# 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

November 2013

**Environmental Pioneers & Solutions Limited** 

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#### **APPROVAL SHEET**

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**Environmental Pioneers & Solutions Limited** 

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# **EXECUTIVE SUMMARY**

This is the fifteenth 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 1<sup>st</sup> of November 2013 to 30<sup>th</sup> of November 2013. No construction activities were carried out during this reporting period.

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 water quality was conducted in the reporting period. No exceedance of A/L level was reported.

Impact monitoring for air quality was conducted. Total 1 number of exceedance were recorded in this reporting period. for the non-compliance events, it was believed that the exceedance was caused by other construction activities, since the drainage diversion works have been completed.

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 fifteenth 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 Company Limited 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 1<sup>st</sup> of November 2013 to 30<sup>th</sup> of November 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).

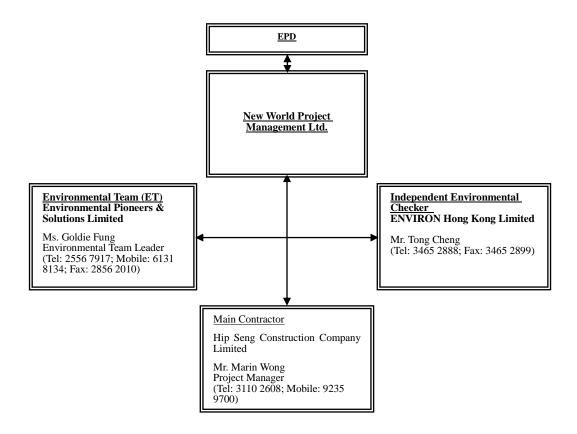
### 2 **Project Information**

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 November 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:

- N/A

# 4.2 Construction Activities for Coming Months

Proposed key construction works in the coming month will include:

- N/A

# 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<sup>-1</sup> or wind with gust exceeding 10ms<sup>-1</sup>. 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

Equipment	Manufacturer & Model No.	Precision Grade	Qty						
Integrated sound	SVAN 955 & S/N: 27302	IEC 651 Type 1	1						
level meter		IEC 804 Type 1							
Acoustical	BSWA CA111 & S/N: 490239	IEC 942 Type 1	1						
calibrator									
Remarks: Calibration details of the sound level meter and acoustical calibrator									
are given in Appe	endix C for reference								

Table 5.2.1 Equipment List for Noise Monitoring

#### 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.

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

Table 5.3.1 Noise Monitoring Locations during Construction Phase

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.

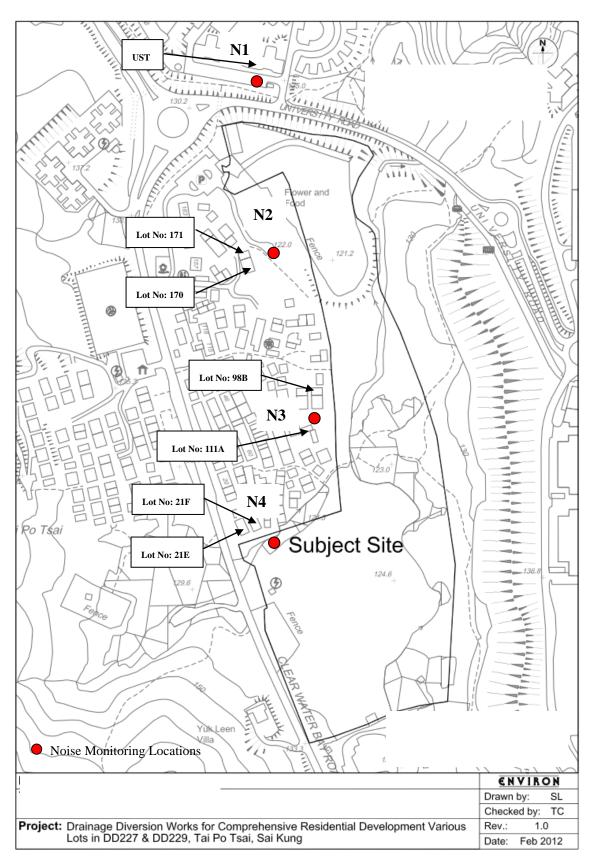


Figure 5.3.1 Impact noise monitoring locations

# 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 5<sup>th</sup>, 11<sup>th</sup>, 16<sup>th</sup>, 22<sup>nd</sup> and 28<sup>th</sup> of November 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 60.0dB (A) and 67.5dB (A), N2 ranged between 59.5dB (A) and 65.2dB (A), N3 ranged between 62.8dB (A) and 71.4dB (A) and N4 ranged between 65.9dB (A) and 73.1dB (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 <sub>Aeq</sub> dB(A)	Limit dB(A)	Exceedance	Weather				
*N1	Leq30min	5-Nov-13	9:06	67.5	75	Ν	Cloudy				
*N1	Leq30min	11-Nov-13	9:02	65.1	75	Ν	Cloudy				
*N1	Leq30min	16-Nov-13	9:00	65.2	75	Ν	Sunny				
*N1	Leq30min	22-Nov-13	10:50	60.0	75	Ν	Overcast				
*N1	Leq30min	28-Nov-13	9:03	63.6	75	Ν	Sunny				
*N2	Leq30min	5-Nov-13	9:41	65.2	75	N	Cloudy				
*N2	Leq30min	11-Nov-13	9:37	61.7	75	Ν	Cloudy				
*N2	Leq30min	16-Nov-13	9:35	59.5	75	Ν	Sunny				
*N2	Leq30min	22-Nov-13	10:14	62.0	75	Ν	Overcast				
*N2	Leq30min	28-Oct-13	9:39	61.8	75	Ν	Sunny				
*N3	Leq30min	5-Nov-13	10:25	66.5	75	Ν	Cloudy				
*N3	Leq30min	11-Nov-13	10:13	69.7	75	Ν	Cloudy				
*N3	Leq30min	16-Nov-13	10:12	71.4	75	Ν	Sunny				
*N3	Leq30min	22-Nov-13	9:38	62.8	75	Ν	Overcast				
*N3	Leq30min	28-Oct-13	10:15	66.9	75	Ν	Sunny				
N4	Leq30min	5-Nov-13	11:01	66.4	75	Ν	Cloudy				
N4	Leq30min	11-Nov-13	10:50	66.8	75	N	Cloudy				
N4	Leq30min	16-Nov-13	10:48	68.7	75	Ν	Sunny				

N4	Leq30min	22-Nov-13	9:02	65.9	75	Ν	Overcast
N4	Leq30min	28-Oct-13	10:52	73.1	75	Ν	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		75 dB(A)*									
0700 – 1900 hrs on normal weekdays	When one documented										
1900 – 2300 on all days and 0700 – 2300 on general holidays (including	complaint is received	60/65/70 dB(A)**									
Sundays)											
2300 – 0700 on all days		45/50/55 dB(A)**									

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

# Table 5.6.2 Event / Action Plan for Construction Noise

Encodere	1 Idortifer	4	<u> </u>	1		1	C1 ''
for two or	1. Identify source,		Checking	1.	Confirm	1.	Submit
	investigate the		monitoring		receipt of		proposals for
more	causes of exceedance		data		notification		remedial
consecutive			submitted by		of failure in		actions to
samples in	and propose		ET.		writing.		IEC within
Action	remedial	2.	Check	2.	2		three
Level.	measures.		Contractor's		Contractor.		working days
	2. Inform IEC and		working	3.	Ensure		of
	Contractor.		method.		remedial		notification.
	3. Repeat	3.	Discuss with		measures	2.	Implement
	measurements		ET and		properly		the agreed
	to confirm		Contractor on		implemented.		proposals.
	findings.		possible			3.	Amend
	4. Increase		remedial				proposals if
	monitoring		measures.				appropriate.
	frequency to	4.	Advise the				
	daily.		ER on the				
	5. Discuss with		effectiveness				
	IEC and		of the				
	Contractor		proposed				
	on remedial		remedial				
	actions.		measures.				
	6. If exceedance	5.	Supervisor				
	continues,		implementati				
	arrange		on of				
	meeting with		remedial				
	IEC and ER.		measures.				
	7. If exceedance						
	stops, cease						
	additional						
	monitoring.						
		l		I		I	

F 1	4	T1 // C	1	011	1	<u>O</u> a a <b>f</b>	1	T-1
Exceedance	1.	•	1.	Checking	1.	Confirm	1.	Take
for on		source,		monitoring		receipt of		immediate
sample in		investigate		data		notification of		action to
Limit Level		the causes of		submitted by		failure in		avoid further
		exceedance		ET		writing.		exceedance.
		and propose	2.	Check	2.	2	2.	Submit
		remedial		Contractor's		Contractor.		proposals for
		measures.		working	3.	Ensure		remedial
	2.	Inform ER,		method		remedial		actions to IEC
		Contractor	3.			measures		within three
		and EPD.		ET and		properly		working days
	3.	Repeat		Contractor on		implemented.		of
		measurement		possible				notification.
		to confirm		remedial			3.	Implement
		finding.		measures				the agreed
	4.	Increase	4.	Advise the				proposals.
		monitoring		ER on the			4.	Amend
		frequency to		effectiveness				proposal if
		daily.		of the				appropriate.
	5.	Assess		proposed				
		effectiveness		remedial				
		of		measures.				
		Contractor's	5.	Supervisor				
		remedial		implementati				
		actions and		on of				
		keep IEC,		remedial				
		EPD and ER		measures.				
		informed of						
		the results.						

Exceedance	1	Identify	1.	Discuss	1	Confirm	1	Take
for two or	1.	source,	1.	amongst ER,	1.	receipt of	1.	immediate
more		investigate		ET and		notification of		action to
consecutive		the causes of		Contractor on		failure in		avoid further
samples in		exceedance		the potential		writing.		exceedance.
Limit Level		and propose		remedial	2.	Notify	2.	
		remedial		actions.	2.	Contractor.	2.	proposals for
		measures.	2.	Review	2	In		remedial
	n		۷.	Contractor's	5.	consultation		actions to IEC
	2.	Notify IEC,		remedial		with the IEC,		within three
		ER,		actions				working days
		Contractor		whenever		agree with the		of
		and EPD.				Contractor on the remedial		notification.
	3.	Repeat		necessary to assure their			2	
		measurement		effectiveness		measures to	3.	Implement
		to confirm		and advise		be implemented.		the agreed
		findings.		the ER	4	-	4	proposals.
	4.	Increase		accordingly.	4.	Ensure	4.	Resubmit
		monitoring	3.	Supervise the		remedial		proposals if
		frequency to	5.	implementati		measures		problem still
		daily.		on of		properly		not under
	5.	Carry out		remedial	_	implemented	-	control.
		analysis of			5.	If exceedance	5.	Stop the
		Contractor's		measures.		continues		relevant
		working				consider what		portion of
		procedures to				portion of the		works as
		determine				work is		determined by
		possible				responsible		the ER until
		mitigation to				and instruct		the
		be				the		exceedance is
		implemented.				Contractor to		abated.
	6.	Arrange				stop that		
		meeting with				portion of		
		IEC and ER				work until the		
		to discuss the				exceedance is		
		remedial				abated		
		actions to be				remedial		

I	Informed of		
t	he results		
8. I	f exceedance		
	stops, cease		
	additional		
	monitoring		

# 5.7 Monitoring Schedule for the next reporting period

Noise monitoring schedule is proposed to be carried out on 4<sup>th</sup>, 10<sup>th</sup>, 16<sup>th</sup>, 21<sup>st</sup> and 27<sup>th</sup> of December 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°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°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)			
Turbidity (NTU)			
рН	in-situ		
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		
Monitoring Station	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.

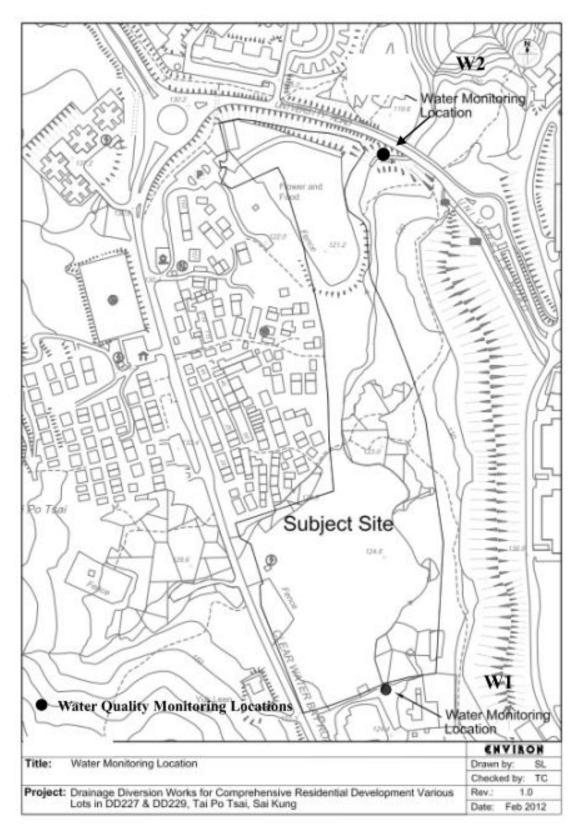


Figure 6.3.1 Water Quality Monitoring Locations

### 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 2<sup>nd</sup>, 5<sup>th</sup>, 7<sup>th</sup>, 9<sup>th</sup>, 12<sup>th</sup>, 14<sup>th</sup>, 16<sup>th</sup>, 19<sup>th</sup>, 21<sup>st</sup>, 23<sup>rd</sup>, 26<sup>th</sup>, 28<sup>th</sup> and 30<sup>th</sup> of November 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.

