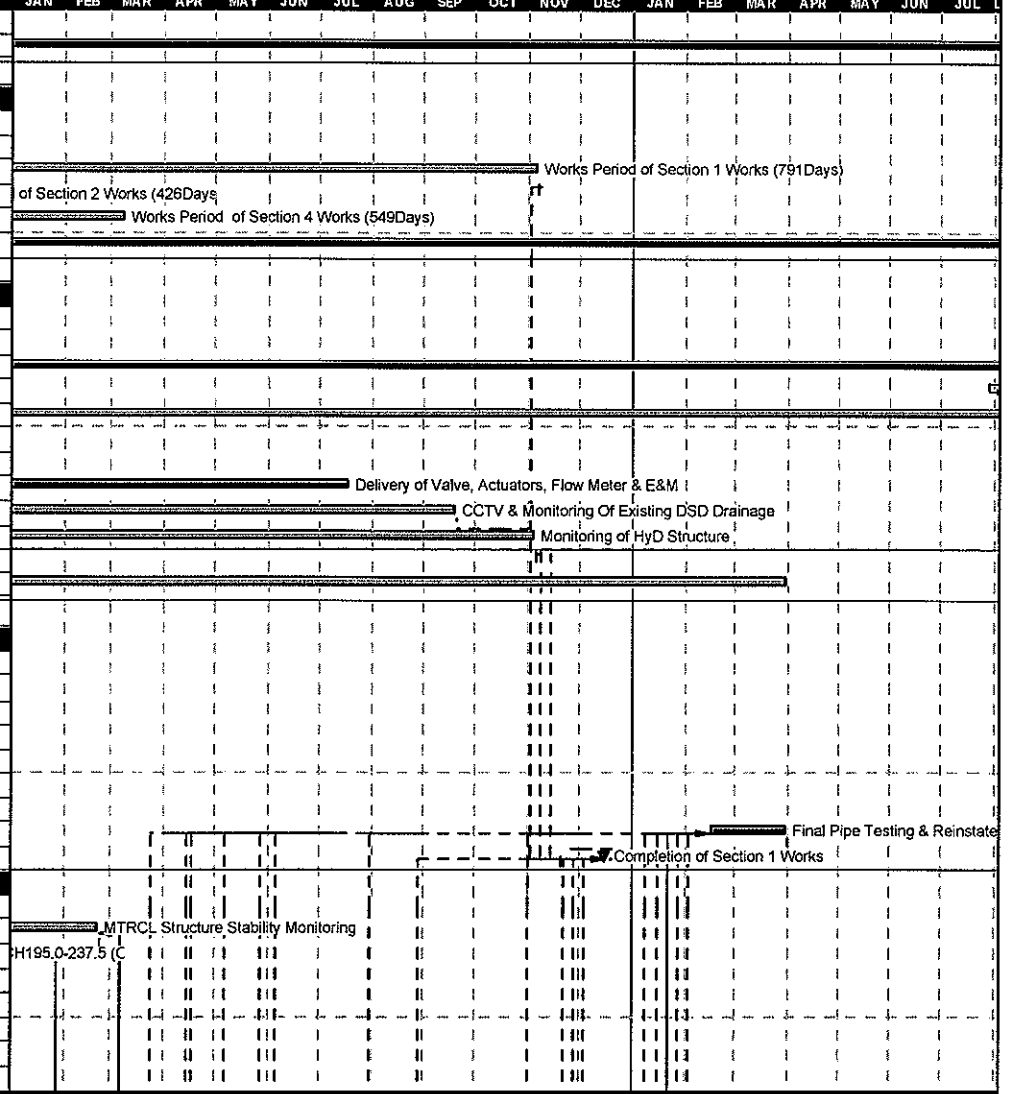
Event	Action			
	ET Leader	IEC	ER	Contractor
Limit Level				
Exceedance for one sample	1. Repeat in-situ measurement to confirm finding; 2. Identify source(s) of impact; 3. Inform IEC, Contractor and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; and 7. Increase the monitoring frequency to daily until no exceedance of Limit level.	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; and 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with IEC, ET and Contractor on the proposed mitigation measures; and 2. Request Contractor to critically review the working methods; 3. Make agreement on the mitigation measures to be implemented; and 4. Assess the effectiveness of the implemented mitigation measures.	1. Inform the Engineer and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with ET and IEC and ER and propose mitigation measures to IEC and ER within 3 working days; and 6. Implement the agreed mitigation measures.
Exceedance for two or more consecutive samples	1. Repeat in-situ measurement to confirm finding; 2. Identify source(s) of impact; 3. Inform IEC, Contractor and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; and 7. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days.	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; and 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with IEC, ET and Contractor on the proposed mitigation measures; and 2. Request Contractor to critically review the working methods; 3. Make agreement on the mitigation measures to be implemented; 4. Assess the effectiveness of the implemented mitigation measures; and 5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit Level.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with ET and IEC and ER and propose mitigation measures to IEC and ER within 3 working days; 6. Implement the agreed mitigation measures; and 7. As directed by the Engineer, to slow down or to stop all or part of the marine work or construction activities.

Appendix E

Work Programme

Contract No.9/WSD/08
Laying of Western Cross Habour Main & Associated Land Mains from West Kowloon to Sai Ying Pun

Act ID	Description	Orig Dur	Early Start	Early Finish	Late Start
General Information					
		1156	07SEP09 A	05NOV12	07SEP09 A
Key Dates					
KD-1010	Contract Commencement Date	0	07SEP09 A		07SEP09 A
KD-1020	Contract Completion	0		05NOV12 *	
KD-1030	Works Period of Section 1 Works (791Days)	830	07SEP09 A	06NOV11	07SEP09 A
KD-1040	Works Period of Section 2 Works (426Days)	449	07SEP09 A	06NOV10	07SEP09 A
KD-1050	Works Period of Section 4 Works (549Days)	576	07SEP09 A	09MAR11	07SEP09 A
KD-1060	Works Period of Section 5 Works (1156Days)	1156	07SEP09 A	05NOV12	07SEP09 A
Preliminaries					
B1-1000	Mobilization	90	07SEP09 A	06DEC09 A	07SEP09 A
B1-1110	Site Office	60	16NOV09 A	16JAN10	16NOV09 A
B1-1120	Maintenance/Servicing of Preliminary Items	936	17JAN10	09AUG12	17JAN10
B1-1130	Clearance & Demobilisation	88	10AUG12	05NOV12	10AUG12
B1-1140	Environmental Monitoring	1026	28DEC09 A	18OCT12	28DEC09 A
B1-1150	Material Approval For Water Mains & Accessories	100	07SEP09 A	18FEB10	07SEP09 A
B1-1160	Material Procument & Delivery Start	60	28DEC09 A	01FEB10	28DEC09 A
B1-1160B	Delivery of Valve, Actuators, Flow Meter & E&M	400	14JUN10	18JUL11 *	14JUN10
B1-1170	CCTV & Monitoring Of Existing DSD Drainage	610	18JAN10	19SEP11	15APR10
B1-1180	Monitoring of HyD Structure	610	06MAR10	05NOV11	15APR10
Section 1					
		937	07SEP09 A	31MAR12	07SEP09 A
Land Works					
General					
S1-1010	Approval & Consent - XP, TTA, MS & Temp Works.	180	07SEP09 A	05MAR10	07SEP09 A
S1-1020	Trial Pit & Utilities Detection (Except E2 & K)	120	01DEC09 A	16MAR10	01DEC09 A
S1-1030	Portion H2 Cycle Track & Footpath Proposal	40	07SEP09 A	08OCT09 A	07SEP09 A
S1-1040	Portion H2 Diversion Route For Cycle Track	60	07OCT09 A	28NOV09 A	07OCT09 A
S1-1050	Portion H2 Submission For Hoarding Mural Design	90	07SEP09 A	17FEB10	07SEP09 A
S1-1060	Portion H2 Set Up For Hoarding Approved Design	30	18FEB10	19MAR10	07OCT12
S1-1080	Initial & Utilities Survey (Except E2 & K)	120	05OCT09 A	04MAR10	05OCT09 A
S1-2010	Final Pipe Testing & Reinstatement	45	16FEB12	31MAR12	01NOV11
S1-2020	Completion of Section 1 Works	0		15DEC11 *	
Portion C1					
S1-3010	MTRCL Consent For Works Commencement	180	07SEP09 A	05MAR10	07SEP09 A
S1-3020	MTRCL Structure Stability Monitoring	270	28MAY10	21FEB11	05JAN11
S1-3030	Portion C1 Pipe Works CH195.0-237.5 (O)	90	24JUN10	21SEP10	19MAR11
S1-3030A10	Preparation & Submission of Risk Assessment	40	22FEB10 *	02APR10	02NOV10
S1-3030A20	Preparation & Submission of Method Statement	40	22FEB10	02APR10	02NOV10
S1-3030A30	Preparation & Submission of Temp. Design	40	22FEB10	02APR10	02NOV10
S1-3030B10	Excavation & Shoring	80	28MAY10	15AUG10	12DEC10
S1-3030B20	Pipe Laying & Welding	50	17JUL10	04SEP10	31JAN11



Start date	07SEP09
Finish date	05NOV12
Data date	04JAN10
Run date	03MAY12
Page number	1A
c Primavera Systems, Inc.	

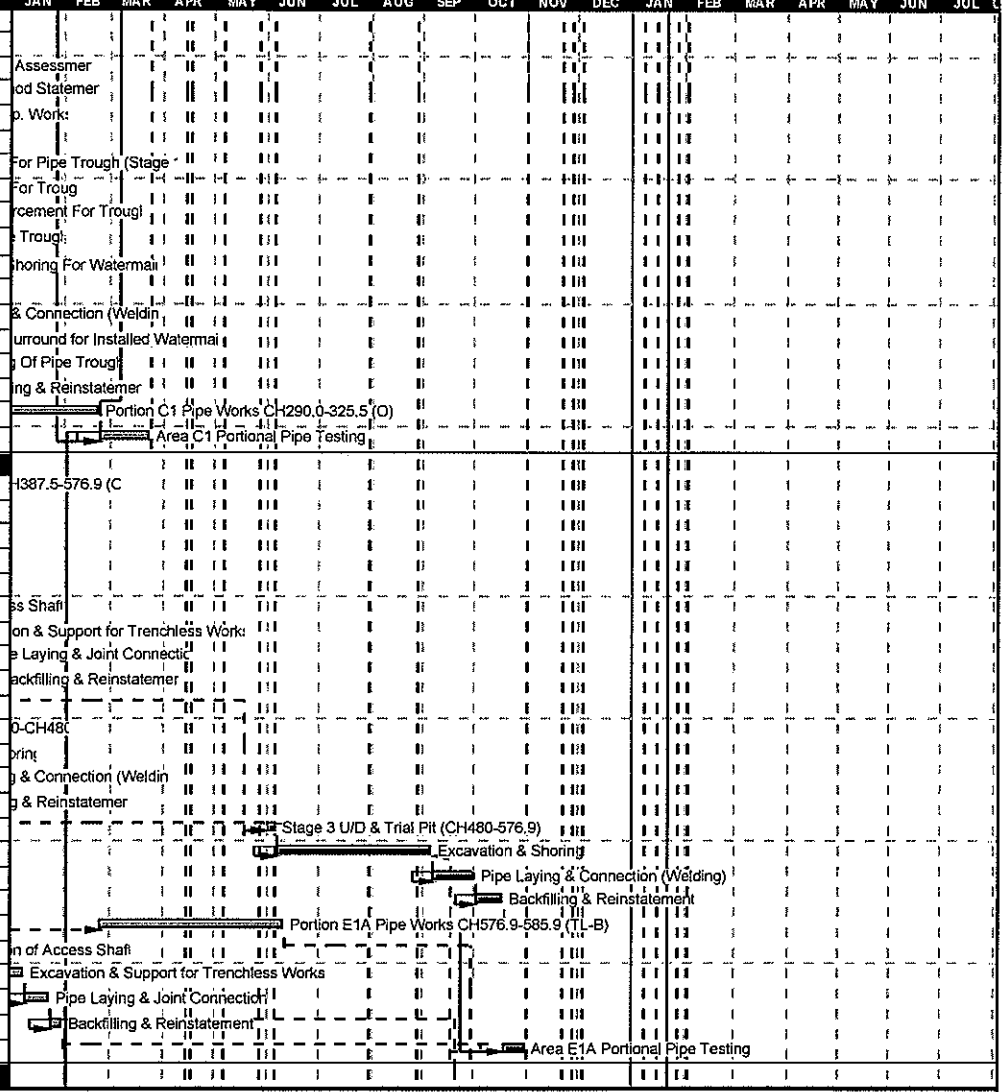
Wo Hing - Penta-Ocean Joint Venture

3 Months Rolling Program (April 2012)

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

Contract No.9/WSD/08
Laying of Western Cross Habour Main & Associated Land Mains from West Kowloon to Sai Ying Pun

Act ID	Description	Orig Dur	Early Start	Early Finish	Late Start
S1-3030B30	Backfilling & Reinstatement	10	05SEP10	14SEP10	22MAR11
S1-3040	Portion C1 Trough Construction CH237.5-290.0	60	06MAR10	04MAY10	15APR10
S1-3040A20	Preparation & Submission Of Risk Assessment	28	17JUL10	13AUG10	15MAR11
S1-3040A30	Preparation & Submission Of Method Statement	28	17JUL10	13AUG10	15MAR11
S1-3040A40	Preparation & Submission Of Temp. Works	28	17JUL10	13AUG10	15MAR11
S1-3040B10	Installation Of Settlement Marker	3	31JUL10	02AUG10	29MAR11
S1-3040B20	Excavation & Shoring For Pipe Trough (Stage 1)	15	15SEP10	29SEP10	01APR11
S1-3040B30	Formation & Blinding For Trough	3	30SEP10	02OCT10	16APR11
S1-3040B40	Formwork & Reinforcement For Trough	10	03OCT10	12OCT10	19APR11
S1-3040B50	Concreting Of Pipe Trough	3	13OCT10	15OCT10	29APR11
S1-3040C10	Excavation & Shoring For Watermain	15	16OCT10	30OCT10	02MAY11
S1-3050	Portion C1 Pipe Works CH237.5-290 (PT)	50	05MAY10	23JUN10	22DEC10
S1-3050B10	Pipe Laying & Connection (Welding)	10	31OCT10	09NOV10	17MAY11
S1-3050B20	Concrete Surround for Installed Watermain	6	10NOV10	15NOV10	27MAY11
S1-3050B30	Backfilling Of Pipe Trough	5	16NOV10	20NOV10	02JUN11
S1-3050B40	Backfilling & Reinstatement	10	21NOV10	30NOV10	07JUN11
S1-3060	Portion C1 Pipe Works CH290.0-325.5 (O)	83	01DEC10	21FEB11	17JUN11
S1-3070	Area C1 Portional Pipe Testing	30	22FEB11	23MAR11	02OCT11
Portion E1A					
S1-4020	Portion E1A Pipe Works CH387.5-576.9 (O)	180	17MAR10	12SEP10	24AUG10
S1-4020A20	Preparation & Submission Of Risk Assessment	40	03MAR10	11APR10	10AUG10
S1-4020A30	Preparation & Submission Of Method Statement	40	03MAR10	11APR10	10AUG10
S1-4020A40	Preparation & Submission Of Temp. Works	40	03MAR10	11APR10	10AUG10
S1-4020B10	Stage 1 U/D & Trial Pit (CH380-420)	52	03MAY10	23JUN10	10OCT10
S1-4020B20	Fabrication of Access Shaft	30	12SEP10	11OCT10	19FEB11
S1-4020B30	Excavation & Support for Trenchless Works	45	12OCT10	25NOV10	21MAR11
S1-4020B40	Pipe Laying & Joint Connection	20	26NOV10	15DEC10	05MAY11
S1-4020B50	Backfilling & Reinstatement	7	16DEC10	22DEC10	25MAY11
S1-4020C05	Existing Trees Relocation	4	19AUG10 *	22AUG10	03JUN11
S1-4020C10	Stage 2 U/D & Trial Pit (CH420-CH480)	10	23AUG10	01SEP10	07JUN11
S1-4020C20	Excavation & Shoring	50	02SEP10	21OCT10	17JUN11
S1-4020C30	Pipe Laying & Connection (Welding)	25	22OCT10	15NOV10	06AUG11
S1-4020C40	Backfilling & Reinstatement	7	16NOV10	22NOV10	31AUG11
S1-4020D10	Stage 3 U/D & Trial Pit (CH480-576.9)	6	01JUN11 *	06JUN11	01JUN11
S1-4020D20	Excavation & Shoring	92	07JUN11	06SEP11	07JUN11
S1-4020D30	Pipe Laying & Connection (Welding)	25	07SEP11	01OCT11	07SEP11
S1-4020D40	Backfilling & Reinstatement	16	02OCT11	17OCT11	02OCT11
S1-4030	Portion E1A Pipe Works CH576.9-585.9 (TL-B)	108	23FEB11 *	10JUN11	02JUL11
S1-4030B10	Fabrication of Access Shaft	55	27SEP10 *	20NOV10	12MAR11
S1-4030B20	Excavation & Support for Trenchless Works	50	21NOV10	09JAN11	06MAY11
S1-4030B30	Pipe Laying & Joint Connection	15	10JAN11	24JAN11	25JUN11
S1-4030B40	Backfilling & Reinstatement	8	25JAN11	01FEB11	10OCT11
S1-4050	Area E1A Portional Pipe Testing	14	18OCT11	31OCT11	18OCT11
Portion E1B + E2 SWM					



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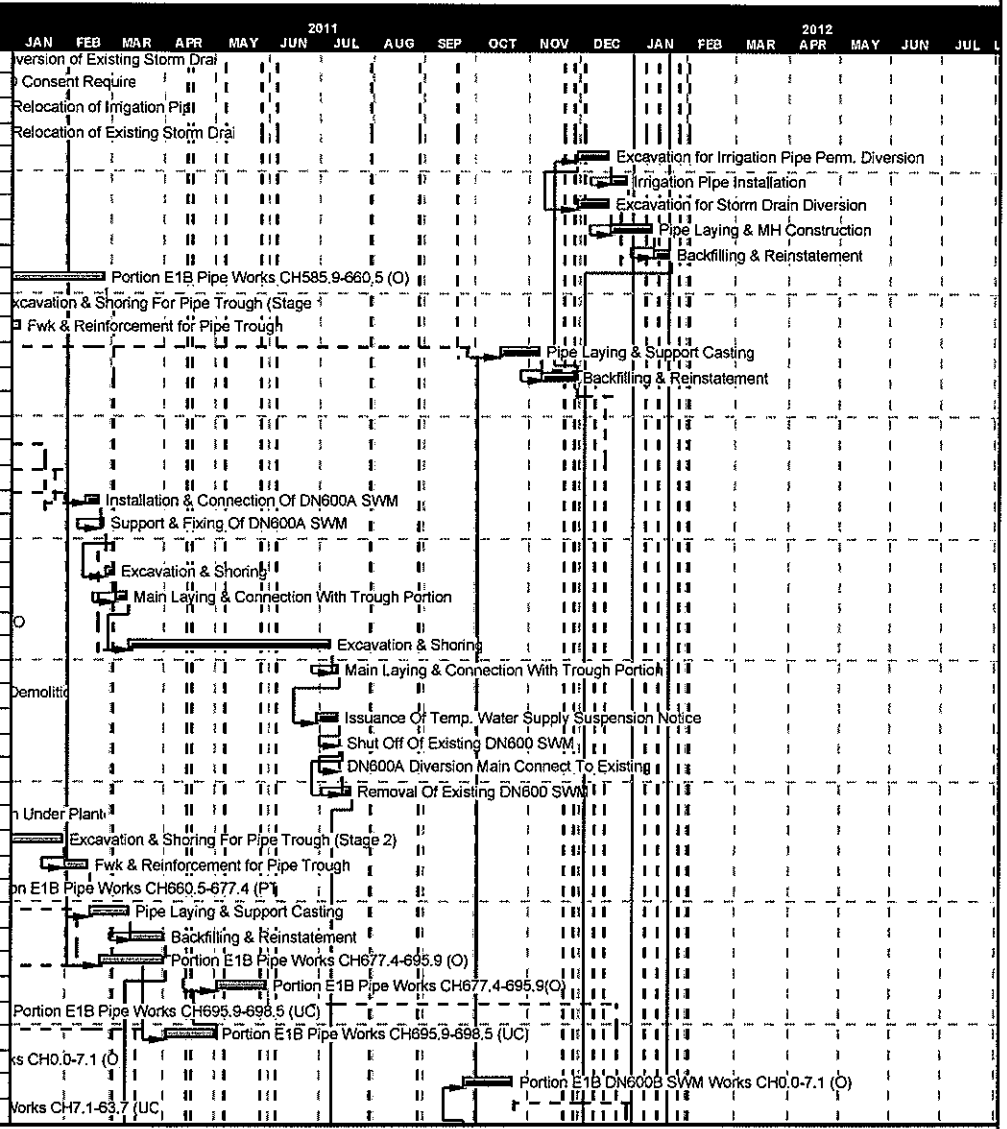
Wo Hing - Penta-Ocean Joint Venture

3 Months Rolling Program (April 2012)

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

Contract No.9/WSD/08
Laying of Western Cross Habour Main & Associated Land Mains from West Kowloon to Sai Ying Pun

