Monthly Environmental Monitoring & Auditing Report for

Drainage Diversion Works for the Comprehensive Residential Development at Various Lots in DD227 & DD229, Tai Po Tsai, Sai Kung

May 2013

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APPROVAL SHEET

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and Verified by:

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Mr. Tony Cheng
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EXECUTIVE SUMMARY

This is the ninth monthly Environmental Monitoring and Audit (EM&A) Report for Drainage Diversion Works for the Comprehensive Residential Development at Various Lots in DD227 & DD229, Tai Po Tsai, Sai Kung under New World Project Management Ltd. This report concludes the impact monitoring for the activities undertaken during the period from 1st of May 2013 to 31st May 2013. The major site activities in this reporting period were mainly stream course diversion works and regular tree maintenance.

The Environmental Team (ET) is responsible for the EM&A works required in the Particular Specifications (PS). Site inspections were carried out on weekly basis to investigate and audit the equipment and work methodologies with respect to pollution control and environmental mitigation. The weekly inspections and photos records were kept.

Noise, water quality and air quality monitoring were performed during the reporting period. Results were compared with the established Action/Limit (A/L) level.

In general, waste management was satisfactory during the reporting period.

Impact monitoring for construction noise and air quality was conducted in the reporting period. No exceedance of A/L level was reported.

Furthermore, impact monitoring for water quality was conducted. Total 4 numbers of Limit Level exceedance were recorded in this reporting period. For the non-compliance events, it was believed that the exceedance records at W2 were caused by adverse weather and natural fluctuation, since the record of SS and turbidity at control station has been recorded relatively high. Therefore, the exceedances records at W2 were unlikely to be related to this project.

There was no complaint, notification of any summons and successful prosecutions against the project received during the reporting period.

It is expected that noise, water quality and air quality impacts may be resulted from the site works. ET has reminded the contractor to provide environmental

pollution control measures wherever necessary and to keep a good environmental management at site practice. The recommended mitigation measures proposed for the project as well as implementation status can refer to section 13.3.

The ET will continue to implement the environmental monitoring & audit programme in accordance with the PS and Environmental Permit requirement.

1 Introduction

This is the ninth monthly Environmental Monitoring and Audit (EM&A) Report for Drainage Diversion Works for the Comprehensive Residential Development at Various Lots in DD227 & DD229, Tai Po Tsai, Sai Kung under New World Project Management Ltd.. The site layout plan is shown in **Appendix A**. The Environmental Team, Environmental Pioneers & Solutions Limited was appointed by Hip Seng Construction Co. Ltd. to prepare the report. The report is to be submitted to the Contractor, the Engineer and the IEC.

This report presents the results of the environmental monitoring of the project activities conducted within the reporting period from 1st May 2013 to 31st May 2013. This report included the noise monitoring, water quality monitoring, air quality monitoring and regular site inspections for verification of implementation of the mitigation measures as recommended in the Environmental Permit (FEP-02/428/2011/A) (EP), PS and the Contractor's Environmental Management Plan (EMP).

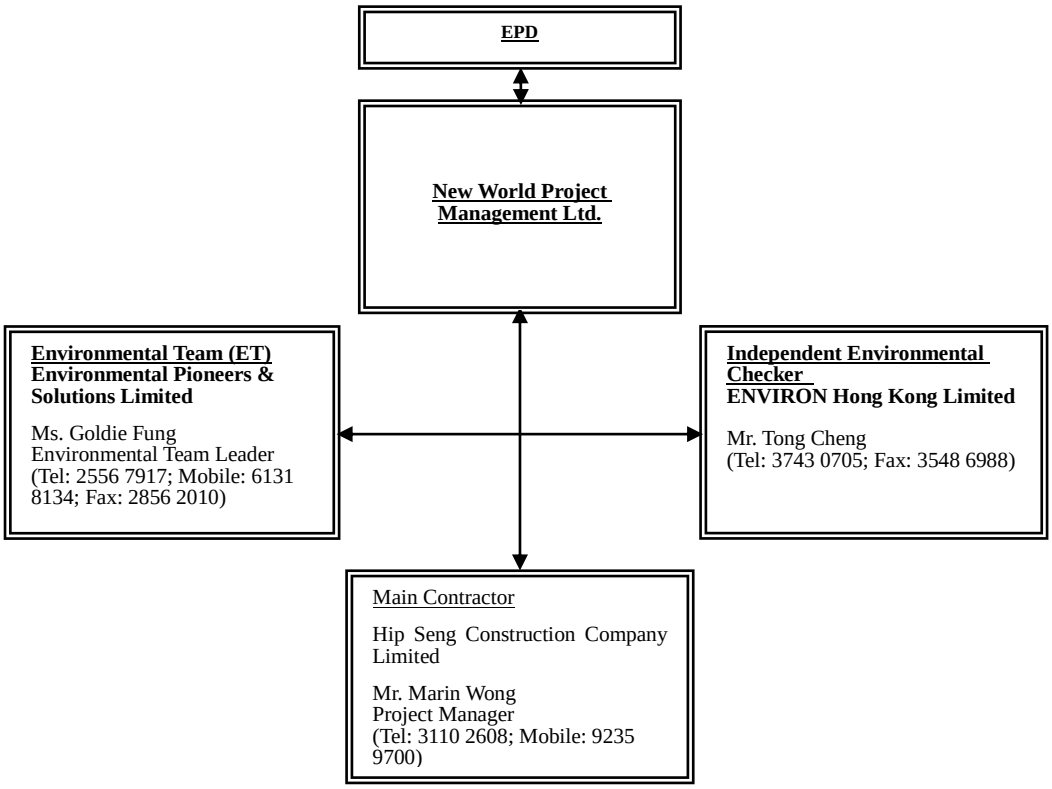
2 Project Information

Construction works of "Drainage Diversion Works for the Comprehensive Residential Development at Various Lots in DD227 & DD229, Tai Po Tsai, Sai Kung" project has been commenced in Sep 2012 and is expected to completed by July 2013. Construction master program is shown in **Appendix A**.

3 Project Organization

The Main Contractor, Hip Seng Construction Company Limited, has commissioned Environmental Pioneers & Solutions Limited as the Environmental Team, which comprises the environmental team leader, the environmental technicians to undertake the environmental monitoring and audit work for this project.

The Environmental management structure is shown in Fig. 3.1



3.1 Key personal contact information chart

Detail contact of key persons involved in environmental aspect of the project is shown in **Appendix B**.

4 Construction Stage

4.1 Construction Activities in Reporting Period

Major activities in the reporting period included the followings:

- Stream course diversion works
- Regular tree maintenance

4.2 Construction Activities for Coming Months

Proposed key construction works in the coming month will include:

- Stream diversion works
- Regular tree maintenance

4.3 Environmental Status

The site layout plan is shown in **Appendix A**.

Locations of the monitoring and control stations with environmental sensitive receivers are presented in Section 5.3, 6.3, and 7.3 for noise monitoring, water quality monitoring, and air quality monitoring respectively.

5 Noise Monitoring

5.1 Monitoring Parameters and Methodology

The construction noise level was measured in terms of the A-weighted equivalent continuous sound pressure level (L_{eq}). $L_{eq\ (30minutes)}$ was used as the monitoring parameter for the impact monitoring in the time period between 0700 to 1900 hours on normal weekdays. For all other time period, $L_{eq\ (5minutes)}$ was employed for comparison with the Noise Control Ordinance (NCO) criteria.

Noise measurement results obtained from each monitoring location were recorded in the Construction Noise Monitoring Data Sheet immediately after the measurement. As supplementary information for data auditing, statistical results L_{10} and L_{90} were also be recorded for reference.

In case of non-compliance with the construction noise criteria, more frequent monitoring, as specified in the Action plan in Table 5.7.2, shall be carried out. This additional monitoring shall be carried out until the recorded noise levels are rectified or proved to be irrelevant to the construction activities.

5.2 Monitoring Equipment

The sound level meters and calibrators comply with the International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1) specifications as referred to in the Technical Memorandum (TM) to the Noise Control Ordinance was deployed as monitoring equipment for noise measurement.

Noise measurement was not be made in the presence of fog, rain, wind with a steady speed exceeding $5ms^{-1}$ or wind with gust exceeding $10ms^{-1}$. Thus wind speed was checked by the portable wind speed indicator capable of measuring the wind speed in m/s. Table 5.2.1 summarizes the equipment list for noise monitoring

Table 5.2.1 Equipment List for Noise Monitoring

Equipment	Manufacturer & Model No.	Precision Grade	Qty
Integrated sound level meter	Svantek 955	IEC 651 Type 1 IEC 804 Type 1	1
Acoustical calibrator	Svantek SV30A	IEC 942 Type 1	1
Remarks: Calibration details of the sound level meter and acoustical calibrator are given in **Appendix C** for reference			

5.3 Monitoring Locations

According to the PS, impact noise monitoring was undertaken at four locations during the construction phase of the project. The monitoring locations are summarized in Table 5.3.1 and are shown in Figure 5.3.1.

Noise measurement for N4 location was taken at a point 1m from the exterior of the selected premises and at a height with no disturbance to the dweller and least obstructed view, so that façade measurement was made for monitoring location N4 and the free field measurements were made for monitoring locations N1, N2 and N3.

Table 5.3.1 Noise Monitoring Locations during Construction Phase

Identification No.	Noise Monitoring Locations
N1	Staff Quarters 1-12, HKUST
N2	174, Lots in DD227 & DD229, Tai Po Tsai, Sai Kung
N3	152A, Lots in DD227 & DD229, Tai Po Tsai, Sai Kung
N4	109, Lots in DD227 & DD229, Tai Po Tsai, Sai Kung

In accordance with the requirements in the PS, weekly impact monitoring was conducted. For the time period between 0700 and 1900 hours on normal weekdays, and noise parameter of $L_{eq\ (30minutes)}$ was measured. As if the construction works were carried out during restricted period (i.e. 1900-2300, 2300-0700 of next day and Sundays / general holiday), impact monitoring that comprises 3 consecutive $L_{eq\ (5minutes)}$ would be carried out.

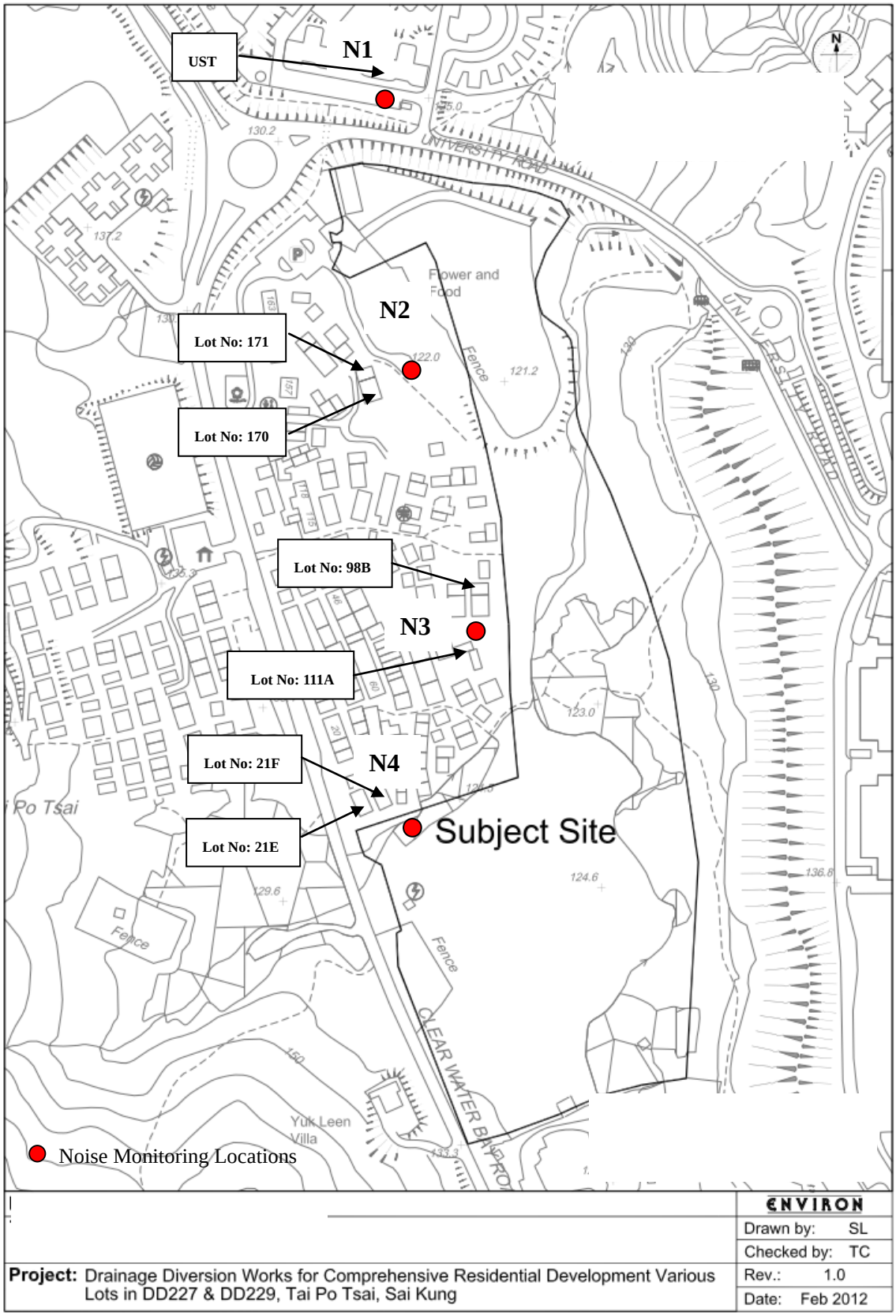


Figure 5.3.1 Impact noise monitoring locations

5.4 Monitoring Frequency

The regular monitoring for each location was performed on a basis of once in every 6 days.

Monitoring was carried out on 1st, 7th, 13th, 18th, 24th and 30th of May 2013.

5.5 Monitoring Results and Interpretation

Relevant details of the noise monitoring results are presented in Table 5.5.1. The results of N1 ranged between 59.8dB (A) and 62.3dB (A), N2 ranged between 59.4dB (A) and 63.2dB (A), N3 ranged between 57.9dB (A) and 62.8dB (A) and N4 ranged between 59.6dB (A) and 66.9dB (A) were within the limit levels and therefore no exceedance was found.

Table 5.5.1 Noise Monitoring Results for the reporting month

Location	Parameter	Date	Time	L_{Aeq} dB(A)	Limit dB(A)	Exceedance	Weather
*N1	Leq30min	1-May-13	13:20	60.5	75	N	Sunny
*N1	Leq30min	7-May-13	9:30	60.2	75	N	Sunny
*N1	Leq30min	13-May-13	10:25	61.6	75	N	Sunny
*N1	Leq30min	18-May-13	13:07	59.8	75	N	Cloudy
*N1	Leq30min	24-May-13	12:45	62.3	75	N	Cloudy
*N1	Leq30min	30-May-13	11:20	60.3	75	N	Sunny
*N2	Leq30min	1-May-13	14:00	63.1	75	N	Sunny
*N2	Leq30min	7-May-13	11:15	63.2	75	N	Sunny
*N2	Leq30min	13-May-13	11:15	60.4	75	N	Sunny
*N2	Leq30min	18-May-13	11:30	61.7	75	N	Cloudy
*N2	Leq30min	24-May-13	11:15	63.1	75	N	Cloudy
*N2	Leq30min	30-May-13	13:01	59.4	75	N	Sunny
*N3	Leq30min	1-May-13	10;30	57.9	75	N	Sunny
*N3	Leq30min	7-May-13	10:15	60.5	75	N	Sunny
*N3	Leq30min	13-May-13	11:58	59.3	75	N	Sunny
*N3	Leq30min	18-May-13	10:00	62.1	75	N	Cloudy
*N3	Leq30min	24-May-13	10:25	62.8	75	N	Cloudy
*N3	Leq30min	30-May-13	9:30	61.2	75	N	Sunny

N4	Leq30min	1-May-13	11:15	60.3	75	N	Sunny
N4	Leq30min	7-May-13	14:20	66.9	75	N	Sunny
N4	Leq30min	13-May-13	9:15	60.1	75	N	Sunny
N4	Leq30min	18-May-13	10:45	64.9	75	N	Cloudy
N4	Leq30min	24-May-13	9:15	59.6	75	N	Cloudy
N4	Leq30min	30-May-13	10:15	64.8	75	N	Sunny

*The equivalent noise level of N1, N2 and N3 is corrected by +3dB(A).

Remarks: Raw datasheet for noise monitoring are attached in **Appendix D** for reference.

5.6 Action and Limit Level for Construction noise

The Action and Limit (A/L) levels for construction noise are defined in Table 5.6.1. Should non-compliance of the criteria occur, action in accordance with the Action Plan in Table 5.6.2 should be carried out.

There was no exceedance recorded in the reporting period.

Table 5.6.1 Action and Limit Levels for Construction Noise at All Sensitive Receivers

Time Period	**Action**	**Limit**
Daytime 0700 – 1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A)*
1900 – 2300 on all days and 0700 – 2300 on general holidays (including Sundays)		60/65/70 dB(A)**
2300 – 0700 on all days		45/50/55 dB(A)**

Table 5.6.2 Event / Action Plan for Construction Noise

EVENT	ET Leader	IEC	ER	CONTRACTOR
Exceedance for one sample in Action Level	1. Identify source, investigate the causes of exceedance and propose remedial measures. 2. Inform ER, IEC and Contractor. 3. Repeat measurement to confirm finding. 4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET. 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice. 2. Amend working methods if appropriate.

Exceedance for two or more consecutive samples in Action Level.	1. Identify source, investigate the causes of exceedance and propose remedial measures. 2. Inform IEC and Contractor. 3. Repeat measurements to confirm findings. 4. Increase monitoring frequency to daily. 5. Discuss with IEC and Contractor on remedial actions. 6. If exceedance continues, arrange meeting with IEC and ER. 7. If exceedance stops, cease additional monitoring.	1. Checking monitoring data submitted by ET. 2. Check Contractor's working method. 3. Discuss with ET and Contractor on possible remedial measures. 4. Advise the ER on the effectiveness of the proposed remedial measures. 5. Supervisor implementation of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify Contractor. 3. Ensure remedial measures properly implemented.	1. Submit proposals for remedial actions to IEC within three working days of notification. 2. Implement the agreed proposals. 3. Amend proposals if appropriate.

Exceedance for on sample in Limit Level	1. Identify source, investigate the causes lof exceedance and propose remedial measures. 2. Inform ER, Contractor and EPD. 3. Repeat measurement to confirm finding. 4. Increase monitoring frequency to daily. 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Checking monitoring data submitted by ET 2. Check Contractor's working method 3. Discuss with ET and Contractor on possible remedial measures 4. Advise the ER on the effectiveness of the proposed remedial measures. 5. Supervisor implementation of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify Contractor. 3. Ensure remedial measures properly implemented.	1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial actions to IEC within three working days of notification. 3. Implement the agreed proposals. 4. Amend proposal if appropriate.

Exceedance for two or more consecutive samples in Limit Level	1. Identify source, investigate the causes of exceedance and prpose remedial measures. 2. Notify IEC, ER, Contractor and EPD. 3. Repeat measurement to confirm findings. 4. Increase monitoring frequency to daily. 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented. 6. Arrange meeting with IEC and ER to discuss the remedial actions to be	1. Discuss amongst ER, ET and Contractor on the potential remedial actions. 2. Review Contractor's remedial actios whenever necessary to assure their effectiveness and advise the ER accordingly. 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify Contractor. 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented. 4. Ensure remedial measures properly implemented 5. If exceedance continues consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated remedial	1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial actions to IEC within three working days of notification. 3. Implement the agreed proposals. 4. Resubmit proposals if problem still not under control. 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

	informed of the results 8. If exceedance stops, cease additional monitoring			

5.7 Monitoring Schedule for the next reporting period

Noise monitoring schedule is proposed to be carried out on 5th, 11th, 17th, 22nd, and 28th of June 2013.

6 Water Monitoring

6.1 Water Quality Monitoring Parameters and Methodology

Turbidity in Nephelometric Turbidity Unit (NTU), and Dissolved Oxygen (DO) in mg/L, temperature, water depth and pH measurements were in-situ measurements and suspended solids measurements were performed by a HOKLAS accredited laboratory using recommended reference method APHA 2540D.

6.2 Monitoring Equipment

Turbidity, DO, Salinity, pH and temperature was measured by an instrument complied with the following requirements:

The instrument is a portable as well as weatherproof multimeter complete with cable and uses a DC power source. It is capable of measuring:

- A turbidity between 0-1000NTU;
- A dissolved Oxygen level in the range of 0-20mg/L and 0-200% saturation;
- A temperature of 0-50^{o}C;
- pH in the range of 0-14.

The measurements were performed by a portable and weatherproof multi-meter. The equipment was calibrated and verified by certified laboratory every 3 months to ensure they perform to the same level of accuracy as stated in the manufacturer's specification. Detailed calibration records of the multi-meter were shown in **Appendix C** for reference

Suspended solids were determined by the water samples collected from the monitoring locations for further analysis in accredited HOKLAS laboratory. Water samples were contained by polythene bottles, packed in ice (cooled in 4^{o}C without frozen) and delivered to the laboratory for analysis as soon as possible after collection.

Since water depths for all monitoring stations were less than 0.5m during the impact measurement period, only mid-depth level was monitored. The

monitoring parameters and measurement methods of water quality monitoring are summarized in Table 6.2.1.

Table 6.2.1 – Water Quality Monitoring Parameters and Measurement Methods

Parameter	Measurement Method
Temperature (°C)	*in-situ*
Turbidity (NTU)	
pH	
Dissolved Oxygen (mg/L and %)	
Suspended Solids (mg/L)	Reference method APHA 2540D

6.3 Monitoring Locations

In accordance with the PS, monitoring stations were established at two locations, which are summarized in Table 6.3.1.

Table 6.3.1 – Water Quality Monitoring Locations

Monitoring Station	Coordinates	
	Easting	Northing
W1 (upstream)	E:844944	N:821720
W2 (downstream)	E:844959	N:822249

As illustrated in Figure 6.3.1, W1 served as the control station while W2 was the monitoring location of water quality.

In accordance with the PS, measurements shall be taken at 3 water depths, namely, 1m below water surface, mid-depth and 1m above river bed, except where the water depth less than 6m, the mid-depth station may be omitted. Should the water depth be less than 3m, only the mid-depth station will be monitored.

As the depth of water was less than 3m, water samples were collected at mid-depth of each monitoring stations for measurements and sample collection.

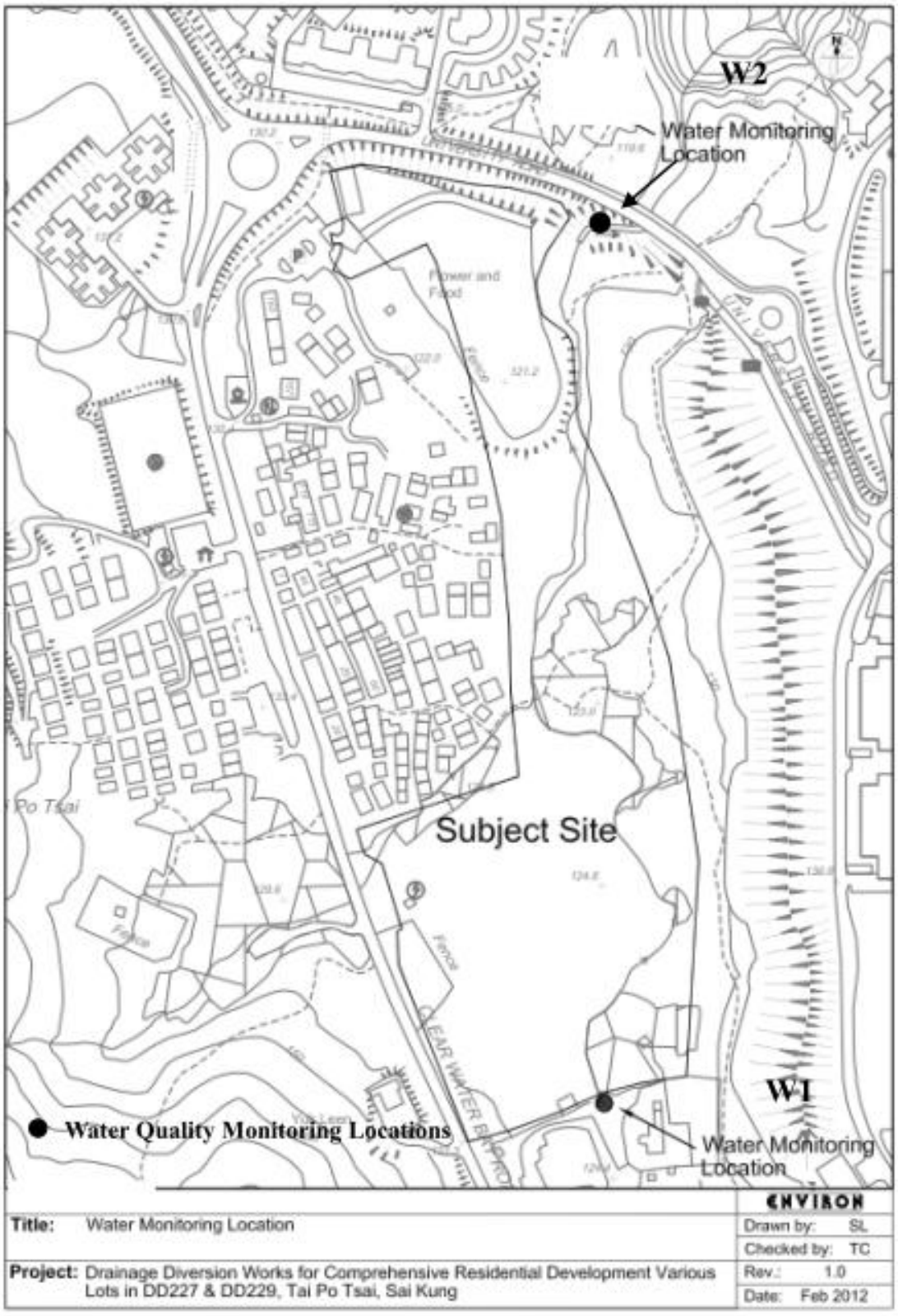


Figure 6.3.1 Water Quality Monitoring Locations

6.4 Monitoring Frequency

Water quality monitoring for each monitoring station was performed at mid-flood or mid-ebb tides for 3 days per week during the course of the construction river works.

Monitoring was carried out on 2nd, 4th, 7th, 9th, 11th, 14th, 16th, 18th, 21st, 23rd, 25th, 28th and 30th of May 2013.

For the exceedances, the repeated measurements were carried out on 22nd and 27th of May 2013.

6.5 Monitoring Results and Interpretation

Water quality monitoring was carried out thirteen times in this reporting month. Detailed on-site measurements are shown in Appendix E. Table 6.5.1 presents consolidated results throughout the reporting month.

There were 4 numbers of Limit Level exceedance (Turbidity & SS) were record in this reporting period as shown in Table 6.5.2. ET has arranged site investigations for the abnormal incidents on same day and found that no construction activities had been carried out at the river bed. It was believed that the exceedances of water quality were not affected by the construction activities. According to the site investigation, we believed that the exceedance records at W2 were caused by adverse weather and natural fluctuation. Therefore, the exceedances records at W2 were unlikely to be related to this project.

Table 6.5.1 Summary of Water Quality Monitoring Results of this reporting month

	Average of Monitoring Results					
	Temperature (°C)	*Turbidity (NTU)*	*pH*	*Dissolved Oxygen (mg/L)*	*Dissolved Oxygen (%)*	*Suspended Solids (mg/L)*
W1	23.8	7.2	8.04	8.18	89.4	12.54
W2	23.4	8.1	7.95	8.29	90.3	13.46

Table 6.5.2 4 numbers of Limit Level exceedance during the reporting month

Date	Location	Parameter		Interpretations
		Turbidity (NTU)	SS (mg/l)	
9/5/2013	W1	N/A	31.0	Exceedance was caused by adverse weather
	W2	N/A	33.0	
21/5/2013	W1	42.6	72.0	Exceedance was caused by adverse weather
	W2	34.8	56.0	
25/5/2013	W1	16.4	N/A	Exceedances were caused by adverse weather
	W2	15.1	N/A	

*Repeated measurement.

6.6 Action and Limit Level for Water Quality

Based on the criteria stipulated in PS (Table 6.6.1) and baseline water quality monitoring data obtained, the A/L levels are shown in Table 6.6.2. The A/L levels for W1 were ignored since W1 functions as the control station for the project. If the water quality monitoring results at any impact stations exceeded the criteria, the actions in accordance with the Event and Action Plan in Table 6.6.3 should be taken.