Table 6.5.1	Table 6.5.1 Summary of Water Quality Monitoring Results of this reporting month					
	Average of M	Average of Monitoring Results				
	Town on at uno	Turkidita		Dissolved	Dissolved	Suspended
	<i>Temperature</i>	Turbidity	pH	Oxygen	Oxygen	Solids
	(°C)	(NTU)		( <i>mg/L</i> )	(%)	(mg/L)
W1	23.0	5.1	8.00	7.94	83.6	3.7
W2	23.1	5.5	8.00	7.92	83.2	3.6

During the reporting period, no exceedance was recorded.

### 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.

Table 6.6.1 Action and Limit Levels for Water Quality at All Monitoring				
Stations	Stations			
Parameters	Action	Limit		
DO in mg/L	5 percentile of baseline data	4 mg/L or 1 percentile of		
DO III IIIg/L	5 percentile of baseline data	baseline data		
	95 percentile of baseline data	99 percentile of baseline data or		
SS in mg/I	or 120% of upstream control	130% of upstream control		
SS in mg/L	station's SS recorded on the	station's SS recorded on the		
	same day	same day		
	95 percentile of baseline data	99 percentile of baseline data or		
Turbidity in	or 120% of upstream control	130% of upstream control		
NTU	station's Turbidity recorded on	station's Turbidity recorded on		
	the same day	the same day		
	<6.5 or >8.4 or > the upstream			
рН	control station's pH recorded	<6.0 or >9.0		
	on the same day			

Table 6.6.2	Action and Limit Levels for Water Quality at All Monitoring
Stations	
	Monitoring Stations
Donomotor	W2
Parameters	

Parameters –	W2		
rarameters	Action	Limit	
	Level	Level	
DO in mg/L	6.42	6.24	
SS in mg/L	18.9	19.8	
Turbidity in NTU	6.2	6.2	
pН	<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.

Event	ET Leader	IEC	ER	Contractor
ACTION LEV	VEL			
Exceedance	1. Repeat in-site	1. Discuss with	1. Discuss	1. Inform the
for one	measurement	ET and	with IEC	ER and
sample day	to confirm	Contractor	on the	confirm
	findings.	on the	proposed	notification
	2. Identify	mitigation	mitigation	of the
	source(s) of	measures.	measures.	non-complian
	impact.	2. Review	2. Make	ce in writing.
	3. Inform IEC	proposals on	agreement	2. Rectify
	and	mitigation	on	unacceptable
	Contractor.	measures	mitigation	practice.
	4. Check	submitted	measures	3. Check all
	monitoring	by	to be	plant and
	data, all plant	Contractor	implement	equipment.
	equipment	and advise	ed.	4. Consider
	and	the ER	3. Assess	changes of
	Contractor's	accordingly;	effectivene	working
	working	3. Assess	ss of	methods.
	methods.	effectivenes	implement	5. Discuss with
	5. Discuss	s of the	ed	ET, IEC and
	mitigation	implemente	mitigation	propose
	measures	d mitigation	measures.	mitigation
	with IEC and	measures.		measures to
	Contractor.			IEC and ER.
	6. Repeat			6. Implement
	measurement			the agreed
	on next day			mitigation
	of			measures.
	exceedance.			

Table 6.6.3 Event and action Plan for Water Quality

Exceedance	1. Repeat in-situ	1. Discuss with	1. Discuss	1. Inform the
for more	neasuremen	ET and	with IEC	ER and
	t to confirm	Contractor		
than one consecutive				notification
	findings.	on the	proposed	
sampling	2. Identify	mitigation	mitigation	of the
days	source(s) of	measures.	measures.	non-complian
	impact.	2. Review	2. Make	ce in writing.
	3. Inform IEC	proposals on	-	•
	and	mitigation	on the	unacceptable
	Contractor.	measures	mitigation	practice.
	4. Check	submitted	measures	3. Check all
	monitoring	by	to be	plant and
	data, all plant,	Contractor	implement	equipment.
	equipment	and advise	ed.	4. Consider
	and	the ER	3. Assess	changes of
	Contractor's	accordingly.	effectivene	working
	working	3. Assess	ss of the	methods.
	methods.	effectivenes	implement	5. Discuss with
	5. Discuss	s of the	ed	ET and IEC
	mitigation	implemente	mitigation	and propose
	measures	d mitigation	measures.	mitigation
	with IEC and	measures.		measures
	Contractor.			within three
	6. Ensure			working
	mitigation			days.
	measures are			6. Implement
	implemented.			the agreed
	7. Prepare to			mitigation
	increase the			measures.
	monitoring			
	frequency to			
	daily.			
	8. Repeat			
	measurement			
	on next day			
	of			
	exceedance.			

LIMIT L	EVEL			
Exceedance	1. Repeat in-situ	1. Discuss with	1. Discuss	1. Inform the
for one	measurements	ET and	with IEC,	ER and
sampling	to confirm	Contractor	ET and	confirm
day	findings.	on the	Contractor	notification
	2. Identify	mitigation	on the	of the
	source(s) of	measures.	proposed	non-complian
	impact.	2. Review	mitigation	ce in writing.
	3. Inform EPD,	proposals on	measures.	2. Rectify
	IEC,	mitigation	2. Request	unacceptable
	Contractor.	measures	Contractor	practice.
	4. Check	submitted	to	3. Check all
	monitoring	by	critically	plant and
	data, all plant,	Contractor	review the	equipment.
	equipment and	and advise	working	4. Consider
	Contractor's	the ER	methods.	changes of
	working	accordingly.	3. Make	working
	methods;	3. Assess	agreement	methods.
	5. Discuss	effectivenes	on the	5. Discuss with
	mitigation	s of the	mitigation	ET, IEC and
	measures with	implemente	measures	ER and
	IEC, ER and	d mitigation	to be	propose
	Contractor.	measures.	implement	mitigation
	6. Ensure		ed.	measures to
	mitigation		4. Assess the	IEC and ER
	measures are		effectivene	within three
	implemented.		ss of the	working
	7. Increase the		implement	days.
	monitoring		ed	6. Implement
	frequency to		mitigation	the agreed
	daily until no		measures.	mitigation
	exceedance of			measures.
	Limit level.			
Exceedance	1. Repeat in-situ	1. Discuss with	1. Discuss	1. Inform the
for more	measurements	ET and	with IEC,	ER and
than on	to confirm	Contractor	ET and	confirm

consecutive	findings.	on the	Contractor notification
sampling	2. Identify	mitigation	on the of the
days	source(s) of	measures.	proposed non-complia
uujs	impact.	2. Review	mitigation ce in writing
	3. Inform EPD,	proposals on	measures. 2. Rectify
	IEC and	mitigation	2. Request unacceptable
	Contractor.	measures	Contractor practice.
	4. Check	submitted	to 3. Check all
	monitoring	by	critically plant and
	data, all plant,	Contractor	review the equipment.
	equipment and	and advise	working 4. Consider
	Contractor's	the ER	methods. changes of
	working	accordingly.	3. Make working
	methods.	3. Assess the	agreement methods.
	5. Discuss	effectivenes	on the 5. Discuss with
	mitigation	s of the	mitigation ET, IEC and
	measures with	implemente	measures ER and
	IEC, ER and	d mitigation	to be propose
	Contractor.	measures.	implement mitigation
	6. Ensure		ed. measures to
	mitigation		4. Assess the IEC and ER
	measures are		effectivene within three
	implemented.		ss of the working
	7. Increase the		implement days.
	monitoring		ed 6. Implement
	frequency to		mitigation the agree
	daily until no		measures. mitigation
	exceedance of		5. Consider measures.
	Limit level for		and 7. As directed
	two consecutive		instruct, if by the ER, to
	days.		necessary, slow down o
			the to stop all or
			Contractor part of the
			to slow work or
			down or to construction
			stop all or activities.
			part of the

	work until	
	no	
	exceedanc	
	e of Limit	
	Level.	

# 6.7 Monitoring Schedule for Next Reporting Period

Water quality monitoring schedule is proposed to be carried out on 3<sup>rd</sup>, 5<sup>th</sup>, 7<sup>th</sup>, 10<sup>th</sup>, 12<sup>th</sup>, 14<sup>th</sup>, 17<sup>th</sup>, 19<sup>th</sup>, 21<sup>st</sup>, 24<sup>th</sup>, 28<sup>th</sup> and 31<sup>st</sup> of December 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**.

Equipment Manufacturer & Model No.		Parameter	Qty
Leser Dust Moniton	1. AM510	1-hr TSP 4	
Laser Dust Monitor	2. SIBATA/LD-3B	1-III 15P	4
High Volume	TE 5025 A	24 here TSD	4
Sampler	TE-5025A	24-hrs TSP	4

Table 7.2.1 Air Quality Monitoring Equipments

# 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

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					

Table 7.3.1 Air Quality Monitoring Locations

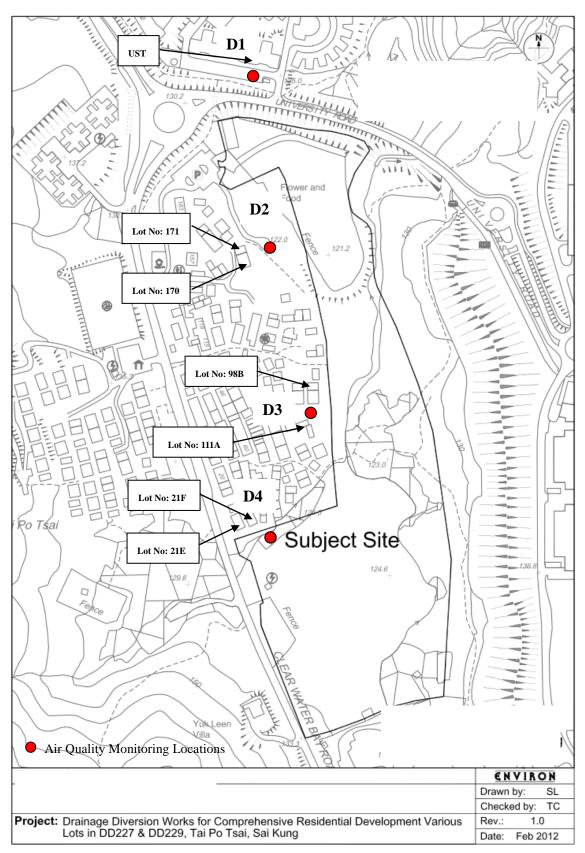


Figure 7.3.1 Air Quality Monitoring Locations

# 7.4 Monitoring Frequency

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

Monitoring was carried out on 5<sup>th</sup>, 11<sup>th</sup>, 16<sup>th</sup>, 22<sup>nd</sup> and 28<sup>th</sup> of November 2013.

# 7.5 Monitoring Results and Interpretation

1-hr TSP and 24-hrs TSP were carried out during this reporting. There was 1 number of exceedance (24-hrs TSP) was recorded in this reporting period as shown in Table 7.5.3. It was believed that the exceedance of air quality was affected by other construction activities, since the drainage diversion works have been completed and no construction activities related to the project. Therefore, the exceedance record was unlikely to be related to this project.

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	Location Range (µg/m <sup>3</sup> ) (Min – Max)						
D1	40.0 - 93.0	66.6					
D2	36.0 - 91.0	66.6					
D3	43.0 - 111.0	69.7					
D4	37.0 - 95.0	68.1					

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/m <sup>3</sup> )	A wave go $(u q lm^3)$					
Location	(Min – Max)	Average (µg/m <sup>3</sup> )					
D1	50.3 - 81.6	62.3					
D2	52.6 - 133.0	72.9					
D3	51-8-131.0	99.9					
D4	31.0 - 186.1	80.0					

		Р	arameter	Interpretations	
Date	Location	24- Hrs TSP (μg/m <sup>3</sup> )	Exceedance		
16/11/2013	D4	186.1	Action Level	Exceedance was caused by other construction activities, which are out of the scope of project.	

Table 7.5.3 1	number of	exceedance	during the	reporting month
14010 / 1010 1	mannoer or	enteecaantee	warms me	reporting month

# 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.

Total 1 number of exceedance was recorded during the reporting period. It was believed that the exceedance of air quality was not to be related to the project.