Act ID	Description	Orig Dur	Early Start	Early Finish	Late Start
S1-4010	Portion E1B Diversion of Existing Storm Drain	50	13SEP10	01NOV10	06MAY11
S1-4010A10	Trees Transplanting (LCSD Consent Required)	5	09SEP10 *	13SEP10	26JAN11
S1-4010A20	Temporary Relocation of Irrigation Pipe	60	14SEP10	12NOV10	31JAN11
S1-4010A30	Temporary Relocation of Existing Storm Drain	60	14SEP10	12NOV10	31JAN11
S1-4010A50	Excavation for Irrigation Pipe Perm. Diversion	20	29NOV11	18DEC11	24AUG11
S1-4010A60	Irrigation Pipe Installation	10	19DEC11	28DEC11	28SEP11
S1-4010A70	Excavation for Storm Drain Diversion	20	29NOV11	18DEC11	24AUG11
S1-4010A80	Pipe Laying & MH Construction	25	19DEC11	12JAN12	13SEP11
S1-4010A90	Backfilling & Reinstatement	10	13JAN12	22JAN12	08OCT11
S1-4040	Portion E1B Pipe Works CH585.9-660.5 (O)	115	02NOV10	24FEB11	25JUN11
S1-4040B10	Excavation & Shoring For Pipe Trough (Stage 1)	40	13NOV10	22DEC10	01APR11
S1-4040B20	Fwk & Reinforcement for Pipe Trough	15	23DEC10	06JAN11	25JUN11
S1-4040B30	Pipe Laying & Support Casting	25	15OCT11	08NOV11	10JUL11
S1-4040B40	Backfilling & Reinstatement	20	09NOV11	28NOV11	04AUG11
S1-4410	Portion E2 DN600A SWM Works CH7.1-63.7 (UC)	50	05MAR10	23APR10	03SEP10
S1-4410A10	Preparation & Submission Of Risk Assessment	28	19FEB10	18MAR10	02OCT10
S1-4410A20	Preparation & Submission Of Method Statement	28	19FEB10	18MAR10	02OCT10
S1-4410A30	Submission & Approval Of Temp. Work	28	19FEB10	18MAR10	02OCT10
S1-4410B10	Installation & Connection Of DN600A SWM	8	14FEB11 *	21FEB11	30OCT10
S1-4410B20	Support & Fixing Of DN600A SWM	3	22FEB11	24FEB11	07NOV10
S1-4420	Portion E1B DN600A SWM Works CH0.0-7.1 (O)	30	24APR10	23MAY10	23OCT10
S1-4420B10	Excavation & Shoring	6	25FEB11	02MAR11	10NOV10
S1-4420B20	Main Laying & Connection With Trough Portion	8	03MAR11	10MAR11	16NOV10
S1-4430	Portion E2 DN600A SWM Works CH63.7-67.9 (O)	30	24MAY10	22JUN10	22NOV10
S1-4430B10	Excavation & Shoring	120	11MAR11	08JUL11	24NOV10
S1-4430B20	Main Laying & Connection With Trough Portion	4	09JUL11	12JUL11	24MAR11
S1-4440	E1B Existing DN600 SWM Diversion & Demolition	30	23JUN10	22JUL10	22DEC10
S1-4440A10	Issuance Of Temp. Water Supply Suspension Notice	14	29JUN11	12JUL11	14MAR11
S1-4440B10	Shut Off Of Existing DN600 SWM	2	13JUL11	14JUL11	28MAR11
S1-4440B20	DN600A Diversion Main Connect To Existing	2	13JUL11	14JUL11	28MAR11
S1-4440B30	Removal Of Existing DN600 SWM	6	15JUL11	20JUL11	30MAR11
S1-4445	Portion E1B Trough Construction Under Planter	60	24JUN10	22AUG10	10FEB11
S1-4445B10	Excavation & Shoring For Pipe Trough (Stage 2)	40	23DEC10	31JAN11	11MAY11
S1-4445B20	Fwk & Reinforcement for Pipe Trough	15	01FEB11	15FEB11	20JUN11
S1-4450	Portion E1B Pipe Works CH660.5-677.4 (PT)	60	11OCT10	09DEC10	11APR11
S1-4450B10	Pipe Laying & Support Casting	25	16FEB11	12MAR11	05JUL11
S1-4450B20	Backfilling & Reinstatement	20	13MAR11	01APR11	30JUL11
S1-4460	Portion E1B Pipe Works CH677.4-695.9 (O)	40	22FEB11	02APR11	08SEP11
S1-4460B10	Portion E1B Pipe Works CH677.4-695.9(O)	30	02MAY11	31MAY11	18SEP11
S1-4470	Portion E1B Pipe Works CH695.9-698.5 (UC)	20	10DEC10	29DEC10	10JUN11
S1-4470B10	Portion E1B Pipe Works CH695.9-698.5 (UC)	30	02APR11	01MAY11	19AUG11
S1-4480	Portion E1B DN600B SWM Works CH0.0-7.1 (O)	30	23JUL10	21AUG10	10FEB11
S1-4480B10	Portion E1B DN600B SWM Works CH0.0-7.1 (O)	30	25SEP11	24OCT11	18SEP11
S1-4490	Portion E2 DN600B SWM Works CH7.1-63.7 (UC)	50	23JUL10	10SEP10	21JAN11



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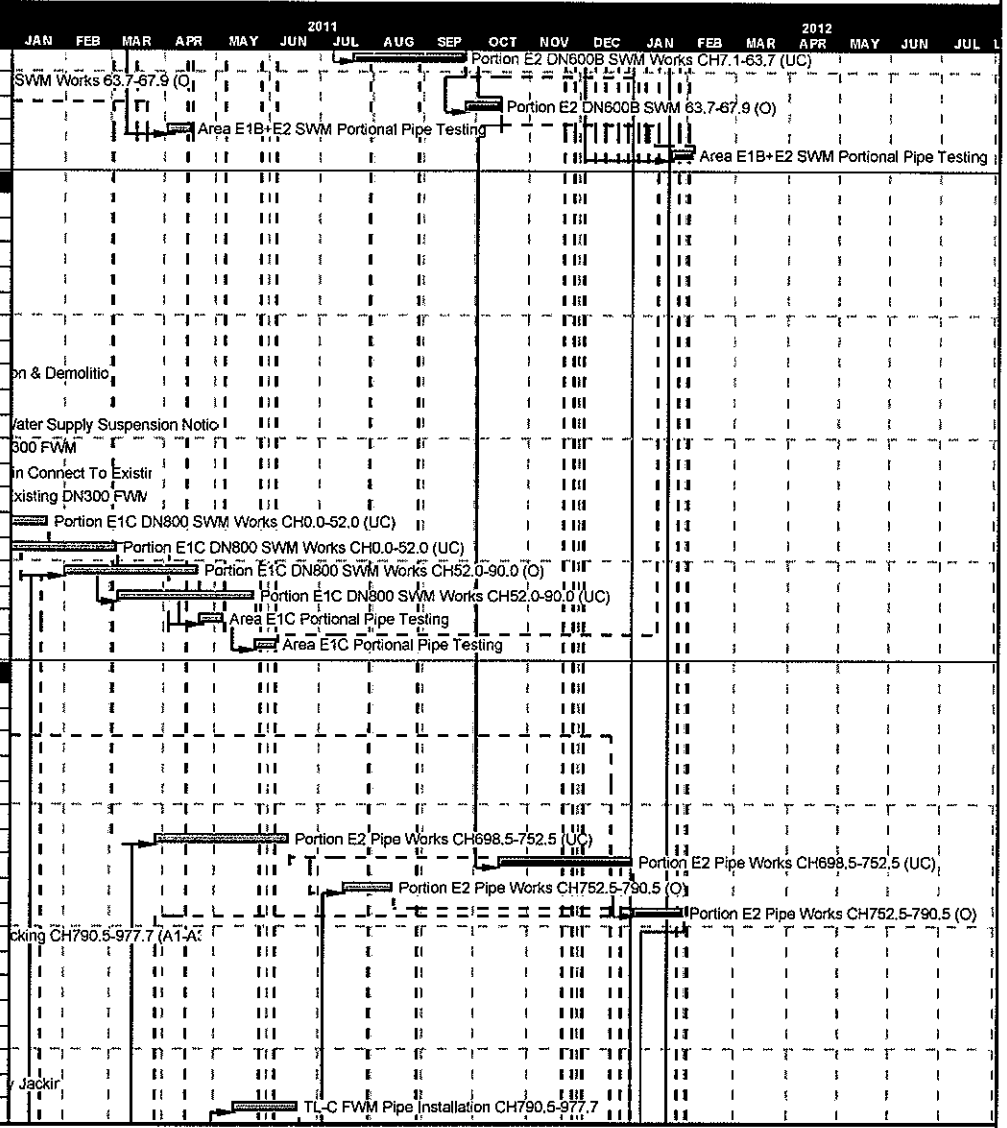
3 Months Rolling Program (April 2012)

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

Contract No.9/WSD/08
Laying of Western Cross Habour Main & Associated Land Mains from West Kowloon to Sai Ying Pun

Act ID	Description	Orig Dur	Early Start	Early Finish	Late Start
S1-4490B10	Portion E2 DN600B SWM Works CH7.1-63.7 (UC)	66	21JUL11	24SEP11	05APR11
S1-4500	Portion E2 DN600B SWM Works 63.7-67.9 (O)	30	11SEP10	10OCT10	12MAR11
S1-4500B10	Portion E2 DN600B SWM 63.7-67.9 (O)	20	25SEP11	14OCT11	10JUN11
S1-4510	Area E1B+E2 SWM Portional Pipe Testing	14	03APR11	16APR11	18OCT11
S1-4510B10	Area E1B+E2 SWM Portional Pipe Testing	14	23JAN12	05FEB12	18OCT11
Portion E1C + E1D					
S1-4710	Portion E1C DN300 FWM Works CH0.0-50.0 (UC)	50	05MAR10	23APR10	27SEP10
S1-4710A10	Submission & Approval Of Risk Assessment	28	19FEB10	18MAR10	13SEP10
S1-4710A20	Submission & Approval Of Method Statement	28	19FEB10	18MAR10	13SEP10
S1-4710A30	Submission & Approval Of Temp. Work	28	19FEB10	18MAR10	13SEP10
S1-4710B10	Installation & Connection Of DN300 FWM	50	17MAY10 *	05JUL10	11OCT10
S1-4710B20	Support & Fixing Of DN300 FWM	40	06JUL10	14AUG10	30NOV10
S1-4720	E1C DN300 FWM Diversion Main Testing	8	24APR10	01MAY10	03APR11
S1-4720B10	E1C Exist. DN300 FWM Diversion & Demolition	8	15AUG10	22AUG10	09JAN11
S1-4730	E1C Exist. DN300 FWM Diversion & Demolition	30	02MAY10	31MAY10	11APR11
S1-4730A10	Issuance Of Temp. Water Supply Suspension Notice	14	22SEP10	05OCT10	16FEB11
S1-4730A20	Shut Off Existing DN300 FWM	2	06OCT10	07OCT10	02MAR11
S1-4730A30	DN300 Diversion Main Connect To Existing	2	06OCT10	07OCT10	02MAR11
S1-4730A40	Removal Of Existing DN300 FWM	28	08OCT10	04NOV10	04MAR11
S1-4740	Portion E1C DN800 SWM Works CH0.0-52.0 (UC)	80	05NOV10	23JAN11	11MAY11
S1-4740B10	Portion E1C DN800 SWM Works CH0.0-52.0 (UC)	120	05NOV10	04MAR11	01APR11
S1-4750	Portion E1C DN800 SWM Works CH52.0-90.0 (O)	80	01FEB11	21APR11	30JUL11
S1-4750B10	Portion E1C DN800 SWM Works CH52.0-90.0 (UC)	80	05MAR11	23MAY11	30JUL11
S1-4760	Area E1C Portional Pipe Testing	14	22APR11	05MAY11	18OCT11
S1-4760B10	Area E1C Portional Pipe Testing	14	24MAY11	06JUN11	18OCT11
Portion E2					
S1-5010	Portion E2 Marine Dept Advance Notice	90	07OCT09 A	20FEB10	07OCT09 A
S1-5020	WHTCL Consent For Works Within Tunnel Area	120	07SEP09 A	20FEB10	07SEP09 A
S1-5030	Chamber Modification - 180 Days of Portion E2	65	07JAN10 A	14MAR10 A	07JAN10 A
S1-5040	Portion E2 Trial Run	60	09NOV09 A	14NOV09 A	09NOV09 A
S1-5050	Portion E2 Trial Pit & Utilities Detection	15	21FEB10	07MAR10	21FEB10
S1-5060	Portion E2 Initial & Utilities Survey	15	21FEB10	07MAR10	21FEB10
S1-5070	Portion E2 Pipe Works CH698.5-752.5 (UC)	80	27MAR11	14JUN11	30JUN11
S1-5070B10	Portion E2 Pipe Works CH698.5-752.5 (UC)	80	15OCT11	02JAN12	30JUN11
S1-5080	Portion E2 Pipe Works CH752.5-790.5 (O)	30	16JUL11	14AUG11	18SEP11
S1-5080A	Portion E2 Pipe Works CH752.5-790.5 (O)	30	03JAN12	01FEB12	18SEP11
S1-5090	TL-C FWM Sleeve Jacking CH790.5-977.7 (A1-A3)	70	26JUL10	03OCT10	28SEP10
S1-5090A10	Preparation & Submission of Risk Assessment	60	06FEB10 *	06APR10	03SEP10
S1-5090A20	Preparation & Submission of Method Statement	60	06FEB10	06APR10	03SEP10
S1-5090A30	Preparation & Submission of Temp. Design	60	06FEB10	06APR10	03SEP10
S1-5090B10	Excavation & Shoring for Jacking Pit (A3)	40	07APR10	16MAY10	02NOV10
S1-5090B20	Jacking Pit Set-up (TL-C)	10	19AUG10	28AUG10	12DEC10
S1-5090C10	Sleeve Pipe Installation by Jacking	20	29AUG10	17SEP10	22DEC10
S1-5095	TL-C FWM Pipe Installation CH790.5-977.7	40	12MAY11	20JUN11	15JUL11



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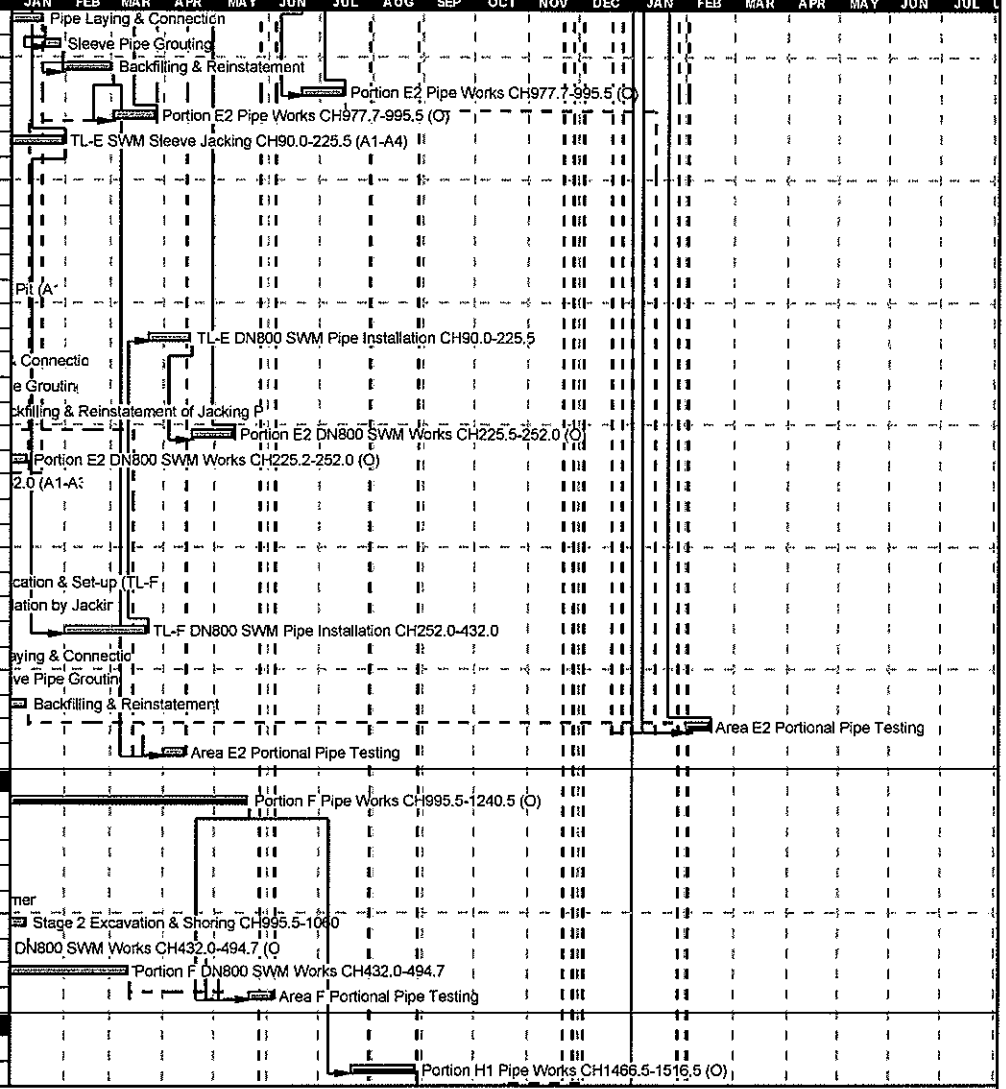
3 Months Rolling Program (April 2012)

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

Contract No.9/WSD/08
Laying of Western Cross Habour Main & Associated Land Mains from West Kowloon to Sai Ying Pun

Act ID	Description	Orig Dur	Early Start	Early Finish	Late Start
S1-5095B10	Pipe Laying & Connection	50	02DEC10	20JAN11	07MAR11
S1-5095B20	Sleeve Pipe Grouting	10	21JAN11	30JAN11	26APR11
S1-5095B30	Backfilling & Reinstatement	30	31JAN11	01MAR11	06MAY11
S1-5100	Portion E2 Pipe Works CH977.7-995.5 (O)	25	21JUN11	15JUL11	24AUG11
S1-5100A	Portion E2 Pipe Works CH977.7-995.5 (O)	25	02MAR11	26MAR11	05JUN11
S1-5110	TL-E SWM Sleeve Jacking CH90.0-225.5 (A1-A4)	120	04OCT10	31JAN11	07DEC10
S1-5110A10	Preparation & Submission of Risk Assessment	60	06FEB10 *	06APR10	12MAY10
S1-5110A20	Preparation & Submission of Method Statement	60	06FEB10	06APR10	12MAY10
S1-5110A30	Preparation & Submission of Temp. Design	60	06FEB10	06APR10	12MAY10
S1-5110B10	Excavation & Shoring for Jacking Pit (A4)	50	07APR10	26MAY10	11JUL10
S1-5110B20	Jacking Pit Set-up (TL-E)	30	30MAY10	28JUN10	02SEP10
S1-5110B30	Excavation & Shoring for Recieving Pit (A1)	42	29JUN10	09AUG10	02OCT10
S1-5110C10	Sleeve Pipe Installation by Jacking	9	10AUG10	18AUG10	13NOV10
S1-5115	TL-E DN800 SWM Pipe Installation CH90.0-225.5	25	23MAR11	16APR11	26MAY11
S1-5115B10	Pipe Laying & Connection	30	08OCT10	06NOV10	11JAN11
S1-5115B20	Sleeve Pipe Grouting	10	07NOV10	16NOV10	01APR11
S1-5115B30	Backfilling & Reinstatement of Jacking Pit	30	17NOV10	16DEC10	11APR11
S1-5120	Portion E2 DN800 SWM Works CH225.5-252.0 (O)	25	17APR11	11MAY11	20JUN11
S1-5120A	Portion E2 DN800 SWM Works CH225.2-252.0 (O)	25	17DEC10	10JAN11	11MAY11
S1-5130	TL-F SWM Sleeve Jacking CH252.0-432.0 (A1-A3)	142	06MAR10	25JUL10	06MAR10
S1-5130A10	Preparation & Submission of Risk Assessment	60	06FEB10 *	06APR10	08DEC10
S1-5130A20	Preparation & Submission of Method Statement	60	06FEB10	06APR10	08DEC10
S1-5130A30	Preparation & Submission of Temp. Design	60	06FEB10	06APR10	08DEC10
S1-5130B10	Jacking Pit (A3) Modification & Set-up (TL-F)	14	18SEP10	01OCT10	06FEB11
S1-5130C10	Sleeve Pipe Installation by Jacking	30	18SEP10	17OCT10	11JAN11
S1-5135	TL-F DN800 SWM Pipe Installation CH252.0-432.0	50	01FEB11	22MAR11	06APR11
S1-5135B10	Pipe Laying & Connection	25	07NOV10	01DEC10	10FEB11
S1-5135B20	Sleeve Pipe Grouting	10	02DEC10	11DEC10	09AUG11
S1-5135B30	Backfilling & Reinstatement	30	12DEC10	10JAN11	19AUG11
S1-5140	Area E2 Portional Pipe Testing	14	02FEB12	15FEB12	18OCT11
S1-5140B10	Area E2 Portional Pipe Testing	14	01APR11	14APR11	18OCT11
Portion F					
S1-6010	Portion F Pipe Works CH995.5-1240.5 (O)	180	23NOV10	21MAY11	23NOV10
S1-6010B10	Stage 1 Excavation & Shoring CH1060-1240.5	100	24MAR10 *	01JUL10	02MAR11
S1-6010B20	Formation Trimming	10	02JUL10	11JUL10	10JUN11
S1-6010B30	Pipe Laying & Connection (Welding)	30	12JUL10	10AUG10	20JUN11
S1-6010B40	Backfilling & Reinstatement	50	11AUG10	29SEP10	20JUL11
S1-6010C10	Stage 2 Excavation & Shoring CH995.5-1060	40	02DEC10	10JAN11	08SEP11
S1-6020	Portion F DN800 SWM Works CH432.0-494.7 (O)	120	26JUL10	22NOV10	26JUL10
S1-6020A10	Portion F DN800 SWM Works CH432.0-494.7	120	12NOV10	11MAR11	20JUN11
S1-6030	Area F Portional Pipe Testing	14	22MAY11	04JUN11	18OCT11
Portion H1					
S1-7010	Portion H1 Temporary Assess Road	80	26DEC09 A	31JAN10	26DEC09 A
S1-7020	Portion H1 Pipe Works CH1466.5-1516.5 (O)	40	20JUL11	28AUG11	20JUL11