Total 4 numbers of Limit Level exceedance were recorded during the reporting period. The repeated measurements were carried out on the 22nd and 27th of May 2013. And, the site inspection for the exceedance was carried out at the same day. We found that the exceedances of water quality at W2 were not to be related to the project.

Table 6.6.1 Action and Limit Levels for Water Quality at All Monitoring Stations

Parameters	Action	Limit
DO in mg/L	5 percentile of baseline data	4 mg/L or 1 percentile of baseline data
SS in mg/L	95 percentile of baseline data or 120% of upstream control station's SS recorded on the same day	99 percentile of baseline data or 130% of upstream control station's SS recorded on the same day

Turbidity in NTU	95 percentile of baseline data or 120% of upstream control station's Turbidity recorded on the same day	99 percentile of baseline data or 130% of upstream control station's Turbidity recorded on the same day
pH	<6.5 or >8.4 or > the upstream control station's pH recorded on the same day	<6.0 or >9.0

Table 6.6.2 Action and Limit Levels for Water Quality at All Monitoring Stations

Parameters	**Monitoring Stations**	
	W2	
	Action Level	**Limit Level**
DO in mg/L	6.42	6.24
SS in mg/L	18.9	19.8
Turbidity in NTU	6.2	6.2
pH	<6.5 or >8.4	<6.0 or >9.0

Remarks:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For SS and Turbidity, non-compliance of the water quality limits occurs when monitoring results is higher than the limits.
3. For pH, for the action level, reference is made to the data recorded at EPD' river monitoring stations at the nearby Tseng Lan Shue Stream (JR3, JR6 and JR22) from year 2006 to 2010; while the limit level is referring to the water quality objective for Inland Water of Junk Bay Water Control Zone.

Table 6.6.3 Event and action Plan for Water Quality

Event	ET Leader	IEC	ER	Contractor
ACTION LEVEL				
Exceedance for one sample day	1. Repeat in-site measurement to confirm findings. 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. 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; 3. Assess effectiveness of the implemented mitigation measures.	1. Discuss with IEC on the proposed mitigation measures. 2. Make agreement on mitigation measures to be implemented. 3. Assess effectiveness of implemented mitigation measures.	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, IEC and propose mitigation measures to IEC and ER. 6. Implement the agreed mitigation measures.

Exceedance for more than one consecutive sampling days	1. Repeat in-situ measurements to confirm findings. 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. 8. Repeat measurement on next day of exeedance.	1. Discuss with ET and Contractor on the mitigation measures. 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly. 3. Assess 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. 3. Assess effectiveness of the implemented mitigation measures.	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 within three working days. 6. Implement the agreed mitigation measures.
LIMIT LEVEL				

Exceedance for one sampling day	1. Repeat in-situ measurements to confirm findings. 2. Identify source(s) of impact. 3. Inform EPD, IEC, Contractor. 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. 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. 3. Assess effectiveness of the implemented mitigation measures.	1. Discuss with IEC, ET and Contractor on the proposed mitigation measures. 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.	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, IEC and ER and propose mitigation measures to IEC and ER within three working days. 6. Implement the agreed mitigation measures.
Exceedance for more than on consecutive sampling	1. Repeat in-situ measurements to confirm findings. 2. Identify	1. Discuss with ET and Contractor on the mitigation	1. Discuss with IEC, ET and Contractor on the	1. Inform the ER and confirm notification of the

days	source(s) of impact. 3. Inform EPD, IEC and Contractor. 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. 7. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days.	measures. 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly. 3. Assess the effectiveness of the implemented mitigation measures.	proposed mitigation measures. 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. 5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the work until no	non-compliance in writing. 2. Rectify unacceptable practice. 3. Check all plant and equipment. 4. Consider changes of working methods. 5. Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within three working days. 6. Implement the agreed mitigation measures. 7. As directed by the ER, to slow down or to stop all or part of the work or construction activities.

			exceedance of Limit Level.	

6.7 Monitoring Schedule for Next Reporting Period

Water quality monitoring schedule is proposed to be carried out on 1st, 4th, 6th, 8th, 11th, 13th, 15th, 18th, 20th, 22nd, 25th, 27th and 29th of June 2013.

7 Air Quality Monitoring

7.1 Monitoring Methodology and Parameters

1-hr and 24-hrs air quality monitoring have been carried out during the reporting period.

Measurements of 1-hr TSP monitoring were taken by a Dust Trak aerosol monitor or its equivalent that is a portable and battery-operated laser photometer capable of performing real time 1-hr TSP measurements.

24-hrs TSP was measured by the High Volume Sampler. The filter papers for each monitoring locations were sent to the accredited HOKLAS laboratory for further analysis.

Other relevant data such as monitoring location, time, weather conditions and any other special phenomena at the construction site were recorded during the measurement period.

7.2 Monitoring Equipment

24-hrs TSP was measured by the High Volume Sampler. And the 3 sets of 1-hr TSP were carried out by the portable dust meter. The measurement equipments are listed in Table 7.2.1 and Calibration Certificates of the equipments are shown in **Appendix C**.

Table 7.2.1 Air Quality Monitoring Equipments

Equipment	Manufacturer & Model No.	Parameter	Qty
Laser Dust Monitor	1. AM510 2. SIBATA/LD-3B	1-hr TSP	2
High Volume Sampler	TE-5025A	24-hrs TSP	4

7.3 Monitoring Locations

Monitoring locations were established at 4 locations, which are summarized in Table 7.3.1 and are shown in Figure 7.3.1

Table 7.3.1 Air Quality Monitoring Locations

Identification No.	TSP Monitoring Locations
D1	Staff Quarters 1-12, HKUST
D2	174, Lots in DD227 & DD229, Tai Po Tsai, Sai Kung
D3	152A, Lots in DD227 & DD229, Tai Po Tsai, Sai Kung
D4	109, Lots in DD227 & DD229, Tai Po Tsai, Sai Kung

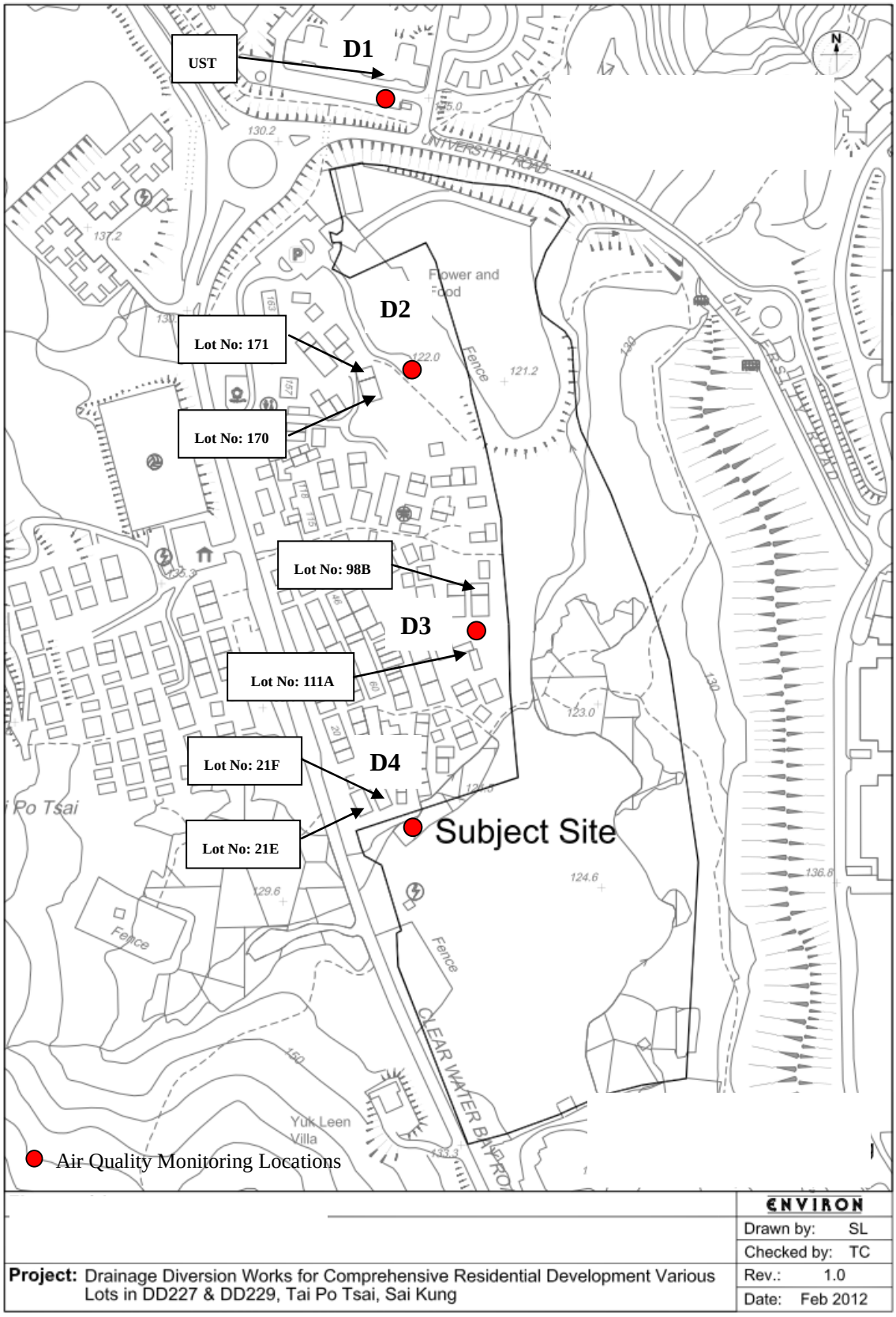


Figure 7.3.1 Air Quality Monitoring Locations

7.4 Monitoring Frequency

For 1-hr and 24-hr TSP monitoring, the sampling frequency of at least once in every six days.

Monitoring was carried out on 1st, 7th, 13th, 18th, 24th and 30th of May 2013.

7.5 Monitoring Results and Interpretation

1-hr TSP and 24-hrs TSP were carried out during this reporting. And, no exceedance was recorded.

1-hr TSP monitoring was conducted at four designated monitoring locations. The monitoring results are summarized in Table 7.5.1.

Table 7.5.1 A summarized of average 1-hr TSP monitoring data

Location	Range (µg/m3) (Min – Max)	Average (µg/m3)
D1	24-119	64.2
D2	32-119	60.1
D3	37-98	65.6
D4	47-97	69.2

24-hrs TSP monitoring data was obtained at four designated monitoring locations. The monitoring results are summarized in Table 7.5.2.

Table 7.5.2 A summarized of average 24-hrs TSP monitoring data

Location	Range (µg/m3) (Min – Max)	Average (µg/m3)
D1	6.9-57.1	33.1
D2	7.4-66.0	32.2
D3	7.7.-66.6	31.7
D4	19.5-68.6	40.2

Details of the monitoring data were presented in **Appendix F**.

7.6 Action and Limit Level for 1-hr TSP and 24-hrs TSP

The Action and Limit levels for all monitoring stations are summarized in Table 7.6.1 and Table 7.6.2, which would be applied for compliance assessment of air quality for this project. If the air quality monitoring results at any impact stations exceeded the criteria, the actions in accordance with the Event and Action Plan in Table 7.6.3 should be taken.

Table 7.6.1 Action and Limit Levels for 1-hr TSP at All Monitoring Stations

Monitoring Station	Monitoring Frequency	Action Level	Limit Level
D1	1-hr	285.6 µg/m^3	500 µg/m^3
D2		279.4 µg/m^3	500 µg/m^3
D3		289.4 µg/m^3	500 µg/m^3
D4		284.3 µg/m^3	500 µg/m^3

Table 7.6.2 Action and Limit Levels for 24-hrs TSP at All Monitoring Stations

Monitoring Station	Monitoring Frequency	Action Level	Limit Level
D1	24-hrs	156.4 µg/m3	260 µg/m^3
D2		153.8 µg/m3	260 µg/m^3
D3		155.2 µg/m3	260 µg/m^3
D4		158.0 µg/m^3	260 µg/m^3

Table 7.6.3 Event and action Plan for Air Quality

Event	ET Leader	IEC	ER	Contractor
ACTION LEVEL				
Exceedance for one sample	1. Identify source, investigate the cause s of exceedance and propose remedial measures. 2. Inform ER , IEC and Contractor. 3. Repeat measurement to confirm finding. 4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET. 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice. 2. Amend working methods if appropriate.
Exceedance for two or more consecutive samples	1. Identify source, investigate the causes of exceedance and propose remedial measures. 2. Inform IEC and Contractor. 3. Repeat measurements	1. Checking monitoring data submitted by ET. 2. Check Contractor's working method. 3. Discuss with ET and Contractor on Possible	1. Confirm receipt of notification of failure in writing. 2. Notify Contractor. 3. Ensure remedial measures properly	1. Submit proposals for remedial actions to IEC within three working days of notification. 2. Implement the agreed proposals. 3. Amend

	to confirm findings 4. Increase monitoring frequency to daily. 5. Discuss with IEC and Contractor on remedial actions. 6. If exceedance continues, arrange meeting with IEC and ER 7. If exceedance stops, cease additional monitoring.	remedial measures. 4. Advise the ER on the effectiveness of the proposed remedial measures. 5. Supervisor implementation of remedial measures.	implemented	proposal if appropriate.
LIMIT LEVEL				
Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures. 2. Inform ER, Contractor and EPD. 3. Repeat measurement to confirm finding. 4. Increase	1. Checking monitoring data submitted by ET. 2. Check Contractor's working method 3. Discuss with ET and Contractor on possible remedial measures 4. Advise the	1. Confirm receipt of notification of failure in writing. 2. Notify Contractor. 3. Ensure remedial measures properly implemented.	1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial actions to IEC within three working days of notification. 3. Implement the agreed proposals.

	monitoring frequency to daily. 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the result.	ER on the effectiveness of the proposed remedial measures. 5. Supervisor implementat i on of remedial measures.		4. Amend proposal if appropriate.
Exceedance for two or more consecutive samples	1. Identify source, investigate the causes of exceedance and propose remedial measures. 2. Notify IEC, ER, Contractor and EPD. 3. Repeat measurement to confirm findings. 4. Increase monitoring frequency to daily. 5. Carry out analysis of Contractor's working procedures to determine possible	1. Discuss amongst ER, ET and Contractor on the potenrial remedial actions. 2. Reviews Contractor's remedial actions whenever necessary to assure their effectivene ss and advise the ER accordingly . 3. Supervisor the implement	1. Confirm receipt of notificatio n of failure in writing. 2. Notify Contractor . 3. In consultatio n with the IEC, agree with the Contractor on the remedial measures to be implement ed. 4. Ensure remedial measures properly implement	1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial actions to IEC within three working days of notification. 3. Implement the agreed proposals 4. Resubmit proposals if problem still not under control. 5. Stop the relevant portion of

	mitigation to be implemented. 6. Arrange meeting with IEC and ER to discuss the remedial actionsto be taken. 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results. 8. If exceedance stops, cease additional monitoring	ati on of remedial measures.	ed. 5. If exceedanc e continues, consider what portion of the work is responsibl e and instruct the Contractor to stop that portion of work until the exceedanc e is abated remedial actions.	works as determined by the ER until the exceedance is abated

7.7 Monitoring Schedule for Next Reporting Period

1-hr TSP and 24-hrs TSP monitoring schedule is proposed to be carried out on 5th, 11th, 17th, 22nd, and 28th of June 2013.

8 Ecology

During the reporting period, tree protection measures have been implemented by contractor, such as provision of tree protective fencing for the retained trees. The tree protection zone has enough space to prevent the construction activities to damage the trees.

As the existing river was diverted temporarily, contractor was reminded that the water flow in the existing river within the site should be maintained.

9 Action Taken in Event of Exceedance

If the measurements (Noise, Water and Air) exceed the action / limit level, exceedance details will be reported and follow-up actions will be taken by relevant parties involved.

During the reporting month there was no exceedance for noise and air measurements recorded; therefore, no actions were taken.

For water quality monitoring, total 4 numbers of Limit Level exceedance (Turbidity & SS) were record in this reporting month in accordance with the established level. ET has arranged site investigations for the exceedance on same day and found that no construction activities had been carried out at the river bed. It was believed that the exceedances of water quality were not affected by the construction activities. According to the site investigation, we believed that the exceedance records at W2 were caused by adverse weather and natural fluctuation. Therefore, the exceedance records at W2 were unlikely to be related to this project.

10 Construction Waste Disposal

It is the contractor's responsibility to ensure that all wastes produced during the construction phase for the drainage improvement works are handled, stored and disposed in accordance with good waste management practices and EPD's regulation and requirement. Waste materials generated during construction activities, such as construction and demolition (C&D) material, chemical wastes and general refuse, are recommended to be audited at regular intervals to ensure that proper storage, transportation and disposal practices are being implemented.

Table 10.1 is a summary of figures of the construction wastes disposal provided by Contractor.

Table 10.1 Summary of Construction Waste Disposal

Month	Actual Quantities of Inert C & D Materials Generated Monthly						Actual Quantities of C & D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/cardboard packaging	Plastics (see note3)	Chemical Waste	Others, e.g. general refuse
	(in'000ton)	(in'000ton)	(in'000ton)	(in'000ton)	(in'000ton)	(in'000ton)	(in'000kg)	(in'000kg)	(in'000kg)	(in'000kg)	(in'000kg)
Sep 12	0	0	0	0	0	0	0	0	0	0	0
Oct12	0	0	0	0	0	0	0	0	0	0	0
Nov 12	2.77	0	0	0	2.77	0	0	0	0	0	0.031
Dec 12	3.70	0	0	0	3.70	0	0	0	0	0	0.006
Jan 13	43.89	0	0	0	43.89	0	0	0	0	0	0
Feb 13	68.93	0	0	0	68.93	0	0	0	0	0	0.016
March 13	55.30	0	0	0	55.30	0	0	0	0	0	6.77
April 13	23.40	0	0	0	23.40	0	0	0	0	0	0
May 13	13.50	0	0	0	13.50	0	0	0	0	0	7.6
Total	211.49	0	0	0	211.49	0	0	0	0	0	14.423

Forecast of Total Quantities of C & D Materials to be Generated from the Contract											
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/cardboard packaging	Plastics (see note3)	Chemical Waste	Others, e.g. general refuse
	(in'000ton)	(in'000ton)	(in'000ton)	(in'000ton)	(in'000ton)	(in'000ton)	(in'000kg)	(in'000kg)	(in'000kg)	(in'000kg)	(in'000kg)
	581	1.67	180	0	239	0	0	0	0	0	240

11 Status of Permits and Licenses

Table 11.1 is the updated status of environmental related permits/ license obtained for the construction activities

Table 11.1 Status of Permits and Licenses Obtained

Description	License / Permit No.#	Date of Issue	Site	Date of expiry	Status
EP	EP-428/2011	4 November 2011	Various Lots in DD227 & DD229, Tai Po Tsai, Sai Kung	N/A	Superseded by VEP
EP	EP-428/2011/A	1 June 2012			Valid
FEP	FEP-01/428/2011/A	9 July 2012			Surrendered on 28 Nov 2012
FEP	FEP-02/428/2011/A	26 November 2012			Valid
Discharge License	WT00014162-2012	18 October 2012			Valid
Registration as a Chemical Waste Producer	349704	27 Sep 2012			Valid
Waste Disposal	N/A	N/A	N/A		N/A
Notification Pursuant to Section 3(1) of The Air Pollution Control (Construction Dust) Regulation	349519	4 Sep 2012	Various Lots in DD227 & DD229, Tai Po Tsai, Sai Kung		Valid

12 Compliant Log

There was no formal complaint received during the reporting period. Therefore, no follow up actions for the environmental complaint is required.

Table 12.1 Summary of Formal Complaints received

	Noise	Water	Air	Others
Year 2012	0	0	0	0
January 2013	0	0	0	0
February 2013	0	0	0	0
March 2013	1	0	1	0
April 2013	0	0	0	0
May 2013	0	0	0	0
Total	1	0	1	0

13 Site Environmental Audits

13.1 Site Inspection

Site inspections were undertaken weekly to inspect the construction activities in active site areas to ensure that appropriate environmental protection and pollution control mitigation measures are properly implemented.

Within this reporting period, site inspections were conducted on 2nd, 7th, 15th, 24th and 30th of May 2013. A detailed checklist of each site inspection together with comments and relevant photos have been filed and kept. The findings from inspection were summarized in Table 13.1.

Table 13.1 Summary results of site inspections findings

Date	Findings	Identification	Advice from ET	Action taken	Closing date	Remarks
2, 7, 15, 24 & 30 May 2013	No major environmental deficiency was observed.	N/A	N/A	N/A	N/A	N/A

13.2 Compliance with Legal and Contractual Requirement

There was no non-compliance recorded for the month of May 2013.

13.3 Implementation Status and Effectiveness of Mitigation Measures

Contractor has implemented mitigation measures to address those problems as advised by ET. Some of the measures taken by the contractor were considered as effective to minimize negative impact to the environment. Ongoing investigation will be carried out to observe performance and effectiveness of those measures. Outstanding environmental items will be inspected in next month.

As there were some ongoing follow up practices, contractor was reminded to regularly review and rectify the discrepancy once found and maintain good site condition. The contractor implemented various environmental mitigation measures as recommended in the Environmental Permit.

14 Future Key Issues and Recommendations

According to the forecasted site activities, key environmental issues to be considered should at least include the following items:

- Site water control and relevant protective measures
- Dust suppression
- Noise control
- Control and disposal for construction wastes generated from works

Tree protective measures for tree planting and transplanting should be implemented such as tree protection zone and regular watering.

15 Conclusions

stream course diversion works and regular tree maintenance were major site activities being carried out within this reporting period.

Regular site meetings and inspection audits led by the seniors for discussing site environmental matters were held among Contractor and the ET on weekly basis. Also monthly site meeting and inspection audits with the above parties and IEC were carried out on 15th May 2013.

No exceedance was recorded for Noise and Air during the reporting period.

Impact monitoring for water quality was conducted. Total 4 numbers of Limit Level exceedance were recorded in this reporting period. For the non-compliance events, ET has arranged site investigation for the abnormal incidents on the same day and found that no construction activities had been carried out at the river bed and could disturb the water quality. It was believed that the exceedances of water quality were not affected by construction activities. According to the site investigation, we believed that the exceedance records at W2 were affected by adverse weather and natural fluactuation. Therefore, the exceedances records at W2 were unlikely to be related to this project.

Also, there was no notification of summons, formal prosecution or complaints being recorded during the reporting period.

ET has reminded the contractor to provide environmental pollution control measures wherever necessary, and to keep a good environmental management at site practice.

The ET will continue to implement the environmental monitoring & audit programme in accordance with the PS and Environmental Permit requirements.

Appendix A

Construction Master Programme and Site Location Plan

Outline Works Programme

Updated: 27 Sept 2012
Rev. 1

		Duration	Start	Finish
		1033 days	Sat 1/9/12	Tue 30/6/15
		0 days	Sat 1/9/12	Sat 1/9/12
		1033 days	Sat 1/9/12	Tue 30/6/15
4	Site Formation, Stream Course Diversion and Foundation	410 days	Sat 1/9/12	Tue 15/10/13
5	Superstructure (Obtain OP)	442 days	Wed 16/10/13	Wed 31/12/14
6	Superstructure (Obtain CC)	181 days	Thu 1/1/15	Tue 30/6/15
7	Contract Completion Date	623 days	Tue 15/10/13	Tue 30/6/15
8	Site Formation, Stream Course Diversion and Foundation	0 days	Tue 15/10/13	Tue 15/10/13
9	Superstructure (Obtain OP)	0 days	Wed 31/12/14	Wed 31/12/14
10	Superstructure (Obtain CC)	0 days	Tue 30/6/15	Tue 30/6/15
11				
12	2) Pre-construction Works	150 days	Sat 1/9/12	Mon 28/1/13
13	Tree Felling / Transplant	150 days	Sat 1/9/12	Mon 28/1/13
14	Submission of Method Statement for Tree Felling and Transplant and Approval	21 days	Sat 1/9/12	Fri 21/9/12
15	Finalization of Tree Felling Plan and Approval from Government Depart	0 days	Sun 9/9/12	Sun 9/9/12
16	Protection and Fencing for Retain and Transplant Trees	21 days	Mon 10/9/12	Sun 30/9/12
17	Tree Felling within Site Boundary	49 days	Mon 17/9/12	Sun 4/11/12
18	Trees in Zone A and C which affect the Commencement of Stream Course Diversion Works	7 days	Mon 17/9/12	Sun 23/9/12
19	Trees in Zone B	20 days	Mon 24/9/12	Sat 13/10/12
20	Trees in Zone C	10 days	Sun 14/10/12	Tue 23/10/12
21	Trees in Zone D	7 days	Wed 24/10/12	Tue 30/10/12
22	Trees in Zone A	5 days	Wed 31/10/12	Sun 4/11/12
23	Tree Felling outside Site Boundary	71 days	Sun 16/9/12	Sun 25/11/12
24	Submission of Tree Felling Plan Amendment to DLO and Approval	30 days	Sun 16/9/12	Mon 15/10/12
25	Tree Felling	21 days	Mon 5/11/12	Sun 25/11/12
26	Tree Transplant	120 days	Mon 1/10/12	Mon 28/1/13
27				
28	4) Site Formation and Foundation Works	313 days	Sat 1/9/12	Wed 10/7/13
29	BD Submission	94 days	Mon 10/9/12	Wed 12/12/12
30	Zone A & B	30 days	Mon 10/9/12	Tue 9/10/12
31	Submission of BD Amendment	0 days	Mon 10/9/12	Mon 10/9/12
32	BD Comment	30 days	Mon 10/9/12	Tue 9/10/12
33	BD Approval	0 days	Tue 9/10/12	Tue 9/10/12
34	Zone C	30 days	Mon 12/11/12	Wed 12/12/12
35	Submisison of BD Amendment	0 days	Mon 12/11/12	Mon 12/11/12
36	BD Comment	30 days	Tue 13/11/12	Wed 12/12/12
37	BD Approval	0 days	Wed 12/12/12	Wed 12/12/12
38	Stream Course Diversion Works	313 days	Sat 1/9/12	Wed 10/7/13
39	Preparation Works and Monitoring Point Set-up	14 days	Sat 1/9/12	Fri 14/9/12
40	Additional Drainage Verification	50 days	Mon 24/9/12	Mon 12/11/12
41	Subletting	21 days	Mon 24/9/12	Sun 14/10/12
42	Survey	14 days	Mon 15/10/12	Sun 28/10/12
43	Re-design of Drainage at Zone C	15 days	Mon 29/10/12	Mon 12/11/12
44	Sheet Piling Works	105 days	Sat 15/9/12	Fri 28/12/12
45	Installation Works	75 days	Sat 15/9/12	Wed 28/11/12
46	Zone A1 to A5, B1 to B4 (not include Area still under BD Amendment)	30 days	Sat 15/9/12	Sun 14/10/12
47	Zone A1 to A5, B1 to B4 (Area under BD Amendment)	15 days	Mon 15/10/12	Mon 29/10/12
48	Zone B5	30 days	Tue 30/10/12	Wed 28/11/12
49	BA14 Submission and Aknowledgement	60 days	Tue 30/10/12	Fri 28/12/12
50	Zone A1 to A5, B1 to B4 (not include Area still under BD Amendment)	30 days	Tue 30/10/12	Wed 28/11/12
51	Zone B5	30 days	Thu 29/11/12	Fri 28/12/12
52	Excavation, Construction Works and Soil Backfill	299 days	Sat 15/9/12	Wed 10/7/13
53	Zone A	167 days	Sat 15/9/12	Thu 28/2/13
54	Zone A1	105 days	Sat 15/9/12	Fri 28/12/12
55	Zone A2	70 days	Thu 25/10/12	Wed 2/1/13
56	Zone A3	105 days	Wed 14/11/12	Tue 26/2/13
57	Zone A4	40 days	Sun 20/1/13	Thu 28/2/13
58	Zone A5	30 days	Wed 30/1/13	Thu 28/2/13
59	Zone B	203 days	Mon 1/10/12	Sun 21/4/13
60	Zone B1	50 days	Mon 1/10/12	Mon 19/11/12
61	Zone B2	50 days	Thu 11/10/12	Thu 29/11/12
62	Zone B3	85 days	Fri 30/11/12	Fri 22/2/13
63	Zone B4	30 days	Sat 23/2/13	Sun 24/3/13
64	Zone B5	40 days	Wed 13/3/13	Sun 21/4/13
65	Zone C	180 days	Thu 13/12/12	Mon 10/6/13
66	Zone C1 (within site boundary)	100 days	Thu 13/12/12	Fri 22/3/13
67	Excavation, Construction Works and Soil Backfill	100 days	Thu 13/12/12	Fri 22/3/13
68	Zone C2 (outside site boundary)	180 days	Thu 13/12/12	Mon 10/6/13
69	Application of Excavation Permit and Approval	90 days	Thu 13/12/12	Tue 12/3/13
70	Sheet Piling and Laterial Support	30 days	Wed 13/3/13	Thu 11/4/13
71	Manhole and Pipe Installation	60 days	Fri 12/4/13	Mon 10/6/13
72	BA14 Submission and Aknowledgement	30 days	Tue 11/6/13	Wed 10/7/13
73				
74	5) Soil Nail, Sheet Piling, Excavation and Shoring, Foundation	505 days	Mon 1/10/12	Mon 17/2/14
75	Design and Pocurement Stage	172 days	Mon 1/10/12	Thu 21/3/13
76	Design and Submission	172 days	Mon 1/10/12	Thu 21/3/13
77	Design Drawing Available for Soil Nail, Shetting Piling, Excavation and Lateral Support (By Consultant)	0 days	Mon 1/10/12	Mon 1/10/12
78	Soil Nail, Sheet Piling, Excavation & Laternal Support	157 days	Mon 15/10/12	Thu 21/3/13
79	BD Amendment Submission for ELS Works (Stage 1)	30 days	Mon 15/10/12	Wed 14/11/12
80	BD Amendment Submission	0 days	Mon 15/10/12	Mon 15/10/12
81	BD Comment	30 days	Tue 16/10/12	Wed 14/11/12
82	BD Approval	0 days	Wed 14/11/12	Wed 14/11/12
83	BD Submission for ELS Works (Stage 2)	95 days	Mon 15/10/12	Fri 18/1/13
84	BD Submission	0 days	Mon 15/10/12	Mon 15/10/12
85	BD Comment	60 days	Tue 16/10/12	Fri 14/12/12

Hip Seng Construction Co., Ltd.