Table 7.6.1 Action and Limit Levels for 1-hr TSP at All Monitoring Stations										
Monitoring Station	Monitoring         Action Level         Limit Level									
D1		$285.6 \mu g/m^3$	$500 \ \mu g/m^3$							
D2	1-hr	$279.4 \mu g/m^3$	$500 \ \mu g/m^3$							
D3	1-111	$289.4 \mu g/m^3$	$500 \mu g/m^3$							
D4		$284.3 \mu g/m^3$	$500 \ \mu g/m^3$							

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		156.4 µg/m3	$260 \mu\text{g/m}^3$						
D2	24 has	153.8 µg/m3	$260 \ \mu g/m^3$						
D3	24-hrs	155.2 μg/m3	$260 \mu\text{g/m}^3$						
D4		$158.0  \mu g/m^3$	260 µg/m3						

Table 7.6.3 Event and action Plan for Air Quality

Event	ЕT	Leader	IE	С	EF	2	Con	tractor		
ACTION LEVEL										
Exceedance	1.	Identify	1	. Check		1. Notify	1.	Rectify any		
for one		source,		monitoring		Contractor		unacceptabl		
sample		investigate the		data				e practice.		
		cause s of		submitted by			2.	Amend		
		exceedance		ET.				working		
		and propose	2	. Check				methods if		
		remedial		Contractor's				appropriate.		
		measures.		working						
	2.	Inform ER,		method.						
		IEC and								
		Contractor.								
	3.	Repeat								
		measurement								
		to confirm								
		finding.								
	4.	Increase								
		monitoring								
		frequency to								
		daily.								
Exceedance	1.	Identify	1.	Checking		1. Confirm	1.	Submit		
for two or		source,		monitoring		receipt of		proposals		
more		investigate the		data		notificatio		for remedial		
consecutive		causes of		submitted by		n of		actions to		

complex		avaadaraa		ET		foilure		IEC within
samples		exceedance	2	ET.		failure in		IEC within
		1 1	2.	Check		writing.		three
		remedial		Contractor's	2.	Notify		working
		measures.		working		Contractor		days of
	2.	Inform IEC		method.				notification.
		and	3.	Discuss with	3.	Ensure	2.	Implement
		Contractor.		ET and		remedial		the agreed
	3.	Repeat		Contractor		measures		proposals.
		measurements		on Possible		properly	3.	Amend
		to confirm		remedial		implement		proposal if
		findings		measures.		ed		appropriate.
	4.	Increase	4.	Advise the				
		monitoring		ER on the				
		frequency to		effectiveness				
		daily.		of the				
	5.	Discuss with		proposed				
		IEC and		remedial				
		Contractor on		measures.				
		remedial	5.	Supervisor				
		actions.		implementati				
	6.	If exceedance		on of				
		continues,		remedial				
		arrange		measures.				
		meeting with						
		IEC and ER						
	7.	If exceedance						
		stops, cease						
		additional						
		monitoring.						
LIMIT LI	EVF							
Exceedance	1	Identify	1	.Checking	1.	Confirm	1.'	Take
for one		source,		monitoring		receipt of		immediate
sample		investigate the		data		notificatio		action to
Sample .		causes of		submitted by		n of failure		avoid further
		exceedance		ET.		in writing.		exceedance.
		and propose	2	2.Check	2	Notify		Submit
		remedial		Contractor's	2.	Contractor.		proposals for
		Temeulai		Contractor S		Contractor.		proposais ioi

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		measures.	working	3	Ensure		remedial
	2.	Inform ER,	method	5.	remedial		actions to
	2.	Contractor	3. Discuss with				IEC within
		and EPD.	ET and		measures		
	2				properly		three working
	3.	Repeat	Contractor		implement		days of
		measurement	on possible		ed.	0	notification.
		to confirm	remedial			3.	Implement
		finding.	measures				the agreed
	4.	Increase	4. Advise the				proposals.
		monitoring	ER on the			4.	Amend
		frequency to	effectiveness				proposal if
		daily.	of the				appropriate.
	5.	Assess	proposed				
		effectiveness	remedial				
		of	measures.				
		Contractor's	5. Supervisor				
		remedial	implementati				
		actions and	on of				
		keep IEC,	remedial				
		EPD and ER	measures.				
		informed of					
		the result.					
Exceedance	1.	Identify	1. Discuss	1.	Confirm	1.	Take
for two or		source,	amongst		receipt of		immediate
more		investigate the	ER, ET and		notificatio		action to
consecutive		causes of	Contractor		n of failure		avoid further
samples		exceedance	on the		in writing.		exceedance.
		and propose	potential	2.	Notify	2.	Submit
		remedial	remedial		Contractor		proposals for
		measures.	actions.				remedial
	2.	Notify IEC,	2. Reviews	3.	In		actions to
		ER, Contractor			consultatio		IEC within
		and EPD.	s remedial		n with the		three
	3.	Repeat	actions		IEC, agree		working days
		measurement	whenever		with the		of
		to confirm	necessary to		Contractor		notification.
		findings.	assure their		on the	3.	Implement
		00.					

Drainage Diversion Works for the Comprehensive Residential Development at Various Lots in DD227 & DD229, Tai Po Tsai, Sai Kung Monthly EM&A Report for November 2013

			-			
4.	Increase	effectivenes		remedial		the agreed
	monitoring	s and advise		measures		proposals
	frequency to	the ER		to be	4.	Resubmit
	daily.	accordingly.		implement		proposals if
5.	Carry out	3. Supervisor		ed.		problem still
	analysis of	the	4.	Ensure		not under
	Contractor's	implementa		remedial		control.
	working	tion of		measures	5.	Stop the
	procedures to	remedial		properly		relevant
	determine	measures.		implement		portion of
	possible			ed.		works as
	mitigation to		5.	If		determined
	be			exceedanc		by the ER
	implemented.			e		until the
				continues,		exceedance
6.	Arrange			consider		is abated
	meeting with			what		
	IEC and ER to			portion of		
	discuss the			the work is		
	remedial			responsibl		
	actions to be			e and		
	taken.			instruct		
7.	Assess			the		
	effectiveness of			Contractor		
	Contractor's			to stop that		
	remedial			portion of		
	actions and			work until		
	keep IEC, EPD			the		
	and ER			exceedanc		
	informed of the			e is abated		
	results.			remedial		
8.	If exceedance			actions.		
	stops, cease					
	additional					
	monitoring					

### 7.7 Monitoring Schedule for Next Reporting Period

1-hr TSP and 24-hrs TSP monitoring schedule is proposed to be carried out on  $4^{\text{th}}$ ,  $10^{\text{th}}$ ,  $16^{\text{th}}$ ,  $21^{\text{st}}$  and  $27^{\text{th}}$  of December 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 drainage diversion works have been almost completed. The water flow in the existing river within the site has been 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, water and air measurements recorded; therefore, no actions were taken.

#### 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 the construction wastes disposal provided by Contractor.

 Table 10.1 Summary of Construction Waste Disposal

	Actual	Quantities of	of Inert C & I	O Materials (	Generated Mo	onthly	Actual	Quantities of C &	D Wastes	Generated I	Monthly
Month	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
June 13	4.09	0	0	0	4.09	0	9.66	0	0	0	4.63
July 13	3.05	0	0	0	3.05	0	0	0	0	0	0.009
Aug 13	3.50	0	0	0	3.50	0	0	0	0	0	16.79
Sep 13	9.25	0	0	0	9.25	0	0	0	0	0	26.71
Oct 13	22.4	0	0	0	22.4	0	0	0	0	0	23.7
Nov 13	52.4	0	0	0	52.4	0	0.66	0	0	0	32.8
Total	306.18	0	0	0	306.18	0	9.66	0	0	0	119.062
		For	ecast of Tota	l Quantities	of C & D Ma	aterials to be	Generated	from the Contrac	t		
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/cardboard packaging	Plastics (see note3)	Chemical Waste	Others, e.g. general refuse
	(in'000ton)			<u>( 1n<sup>2</sup>000ton)</u>	( in'000ton)	<u>( 11°000ton)</u>	(1n'000kg)	(in'000kg)	(111 <sup>°</sup> 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			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	Various Lots in DD227 & DD229, Tai Po Tsai, Sai Kung	N/A	Valid
Registration as a Chemical Waste Producer	349704	27 Sep 2012			Valid
Waste Disposal	7016348	16 Nov 2012			Valid
Notification Pursuant to Section 3(1) of The Air Pollution Control (Construction Dust) Regulation	349519	4 Sep 2012			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 Sumn	nary of Form	al Complaints re	eceived	
	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
June 2013	0	0	0	0
July 2013	0	0	0	0
August 2013	0	0	0	0
September 2013	0	0	0	0
October 2013	1	0	1	0
November 2013	0	0	0	0
Total	2	0	2	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 5<sup>th</sup>, 11<sup>th</sup>, 20<sup>th</sup>, and 28<sup>th</sup> of November 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.

Date	Findings	Identification	Advice from ET	Action taken	Closing date	Remarks
5, 11, 20 &	No major					
28	environmental	NT/A	NT / A	NT/A	NI/A	NI/A
November	deficiency was	N/A	N/A	N/A	N/A	N/A
2013	observed.					

 Table 13.1 Summary results of site inspections findings

#### 13.2 Compliance with Legal and Contractual Requirement

There was no non-compliance recorded for this reporting month.

#### 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.

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

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

#### 15 Conclusions

No construction activities were carried out during 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 28<sup>th</sup> of November 2013.

No exceedance was recorded for noise and water during the reporting period.

Impact monitoring for air quality was conducted. Total 1 number of exceedance was recorded in this reporting period. For the non-compliance events, it was believed that the exceedances did not relate to the 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

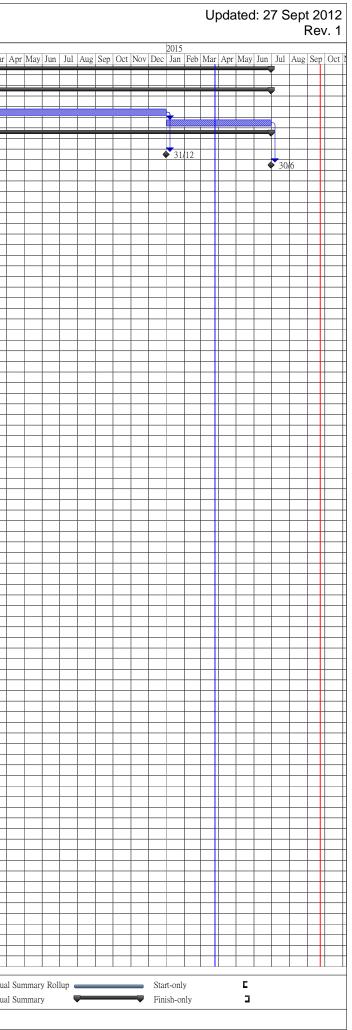
Construction Master Programme and Site Location Plan



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### **Outline Works Programme**