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Early bar
Progress bar
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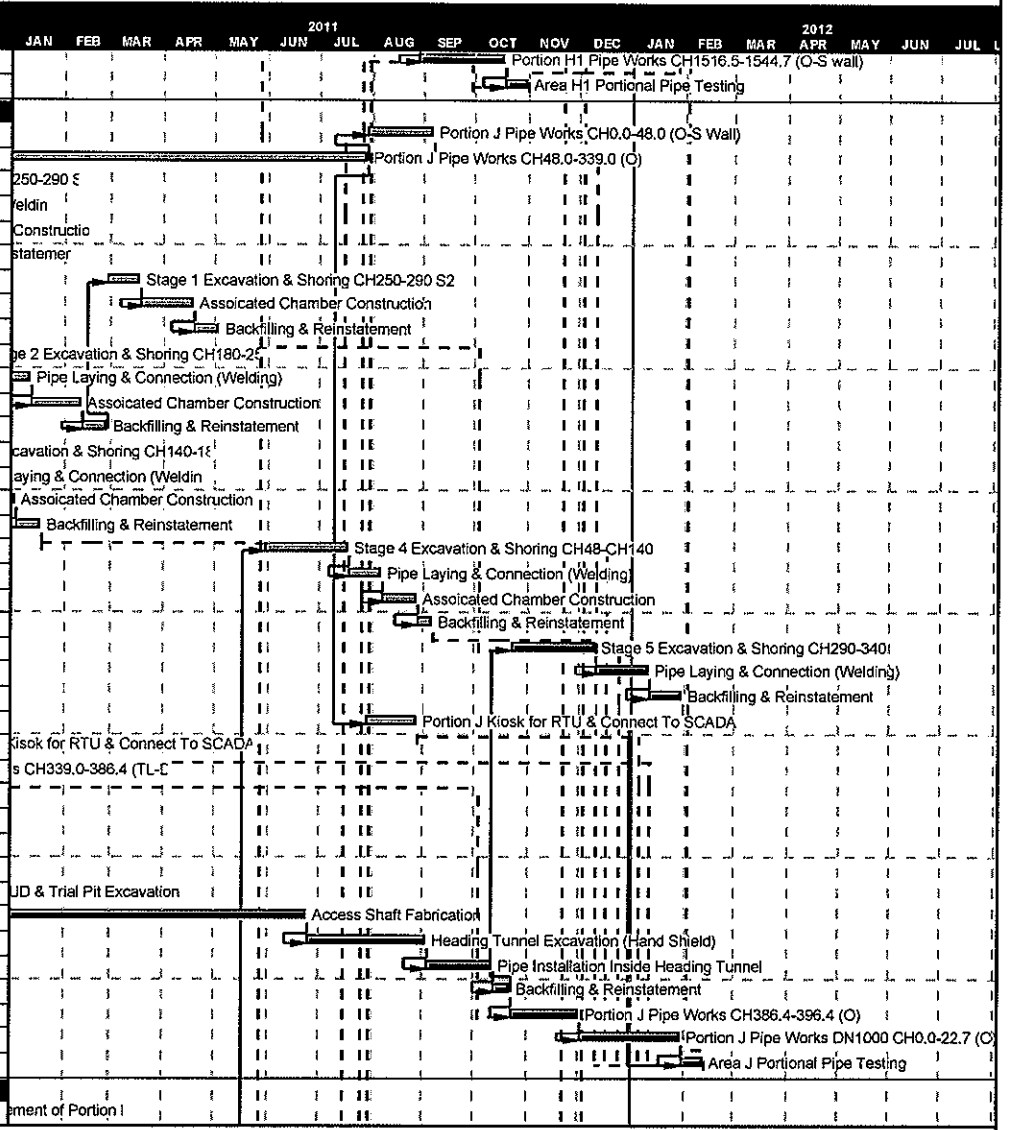
Start milestone point
Finish milestone point

Contract No.9/WSD/08
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun

Act ID	Description	Orig Dur	Early Start	Early Finish	Late Start
S1-7030	Portion H1 Pipe Works CH1516.5-1544.7 (O-S wall)	50	29AUG11	17OCT11	29AUG11
S1-7040	Area H1 Portional Pipe Testing	14	18OCT11	31OCT11	18OCT11
Portion J					
S1-8010	Portion J Pipe Works CH0.0-48.0 (O-S Wall)	40	29JUL11	08SEP11	08SEP11
S1-8020	Portion J Pipe Works CH48.0-339.0 (O)	300	02OCT10	28JUL11	12NOV10
S1-8020B10	Stage 1 Excavation & Shoring CH250-290 S1	55	22JUN10 *	15AUG10	29AUG10
S1-8020B20	Pipe Laying & Connection (Welding)	20	16AUG10	04SEP10	23OCT10
S1-8020B30	Assoicated Chamber Construction	30	05SEP10	04OCT10	12NOV10
S1-8020B40	Backfilling & Reinstatement	15	05OCT10	19OCT10	12DEC10
S1-8020B50	Stage 1 Excavation & Shoring CH250-290 S2	20	27FEB11	18MAR11	06MAY11
S1-8020B60	Assoicated Chamber Construction	30	19MAR11	17APR11	26MAY11
S1-8020B70	Backfilling & Reinstatement	15	18APR11	02MAY11	25JUN11
S1-8020C10	Stage 2 Excavation & Shoring CH180-250	55	20OCT10	13DEC10	27DEC10
S1-8020C20	Pipe Laying & Connection (Welding)	30	14DEC10	12JAN11	20FEB11
S1-8020C30	Assoicated Chamber Construction	30	13JAN11	11FEB11	22MAR11
S1-8020C40	Backfilling & Reinstatement	15	12FEB11	26FEB11	21APR11
S1-8020D10	Stage 3 Excavation & Shoring CH140-180	35	11OCT10 *	14NOV10	10JUL11
S1-8020D20	Pipe Laying & Connection (Welding)	20	15NOV10	04DEC10	14AUG11
S1-8020D30	Assoicated Chamber Construction	30	05DEC10	03JAN11	03SEP11
S1-8020D40	Backfilling & Reinstatement	15	04JAN11	18JAN11	03OCT11
S1-8020E10	Stage 4 Excavation & Shoring CH48-CH140	50	30MAY11	18JUL11	10JUL11
S1-8020E20	Pipe Laying & Connection (Welding)	20	19JUL11	07AUG11	29AUG11
S1-8020E30	Assoicated Chamber Construction	20	08AUG11	27AUG11	18SEP11
S1-8020E40	Backfilling & Reinstatement	10	28AUG11	06SEP11	08OCT11
S1-8020F10	Stage 5 Excavation & Shoring CH290-340	50	23OCT11	11DEC11	10JUL11
S1-8020F20	Pipe Laying & Connection (Welding)	30	12DEC11	10JAN12	29AUG11
S1-8020F30	Backfilling & Reinstatement	20	11JAN12	30JAN12	28SEP11
S1-8030	Portion J Kiosk for RTU & Connect To SCADA	30	29JUL11	27AUG11	18SEP11
S1-8030B10	Portion J Kisok for RTU & Connect To SCADA	30	20OCT10	18NOV10	18SEP11
S1-8040	Portion J Pipe Works CH339.0-386.4 (TL-D)	209	17MAR10	11OCT10	27APR10
S1-8040A10	Preparation & Submission of Risk Assessment	28	03MAR10	30MAR10	28APR10
S1-8040A20	Preparation & Submission of Method Statement	28	03MAR10	30MAR10	28APR10
S1-8040A30	Preparation & Submission of Temp. Works	28	03MAR10	30MAR10	28APR10
S1-8040A40	Granting of Excavation Permit	0	01SEP10 *		19MAY10
S1-8040B10	TTA, UD & Trial Pit Excavation	90	08SEP10	06DEC10	26MAY10
S1-8040B20	Access Shaft Fabrication	180	27DEC10	24JUN11	13SEP10
S1-8040B30	Heading Tunnel Excavation (Hand Shield)	70	25JUN11	02SEP11	12MAR11
S1-8040B40	Pipe Installation Inside Heading Tunnel	40	03SEP11	12OCT11	21MAY11
S1-8040B50	Backfilling & Reinstatement	10	13OCT11	22OCT11	30JUN11
S1-8050	Portion J Pipe Works CH386.4-396.4 (O)	40	23OCT11	01DEC11	10JUL11
S1-8060	Portion J Pipe Works DN1000 CH0.0-22.7 (O)	60	02DEC11	30JAN12	19AUG11
S1-8070	Area J Portional Pipe Testing	14	31JAN12	13FEB12	18OCT11
Portion K					
S1-9010	Within 365 Days Commencement of Portion K	365	07SEP09 A	08SEP10	07SEP09 A



Start date	07SEP09
Finish date	05NOV12
Data date	04JAN10
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Page number	6A
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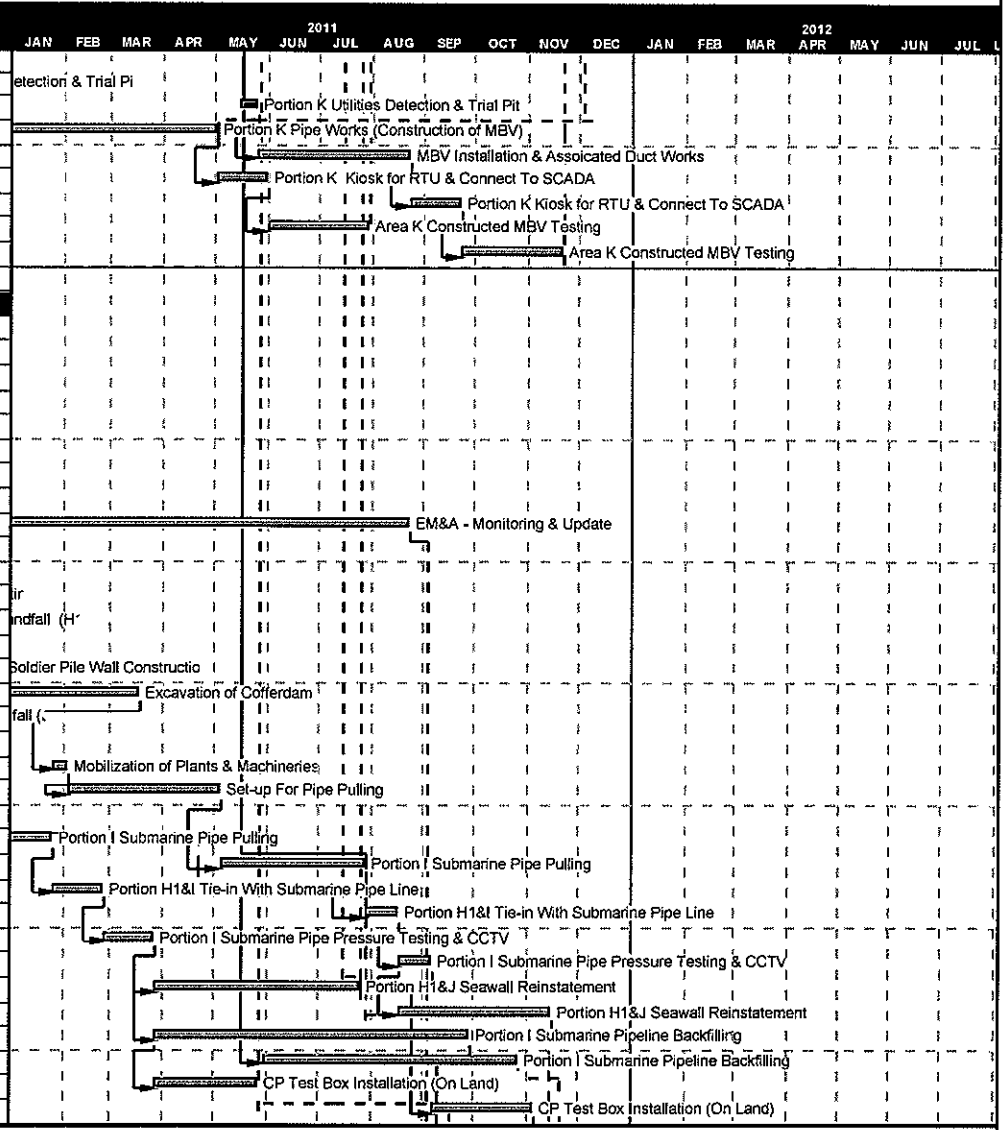
3 Months Rolling Program (April 2012)

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

Contract No.9/WSD/08
Laying of Western Cross Habour Main & Associated Land Mains from West Kowloon to Sai Ying Pun

Act ID	Description	Orig Dur	Early Start	Early Finish	Late Start
S1-9020	Portion K Initial Survey	15	09SEP10	23SEP10	11DEC10
S1-9030	Portion K Utilities Detection & Trial Pit	20	24SEP10	13OCT10	26DEC10
S1-9030B10	Portion K Utilities Detection & Trial Pit	10	16MAY11 *	25MAY11	16MAY11 *
S1-9040	Portion K Pipe Works (Construction of MBV)	200	14OCT10	01MAY11	15JAN11
S1-9040B10	MBV Installation & Assoicated Duct Works	90	26MAY11	23AUG11	19JUN11
S1-9050	Portion K Kiosk for RTU & Connect To SCADA	30	02MAY11	31MAY11	03AUG11
S1-9050B10	Portion K Kiosk for RTU & Connect To SCADA	30	24AUG11	22SEP11	17SEP11
S1-9060	Area K Constructed MBV Testing	60	01JUN11	30JUL11	02SEP11
S1-9060B10	Area K Constructed MBV Testing	60	23SEP11	21NOV11	17OCT11
Marine Works (Portion I)					
M1000	Permit Application & Advance Notification	120	07SEP09 A	20FEB10	07SEP09 A
M1010	Submission & Approval - MS & Temp Works Design	120	07SEP09 A	20FEB10	07SEP09 A
M1010A10	Preparation & Submission of Risk Assessment	217	07SEP09 A	11APR10	07SEP09 A
M1010A20	Preparation & Submission of Method Statement	217	07SEP09 A	11APR10	07SEP09 A
M1010A30	Preparation & Submission of Temp. Works	217	07SEP09 A	11APR10	07SEP09 A
M1020	Bathymetric Survey	120	22FEB10 A	27FEB10 A	22FEB10 A
M1030	Material Procurement & Delivery	180	06NOV09 A	04MAY10	06NOV09 A
M1040	Submission & Approval of EM&A Manual	90	07SEP09 A	17JAN10 A	07SEP09 A
M1050	EM&A - Monitoring & Update	640	06DEC09 A	23AUG11	06DEC09 A
M1060	Portion H1 Coating Yard Set-up	60	06MAR10	04MAY10	25MAY10
M1060A10	Portion H1 Coating Yard Set-up	34	01APR10 *	04MAY10	20JUN10
M1070	Portion H1 Pipe Material On-site Coating	90	05MAY10	02AUG10	24JUL10
M1080	West Kowloon Cofferdam for Landfall (H1)	180	21FEB10	19AUG10	10APR10
M1080A10	Set-up for Cofferdam at Landfall (H1 & J)	10	02APR10	11APR10	12APR10
M1080B10	Soldier Pile Wall Construction	260	12APR10	27DEC10	22APR10
M1080B20	Excavation of Cofferdam	80	28DEC10	17MAR11	07JAN11
M1090	Sai Ying Pun Cofferdam for Landfall (J)	180	21FEB10	19AUG10	10APR10
M2060	Set-up For Pipe Pulling	60	21JUL10	18SEP10	07SEP10
M2060A10	Mobilization of Plants & Machineries	8	27JAN11	03FEB11	06FEB11
M2060A20	Set-up For Pipe Pulling	90	04FEB11	04MAY11	14FEB11
M2070	Dredging Works	150	22APR10	18SEP10	09JUN10
M2080	Portion I Submarine Pipe Pulling	130	19SEP10	26JAN11	06NOV10
M2080B10	Portion I Submarine Pipe Pulling	85	05MAY11	28JUL11	15MAY11
M2090	Portion H1&I Tie-in With Submarine Pipe Line	30	27JAN11	25FEB11	16MAR11
M2090A10	Portion H1&I Tie-in With Submarine Pipe Line	20	29JUL11	17AUG11	08AUG11
M2100	Portion I Submarine Pipe Pressure Testing & CCTV	30	26FEB11	27MAR11	15APR11
M2100A10	Portion I Submarine Pipe Pressure Testing & CCTV	20	18AUG11	06SEP11	28AUG11
M2110	Portion H1&J Seawall Reinstatement	120	28MAR11	25JUL11	29MAY11
M2110A10	Portion H1&J Seawall Reinstatement	90	18AUG11	15NOV11	17SEP11
M2120	Portion I Submarine Pipeline Backfilling	185	28MAR11	28SEP11	15MAY11
M2120A10	Portion I Submarine Pipeline Backfilling	150	30MAY11	26OCT11	19JUL11
M2130	CP Test Box Installation (On Land)	60	28MAR11	26MAY11	02SEP11
M2130A10	CP Test Box Installation (On Land)	60	07SEP11	06NOV11	17SEP11



Start date	07SEP09
Finish date	05NOV12
Data date	04JAN10
Run date	03MAY12
Page number	7A
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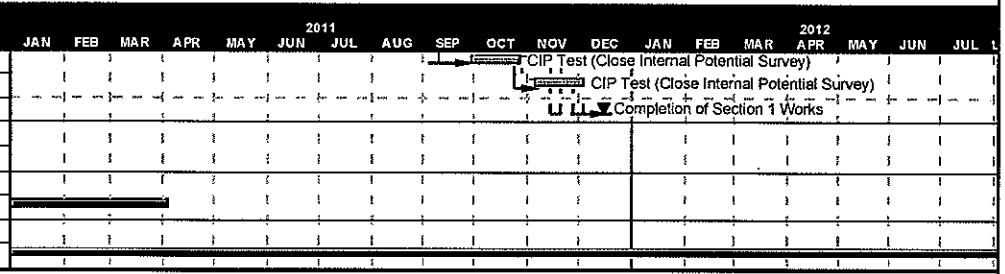
3 Months Rolling Program (April 2012)

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

Contract No.9/WSD/08
Laying of Western Cross Habour Main & Associated Land Mains from West Kowloon to Sai Ying Pun

Act ID	Description	Orig Dur	Early Start	Early Finish	Late Start
M2140	CIP Test (Close Internal Potential Survey)	30	29SEP11	28OCT11	16NOV11
M2140A10	CIP Test (Close Internal Potential Survey)	30	06NOV11	05DEC11	16NOV11
M2150	Completion of Section 1 Works	0		15DEC11 *	
+Section 2					
		449	07SEP09 A	29NOV10	07SEP09 A
+Section 4					
		576	07SEP09 A	05APR11	07SEP09 A
+Section 5					
		1156	07SEP09 A	05NOV12	07SEP09 A



Start date	07SEP09
Finish date	05NOV12
Data date	04JAN10
Run date	03MAY12
Page number	8A
c Primavera Systems, Inc.	

Wo Hing - Penta-Ocean Joint Venture

3 Months Rolling Program (April 2012)

Early bar
Progress bar
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Summary bar
Start milestone point
Finish milestone point

Appendix F

ET Weekly Site Inspection Records

WEEKLY SITE INSPECTION CHECKLIST

Inspection Date	03 April 2012	Inspected by	RE	IEC	Contractor	ET
Time	09:30	Name		—	JNG	C.L. Lau

Weather
Condition : Sunny / Fine / (Cloudy) / Drizzle / Rain / Storm / Hazy
Wind : Calm / Light / Breeze / Strong

Temperature : 24°C
Humidity : High / (Moderate) / Low

Environmental Checklist	Implementation Stages*				Remark
	Yes	No	Not Obs	N/A	
Fugitive Dust Emission					
• Dust control / mitigation measures shall be provided to prevent dust nuisance.					
• Any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated within 24 hours of the excavation or unloading.					
• The working area of excavation should be sprayed with water immediately before, during and immediately after the operations so as to maintain the entire surface wet.					
• The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle					
• Where a site boundary adjoins a road, streets or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length except for a site entrance or exit;.					
• The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.					
• Every main haul road should be sealed with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.					
• The portion of road leading only to a construction site that is within 30m of a designated vehicle entrance or exit should be kept clear of dusty materials.					
• All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet.					
• Vehicle speed should be limited to 10 kph except on completed access roads.					
• Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.					
• The public road around the site entrance should be kept clean and free from dust.					
• Vehicle and equipment should be switched off while not in use.					
• All plant and equipment should be well maintained e.g. without black smoke emission.					
• Open burning should be prohibited.					