Task | Summary | Inactive Task | Inactive Milestone | Manual Task | Manual Summary Rollup | Start-only
Milestone | Critical | Inactive Task | Inactive Summary | Duration-only | Manual Summary | Finish-only

* All public hoildays are excluded

Outline Works Programme

Updated: 27 Sept 2012
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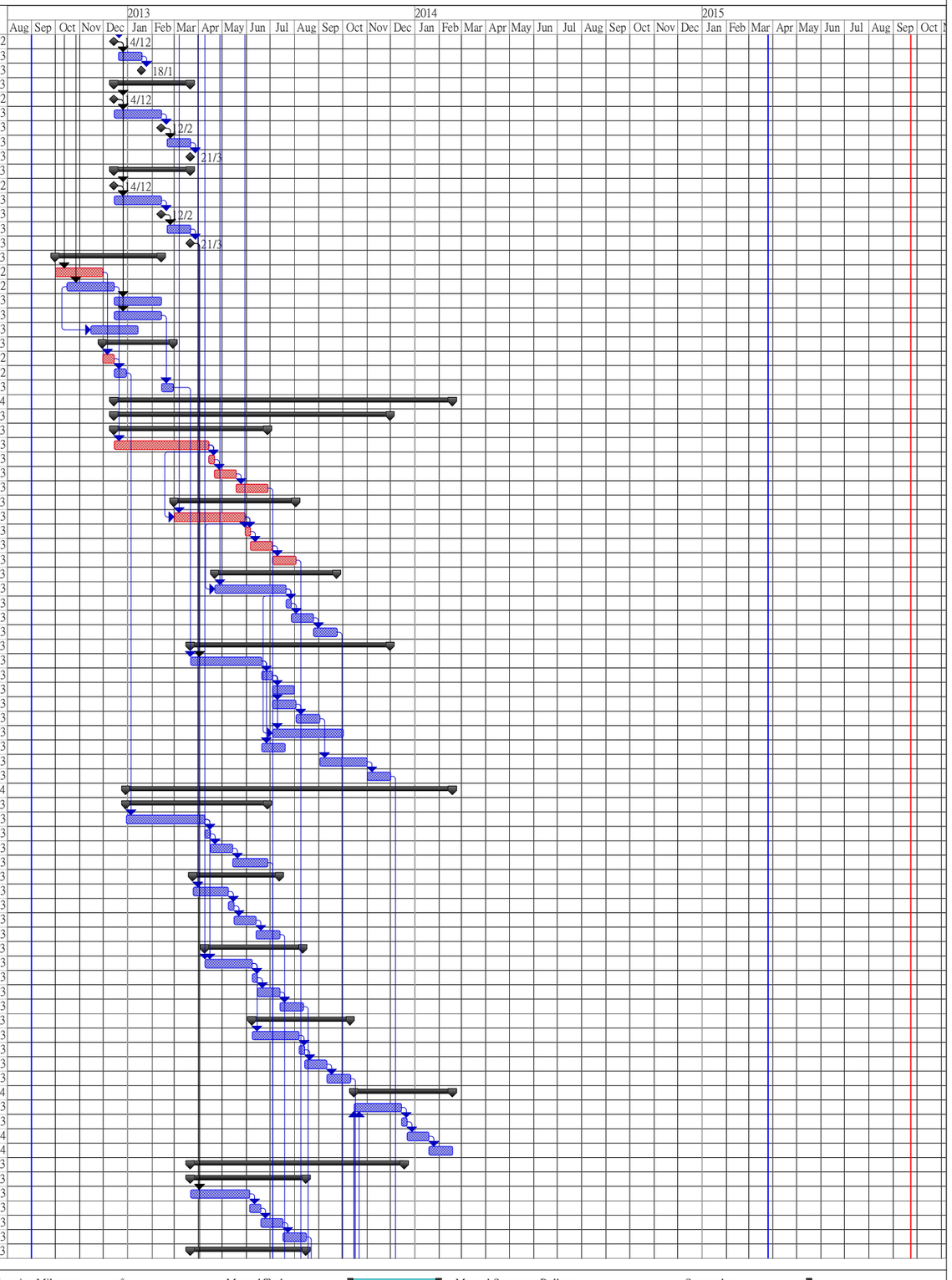
		Duration	Start	Finish
		0 days	Fri 14/12/12	Fri 14/12/12
		30 days	Thu 20/12/12	Fri 18/1/13
		0 days	Fri 18/1/13	Fri 18/1/13
89	BD Amendment Submission for Raft Footing	97 days	Fri 14/12/12	Thu 21/3/13
90	BD Amendment Submission	0 days	Fri 14/12/12	Fri 14/12/12
91	BD Comment	60 days	Sat 15/12/12	Tue 12/2/13
92	BD Approval	0 days	Tue 12/2/13	Tue 12/2/13
93	Consent Application	30 days	Wed 20/2/13	Thu 21/3/13
94	Consent Obtained	0 days	Thu 21/3/13	Thu 21/3/13
95	Socket H-Pile & Pile Cap	97 days	Fri 14/12/12	Thu 21/3/13
96	BD Amendment Submission	0 days	Fri 14/12/12	Fri 14/12/12
97	BD Comment	60 days	Sat 15/12/12	Tue 12/2/13
98	BD Approval	0 days	Tue 12/2/13	Tue 12/2/13
99	Consent Application	30 days	Wed 20/2/13	Thu 21/3/13
100	Consent Obtained	0 days	Thu 21/3/13	Thu 21/3/13
101	Procurement	135 days	Mon 1/10/12	Tue 12/2/13
102	Tender Preparation and Subletting for Soil Nail and Excavation	60 days	Mon 1/10/12	Thu 29/11/12
103	Tender Preparation and Subletting for Sheet Piling and Excavation and Shoring, Socket H-Pile Works	60 days	Tue 16/10/12	Fri 14/12/12
104	Tender Preparation and Subletting for Formwork, Reinforcement Fixing and Concreting Works	60 days	Sat 15/12/12	Tue 12/2/13
105	Tender Preparation and Subletting for Socket H-Pile Works	60 days	Sat 15/12/12	Tue 12/2/13
106	Tender Preparation and Subletting for Formwork, Reinforcement Fixing and Concreting Works	60 days	Thu 15/11/12	Sun 13/1/13
107	Preparation Works and Mobilization	90 days	Fri 30/11/12	Wed 27/2/13
108	Preparation Works and Mobilization for Soil Nail & Excavation	15 days	Fri 30/11/12	Fri 14/12/12
109	Preparation Works and Mobilization for Sheet Piling and ELS Works	15 days	Sat 15/12/12	Sat 29/12/12
110	Preparation Works and Mobilization for Socket H-Pile	15 days	Wed 13/2/13	Wed 27/2/13
111	Construction Works	430 days	Sat 15/12/12	Mon 17/2/14
112	Zone A (Tower 7 to Tower 19)	351 days	Sat 15/12/12	Sat 30/11/13
113	Zone A1	195 days	Sat 15/12/12	Thu 27/6/13
114	Excavation and Soil Nailing	120 days	Sat 15/12/12	Sat 13/4/13
115	Plate Load Test for Soil Stratum and Report Submission to BD	7 days	Sun 14/4/13	Sat 20/4/13
116	Apply Consent for Foundation	28 days	Sun 21/4/13	Sat 18/5/13
117	Construction of Raft Footing	40 days	Sun 19/5/13	Thu 27/6/13
118	Zone A2	155 days	Fri 1/3/13	Fri 2/8/13
119	Excavation and Soil Nailing	90 days	Fri 1/3/13	Wed 29/5/13
120	Plate Load Test for Soil Stratum and Report Submission to BD	7 days	Thu 30/5/13	Wed 5/6/13
121	Apply Consent for Foundation	28 days	Thu 6/6/13	Wed 3/7/13
122	Construction of Raft Footing	30 days	Thu 4/7/13	Fri 2/8/13
123	Zone A3	155 days	Mon 22/4/13	Mon 23/9/13
124	Excavation and Soil Nailing	90 days	Mon 22/4/13	Sat 20/7/13
125	Plate Load Test for Soil Stratum and Report Submission to BD	7 days	Sun 21/7/13	Sat 27/7/13
126	Apply Consent for Foundation	28 days	Sun 28/7/13	Sat 24/8/13
127	Construction of Raft Footing	30 days	Sun 25/8/13	Mon 23/9/13
128	Zone A4	254 days	Fri 22/3/13	Sat 30/11/13
129	Pre-drilling, Socket H-Pile Installation	90 days	Fri 22/3/13	Wed 19/6/13
130	Loading Test	14 days	Thu 20/6/13	Wed 3/7/13
131	Submission of BA14 and Consent Application for Pile Cap Construction	28 days	Thu 4/7/13	Wed 31/7/13
132	Open Cut Excavation	30 days	Thu 4/7/13	Fri 2/8/13
133	Part of Pile Cap Construction	30 days	Sat 3/8/13	Sun 1/9/13
134	Soil Nail & Excavation	90 days	Thu 4/7/13	Tue 1/10/13
135	Sheet Piling	30 days	Thu 20/6/13	Fri 19/7/13
136	ELS	60 days	Mon 2/9/13	Thu 31/10/13
137	Remaining Pile Cap and Basement Slab Construction	30 days	Fri 1/11/13	Sat 30/11/13
138	Zone B B (Tower 20 to Tower 27)	415 days	Sun 30/12/12	Mon 17/2/14
139	Zone B1	180 days	Sun 30/12/12	Thu 27/6/13
140	Open Cut Excavation & Portion of Footing Construction	100 days	Sun 30/12/12	Mon 8/4/13
141	Plate Load Test for Soil Stratum and Report Submission to BD	7 days	Tue 9/4/13	Mon 15/4/13
142	Apply Consent for Foundation	28 days	Tue 16/4/13	Mon 13/5/13
143	Construction of Raft Footing	45 days	Tue 14/5/13	Thu 27/6/13
144	Zone B2	110 days	Mon 25/3/13	Fri 12/7/13
145	Open Cut Excavation	45 days	Mon 25/3/13	Wed 8/5/13
146	Plate Load Test for Soil Stratum and Report Submission to BD	7 days	Thu 9/5/13	Wed 15/5/13
147	Apply Consent for Foundation	28 days	Thu 16/5/13	Wed 12/6/13
148	Construction of Raft Footing	30 days	Thu 13/6/13	Fri 12/7/13
149	Zone B3	125 days	Tue 9/4/13	Sun 11/8/13
150	Sheet Piling, Excavation and Lateral Support	60 days	Tue 9/4/13	Fri 7/6/13
151	Plate Load Test for Soil Stratum and Report Submission to BD	7 days	Sat 8/6/13	Fri 14/6/13
152	Apply Consent for Foundation	28 days	Sat 15/6/13	Fri 12/7/13
153	Construction of Raft Footing	30 days	Sat 13/7/13	Sun 11/8/13
154	Zone B4	125 days	Sat 8/6/13	Thu 10/10/13
155	Sheet Piling, Excavation and Lateral Support	60 days	Sat 8/6/13	Tue 6/8/13
156	Plate Load Test for Soil Stratum and Report Submission to BD	7 days	Wed 7/8/13	Tue 13/8/13
157	Apply Consent for Foundation	28 days	Wed 14/8/13	Tue 10/9/13
158	Construction of Raft Footing	30 days	Wed 11/9/13	Thu 10/10/13
159	Zone B5	125 days	Wed 16/10/13	Mon 17/2/14
160	Sheet Piling, Excavation and Lateral Support	60 days	Wed 16/10/13	Sat 14/12/13
161	Plate Load Test for Soil Stratum and Report Submission to BD	7 days	Sun 15/12/13	Sat 21/12/13
162	Apply Consent for Foundation	28 days	Sun 22/12/13	Sat 18/1/14
163	Construction of Raft Footing	30 days	Sun 19/1/14	Mon 17/2/14
164	Zone C (Tower 1 to Tower 6)	272 days	Fri 22/3/13	Wed 18/12/13
165	Zone C1	147 days	Fri 22/3/13	Thu 15/8/13
166	Pre-drilling, Socket H-Pile Installation and Excavation	75 days	Fri 22/3/13	Tue 4/6/13
167	Loading Test	14 days	Wed 5/6/13	Tue 18/6/13
168	Submission of BA14 and Consent Application for Pile Cap Construction	28 days	Wed 19/6/13	Tue 16/7/13
169	Pile Cap and Basement Slab Construction	30 days	Wed 17/7/13	Thu 15/8/13
170	Zone C2	147 days	Fri 22/3/13	Thu 15/8/13



Hip Seng Construction Co., Ltd.

Task | Summary | Inactive Task | Inactive Milestone | Manual Task | Manual Summary Rollup | Start-only
Milestone | Critical | Inactive Task | Inactive Summary | Duration-only | Manual Summary | Finish-only

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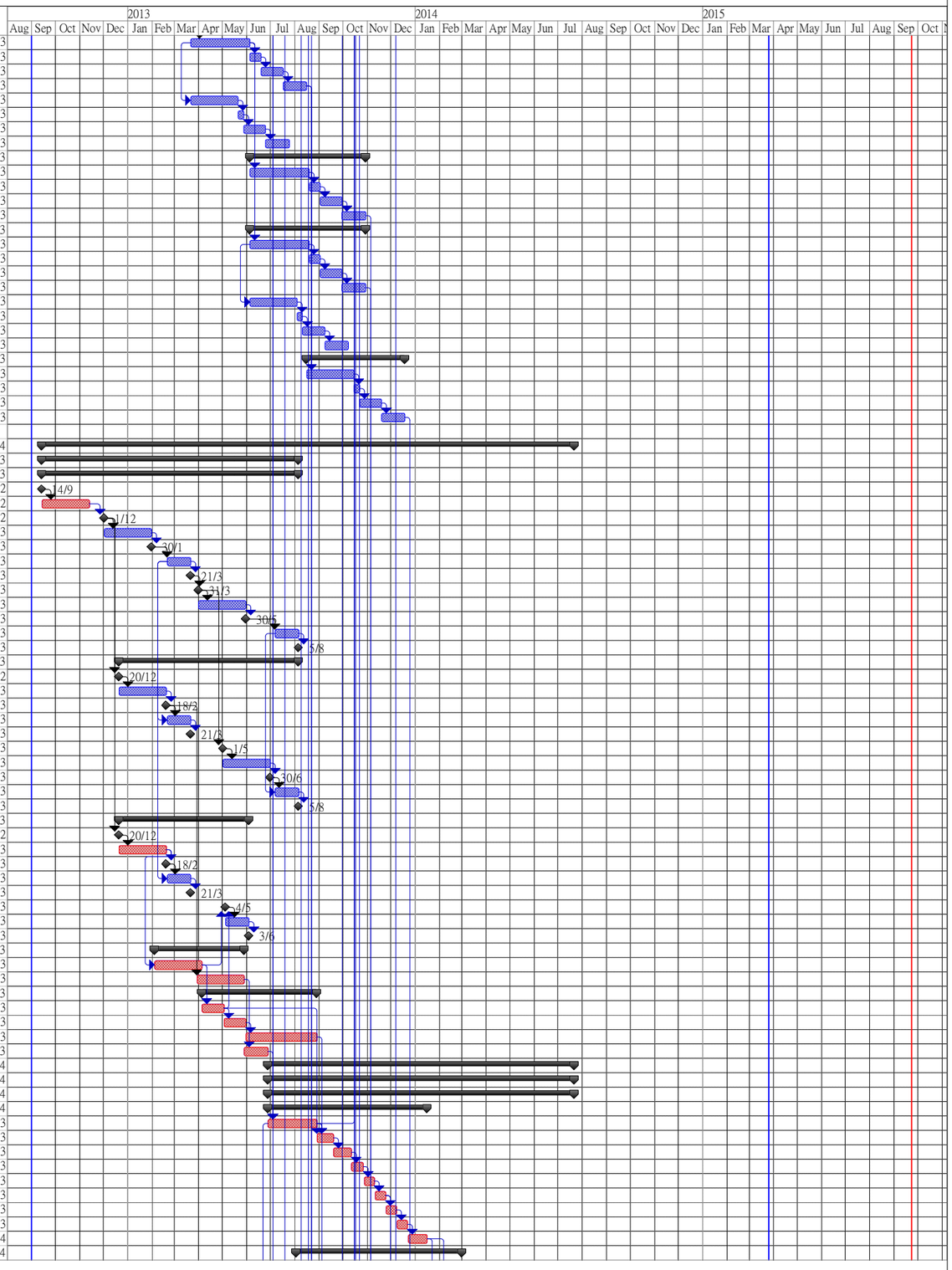
		Duration	Start	Finish
		75 days	Fri 22/3/13	Tue 4/6/13
		14 days	Wed 5/6/13	Tue 18/6/13
	ction	28 days	Wed 19/6/13	Tue 16/7/13
174	Pile Cap and Basement Slab Construction	30 days	Wed 17/7/13	Thu 15/8/13
175	Open Cut Excavation	60 days	Fri 22/3/13	Mon 20/5/13
176	Plate Load Test for Soil Stratum and Report Submission to BD	7 days	Tue 21/5/13	Mon 27/5/13
177	Apply Consent for Foundation	28 days	Tue 28/5/13	Mon 24/6/13
178	Pile Cap and Basement Slab Construction	30 days	Tue 25/6/13	Wed 24/7/13
179	Zone C3	147 days	Wed 5/6/13	Tue 29/10/13
180	Pre-drilling, Socket H-Pile Installation and Excavation	75 days	Wed 5/6/13	Sun 18/8/13
181	Loading Test	14 days	Mon 19/8/13	Sun 1/9/13
182	Submission of BA14 and Consent Application for Pile Cap Construction	28 days	Mon 2/9/13	Sun 29/9/13
183	Pile Cap and Basement Slab Construction	30 days	Mon 30/9/13	Tue 29/10/13
184	Zone C4	147 days	Wed 5/6/13	Tue 29/10/13
185	Pre-drilling, Socket H-Pile Installation and Excavation	75 days	Wed 5/6/13	Sun 18/8/13
186	Loading Test	14 days	Mon 19/8/13	Sun 1/9/13
187	Submission of BA14 and Consent Application for Pile Cap Construction	28 days	Mon 2/9/13	Sun 29/9/13
188	Pile Cap and Basement Slab Construction	30 days	Mon 30/9/13	Tue 29/10/13
189	Open Cut Excavation	60 days	Wed 5/6/13	Sat 3/8/13
190	Plate Load Test for Soil Stratum and Report Submission to BD	7 days	Sun 4/8/13	Sat 10/8/13
191	Apply Consent for Foundation	28 days	Sun 11/8/13	Sat 7/9/13
192	Pile Cap and Basement Slab Construction	30 days	Sun 8/9/13	Mon 7/10/13
193	Zone C5	125 days	Fri 16/8/13	Wed 18/12/13
194	Sheet Piling, Excavation and Lateral Support	60 days	Fri 16/8/13	Mon 14/10/13
195	Plate Load Test for Soil Stratum and Report Submission to BD	7 days	Tue 15/10/13	Mon 21/10/13
196	Apply Consent for Foundation	28 days	Tue 22/10/13	Mon 18/11/13
197	Construction of Raft Footing	30 days	Tue 19/11/13	Wed 18/12/13
198				
199	6) Superstructure (R.C. Works)	676 days	Fri 14/9/12	Mon 21/7/14
200	BD Submission	326 days	Fri 14/9/12	Mon 5/8/13
201	GBP Submission	326 days	Fri 14/9/12	Mon 5/8/13
202	1st BD Submission for GBP	0 days	Fri 14/9/12	Fri 14/9/12
203	BD Comment	60 days	Fri 14/9/12	Mon 12/11/12
204	Withdraw and Re-submit for GBP	0 days	Sat 1/12/12	Sat 1/12/12
205	BD Comment	60 days	Sun 2/12/12	Wed 30/1/13
206	Approval of GBP	0 days	Wed 30/1/13	Wed 30/1/13
207	Cosent Application	30 days	Wed 20/2/13	Thu 21/3/13
208	Consent Obtained	0 days	Thu 21/3/13	Thu 21/3/13
209	BD Major Amendment	0 days	Sun 31/3/13	Sun 31/3/13
210	BD Comment	60 days	Mon 1/4/13	Thu 30/5/13
211	BD Approval	0 days	Thu 30/5/13	Thu 30/5/13
212	Cosent Application	30 days	Sun 7/7/13	Mon 5/8/13
213	Consent Obtained	0 days	Mon 5/8/13	Mon 5/8/13
214	Structural Drawing Submission	228 days	Thu 20/12/12	Mon 5/8/13
215	BD Submission	0 days	Thu 20/12/12	Thu 20/12/12
216	BD Comment	60 days	Fri 21/12/12	Mon 18/2/13
217	BD Approval	0 days	Mon 18/2/13	Mon 18/2/13
218	Consent Application	30 days	Wed 20/2/13	Thu 21/3/13
219	Consent Obtained	0 days	Thu 21/3/13	Thu 21/3/13
220	BD Major Amendment	0 days	Wed 1/5/13	Wed 1/5/13
221	BD Comment	60 days	Thu 2/5/13	Sun 30/6/13
222	BD Approval	0 days	Sun 30/6/13	Sun 30/6/13
223	Cosent Application	30 days	Sun 7/7/13	Mon 5/8/13
224	Consent Obtained	0 days	Mon 5/8/13	Mon 5/8/13
225	Precast Façade Submission	165 days	Thu 20/12/12	Mon 3/6/13
226	BD Submission	0 days	Thu 20/12/12	Thu 20/12/12
227	BD Comment	60 days	Fri 21/12/12	Mon 18/2/13
228	BD Approval	0 days	Mon 18/2/13	Mon 18/2/13
229	Consent Application	30 days	Wed 20/2/13	Thu 21/3/13
230	Consent Obtained	0 days	Thu 21/3/13	Thu 21/3/13
231	BD Amendment	0 days	Sat 4/5/13	Sat 4/5/13
232	BD Comment	30 days	Sun 5/5/13	Mon 3/6/13
233	BD Approval	0 days	Mon 3/6/13	Mon 3/6/13
234	Tender Preparation and Subletting	114 days	Mon 4/2/13	Tue 28/5/13
235	Tender Preparation and Subletting for Precast Façade and Window (if any)	60 days	Mon 4/2/13	Thu 4/4/13
236	Tender Preparation and Subletting for Structural Works	60 days	Sat 30/3/13	Tue 28/5/13
237	Precast Façade	146 days	Fri 5/4/13	Wed 28/8/13
238	Shop Drawing Submission and Approval	28 days	Fri 5/4/13	Thu 2/5/13
239	Mould Fabrication and Trail Panel Construction (if necessary)	28 days	Fri 3/5/13	Thu 30/5/13
240	Mass Production of Mould and Construction of 1st Batch of Precast Façade	90 days	Fri 31/5/13	Wed 28/8/13
241	Mobilization and Preparation Works	30 days	Wed 29/5/13	Thu 27/6/13
242	Construction Works	389 days	Fri 28/6/13	Mon 21/7/14
243	Zone A (Tower 7 to Tower 19)	310 days	Fri 28/6/13	Mon 21/7/14
244	Type 6 Tower	310 days	Fri 28/6/13	Mon 21/7/14
245	Zone A1 (Tower 11, 12 & 13)	166 days	Fri 28/6/13	Wed 15/1/14
246	Basement to G/F Slab (including U/G Drainage & Utilities Installaion Works)	52 days	Fri 28/6/13	Wed 28/8/13
247	G/F to 1/F Slab	18 days	Thu 29/8/13	Wed 18/9/13
248	1/F to 2/F Slab	18 days	Thu 19/9/13	Fri 11/10/13
249	2/F to 3/F Slab	12 days	Sat 12/10/13	Sat 26/10/13
250	3/F to 4/F Slab	12 days	Mon 28/10/13	Sat 9/11/13
251	4/F to 5/F Slab	12 days	Mon 11/11/13	Sat 23/11/13
252	5/F to 6/F Slab	12 days	Mon 25/11/13	Sat 7/12/13
253	6/F to R/F Slab	12 days	Mon 9/12/13	Sat 21/12/13
254	R/F	18 days	Mon 23/12/13	Wed 15/1/14
255	Zone A2 (Tower 7, 8 , 9 & 10)	166 days	Sat 3/8/13	Fri 28/2/14



Hip Seng Construction Co., Ltd.