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He	re to upgrade to	1033 days		Sat 1/9/12	Tue 30/6/15	Aug Sep O	t Nov	Dec Jan Feb	Mar Apr N	/lay Jun Ju	II Aug Sep	Oct Nov I	Dec Ja	n Fe
ite	d Pages and Expanded Features	0 days		Sat 1/9/12	Sat 1/9/12	1/9								
		1033 days		Sat 1/9/12	Tue 30/6/15				÷					+
	Site Formation, Stream Course Diversion and Foundation	410 days		Sat 1/9/12	Tue 15/10/13									
	Superstructure (Obtain OP)	442 days		Wed 16/10/13	Wed 31/12/14									<b>—</b>
	Superstructure (Obtain CC)	181 days		Thu 1/1/15	Tue 30/6/15									$\rightarrow$
(	Contract Completion Date	623 days		Tue 15/10/13	Tue 30/6/15		_					♦ 15/10		
	Site Formation, Stream Course Diversion and Foundation	0 days		Tue 15/10/13	Tue 15/10/13		_					◆ 15/10		
	Superstructure (Obtain OP) Superstructure (Obtain CC)	0 days 0 days		Wed 31/12/14 Tue 30/6/15	Wed 31/12/14 Tue 30/6/15		-					+		+-
	Supersu ucture (Obtain CC)	0 days		Tue 50/0/15	100 50/0/15				+			+		
Ţ	Pre-construction Works	150 days		Sat 1/9/12	Mon 28/1/13				+			++		+
	Free Felling / Transplant	150 days		Sat 1/9/12	Mon 28/1/13				+++			++		+
	Submission of Method Statement for Tree Felling and Transplant and Approval	21 days		Sat 1/9/12	Fri 21/9/12				+-++			+		
	Finalization of Tree Felling Plan and Approval from Government Depart	0 days		Sun 9/9/12	Sun 9/9/12	<b>4</b> 9/9								+
	Protection and Fencing for Retain and Transplant Trees	21 days		Mon 10/9/12	Sun 30/9/12	×9/9								-
	Tree Felling within Site Boundary	49 days		Mon 17/9/12	Sun 4/11/12									-
	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									
	Trees in Zone B	20 days		Mon 24/9/12	Sat 13/10/12		_							
	Trees in Zone C	10 days		Sun 14/10/12	Tue 23/10/12	6	5							
	Trees in Zone D	7 days		Wed 24/10/12	Tue 30/10/12									
	Trees in Zone A	5 days		Wed 31/10/12	Sun 4/11/12		ĥ					+		$\perp$
	Tree Felling outside Site Boundary	71 days		Sun 16/9/12	Sun 25/11/12							+		
	Submission of Tree Felling Plan Amendment to DLO and Approval	30 days		Sun 16/9/12	Mon 15/10/12							+		+
	Tree Felling	21 days		Mon 5/11/12	Sun 25/11/12				++			++		
	Tree Transplant	120 days		Mon 1/10/12	Mon 28/1/13				+ + +		+	+		+
	ite Formation and Foundation Works	313 days		Sat 1/9/12	Wed 10/7/13							++-+		+
	3D Submission	94 days		Mon 10/9/12	Wed 10///13 Wed 12/12/12			•	+-++			++		+
-	Zone A & B	30 days		Mon 10/9/12	Tue 9/10/12		-		+++		++	+-++		+
	Submission of BD Amendment	0 days		Mon 10/9/12	Mon 10/9/12	◆ <u>1</u> 0/9			++			++		+
	BD Comment	30 days		Mon 10/9/12	Tue 9/10/12									-
	BD Approval	0 days		Tue 9/10/12	Tue 9/10/12		9/10							1
	Zone C	30 days	N	Mon 12/11/12	Wed 12/12/12									+
	Submission of BD Amendment	0 days		Mon 12/11/12	Mon 12/11/12		• 1	2/11						
	BD Comment	30 days		Tue 13/11/12	Wed 12/12/12			Bh						
	BD Approval	0 days		Wed 12/12/12	Wed 12/12/12		T	◆12/12						
	Stream Course Diversion Works	313 days		Sat 1/9/12	Wed 10/7/13						1			
	Preparation Works and Monitoring Point Set-up	14 days		Sat 1/9/12	Fri 14/9/12									_
	Additional Drainage Verification	50 days		Mon 24/9/12	Mon 12/11/12									+
	Subletting	21 days		Mon 24/9/12	Sun 14/10/12				++			++		+
	Survey Re-design of Drainage at Zone C	14 days 15 days		Mon 15/10/12 Mon 29/10/12	Sun 28/10/12 Mon 12/11/12				+			+		+
	Sheet Piling Works	105 days		Sat 15/9/12	Fri 28/12/12				++			++		+
	Installation Works	75 days		Sat 15/9/12	Wed 28/11/12				++			++		+
-	Zone A1 to A5, B1 to B4 (not include Area still under BD Amendment)	30 days		Sat 15/9/12	Sun 14/10/12				+			+		+
	Zone A1 to A5, B1 to B4 (Area under BD Amendment)	15 days		Mon 15/10/12	Mon 29/10/12				+-+-+			++		+
	Zone B5	30 days		Tue 30/10/12	Wed 28/11/12									-
	BA14 Submission and Aknowledgement	60 days		Tue 30/10/12	Fri 28/12/12		<b>•</b>							+
	Zone A1 to A5, B1 to B4 (not include Area still under BD Amendment)	30 days		Tue 30/10/12	Wed 28/11/12			_						T
	Zone B5	30 days		Thu 29/11/12	Fri 28/12/12		Ó							
	Excavation, Construction Works and Soil Backfill	299 days		Sat 15/9/12	Wed 10/7/13						1			
	Zone A	167 days		Sat 15/9/12	Thu 28/2/13				<b></b>					
	Zone Al	105 days		Sat 15/9/12	Fri 28/12/12			<u> </u>						$ \rightarrow$
	Zone A2	70 days		Thu 25/10/12	Wed 2/1/13			<u> </u>						$\rightarrow$
	Zone A3	105 days		Wed 14/11/12	Tue 26/2/13				<u>}</u>					_
	Zone A4	40 days		Sun 20/1/13	Thu 28/2/13									_
	Zone A5 Zone B	30 days		Wed 30/1/13 Mon 1/10/12	Thu 28/2/13 Sun 21/4/13			<b>\</b>	≞			++		+
	Zone B1	203 days		Mon 1/10/12 Mon 1/10/12								++		+
	Zone B1 Zone B2	50 days 50 days		Thu 11/10/12	Mon 19/11/12 Thu 29/11/12				+++			++		+
	Zone B2 Zone B3	85 days		Fri 30/11/12	Fri 22/2/13							+-+-+		+
	Zone B5 Zone B4	30 days		Sat 23/2/13	Sun 24/3/13				╈╧┼─┼			++		+
	Zone B5	40 days		Wed 13/3/13	Sun 21/4/13					$\pm$	++-	+		+
	Zone C	180 days		Thu 13/12/12	Mon 10/6/13				╪╤╤╪╤╧╞					+
	Zone C1 (within site boundary)	100 days		Thu 13/12/12	Fri 22/3/13									1
	Excavation, Construction Works and Soil Backfill	100 days		Thu 13/12/12	Fri 22/3/13									
	Zone C2 (outside site boundary)	180 days		Thu 13/12/12	Mon 10/6/13				┿━╋╋					
	Application of Excavation Permit and Approval	90 days		Thu 13/12/12	Tue 12/3/13				<b>₩</b> _					
	Sheet Piling and Laterial Support	30 days		Wed 13/3/13	Thu 11/4/13							$\downarrow$		
	Manhole and Pipe Installation	60 days		Fri 12/4/13	Mon 10/6/13				-    ਁ			+		$\downarrow$
	BA14 Submission and Aknowledgement	30 days		Tue 11/6/13	Wed 10/7/13							+		$\downarrow$
0.7	all Nail Chart Diling Execution and Charles Erected	505 days		Man 1/10/12	M 17/0/14									
	Soil Nail, Sheet Piling, Excavation and Shoring, Foundation	505 days 172 days		Mon 1/10/12 Mon 1/10/12	Mon 17/2/14 Thu 21/3/13	X					$\mp$	+++		7
- 1	Design and Submission	172 days		Mon 1/10/12 Mon 1/10/12	Thu 21/3/13 Thu 21/3/13							++		-
	Design Drawing Available for Soil Nail, Shetting Piling, Excavation and Lateral Support (By Consultant)	0 days		Mon 1/10/12	Mon 1/10/12		/10		++-++++++++++++++++++++++++++++++++++++		+	+		-
	Soil Nail, Sheet Piling, Excavation & Laternal Support	157 days		Mon 15/10/12	Thu 21/3/13	<u> </u>	, 10		╪╤┼┼┼┼			+-++		$\neg$
	BD Amendment Submission for ELS Works (Stage 1)	30 days		Mon 15/10/12	Wed 14/11/12						++-			+
	BD Amendment Submission	0 days		Mon 15/10/12	Mon 15/10/12	1	15/10							+
	BD Comment	30 days		Tue 16/10/12	Wed 14/11/12									
	BD Approval	0 days		Wed 14/11/12	Wed 14/11/12		<b></b>	4/11						
	BD Submission for ELS Works (Stage 2)	95 days		Mon 15/10/12	Fri 18/1/13									
	BD Submission	0 days		Mon 15/10/12	Mon 15/10/12		5/10							
	BD Comment	60 days		Tue 16/10/12	Fri 14/12/12		1	🕒 📔						
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nite	ed Pages and Expanded Features	30 days Thu 20/12/12 Fri 18/1/13	
	BD Amendment Submission for Raft Footing	0 days Fri 18/1/13 Fri 18/1/13	
	BD Amendment Submission	0 days Fri 14/12/12 Fri 14/12/12	
	BD Comment	60 days Sat 15/12/12 Tue 12/2/13	
-	BD Approval Consent Application	0 days         Tue 12/2/13         1         2/2         1 <th1< th=""> <th1< th=""> <th1< th=""></th1<></th1<></th1<>	
	Consent Obtained	0  days Thu 21/3/13 Thu 21/3/13 <b>21</b>	
	Socket H-Pile & Pile Cap		
	BD Amendment Submission	97 days Fri 14/12/12 Thu 21/3/13 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	
-	BD Comment BD Approval	60 days     Sat 15/12/12     Tue 12/2/13       0 days     Tue 12/2/13     Tue 12/2/13	
-	Consent Application	0 days     Tue 12/213     0 days     Tue 12/213     0 days     0	
	Consent Obtained	0 days Thu 21/3/13 Thu 21/3/13	
	Procurement	135 days Mon 1/10/12 Tue 12/2/13	
-	Tender Preparation and Subletting for Soil Nail and Excavation Tender Preparation and Subletting for Sheet Piling and Excavation and Shoring, Socket H-Pile Works	60 days         Mon 1/10/12         Thu 29/11/12         Image: Comparison of the compar	
+	Tender Preparation and Subjecting for Formwork, Reinforcement Fixing and Concreting Works	60 days Sati 51/2/12 Tue 12/2/13	
	Tender Preparation and Subletting for Socket H-Pile Works	60 days Sat 15/12/12 Tue 12/2/13	
	Tender Preparation and Subletting for Formwork, Reinforcement Fixing and Concreting Works	60 days Thu 15/11/12 Sun 13/1/13	
-	Preparation Works and Mobilization Preparation Works and Mobilization for Soil Nail & Excavation	90 days         Fri 30/11/12         Wed 27/2/13         Image: Comparison of the second sec	
-	Preparation Works and Mobilization for Sheet Piling and ELS Works	15 days Sat 15/12/12 Sat 29/12/12	╷╴┼╶┼╶┼╶┼╴┼╴┽╴╫╶┼╶┼╶┼╴┼
	Preparation Works and Mobilization for Socket H-Pile	15 days Wed 13/2/13 Wed 27/2/13	
	Construction Works	430 days Sat 15/12/12 Mon 17/2/14	
	Zone A (Tower 7 to Tower 19) Zone A1	351 days         Sat 15/12/12         Sat 30/11/13           195 days         Sat 15/12/12         Thu 27/6/13	
-	Zone A1 Excavation and Soil Nailing	195 days Sat 15/12/12 Sat 13/4/13	┍─┼┼┼┼┼┼╫┼┼┼┼
	Plate Load Test for Soil Stratum and Report Submission to BD	7 days Sun 14/4/13 Sat 20/4/13	
	Apply Consent for Foundation	28 days Sun 21/4/13 Sat 18/5/13	
	Construction of Raft Footing Zone A2	40 days         Sun 19/5/13         Thu 27/6/13         Image: Constraint of the second seco	
	Zone AZ Excavation and Soil Nailing	155 days         Fri 1/3/13         Fri 2/8/13           90 days         Fri 1/3/13         Wed 29/5/13	╷─┼┼┼┼┼┼┼╫┼┼┼┼
	Plate Load Test for Soil Stratum and Report Submission to BD	7 days Thu 30/5/13 Wed 5/6/13	
	Apply Consent for Foundation	28 days Thu 6/6/13 Wed 3/7/13	
	Construction of Raft Footing	30 days Thu 4/7/13 Fri 2/8/13	
	Zone A3 Excavation and Soil Nailing	155 days         Mon 22/4/13         Mon 23/9/13         Image: Comparison of the compar	
	Plate Load Test for Soil Stratum and Report Submission to BD	7 days Sun 21/7/13 Sat 20/7/13	