Environmental Checklist	Implementation Stages*				Remark
	Yes	No	Not Obs	N/A	
Noise Impact					
▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	√				
▪ The constructions works should be scheduled to minimize noise nuisance. Concurrent noisy works should be carried out at different time slots or spread around the construction sites in order to help to reduce the cumulative noise effect produced in the construction process.	√				
▪ Noisy equipment and mobile plant shall always be site away from NSRs.	√				
▪ Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	√				
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	√				
▪ Mobile or movable noise barriers should be erected near to the construction plants to reduce the noise levels from stationary items of PME whenever practicable.	√				
▪ Quality Powered mechanical equipment (Quality PME), which are construction plants and equipments that are notably quieter, more environmental friendly and efficiently, recognized by the Noise Control Authority for the purpose of CNP application should be used to reduce the noise generated from the construction plants effectively. The Contractor shall note the required procedures involved in application of the QPME.	√				
▪ Well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	√				
▪ Air compressors and hand held breakers should have noise labels.	√				
▪ Compressors and generators should operate with door closed.	√				
▪ Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	√				
Water Quality					
Mitigation Measures for Dredging					
▪ Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m^3 per day.			√		No dredging work was observed.
▪ Deployment of frame type silt curtain should be fully enclosed the grab while dredging works are in progress.			√		No dredging work was observed.
▪ Deployment of silt screen should be at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress	√				
▪ Tight-closing grabs should be used to minimize the loss of sediment to suspension during dredging works. For dredging of any contaminated mud, closed watertight grabs must be used.	√				
▪ All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash	√				
▪ The decks of all vessels should be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard	√				
▪ Adequate free board shall be maintained on barges to ensure that decks are not washed by wave action.	√				
▪ All barges used for the transport of dredged materials should be fitted with tight bottom seals to prevent leakage of material during loading and transport	√				
▪ Dredging activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present in the water within the site or dumping grounds				√	No dredging work was observed.
▪ Loading of barges should be controlled to prevent splashing of material into the surrounding waters. Barges should not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation	√				
▪ The speed of vessels should be controlled within the works area to prevent propeller wash from stirring up the seabed sediments	√				

Environmental Checklist	Implementation Stages*				Remark
	Yes	No	Not Obs	N/A	
Water Quality					
Mitigation Measures for other Construction Activities					
▪ Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m^3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity should be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped	√				
▪ Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the storm runoff being directed into foul sewers	√				
▪ Construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present in the water within the site or dumping grounds	√				
▪ Fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour and Western Harbour WCZs	√				
▪ Portable chemical toilets should be used to handle construction workforce sewage prior to discharge to the existing trunk sewer. Sufficient numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers. The Contractor shall also be responsible for waste disposal and maintenance practices.	√				
▪ Construction site runoff should be prevented or minimised in accordance with the guidelines stipulated in the EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the Victoria Harbour WCZ under the TM-DSS.	√				
▪ Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	√				
▪ An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process.				√	
▪ The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfill toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains				√	
Waste Management					
C&D Materials					
▪ Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable.			√		
▪ C&D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses.			√		
▪ A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed			√		
▪ A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.			√		
Chemical Waste					
▪ Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.	√				
▪ Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc.	√				
▪ The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility.	√				

Environmental Checklist	Implementation Stages*				Remark
	Yes	No	Not Obs	N/A	
Waste Management					
General Refuse					
▪ General refuse should be stored in enclosed bins or compaction units separate from C&D material.	√				
▪ A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material.	√				
▪ An enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.	√				
Marine Dredged Sediment (During transportation and disposal)					
▪ Bottom opening of barges shall be fitted with tight fitting seals to prevent leakage of material. Excess material shall be cleaned from the decks and exposed fittings of barges and dredgers before the vessel is moved				√	No dredging work was observed.
▪ Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the EPD				√	No dredging work was observed.
▪ Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation.				√	No dredging work was observed.
Site Practices					
▪ Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site	√				
▪ Training of site personnel in proper waste management and chemical handling procedures	√				
▪ Provision of sufficient waste disposal points and regular collection of waste	√				
▪ Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	√				
▪ Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers	√				
Waste Reduction Measures					
▪ Sort C&D material from demolition and decommissioning of the existing facilities to recover recyclable portions such as metals	√				
▪ Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal	√				
▪ Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force	√				
▪ Proper storage and site practices to minimise the potential for damage or contamination of construction materials	√				
▪ Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste	√				

Environmental Checklist	Implementation Stages*				Remark
	Yes	No	Not Obs	N/A	
Marine Ecology					
▪ Use of one grab dredger only with a maximum production rate of 4,000m^3 per day for dredging.			√		No dredging work was observed.
▪ Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress.			√		No dredging work was observed.
▪ Deployment of silt screen at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress.	√				
▪ Good site practices to avoid silt runoff from construction works associated with the construction of the submarine watermain.	√				
Good Site Practices					
• The Environmental Permit should be displaced conspicuously on site.	√				
• Construction noise permits should be posted at site entrance or available for site inspection.	√				
▪ Chemical storage area provided with lock and located on sealed areas.	√				
▪ All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank).	√				
▪ Any unused chemicals or those with remaining functional capacity should be recycled.	√				
▪ All generators, fuel and oil storage are within bundle areas.	√				
▪ Oil leakage from machinery, vehicle and plant should be prevented.	√				
▪ Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	√				
▪ A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be bunded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	√				

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Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Status of the item (closed / continue follow-up)	Proposed Follow Up Action (if required)	Photo Ref.	Target Completion Date
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Remark

No new item was found during the site inspection and audit on 03/04/2012.

	Name	Signature	Date
Inspected by	C. L. Lau		03 April 2012

WEEKLY SITE INSPECTION CHECKLIST

Inspection Date	11 April 2012	Inspected by	RE	IEC	Contractor	ET
Time	09:30	Name		—	JNG	C.L.Lau

Weather
Condition : Sunny / (Fine) / Cloudy / Drizzle / Rain / Storm / Hazy
Wind : (Calm) / Light / Breeze / Strong

Temperature : 24°C
Humidity : High / (Moderate) / Low

Environmental Checklist	Implementation Stages*				Remark
	Yes	No	Not Obs	N/A	
Fugitive Dust Emission					
• Dust control / mitigation measures shall be provided to prevent dust nuisance.	✓				
• Any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated within 24 hours of the excavation or unloading.	✓				
• The working area of excavation should be sprayed with water immediately before, during and immediately after the operations so as to maintain the entire surface wet.	✓				
• The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle	✓				
• Where a site boundary adjoins a road, streets or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length except for a site entrance or exit;.	✓				
• The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.				✓	
• Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.	✓				
• The portion of road leading only to a construction site that is within 30m of a designated vehicle entrance or exit should be kept clear of dusty materials.	✓				
• All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet.	✓				
• Vehicle speed should be limited to 10 kph except on completed access roads.	✓				
• Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.				✓	
• The public road around the site entrance should be kept clean and free from dust.	✓				
• Vehicle and equipment should be switched off while not in use.	✓				
• All plant and equipment should be well maintained e.g. without black smoke emission.	✓				
• Open burning should be prohibited.	✓				

Environmental Checklist	Implementation Stages*				Remark
	Yes	No	Not Obs	N/A	
Noise Impact					
▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	√				
▪ The constructions works should be scheduled to minimize noise nuisance. Concurrent noisy works should be carried out at different time slots or spread around the construction sites in order to help to reduce the cumulative noise effect produced in the construction process.	√				
▪ Noisy equipment and mobile plant shall always be site away from NSRs.	√				
▪ Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	√				
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	√				
▪ Mobile or movable noise barriers should be erected near to the construction plants to reduce the noise levels from stationary items of PME whenever practicable.	√				
▪ Quality Powered mechanical equipment (Quality PME), which are construction plants and equipments that are notably quieter, more environmental friendly and efficiently, recognized by the Noise Control Authority for the purpose of CNP application should be used to reduce the noise generated from the construction plants effectively. The Contractor shall note the required procedures involved in application of the QPME.	√				
▪ Well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	√				
▪ Air compressors and hand held breakers should have noise labels.	√				
▪ Compressors and generators should operate with door closed.	√				
▪ Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	√				
Water Quality					
Mitigation Measures for Dredging					
▪ Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m^3 per day.			√		No dredging work was observed.
▪ Deployment of frame type silt curtain should be fully enclosed the grab while dredging works are in progress.			√		No dredging work was observed.
▪ Deployment of silt screen should be at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress	√				
▪ Tight-closing grabs should be used to minimize the loss of sediment to suspension during dredging works. For dredging of any contaminated mud, closed watertight grabs must be used.	√				
▪ All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash	√				
▪ The decks of all vessels should be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard	√				
▪ Adequate free board shall be maintained on barges to ensure that decks are not washed by wave action.	√				
▪ All barges used for the transport of dredged materials should be fitted with tight bottom seals to prevent leakage of material during loading and transport	√				
▪ Dredging activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present in the water within the site or dumping grounds				√	No dredging work was observed.
▪ Loading of barges should be controlled to prevent splashing of material into the surrounding waters. Barges should not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation	√				
▪ The speed of vessels should be controlled within the works area to prevent propeller wash from stirring up the seabed sediments	√				

Environmental Checklist	Implementation Stages*				Remark
	Yes	No	Not Obs	N/A	
Water Quality					
Mitigation Measures for other Construction Activities					
▪ Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m^3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity should be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped	√				
▪ Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the storm runoff being directed into foul sewers	√				
▪ Construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present in the water within the site or dumping grounds	√				
▪ Fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour and Western Harbour WCZs	√				
▪ Portable chemical toilets should be used to handle construction workforce sewage prior to discharge to the existing trunk sewer. Sufficient numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers. The Contractor shall also be responsible for waste disposal and maintenance practices.	√				
▪ Construction site runoff should be prevented or minimised in accordance with the guidelines stipulated in the EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the Victoria Harbour WCZ under the TM-DSS.	√				
▪ Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.		√			Item 1
▪ An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process.				√	
▪ The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfill toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains				√	
Waste Management					
C&D Materials					
▪ Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable.			√		
▪ C&D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses.			√		
▪ A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed			√		
▪ A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.			√		
Chemical Waste					
▪ Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.	√				
▪ Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc.	√				
▪ The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility.	√				

Environmental Checklist	Implementation Stages*				Remark
	Yes	No	Not Obs	N/A	
Waste Management					
General Refuse					
▪ General refuse should be stored in enclosed bins or compaction units separate from C&D material.	√				
▪ A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material.	√				
▪ An enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.	√				
Marine Dredged Sediment (During transportation and disposal)					
▪ Bottom opening of barges shall be fitted with tight fitting seals to prevent leakage of material. Excess material shall be cleaned from the decks and exposed fittings of barges and dredgers before the vessel is moved				√	No dredging work was observed.
▪ Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the EPD				√	No dredging work was observed.
▪ Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation.				√	No dredging work was observed.
Site Practices					
▪ Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site	√				
▪ Training of site personnel in proper waste management and chemical handling procedures	√				
▪ Provision of sufficient waste disposal points and regular collection of waste	√				
▪ Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	√				
▪ Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers	√				
Waste Reduction Measures					
▪ Sort C&D material from demolition and decommissioning of the existing facilities to recover recyclable portions such as metals	√				
▪ Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal	√				
▪ Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force	√				
▪ Proper storage and site practices to minimise the potential for damage or contamination of construction materials	√				
▪ Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste	√				

Environmental Checklist	Implementation Stages*				Remark
	Yes	No	Not Obs	N/A	
Marine Ecology					
▪ Use of one grab dredger only with a maximum production rate of 4,000m^3 per day for dredging.			√		No dredging work was observed.
▪ Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress.			√		No dredging work was observed.
▪ Deployment of silt screen at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress.	√				
▪ Good site practices to avoid silt runoff from construction works associated with the construction of the submarine watermain.	√				
Good Site Practices					
• The Environmental Permit should be displaced conspicuously on site.	√				
• Construction noise permits should be posted at site entrance or available for site inspection.	√				
▪ Chemical storage area provided with lock and located on sealed areas.	√				
▪ All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank).	√				
▪ Any unused chemicals or those with remaining functional capacity should be recycled.	√				
▪ All generators, fuel and oil storage are within bundle areas.	√				
▪ Oil leakage from machinery, vehicle and plant should be prevented.	√				
▪ Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	√				
▪ A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be bunded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	√				

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Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Status of the item (closed / continue follow-up)	Proposed Follow Up Action (if required)	Photo Ref.	Target Completion Date
1.	Standing water was noted at a steel pile in Portion J which was cleaned immediately during the site audit.	---	---	120411_001 & 120411_002	---

Remark

	Name	Signature	Date
Inspected by	C. L. Lau		11 April 2012

Photos

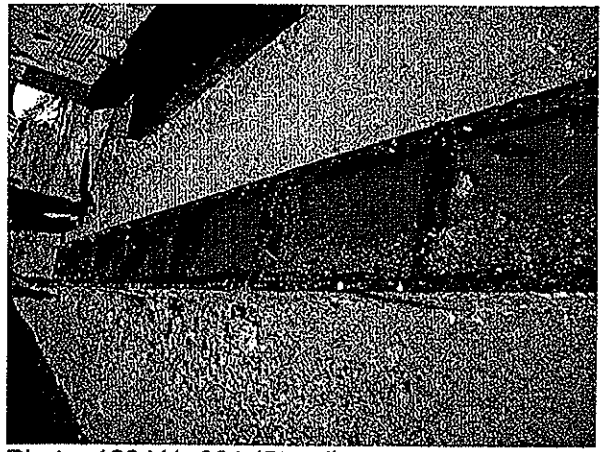

Photo_120411_001 (Standing water was noted at a steel pile in Portion J.)

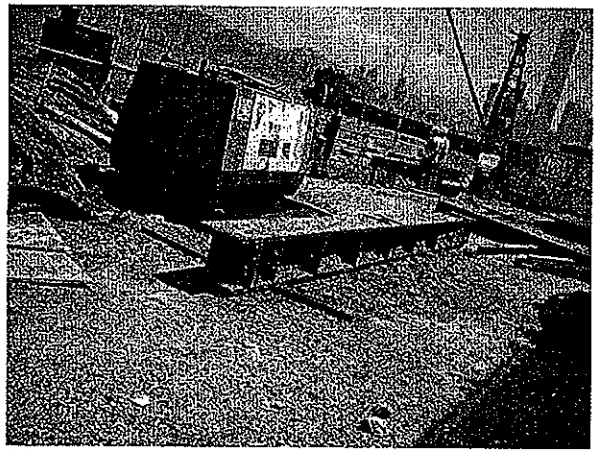

Photo_120411_002 (Standing water noted at a steel pile in Portion J was cleaned immediately.)

WEEKLY SITE INSPECTION CHECKLIST

Inspection Date	16 April 2010	Inspected by	RE	IEC	16 April 2012	Contractor	ET
Time	14:00	Name		Edmund Cheung			C.L. Lau

Weather
Condition : Sunny / Fine / (Cloudy) / Drizzle / Rain / Storm / Hazy
Wind : Calm / (Light) / Breeze / Strong

Temperature : 29°C
Humidity : High / (Moderate) / Low

Environmental Checklist	Implementation Stages*				Remark
	Yes	No	Not Obs	N/A	
Fugitive Dust Emission					
• Dust control / mitigation measures shall be provided to prevent dust nuisance.	✓				
• Any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated within 24 hours of the excavation or unloading.	✓				
• The working area of excavation should be sprayed with water immediately before, during and immediately after the operations so as to maintain the entire surface wet.	✓				
• The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle	✓				
• Where a site boundary adjoins a road, streets or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length except for a site entrance or exit;.	✓				
• The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.				✓	
• Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.	✓				
• The portion of road leading only to a construction site that is within 30m of a designated vehicle entrance or exit should be kept clear of dusty materials.	✓				
• All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet.	✓				
• Vehicle speed should be limited to 10 kph except on completed access roads.	✓				
• Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.				✓	
• The public road around the site entrance should be kept clean and free from dust.	✓				
• Vehicle and equipment should be switched off while not in use.	✓				
• All plant and equipment should be well maintained e.g. without black smoke emission.	✓				
• Open burning should be prohibited.	✓				

Environmental Checklist	Implementation Stages*				Remark
	Yes	No	Not Obs	N/A	
Noise Impact					
▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	√				
▪ The constructions works should be scheduled to minimize noise nuisance. Concurrent noisy works should be carried out at different time slots or spread around the construction sites in order to help to reduce the cumulative noise effect produced in the construction process.	√				
▪ Noisy equipment and mobile plant shall always be site away from NSRs.	√				
▪ Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	√				
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	√				
▪ Mobile or movable noise barriers should be erected near to the construction plants to reduce the noise levels from stationary items of PME whenever practicable.	√				
▪ Quality Powered mechanical equipment (Quality PME), which are construction plants and equipments that are notably quieter, more environmental friendly and efficiently, recognized by the Noise Control Authority for the purpose of CNP application should be used to reduce the noise generated from the construction plants effectively. The Contractor shall note the required procedures involved in application of the QPME.	√				
▪ Well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	√				
▪ Air compressors and hand held breakers should have noise labels.	√				
▪ Compressors and generators should operate with door closed.	√				
▪ Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	√				
Water Quality					
Mitigation Measures for Dredging					
▪ Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m^3 per day.			√		No dredging work was observed.
▪ Deployment of frame type silt curtain should be fully enclosed the grab while dredging works are in progress.			√		No dredging work was observed.
▪ Deployment of silt screen should be at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress	√				
▪ Tight-closing grabs should be used to minimize the loss of sediment to suspension during dredging works. For dredging of any contaminated mud, closed watertight grabs must be used.	√				
▪ All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash	√				
▪ The decks of all vessels should be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard	√				
▪ Adequate free board shall be maintained on barges to ensure that decks are not washed by wave action.	√				
▪ All barges used for the transport of dredged materials should be fitted with tight bottom seals to prevent leakage of material during loading and transport	√				
▪ Dredging activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present in the water within the site or dumping grounds				√	No dredging work was observed.
▪ Loading of barges should be controlled to prevent splashing of material into the surrounding waters. Barges should not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation	√				
▪ The speed of vessels should be controlled within the works area to prevent propeller wash from stirring up the seabed sediments	√				

Environmental Checklist	Implementation Stages*				Remark
	Yes	No	Not Obs	N/A	
Water Quality					
Mitigation Measures for other Construction Activities					
▪ Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m^3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity should be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped	√				
▪ Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the storm runoff being directed into foul sewers	√				
▪ Construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present in the water within the site or dumping grounds	√				
▪ Fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour and Western Harbour WCZs	√				
▪ Portable chemical toilets should be used to handle construction workforce sewage prior to discharge to the existing trunk sewer. Sufficient numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers. The Contractor shall also be responsible for waste disposal and maintenance practices.	√				
▪ Construction site runoff should be prevented or minimised in accordance with the guidelines stipulated in the EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the Victoria Harbour WCZ under the TM-DSS.	√				
▪ Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	√				
▪ An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process.				√	
▪ The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfill toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains				√	
Waste Management					
C&D Materials					
▪ Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable.			√		
▪ C&D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses.			√		
▪ A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed			√		
▪ A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.			√		
Chemical Waste					
▪ Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.	√				
▪ Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc.	√				
▪ The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility.	√				

Environmental Checklist	Implementation Stages*				Remark
	Yes	No	Not Obs	N/A	
Waste Management					
General Refuse					
▪ General refuse should be stored in enclosed bins or compaction units separate from C&D material.	√				
▪ A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material.	√				
▪ An enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.	√				
Marine Dredged Sediment (During transportation and disposal)					
▪ Bottom opening of barges shall be fitted with tight fitting seals to prevent leakage of material. Excess material shall be cleaned from the decks and exposed fittings of barges and dredgers before the vessel is moved				√	No dredging work was observed.
▪ Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the EPD				√	No dredging work was observed.
▪ Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation.				√	No dredging work was observed.
Site Practices					
▪ Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site	√				
▪ Training of site personnel in proper waste management and chemical handling procedures	√				
▪ Provision of sufficient waste disposal points and regular collection of waste	√				
▪ Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	√				
▪ Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers	√				
Waste Reduction Measures					
▪ Sort C&D material from demolition and decommissioning of the existing facilities to recover recyclable portions such as metals	√				
▪ Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal	√				
▪ Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force	√				
▪ Proper storage and site practices to minimise the potential for damage or contamination of construction materials	√				
▪ Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste	√				

Environmental Checklist	Implementation Stages*				Remark
	Yes	No	Not Obs	N/A	
Marine Ecology					
▪ Use of one grab dredger only with a maximum production rate of 4,000m^3 per day for dredging.			√		No dredging work was observed.
▪ Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress.			√		No dredging work was observed.
▪ Deployment of silt screen at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress.	√				
▪ Good site practices to avoid silt runoff from construction works associated with the construction of the submarine watermain.	√				
Good Site Practices					
• The Environmental Permit should be displaced conspicuously on site.	√				
• Construction noise permits should be posted at site entrance or available for site inspection.	√				
▪ Chemical storage area provided with lock and located on sealed areas.	√				
▪ All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank).	√				
▪ Any unused chemicals or those with remaining functional capacity should be recycled.	√				
▪ All generators, fuel and oil storage are within bundle areas.	√				
▪ Oil leakage from machinery, vehicle and plant should be prevented.	√				
▪ Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	√				
▪ A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be bunded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	√				

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Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Status of the item (closed / continue follow-up)	Proposed Follow Up Action (if required)	Photo Ref.	Target Completion Date
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Remark

No new item was found during the site inspection and audit on 16/04/2012.