Task | Summary | Inactive Task | Inactive Milestone | Manual Task | Manual Summary Rollup | Start-only
Milestone | Critical | Inactive Task | Inactive Summary | Duration-only | Manual Summary | Finish-only

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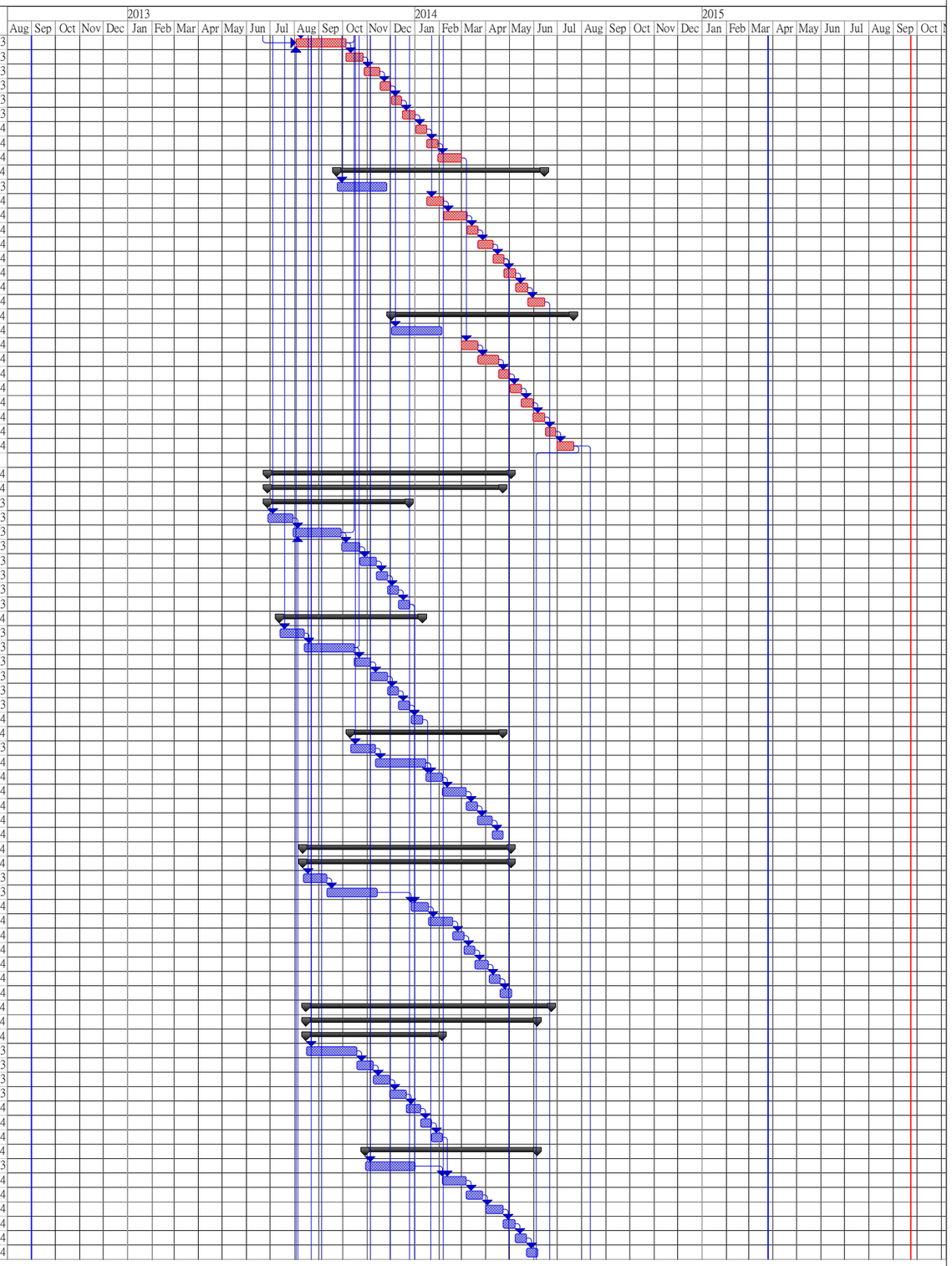
		Duration	Start	Finish
	llaion Works)	52 days	Sat 3/8/13	Fri 4/10/13
		18 days	Sat 5/10/13	Sat 26/10/13
		18 days	Mon 28/10/13	Sat 16/11/13
259	2/F to 3/F Slab	12 days	Mon 18/11/13	Sat 30/11/13
260	3/F to 4/F Slab	12 days	Mon 2/12/13	Sat 14/12/13
261	4/F to 5/F Slab	12 days	Mon 16/12/13	Tue 31/12/13
262	5/F to 6/F Slab	12 days	Thu 2/1/14	Wed 15/1/14
263	6/F to R/F Slab	12 days	Thu 16/1/14	Wed 29/1/14
264	R/F	18 days	Thu 30/1/14	Fri 28/2/14
265	Zone A3 (Tower 14, 15 & 16)	207 days	Tue 24/9/13	Sat 14/6/14
266	Basement to G/F Slab (including U/G Drainage & Utilities Installaion Works)	52 days	Tue 24/9/13	Mon 25/11/13
267	G/F to 1/F Slab	18 days	Thu 16/1/14	Wed 5/2/14
268	1/F to 2/F Slab	18 days	Thu 6/2/14	Fri 7/3/14
269	2/F to 3/F Slab	12 days	Sat 8/3/14	Fri 21/3/14
270	3/F to 4/F Slab	12 days	Sat 22/3/14	Wed 9/4/14
271	4/F to 5/F Slab	12 days	Thu 10/4/14	Wed 23/4/14
272	5/F to 6/F Slab	12 days	Thu 24/4/14	Thu 8/5/14
273	6/F to R/F Slab	12 days	Fri 9/5/14	Fri 23/5/14
274	R/F	18 days	Sat 24/5/14	Sat 14/6/14
275	Zone A4 (Tower 17, 18 & 19)	180 days	Mon 2/12/13	Mon 21/7/14
276	Basement to G/F Slab (including U/G Drainage & Utilities Installaion Works)	52 days	Mon 2/12/13	Mon 3/2/14
277	G/F to 1/F Slab	18 days	Sat 1/3/14	Fri 21/3/14
278	1/F to 2/F Slab	18 days	Sat 22/3/14	Wed 16/4/14
279	2/F to 3/F Slab	12 days	Thu 17/4/14	Wed 30/4/14
280	3/F to 4/F Slab	12 days	Fri 2/5/14	Thu 15/5/14
281	4/F to 5/F Slab	12 days	Fri 16/5/14	Fri 30/5/14
282	5/F to 6/F Slab	12 days	Sat 31/5/14	Sat 14/6/14
283	6/F to R/F Slab	12 days	Mon 16/6/14	Sat 28/6/14
284	R/F	18 days	Mon 30/6/14	Mon 21/7/14
285				
286	Zone B (Tower 20 to Tower 27)	246 days	Fri 28/6/13	Sat 3/5/14
287	Type 3 Tower	237 days	Fri 28/6/13	Tue 22/4/14
288	Zone B1 (Tower 21)	150 days	Fri 28/6/13	Tue 24/12/13
289	Basement to LG/F Slab	26 days	Fri 28/6/13	Mon 29/7/13
290	LG/F to G/F Slab (including U/G Drainage & Utilities Installaion Works)	52 days	Tue 30/7/13	Sat 28/9/13
291	G/F to 1/F Slab	18 days	Mon 30/9/13	Tue 22/10/13
292	1/F to 2/F Slab	18 days	Wed 23/10/13	Tue 12/11/13
293	2/F to 3/F Slab	12 days	Wed 13/11/13	Tue 26/11/13
294	3/F to R/F Slab	12 days	Wed 27/11/13	Tue 10/12/13
295	R/F	12 days	Wed 11/12/13	Tue 24/12/13
296	Zone B2 (Tower 20)	150 days	Sat 13/7/13	Fri 10/1/14
297	Basement to LG/F Slab	26 days	Sat 13/7/13	Mon 12/8/13
298	LG/F to G/F Slab (including U/G Drainage & Utilities Installaion Works)	52 days	Tue 13/8/13	Tue 15/10/13
299	G/F to 1/F Slab	18 days	Wed 16/10/13	Tue 5/11/13
300	1/F to 2/F Slab	18 days	Wed 6/11/13	Tue 26/11/13
301	2/F to 3/F Slab	12 days	Wed 27/11/13	Tue 10/12/13
302	3/F to R/F Slab	12 days	Wed 11/12/13	Tue 24/12/13
303	R/F	12 days	Fri 27/12/13	Fri 10/1/14
304	Zone B4 (Tower 22)	150 days	Fri 11/10/13	Tue 22/4/14
305	Basement to LG/F Slab	26 days	Fri 11/10/13	Mon 11/11/13
306	LG/F to G/F Slab (including U/G Drainage & Utilities Installaion Works)	52 days	Tue 12/11/13	Tue 14/1/14
307	G/F to 1/F Slab	18 days	Wed 15/1/14	Tue 4/2/14
308	1/F to 2/F Slab	18 days	Wed 5/2/14	Thu 6/3/14
309	2/F to 3/F Slab	12 days	Fri 7/3/14	Thu 20/3/14
310	3/F to R/F Slab	12 days	Fri 21/3/14	Tue 8/4/14
311	R/F	12 days	Wed 9/4/14	Tue 22/4/14
312	Type 7 Tower	209 days	Mon 12/8/13	Sat 3/5/14
313	Zone B3 (Tower 23, 24, 25, 26 & 27)	209 days	Mon 12/8/13	Sat 3/5/14
314	Basement to Clubhouse Slab	26 days	Mon 12/8/13	Tue 10/9/13
315	Basement to G/F Slab (including U/G Drainage & Utilities Installaion Works)	52 days	Wed 11/9/13	Wed 13/11/13
316	G/F to 1/F Slab	18 days	Fri 27/12/13	Fri 17/1/14
317	1/F to 2/F Slab	18 days	Sat 18/1/14	Mon 17/2/14
318	2/F to 3/F Slab	12 days	Tue 18/2/14	Mon 3/3/14
319	3/F to 4/F Slab	12 days	Tue 4/3/14	Mon 17/3/14
320	3/F to 5/F Slab	12 days	Tue 18/3/14	Thu 3/4/14
321	5/F to R/F Slab	12 days	Sat 5/4/14	Fri 18/4/14
322	R/F	12 days	Sat 19/4/14	Sat 3/5/14
323	Zone C (Tower 1 to Tower 6)	246 days	Fri 16/8/13	Mon 23/6/14
324	Type 1 Tower	232 days	Fri 16/8/13	Thu 5/6/14
325	Zone C1 (Tower 1)	142 days	Fri 16/8/13	Tue 4/2/14
326	Cap / Basement to LG/F (including U/G Drainage & Utilities Installaion Works)	52 days	Fri 16/8/13	Fri 18/10/13
327	LG/F to G/F Slab	18 days	Sat 19/10/13	Fri 8/11/13
328	G/F to 1/F Slab	18 days	Sat 9/11/13	Fri 29/11/13
329	1/F to 2/F Slab	18 days	Sat 30/11/13	Fri 20/12/13
330	2/F to 3/F Slab	12 days	Sat 21/12/13	Tue 7/1/14
331	3/F to R/F Slab	12 days	Wed 8/1/14	Tue 21/1/14
332	R/F	12 days	Wed 22/1/14	Tue 4/2/14
333	Zone C3 (Tower 2)	171 days	Wed 30/10/13	Thu 5/6/14
334	Cap / Basement to LG/F (including U/G Drainage & Utilities Installaion Works)	52 days	Wed 30/10/13	Tue 31/12/13
335	LG/F to G/F Slab	18 days	Wed 5/2/14	Thu 6/3/14
336	G/F to 1/F Slab	18 days	Fri 7/3/14	Thu 27/3/14
337	1/F to 2/F Slab	18 days	Tue 1/4/14	Tue 22/4/14
338	2/F to 3/F Slab	12 days	Wed 23/4/14	Wed 7/5/14
339	3/F to R/F Slab	12 days	Thu 8/5/14	Thu 22/5/14
340	R/F	12 days	Fri 23/5/14	Thu 5/6/14



Hip Seng Construction Co., Ltd.

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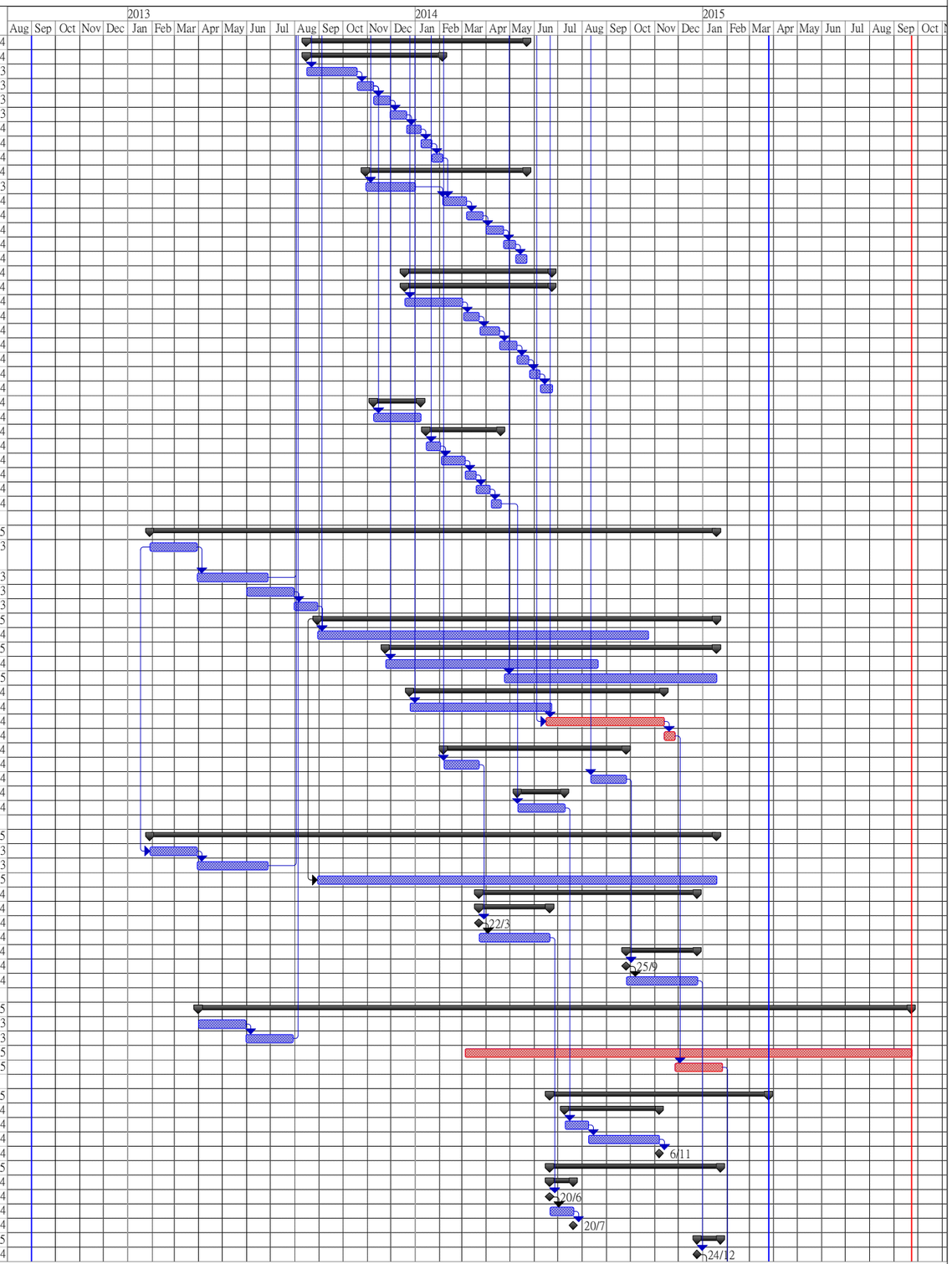
		Duration	Start	Finish
		220 days	Fri 16/8/13	Thu 22/5/14
		142 days	Fri 16/8/13	Tue 4/2/14
	Installaion Works)	52 days	Fri 16/8/13	Fri 18/10/13
344	LG/F to G/F Slab	18 days	Sat 19/10/13	Fri 8/11/13
345	G/F to 1/F Slab	18 days	Sat 9/11/13	Fri 29/11/13
346	1/F to 2/F Slab	18 days	Sat 30/11/13	Fri 20/12/13
347	2/F to 3/F Slab	12 days	Sat 21/12/13	Tue 7/1/14
348	3/F to R/F Slab	12 days	Wed 8/1/14	Tue 21/1/14
349	R/F	12 days	Wed 22/1/14	Tue 4/2/14
350	Zone C4 (Tower 3)	159 days	Wed 30/10/13	Thu 22/5/14
351	Cap / Basement to LG/F (including U/G Drainage & Utilities Installaion Works)	52 days	Wed 30/10/13	Tue 31/12/13
352	LG/F to G/F Slab	18 days	Wed 5/2/14	Thu 6/3/14
353	G/F to 1/F Slab	18 days	Fri 7/3/14	Thu 27/3/14
354	1/F to 2/F Slab	18 days	Tue 1/4/14	Tue 22/4/14
355	2/F to R/F Slab	12 days	Wed 23/4/14	Wed 7/5/14
356	R/F	12 days	Thu 8/5/14	Thu 22/5/14
357	Type 4 Tower	187 days	Thu 19/12/13	Mon 23/6/14
358	Zone C5 (Tower 5 & 6)	142 days	Thu 19/12/13	Mon 23/6/14
359	Cap / Basement to LG/F (including U/G Drainage & Utilities Installaion Works)	52 days	Thu 19/12/13	Sat 1/3/14
360	LG/F to G/F Slab	18 days	Mon 3/3/14	Sat 22/3/14
361	G/F to 1/F Slab	18 days	Mon 24/3/14	Thu 17/4/14
362	1/F to 2/F Slab	18 days	Fri 18/4/14	Fri 9/5/14
363	2/F to 3/F Slab	12 days	Sat 10/5/14	Sat 24/5/14
364	3/F to R/F Slab	12 days	Mon 26/5/14	Sat 7/6/14
365	R/F	12 days	Mon 9/6/14	Mon 23/6/14
366	Transformer Room at Northern Area	60 days	Sat 9/11/13	Tue 7/1/14
367	G/F to R/F Slab	60 days	Sat 9/11/13	Tue 7/1/14
368	Retail	95 days	Wed 15/1/14	Sat 19/4/14
369	G/F to 1/F Slab	18 days	Wed 15/1/14	Sat 1/2/14
370	1/F to 2/F Slab	18 days	Mon 3/2/14	Tue 4/3/14
371	2/F to 3/F Slab	12 days	Wed 5/3/14	Tue 18/3/14
372	3/F to R/F Slab	12 days	Wed 19/3/14	Sat 5/4/14
373	R/F	12 days	Mon 7/4/14	Sat 19/4/14
374				
375	7) Finishing Works	720 days	Tue 29/1/13	Sun 18/1/15
376	Tender Preparation and Subletting for Specialist Works Sub-contractors (In-situ Window & Door, Metal & Glass Balustrade, Glass & Curtain Wall, etc)	60 days	Tue 29/1/13	Fri 29/3/13
377	Co-ordination Works, Shop Drawing Submission and BD Submission (affect Structure Works)	90 days	Sat 30/3/13	Thu 27/6/13
378	Tender Preparation and Subletting for General Finishing Works Sub-contractors	60 days	Sat 1/6/13	Tue 30/7/13
379	Preparation Works, Submission & Material Delivery	30 days	Wed 31/7/13	Thu 29/8/13
380	Finishing Works	507 days	Fri 30/8/13	Sun 18/1/15
381	Internal Finishing Works for Basement	420 days	Fri 30/8/13	Thu 23/10/14
382	Internal Finishing Works for Towers	421 days	Sun 24/11/13	Sun 18/1/15
383	Internal Wall Finishing Works (1st Batch of Towers)	270 days	Sun 24/11/13	Wed 20/8/14
384	Internal Wall Finishing Works (2nd Batch of Towers)	270 days	Thu 24/4/14	Sun 18/1/15
385	External Wall Finishing Works	323 days	Wed 25/12/13	Wed 12/11/14
386	External Wall Finishing Works (1st Batch of Towers)	180 days	Wed 25/12/13	Sun 22/6/14
387	External Wall Finishing Works (2nd Batch of Towers)	150 days	Mon 16/6/14	Wed 12/11/14
388	Removal of Bamboo Scaffolding	14 days	Thu 13/11/14	Wed 26/11/14
389	Finishing Works for Lift Machine Room	232 days	Thu 6/2/14	Thu 25/9/14
390	1st Batch of Lift	45 days	Thu 6/2/14	Sat 22/3/14
391	2nd Batch of Lift	45 days	Tue 12/8/14	Thu 25/9/14
392	Finishng Works for Transformer Rooms	60 days	Sun 11/5/14	Wed 9/7/14
393	Finishng Works for Transformer Rooms	60 days	Sun 11/5/14	Wed 9/7/14
394				
395	8) E&M Installation	720 days	Tue 29/1/13	Sun 18/1/15
396	Tender Preparation and Subletting	60 days	Tue 29/1/13	Fri 29/3/13
397	CSD Co-ordination for U/G and Basement	90 days	Sat 30/3/13	Thu 27/6/13
398	E&M Installation Works	507 days	Fri 30/8/13	Sun 18/1/15
399	Lift Installation	277 days	Sat 22/3/14	Wed 24/12/14
400	1st Batch of Lift	90 days	Sat 22/3/14	Fri 20/6/14
401	Handover of Lift Shaft & Lift Machine Room	0 days	Sat 22/3/14	Sat 22/3/14
402	Lift Installation	90 days	Sun 23/3/14	Fri 20/6/14
403	2nd Batch of Lift	90 days	Thu 25/9/14	Wed 24/12/14
404	Handover of Lift Shaft & Lift Machine Room	0 days	Thu 25/9/14	Thu 25/9/14
405	Lift Installation	90 days	Fri 26/9/14	Wed 24/12/14
406				
407	9) Fitting Works and External Works	905 days	Mon 1/4/13	Tue 22/9/15
408	Tender Preparation and Subletting for Fitting Out Works	60 days	Mon 1/4/13	Thu 30/5/13
409	Co-ordination Works and Submission (for design affecting finishing and E&M works)	60 days	Fri 31/5/13	Mon 29/7/13
410	Fitting Works and External Walls	567 days	Wed 5/3/14	Tue 22/9/15
411	Hand Landscape	60 days	Thu 27/11/14	Sun 25/1/15
412				
413	10) Statutory Inspection	278 days	Fri 20/6/14	Wed 25/3/15
414	CLP	120 days	Thu 10/7/14	Thu 6/11/14
415	Handover of Transformer Rooms	30 days	Thu 10/7/14	Fri 8/8/14
416	Installation of Trasnformer and Cable Laying & Lead-in	90 days	Sat 9/8/14	Thu 6/11/14
417	Power Energization	0 days	Thu 6/11/14	Thu 6/11/14
418	EMSD Inspection	217 days	Fri 20/6/14	Fri 23/1/15
419	1st Batch of Lift	30 days	Fri 20/6/14	Sun 20/7/14
420	Submission of Form 5	0 days	Fri 20/6/14	Fri 20/6/14
421	EMSD Inspection	30 days	Sat 21/6/14	Sun 20/7/14
422	Issuance of Form 6	0 days	Sun 20/7/14	Sun 20/7/14
423	2nd Batch of Lift	30 days	Wed 24/12/14	Fri 23/1/15
424	Submission of Form 5	0 days	Wed 24/12/14	Wed 24/12/14



Hip Seng Construction Co., Ltd.

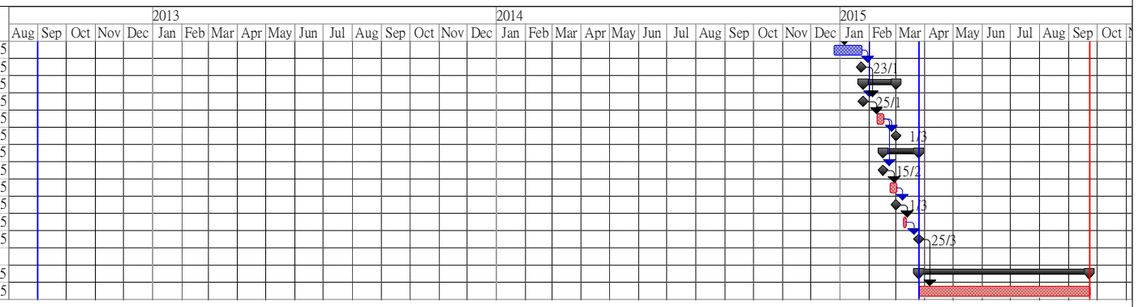
Task | Summary | Inactive Task | Inactive Milestone | Manual Task | Manual Summary Rollup | Start-only
Milestone | Critical | Inactive Task | Inactive Summary | Duration-only | Manual Summary | Finish-only

* All public hoildays are excluded

Outline Works Programme

Updated: 27 Sept 2012
Rev. 1

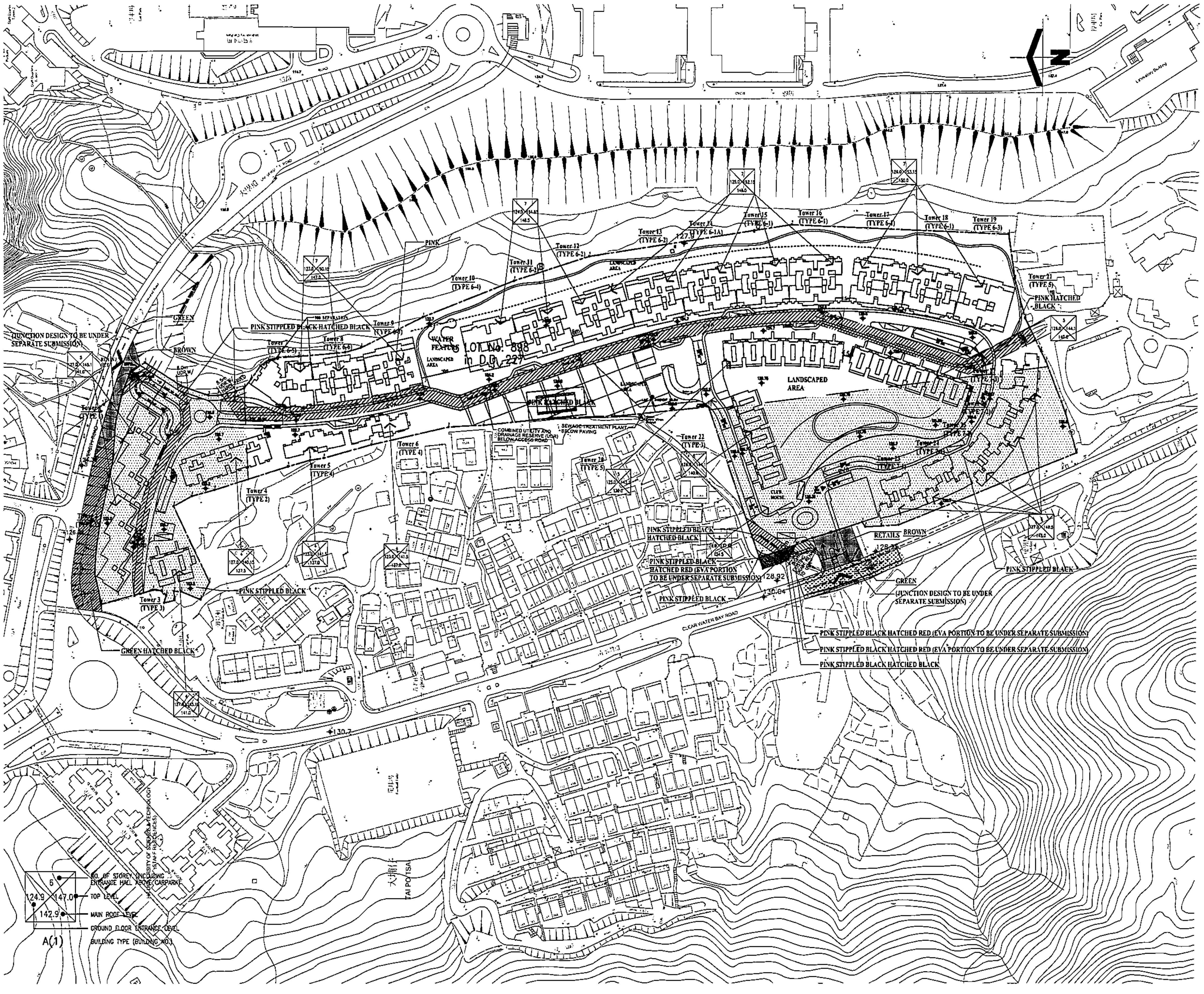
		Duration	Start	Finish
		30 days	Thu 25/12/14	Fri 23/1/15
		0 days	Fri 23/1/15	Fri 23/1/15
		35 days	Sun 25/1/15	Sun 1/3/15
428	Submission of Form 501	0 days	Sun 25/1/15	Sun 25/1/15
429	FS Inspection	7 days	Mon 9/2/15	Sun 15/2/15
430	Issuance of FS Certificate	0 days	Sun 1/3/15	Sun 1/3/15
431	BD Inspection	38 days	Sun 15/2/15	Wed 25/3/15
432	Submission of BA13	0 days	Sun 15/2/15	Sun 15/2/15
433	BD Inspection	7 days	Mon 23/2/15	Sun 1/3/15
434	Withdraw and Re-submit for BA13	0 days	Sun 1/3/15	Sun 1/3/15
435	BD Re-inpection	3 days	Mon 9/3/15	Wed 11/3/15
436	Issuance of OP Certificate	0 days	Wed 25/3/15	Wed 25/3/15
437				
438	11) Works After OP	181 days	Thu 26/3/15	Tue 22/9/15
439	Works after OP	181 days	Thu 26/3/15	Tue 22/9/15



Hip Seng Construction Co., Ltd.