	Apply Consent for Foundation	28 days Sun 28/7/13 Sat 24/8/13	
	Construction of Raft Footing	30 days Sun 25/8/13 Mon 23/9/13	
	Zone A4 Pre-drilling, Socket H-Pile Installation	254 days         Fri 22/3/13         Sat 30/11/13	
	Loading Test	14 days Thu 20/6/13 Wed 3/7/13	┍─┼┼┼┼┼┼╫┼┼┼┼
	Submission of BA14 and Consent Application for Pile Cap Construction	28 days         Thu 4/7/13         Wed 31/7/13         Image: Control of the	
	Open Cut Excavation	30 days Thu 4/7/13 Fri 2/8/13	
	Part of Pile Cap Construction Soil Nail & Excavation	30 days         Sat 3/8/13         Sun 1/9/13         Composition         Composite 100 minition         Composition	┍─┼┼┼┼┼┼╫┼┼┼┼
	Soil Nail & Excavation Sheet Piling	30 days Thu 20/6/13 Fri 19/7/13	┍─┼┼┼┼┼┼╫┼┼┼┼
	ELS	60 days Mon 2/9/13 Thu 31/10/13	
	Remaining Pile Cap and Basement Slab Construction	30 days Fri 1/11/13 Sat 30/11/13	
	Zone B B (Tower 20 to Tower 27)	415 days Sun 30/12/12 Mon 17/2/14	
	Zone B1 Open Cut Excavation & Portion of Footing Construction	180 days         Sun 30/12/12         Thu 27/6/13           100 days         Sun 30/12/12         Mon 8/4/13	
	Plate Load Test for Soil Stratum and Report Submission to BD	7 days Tue 9/4/13 Mon 15/4/13	
	Apply Consent for Foundation	28 days Tue 16/4/13 Mon 13/5/13	
	Construction of Raft Footing	45 days Tue 14/5/13 Thu 27/6/13	
	Zone B2 Open Cut Excavation	110 days         Mon 25/3/13         Fri 12/7/13         Image: Constraint of the second sec	
	Plate Load Test for Soil Stratum and Report Submission to BD	7 days Thu 9/5/13 Wed 8/5/13	╷─┼┼┼┼┼┼┼╫┼┼┼┼
	Apply Consent for Foundation	28 days Thu 16/5/13 Wed 12/6/13	
	Construction of Raft Footing	30 days Thu 13/6/13 Fri 12/7/13	
	Zone B3 Sheet Piling, Excavation and Lateral Support	125 days         Tue 9/4/13         Sun 11/8/13         Control of the second	
	Plate Load Test for Soil Stratum and Report Submission to BD	7 days Sat 8/6/13 Fri 14/6/13	╷╴┼╶┼╶┼╶┼╴┼╴┽╴╫╶┼╶┼╶┼╴┼
	Apply Consent for Foundation	28 days Sat 15/6/13 Fri 12/7/13	
	Construction of Raft Footing	30 days Sat 13/7/13 Sun 11/8/13	
	Zone B4 Short Diling, Evaquation and Lateral Support	125 days     Sat 8/6/13     Thu 10/10/13     Image: Constraint of the second	
	Sheet Piling, Excavation and Lateral Support Plate Load Test for Soil Stratum and Report Submission to BD	60 days         Sat 8/6/13         Tue 6/8/13         Common           7 days         Wed 7/8/13         Tue 13/8/13         Image: Common Address of the second seco	
	Apply Consent for Foundation	28 days Wed 1/6/15 Tue 10/9/13	
	Construction of Raft Footing	30 days Wed 11/9/13 Thu 10/10/13	
	Zone B5 Shar Piling Europeation and Lateral Summert	125 days Wed 16/10/13 Mon 17/2/14	
	Sheet Piling, Excavation and Lateral Support Plate Load Test for Soil Stratum and Report Submission to BD	60 days         Wed 16/10/13         Sat 14/12/13         Image: Constraint of the set of the	
	Apply Consent for Foundation	28 days Sun 22/12/13 Sat 18/1/14	
	Construction of Raft Footing	30 days Sun 19/1/14 Mon 17/2/14 Source State Sta	
	Zone C (Tower 1 to Tower 6)	272 days Fri 22/3/13 Wed 18/12/13	
	Zone C1 Pre-drilling, Socket H-Pile Installation and Excavation	147 days         Fri 22/3/13         Thu 15/8/13           75 days         Fri 22/3/13         Tue 4/6/13	
	Loading Test	14 days Wed 5/6/13 Tue 18/6/13	
	Submission of BA14 and Consent Application for Pile Cap Construction	28 days Wed 19/6/13 Tue 16/7/13	
	Pile Cap and Basement Slab Construction Zone C2	30 days Wed 17/7/13 Thu 15/8/13	
		147 days Fri 22/3/13 Thu 15/8/13	
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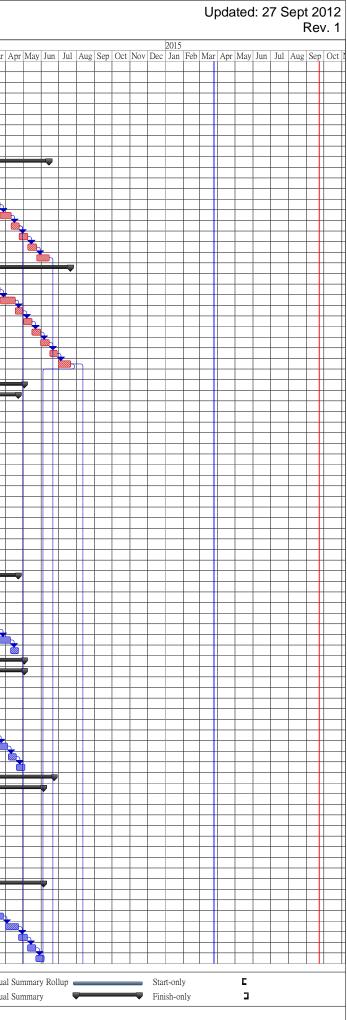
complete <i>use period has ended.</i> <i>Thank you for using</i> <i>PDF Complete.</i>	Outline Works Programme	Updated: 27 Sep
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ed Pages and Expanded Features	75 days         Fri 22/3/13         Tue 4/6/13         Image: Comparison of the field	
Pile Cap and Basement Slab Construction	28 days         Wed 19/6/13         Tue 16/7/13         Image: Comparison of the compari	
Open Cut Excavation	60 days Fri 22/3/13 Mon 20/5/13	
Plate Load Test for Soil Stratum and Report Submission to BD Apply Consent for Foundation	7 days         Tue 21/5/13         Mon 27/5/13         Image: Comparison of the comparis	
Pile Cap and Basement Slab Construction	28 days         Tue 28/5/13         Mon 24/6/13         Image: Constraint of the constra	
Zone C3 Pre-drilling, Socket H-Pile Installation and Excavation	147 days         Wed 5/6/13         Tue 29/10/13         Control	
Loading Test	14 days Mon 19/8/13 Sun 19/13	
Submission of BA14 and Consent Application for Pile Cap Construction	28 days Mon 2/9/13 Sun 29/9/13	
Pile Cap and Basement Slab Construction Zone C4	30 days         Mon 30/9/13         Tue 29/10/13	
Pre-drilling, Socket H-Pile Installation and Excavation	75 days Wed 5/6/13 Sun 18/8/13	
Loading Test Submission of BA14 and Consent Application for Pile Cap Construction	14 days         Mon 19/8/13         Sun 1/9/13         Sun 29/9/13         Sun 29/9/13 <t< td=""><td></td></t<>	
Pile Cap and Basement Slab Construction	30 days Mon 30/9/13 Tue 29/10/13	
Open Cut Excavation Plate Load Test for Soil Stratum and Report Submission to BD	60 days         Wed 5/6/13         Sat 3/8/13         Control         Control <thcontrol< th="">         Control</thcontrol<>	
Apply Consent for Foundation	28 days Sun 11/8/13 Sat 7/9/13	
Pile Cap and Basement Slab Construction Zone C5	30 days Sun 8/9/13 Mon 7/10/13	
Sheet Piling, Excavation and Lateral Support	125 days         Fri 16/8/13         Wed 18/12/13         Comparison         Comparison <thcomparison< th="">         Comparison         Compari</thcomparison<>	
Plate Load Test for Soil Stratum and Report Submission to BD	7 days Tue 15/10/13 Mon 21/10/13	
Apply Consent for Foundation Construction of Raft Footing	28 days         Tue 22/10/13         Mon 18/11/13         Image: Constraint of the second se	
Superstructure (R.C. Works) BD Submission	676 days       Fri 14/9/12       Mon 21/7/14         326 days       Fri 14/9/12       Mon 5/8/13	
GBP Submission	326 days Fri 14/9/12 Mon 5/8/13	
1st BD Submission for GBP BD Comment	0 days Fri 14/9/12 Fri 14/9/12 ◆14/9 60 days Fri 14/9/12 Mon 12/11/12	
Withdraw and Re-submit for GBP	0 days Sat 1/12/12 Sat 1/12/12 Sat 1/12/12	
BD Comment Approval of GBP	60  days Sun 2/12/12 Wed 30/1/13	
Cosent Application	30 days Wed 20/2/13 Thu 21/3/13	
Consent Obtained	0 days Thu 21/3/13 Thu 21/3/13 <b>C</b>	
BD Major Amendment BD Comment	0 days Sun 31/3/13 Sun 31/3/13	
BD Approval	0 days Thu 30/5/13 Thu 30/5/13	
Cosent Application Consent Obtained	30 days         Sun 7/7/13         Mon 5/8/13	
Structural Drawing Submission	228 days Thu 20/12/12 Mon 5/8/13	
BD Submission	0 days Thu 20/12/12 Thu 20/12/12 Thu 20/12/12 Thu 20/12/12	
BD Comment BD Approval	60 days Fri 21/12/12 Mon 18/2/13 0 days Mon 18/2/13 Mon 18/2/13 ↓ 18/2	
Consent Application	30  days Wed $20/2/13$ Thu $21/3/13$	
Consent Obtained BD Major Amendment	0 days Thu 21/3/13 Thu 21/3/13	
BD Comment	60 days Thu 2/5/13 Sun 30/6/13	
BD Approval	0 days     Sun 30/6/13     Sun 30/6/13     Sun 30/6/13       30 days     Sun 7/7/13     Mon 5/8/13     Sun 30/6/13       0 days     Sun 7/7/13     Mon 5/8/13     Sun 30/6/13	
Cosent Application Consent Obtained	30 days         Sun 7/7/13         Mon 5/8/13	
Precast Façade Submission	165 days Thu 20/12/12 Mon 3/6/13	
BD Submission BD Comment	0 days         Thu 20/12/12         Thu 20/12/12         20/12         1 <th1< th="">         1         <th1< th=""> <th< td=""><td></td></th<></th1<></th1<>	
BD Approval	0 days Mon 18/2/13 Mon 18/2/13	
Consent Application Consent Obtained	30 days     Wed 20/2/13     Thu 21/3/13       0 days     Thu 21/3/13	
BD Amendment	0 days Sat 4/5/13 Sat 4/5/13 Sat 4/5/13	
BD Comment	30 days Sun 5/5/13 Mon 3/6/13	
BD Approval Tender Preparation and Subletting	0 days Mon 3/6/13 Mon 3/6/13 114 days Mon 4/2/13 Tue 28/5/13	
Tender Preparation and Subletting for Precast Façade and Window (if any)	60 days Mon 4/2/13 Thu 4/4/13	
Tender Preparation and Subletting for Structural Works Precast Façade	60 days         Sat 30/3/13         Tue 28/5/13           146 days         Fri 5/4/13         Wed 28/8/13	
Shop Drawing Submission and Approval	28 days Fri 5/4/13 Thu 2/5/13	
Mould Fabrication and Trail Panel Construction (if necessary) Mass Production of Mould and Construction of 1st Batch of Precast Façade	28 days         Fri 3/5/13         Thu 30/5/13         Image: Comparison of the second secon	
Mass Production of Mould and Construction of 1st Batch of Precast Paçade Mobilization and Preparation Works	30 days Wed 29/5/13 Thu 27/6/13	
Construction Works	389 days Fri 28/6/13 Mon 21/7/14	
Zone A (Tower 7 to Tower 19) Type 6 Tower	510 days FrI 20/0/15 Molt 21/1/14	
Zone A1 (Tower 11, 12 & 13)	166 days Fri 28/6/13 Wed 15/1/14	
Basement to G/F Slab (including U/G Drainage & Utilities Installaion Works) G/F to 1/F Slab	52 days         Fri 28/6/13         Wed 28/8/13         Comment	
1/F to 2/F Slab	18 days Thu 19/9/13 Fri 11/10/13	
2/F to 3/F Slab 3/F to 4/F Slab	12 days         Sat 12/10/13         Sat 26/10/13         Image: Control of the control of	
4/F to 5/F Slab	12 days Mon 11/11/13 Sat 23/11/13	
5/F to 6/F Slab 6/F to R/F Slab	12 days         Mon 25/11/13         Sat 7/12/13         Image: Control of the state	
R/F	18 days Mon 23/12/13 Wed 15/1/14	
Zone A2 (Tower 7, 8, 9 & 10)	166 days Sat 3/8/13 Fri 28/2/14	
Task	Summary Inactive Task ? Inactive Milestone $\diamond$ Manual Task Manual Summa	ry Rollup Start-only <b>C</b>
eng Construction Co., Ltd.	Critical Inactive Task Inactive Summary United to Infection Inactive Summary United to Infection Inactive Summary III III IIII IIIIIIIIIIIIIIIIIIIIIII	
intilestone 🗘		