	Name	Signature	Date
Inspected by	C. L. Lau		16 April 2012

WEEKLY SITE INSPECTION CHECKLIST

Inspection Date	26 April 2012	Inspected by	RE	IEC	Contractor	ET
Time	09:30	Name		—	JNC	C.L. Law

Weather
Condition : Sunny (Fine) / Cloudy / Drizzle / Rain / Storm / Hazy
Wind : (Calm) / Light / Breeze / Strong

Temperature : 23°C
Humidity : High (Moderate) / Low

Environmental Checklist	Implementation Stages*				Remark
	Yes	No	Not Obs	N/A	
Fugitive Dust Emission					
• Dust control / mitigation measures shall be provided to prevent dust nuisance.	✓				
• Any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated within 24 hours of the excavation or unloading.	✓				
• The working area of excavation should be sprayed with water immediately before, during and immediately after the operations so as to maintain the entire surface wet.	✓				
• The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle	✓				
• Where a site boundary adjoins a road, streets or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length except for a site entrance or exit;.	✓				
• The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.				✓	
• Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.	✓				
• The portion of road leading only to a construction site that is within 30m of a designated vehicle entrance or exit should be kept clear of dusty materials.	✓				
• All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet.	✓				
• Vehicle speed should be limited to 10 kph except on completed access roads.	✓				
• Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.				✓	
• The public road around the site entrance should be kept clean and free from dust.	✓				
• Vehicle and equipment should be switched off while not in use.	✓				
• All plant and equipment should be well maintained e.g. without black smoke emission.	✓				
• Open burning should be prohibited.	✓				

Environmental Checklist	Implementation Stages*				Remark
	Yes	No	Not Obs	N/A	
Noise Impact					
▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	√				
▪ The constructions works should be scheduled to minimize noise nuisance. Concurrent noisy works should be carried out at different time slots or spread around the construction sites in order to help to reduce the cumulative noise effect produced in the construction process.	√				
▪ Noisy equipment and mobile plant shall always be site away from NSRs.	√				
▪ Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	√				
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	√				
▪ Mobile or movable noise barriers should be erected near to the construction plants to reduce the noise levels from stationary items of PME whenever practicable.	√				
▪ Quality Powered mechanical equipment (Quality PME), which are construction plants and equipments that are notably quieter, more environmental friendly and efficiently, recognized by the Noise Control Authority for the purpose of CNP application should be used to reduce the noise generated from the construction plants effectively. The Contractor shall note the required procedures involved in application of the QPME.	√				
▪ Well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	√				
▪ Air compressors and hand held breakers should have noise labels.	√				
▪ Compressors and generators should operate with door closed.	√				
▪ Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	√				
Water Quality					
Mitigation Measures for Dredging					
▪ Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m^3 per day.			√		No dredging work was observed.
▪ Deployment of frame type silt curtain should be fully enclosed the grab while dredging works are in progress.			√		No dredging work was observed.
▪ Deployment of silt screen should be at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress	√				
▪ Tight-closing grabs should be used to minimize the loss of sediment to suspension during dredging works. For dredging of any contaminated mud, closed watertight grabs must be used.	√				
▪ All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash	√				
▪ The decks of all vessels should be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard	√				
▪ Adequate free board shall be maintained on barges to ensure that decks are not washed by wave action.	√				
▪ All barges used for the transport of dredged materials should be fitted with tight bottom seals to prevent leakage of material during loading and transport	√				
▪ Dredging activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present in the water within the site or dumping grounds				√	No dredging work was observed.
▪ Loading of barges should be controlled to prevent splashing of material into the surrounding waters. Barges should not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation	√				
▪ The speed of vessels should be controlled within the works area to prevent propeller wash from stirring up the seabed sediments	√				

Environmental Checklist	Implementation Stages*				Remark
	Yes	No	Not Obs	N/A	
Water Quality					
Mitigation Measures for other Construction Activities					
▪ Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m^3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity should be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped	√				
▪ Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the storm runoff being directed into foul sewers	√				
▪ Construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present in the water within the site or dumping grounds	√				
▪ Fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour and Western Harbour WCZs	√				
▪ Portable chemical toilets should be used to handle construction workforce sewage prior to discharge to the existing trunk sewer. Sufficient numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers. The Contractor shall also be responsible for waste disposal and maintenance practices.	√				
▪ Construction site runoff should be prevented or minimised in accordance with the guidelines stipulated in the EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the Victoria Harbour WCZ under the TM-DSS.	√				
▪ Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	√				
▪ An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process.				√	
▪ The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfill toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains				√	
Waste Management					
C&D Materials					
▪ Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable.			√		
▪ C&D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses.			√		
▪ A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed			√		
• A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.			√		
Chemical Waste					
▪ Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.	√				
▪ Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc.	√				
▪ The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility.	√				

Environmental Checklist	Implementation Stages*				Remark
	Yes	No	Not Obs	N/A	
Waste Management					
General Refuse					
▪ General refuse should be stored in enclosed bins or compaction units separate from C&D material.	√				
▪ A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material.	√				
▪ An enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.	√				
Marine Dredged Sediment (During transportation and disposal)					
▪ Bottom opening of barges shall be fitted with tight fitting seals to prevent leakage of material. Excess material shall be cleaned from the decks and exposed fittings of barges and dredgers before the vessel is moved				√	No dredging work was observed.
▪ Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the EPD				√	No dredging work was observed.
▪ Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation.				√	No dredging work was observed.
Site Practices					
▪ Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site	√				
▪ Training of site personnel in proper waste management and chemical handling procedures	√				
▪ Provision of sufficient waste disposal points and regular collection of waste	√				
▪ Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	√				
▪ Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers	√				
Waste Reduction Measures					
▪ Sort C&D material from demolition and decommissioning of the existing facilities to recover recyclable portions such as metals	√				
▪ Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal	√				
▪ Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force	√				
▪ Proper storage and site practices to minimise the potential for damage or contamination of construction materials	√				
▪ Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste	√				

Environmental Checklist	Implementation Stages*				Remark
	Yes	No	Not Obs	N/A	
Marine Ecology					
▪ Use of one grab dredger only with a maximum production rate of 4,000m^3 per day for dredging.			√		No dredging work was observed.
▪ Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress.			√		No dredging work was observed.
▪ Deployment of silt screen at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress.	√				
▪ Good site practices to avoid silt runoff from construction works associated with the construction of the submarine watermain.	√				
Good Site Practices					
• The Environmental Permit should be displaced conspicuously on site.	√				
• Construction noise permits should be posted at site entrance or available for site inspection.	√				
▪ Chemical storage area provided with lock and located on sealed areas.	√				
▪ All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank).	√				
▪ Any unused chemicals or those with remaining functional capacity should be recycled.	√				
▪ All generators, fuel and oil storage are within bundle areas.	√				
▪ Oil leakage from machinery, vehicle and plant should be prevented.	√				
▪ Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	√				
▪ A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be bunded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	√				

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Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Status of the item (closed / continue follow-up)	Proposed Follow Up Action (if required)	Photo Ref.	Target Completion Date
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Remark

No new item was found during the site inspection and audit on 26/04/2012.

The contractor was reminded to clean the standing water on the unused steel piles in Portion J after rained.

	Name	Signature	Date
Inspected by	C. L. Lau		26 April 2012

Appendix G

Implementation Schedule of Mitigation Measures

Environmental Mitigation Implementation Schedule

Environmental Protection Measures	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
Air Quality					
▪ Dust control / mitigation measures shall be provided to prevent dust nuisance.	All areas	√			
▪ Any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated within 24 hours of the excavation or unloading.	All areas	√			
▪ The working area of excavation should be sprayed with water immediately before, during and immediately after the operations so as to maintain the entire surface wet.	All areas	√			
▪ The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle	All areas	√			
▪ Where a site boundary adjoins a road, streets or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length except for a site entrance or exit;.	All areas	√			
▪ The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.	Site Egress				√
▪ Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.	All haul roads	√			
▪ The portion of road leading only to a construction site that is within 30m of a designated vehicle entrance or exit should be kept clear of dusty materials.	All areas	√			
▪ All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain dusty material wet.	All areas	√			
▪ Vehicle speed should be limited to 10 kph except on completed access roads.	All areas	√			
▪ Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.	All areas	√			
▪ The public road around the site entrance should be kept clean and free from dust.	All areas	√			
▪ Vehicle and equipment should be switched off while not in use.	All areas	√			
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	All areas	√			
▪ Open burning should be prohibited.	All areas	√			
Noise Impact					
▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	All areas	√			
▪ The constructions works should be scheduled to minimize noise nuisance. Concurrent noisy works should be carried out at different time slots or spread around the construction sites in order to help to reduce the cumulative noise effect produced in the construction process.	All areas	√			
▪ Noisy equipment and mobile plant shall always be site away from NSRs.	All areas	√			
▪ Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	All areas	√			
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	All areas	√			
▪ Mobile or movable noise barriers should be erected near to the construction plants to reduce the noise levels from stationary items of PME whenever practicable.	All areas	√			
▪ Quality Powered mechanical equipment (Quality PME), which are construction plants and equipments that are notably quieter, more environmental friendly and efficiently, recognized by the Noise Control Authority for the purpose of CNP application should be used to reduce the noise generated from the construction plants effectively. The Contractor shall note the required procedures involved in application of the QPME.	All areas	√			

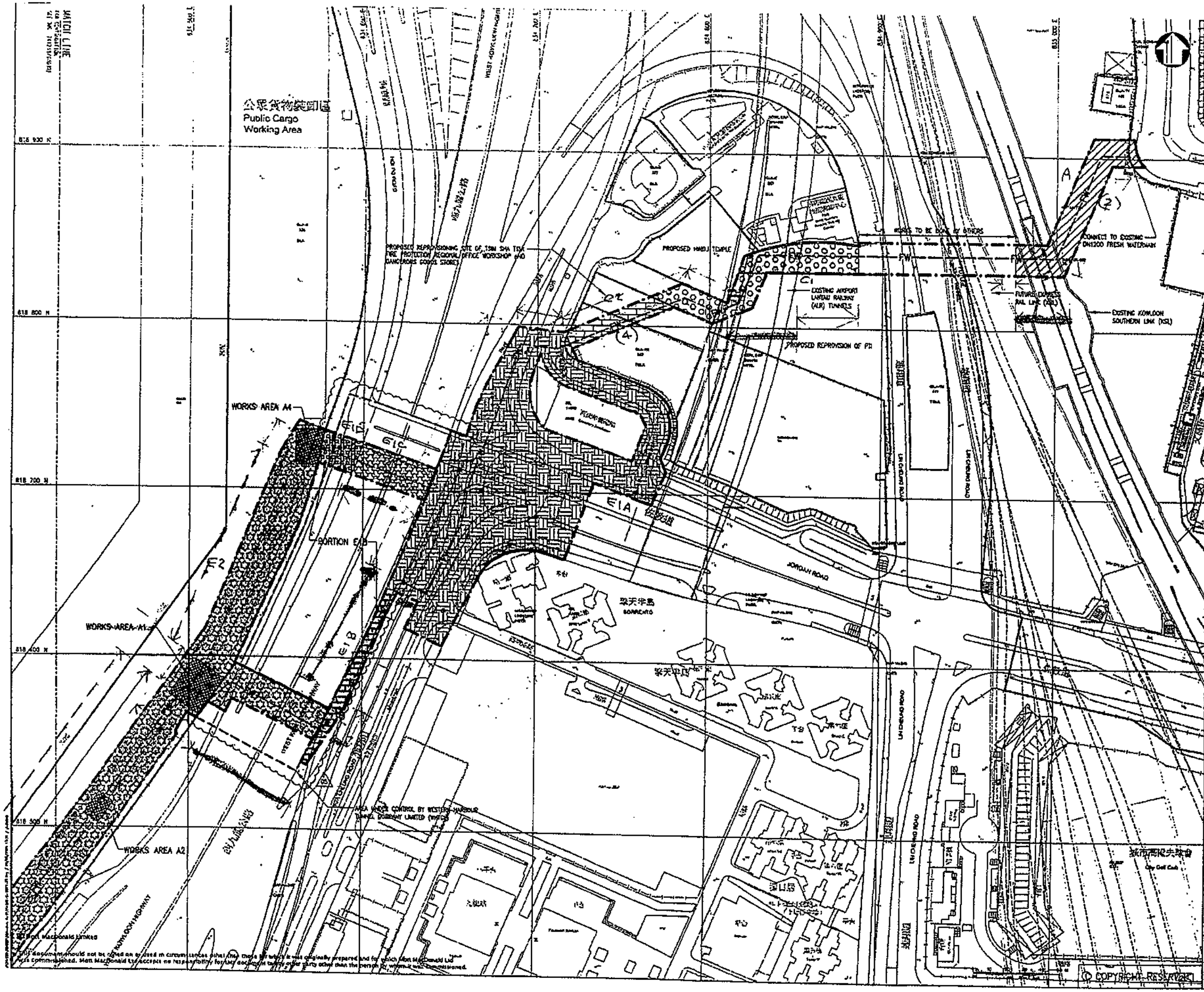
Environmental Protection Measures	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
Noise Impact					
▪ Well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	All areas	√			
▪ Air compressors and hand held breakers should have noise labels.	All areas	√			
▪ Compressors and generators should operate with door closed.	All areas	√			
▪ Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	All areas	√			
Water Quality					
Mitigation Measures for Dredging					
▪ Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m^3 per day.	Marine				√
▪ Deployment of frame type silt curtain should be fully enclose the grab while dredging works are in progress.	Marine				√
▪ Deployment of silt screen should be at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress	Marine	√			
▪ Tight-closing grabs should be used to minimize the loss of sediment to suspension during dredging works. For dredging of any contaminated mud, closed watertight grabs must be used.	Marine				√
▪ All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash	Marine				√
▪ The decks of all vessels should be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard	Marine				√
▪ Adequate free board shall be maintained on barges to ensure that decks are not washed by wave action.	Marine				√
▪ All barges used for the transport of dredged materials should be fitted with tight bottom seals to prevent leakage of material during loading and transport	Marine				√
▪ Construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present in the water within the site or dumping grounds	Marine	√			
▪ Loading of barges should be controlled to prevent splashing of material into the surrounding waters. Barges should not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation	Marine	√			
▪ The speed of vessels should be controlled within the works area to prevent propeller wash from stirring up the seabed sediments	Marine	√			
Mitigation Measures for other Construction Activities					
▪ Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m^3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity should be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped	All areas	√			
▪ Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the storm runoff being directed into foul sewers	All areas	√			
▪ All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads.	All areas	√			
▪ An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process.	All areas	√			
▪ The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfill toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains	All areas	√			
▪ Fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour and Western Harbour WCZs	All areas	√			

Environmental Protection Measures	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
Water Quality					
Mitigation Measures for other Construction Activities					
▪ Portable chemical toilets should be used to handle construction workforce sewage prior to discharge to the existing trunk sewer. Sufficient numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers. The Contractor shall also be responsible for waste disposal and maintenance practices.	All areas	√			
▪ Construction site runoff should be prevented or minimised in accordance with the guidelines stipulated in the EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the Victoria Harbour WCZ under the TM-DSS.	All areas	√			
▪ Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	All areas		√		
Waste Management					
C&D Materials					
▪ Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable.	All areas				√
▪ C&D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses.	All areas				√
▪ A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed	All areas	√			
▪ A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.	All areas	√			
Chemical Waste					
▪ Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.	All areas	√			
▪ Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc.	All areas	√			
▪ The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility.	All areas	√			
General Refuse					
▪ General refuse should be stored in enclosed bins or compaction units separate from C&D material.	All areas	√			
▪ A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material.	All areas	√			
▪ An enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.	All areas	√			
Marine Dredged Sediment (During transportation and disposal)					
▪ Bottom opening of barges shall be fitted with tight fitting seals to prevent leakage of material. Excess material shall be cleaned from the decks and exposed fittings of barges and dredgers before the vessel is moved	Marine				√
▪ Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the EPD	Marine				√
▪ Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation.	Marine				√
Good Site Practices					
▪ Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site	All areas	√			
▪ Training of site personnel in proper waste management and chemical handling procedures	All areas	√			
▪ Provision of sufficient waste disposal points and regular collection of waste	All areas	√			

Environmental Protection Measures	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
Waste Management					
Good Site Practices					
▪ Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	All areas	√			
▪ Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers	All areas	√			
Waste Reduction Measures					
▪ Sort C&D material from demolition and decommissioning of the existing facilities to recover recyclable portions such as metals	All areas	√			
▪ Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal	All areas	√			
▪ Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force	All areas	√			
▪ Proper storage and site practices to minimise the potential for damage or contamination of construction materials	All areas	√			
▪ Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste	All areas	√			
Marine Ecology					
▪ Use of one grab dredger only with a maximum production rate of 4,000m^3 per day for dredging.	Marine				√
▪ Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress.	Marine				√
▪ Deployment of silt screen at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress.	Marine	√			
▪ Good site practices to avoid silt runoff from construction works associated with the construction of the submarine watermain.	Marine	√			
Good Site Practices					
▪ The Environmental Permit should be displaced conspicuously on site.	All areas	√			
▪ Construction noise permits should be posted at site entrance or available for site inspection.	All areas	√			
▪ Chemical storage area provided with lock and located on sealed areas.	All areas	√			
▪ All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank).	All areas	√			
▪ Any unused chemicals or those with remaining functional capacity should be recycled.	All areas	√			
▪ All generators, fuel and oil storage are within bundle areas.	All areas	√			
▪ Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	All areas	√			
▪ A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be bunded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	All areas	√			

Appendix H

Site General Layout plan



NOTES :

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 241239/G/0302 TO 0305.

LEGEND :

- PROPOSED FRESH WATERMAIN
- PROPOSED SALT WATERMAIN
- PROPOSED WORKS LIMIT
- GLA / STT
- PORTION A (Section 2)
- PORTION C1
- PORTION C2 (Section 4)
- PORTION E1A
- PORTION E1B
- PORTION E1C
- PORTION E1D
- PORTION F1
- PORTION G (Section 4)
- PORTION H1
- PORTION H2
- WORKS AREA WITHIN NEW YAU MA TEI PUBLIC CARGO WORKING AREA FORMING PART OF PORTION E2 OF THE SITE (TO BE FENCED OFF BY CONCRETE BARRIERS AS PART OF TEMPORARY TRAFFIC ARRANGEMENT BY THE CONTRACTOR, DETAILS REFER TO HyD STANDARD DRAWING NO. H2104)

Section 1
Section 2
Section 4

Rev	Date		Description		
05	MAY 09		TENDER ADDENDUM NO. 6		
04	APR 09	PL	TENDER ADDENDUM NO. 5	KL	SHC
03	APR 09	PL	TENDER ADDENDUM NO. 4	KL	SHC
02	MAR 09	PL	TENDER ADDENDUM NO. 3	KL	SHC
01	FEB 09	PL	TENDER ADDENDUM NO. 2	KL	SHC
0	DEC 08	PL	ISSUE FOR TENDER	KL	SHC

Mott MacDonald

THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION
WATER SUPPLIES DEPARTMENT

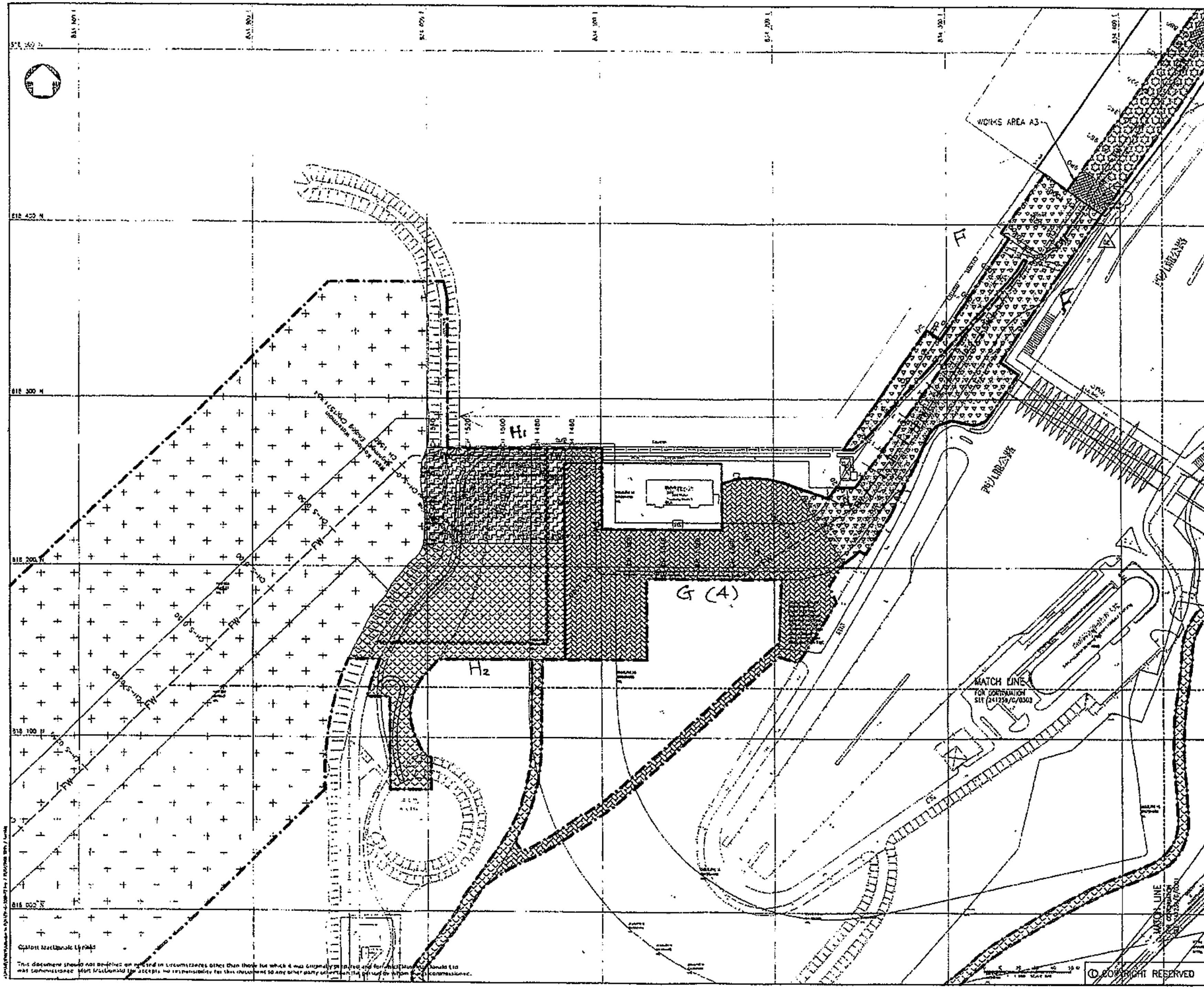
Contract No. 9/WSD/08

LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SAI YING PUN

POSSESSION OF SITE (SHEET 1 OF 5)

Scale 1:1000 @A1 | Status TEN

Drawing No. 241239/G/0301 | Rev 05



NOTES :

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS 241239/G/0301 AND 0303 TO 0305
2. THE LEGEND SHALL REFER TO DRAWING NO 241239/G/0301

Rev	Date	Drawn	Description	Ch'k'd	App'd
02	APR 09		TENDER ADDENDUM NO. 4		
01	MAR 09	PL	TENDER ADDENDUM NO. 3	KL	SHC
0	DEC 08	PL	ISSUE FOR TENDER	KL	SHC