Task | Summary | Inactive Task | Inactive Milestone | Manual Task | Manual Summary Rollup | Start-only
Milestone | Critical | Inactive Task | Inactive Summary | Duration-only | Manual Summary | Finish-only

* All public hoildays are excluded


Tower 12 (TYPE 6-2)
Tower 13 (TYPE 6-2)
Tower 15 (TYPE 6-1)
Tower 16 (TYPE 6-1)
Tower 17 (TYPE 6-1)
Tower 18 (TYPE 6-1)
Tower 19 (TYPE 6-3)
Tower 10 (TYPE 6-1)
Tower 11 (TYPE 6-1)
Tower 21 (TYPE 5)
PINK HATCHED BLACK
PINK STIPPLED BLACK HATCHED BLACK
(JUNCTION DESIGN TO BE UNDER SEPARATE SUBMISSION)
GREEN
BROWN
PINK
LOT No. 898 in D.D.227
LANDSCAPED AREA
SEWAGE TREATMENT PLANT BELOW PAVING
Tower 6 (TYPE 4)
Tower 5 (TYPE 4)
Tower 4 (TYPE 2)
Tower 3 (TYPE 3)
Tower 22 (TYPE 5)
Tower 23
Tower 24
RETAILS
PINK STIPPLED BLACK HATCHED BLACK
PINK STIPPLED BLACK HATCHED RED (EVA PORTION TO BE UNDER SEPARATE SUBMISSION)
PINK STIPPLED BLACK
GREEN HATCHED BLACK
CLEAR WATER BAY ROAD
TAI PO TSAI
NO. OF STOREY (INCLUDING ENTRANCE HALL ABOVE CARPARK)
TOP LEVEL
MAIN ROOF LEVEL
GROUND FLOOR ENTRANCE LEVEL
BUILDING TYPE (BUILDING NO.)
A(1)

REVISIONS

WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS

PROJECT:
PROPOSED COMPREHENSIVE RESIDENTIAL DEVELOPMENT AT TAI PO TSAI, SAI KUNG, N.T., LOT 898 IN D.D.227

TITLE:
MASTER LAYOUT PLAN

DATE: 09/2012 | SCALE: 1:800

JOB NO.: 31160 | DRAWING NO.: B/A10/02 | REV. NO.: (00)

Appendix B

Key Personal Contact Information Chart

Key Personal Contact Information Chart

Organization Name	Role	Name	Telephone	Fax Number
ENVIRON Hong Kong Limited	Independent Environmental Checker (IEC)	Mr. Tong Cheng	3465 2888	3465 2899
Hip Seng Construction Company Limited	Main Contractor	Mr. Martin Wong	3110 2608	3110 2606
Environmental Pioneers & Solutions Limited	Environmental Team (ET)	Ms. Goldie Fung	2556 9172	2856 2010

Appendix C

Calibration Certificates for Measuring Instruments

Hong Kong Calibration Ltd.
香 港 校 正 有限公司

Calibration Certificate

Certificate No. **28553** Page 1 of 5 Pages

Customer : Environmental Pioneers and Solutions Limited

Address : Flat A, 19/F., Chai Wan Industrial Centre Building, 21 Lee Chung Street, Chai Wan, HK.

Order No. : Q23300 **Date of receipt :** 11-Dec-12

Item Tested

Description : Sound Level Meter

Manufacturer : SVAN

Model : 955 **Serial No.** : 27302

Test Conditions

Date of Test : 8-Jan-13 **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 61672 Type1, IEC 1260 Class1 and manufacturer's 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	C127181	SCL-HKSAR
S024	Sound Level Calibrator	28588	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-Jan-13

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. **Self-generated noise:** 2.0 dBA (Mfr's Spec (Electrical) ≤14 dBA)

2. **Acoustical signal test**

UUT Setting				Applied Value (dB)	UUT Reading (dB)	
Range (dB)	Frequency Weighting	Time Weighting	1/1 Octave Filter		Before adjust	After adjust
25-120	A	F	OFF	94.0	--	93.5
		S	OFF		--	93.5
	C	F	OFF		--	93.5
	A	F	OFF	114.0	--	113.9
		S	OFF		--	113.9
	C	F	OFF		--	113.9
	A	F	ON	94.0	--	93.5
	A	F	ON	114.0	--	113.9
45-139	A	F	OFF	94.0	*91.6	93.5
		S	OFF		--	93.5
	C	F	OFF		--	93.5
	A	F	OFF	114.0	--	113.9
		S	OFF		--	113.9
	C	F	OFF		--	113.9
	A	F	ON	94.0	--	93.5
	A	F	ON	114.0	--	113.9

Mfr's Spec. : ± 0.7 dB
Uncertainty : ± 0.1 dB

3 **Electrical signal tests of frequency weightings** (A weighting)

Frequency	Attenuation (dB)	IEC 61672 Type 1 Spec.
31.5 Hz	-39.5	- 39.4 dB, ± 2 dB
63 Hz	-26.5	- 26.2 dB, ± 1.5 dB
125 Hz	-16.2	- 16.1 dB, ± 1.5 dB
250 Hz	-8.7	- 8.6 dB, ± 1 dB
500 Hz	-3.3	- 3.2 dB, ± 1.4 dB
1 kHz	0.0 (Ref)	0 dB, ± 1.1 dB
2 kHz	+1.2	+ 1.2 dB, ± 1.6 dB
4 kHz	+1.0	+ 1.0 dB, ± 1.6 dB
8 kHz	-1.1	- 1.1 dB, + 2.1 dB ~ -3.1 dB
16 kHz	-6.9	- 6.6 dB, + 3.5 dB ~ - 17.0 dB

Uncertainty : ± 0.1 dB

Calibration Certificate

4. Frequency & Time weightings at 1 kHz

4.1 Frequency Weighting (Fast)

UUT Setting	Applied Value (dB)	UUT Reading (dB)	Difference (dB)	IEC 61672 Type 1 Spec.
A	94.0	93.5 (Ref.)	- -	± 0.4 dB
C	94.0	93.5	0.0	

4.2 Time Weighting (A-weighted)

UUT Setting	Applied Value (dB)	UUT Reading (dB)	Difference (dB)	IEC 61672 Type 1 Spec.
Fast	94.0	93.5 (Ref.)	- -	± 0.3 dB
Slow	94.0	93.5	0.0	
Time-averaging	94.0	93.5	0.0	

Uncertainty : ± 0.1 dB

5. Level linearity on the reference level range

UUT Range	Applied Value (dB)	UUT Reading (dB)	Difference (dB)	IEC 61672 Type 1 Spec.
140 dB (Ref Level)	137.0	136.5	0.0	± 1.1 dB
	136.0	135.5	0.0	
	135.0	134.5	0.0	
	134.0	133.5	0.0	
	129.0	128.5	0.0	
	124.0	123.5	0.0	
	119.0	118.5	0.0	
	114.0	113.5	0.0	
	109.0	108.5	0.0	
	104.0	103.5	0.0	
	99.0	98.5	0.0	
	94.0	93.5 (Ref)	--	
	89.0	88.5	0.0	
	84.0	83.5	0.0	
	79.0	78.5	0.0	
	74.0	73.5	0.0	
	69.0	68.5	0.0	
	64.0	63.5	0.0	
	59.0	58.5	0.0	
	54.0	53.5	0.0	
	49.0	48.4	0.1	
	48.0	47.4	0.1	

Uncertainty : ± 0.1 dB

Calibration Certificate

6. Toneburst response (4kHz)

UUT Setting	Tone Burst Duration(ms)	UUT Reading(dB)	Difference (dB)	IEC 61672 Type 1 Spec.
Fast	Steady	137.0(Ref)	--	--
	200	136.0	-1.0	-1.0 ± 0.8dB
	2	118.9	-18.1	-18.0, +1.3 dB ~ -1.8 dB
	0.25	109.9	-27.1	-27.0, +1.3 dB ~ -3.3 dB
Slow	Steady	137.0(Ref)	--	--
	200	129.5	-7.5	-7.4 ± 0.8dB
	2	109.9	-27.1	-27.0, +1.3 dB ~ -3.3 dB
Time averaging	Steady	137.0(Ref)	--	--
	200	130.0	-7.0	-7.0±0.8dB
	2	110.8	-26.2	-27.0, +1.3 dB ~ -1.8 dB
	0.25	102.0	-35.0	-36.0, +1.3 dB ~ -3.3 dB

Uncertainty : ± 0.1 dB

7. Peak C sound level (140 dB Range, C-weighted, Fast)

Freq(Hz)	Signal Type	Indication of overload	UUT reading (dB)	Difference (dB)	IEC 61672 Type 1 Spec.
8000	Steady	--	132.0	--	3.2 ± 2.4 dB
	Complete-cycle	No	135.3	3.3 dB	
500	Steady	--	132.0	--	2.4 ± 1.4 dB
	+ve half-cycle	No	129.3	2.7 dB	
	-ve half-cycle	No	129.1	2.9 dB	

Uncertainty : ± 0.1 dB

Calibration Certificate

8. Overload indication (140 dB range, A-weighted, Time-average, 4kHz)

UUT Reading at overload (dB)		Difference (dB)	IEC 61672 Type 1 Spec.
+ ve one half cycle	- ve one half cycle		
137.0	138.5	1.5	< 1.8 dB

The overload indicator latched on until reset

Uncertainty : ± 0.1 dB

9. Filter Characteristics

9.1 1/1 – Octave Filter

Frequency	Attenuation (dB)	IEC 1260 Class 1 (dB)
125 Hz	-76.4	< - 61
250 Hz	-70.5	< - 42
500 Hz	-36.3	< - 17.5
707 Hz	-4.3	- 2 ~ - 5
1 kHz (Ref)	--	--
1.414 kHz	-2.1	- 2 ~ - 5
2 kHz	-50.6	< - 17.5
4 kHz	-82.3	< - 42
8 kHz	-82.5	< - 61

Uncertainty : ± 0.25 dB

Remarks : 1. UUT : Unit-Under-Test
2. The uncertainty claimed is for a confidence probability of not less than 95%.
3. Atmospheric Pressure : 1010 hPa.
4. Preamplifier model : SV 12L , S/N : 25732
5. Firmware Version: 6.12.4
6. Power Supply Check: OK
7. The UUT was adjusted with the supplied sound calibrator at the reference sound pressure level before the calibration.
8. *Out of specification.

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

Hong Kong Calibration Ltd.
香港校正有限公司

Calibration Certificate

Certificate No. **28554** Page 1 of 2 Pages

Customer : Environmental Pioneers and Solutions Limited

Address : Flat A, 19/F., Chai Wan Industrial Centre Building, 21 Lee Chung Street, Chai Wan, HK.

Order No. : Q23300 **Date of receipt :** 11-Dec-12

Item Tested

Description : Sound Level Calibrator

Manufacturer : Svantek

Model : SV30A **Serial No.** : 29085

Test Conditions

Date of Test : 3-Jan-13 **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 IEC 942 Class1 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	28588	NIM-PRC & SCL-HKSAR
S041	Universal Counter	28347	SCL-HKSAR
S206	Sound Level Meter	16338	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: 3-Jan-13

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

E

Calibration Certificate

Certificate No. 28554

Results :

1. Level Accuracy

UUT Nominal Value (dB)	Measured Value (dB)	IEC 942 Class 1 Spec.
94	94.03	± 0.3 dB
114	114.02	

Uncertainty : ± 0.2 dB

2. Frequency

UUT Nominal Value	Measured Value	IEC 942 Class 1 Spec.
1 kHz	1.000 kHz	± 2 %

Uncertainty : $\pm 3.6 \times 10^{-6}$

3. Level Stability : 0.0 dB
IEC 942 Class 1 Spec. : ± 0.1 dB
Uncertainty : ± 0.01 dB

4. Total Harmonic Distortion : < 0.1 %
IEC 942 Class 1 Spec. : < 3 %
Uncertainty : ± 2.3 % of reading

Remark : 1. UUT : Unit-Under-Test
2. The above measured values are the mean of 3 measurements.
3. The uncertainty claimed is for a confidence probability of not less than 95%.
4. Atmospheric Pressure : 1010 hPa.

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

ALS Technichem (HK) Pty Ltd

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT:	MR ALLEN CHAN	**WORK ORDER:**	HK1310697
CLIENT:	ENVIRONMENTAL PIONEERS & SOLUTIONS LIMITED	**LABORATORY:**	HONG KONG
ADDRESS:	FLAT A, 19/F, CHAI WAN INDUSTRIAL BUILDING, 20 LEE CHUNG STREET, CHAI WAN, HONG KONG	**DATE RECEIVED:** **DATE OF ISSUE:**	18/04/2013 02/05/2013

COMMENTS

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

Scope of Test:	Conductivity, Dissolved Oxygen, pH, Temperature and Turbidity
Equipment Type:	MULTI-METER
Brand Name:	Horiba
Model No.:	U-54-2 Multiparameter Probe
Serial No.:	T825CR6N
Equipment No.:	--
Date of Calibration:	30 April, 2013

NOTES

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

ISSUING LABORATORY: HONG KONG

Address

ALS Technichem (HK) Pty Ltd

11/F Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
HONG KONG

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

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

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1310697
Date of Issue: 02/05/2013
Client: ENVIRONMENTAL PIONEERS & SOLUTIONS LIMITED

Description: MULTI-METER
Brand Name: Horiba
Model No.: U-54-2 Multiparameter Probe
Serial No.: T825CR6N
Equipment No.: --
Date of Calibration: 30 April, 2013 Date of next Calibration: 30 July, 2013

Parameters:

Conductivity

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

Expected Reading (uS/cm)	Displayed Reading (uS/cm)	Tolerance (%)
146.9	147	0.1
6667	6360	-4.6
12890	13000	0.9
58670	58700	0.1
	Tolerance Limit (±%)	10.0

Dissolved Oxygen

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

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.94	4.09	0.15
6.10	6.23	0.13
8.55	8.59	0.04
	Tolerance Limit (±mg/L)	0.20

pH Value

Method Ref: APHA 21st Ed. 4500H:B

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	4.01	0.01
7.0	7.07	0.07
10.0	10.01	0.01
	Tolerance Limit (±pH unit)	0.20

Temperature

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

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
10.0	10.71	0.7
22.0	23.68	1.7
39.5	39.36	-0.1
	Tolerance Limit (±°C)	2.0

Turbidity

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

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0	--
4	3.9	-2.5
40	41.6	4.0
80	83.3	4.1
400	402	0.5
800	779	-2.6
	Tolerance Limit (±%)	10.0

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

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

CERTIFICATE OF CALIBRATION AND TESTING

TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA
Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com

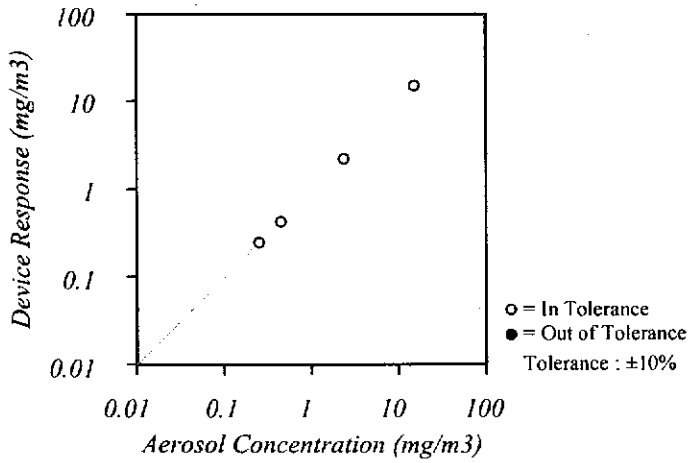
Environment Condition		
Temperature	66.6 (19.2)	°F (°C)
Relative Humidity	54	%RH
Barometric Pressure	29.08 (984.8)	inHg (hPa)

Model	**AM510**
Serial Number	**11208034**

☒ As Left ☐ As Found

☒ In Tolerance ☐ Out of Tolerance

Concentration Linearity Plot



System ID: DTI101-01

TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. There is no NIST standard for optical mass measurements. Calibration of this instrument performed by TSI has been done using emery oil and has been nominally adjusted to respirable mass of standard ISO 12103-1, A1 test dust (Arizona dust). Our calibration ratio is greater than 1.2:1

Measurement Variable	System ID	Last Cal	Cal. Due	Measurement Variable	System ID	Last Cal.	Cal. Due
Photometer	E003433	04-11-12	10-11-12	Flow and temperature	E002371	03-06-12	03-06-13
DC Voltage(Keithley)	E002859	01-18-12	01-18-13	Microbalance	M001324	01-04-11	01-04-13
Barometric Pressure	E003733	02-25-12	02-25-13	Temperature	E002873	11-14-11	11-14-12
Humidity	E002873	11-14-11	11-14-12	Pressure	E003440	08-17-12	08-17-13

Calibrated

☒ Final Function Check

August 27, 2012
Date

TSI P/N 2300157

Hong Kong Calibration Ltd.
香港校正有限公司

Calibration Certificate

Certificate No. **24181** Page 1 of 2 Pages

Customer : Environmental Pioneers and Solutions Limited

Address : Flat A, 19/F., Chai Wan Industrial Centre Building, 21 Lee Chung Street, Chai Wan, HK.

Order No. : Q21644 **Date of receipt :** 3-Jul-12

Item Tested

Description : Laser Dust Monitor

Manufacturer : SIBATA

Model : LD-3B **Serial No. :** 954254

Test Conditions

Date of Test : 5-Jul-12 ~13-Jul-12 **Supply Voltage :** --

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

Test Specifications

Calibration check.

Ref. Document/Procedure : Manufacturer recommended method (gravimetric), Z28.

Test Results

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

Main Test equipment used:

Equipment No.	Description	Cert. No.	Traceable to
S136B	Stop Watch	13184	NIM-PRC
S156	Analytical Balance	00352	NIM-PRC
S201	Std. Test Dust	61291	NIST
S207B	Std. Flowmeter	20588	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 : Dorothy Cheuk

Approved by : Steve Kwan

Date: 23-Jul-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

Certificate No. 24181

Results :

Applied Value ($\mu g/m^3$)	UUT Measured Value (K=1.3) ($\mu g/m^3$), (cpm)
1225.3	1266.2

Remarks : 1. UUT : Unit-Under-Test
2. Uncertainty ± 15 %, for a confidence probability of not less than 95%.
3. The results were the mean of 3 measurements,
4. ISO 12103-1 A1 respirable standard test dust was used for the calibration.
5. The K-Factor had been adjusted from 2.0 to 1.3

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

TISCH ENVIROMENTAL, INC.
145 SOUTH MIAMI AVE.
VILLAGE OF CLEVES, OH 45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX
WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5028A

Date - Jan 31, 2013 Rootsmeter S/N 0438320 Ta (K) - 295
Operator Tisch Orifice I.D. - 2137 Pa (mm) - 735.33

PLATE OR VDC #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.3380	4.1	1.50
2	NA	NA	1.00	1.0240	6.8	2.50
3	NA	NA	1.00	0.9350	8.2	3.00
4	NA	NA	1.00	0.8610	9.6	3.50
5	NA	NA	1.00	0.6540	16.5	6.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)
0.9719	0.7263	1.2108
0.9683	0.9456	1.5632
0.9664	1.0336	1.7123
0.9645	1.1203	1.8495
0.9554	1.4608	2.4216

Qstd slope (m) = 1.65013
intercept (b) = 0.00670
coefficient (r) = 0.99988

y axis = SQRT[H2O(Pa/760)(298/Ta)]

Va	(x axis) Qa	(y axis)
0.9944	0.7432	0.7757
0.9907	0.9675	1.0015
0.9888	1.0575	1.0971
0.9869	1.1462	1.1850
0.9775	1.4946	1.5515

Qa slope (m) = 1.03328
intercept (b) = 0.00429
coefficient (r) = 0.99988

y axis = SQRT[H2O(Ta/Pa)]

CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]
Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m{[SQRT(H2O(Pa/760)(298/Ta))]- b}
Qa = 1/m{[SQRT H2O(Ta/Pa)]- b}

TSP Sampler Calibration

SITE

Location: Tai Po Tsai
Sampler: TE-5170 MFC (Serial # : 2039)
Date: April 27, 2013
Tech: Sam Wong

CONDITIONS

Barometric Pressure (in Hg):	39.98	Corrected Pressure (mm Hg):	1015
Temperature (deg F):	72	Temperature (deg K):	295
Average Press. (in Hg):	39.98	Corrected Average (mm Hg):	1015
Average Temp. (deg F):	72	Average Temp. (deg K):	295

CALIBRATION ORIFICE

Make:	Tisch	Qstd Slope:	2.02742
Model:	TE-5025A	Qstd Intercept:	-0.02027
Serial#:	1483	Date Certified:	May 17, 2012

CALIBRATIONS

Plate or Test #	H2O (in)	Qstd (m3/min)	I (chart)	IC (corrected)
1	12.00	1.994	60.0	69.68
2	10.40	1.857	54.0	62.71
3	8.20	1.650	48.0	55.75
4	5.20	1.316	38.0	44.13
5	3.20	1.035	30.0	34.84

LINEAR REGRESSION

Slope =	35.5806
Intercept =	-2.4596
Corr. coeff.=	0.9982
# of Observations:	5

Calculations

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure

TSP Sampler Calibration

SITE

Location: Tai Po Tsai
Sampler: TE-5170 MFC (Serial # : 1959)
Date: April 27, 2013
Tech: Sam Wong

CONDITIONS

Barometric Pressure (in Hg):	39.98	Corrected Pressure (mm Hg):	1015
Temperature (deg F):	72	Temperature (deg K):	295
Average Press. (in Hg):	39.98	Corrected Average (mm Hg):	1015
Average Temp. (deg F):	72	Average Temp. (deg K):	295

CALIBRATION ORIFICE

Make:	Tisch	Qstd Slope:	2.02742
Model:	TE-5025A	Qstd Intercept:	-0.02027
Serial#:	1483	Date Certified:	May 17, 2012

CALIBRATIONS

Plate or Test #	H2O (in)	Qstd (m3/min)	I (chart)	IC (corrected)
1	12.40	2.027	60.0	69.68
2	10.60	1.875	54.0	62.71
3	8.40	1.670	48.0	55.75
4	5.40	1.341	38.0	44.13
5	3.20	1.035	32.0	37.16

LINEAR REGRESSION

Slope =	32.7924
Intercept =	1.7593
Corr. coeff.=	0.9945
# of Observations:	5

Calculations

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure

TSP Sampler Calibration

SITE

Location: Tai Po Tsai
Sampler: TE-5170 MFC (Serial # : 2042)
Date: April 27, 2013
Tech: Sam Wong

CONDITIONS

Barometric Pressure (in Hg):	39.98	Corrected Pressure (mm Hg):	1015
Temperature (deg F):	72	Temperature (deg K):	295
Average Press. (in Hg):	39.98	Corrected Average (mm Hg):	1015
Average Temp. (deg F):	72	Average Temp. (deg K):	295

CALIBRATION ORIFICE

Make:	Tisch	Qstd Slope:	2.02742
Model:	TE-5025A	Qstd Intercept:	-0.02027
Serial#:	1483	Date Certified:	May 17, 2012

CALIBRATIONS

Plate or Test #	H2O (in)	Qstd (m3/min)	I (chart)	IC (corrected)
1	12.40	2.027	58.0	67.36
2	10.20	1.839	52.0	60.39
3	7.90	1.620	46.0	53.42
4	5.20	1.316	38.0	44.13
5	3.30	1.051	30.0	34.84

LINEAR REGRESSION

Slope =	32.7734
Intercept =	0.5521
Corr. coeff.=	0.9995
# of Observations:	5

Calculations

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure

TSP Sampler Calibration

SITE

Location: Tai Po Tsai
Sampler: TE-5170 MFC (Serial # : 2040)
Date: April 27, 2013
Tech: Sam Wong

CONDITIONS

Barometric Pressure (in Hg):	39.98	Corrected Pressure (mm Hg):	1015
Temperature (deg F):	72	Temperature (deg K):	295
Average Press. (in Hg):	39.98	Corrected Average (mm Hg):	1015
Average Temp. (deg F):	72	Average Temp. (deg K):	295

CALIBRATION ORIFICE

Make:	Tisch	Qstd Slope:	2.02742
Model:	TE-5025A	Qstd Intercept:	-0.02027
Serial#:	1483	Date Certified:	May 17, 2012

CALIBRATIONS

Plate or Test #	H2O (in)	Qstd (m3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
1	12.20	2.011	58.0	67.36	Slope =	33.1774
2	10.20	1.839	53.0	61.55	Intercept =	0.2961
3	8.00	1.630	46.0	53.42	Corr. coeff.=	0.9991
4	5.20	1.316	38.0	44.13		
5	3.20	1.035	30.0	34.84	# of Observations:	5

Calculations

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure

Appendix D

Construction Noise Monitoring Data

大成環境科技拓展有限公司
Environmental Pioneers and Solutions Limited

Noise Monitoring Data Sheet

Monitoring Location		N1	N2	N3	N4
Monitoring Method		Freefield	Freefield	Freefield	Façade
Date of Monitoring		1/5/2013	1/5/2013	1/5/2013	1/5/2013
Weather Condition		Sunny	Sunny	Sunny	Sunny
Measurement Start Time (hh:mm)		13:20	14:00	10:30	11:15
Measurement Time Length (mins)		30 mins		30 mins	
SLM Model & S/N		SVAN 955		SVAN 955	
Wind Speed (m/s)		<5, Northeast	<5, Northeast	<5, Northeast	<5, Northeast
Measurement Results	L_{eq} (dB(A))	60.5	63.1	57.9	60.3
	L_{10} (dB(A))	63.1	63.9	58.3	61.4
	L_{90} (dB(A))	53.8	62.0	54.8	52.8
Major Construction Noise Source(s) During Monitoring		Nil	Nil	Nil	Nil
Other Noise Source(s) During Monitoring		Background noise	Background noise	Background noise	Background noise Traffic noise

	Name	Signature	Date
Perpared by:	Tsang King Yuen		1/5/2013

大成環境科技拓展有限公司
Environmental Pioneers and Solutions Limited

Noise Monitoring Data Sheet

Monitoring Location		N1	N2	N3	N4
Monitoring Method		Freefield	Freefield	Freefield	Façade
Date of Monitoring		7/5/2013	7/5/2013	7/5/2013	7/5/2013
Weather Condition		Cloudy	Cloudy	Cloudy	Cloudy
Measurement Start Time (hh:mm)		9:30	11:15	10:15	14:20
Measurement Time Length (mins)		30 mins		30 mins	
SLM Model & S/N		SVAN 955		SVAN 955	
Wind Speed (m/s)		<5, Northeast	<5, Northeast	<5, Northeast	<5, Northeast
Measurement Results	L_{eq} (dB(A))	60.2	63.2	60.5	66.9
	L_{10} (dB(A))	62.3	64.9	62.7	68.3
	L_{90} (dB(A))	56.3	58.3	58.9	59.7
Major Construction Noise Source(s) During Monitoring		Nil	Nil	Nil	Nil
Other Noise Source(s) During Monitoring		Background noise	Background noise	Background noise	Background noise Traffic noise

	Name	Signature	Date
Perpared by:	Tsang King Yuen		7/5/2013

大成環境科技拓展有限公司
Environmental Pioneers and Solutions Limited

Noise Monitoring Data Sheet

Monitoring Location		N1	N2	N3	N4
Monitoring Method		Freefield	Freefield	Freefield	Façade
Date of Monitoring		13/5/2013	13/5/2013	13/5/2013	13/5/2013
Weather Condition		Sunny	Sunny	Sunny	Sunny
Measurement Start Time (hh:mm)		10:25	11:15	11:58	9:15
Measurement Time Length (mins)		30 mins		30 mins	
SLM Model & S/N		SVAN 955		SVAN 955	
Wind Speed (m/s)		<5, Northeast	<5, Northeast	<5, Northeast	<5, Northeast
Measurement Results	L_{eq} (dB(A))	61.6	60.4	59.3	60.1
	L_{10} (dB(A))	63.4	62.1	61.2	62.7
	L_{90} (dB(A))	55.9	54.7	54.3	56.1
Major Construction Noise Source(s) During Monitoring		Nil	Nil	Nil	Nil
Other Noise Source(s) During Monitoring		Background noise	Background noise	Background noise	Background noise Traffic noise

	Name	Signature	Date
Perpared by:	Tsang King Yuen		13/5/2013

大成環境科技拓展有限公司
Environmental Pioneers and Solutions Limited

Noise Monitoring Data Sheet

Monitoring Location		N1	N2	N3	N4
Monitoring Method		Freefield	Freefield	Freefield	Façade
Date of Monitoring		18/5/2013	18/5/2013	18/5/2013	18/5/2013
Weather Condition		Sunny	Sunny	Sunny	Sunny
Measurement Start Time (hh:mm)		13:07	11:30	10:00	10:45
Measurement Time Length (mins)		30 mins		30 mins	
SLM Model & S/N		SVAN 955		SVAN 955	
Wind Speed (m/s)		<5, East	<5, East	<5, East	<5, East
Measurement Results	L_{eq} (dB(A))	59.8	61.7	62.1	64.9
	L_{10} (dB(A))	61.3	62.9	63.8	66.1
	L_{90} (dB(A))	54.1	55.7	56.8	58.6
Major Construction Noise Source(s) During Monitoring		Nil	Nil	Nil	Nil
Other Noise Source(s) During Monitoring		Background noise	Background noise	Background noise	Background noise Traffic noise