Your complimentary use period has ended. At Thank you for using

### **Outline Works Programme**

lere ted i	PDF Complete.         to upgrade to         Pages and Expanded Features         2/F to 3/F Slab         3/F to 4/F Slab         4/F to 5/F Slab         6/F to K/F Slab         6/F to K/F Slab         6/F to K/F Slab         7/F to 3/F Slab         7/F to 3/F Slab         6/F to K/F Slab         6/F to K/F Slab         7/F to 3/F Slab         7/F to 1/F Slab         7/F to 3/F Slab         7/F to 4/F Slab         7/F to	Duration           52 days           18 days           12 days           18 days           207 days           52 days           18 days           12 days           18 days           18 days           12 days           <	Start Sat 3/8/13 Sat 5/10/13 Mon 28/10/13 Mon 18/11/13 Mon 12/13 Thu 21/14 Thu 21/14 Thu 21/14 Thu 21/14 Thu 21/14 Thu 21/14 Thu 24/9/13 Tue 24/9/13 Tue 24/9/13 Thu 6/2/14 Thu 6/2/14 Thu 6/2/14 Thu 6/2/14 Thu 6/2/14 Thu 24/9/13 Thu 24/9/13 Thu 24/9/13 Sat 22/3/14 Thu 10/4/14 Fri 9/5/14 Sat 12/3/14 Sat 13/14 Sat 31/5/14 Fri 25/14 Fri 25/14 Fri 25/14 Sat 31/5/14 Mon 16/6/14 Mon 30/6/14 Fri 28/6/13 Fri 28/6/13 Fri 28/6/13 Fri 28/6/13	Finish         Au           Fri 4/10/13         Sat 26/10/13           Sat 26/10/13         Sat 16/11/13           Sat 16/11/13         Sat 14/12/13           Tue 31/12/13         Wed 15/1/14           Wed 15/1/14         Wed 29/1/14           Fri 28/2/14         Sat 14/6/14           Mon 25/11/13         Wed 5/2/14           Fri 21/3/14         Fri 21/3/14           Fri 21/3/14         Fri 21/3/14           Fri 23/5/14         Sat 14/6/14           Mon 21/7/14         Mon 21/7/14           Wed 16/4/14         Wed 30/4/14           Fri 30/5/14         Fri 30/5/14           Fri 30/5/14         Sat 14/6/14           Mon 21/7/14         Wed 30/4/14           Mu 15/5/14         Sat 14/6/14           Sat 14/6/14         Sat 28/6/14           Mon 21/7/14         Sat 28/6/14	ju Sep         Oct         Nov         Dec         Jan         Feb           ig         Sep         Oct         Nov         Dec         Jan         Feb           i         I         I         I         I         I         I         I           i         I         I         I         I         I         I         I           i         I <tdi< th=""><th>Mar     Apr     May     Jun     Jul     Aug     Sep     Oct       -     -     -     -     -     -     -     -     -       -     -     -     -     -     -     -     -     -       -     -     -     -     -     -     -     -     -     -       -     -     -     -     -     -     -     -     -     -       -     -     -     -     -     -     -     -     -     -       -     -     -     -     -     -     -     -     -     -     -       -     -     -     -     -     -     -     -     -     -     -       -     -     -     -     -     -     -     -     -     -     -       -     -     -     -     -     -     -     -     -     -     -       -     -     -     -     -     -     -     -     -     -       -     -     -     -     -     -     -     -     -     -       -     -     -<!--</th--><th></th></th></tdi<>	Mar     Apr     May     Jun     Jul     Aug     Sep     Oct       -     -     -     -     -     -     -     -     -       -     -     -     -     -     -     -     -     -       -     -     -     -     -     -     -     -     -     -       -     -     -     -     -     -     -     -     -     -       -     -     -     -     -     -     -     -     -     -       -     -     -     -     -     -     -     -     -     -     -       -     -     -     -     -     -     -     -     -     -     -       -     -     -     -     -     -     -     -     -     -     -       -     -     -     -     -     -     -     -     -     -     -       -     -     -     -     -     -     -     -     -     -       -     -     -     -     -     -     -     -     -     -       -     -     - </th <th></th>	
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	6/F to R/F Slab         R/F         Zone A3 (Tower 14, 15 & 16)         Basement to G/F Slab (including U/G Drainage & Utilities Installaion Works)         G/F to 1/F Slab         1/F to 2/F Slab         2/F to 3/F Slab         3/F to 4/F Slab         3/F to 4/F Slab         5/F to 6/F Slab         6/F to R/F Slab         7/F to 4/F Slab         7/F to 1/F Slab         1/F to 4/F Slab         3/F to 4/F Slab         5/F to 6/F Slab         6/F to R/F Slab         1/F to 2/F Slab         1/F to 2/F Slab         1/F t	12 days           18 days           207 days           52 days           18 days           12 days           18 days           18 days           18 days           12 days           246 days           237 days           150 days           26 days           52 days	Thu 16/1/14 Thu 30/1/14 Tue 24/9/13 Thu 24/9/13 Thu 16/1/14 Thu 6/2/14 Sat 8/3/14 Sat 22/3/14 Thu 10/4/14 Thu 24/4/14 Fri 9/5/14 Sat 24/5/14 Mon 2/12/13 Mon 2/12/13 Sat 1/3/14 Sat 22/3/14 Thu 17/4/14 Fri 2/5/14 Fri 16/5/14 Mon 16/6/14 Mon 30/6/14 Fri 28/6/13 Fri 28/6/13 Fri 28/6/13	Wed 29/1/14 Fri 28/2/14 Sat 14/6/14 Mon 25/11/13 Wed 5/2/14 Fri 7/3/14 Fri 7/3/14 Wed 9/4/14 Wed 23/4/14 Thu 8/5/14 Fri 23/5/14 Sat 14/6/14 Mon 21/7/14 Wed 16/4/14 Wed 30/4/14 Fri 30/5/14 Fri 30/5/14 Sat 14/6/14 Sat 28/6/14 Mon 21/7/14			
	R/F         Zone A3 (Tower 14, 15 & 16)         Basement to G/F Slab (including U/G Drainage & Utilities Installaion Works)         G/F to 1/F Slab         1/F to 2/F Slab         2/F to 3/F Slab         3/F to 4/F Slab         4/F to 5/F Slab         5/F to 6/F Slab         6/F to R/F Slab         6/F to R/F Slab         7/F to 1/F Slab         7/F to 1/F Slab         8/F         2/00 A4 (Tower 17, 18 & 19)         Basement to C/F Slab         7/F to 2/F Slab         7/F to 3/F Slab         7/F to 3/F Slab         7/F to 3/F Slab         7/F to 5/F Slab         7/F to 6/F Slab         7/F to 6/F Slab         7/F to 7/F Slab	18 days           207 days           52 days           18 days           18 days           12 days           18 days           18 days           12 days           24 days           24 days           246 days           237 days           150 days           26 days           52 days	Thu 30/1/14 Tue 24/9/13 Tue 24/9/13 Thu 16/1/14 Thu 6/2/14 Sat 8/3/14 Sat 22/3/14 Thu 21/14 Thu 24/1/14 Thu 24/1/14 Fri 9/5/14 Sat 22/3/14 Mon 2/12/13 Sat 1/3/14 Sat 22/3/14 Thu 17/4/14 Fri 2/5/14 Sat 31/5/14 Mon 16/6/14 Mon 30/6/14 Fri 28/6/13 Fri 28/6/13 Fri 28/6/13	Fri 28/2/14 Sat 14/6/14 Mon 25/11/13 Wed 5/2/14 Fri 7/3/14 Fri 21/3/14 Wed 9/4/14 Wed 9/4/14 Wed 23/4/14 Thu 8/5/14 Fri 23/5/14 Sat 14/6/14 Mon 21/7/14 Wed 16/4/14 Wed 30/4/14 Fri 30/5/14 Fri 30/5/14 Sat 14/6/14 Sat 28/6/14 Mon 21/7/14			
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	1/F to 2/F Slab         2/F to 3/F Slab         3/F to 4/F Slab         4/F to 5/F Slab         5/F to 6/F Slab         6/F to R/F Slab         R/F         Zone A4 (Tower 17, 18 & 19)         Basement to G/F Slab (including U/G Drainage & Utilities Installaion Works)         G/F to 1/F Slab         1/F to 2/F Slab         2/F to 3/F Slab         3/F to 4/F Slab         3/F to 4/F Slab         3/F to 4/F Slab         3/F to 5/F Slab         3/F to 6/F Slab         5/F to 6/F Slab         6/F to R/F Slab         5/F to 6/F Slab         6/F to R/F Slab         7/F to 7/F Slab         Some B (Tower 20 to Tower 27)         Type 3 Tower         Zone B1 (Tower 21)         Basement to LG/F Slab         LG/F to 1/F Slab         LG/F to 1/F Slab         LG/F to 1/F Slab         1/F to 2/F Slab         1/F to 2/F Slab         1/F to 2/F Slab	18 days           12 days           18 days           18 days           18 days           12 days           246 days           237 days           150 days           26 days           52 days	Thu 6/2/14 Sat 8/3/14 Sat 22/3/14 Thu 10/4/14 Thu 24/4/14 Fri 9/5/14 Sat 24/5/14 Mon 2/12/13 Sat 1/3/14 Sat 22/3/14 Thu 17/4/14 Fri 2/5/14 Sat 31/5/14 Mon 16/6/14 Mon 30/6/14 Fri 28/6/13 Fri 28/6/13 Fri 28/6/13	Fri 7/3/14 Fri 21/3/14 Wed 9/4/14 Wed 23/4/14 Thu 8/5/14 Fri 23/5/14 Sat 14/6/14 Mon 21/7/14 Wed 16/4/14 Wed 30/4/14 Thu 15/5/14 Fri 30/5/14 Sat 14/6/14 Sat 28/6/14 Mon 21/7/14	Image: sector		
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	R/F         Zone A4 (Tower 17, 18 & 19)         Basement to G/F Slab (including U/G Drainage & Utilities Installaion Works)         G/F to 1/F Slab         1/F to 2/F Slab         2/F to 3/F Slab         3/F to 4/F Slab         3/F to 4/F Slab         5/F to 6/F Slab         6/F to R/F Slab         6/F to R/F Slab         6/F to R/F Slab         7/F         0/F to S/F Slab         6/F to R/F Slab         7/F         0/F to R/F Slab         0/F to C/F Slab         0/F to C/F Slab         0/F to C/F Slab         1/F to 2/F Slab         1/F to 2/F Slab         1/F to 2/F Slab	18 days           180 days           52 days           52 days           18 days           18 days           12 days           13 days           246 days           237 days           150 days           26 days           52 days	Sat 24/5/14 Mon 2/12/13 Sat 1/3/14 Sat 22/3/14 Thu 17/4/14 Fri 2/5/14 Fri 16/5/14 Sat 31/5/14 Mon 16/6/14 Mon 30/6/14 Fri 28/6/13 Fri 28/6/13 Fri 28/6/13	Sat 14/6/14 Mon 3/2/14 Fri 21/3/14 Wed 16/4/14 Wed 30/4/14 Thu 15/5/14 Fri 30/5/14 Sat 14/6/14 Sat 28/6/14 Mon 21/7/14	Image: Section of the sectio		
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	1/F to 2/F Slab         2/F to 3/F Slab         3/F to 4/F Slab         4/F to 5/F Slab         5/F to 6/F Slab         6/F to R/F Slab         6/F to R/F Slab         R/F         cone B (Tower 20 to Tower 27)         Type 3 Tower         Zone B1 (Tower 21)         Basement to LG/F Slab         LG/F to G/F Slab (including U/G Drainage & Utilities Installaion Works)         G/F to 1/F Slab         1/F to 2/F Slab	18 days           12 days           13 days           246 days           237 days           150 days           26 days           52 days	Sat 22/3/14 Thu 17/4/14 Fri 2/5/14 Fri 16/5/14 Sat 31/5/14 Mon 16/6/14 Mon 30/6/14 Fri 28/6/13 Fri 28/6/13 Fri 28/6/13	Wed 16/4/14 Wed 30/4/14 Thu 15/5/14 Fri 30/5/14 Sat 14/6/14 Sat 28/6/14 Mon 21/7/14			
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Ζ.	R/F tone B (Tower 20 to Tower 27) Type 3 Tower Zone B1 (Tower 21) Basement to LG/F Slab LG/F to G/F Slab (including U/G Drainage & Utilities Installaion Works) G/F to 1/F Slab 1/F to 2/F Slab	18 days 246 days 237 days 150 days 26 days 52 days	Mon 30/6/14 Fri 28/6/13 Fri 28/6/13 Fri 28/6/13	Mon 21/7/14			
	ione B (Tower 20 to Tower 27) Type 3 Tower Zone B1 (Tower 21) Basement to LG/F Slab LG/F to G/F Slab (including U/G Drainage & Utilities Installaion Works) G/F to 1/F Slab 1/F to 2/F Slab	246 days 237 days 150 days 26 days 52 days	Fri 28/6/13 Fri 28/6/13 Fri 28/6/13				`
Ζι	Type 3 Tower Zone B1 (Tower 21) Basement to LG/F Slab LG/F to G/F Slab (including U/G Drainage & Utilities Installaion Works) G/F to 1/F Slab 1/F to 2/F Slab	237 days 150 days 26 days 52 days	Fri 28/6/13 Fri 28/6/13	Sat 3/5/14			. 11 1 1 1
	Type 3 Tower Zone B1 (Tower 21) Basement to LG/F Slab LG/F to G/F Slab (including U/G Drainage & Utilities Installaion Works) G/F to 1/F Slab 1/F to 2/F Slab	237 days 150 days 26 days 52 days	Fri 28/6/13 Fri 28/6/13	Sat 3/5/141		┼─┼─┼─ <u>┹┶╊╫╫</u>	
	Zone B1 (Tower 21) Basement to LG/F Slab LG/F to G/F Slab (including U/G Drainage & Utilities Installaion Works) G/F to I/F Slab 1/F to 2/F Slab	150 days 26 days 52 days	Fri 28/6/13	Tue 22/4/14			
	Basement to LG/F Slab LG/F to G/F Slab (including U/G Drainage & Utilities Installaion Works) G/F to 1/F Slab 1/F to 2/F Slab	26 days 52 days		Tue 22/4/14 Tue 24/12/13			
	LG/F to G/F Slab (including U/G Drainage & Utilities Installaion Works) G/F to 1/F Slab 1/F to 2/F Slab	52 days	Fri 28/6/13	Mon 29/7/13			
	G/F to 1/F Slab 1/F to 2/F Slab		Tue 30/7/13	Sat 28/9/13			.╢─┨─╢──
	1/F to 2/F Slab	18 days	Mon 30/9/13	Tue 22/10/13			
		18 days	Wed 23/10/13	Tue 12/11/13			
	2/F to 3/F Slab	12 days	Wed 13/11/13	Tue 26/11/13			
	3/F to R/F Slab	12 days	Wed 27/11/13	Tue 10/12/13			
	R/F	12 days	Wed 11/12/13	Tue 24/12/13			
	Zone B2 (Tower 20)	150 days	Sat 13/7/13	Fri 10/1/14			
	Basement to LG/F Slab	26 days	Sat 13/7/13	Mon 12/8/13			
	LG/F to G/F Slab (including U/G Drainage & Utilities Installaion Works)	52 days	Tue 13/8/13	Tue 15/10/13			
	G/F to 1/F Slab	18 days	Wed 16/10/13	Tue 5/11/13			
	1/F to 2/F Slab	18 days	Wed 6/11/13	Tue 26/11/13			
	2/F to 3/F Slab	12 days	Wed 27/11/13	Tue 10/12/13			
	3/F to R/F Slab	12 days	Wed 11/12/13	Tue 24/12/13			
	R/F	12 days	Fri 27/12/13	Fri 10/1/14			
	Zone B4 (Tower 22)	150 days	Fri 11/10/13	Tue 22/4/14			
	Basement to LG/F Slab	26 days	Fri 11/10/13	Mon 11/11/13			
	LG/F to G/F Slab (including U/G Drainage & Utilities Installaion Works)	52 days	Tue 12/11/13	Tue 14/1/14			
	G/F to 1/F Slab	18 days	Wed 15/1/14	Tue 4/2/14			
	1/F to 2/F Slab	18 days	Wed 5/2/14	Thu 6/3/14			+
	2/F to 3/F Slab	12 days	Fri 7/3/14	Thu 20/3/14		┼─┼─┼─┼─╫╫╢─┼──	+
	3/F to R/F Slab	12 days	Fri 21/3/14	Tue 8/4/14			
	R/F	12 days	Wed 9/4/14	Tue 22/4/14			
	Type 7 Tower	209 days	Mon 12/8/13	Sat 3/5/14			
	Zone B3 (Tower 23, 24, 25, 26 & 27)	209 days	Mon 12/8/13	Sat 3/5/14			
	Basement to Clubhouse Slab	26 days	Mon 12/8/13	Tue 10/9/13			
	Basement to G/F Slab (including U/G Drainage & Utilities Installaion Works)	52 days	Wed 11/9/13	Wed 13/11/13		┤─┼┼┼┼╢╨╨┉┉┉	┦
	G/F to 1/F Slab	18 days	Fri 27/12/13	Fri 17/1/14		┼─┼─┼─┼─╫┼╢─┼──	
	1/F to 2/F Slab 2/F to 3/F Slab	18 days	Sat 18/1/14 Tue 18/2/14	Mon 17/2/14 Mon 3/3/14		┼─┼─┼─╫┼╢─┼──	
	3/F to 3/F Slab	12 days 12 days	Tue 18/2/14 Tue 4/3/14	Mon 3/3/14 Mon 17/3/14			+++++
	3/F to 5/F Slab	12 days 12 days	Tue 18/3/14	Thu 3/4/14			
	5/F to R/F Slab	12 days	Sat 5/4/14	Fri 18/4/14			
	R/F	12 days	Sat 3/4/14 Sat 19/4/14	Sat 3/5/14		┼┼┼┼┼╫╫┼─	+++++++++++++++++++++++++++++++++++++++
7	ione C (Tower 1 to Tower 6)	246 days	Fri 16/8/13	Mon 23/6/14		┤─ <del>┤╶┤╶┤╶╢<sub>╛</sub>╽╻╻</del>	
니	Type 1 Tower	240 days 232 days	Fri 16/8/13	Thu 5/6/14			
	Zone CI (Tower I)	142 days	Fri 16/8/13	Tue 4/2/14			
	Cap / Basement to LG/F (including U/G Drainage & Utilities Installaion Works)	52 days	Fri 16/8/13	Fri 18/10/13			
	Cap' to G/F Slab	18 days	Sat 19/10/13	Fri 8/11/13			
	G/F to 1/F Slab	18 days	Sat 9/11/13	Fri 29/11/13			
	1/F to 2/F Slab	18 days	Sat 30/11/13	Fri 20/12/13			
	2/F to 3/F Slab	12 days	Sat 21/12/13	Tue 7/1/14			
	3/F to R/F Slab	12 days	Wed 8/1/14	Tue 21/1/14			
	R/F	12 days	Wed 22/1/14	Tue 4/2/14			
	Zone C3 (Tower 2)	171 days	Wed 30/10/13	Thu 5/6/14			<del>v∐= =  =</del> Ϊ
	Cap / Basement to LG/F (including U/G Drainage & Utilities Installaion Works)	52 days	Wed 30/10/13	Tue 31/12/13			
		18 days	Wed 5/2/14	Thu 6/3/14			
	LG/F to G/F Slab	18 days	Fri 7/3/14	Thu 27/3/14			
	LG/F to G/F Slab G/F to 1/F Slab	18 days	Tue 1/4/14	Tue 22/4/14			
	LG/F to G/F Slab	12 days	Wed 23/4/14	Wed 7/5/14			
	LG/F to G/F Slab G/F to 1/F Slab 1/F to 2/F Slab 2/F to 3/F Slab		Thu 8/5/14	Thu 22/5/14			
	LG/F to G/F Slab G/F to 1/F Slab 1/F to 2/F Slab 2/F to 3/F Slab 3/F to R/F Slab	12 days	D : 00 / 5 / 1				
	LG/F to G/F Slab G/F to 1/F Slab 1/F to 2/F Slab 2/F to 3/F Slab		Fri 23/5/14	Thu 5/6/14			
	LG/F to G/F Slab G/F to 1/F Slab 1/F to 2/F Slab 2/F to 3/F Slab 3/F to R/F Slab	12 days	Fn 23/5/14				
Seng	LG/F to G/F Slab G/F to 1/F Slab 1/F to 2/F Slab 2/F to 3/F Slab 3/F to R/F Slab R/F	12 days 12 days		Thu 5/6/14	ve Milestone 🗇	Manual Task	
-	LG/F to G/F Slab G/F to 1/F Slab 1/F to 2/F Slab 2/F to 3/F Slab 3/F to R/F Slab	12 days	C 🔍	Thu 5/6/14 Inactiv	ive Milestone $\diamond$	Manual Task	