Mott MacDonald

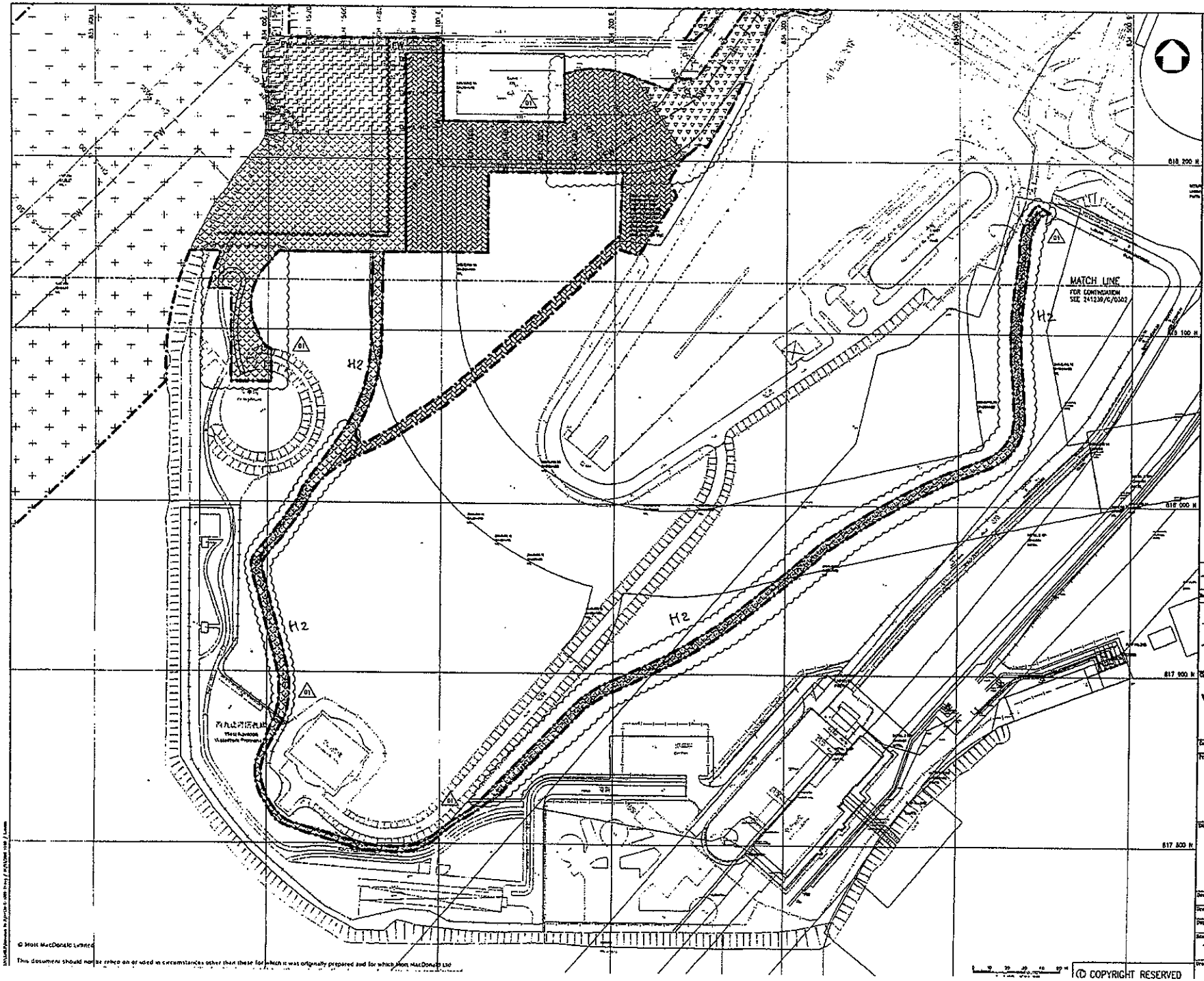
Client: THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION WATER SUPPLIES DEPARTMENT

Contract No. 9/WSD/08

Project: LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SAI YING PUN

Title: POSSESSION OF SITE (SHEET 2 OF 5)

Designed	KSC		Eng Chk'd	KL
Drawn	PL		Coordination	SHC
Dwg Chk'd	KL		Approved	SHC
Scale	1:1000 @A1	Project	241239	Status: TEN
Drawing No	241239/G/0302			Rev 02



NOTES :

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 241239/G/0301 TO 0302 AND 0304 TO 0305.
2. THE LEGEND SHALL REFER TO DRAWING NO. 241239/G/0301.

01	MAR 09		TENDER ADDENDUM NO. 3		
0	DEC 08	PL	ISSUE FOR TENDER	KL	SHC
Rev	Date	Drawn	Description	Ch'k'd	App'd

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Client

THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION
WATER SUPPLIES DEPARTMENT

Contract No. 9/WSD/08

Project

LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SAI YING PUN

Title

POSSESSION OF SITE
(SHEET 3 OF 5)

Designed	KSC		Dep'l Mgr	PL	
Drawn	PL		Coordinator	SHC	
Dep'l Mgr	KL		Approved	SHC	

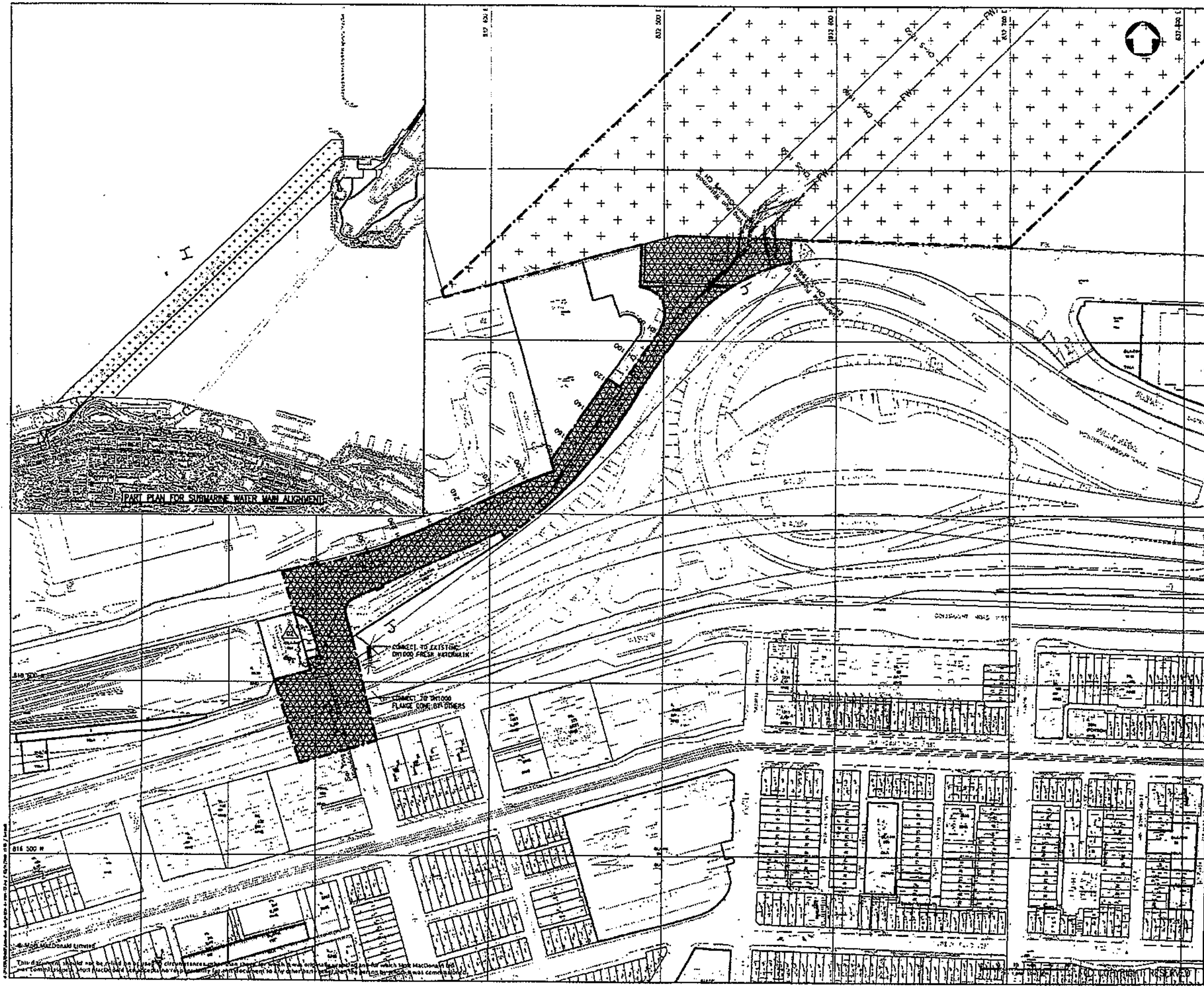
Scale 1:1000 @A1

Project 241239

Status TEN

Drawing No. 241239/G/0303

Rev 01



NOTES :

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 241239/C/0301 TO 0303 AND 0305.
2. THE LEGEND SHALL REFER TO DRAWING NO. 241239/C/0301.

Rev	Date	Drawn	Description	Ch'k'd	App'd
02	APR 09		TENDER ADDENDUM NO. 4		
01	MAR 09	PL	TENDER ADDENDUM NO. 3	CF	SHC
0	DEC 08	PL	ISSUE FOR TENDER	CF	SHC

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THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION WATER SUPPLIES DEPARTMENT

Contract No. 9/WSD/08

LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SAI YING PUN

POSSESSION OF SITE
(SHEET 4 OF 5)

Designed	KSC		Eng Chk	KL	
Drawn	PL		Coordination	SHC	
Dwg Chk	KL		Approved	SHC	
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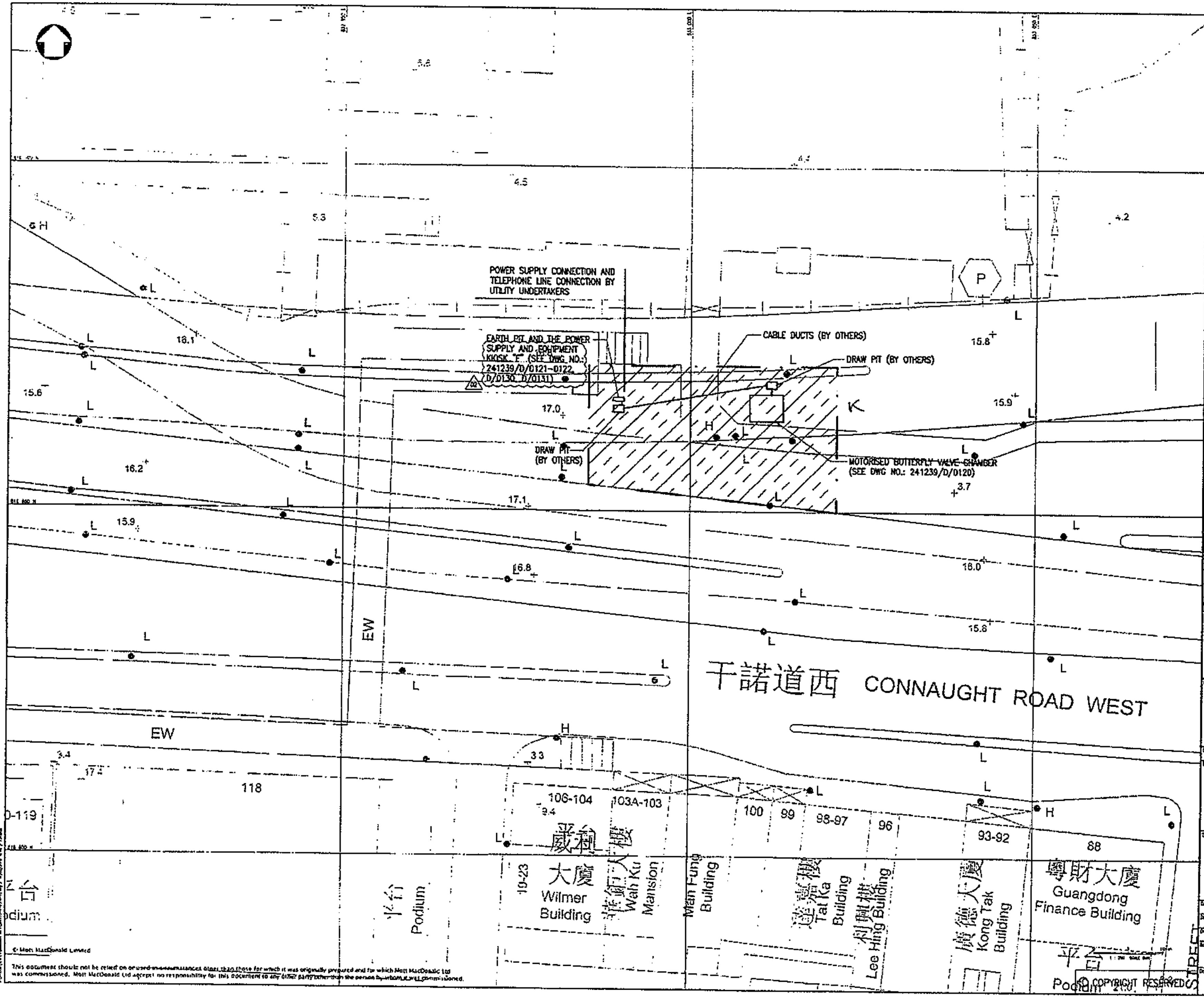
Drawing No.	241239/C/0304			Rev	02



NOTES

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 241239/G/0301 TO 0304.
2. THE LEGEND SHALL REFER TO DRAWING NO. 241239/G/0301.

Rev	Date	Drawn	Description	Ch'k'd	App'd
02	FEB 09		TENDER ADDENDUM NO. 2		
01	JAN 09	PL	TENDER ADDENDUM NO. 1	KL	SHC
0	DEC 08	PL	ISSUE FOR TENDER	KL	SHC

Mott MacDonald

Client: THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION WATER SUPPLIES DEPARTMENT

Contract No. 9/WSD/08

Project: LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SAI YING PUN

Title: POSSESSION OF SITE (SHEET 5 OF 5)

Designed	KSC	Eng Chk	KL	
Drawn	PL	Coordination	SHC	
Dwg Chk	KL	Approved	SHC	
Scale 1:250 @A1	Project 241239	Status TEN		
Drawing No. 241239/G/0305		Rev 02		

Appendix I

Monitoring Schedule for this Month and Coming Month

Contract No. 9/WSD/08
Laying of Western Cross Habour Main & Associated Land Mains from West Kowloon to Sai Ying Pun
Time Schedule for Impact Marine Water Quality Monitoring (WQM), Noise Monitoring (NM) and Weekly Site Inspection (SI)
April 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
01-Apr	02-Apr	03-Apr	04-Apr	05-Apr	06-Apr	07-Apr
NM Evening-time (West Kowloon) (Sai Ying Pun) **NM Holiday** (West Kowloon) (Sai Ying Pun)	**NM** (SYP-Daytime) **NM** (WK-Daytime)	**WQM** Mid-Ebb 08:30 - 12:30 Mid-Flood 14:00 - 18:00 **SI**		**WQM** Mid-Ebb 09:00 - 13:00 Mid-Flood 14:30 - 18:30	**NM Holiday** (West Kowloon) (Sai Ying Pun)	
08-Apr	09-Apr	10-Apr	11-Apr	12-Apr	13-Apr	14-Apr
		WQM Mid-Flood 07:00 - 11:00 Mid-Ebb 13:00 - 17:00	**NM** (SYP-Daytime) **SI**	**WQM** Mid-Flood 08:30 - 12:30 Mid-Ebb 14:00 - 18:00	**NM** (WK-Daytime)	**WQM** Mid-Flood 10:30 - 14:30 Mid-Ebb 16:00 - 20:00 **NM Evening-time** (West Kowloon) (Sai Ying Pun)
15-Apr	16-Apr	17-Apr	18-Apr	19-Apr	20-Apr	21-Apr
NM Holiday (West Kowloon) (Sai Ying Pun)	**SI**	**WQM** Mid-Ebb 08:30 - 12:30 Mid-Flood 14:00 - 18:00	**NM** (SYP-Daytime) **NM** (WK-Daytime)	**WQM** Mid-Ebb 09:00 - 13:00 Mid-Flood 14:30 - 18:30		**WQM** Mid-Ebb 10:15 - 14:15 Mid-Flood 15:45 - 19:45 **NM Evening-time** (West Kowloon) (Sai Ying Pun)
22-Apr	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr	28-Apr
NM Holiday (West Kowloon) (Sai Ying Pun)		**WQM** Mid-Ebb 12:15 - 16:15 Mid-Flood 17:45 - 21:45 **NM** (WK-Daytime)	**NM** (SYP-Daytime)	**WQM** Mid-Flood 06:00 - 10:00 Mid-Ebb 11:30 - 15:30 **SI**	**NM Evening-time** (West Kowloon) (Sai Ying Pun)	**NM Holiday** (West Kowloon) (Sai Ying Pun)
29-Apr	30-Apr					

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Laying of Western Cross Habour Main & Associated Land Mains from West Kowloon to Sai Ying Pun

Time Schedule for Impact Marine Water Quality Monitoring (WQM), Noise Monitoring (NM) and Weekly Site Inspection (SI)

May 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		01-May	02-May	03-May	04-May	05-May
			NM (SYP-Daytime)	**WQM** Mid-Ebb 08:00 - 12:00 Mid-Flood 13:30 - 17:30 **SI**	**NM** (WK-Daytime)	**WQM** Mid-Ebb 09:00 - 13:00 Mid-Flood 14:00 - 18:00
06-May	07-May	08-May	09-May	10-May	11-May	12-May
		WQM Mid-Flood 07:00 - 11:00 Mid-Ebb 12:30 - 16:30 **SI**	**NM** (SYP-Daytime)	**WQM** Mid-Flood 07:30 - 11:30 Mid-Ebb 13:00 - 17:00	**NM** (WK-Daytime)	**WQM** Mid-Flood 08:30 - 12:30 Mid-Ebb 14:00 - 18:00
13-May	14-May	15-May	16-May	17-May	18-May	19-May
		WQM Mid-Ebb 07:00 - 11:00 Mid-Flood 13:00 - 17:00 **SI**	**NM** (SYP-Daytime)	**WQM** Mid-Ebb 08:30 - 12:30 Mid-Flood 14:00 - 18:00	**NM** (WK-Daytime)	**WQM** Mid-Ebb 09:30 - 13:30 Mid-Flood 15:00 - 19:00
20-May	21-May	22-May	23-May	24-May	25-May	26-May
		WQM Mid-Ebb 11:30 - 15:30 Mid-Flood 17:00 - 21:00 **SI**	**NM** (SYP-Daytime)	**WQM** Mid-Ebb 12:30 - 16:30 Mid-Flood 18:00 - 22:00	**NM** (WK-Daytime)	**WQM** Mid-Flood 07:00 - 10:45 Mid-Ebb 12:30 - 16:30
27-May	28-May	29-May	30-May	31-May		
		WQM Mid-Flood 09:30 - 13:30 Mid-Ebb 15:00 - 19:00 **SI**		**WQM** Mid-Ebb 07:15 - 11:15 Mid-Flood 13:00 - 17:00		

Appendix J

Daily Dredging Summary

Wo Hing - Penta-Ocean Joint Venture

Contract no. 9/WSD/08

Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun

Summary of Dumping Qty. of Type 2 Marine Sediment

Date	Dumping qty (m^3)	Barge Load per day	Accumulated Dumping Qty.	Target Dumping qty (m^3)	Target Barge Load per day	Target Accumulated Dumping Qty.	Permit No.
			(bulk volume)			(bulk volume)	
5 May, 2010	440	1	440	1,260	2	1,260	EP/MD/10-086
6 May, 2010	1,280	3	1,720	1,260	2	2,520	EP/MD/10-086
7 May, 2010	0	0	1,720	1,260	2	3,780	EP/MD/10-086
8 May, 2010	0	0	1,720	1,260	2	5,040	EP/MD/10-086
9 May, 2010	1,400	2	3,120	1,260	2	6,300	EP/MD/10-086
10 May, 2010	1,400	2	4,520	1,260	2	7,560	EP/MD/10-086
11 May, 2010	1,300	2	5,820	1,260	2	8,820	EP/MD/10-086
12 May, 2010	1,800	3	7,620	1,260	2	10,080	EP/MD/10-086
13 May, 2010	1,200	2	8,820	1,260	2	11,340	EP/MD/10-086
14 May, 2010	0	0	8,820	1,260	2	12,600	EP/MD/10-086
15 May, 2010	0	0	8,820	1,260	2	13,860	EP/MD/10-086
16 May, 2010	600	1	9,420	1,260	2	15,120	EP/MD/10-086
17 May, 2010	1,200	2	10,620	1,260	2	16,380	EP/MD/10-086
18 May, 2010	700	1	11,320	1,260	2	17,640	EP/MD/10-086
19 May, 2010	2,000	3	13,320	1,260	2	18,900	EP/MD/10-086
20 May, 2010	1,400	2	14,720	1,260	2	20,160	EP/MD/10-086
21 May, 2010	1,400	2	16,120	1,260	2	21,420	EP/MD/10-086
22 May, 2010	2,100	3	18,220	1,260	2	22,680	EP/MD/10-086
23 May, 2010	1,400	2	19,620	1,260	2	23,940	EP/MD/10-086
24 May, 2010	1,400	2	21,020	1,260	2	25,200	EP/MD/10-086
25 May, 2010	1,300	2	22,320	1,260	2	26,460	EP/MD/10-086
26 May, 2010	1,400	2	23,720	1,260	2	27,720	EP/MD/10-086
27 May, 2010	1,300	2	25,020	1,260	2	28,980	EP/MD/10-086
28 May, 2010	1,400	2	26,420	1,260	2	30,240	EP/MD/10-086
29 May, 2010	600	1	27,020	1,260	2	31,500	EP/MD/10-086
30 May, 2010	2,100	3	29,120	1,260	2	32,760	EP/MD/11-012
31 May, 2010	700	1	29,820	1,260	2	34,020	EP/MD/11-012
1 June, 2010	1,900	3	31,720	1,260	2	35,280	EP/MD/11-012
2 June, 2010	1,220	2	32,940	1,260	2	36,540	EP/MD/11-012
3 June, 2010	1,300	2	34,240	1,260	2	37,800	EP/MD/11-012
4 June, 2010	1,200	2	35,440	1,260	2	39,060	EP/MD/11-012
5 June, 2010	1,400	2	36,840	1,260	2	40,320	EP/MD/11-012
6 June, 2010	600	1	37,440	1,260	2	41,580	EP/MD/11-012
7 June, 2010	0	0	37,440	1,260	2	42,840	EP/MD/11-012
8 June, 2010	500	1	37,940	1,260	2		EP/MD/11-012
9 June, 2010	0	0	37,940	1,260	2		EP/MD/11-012
10 June, 2010	600	1	38,540	1,260	2		EP/MD/11-012
11 June, 2010	1,200	2	39,740	1,260	2		EP/MD/11-012
12 June, 2010	1,400	2	41,140	1,260	2		EP/MD/11-012
13 June, 2010	1,400	2	42,540	1,260	2		EP/MD/11-012
14 June, 2010	0	0	42,540	0	0		EP/MD/11-012
15 June, 2010	0	0	42,540	0	0		EP/MD/11-012
16 June, 2010	0	0	42,540	0	0		EP/MD/11-012
17 June, 2010	0	0	42,540	0	0		EP/MD/11-012
18 June, 2010	0	0	42,540	0	0		EP/MD/11-012
19 June, 2010	0	0	42,540	0	0		EP/MD/11-012