	Name	Signature	Date
Perpared by:	Tsang King Yuen		18/5/2013

大成環境科技拓展有限公司
Environmental Pioneers and Solutions Limited

Noise Monitoring Data Sheet

Monitoring Location		N1	N2	N3	N4
Monitoring Method		Freefield	Freefield	Freefield	Façade
Date of Monitoring		24/5/2013	24/5/2013	24/5/2013	24/5/2013
Weather Condition		Cloudy	Cloudy	Cloudy	Cloudy
Measurement Start Time (hh:mm)		12:45	11:15	10:25	9:15
Measurement Time Length (mins)		30 mins		30 mins	
SLM Model & S/N		SVAN 955		SVAN 955	
Wind Speed (m/s)		<5, Northeast	<5, Northeast	<5, Northeast	<5, Northeast
Measurement Results	L_{eq} (dB(A))	62.3	63.1	62.8	59.6
	L_{10} (dB(A))	63.8	64.5	66.9	61.5
	L_{90} (dB(A))	59.6	55.8	53.7	54.9
Major Construction Noise Source(s) During Monitoring		Nil	Nil	Nil	Nil
Other Noise Source(s) During Monitoring		Background noise	Background noise	Background noise	Background noise Traffic noise

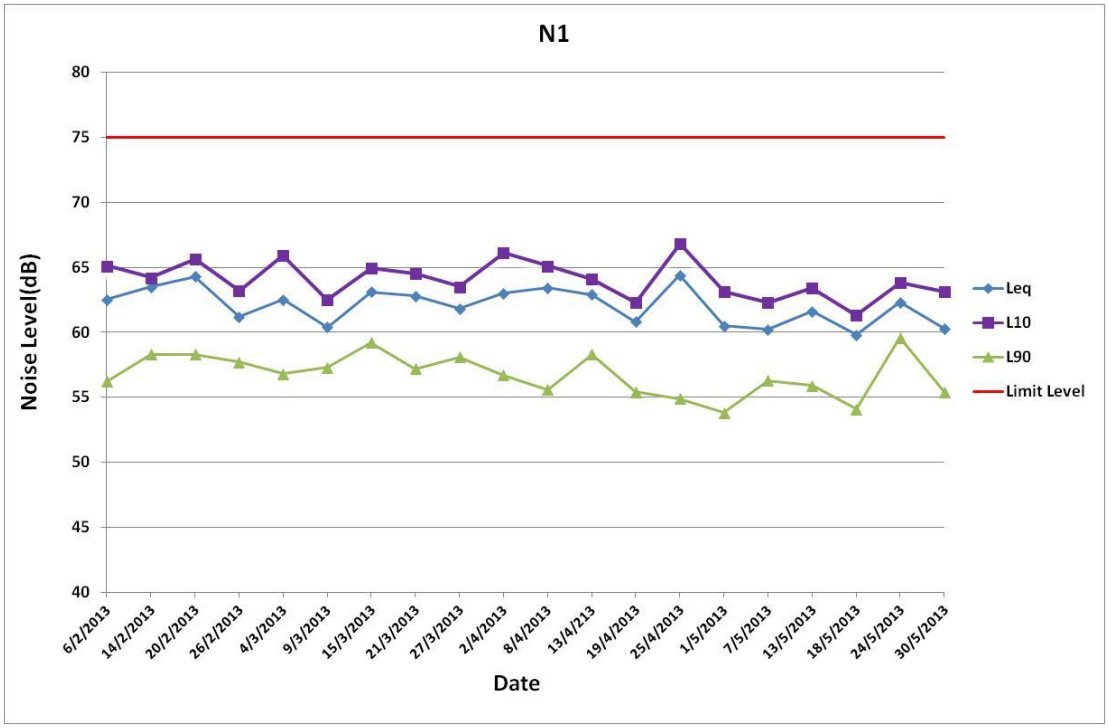
	Name	Signature	Date
Perpared by:	Tsang King Yuen		24/5/2013

大成環境科技拓展有限公司
Environmental Pioneers and Solutions Limited

Noise Monitoring Data Sheet

Monitoring Location		N1	N2	N3	N4
Monitoring Method		Freefield	Freefield	Freefield	Façade
Date of Monitoring		30/5/2013	30/5/2013	30/5/2013	30/5/2013
Weather Condition		Sunny	Sunny	Sunny	Sunny
Measurement Start Time (hh:mm)		11:20	13:01	9:30	10:15
Measurement Time Length (mins)		30 mins		30 mins	
SLM Model & S/N		SVAN 955		SVAN 955	
Wind Speed (m/s)		<5, East	<5, East	<5, East	<5, Northeast
Measurement Results	L_{eq} (dB(A))	60.3	59.4	61.2	64.8
	L_{10} (dB(A))	63.1	62.6	63.9	66.7
	L_{90} (dB(A))	55.4	51.6	57.2	58.9
Major Construction Noise Source(s) During Monitoring		Nil	Nil	Nil	Nil
Other Noise Source(s) During Monitoring		Background noise	Background noise	Background noise	Background noise Traffic noise

	Name	Signature	Date
Perpared by:	Andy Tsang		30/5/2013


N1
80
75
70
65
60
55
50
45
40
Noise Level(dB)
6/2/2013
14/2/2013
20/2/2013
26/2/2013
4/3/2013
9/3/2013
15/3/2013
21/3/2013
27/3/2013
2/4/2013
8/4/2013
13/4/213
19/4/2013
25/4/2013
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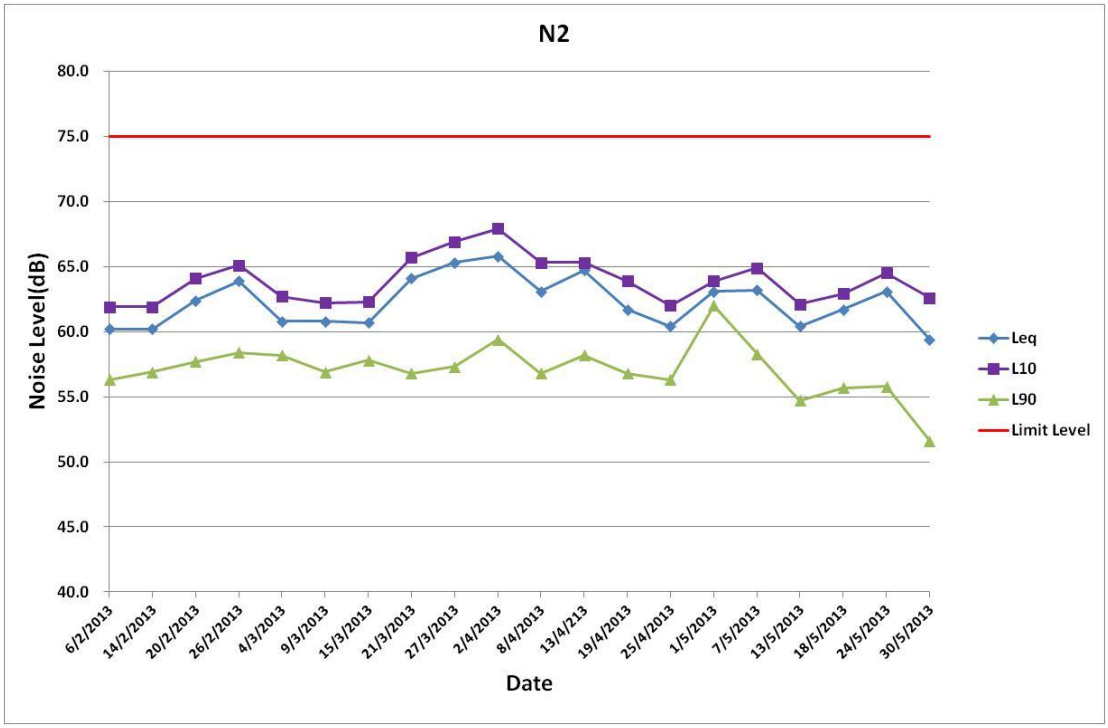
24/5/2013
30/5/2013
Date
Leq
L10
L90
Limit Level


N2
80.0
75.0
70.0
65.0
60.0
55.0
50.0
45.0
40.0
Noise Level(dB)
6/2/2013
14/2/2013
20/2/2013
26/2/2013
4/3/2013
9/3/2013
15/3/2013
21/3/2013
27/3/2013
2/4/2013
8/4/2013
13/4/213
19/4/2013
25/4/2013
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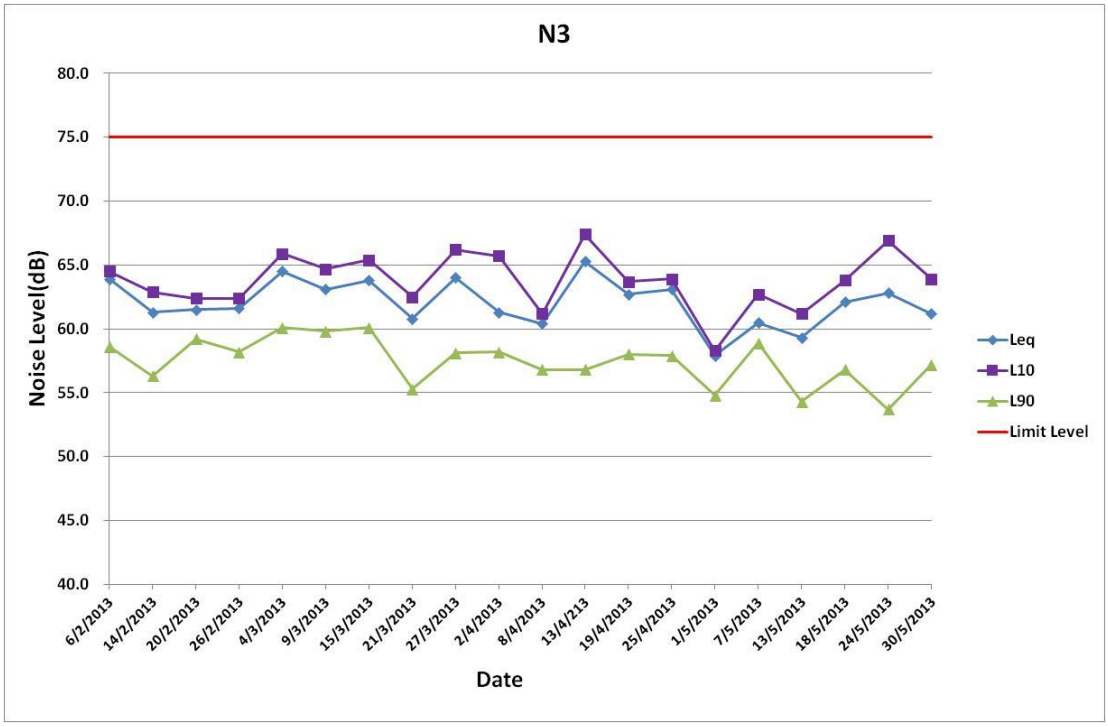
24/5/2013
30/5/2013
Date
Leq
L10
L90
Limit Level


N3
80.0
75.0
70.0
65.0
60.0
55.0
50.0
45.0
40.0
Noise Level(dB)
6/2/2013
14/2/2013
20/2/2013
26/2/2013
4/3/2013
9/3/2013
15/3/2013
21/3/2013
27/3/2013
2/4/2013
8/4/2013
13/4/213
19/4/2013
25/4/2013
1/5/2013
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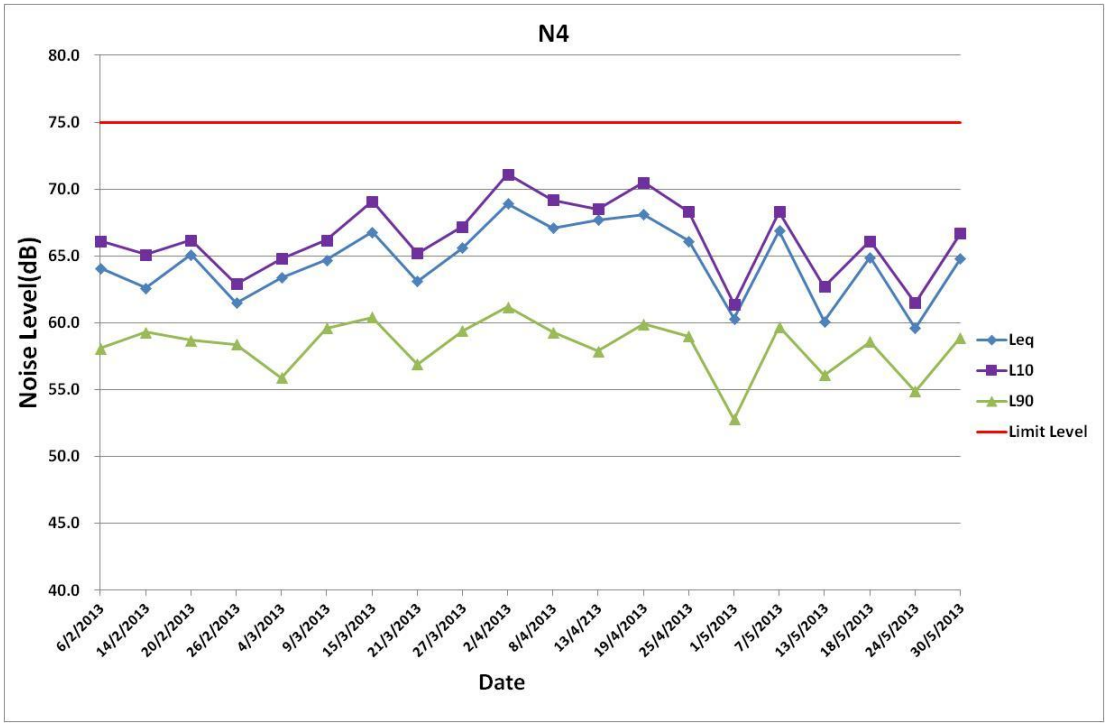
24/5/2013
30/5/2013
Date
Leq
L10
L90
Limit Level


N4
80.0
75.0
70.0
65.0
60.0
55.0
50.0
45.0
40.0
Noise Level(dB)
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14/2/2013
20/2/2013
26/2/2013
4/3/2013
9/3/2013
15/3/2013
21/3/2013
27/3/2013
2/4/2013
8/4/2013
13/4/213
19/4/2013
25/4/2013
1/5/2013
7/5/2013
13/5/2013
18/5/2013
24/5/2013
30/5/2013
Date
Leq
L10
L90
Limit Level

Appendix E

Water Quality Monitoring Data

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 2/5/2013

Weather : Sunny

Monitoring Location	W1	W2
Time (hhmm)	13:00	13:30
Water Depth (m)	<1	<1
pH value	8.17	7.89
Temperature (^{o}C)	23.4	22.3
Turbidity (NTU)	4.9	6.0
DO (mg/L)	8.77	8.78
DO Saturation (%)	98%	100%
Suspended Solids (mg/L)	13.0	12.0

Remark or Observation :

	Name	Signature	Date
Prepared By :	Tsang King Yeun		2/5/2013

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 4/5/2013

Weather : Sunny

Monitoring Location	W1	W2
Time (hhmm)	16:00	16:30
Water Depth (m)	<1	<1
pH value	8.23	7.25
Temperature (^{o}C)	23.4	22.7
Turbidity (NTU)	2.0	5.1
DO (mg/L)	8.21	7.56
DO Saturation (%)	90%	85%
Suspended Solids (mg/L)	16.0	17.0

Remark or Observation :

	Name	Signature	Date
Prepared By :	Tsang King Yeun		4/5/2013

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 7/5/2013

Weather : Cloudy

Monitoring Location	W1	W2
Time (hhmm)	13:00	13:30
Water Depth (m)	<1	<1
pH value	8.20	7.83
Temperature (^{o}C)	23.4	23.1
Turbidity (NTU)	5.80	5.6
DO (mg/L)	8.78	8.30
DO Saturation (%)	98%	93%
Suspended Solids (mg/L)	4.0	4.0

Remark or Observation :

	Name	Signature	Date
Prepared By :	Tsang King Yeun		7/5/2013

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 9/5/2013

Weather : Rainy

Monitoring Location	W1	W2
Time (hhmm)	13:00	13:30
Water Depth (m)	<1	<1
pH value	7.79	8.30
Temperature (^{o}C)	23.5	23.4
Turbidity (NTU)	7.6	6.0
DO (mg/L)	7.89	7.69
DO Saturation (%)	88%	85%
Suspended Solids (mg/L)	31.0	33.0

Remark or Observation : Turbid water was observed at W1 and W2.
The exceedanc was caused by adverse weather

	Name	Signature	Date
Prepared By :	Tsang King Yeun		9/5/2013

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 11/5/2013

Weather : Sunny

Monitoring Location	W1	W2
Time (hhmm)	16:00	16:30
Water Depth (m)	<1	<1
pH value	7.78	8.21
Temperature (^{o}C)	23.6	23.1
Turbidity (NTU)	3.2	4.9
DO (mg/L)	7.96	7.88
DO Saturation (%)	90%	88%
Suspended Solids (mg/L)	4.0	6.0

Remark or Observation :

	Name	Signature	Date
Prepared By :	Tsang King Yeun		11/5/2013

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 14/5/2013

Weather : Sunny

Monitoring Location	W1	W2
Time (hhmm)	10:00	10:30
Water Depth (m)	<1	<1
pH value	7.87	8.20
Temperature (^{o}C)	23.1	23.4
Turbidity (NTU)	2.1	5.7
DO (mg/L)	8.21	8.71
DO Saturation (%)	90%	95%
Suspended Solids (mg/L)	3.0	5.0

Remark or Observation :

	Name	Signature	Date
Prepared By :	Tsang King Yeun		14/5/2013

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 16/5/2013

Weather : Sunny

Monitoring Location	W1	W2
Time (hhmm)	13:00	13:30
Water Depth (m)	<1	<1
pH value	7.96	8.21
Temperature (^{o}C)	23.4	22.3
Turbidity (NTU)	1.9	6.0
DO (mg/L)	7.90	7.34
DO Saturation (%)	90%	85%
Suspended Solids (mg/L)	4.0	5.0

Remark or Observation :

	Name	Signature	Date
Prepared By :	Tsang King Yeun		16/5/2013

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 18/5/2013

Weather : Sunny

Monitoring Location	W1	W2
Time (hhmm)	16:00	16:30
Water Depth (m)	<1	<1
pH value	8.23	7.88
Temperature (^{o}C)	23.5	22.9
Turbidity (NTU)	1.8	5.9
DO (mg/L)	7.84	8.31
DO Saturation (%)	88%	93%
Suspended Solids (mg/L)	4.0	3.0

Remark or Observation :

	Name	Signature	Date
Prepared By :	Tsang King Yeun		18/5/2013

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 21/5/2013

Weather : Rainy

Monitoring Location	W1	W2
Time (hhmm)	13:00	13:30
Water Depth (m)	<1	<1
pH value	8.20	7.86
Temperature (^{o}C)	23.1	22.8
Turbidity (NTU)	42.6	34.8
DO (mg/L)	8.56	8.89
DO Saturation (%)	95%	98%
Suspended Solids (mg/L)	72.0	56.0

Remark or Observation : Turbid water was observed at W1 and W2.
The exceedanc was caused by adverse weather

	Name	Signature	Date
Prepared By :	Tsang King Yeun		21/5/2013

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 22/5/2013

Weather : Overcast

Monitoring Location	W1	W2
Time (hhmm)	10:30	11:00
Water Depth (m)	<1	<1
pH value	8.06	7.88
Temperature (^{o}C)	23.3	22.9
Turbidity (NTU)	4.7	6.0
DO (mg/L)	8.36	8.69
DO Saturation (%)	92%	99%
Suspended Solids (mg/L)	N/A	N/A

Remark or Observation :

	Name	Signature	Date
Prepared By :	Tsang King Yeun		22/5/2013

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 23/5/2013

Weather : Cloudy

Monitoring Location	W1	W2
Time (hhmm)	13:00	13:30
Water Depth (m)	<1	<1
pH value	8.13	7.98
Temperature (^{o}C)	23.8	23.9
Turbidity (NTU)	4.8	5.8
DO (mg/L)	7.56	8.56
DO Saturation (%)	80%	86%
Suspended Solids (mg/L)	5.0	16.0

Remark or Observation :

	Name	Signature	Date
Prepared By :	Tsang King Yeun		23/5/2013

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 25/5/2013

Weather : Rainy

Monitoring Location	W1	W2
Time (hhmm)	10:00	10:30
Water Depth (m)	<1	<1
pH value	7.96	7.89
Temperature (^{o}C)	24.9	24.1
Turbidity (NTU)	16.4	15.1
DO (mg/L)	8.38	8.67
DO Saturation (%)	84%	90%
Suspended Solids (mg/L)	3.0	14.0

Remark or Observation : Turbid water was observed at W1 and W2.
The exceedanc was caused by adverse weather

	Name	Signature	Date
Prepared By :	Tsang King Yeun		25/5/2013

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 27/5/2013

Weather : Sunny

Monitoring Location	W1	W2
Time (hhmm)	10:15	10:45
Water Depth (m)	<1	<1
pH value	8.01	7.89
Temperature (^{o}C)	23.9	23.1
Turbidity (NTU)	4.8	4.1
DO (mg/L)	8.13	8.61
DO Saturation (%)	91%	92%
Suspended Solids (mg/L)	N/A	N/A

Remark or Observation :

	Name	Signature	Date
Prepared By :	Tsang King Yeun		27/5/2013

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 28/5/2013

Weather : Sunny

Monitoring Location	W1	W2
Time (hhmm)	13:00	13:30
Water Depth (m)	<1	<1
pH value	7.78	8.03
Temperature (^{o}C)	25.4	25.6
Turbidity (NTU)	2.0	5.1
DO (mg/L)	8.23	7.78
DO Saturation (%)	92%	80%
Suspended Solids (mg/L)	2.0	2.0

Remark or Observation :

	Name	Signature	Date
Prepared By :	Tsang King Yeun		28/5/2013

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 30/5/2013

Weather : Sunny

Monitoring Location	W1	W2
Time (hhmm)	10:00	10:30
Water Depth (m)	<1	<1
pH value	8.17	7.88
Temperature (^{o}C)	25.1	25.2
Turbidity (NTU)	4.0	5.8
DO (mg/L)	7.86	8.56
DO Saturation (%)	75%	85%
Suspended Solids (mg/L)	2.0	2.0

Remark or Observation :

	Name	Signature	Date
Prepared By :	Tsang King Yeun		30/5/2013

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: ENVIRONMENTAL PIONEERS & SOLUTIONS LTD	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 3
Contact	: MR ALLEN CHAN	Contact	: Fung Lim Chee, Richard	Work Order	: HK1312112
Address	: FLAT A, 19/F, CHAI WAN INDUSTRIAL CENTRE BUILDING, 20 LEE CHUNG STREET, CHAI WAN HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: allenchan@epsl.com.hk	E-mail	: Richard.Fung@alsglobal.com		
Telephone	: +852 2558 7699	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: TAI PO TSAI	Quote number	: ----	Date Samples Received	: 06-MAY-2013
Order number	: ----			Issue Date	: 14-MAY-2013
C-O-C number	: ----			No. of samples received	: 4
Site	: ----			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 10-MAY-2013

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific comments for Work Order: **HK1312112**

Sample(s) were received in an ambient condition.

Water sample(s) analysed and reported on an as received basis.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the Electronic Transactions Ordinance of Hong Kong, Chapter 553, Section 6.

Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

Analytical Results

Sub-Matrix: **WATER**

Compound	*CAS Number*	*LOR*	*Unit*	*Client sample ID*	**W1**	**W2**	**W1**	**W2**	
				Client sampling date / time	[02-MAY-2013]	[02-MAY-2013]	[04-MAY-2013]	[04-MAY-2013]	
					HK1312112-001	**HK1312112-002**	**HK1312112-003**	**HK1312112-004**	
EA/ED: Physical and Aggregate Properties									
EA025: Suspended Solids (SS)	----	2	mg/L		**13**	**12**	**16**	**17**	

Laboratory Duplicate (DUP) Report

Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 2858783)								
HK1311972-001	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	<2	<2	0.0
HK1312106-005	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	125	126	1.2
EA/ED: Physical and Aggregate Properties (QC Lot: 2860261)								
HK1312081-039	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	<2	<2	0.0
HK1312081-060	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	<2	<2	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 2858783)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	100	----	84	114	----	----
EA/ED: Physical and Aggregate Properties (QC Lot: 2860261)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	102	----	84	114	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: ENVIRONMENTAL PIONEERS & SOLUTIONS LTD	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 3
Contact	: MR ALLEN CHAN	Contact	: Fung Lim Chee, Richard	Work Order	: HK1312608
Address	: FLAT A, 19/F, CHAI WAN INDUSTRIAL CENTRE BUILDING, 20 LEE CHUNG STREET, CHAI WAN HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: allenchan@epsl.com.hk	E-mail	: Richard.Fung@alsglobal.com		
Telephone	: +852 2558 7699	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: TAI PO TSAI	Quote number	: ----	Date Samples Received	: 09-MAY-2013
Order number	: ----			Issue Date	: 20-MAY-2013
C-O-C number	: ----			No. of samples received	: 4
Site	: ----			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 16-MAY-2013

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific comments for Work Order: **HK1312608**

Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.

Water sample(s) analysed and reported on an as received basis.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the Electronic Transactions Ordinance of Hong Kong, Chapter 553, Section 6.

Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

Analytical Results

Sub-Matrix: **WATER**

Compound	*CAS Number*	*LOR*	*Unit*	*Client sample ID*	**W1**	**W2**	**W1**	**W2**	
				Client sampling date / time	[07-MAY-2013]	[07-MAY-2013]	[09-MAY-2013]	[09-MAY-2013]	
					HK1312608-001	**HK1312608-002**	**HK1312608-003**	**HK1312608-004**	
EA/ED: Physical and Aggregate Properties									
EA025: Suspended Solids (SS)	----	2	mg/L		**4**	**4**	**31**	**33**	

Laboratory Duplicate (DUP) Report

Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 2866576)								
HK1312233-065	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	6	6	0.0
EA/ED: Physical and Aggregate Properties (QC Lot: 2869261)								
HK1312378-001	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	44	46	5.2
HK1312608-004	W2	**EA025: Suspended Solids (SS)**	----	2	mg/L	33	32	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 2866576)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	100	----	84	114	----	----
EA/ED: Physical and Aggregate Properties (QC Lot: 2869261)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	100	----	84	114	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: ENVIRONMENTAL PIONEERS & SOLUTIONS LTD	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 3
Contact	: MR ALLEN CHAN	Contact	: Fung Lim Chee, Richard	Work Order	: HK1313101
Address	: FLAT A, 19/F, CHAI WAN INDUSTRIAL CENTRE BUILDING, 20 LEE CHUNG STREET, CHAI WAN HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: allenchan@epsl.com.hk	E-mail	: Richard.Fung@alsglobal.com		
Telephone	: +852 2558 7699	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: TAI PO TSAI	Quote number	: ----	Date Samples Received	: 14-MAY-2013
Order number	: ----			Issue Date	: 23-MAY-2013
C-O-C number	: ----			No. of samples received	: 4
Site	: ----			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 21-MAY-2013

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific comments for Work Order: **HK1313101**

Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.

Water sample(s) analysed and reported on an as received basis.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the Electronic Transactions Ordinance of Hong Kong, Chapter 553, Section 6.

Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

Analytical Results

Sub-Matrix: **WATER**

Compound	*CAS Number*	*LOR*	*Unit*	*Client sample ID*	**W1**	**W2**	**W1**	**W2**	
				Client sampling date / time	[11-MAY-2013]	[11-MAY-2013]	[14-MAY-2013]	[14-MAY-2013]	
					HK1313101-001	**HK1313101-002**	**HK1313101-003**	**HK1313101-004**	
EA/ED: Physical and Aggregate Properties									
EA025: Suspended Solids (SS)	----	2	mg/L		**4**	**6**	**3**	**5**	

Laboratory Duplicate (DUP) Report

Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 2874576)								
HK1312864-004	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	18	18	0.0
HK1312873-001	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	<2	<2	0.0
EA/ED: Physical and Aggregate Properties (QC Lot: 2876630)								
HK1313012-001	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	642	644	0.3
HK1313098-001	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	3	3	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 2874576)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	102	----	84	114	----	----
EA/ED: Physical and Aggregate Properties (QC Lot: 2876630)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	98.0	----	84	114	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: ENVIRONMENTAL PIONEERS & SOLUTIONS LTD	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 3
Contact	: MR ALLEN CHAN	Contact	: Fung Lim Chee, Richard	Work Order	: HK1313516
Address	: FLAT A, 19/F, CHAI WAN INDUSTRIAL CENTRE BUILDING, 20 LEE CHUNG STREET, CHAI WAN HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: allenchan@epsl.com.hk	E-mail	: Richard.Fung@alsglobal.com		
Telephone	: +852 2558 7699	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: TAI PO TSAI	Quote number	: ----	Date Samples Received	: 20-MAY-2013
Order number	: ----			Issue Date	: 29-MAY-2013
C-O-C number	: ----			No. of samples received	: 4
Site	: ----			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 27-MAY-2013

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific comments for Work Order: **HK1313516**

Sample(s) were received in an ambient condition.

Water sample(s) analysed and reported on an as received basis.