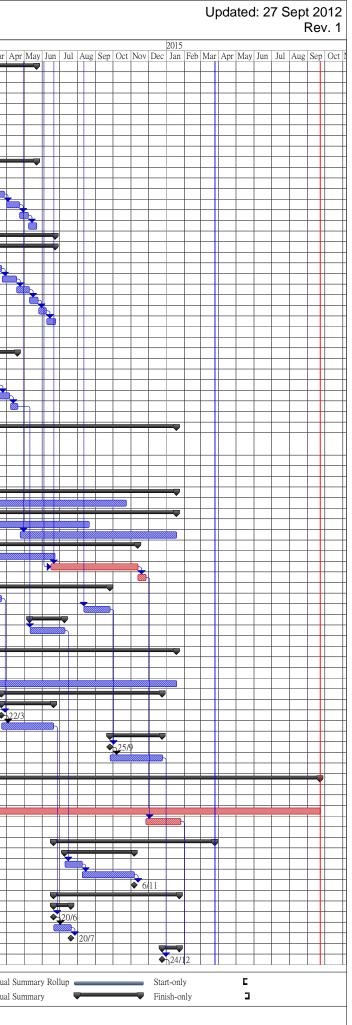




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### **Outline Works Programme**

Here to upgrade to				Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov
	220 days	Fri 16/8/13	Thu 22/5/14	
ted Pages and Expanded Features	142 days	Fri 16/8/13	Tue 4/2/14	
stallaion Works)	52 days	Fri 16/8/13	Fri 18/10/13	
LG/F to G/F Slab	18 days	Sat 19/10/13	Fri 8/11/13	
G/F to 1/F Slab	18 days	Sat 9/11/13	Fri 29/11/13	
1/F to 2/F Slab	18 days	Sat 30/11/13	Fri 20/12/13	3
2/F to 3/F Slab	12 days	Sat 21/12/13	Tue 7/1/14	4
3/F to R/F Slab	12 days	Wed 8/1/14	Tue 21/1/14	4
R/F	12 days	Wed 22/1/14	Tue 4/2/14	
Zone C4 (Tower 3)	159 days	Wed 30/10/13	Thu 22/5/14	
Cap / Basement to LG/F (including U/G Drainage & Utilities Installaion Works)	52 days	Wed 30/10/13	Tue 31/12/13	
LG/F to G/F Slab	18 days	Wed 5/2/14	Thu 6/3/14	
GF to UF Stab	18 days	Fri 7/3/14	Thu 27/3/14	
1/F to 2/F Slab	18 days	Tue 1/4/14	Tue 22/4/14	
2/F to R/F Slab	12 days	Wed 23/4/14		
R/F	12 days	Thu 8/5/14	Thu 22/5/14	
Type 4 Tower	187 days	Thu 19/12/13	Mon 23/6/14	
Zone C5 (Tower 5 & 6)	142 days	Thu 19/12/13	Mon 23/6/14	4
Cap / Basement to LG/F (including U/G Drainage & Utilities Installaion Works)	52 days	Thu 19/12/13	Sat 1/3/14	4
LG/F to G/F Slab	18 days	Mon 3/3/14	Sat 22/3/14	
G/F to 1/F Slab	18 days	Mon 24/3/14	Thu 17/4/14	
1/F to 2/F Slab	18 days	Fri 18/4/14		
2/F to 3/F Slab	12 days	Sat 10/5/14	Sat 24/5/14	
3/F to R/F Slab	12 days	Mon 26/5/14	Sat 7/6/14	
R/F	12 days	Mon 9/6/14	Mon 23/6/14	4
Transformer Room at Northern Area	60 days	Sat 9/11/13	Tue 7/1/14	
G/F to R/F Slab	60 days	Sat 9/11/13	Tue 7/1/14	
Retai	95 days	Wed 15/1/14	Sat 19/4/14	
G/F to 1/F Slab		Wed 15/1/14 Wed 15/1/14		
	18 days		Sat 1/2/14	
1/F to 2/F Slab	18 days	Mon 3/2/14	Tue 4/3/14	
2/F to 3/F Slab	12 days	Wed 5/3/14	Tue 18/3/14	
3/F to R/F Slab	12 days	Wed 19/3/14	Sat 5/4/14	4
R/F	12 days	Mon 7/4/14	Sat 19/4/14	
7) Finishing Works	720 days	Tue 29/1/13	Sun 18/1/15	5
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	
Co-ordination Works, Shop Drawing Submission and BD Submission (affect Structure Works)	90 days	Sat 30/3/13	Thu 27/6/13	3
Tender Preparation and Subletting for General Finishing Works Sub-contractors	60 days	Sat 1/6/13	Tue 30/7/13	3
Preparation Works, Submission & Material Delivery	30 days	Wed 31/7/13	Thu 29/8/13	
Finishing Works	507 days	Fri 30/8/13	Sun 18/1/15	
Internal Finishing Works for Basement	420 days	Fri 30/8/13	Thu 23/10/14	
Internal Finishing Works for Towers	421 days	Sun 24/11/13	Sun 18/1/15	
Internal Wall Finishing Works (1st Batch of Towers)	270 days	Sun 24/11/13	Wed 20/8/14	4
Internal Wall Finishing Works (2nd Batch of Towers)	270 days	Thu 24/4/14	Sun 18/1/15	
External Wall Finishing Works	323 days	Wed 25/12/13		
		Wed 25/12/13 Wed 25/12/13		
External Wall Finishing Works (1st Batch of Towers)	180 days		Sun 22/6/14	
External Wall Finishing Works (2nd Batch of Towers)	150 days	Mon 16/6/14	Wed 12/11/14	
Removal of Bamboo Scaffolding	14 days	Thu 13/11/14		
Finishing Works for Lift Machine Room	232 days	Thu 6/2/14	Thu 25/9/14	
1st Batch of Lift	45 days	Thu 6/2/14	Sat 22/3/14	
2nd Batch of Lift	45 days	Tue 12/8/14	Thu 25/9/14	
Finishng Works for Transformer Rooms	60 days	Sun 11/5/14		
Finishng Works for Transformer Rooms	60 days	Sun 11/5/14	Wed 9/7/14	4
8) E&M Installation	720 days	Tue 29/1/13	Sun 18/1/15	5
Tender Preparation and Subletting	60 days	Tue 29/1/13	Fri 29/3/13	3
CSD Co-ordination for U/G and Basement	90 days	Sat 30/3/13	Thu 27/6/13	3
E&M Installation Works	507 days	Fri 30/8/13	Sun 18/1/15	
Lift Installation	277 days	Sat 22/3/14	Wed 24/12/14	
Int Instantation Ist Batch of Lift				
	90 days	Sat 22/3/14	Fri 20/6/14	
Handover of Lift Shaft & Lift Machine Room	0 days	Sat 22/3/14	Sat 22/3/14	
Lift Installation	90 days	Sun 23/3/14		
2nd Batch of Lift	90 days	Thu 25/9/14	Wed 24/12/14	
Handover of Lift Shaft & Lift Machine Room	0 days	Thu 25/9/14	Thu 25/9/14	4
Lift Installation	90 days	Fri 26/9/14	Wed 24/12/14	
	, c anyo	2000000		
9) Fitting Works and External Works	905 days	Mon 1/4/13	Tue 22/9/15	
Tender Preparation and Subletting for Fitting Out Works	60 days	Mon 1/4/13		
Co-ordination Works and Submission (for design affecting finishing and E&M works)	60 days	Fri 31/5/13	Mon 29/7/13	
Fitting Works and External Walls	567 days	Wed 5/3/14	Tue 22/9/15	
Hand Landscape	60 days	Thu 27/11/14	Sun 25/1/15	5
10) Statutory Inspection	278 days	Fri 20/6/14	Wed 25/3/15	
CLP	120 days	Thu 10/7/14	Thu 6/11/14	
Handover of Transformer Rooms	30 days	Thu 10/7/14	Fri 8/8/14	
Installation of Trasnformer and Cable Laying & Lead-in	90 days	Sat 9/8/14	Thu 6/11/14	
Power Energization	0 days	Thu 6/11/14	Thu 6/11/14	4
EMSD Inspection	217 days	Fri 20/6/14	Fri 23/1/15	
Ist Batch of Lift	30 days	Fri 20/6/14	Sun 20/7/14	
Submission of Form 5	0 days	Fri 20/6/14	Fri 20/6/14	
EMBD Inspection	30 days	Sat 21/6/14		
Issuance of Form 6	0 days	Sun 20/7/14		
2nd Batch of Lift	30 days	Wed 24/12/14	Fri 23/1/15	
	0 days	Wed 24/12/14	Wed 24/12/14	4
Submission of Form 5				
Submission of Form 5				
Teelr Summer -	Inactive Task	<b>↓</b>	Ir	Inactive Milestone $\diamond$ Manual Task
	Inactive Task			Inactive Milestone $\diamond$ Manual Task Inactive Summary Duration-only