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Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun

Summary of Dumping Qty. of Type 2 Marine Sediment

Date	Dumping qty (m^3)	Barge Load per day	Accumulated Dumping Qty.	Target Dumping qty (m^3)	Target Barge Load per day	Target Accumulated Dumping Qty.	Permit No.
			(bulk volume)			(bulk volume)	
20 June, 2010	0	0	42,540	0	0		EP/MD/11-012
21 June, 2010	0	0	42,540	0	0		EP/MD/11-012
22 June, 2010	0	0	42,540	0	0		EP/MD/11-012
23 June, 2010	0	0	42,540	0	0		EP/MD/11-012
24 June, 2010	0	0	42,540	0	0		EP/MD/11-012
25 June, 2010	0	0	42,540	0	0		EP/MD/11-012
26 June, 2010	0	0	42,540	0	0		EP/MD/11-012
27 June, 2010	0	0	42,540	0	0		EP/MD/11-012
28 June, 2010	0	0	42,540	0	0		EP/MD/11-012
29 June, 2010	0	0	42,540	0	0		EP/MD/11-012
30 June, 2010	1,200	2	43,740				EP/MD/11-024
1 July, 2010	2,600	4	46,340				EP/MD/11-024
2 July, 2010	2,800	4	49,140				EP/MD/11-024
3 July, 2010	1,400	2	50,540				EP/MD/11-024
4 July, 2010	2,100	3					EP/MD/11-024
5 July, 2010	2,850	4					EP/MD/11-024
6 July, 2010	1,400	2					EP/MD/11-024
7 July, 2010	1,400	2					EP/MD/11-024
8 July, 2010	2,700	4					EP/MD/11-024
9 July, 2010	2,100	3					EP/MD/11-024
10 July, 2010	2,100	3					EP/MD/11-024
11 July, 2010	1,400	2					EP/MD/11-024
12 July, 2010							EP/MD/11-024
13 July, 2010							EP/MD/11-024
14 July, 2010							EP/MD/11-024
15 July, 2010							EP/MD/11-024
16 July, 2010							EP/MD/11-024
17 July, 2010							EP/MD/11-024
18 July, 2010							EP/MD/11-024
19 July, 2010							EP/MD/11-024
20 July, 2010							EP/MD/11-024
21 July, 2010							EP/MD/11-024
22 July, 2010							EP/MD/11-024
23 July, 2010							EP/MD/11-024
24 July, 2010							EP/MD/11-024
25 July, 2010							EP/MD/11-024
26 July, 2010							EP/MD/11-024
27 July, 2010							EP/MD/11-024
28 July, 2010							EP/MD/11-024
29 July, 2010							EP/MD/11-024
30 July, 2010							
31 July, 2010							
	66,590	101		***50,400***	70		

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Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun

Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground)

Date	Dumping qty (m^3)	Barge Load per day	Accumulated Dumping Qty.	Target Dumping qty (m^3)	Target Barge Load per day	Target Accumulated Dumping Qty.	Permit No.
			(bulk volume)			(bulk volume)	
30 April, 2010	0	0	0	0	0	0	EP/MD/10-085
1 May, 2010	0	0	0	0	0	0	EP/MD/10-085
2 May, 2010	0	0	0	0	0	0	EP/MD/10-085
3 May, 2010	0	0	0	0	0	0	EP/MD/10-085
4 May, 2010	0	0	0	0	0	0	EP/MD/10-085
5 May, 2010	0	0	0	0	0	0	EP/MD/10-085
6 May, 2010	0	0	0	0	0	0	EP/MD/10-085
7 May, 2010	0	0	0	0	0	0	EP/MD/10-085
8 May, 2010	0	0	0	0	0	0	EP/MD/10-085
9 May, 2010	0	0	0	0	0	0	EP/MD/10-085
10 May, 2010	0	0	0	0	0	0	EP/MD/10-085
11 May, 2010	0	0	0	0	0	0	EP/MD/10-085
12 May, 2010	0	0	0	0	0	0	EP/MD/10-085
13 May, 2010	0	0	0	0	0	0	EP/MD/10-085
14 May, 2010	0	0	0	0	0	0	EP/MD/10-085
15 May, 2010	0	0	0	0	0	0	EP/MD/10-085
16 May, 2010	0	0	0	0	0	0	EP/MD/10-085
17 May, 2010	0	0	0	0	0	0	EP/MD/10-085
18 May, 2010	0	0	0	0	0	0	EP/MD/10-085
19 May, 2010	0	0	0	0	0	0	EP/MD/10-085
20 May, 2010	0	0	0	0	0	0	EP/MD/10-085
21 May, 2010	0	0	0	0	0	0	EP/MD/10-085
22 May, 2010	0	0	0	0	0	0	EP/MD/10-085
23 May, 2010	0	0	0	0	0	0	EP/MD/10-085
24 May, 2010	0	0	0	0	0	0	EP/MD/10-085
25 May, 2010	0	0	0	0	0	0	EP/MD/10-085
26 May, 2010	0	0	0	0	0	0	EP/MD/10-085
27 May, 2010	0	0	0	0	0	0	EP/MD/10-085
28 May, 2010	0	0	0	0	0	0	EP/MD/10-085
29 May, 2010	0	0	0	0	0	0	EP/MD/10-085
30 May, 2010	0	0	0	0	0	0	EP/MD/10-085
31 May, 2010	0	0	0	0	0	0	EP/MD/10-085
1 June, 2010	0	0	0	0	0	0	EP/MD/10-085
2 June, 2010	0	0	0	0	0	0	EP/MD/10-085
3 June, 2010	0	0	0	0	0	0	EP/MD/10-085
4 June, 2010	0	0	0	0	0	0	EP/MD/10-085
5 June, 2010	0	0	0	0	0	0	EP/MD/10-085

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Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun

Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground)

Date	Dumping qty (m^3)	Barge Load per day	Accumulated Dumping Qty.	Target Dumping qty (m^3)	Target Barge Load per day	Target Accumulated Dumping Qty.	Permit No.
			(bulk volume)			(bulk volume)	
6 June, 2010	0	0	0	0	0	0	EP/MD/10-085
7 June, 2010	0	0	0	0	0	0	EP/MD/10-085
8 June, 2010	0	0	0	0	0	0	EP/MD/10-085
9 June, 2010	0	0	0	0	0	0	EP/MD/10-085
10 June, 2010	0	0	0	0	0	0	EP/MD/10-085
11 June, 2010	0	0	0	0	0	0	EP/MD/10-085
12 June, 2010	0	0	0	0	0	0	EP/MD/10-085
13 June, 2010	0	0	0	0	0	0	EP/MD/10-085
14 June, 2010	1,400	2	1,400	2,100	3	2,100	EP/MD/10-085
15 June, 2010	1,400	2	2,800	2,100	3	4,200	EP/MD/10-085
16 June, 2010	2,100	3	4,900	2,100	3	6,300	EP/MD/10-085
17 June, 2010	2,800	4	7,700	2,100	3	8,400	EP/MD/10-085
18 June, 2010	2,100	3	9,800	2,100	3	10,500	EP/MD/10-085
19 June, 2010	2,700	4	12,500	2,100	3	12,600	EP/MD/10-085
20 June, 2010	2,800	4	15,300	2,100	3	14,700	EP/MD/10-085
21 June, 2010	2,100	3	17,400	2,100	3	16,800	EP/MD/10-085
22 June, 2010	2,800	4	20,200	2,100	3	18,900	EP/MD/10-085
23 June, 2010	2,100	3	22,300	2,100	3	21,000	EP/MD/10-085
24 June, 2010	2,100	3	24,400	2,100	3	23,100	EP/MD/10-085
25 June, 2010	2,100	3	26,500	2,100	3	25,200	EP/MD/10-085
26 June, 2010	2,100	3	28,600	2,100	3	27,300	EP/MD/10-085
27 June, 2010	700	1	29,300	2,100	3	29,400	EP/MD/10-085
28 June, 2010	2,100	3	31,400	2,100	3	31,500	EP/MD/10-085
29 June, 2010	1,400	2	32,800	2,100	3	33,600	EP/MD/10-085
30 June, 2010			32,800	2,100	3	35,700	EP/MD/10-085
1 July, 2010			32,800	2,100	3	37,800	EP/MD/10-085
2 July, 2010			32,800	2,100	3	39,900	EP/MD/10-085
3 July, 2010			32,800	2,100	3	42,000	EP/MD/10-085
4 July, 2010			32,800	2,100	3	44,100	EP/MD/10-085
5 July, 2010			32,800	2,100	3	46,200	EP/MD/10-085
6 July, 2010			32,800	2,100	3	48,300	EP/MD/10-085
7 July, 2010			32,800	2,100	3	50,400	EP/MD/10-085
8 July, 2010			32,800	2,100	3	52,500	EP/MD/10-085
9 July, 2010			32,800	2,100	3	54,600	EP/MD/10-085
10 July, 2010			32,800	2,100	3	56,700	EP/MD/10-085
11 July, 2010			32,800	2,100	3	58,800	EP/MD/10-085
12 July, 2010			32,800	2,100	3	60,900	EP/MD/10-085
13 July, 2010			32,800	2,100	3	63,000	EP/MD/10-085
14 July, 2010			32,800	2,100	3	65,100	EP/MD/10-085
15 July, 2010			32,800	2,100	3	67,200	EP/MD/10-085
16 July, 2010			32,800	2,100	3	69,300	EP/MD/10-085
17 July, 2010			32,800	2,100	3	71,400	EP/MD/10-085

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Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun

Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground)

Date	Dumping qty (m^3)	Barge Load per day	Accumulated Dumping Qty.	Target Dumping qty (m^3)	Target Barge Load per day	Target Accumulated Dumping Qty.	Permit No.
			(bulk volume)			(bulk volume)	
18 July, 2010			32,800	2,100	3	73,500	EP/MD/10-085
19 July, 2010			32,800	2,100	3	75,600	EP/MD/10-085
20 July, 2010			32,800	2,100	3	77,700	EP/MD/10-085
21 July, 2010			32,800	2,100	3	79,800	EP/MD/10-085
22 July, 2010			32,800	2,100	3	81,900	EP/MD/10-085
23 July, 2010			32,800	2,100	3	84,000	EP/MD/10-085
24 July, 2010			32,800	2,100	3	86,100	EP/MD/10-085
25 July, 2010			32,800	2,100	3	88,200	EP/MD/10-085
26 July, 2010			32,800	2,100	3	90,300	EP/MD/10-085
27 July, 2010			32,800	2,100	3	92,400	EP/MD/10-085
28 July, 2010			32,800	2,100	3	94,500	EP/MD/10-085
29 July, 2010			32,800	2,100	3	96,600	EP/MD/10-085
30 July, 2010			32,800	2,100	3	98,700	EP/MD/10-085
31 July, 2010			32,800	2,100	3	100,800	EP/MD/10-085
1 August, 2010			32,800	2,100	3	102,900	EP/MD/10-085
2 August, 2010			32,800	2,100	3	105,000	EP/MD/10-085
3 August, 2010			32,800	2,100	3	107,100	EP/MD/10-085
4 August, 2010			32,800	2,100	3	109,200	EP/MD/10-085
5 August, 2010			32,800	2,100	3	111,300	EP/MD/10-085
6 August, 2010			32,800	2,100	3	113,400	EP/MD/10-085
7 August, 2010			32,800	2,100	3	115,500	EP/MD/10-085
8 August, 2010			32,800	2,100	3	117,600	EP/MD/10-085
9 August, 2010			32,800	2,100	3	119,700	EP/MD/10-085
10 August, 2010			32,800	2,100	3	121,800	EP/MD/10-085
11 August, 2010			32,800	2,100	3	123,900	EP/MD/10-085
12 August, 2010			32,800	2,100	3	126,000	EP/MD/10-085
13 August, 2010			32,800	2,100	3	128,100	EP/MD/10-085
14 August, 2010			32,800	2,100	3	130,200	EP/MD/10-085
15 August, 2010			32,800	2,100	3	132,300	EP/MD/10-085
16 August, 2010			32,800	2,100	3	134,400	EP/MD/10-085
17 August, 2010			32,800	2,100	3	136,500	EP/MD/10-085
18 August, 2010			32,800	2,100	3	138,600	EP/MD/10-085
19 August, 2010			32,800	2,100	3	140,700	EP/MD/10-085
20 August, 2010			32,800	2,100	3	142,800	EP/MD/10-085
21 August, 2010			32,800	2,100	3	144,900	EP/MD/10-085

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Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun

Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground)

Date	Dumping qty (m^3)	Barge Load per day	Accumulated Dumping Qty.	Target Dumping qty (m^3)	Target Barge Load per day	Target Accumulated Dumping Qty.	Permit No.
			(bulk volume)			(bulk volume)	
22 August, 2010			32,800	2,100	3	147,000	EP/MD/10-085
23 August, 2010			32,800	2,100	3	149,100	EP/MD/10-085
24 August, 2010			32,800	2,100	3	151,200	EP/MD/10-085
25 August, 2010			32,800	2,100	3	153,300	EP/MD/10-085
26 August, 2010			32,800	2,100	3	155,400	EP/MD/10-085
27 August, 2010			32,800	2,100	3	157,500	EP/MD/10-085
28 August, 2010			32,800	2,100	3	159,600	EP/MD/10-085
29 August, 2010			32,800	2,100	3	161,700	EP/MD/10-085
30 August, 2010			32,800	2,100	3	163,800	EP/MD/10-085
31 August, 2010			32,800	2,100	3	165,900	EP/MD/10-085
1 September, 2010			32,800	2,100	3	168,000	EP/MD/10-085
2 September, 2010			32,800	2,100	3	170,100	EP/MD/10-085
3 September, 2010			32,800	2,100	3	172,200	EP/MD/10-085
4 September, 2010			32,800	2,100	3	174,300	EP/MD/10-085
5 September, 2010			32,800	2,100	3	176,400	EP/MD/10-085
6 September, 2010			32,800	2,100	3	178,500	EP/MD/10-085
7 September, 2010			32,800	2,100	3	180,600	EP/MD/10-085
8 September, 2010			32,800	2,100	3	182,700	EP/MD/10-085
9 September, 2010			32,800	2,100	3	184,800	EP/MD/10-085
10 September, 2010			32,800	2,100	3	186,900	EP/MD/10-085
11 September, 2010			32,800	2,100	3	189,000	EP/MD/10-085
12 September, 2010			32,800	2,100	3	191,100	EP/MD/10-085
13 September, 2010			32,800	2,100	3	193,200	EP/MD/10-085
14 September, 2010			32,800	2,100	3	195,300	EP/MD/10-085
15 September, 2010			32,800	2,100	3	197,400	EP/MD/10-085
16 September, 2010			32,800	2,100	3	199,500	EP/MD/10-085
17 September, 2010			32,800	2,100	3	201,600	EP/MD/10-085
18 September, 2010			32,800	2,100	3	203,700	EP/MD/10-085
	32,800	47		***203,700***	291		

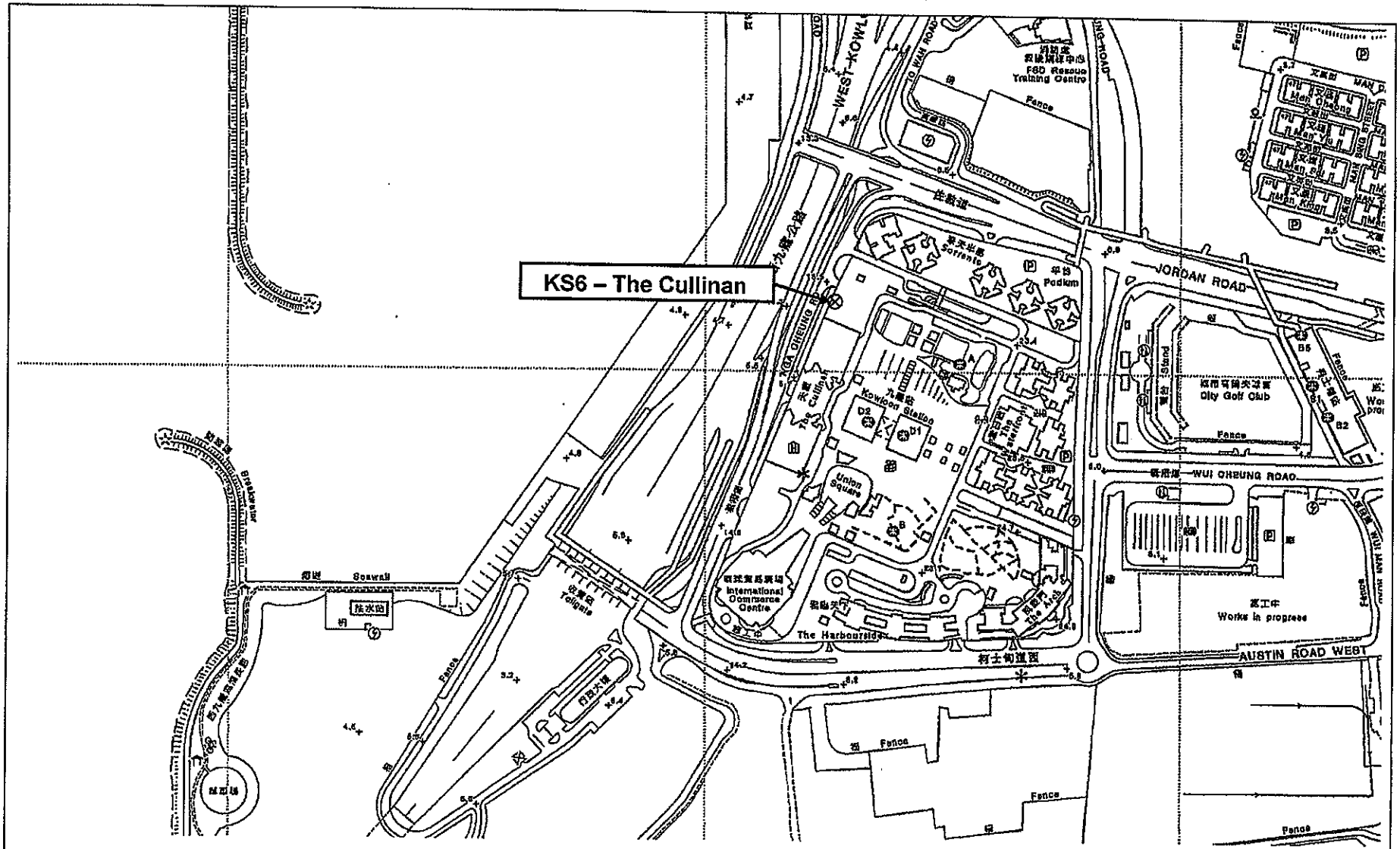
Appendix K

Complaint Log

Complaint Log

Log Ref.	Location	Received Date	Details of Complaint	Investigation / Mitigation Action	Status
001	Portion I – Launch Barge	08/07/2011	One complaint received on 23 June 2011 was forwarded by the Engineer's Representatives on 08 July 2011 through internet from a citizen against urinating into the sea from the Launching Barge which caused by site workers. The complainant complained that that caused an environmental nuisance.	Details of ET Follow up Action(s): During the weekly site inspection on 08 July 2010, the Contractor has provided portable chemical toilet and warming notice on the barge. No urinating was observed during the weekly site inspection. Details of Action(s) Taken by the Contractor: 1. Meeting has been arranged on 29 June 2011 to discuss the safety and environmental issues on launching barge. 2. New disciplinary system has been in place to prevent the same inappropriate act of workers from happening. 3. Additional sanitary facilities have been added on the barge and the nearby area to facilitate the workers need.	Closed