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Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

Analytical Results

Sub-Matrix: **WATER**

Compound	*CAS Number*	*LOR*	*Unit*	*Client sample ID*	**W1**	**W2**	**W1**	**W2**	
				Client sampling date / time	[16-MAY-2013]	[16-MAY-2013]	[18-MAY-2013]	[18-MAY-2013]	
					HK1313516-001	**HK1313516-002**	**HK1313516-003**	**HK1313516-004**	
EA/ED: Physical and Aggregate Properties									
EA025: Suspended Solids (SS)	----	2	mg/L		**4**	**5**	**4**	**3**	

Laboratory Duplicate (DUP) Report

Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 2887061)								
HK1313486-001	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	359	356	0.9
HK1313516-001	W1	**EA025: Suspended Solids (SS)**	----	2	mg/L	4	5	21.4

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 2887061)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	98.5	----	84	114	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: ENVIRONMENTAL PIONEERS & SOLUTIONS LTD	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 3
Contact	: MR ALLEN CHAN	Contact	: Fung Lim Chee, Richard	Work Order	: HK1313918
Address	: FLAT A, 19/F, CHAI WAN INDUSTRIAL CENTRE BUILDING, 20 LEE CHUNG STREET, CHAI WAN HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: allenchan@epsl.com.hk	E-mail	: Richard.Fung@alsglobal.com		
Telephone	: +852 2558 7699	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: TAI PO TSAI	Quote number	: ----	Date Samples Received	: 23-MAY-2013
Order number	: ----			Issue Date	: 31-MAY-2013
C-O-C number	: ----			No. of samples received	: 4
Site	: ----			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 29-MAY-2013

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific comments for Work Order: **HK1313918**

Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.

Water sample(s) analysed and reported on an as received basis.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the Electronic Transactions Ordinance of Hong Kong, Chapter 553, Section 6.

Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

Analytical Results

Sub-Matrix: **WATER**

Compound	*CAS Number*	*LOR*	*Unit*	*Client sample ID*	**W1**	**W2**	**W1**	**W2**	
				Client sampling date / time	[21-MAY-2013]	[21-MAY-2013]	[23-MAY-2013]	[23-MAY-2013]	
					HK1313918-001	**HK1313918-002**	**HK1313918-003**	**HK1313918-004**	
EA/ED: Physical and Aggregate Properties									
EA025: Suspended Solids (SS)	----	2	mg/L		**72**	**56**	**6**	**16**	

Laboratory Duplicate (DUP) Report

Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 2891609)								
HK1313801-001	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	6	5	0.0
HK1313888-001	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	<2	<2	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 2891609)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	98.5	----	84	114	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: ENVIRONMENTAL PIONEERS & SOLUTIONS LTD	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 3
Contact	: MR ALLEN CHAN	Contact	: Fung Lim Chee, Richard	Work Order	: HK1314267
Address	: FLAT A, 19/F, CHAI WAN INDUSTRIAL CENTRE BUILDING, 20 LEE CHUNG STREET, CHAI WAN HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: allenchan@epsl.com.hk	E-mail	: Richard.Fung@alsglobal.com		
Telephone	: +852 2558 7699	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: TAI PO TSAI	Quote number	: ----	Date Samples Received	: 28-MAY-2013
Order number	: ----			Issue Date	: 05-JUN-2013
C-O-C number	: ----			No. of samples received	: 4
Site	: ----			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 03-JUN-2013

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific comments for Work Order: **HK1314267**

Sample(s) were picked up from client by ALS Technichem (HK) staff in an ambient condition.

Water sample(s) analysed and reported on an as received basis.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the Electronic Transactions Ordinance of Hong Kong, Chapter 553, Section 6.

Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

Analytical Results

Sub-Matrix: **WATER**

Compound	*CAS Number*	*LOR*	*Unit*	*Client sample ID*	**W1**	**W2**	**W1**	**W2**	
				Client sampling date / time	[25-MAY-2013]	[25-MAY-2013]	[28-MAY-2013]	[28-MAY-2013]	
					HK1314267-001	**HK1314267-002**	**HK1314267-003**	**HK1314267-004**	
EA/ED: Physical and Aggregate Properties									
EA025: Suspended Solids (SS)	----	2	mg/L		**3**	**14**	<2	<2	

Laboratory Duplicate (DUP) Report

Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 2895894)								
HK1314183-001	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	<2	<2	0.0
HK1314236-001	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	11	9	12.6
EA/ED: Physical and Aggregate Properties (QC Lot: 2898198)								
HK1314239-001	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	5	6	0.0
HK1314360-002	Anonymous	**EA025: Suspended Solids (SS)**	----	0.1	mg/L	4.3	4.9	11.6

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 2895894)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	92.0	----	84	114	----	----
EA/ED: Physical and Aggregate Properties (QC Lot: 2898198)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	105	----	84	114	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: ENVIRONMENTAL PIONEERS & SOLUTIONS LTD	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 3
Contact	: MR ALLEN CHAN	Contact	: Fung Lim Chee, Richard	Work Order	: HK1314653
Address	: FLAT A, 19/F, CHAI WAN INDUSTRIAL CENTRE BUILDING, 20 LEE CHUNG STREET, CHAI WAN HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: allenchan@epsl.com.hk	E-mail	: Richard.Fung@alsglobal.com		
Telephone	: +852 2558 7699	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: TAI PO TSAI	Quote number	: ----	Date Samples Received	: 03-JUN-2013
Order number	: ----			Issue Date	: 11-JUN-2013
C-O-C number	: ----			No. of samples received	: 4
Site	: ----			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 06-JUN-2013

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific comments for Work Order: **HK1314653**

Sample(s) were received in an ambient condition.

Water sample(s) analysed and reported on an as received basis.

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Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

Analytical Results

Sub-Matrix: **WATER**

Compound	*CAS Number*	*LOR*	*Unit*	*Client sample ID*	**W1**	**W2**	**W1**	**W2**	
				Client sampling date / time	[30-MAY-2013]	[30-MAY-2013]	[01-JUN-2013]	[01-JUN-2013]	
					HK1314653-001	**HK1314653-002**	**HK1314653-003**	**HK1314653-004**	
EA/ED: Physical and Aggregate Properties									
EA025: Suspended Solids (SS)	----	2	mg/L		<2	<2	<2	<2	

Laboratory Duplicate (DUP) Report

Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 2906062)								
HK1314627-001	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	24	25	0.0
HK1314852-014	Anonymous	**EA025: Suspended Solids (SS)**	----	1	mg/L	3	3	0.0

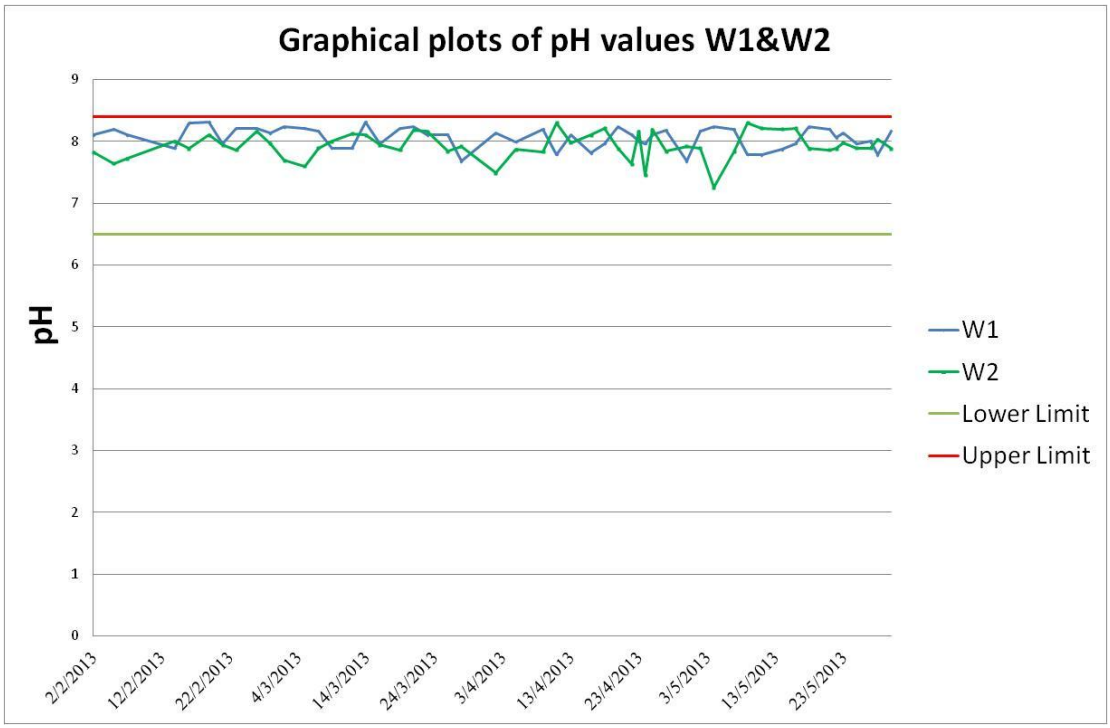
Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

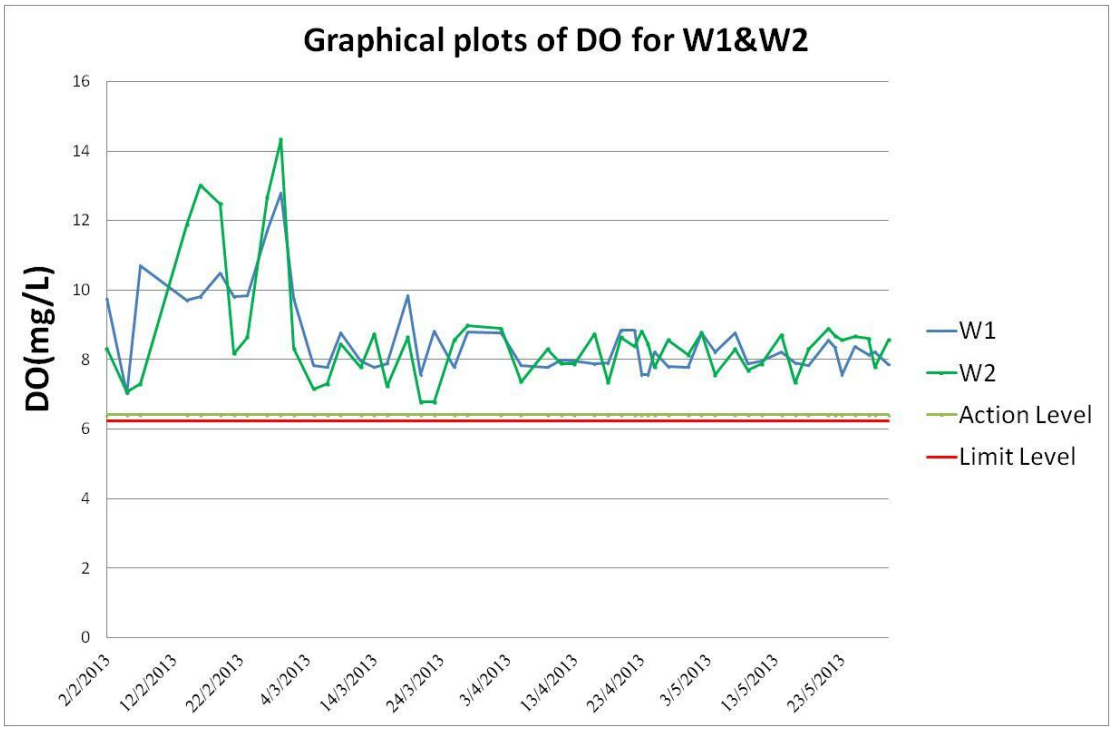
Matrix: WATER

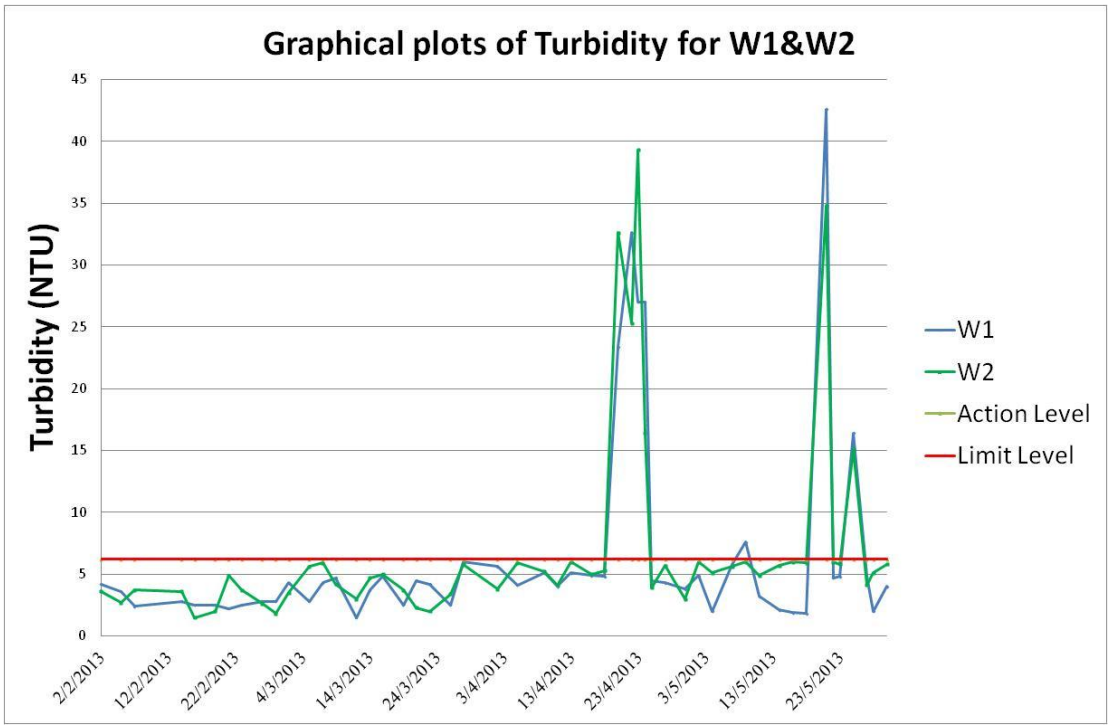
Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 2906062)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	90.5	----	84	114	----	----

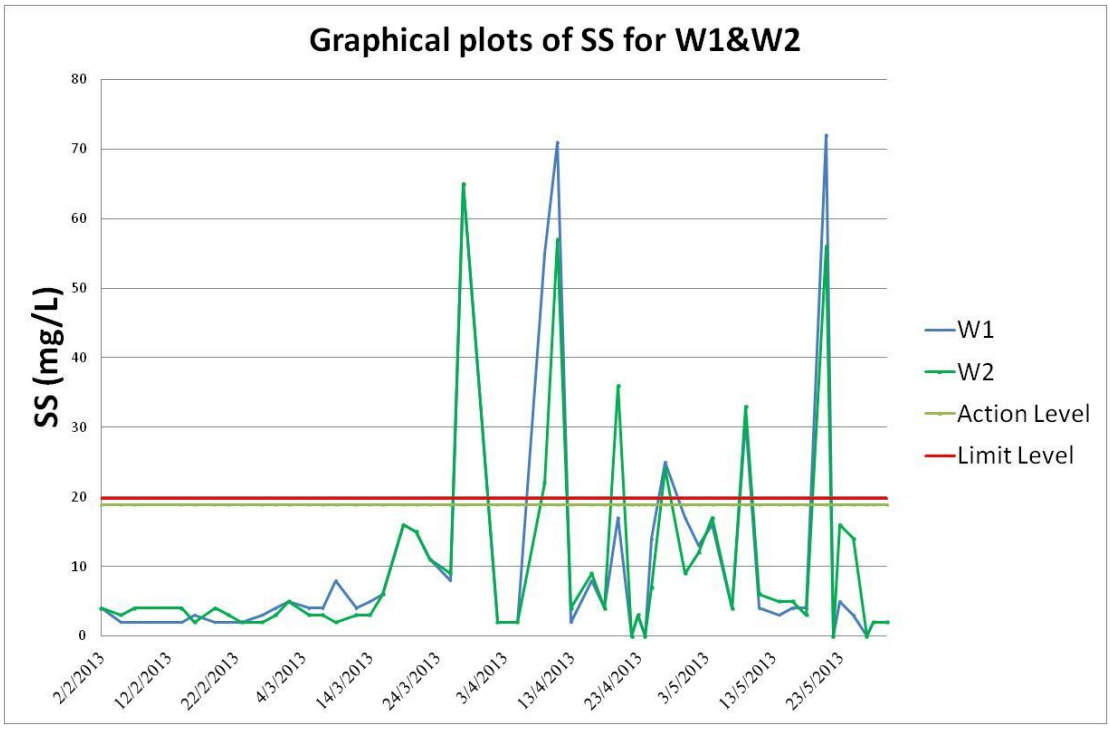
Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**


Graphical plots of pH values W1&W2
pH
9
8
7
6
5
4
3
2
1
0
2/2/2013
12/2/2013
22/2/2013
4/3/2013
14/3/2013
24/3/2013
3/4/2013
13/4/2013
23/4/2013
3/5/2013
13/5/2013
23/5/2013
W1
W2
Lower Limit
Upper Limit


Graphical plots of DO for W1&W2
DO(mg/L)
16
14
12
10
8
6
4
2
0
2/2/2013
12/2/2013
22/2/2013
4/3/2013
14/3/2013
24/3/2013
3/4/2013
13/4/2013
23/4/2013
3/5/2013
13/5/2013
23/5/2013
W1
W2
Action Level
Limit Level


Graphical plots of Turbidity for W1&W2
Turbidity (NTU)
45
40
35
30
25
20
15
10
5
0
2/2/2013
12/2/2013
22/2/2013
4/3/2013
14/3/2013
24/3/2013
3/4/2013
13/4/2013
23/4/2013
3/5/2013
13/5/2013
23/5/2013
W1
W2
Action Level
Limit Level

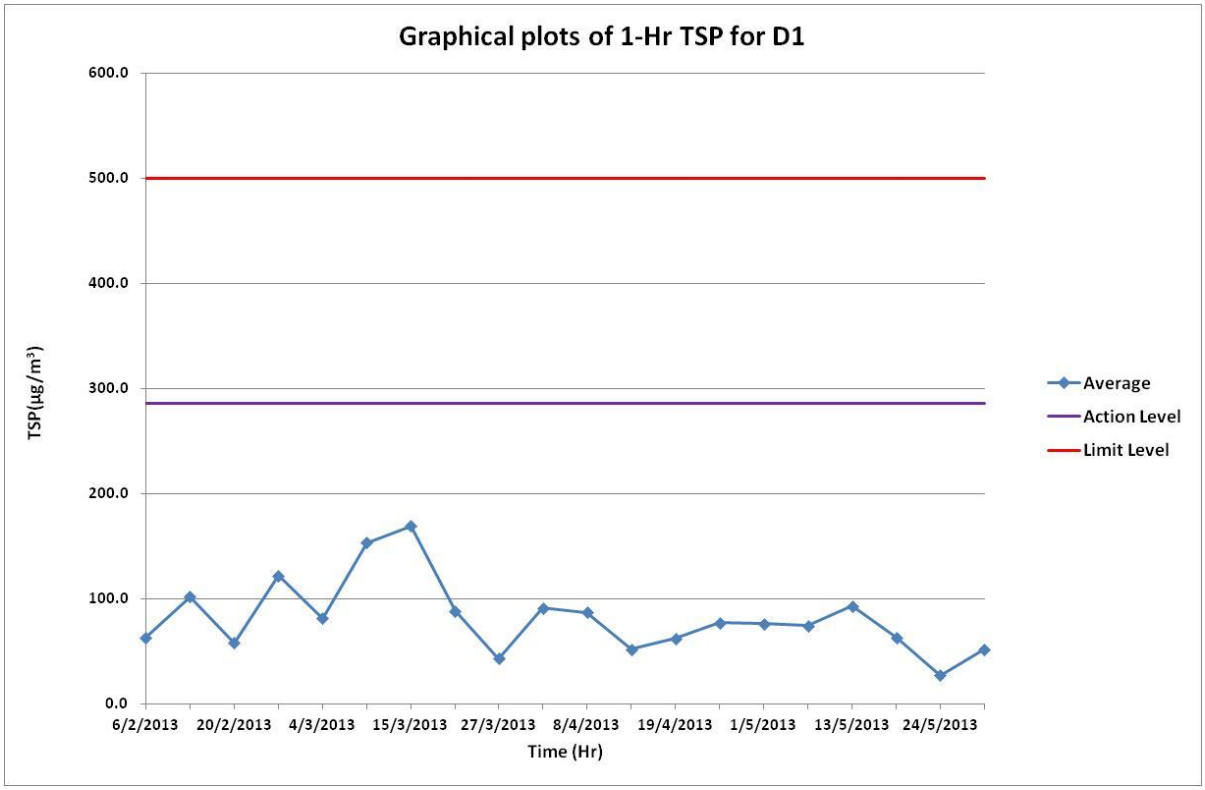

Graphical plots of SS for W1&W2
SS (mg/L)
80
70
60
50
40
30
20
10
0
2/2/2013
12/2/2013
22/2/2013
4/3/2013
14/3/2013
24/3/2013
3/4/2013
13/4/2013
23/4/2013
3/5/2013
13/5/2013
23/5/2013
W1
W2
Action Level
Limit Level

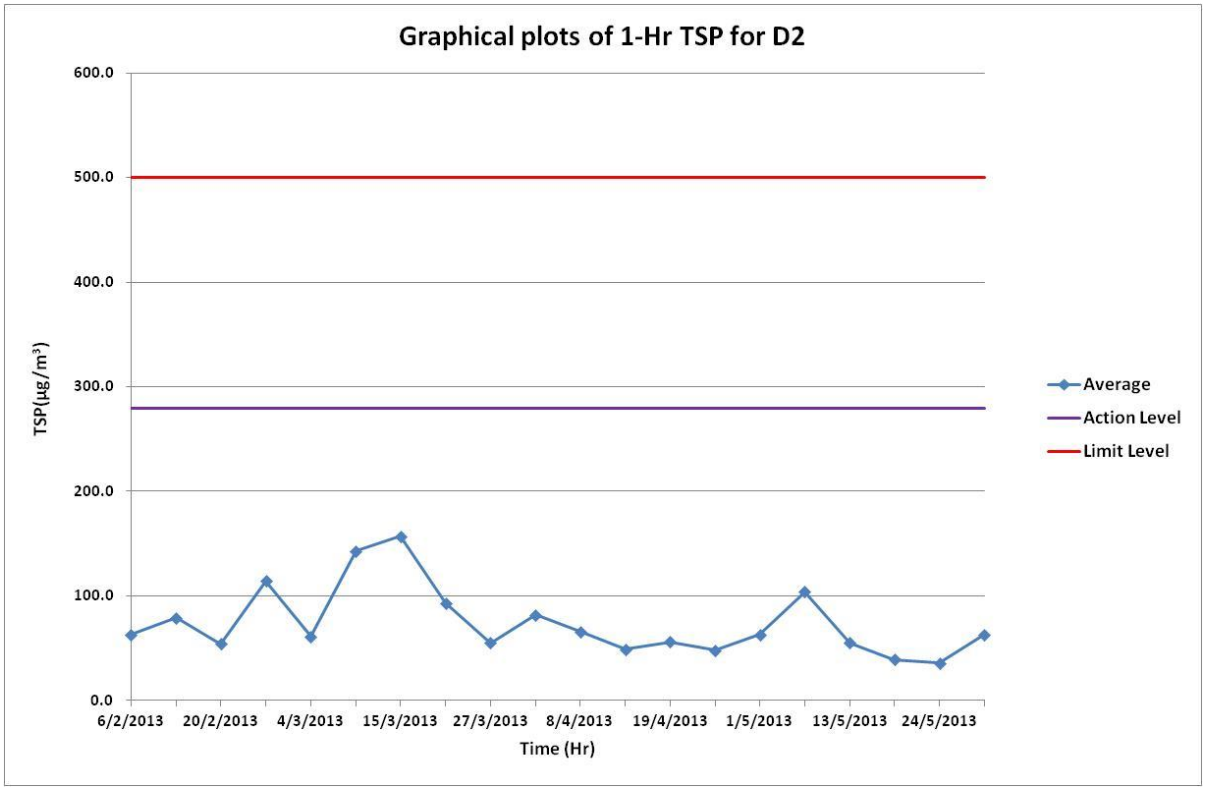
Appendix F

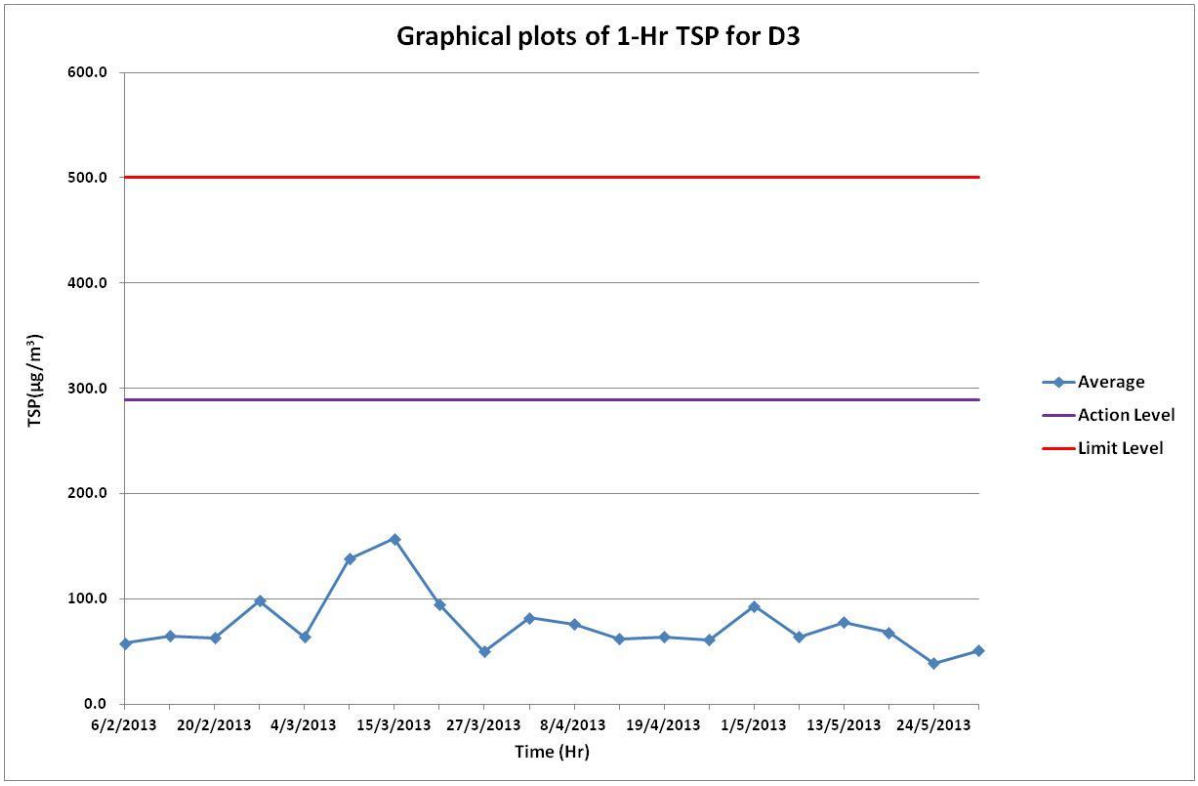
Air Quality Monitoring Data

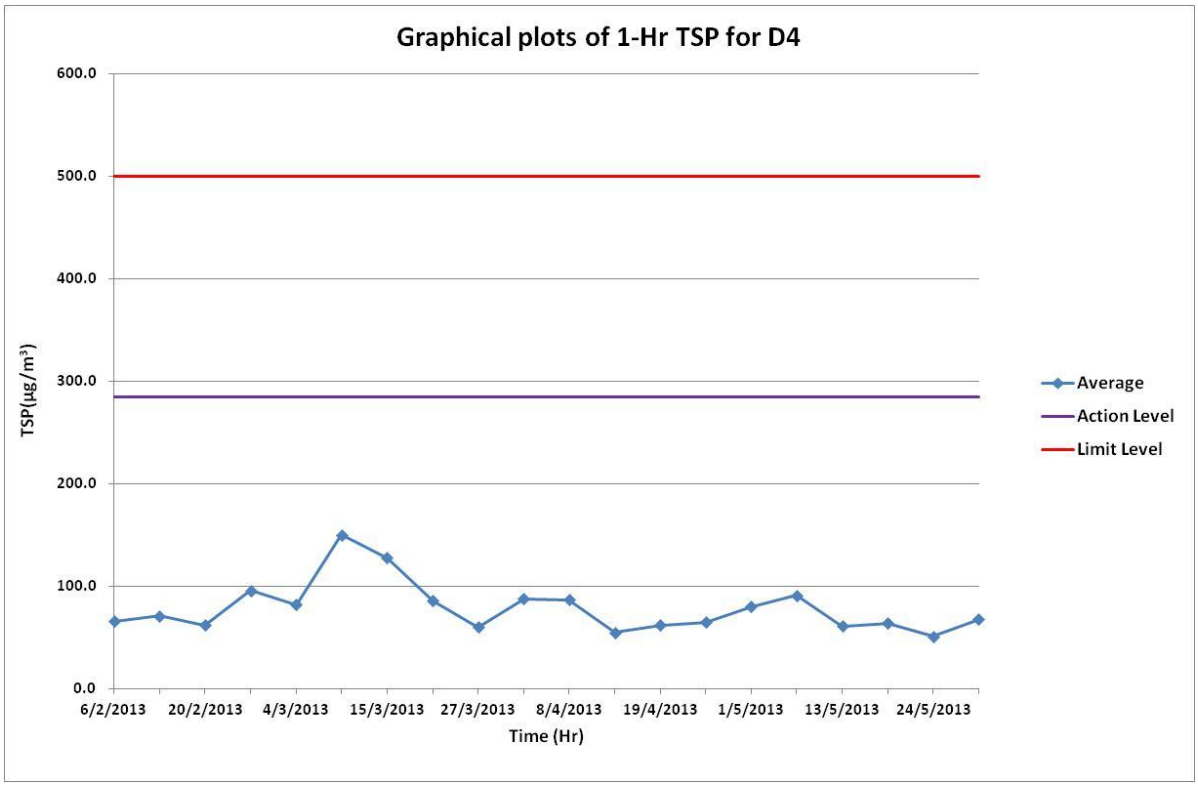
1-Hr TSP Monitoring Results

		Locations											
		D1			D2			D3			D4		
Date	Duration	Start Time	TSP Level (ug/m3)	Average (ug/m3)	Start Time	TSP Level (ug/m3)	Average (ug/m3)	Start Time	TSP Level (ug/m3)	Average (ug/m3)	Start Time	TSP Level (ug/m3)	Average (ug/m3)
1/5/2013	1 Hour	9:30	79	76	13:02	62	63	9:43	89	93	13:15	81	80
		10:30	69		14:02	67		10:43	98		14:15	83	
		11:30	80		15:02	61		11:43	92		15:15	76	
7/5/2013	1 Hour	9:45	70	74	13:04	85	104	9:55	77	64	13:12	97	91
		10:45	56		14:04	107		10:55	41		14:12	95	
		11:45	95		15:04	119		11:55	74		15:12	81	
13/5/2013	1 Hour	9:55	119	93	13:00	62	55	9:45	80	78	13:08	68	61
		10:55	87		14:00	54		10:45	74		14:08	61	
		11:55	73		15:00	50		11:45	80		15:08	55	
18/5/2013	1 Hour	9:44	67	63	13:18	40	39	9:50	62	68	13:25	64	64
		10:44	69		14:18	40		10:50	67		14:25	60	
		11:44	54		15:18	36		11:50	75		15:25	68	
24/5/2013	1 Hour	9:53	24	27	13:01	32	36	9:58	40	39	13:08	55	51
		10:53	25		14:01	35		10:58	41		14:08	47	
		11:53	32		15:01	42		11:58	37		15:08	52	
30/5/2013	1 Hour	9:15	57	52	13:07	64	63	9:28	55	51	13:00	71	68
		10:15	51		14:07	59		10:28	48		14:00	65	
		11:15	49		15:07	66		11:28	51		15:00	67	


Graphical plots of 1-Hr TSP for D1
600.0
500.0
400.0
300.0
200.0
100.0
0.0
TSP(µg/m³)
6/2/2013
20/2/2013
4/3/2013
15/3/2013
27/3/2013
8/4/2013
19/4/2013
1/5/2013
13/5/2013
24/5/2013
Time (Hr)
Average
Action Level
Limit Level


Graphical plots of 1-Hr TSP for D2
600.0
500.0
400.0
300.0
200.0
100.0
0.0
TSP(µg/m³)
6/2/2013
20/2/2013
4/3/2013
15/3/2013
27/3/2013
8/4/2013
19/4/2013
1/5/2013
13/5/2013
24/5/2013
Time (Hr)
Average
Action Level
Limit Level


Graphical plots of 1-Hr TSP for D3
600.0
500.0
400.0
300.0
200.0
100.0
0.0
TSP(µg/m³)
6/2/2013
20/2/2013
4/3/2013
15/3/2013
27/3/2013
8/4/2013
19/4/2013
1/5/2013
13/5/2013
24/5/2013
Time (Hr)
Average
Action Level
Limit Level


Graphical plots of 1-Hr TSP for D4
600.0
500.0
400.0
300.0
200.0
100.0
0.0
TSP(µg/m³)
6/2/2013
20/2/2013
4/3/2013
15/3/2013
27/3/2013
8/4/2013
19/4/2013
1/5/2013
13/5/2013
24/5/2013
Time (Hr)
Average
Action Level
Limit Level

D1 24-Hrs TSP Monitoring Results

		Wt. of paper (g)			**Elapse Time**			**Flow Rate (CFM)**			**Total Volume (m^3)**	**TSP Concentration (µg/m3)**	**Weather**
Sampling Date	Paper No.	Initial Wt.	Final Wt.	Wt. of dust	Initial	Final	Sampling Hour	Initial	Final	Avg Flow Rate			
01/05/13	204671	2.8043	2.9022	0.0979	1370.82	1394.84	24.02	42	42	42.0	1714.03	57.1169	Cloudy
07/05/13	204675	2.8052	2.8957	0.0905	1394.84	1418.87	24.03	42	42	42.0	1714.74	52.7776	Cloudy
13/05/13	060852	3.6079	3.6646	0.0567	1418.87	1442.91	24.04	42	42	42.0	1715.46	33.0524	Sunny
18/05/13	060856	3.6108	3.6541	0.0433	1442.91	1466.94	24.03	42	42	42.0	1714.74	25.2516	Rainy
24/05/13	060860	3.6114	3.6516	0.0402	1466.94	1490.98	24.04	42	42	42.0	1715.46	23.4340	Cloudy
30/05/13	060864	3.6173	3.6292	0.0119	1490.98	1515.00	24.02	42	42	42.0	1714.03	6.9427	Sunny

D2 24-Hrs TSP Monitoring Results

		Wt. of paper (g)			Elapse Time			Flow Rate (CFM)			Total Volume (m^3)	TSP Concentration (µg/m3)	Weather
Sampling Date	Paper No.	Initial Wt.	Final Wt.	Wt. of dust	Initial	Final	Sampling Hour	Initial	Final	Avg Flow Rate			
01/05/13	204672	2.8174	2.9079	0.0905	1703.47	1727.51	24.04	42	42	42.0	1715.46	52.7556	Cloudy
07/05/13	204676	2.8133	2.9265	0.1132	1727.51	1751.54	24.03	42	42	42.0	1714.74	66.0157	Cloudy
13/05/13	060853	3.6167	3.6562	0.0395	1751.54	1775.59	24.05	42	42	42.0	1716.17	23.0164	Sunny
18/05/13	060857	3.6154	3.6548	0.0394	1775.59	1799.62	24.03	42	42	42.0	1714.74	22.9772	Rainy
24/05/13	060861	3.6059	3.6186	0.0127	1254.70	1278.70	24.00	42	42	42.0	1712.60	7.4156	Cloudy
30/05/13	060865	3.6172	3.6530	0.0358	1278.70	1302.72	24.02	42	42	42.0	1714.03	20.8865	Sunny

D3 24-Hrs TSP Monitoring Results

		Wt. of paper (g)			Elapse Time			Flow Rate (CFM)			Total Volume (m^3)	TSP Concentration (µg/m3)	Weather
Sampling Date	Paper No.	Initial Wt.	Final Wt.	Wt. of dust	Initial	Final	Sampling Hour	Initial	Final	Avg Flow Rate			
01/05/13	204673	2.8128	2.8713	0.0585	1742.69	1766.74	24.05	42	42	42.0	1716.17	34.0875	Cloudy
07/05/13	204677	2.8147	2.9290	0.1143	1766.74	1790.80	24.06	42	42	42.0	1716.88	66.5741	Cloudy
13/05/13	060854	3.6055	3.6648	0.0593	1790.80	1814.82	24.02	42	42	42.0	1714.03	34.5968	Sunny
18/05/13	060858	3.5910	3.6387	0.0477	1814.82	1838.86	24.04	42	42	42.0	1715.46	27.8060	Rainy
24/05/13	060862	3.6139	3.6271	0.0132	1838.86	1862.91	24.05	42	42	42.0	1716.17	7.6915	Cloudy
30/05/13	060866	3.6132	3.6466	0.0334	1862.91	1886.94	24.03	42	42	42.0	1714.74	19.4781	Sunny

D4 24-Hrs TSP Monitoring Results

		Wt. of paper (g)			Elapse Time			Flow Rate (CFM)			Total Volume (m^3)	TSP Concentration (µg/m3)	Weather
Sampling Date	Paper No.	Initial Wt.	Final Wt.	Wt. of dust	Initial	Final	Sampling Hour	Initial	Final	Avg Flow Rate			
01/05/13	204674	2.7966	2.8966	0.1000	1699.82	1723.85	24.03	42	42	42.0	1714.74	58.3178	Cloudy
07/05/13	204678	2.8223	2.9400	0.1177	1723.85	1747.91	24.06	42	42	42.0	1716.88	68.5544	Cloudy
13/05/13	060855	3.6001	3.6722	0.0721	1747.91	1771.96	24.05	42	42	42.0	1716.17	42.0121	Sunny
18/05/13	060859	3.5933	3.6482	0.0549	1771.96	1796.00	24.04	42	42	42.0	1715.46	32.0031	Rainy
24/05/13	060863	3.6097	3.6432	0.0335	1796.00	1820.03	24.03	42	42	42.0	1714.74	19.5364	Cloudy
30/05/13	060867	3.6112	3.6472	0.0360	1820.03	1844.08	24.05	42	42	42.0	1716.17	20.9769	Sunny

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: **ENOVATIVE ENVIRONMENTAL SERVICE LTD**	*Laboratory*	: **ALS Technichem HK Pty Ltd**	*Page*	: **1 of 2**		
Contact	: **MR SAM WONG**	*Contact*	: **Fung Lim Chee, Richard**	*Work Order*	: **HK1314743**		
Address	: **RM 3704, SIK MAN HOUSE, HOMANTIN ESTATE, KOWLOON, HONG KONG**	*Address*	: **11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong**				
E-mail	: **sam.wong@eno.com.hk**	*E-mail*	: **Richard.Fung@alsglobal.com**				
Telephone	: **+852 22421020**	*Telephone*	: **+852 2610 1044**				
Facsimile	: **+852 27143612**	*Facsimile*	: **+852 2610 2021**				
Project	: **----**	*Quote number*	: **----**	*Date received*	: **01-MAY-2013**		
Order number	: **----**			*Date of issue*	: **06-JUN-2013**		
C-O-C number	: **----**			*No. of samples*	- *Received* :	**24**	
Site	: **----**				- *Analysed* :	**24**	

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1314743 supersedes any previous reports with this reference. The completion date of analysis is 06-JUN-2013. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1314743 : Sample(s) were received in an ambient condition.
Sample(s) analysed and reported on an as received basis.

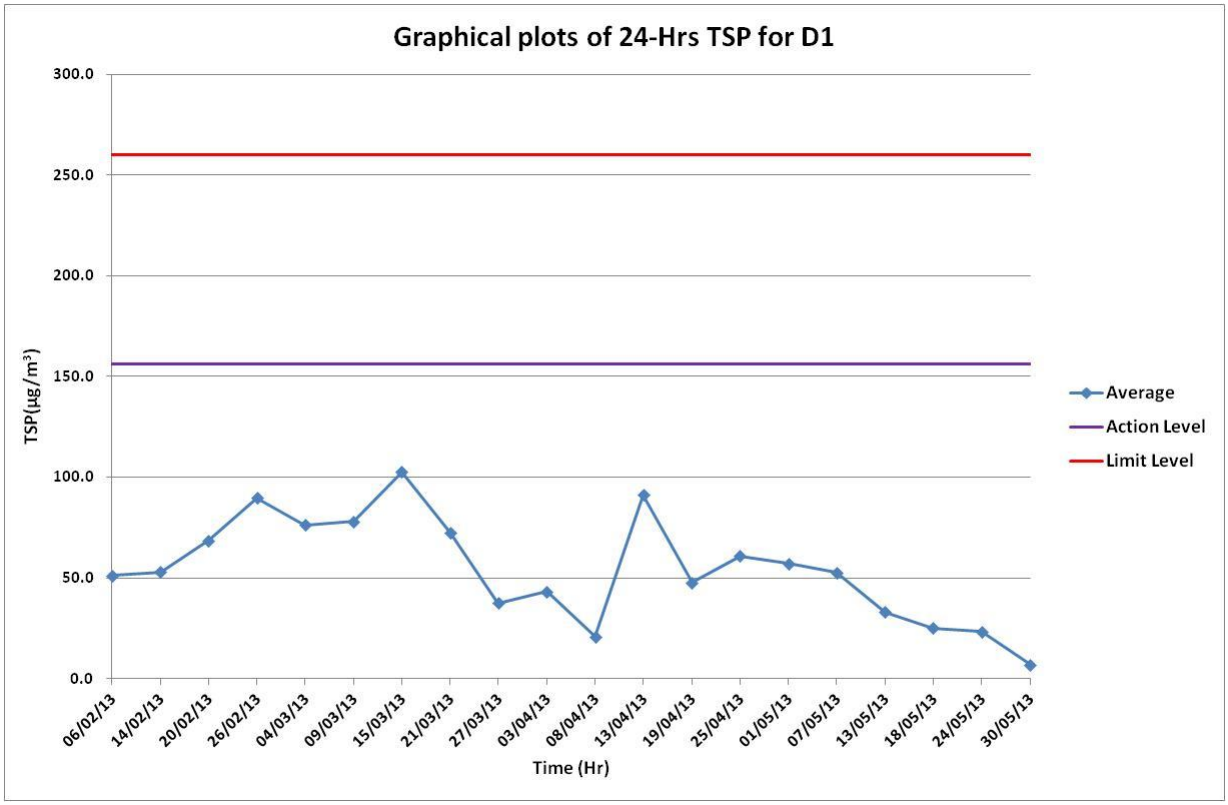
This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

Signatory	*Position*	*Authorised results for:-*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

Analytical Results

Sub-Matrix: **FILTER (TSP/RSP)**

Client sample ID	Client sampling date / time	Laboratory sample ID	Compound: HK-TSP: Total Suspended Particulates	HK-TSP: Initial Weight	HK-TSP: Final Weight		
		LOR Unit	0.0010 g	0.0010 g	0.0010 g		
			EA/ED: Physical and Aggregate Properties	EA/ED: Physical and Aggregate Properties	EA/ED: Physical and Aggregate Properties		
204671	[01-MAY-2013]	HK1314743-001	**0.0979**	**2.8043**	**2.9022**		
204672	[01-MAY-2013]	HK1314743-002	**0.0905**	**2.8174**	**2.9079**		
204673	[01-MAY-2013]	HK1314743-003	**0.0585**	**2.8128**	**2.8713**		
204674	[01-MAY-2013]	HK1314743-004	**0.1000**	**2.7966**	**2.8966**		
204675	[07-MAY-2013]	HK1314743-005	**0.0905**	**2.8052**	**2.8957**		
204676	[07-MAY-2013]	HK1314743-006	**0.1132**	**2.8133**	**2.9265**		
204677	[07-MAY-2013]	HK1314743-007	**0.1143**	**2.8147**	**2.9290**		
204678	[07-MAY-2013]	HK1314743-008	**0.1177**	**2.8223**	**2.9400**		
060852	[13-MAY-2013]	HK1314743-009	**0.0567**	**3.6079**	**3.6646**		
060853	[13-MAY-2013]	HK1314743-010	**0.0395**	**3.6167**	**3.6562**		
060854	[13-MAY-2013]	HK1314743-011	**0.0593**	**3.6055**	**3.6648**		
060855	[13-MAY-2013]	HK1314743-012	**0.0721**	**3.6001**	**3.6722**		
060856	[18-MAY-2013]	HK1314743-013	**0.0433**	**3.6108**	**3.6541**		
060857	[18-MAY-2013]	HK1314743-014	**0.0394**	**3.6154**	**3.6548**		
060858	[18-MAY-2013]	HK1314743-015	**0.0477**	**3.5910**	**3.6387**		
060859	[18-MAY-2013]	HK1314743-016	**0.0549**	**3.5933**	**3.6482**		
060860	[24-MAY-2013]	HK1314743-017	**0.0402**	**3.6114**	**3.6516**		
060861	[24-MAY-2013]	HK1314743-018	**0.0127**	**3.6059**	**3.6186**		
060862	[24-MAY-2013]	HK1314743-019	**0.0132**	**3.6139**	**3.6271**		
060863	[24-MAY-2013]	HK1314743-020	**0.0335**	**3.6097**	**3.6432**		
060864	[30-MAY-2013]	HK1314743-021	**0.0119**	**3.6173**	**3.6292**		
060865	[30-MAY-2013]	HK1314743-022	**0.0358**	**3.6172**	**3.6530**		
060866	[30-MAY-2013]	HK1314743-023	**0.0334**	**3.6132**	**3.6466**		
060867	[30-MAY-2013]	HK1314743-024	**0.0360**	**3.6112**	**3.6472**		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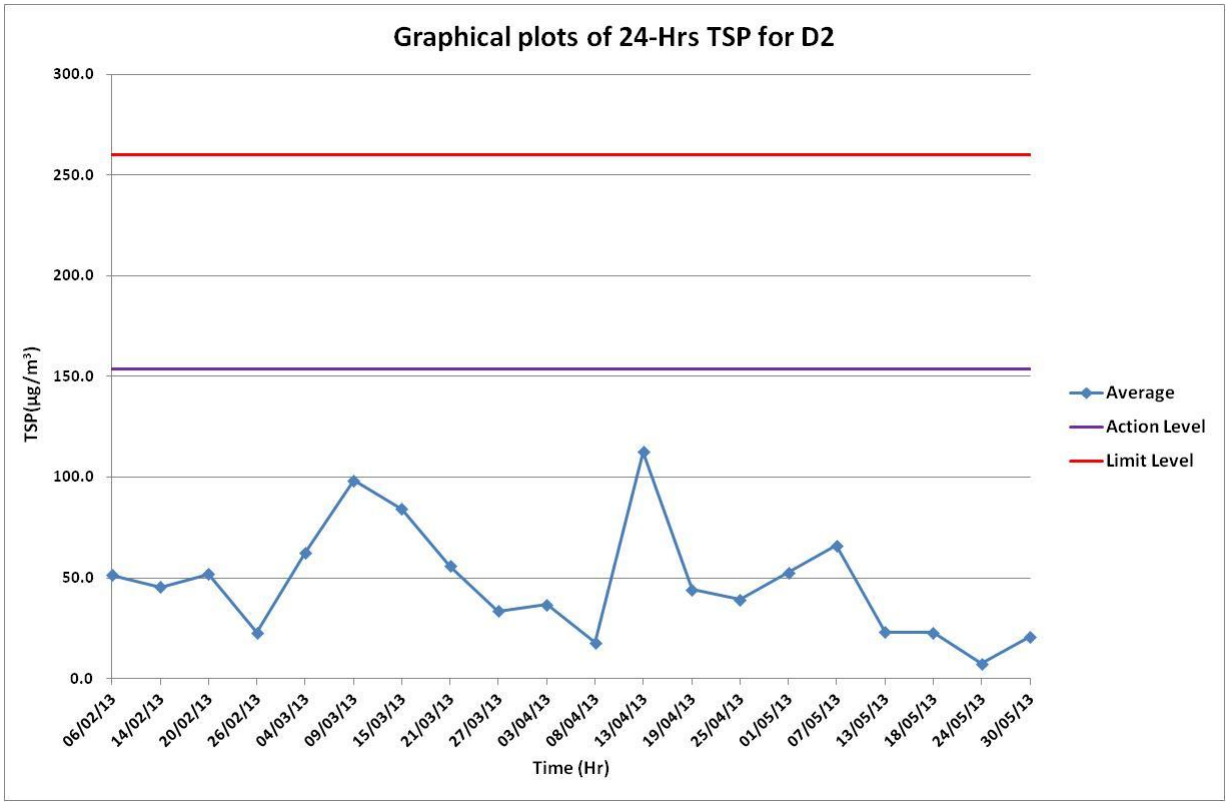
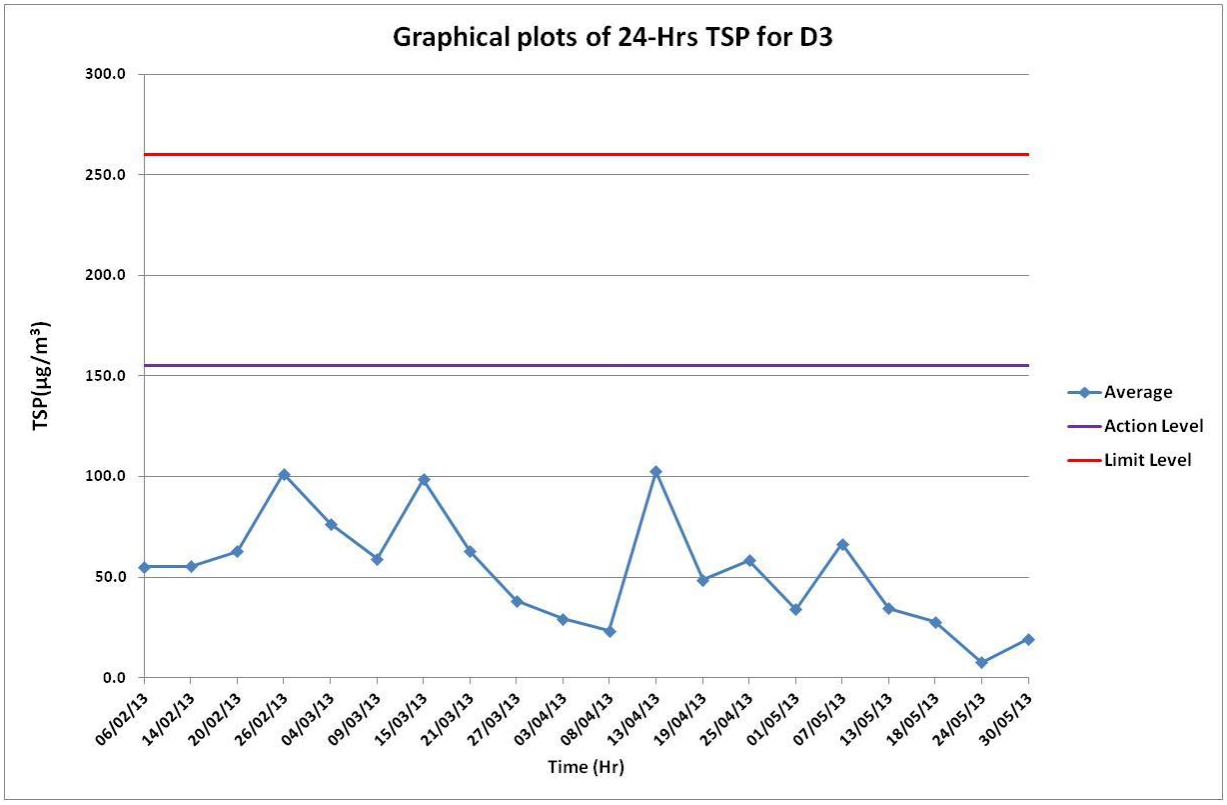
300.0
250.0
200.0
150.0
100.0
50.0
0.0
TSP(µg/m³)
06/02/13
14/02/13
20/02/13
26/02/13
04/03/13
09/03/13
15/03/13
21/03/13
27/03/13
03/04/13
08/04/13
13/04/13
19/04/13
25/04/13
01/05/13
07/05/13
13/05/13
18/05/13
24/05/13
30/05/13
Time (Hr)
Average
Action Level
Limit Level


Graphical plots of 24-Hrs TSP for D2
300.0
250.0
200.0
150.0
100.0
50.0
0.0
TSP(µg/m³)
06/02/13
14/02/13
20/02/13
26/02/13
04/03/13
09/03/13
15/03/13
21/03/13
27/03/13
03/04/13
08/04/13
13/04/13
19/04/13
25/04/13
01/05/13
07/05/13
13/05/13
18/05/13
24/05/13
30/05/13
Time (Hr)
Average
Action Level
Limit Level


Graphical plots of 24-Hrs TSP for D3
TSP(µg/m³)
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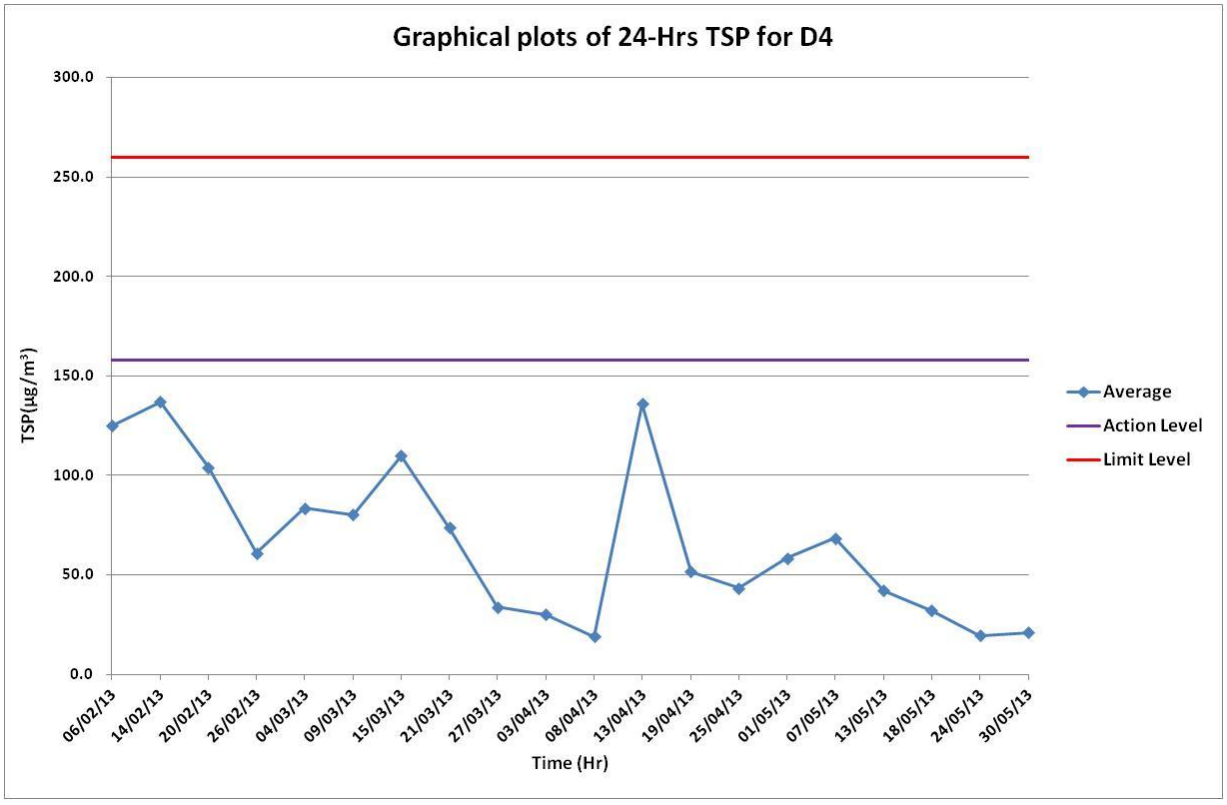
250.0
200.0
150.0
100.0
50.0
0.0
06/02/13
14/02/13
20/02/13
26/02/13
04/03/13
09/03/13
15/03/13
21/03/13
27/03/13
03/04/13
08/04/13
13/04/13
19/04/13
25/04/13
01/05/13
07/05/13
13/05/13
18/05/13
24/05/13
30/05/13
Time (Hr)
Average
Action Level
Limit Level


Graphical plots of 24-Hrs TSP for D4
TSP(µg/m³)
300.0
250.0
200.0
150.0
100.0
50.0
0.0
06/02/13
14/02/13
20/02/13
26/02/13
04/03/13
09/03/13
15/03/13
21/03/13
27/03/13
03/04/13
08/04/13
13/04/13
19/04/13
25/04/13
01/05/13
07/05/13
13/05/13
18/05/13
24/05/13
30/05/13
Time (Hr)
Average
Action Level
Limit Level