Figures

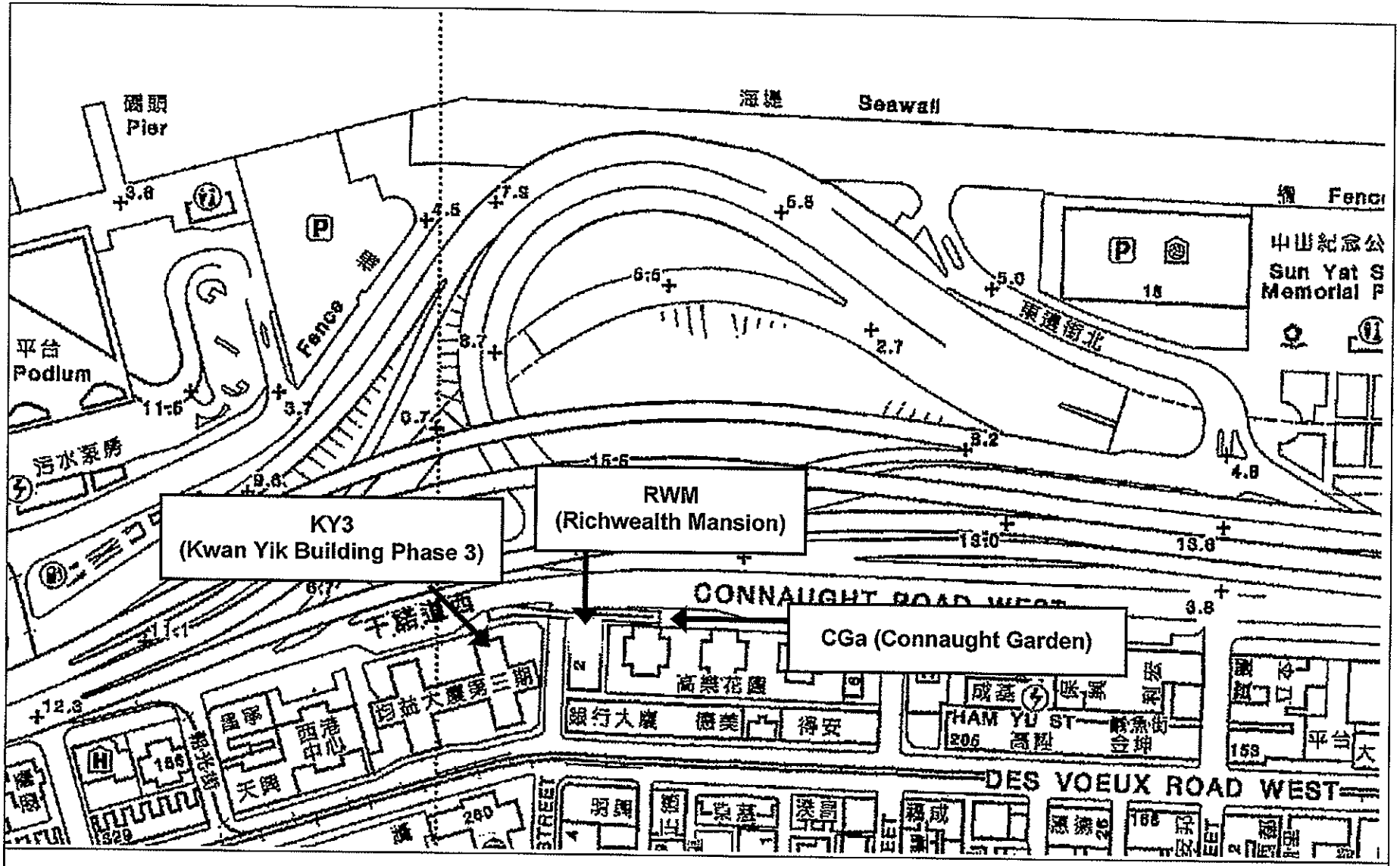


Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Mains for West Kowloon to Sai Ying Pun

Figure 1

Location of Noise Monitoring Station at West Kowloon

東業檢測試顧問有限公司
ETS-TESTCONSULT LIMITED

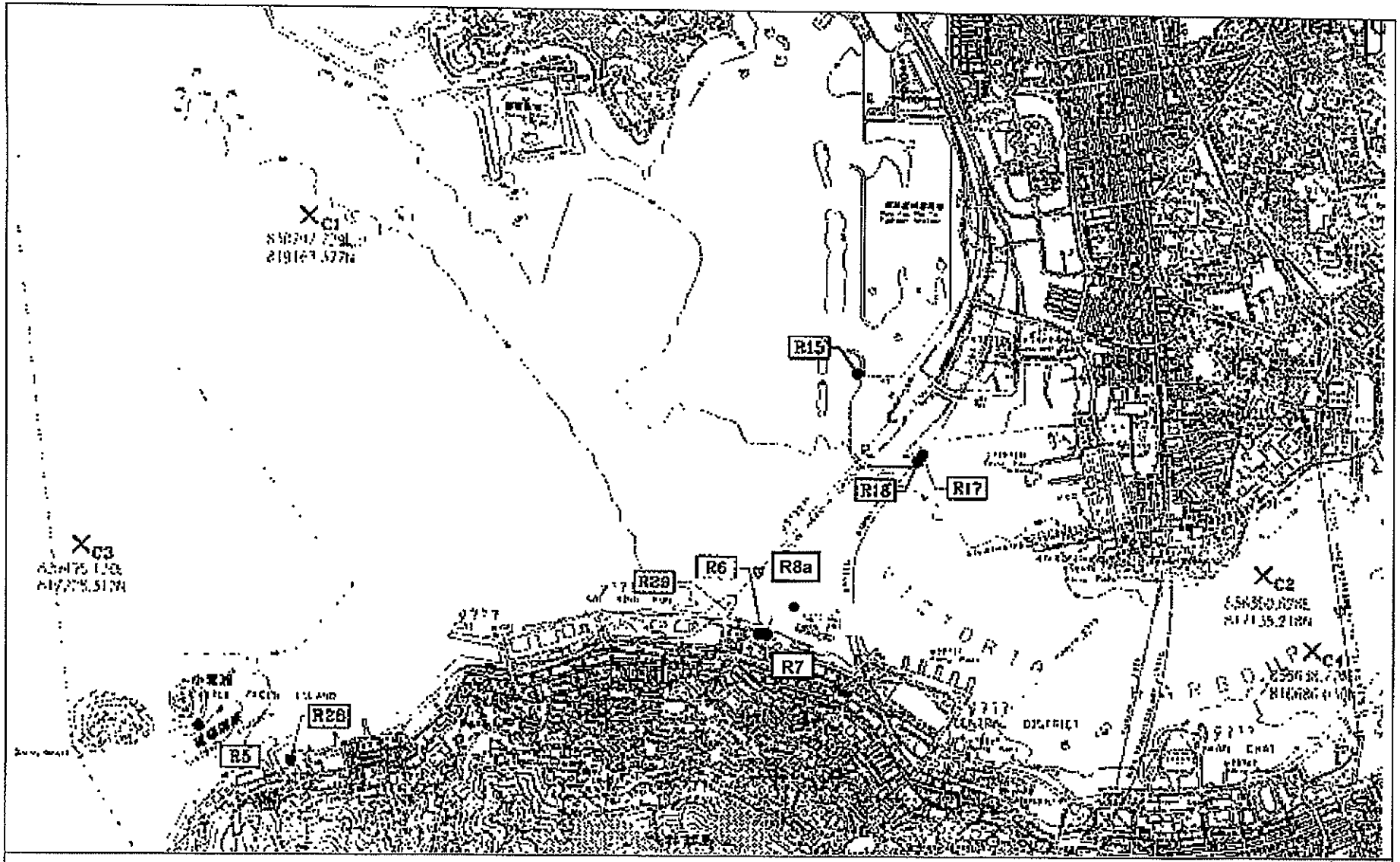


Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Mains for West Kowloon to Sai Ying Pun

Figure 2

Locations of Noise Monitoring Stations at Sai Ying Pun

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

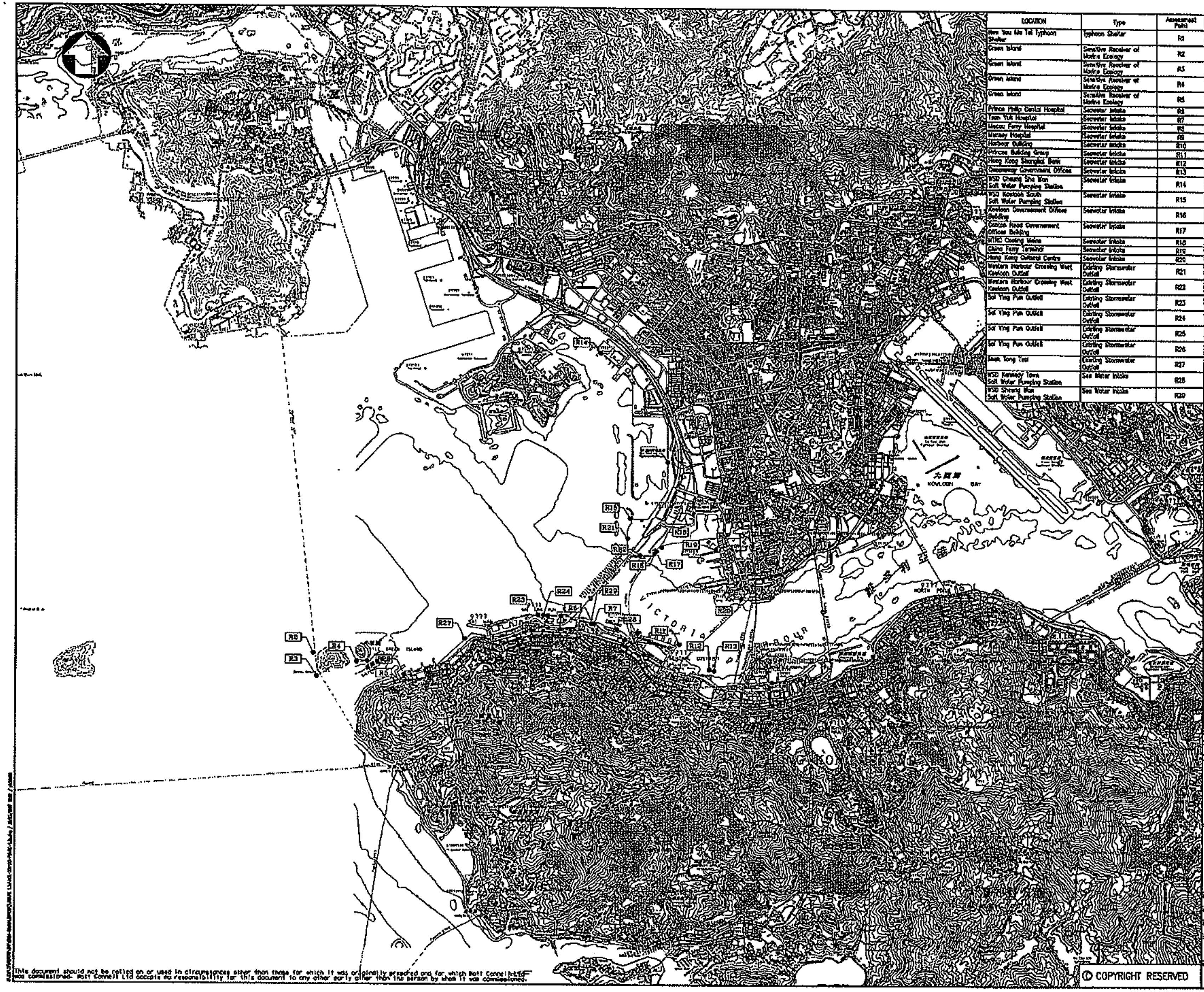


Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Mains for West Kowloon to Sai Ying Pun

Figure 3

Locations of Water Quality Monitoring Stations

ETS-TESTCONSULT LIMITED



LOCATION	Type	Assessment Point
New Yau Ma Tei Typhoon Shelter	Typhoon Shelter	R1
Green Island	Sensitive Receiver of Marine Ecology	R2
Green Island	Sensitive Receiver of Marine Ecology	R3
Green Island	Sensitive Receiver of Marine Ecology	R4
Green Island	Sensitive Receiver of Marine Ecology	R5
Prince Philip Dental Hospital	Seawater Intake	R6
Tsan Yuk Hospital	Seawater Intake	R7
Macau Ferry Terminal	Seawater Intake	R8
[illegible] Hospital	Seawater Intake	R9
Harbour Building	Seawater Intake	R10
Princes Building Group	Seawater Intake	R11
Hong Kong Shanghai Bank	Seawater Intake	R12
Queensway Government Offices	Seawater Intake	R13
WSD Cheung Sha Wan Salt Water Pumping Station	Seawater Intake	R14
WSD Kowloon South Salt Water Pumping Station	Seawater Intake	R15
Kowloon Government Offices Building	Seawater Intake	R16
Canton Road Government Offices Building	Seawater Intake	R17
KTRC Cooling Mains	Seawater Intake	R18
China Ferry Terminal	Seawater Intake	R19
Hong Kong Cultural Centre	Seawater Intake	R20
Western Harbour Crossing West Kowloon Outfall	Existing Stormwater Outfall	R21
Western Harbour Crossing West Kowloon Outfall	Existing Stormwater Outfall	R22
Sai Ying Pun Outfall	Existing Stormwater Outfall	R23
Sai Ying Pun Outfall	Existing Stormwater Outfall	R24
Sai Ying Pun Outfall	Existing Stormwater Outfall	R25
Sai Ying Pun Outfall	Existing Stormwater Outfall	R26
Kwun Tong Tsui	Existing Stormwater Outfall	R27
WSD Kennedy Town Salt Water Pumping Station	Sea Water Intake	R28
WSD Sheung Wan Salt Water Pumping Station	Sea Water Intake	R29

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	06/06	LYK	PRELIMINARY		

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Client: THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION WATER SUPPLIES DEPARTMENT

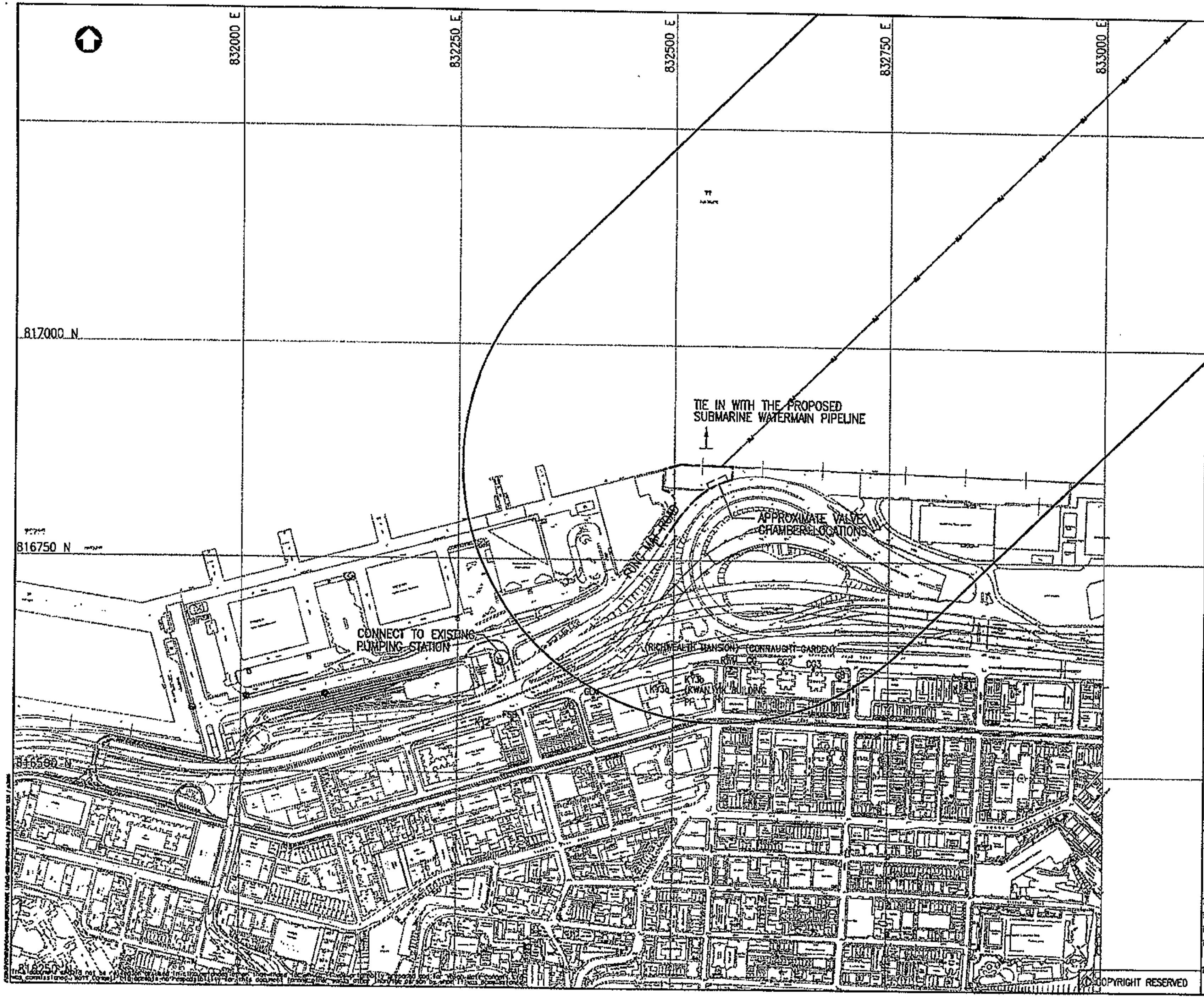
Contract No. CE42/2005(WS)

Project: LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SAI YING PUN – INVESTIGATION

Title: LOCATIONS OF WATER SENSITIVE RECEIVERS AND STORMWATER OUTFALLS AT WESTERN HARBOUR

Drawn: LYK
Scale: 1 : 25000@A1
Project: 228133

FIGURE 1.2a
Rev A



A	08/05	LYK	PRELIMINARY
Rev	Date	Drawn	Description

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THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION
WATER SUPPLIES DEPARTMENT

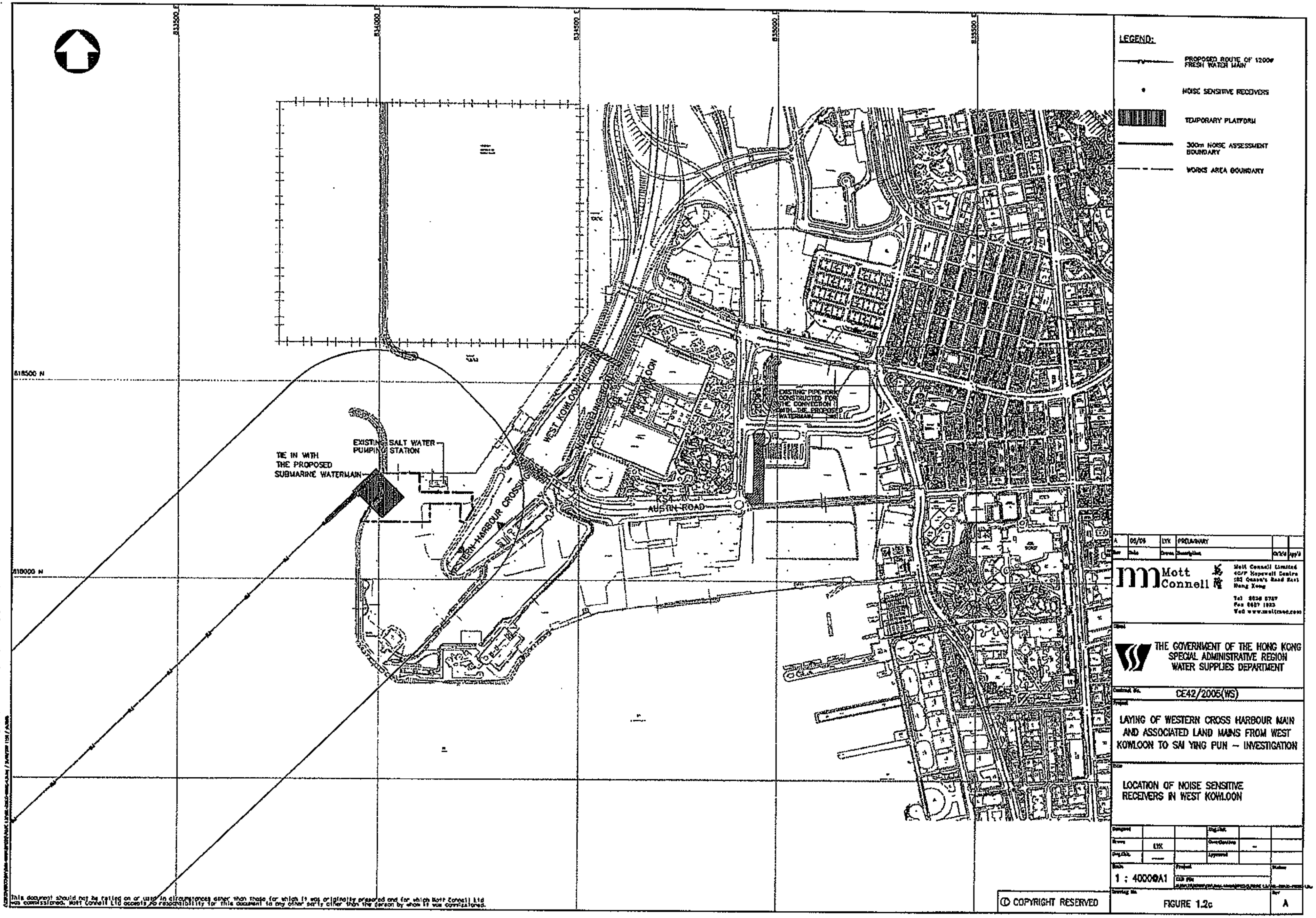
Contract No. CE42/2005(WS)

Project: LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SAI YING PUN – INVESTIGATION

Title: LOCATIONS OF NOISE SENSITIVE RECEIVERS IN SAI YING PUN

Drawn: LYK
Scale: 1 : 2000@A1

Drawing No. FIGURE 1.2b
Rev A



LEGEND:
PROPOSED ROUTE OF 1200Ø FRESH WATER MAIN
NOISE SENSITIVE RECEIVERS
TEMPORARY PLATFORM
300m NOISE ASSESSMENT BOUNDARY
WORKS AREA BOUNDARY
EXISTING SALT WATER PUMPING STATION
TIE IN WITH THE PROPOSED SUBMARINE WATERMAIN
EXISTING PIPEWORK CONSTRUCTED FOR THE CONVERSION WITH THE PROPOSED WATERMAIN
WEST KOWLOON HIGHWAY
AUSTIN ROAD
818500 N
818000 N
833500 E
834000 E
834500 E
835000 E
835500 E
A 05/06 LYK PRELIMINARY
Mott Connell
Mott Connell Limited
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183 Queen's Road East
Hong Kong
THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION WATER SUPPLIES DEPARTMENT
CE42/2005(WS)
LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SAI YING PUN – INVESTIGATION
LOCATION OF NOISE SENSITIVE RECEIVERS IN WEST KOWLOON
1 : 4000@A1
FIGURE 1.2c
A