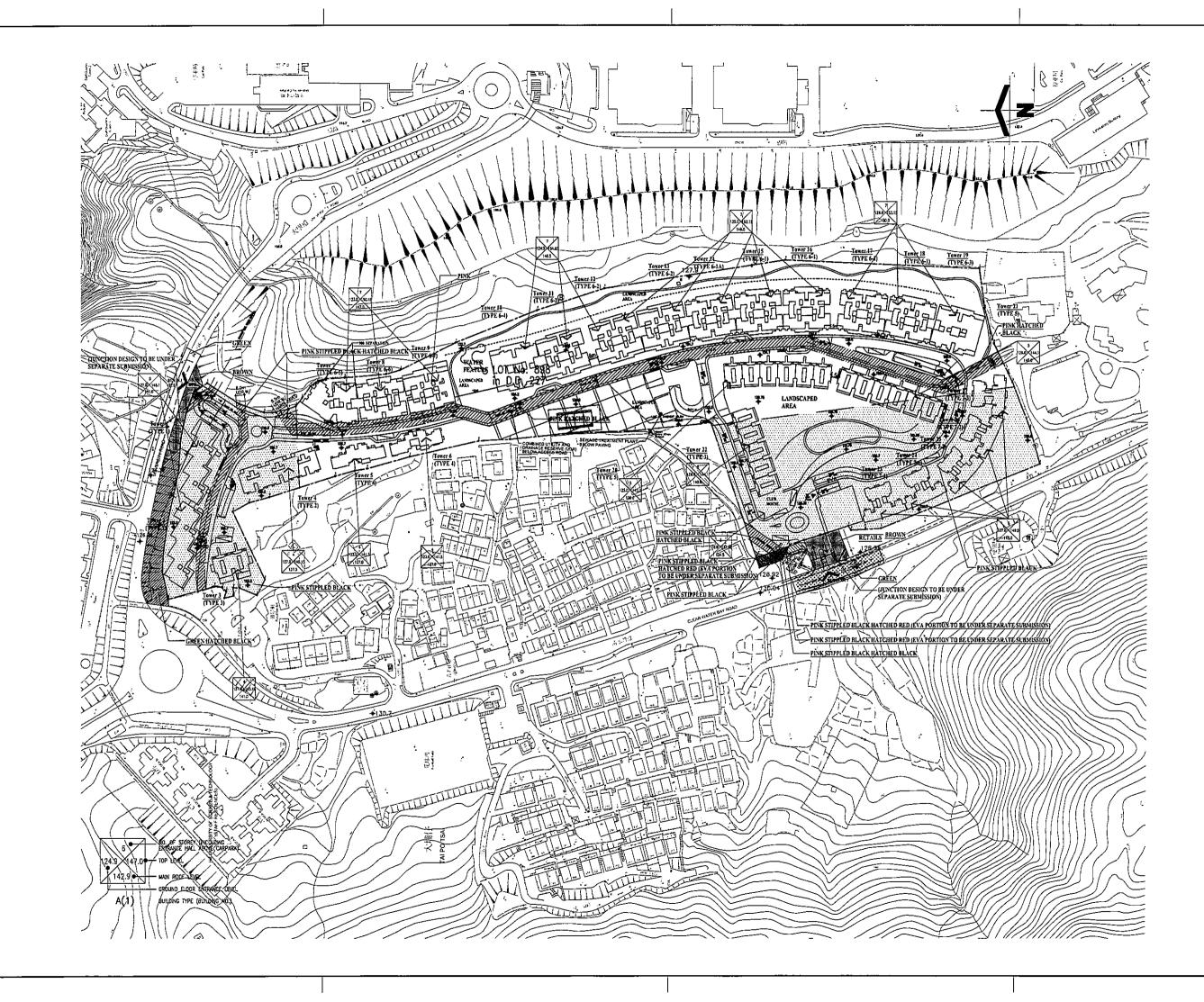


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Complete Use period has ended. Thank you for using	Outline	Outline Works Programme						
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	30 days	Thu 25/12/14 Fri 23/1	15					
Unlimited Pages and Expanded Features	0 days	Fri 23/1/15 Fri 23/1	/15				◆ 23/1	
	35 days	Sun 25/1/15 Sun 1/3						
428 Submission of Form 501	0 days	Sun 25/1/15 Sun 25/1	15				◆ 25/1	
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				• 1/3	
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				◆15/2	
433 BD Inspection	7 days	Mon 23/2/15 Sun 1/2	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 11/2	15					
436 Issuance of OP Certificate	0 days	Wed 25/3/15 Wed 25/3	15				•	25/3
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 Milestone	<b></b>	Summary Critical	 ve Task ve Task 🛛	♥	Inactive Milestone Inactive Summary	♦	Manual Task Duration-only	Manual S
* All public hoildays are excluded					Page 6				

al Summary Rollup	Start-only	Ľ	
al Summary	Finish-only	3	



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## **Appendix B**

Key Personal Contact Information Chart

### Key Personal Contact Information Chart

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

## **Appendix C**

Calibration Certificates for Measuring Instruments



Certificate No. 28553	Page 1 of 5 Pages
Customer : Environmental Pioneers and Solution	ns Limited
Address : Flat A, 19/F., Chai Wan Industrial Ce	entre 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 12	60 Class1 and manufacturer's specification.
The results are shown in the attached page(s).	

Main Test equipment used:Cert. No.Traceable toEquipment No.DescriptionCert. No.Traceable toS017Multi-Function GeneratorC127181SCL-HKSARS024Sound Level Calibrator28588NIM-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 8-Jan-13

 This Certificate is issued by:
 Date:

 Hong Kong Calibration Ltd.
 Unit 88, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

 Tel: 2425 8801
 Fax: 2425 8646

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Certificate No. 28553

Page 2 of 5 Pages

Results :

1. Self-generated noise: 2.0 dBA (Mfr's Spec (Electrical)  $\leq 14$  dBA)

#### 2. Acoustical signal test

	UUT S	Setting				
	Frequency Time 1/1			Applied	UUT	
Range (dB)	Weighting	Weighting	Octave	Value (dB)	Readin	The second s
Ŭ ( )			Filter		Before adjust	After adjust
25-120	A	F	OFF	94.0		93.5
		S	OFF	]		93.5
	С	F	OFF	]		93.5
	A	F	OFF	114.0		113.9
		S	OFF	-		113.9
	С	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
	С	F	OFF			93.5
	A	F	OFF	114.0		113.9
		s	OFF			113.9
	C	F	OFF	1		113.9
	A	F	ON	94.0		93.5
	Α	F	ON	114.0		113.9

Mfr's Spec. :  $\pm 0.7 \text{ dB}$ 

Uncertainty :  $\pm 0.1 \text{ dB}$ 

### 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	- $8.6  dB, \pm 1  dB$
500 Hz	-3.3	- $3.2 \text{ dB}, \pm 1.4 \text{ dB}$
1 kHz	0.0 (Ref)	$0  dB, \pm 1.1  dB$
2 kHz	+1.2	$+ 1.2 \text{ dB}, \pm 1.6 \text{ dB}$
4 kHz	+1.0	$+$ 1.0 dB, $\pm$ 1.6 dB
8 kHz	-1.1	$- 1.1 \text{ dB}, + 2.1 \text{ dB} \sim -3.1 \text{ dB}$
16 kHz	-6.9	- 6.6 dB, + 3.5 dB ~ - 17.0 dB

Uncertainty :  $\pm 0.1 \text{ dB}$ 

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#### Certificate No. 28553

Page 3 of 5 Pages

### 4. Frequency & Time weightings at 1 kHz

4.1 Frequency Weighting (Fast)

111 1100 40000)				
UUT	Applied	UUT	Difference	IEC 61672
Setting	Value (dB)	Reading (dB)	(dB)	Type 1 Spec.
A	94.0	93.5 (Ref.)		± 0.4 dB
С	94.0	93.5	0.0	

<sup>4.2</sup> Time Weighting (A-weighted)

			·····		100 (1(70
	UUT	Applied	UUT	Difference	IEC 61672
	Setting	Value (dB)	Reading (dB)	(dB)	Type 1 Spec.
	Fast	94.0	93.5 (Ref.)		$\pm 0.3 \text{ dB}$
ľ	Slow	94.0	93.5	0.0	
	Time-averaging	94.0	93.5	0.0	

Uncertainty :  $\pm 0.1 \text{ dB}$ 

### 5. Level linearity on the reference level range

	Applied	· · · · · · · · · · · · · · · ·		
UUT Range	Value (dB)	UUT Reading (dB)	Difference (dB)	IEC 61672 Type 1 Spec.
140 dB	137.0	136.5	0.0	$\pm 1.1  dB$
(Ref Level)	136.0	135.5	0.0	
<b>`</b>	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	

 $Uncertainty:\pm 0.1 \ dB$  The copyright of this certificate is owned by Hong Kong Calibration Ltd., It may not be reproduced except in full.



#### Certificate No. 28553

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#### 6. Toneburst response (4kHz)

UUT	Tone Burst	UUT	Difference	IEC 61672
Setting	Duration(ms)	Reading(dB)	(dB)	Type 1 Spec.
Fast	Steady	137.0(Ref)		
	200	136.0	-1.0	$-1.0 \pm 0.8$ dB
	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	$-7.4 \pm 0.8$ dB
	2	109.9	-27.1	-27.0, +1.3 dB ~ -3.3 dB
Time	Steady	137.0(Ref)		
averaging	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 :  $\pm 0.1 \text{ dB}$ 

#### 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		$3.2 \pm 2.4 \text{ dB}$
	Complete-cycle	No	135.3	3.3 dB	
500	Steady		132.0		$2.4 \pm 1.4  \text{dB}$
	+ve half-cycle	No	129.3	2.7 dB	
	-ve half-cycle	No	129.1	2.9 dB	

Uncertainty :  $\pm 0.1 \text{ dB}$ 



#### Certificate No. 28553

Page 5 of 5 Pages

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

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

Freque	ency	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 1	KHz (Ref)		
1.414 1	kHz	-2.1	- 2~- 5
2 1	kHz	-50.6	< - 17.5
4 1	kHz	-82.3	< - 42
	kHz	-82.5	<- 61

Uncertainty :  $\pm 0.25 \text{ dB}$ 

#### 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.

<b>A;</b>	Calibra	tion Chart
BSWA TECH	BSWA-IV-C	C021-03-0048A
Sound Cali	brator model	CAILL
Serial Hum	her	490239
Appearanc		<u>OK</u>
Pewer Sup	ply	1.5V LR6 (AA battery) x2
Sound Pres	sure Level	94.03 / 114.03 de
Frequency		1000.3 / 1000.3 Hz
<b>THE</b> (@100	OHz)	0.35 / 0.72 %

Copying and using select parts, or tampering with this document without the permission of BSWA is forbidden!

### BSWA Technology Ltd.

<u>www.bswa-tech.com</u> This equipment was calibrated at the following ambient conditions: **Temperature**: <u>کو</u>

Kumidity:	30	%RH	
Pressure :	1025	hPa	
This equipm	ent is qualifi	ed!	
C	<u>- 2-z</u>		
Cali	brated		
2013	- 3-11		
۵	ate		



### ALS Technichem (HK) Pty Ltd

### **REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION**

CONTACT: MR ALLEN CHAN CLIENT: ENVIRONMENTAL PIONEERS & SOLUTIONS LIMITED ADDRESS: FLAT A, 19/F, CHAI WAN INDUSTRIAL BUILDING, 20 LEE CHUNG STREET, CHAI WAN, HONG KONG 
 WORK ORDER:
 HK1328496

 LABORATORY:
 HONG KONG

 DATE RECEIVED:
 16/10/2013

 DATE OF ISSUE:
 24/10/2013

#### **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:	WATER QUALITY MULTI-METER
Brand Name:	TOA DKK
Model No.:	WMS-24
Serial No.:	685940
Equipment No.:	
Date of Calibration:	23 October, 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: Fax: Email:

852-2610 1044 852-2610 2021 <u>hongkong@alsglobal.com</u>

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

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Page 1 of 2

ADDRESS 11/F, Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, N.T., Hong Kong | PHONE +852 2610 1044 | FAX +852 2610 2021 ALS TECHNICHEM (HK) PTY LTD An ALS Limited Company

Life Sciences

www.alsglobal.com

**RIGHT SOLUTIONS BIGHT PARTNER** 

#### **REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION**

REPORT	OF EQUIPMENT PERF	ORMANCE CHECK/CA	LIBRATION		
Work Order: Date of Issue: Client:	HK1328496 24/10/2013 ENVIRONMENTAL PIONEERS &	SOLUTIONS LIMITED	A		
Description: Brand Name: Model No.: Serial No.: Equipment No.: Date of Calibration:	WATER QUALITY MULTI-METE TOA DKK WMS-24 685940  23 October, 2013	ER Date of next Calibration:	23 January, 2014		
Parameters:					
Conductivity	Method Ref: APHA (21st edition	on). 2510B			
conductionty	Expected Reading (uS/cm)	Displayed Reading (uS/cm )	Tolerance (% )		
	146.9 6667 12890 58670	138.0 6530 12800 56900 Tolerance Limit (±%)	-6.1 -2.1 -0.7 -3.0 10.0		
Dissolved Oxygen	Method Ref: APHA (21st editio	an) 45000 C			
Dissolved Oxygen	Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)		
	3.67 5.15 7.25	3.77 5.29 7.09 Tolerance Limit (±mg/L)	0.10 0.14 -0.16 0.20		
pH Value	Method Ref: APHA 21st Ed. 45 Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)		
	4.0 7.0 10.0	4.03 6.99 9.92 Tolerance Limit (±pH unit)	0.03 -0.01 -0.08 0.20		
<b>T</b>					
Temperature	Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.				
	Expected Reading (°C)	Displayed Reading (°C )	Tolerance (°C )		
	11.0 25.0 32.0	10.6 24.0 31.0	-0.4 -1.0 -1.0		
		Tolerance Limit (±°C)	2.0		
Turbidity	Method Ref: APHA (21st edition				
	Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)		
	0 4 40 80 400 800	0.0 3.9 39.4 79.4 383.6 799.8	 -2.5 -1.5 -0.7 -4.1 0.0		
		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 Page 2 c

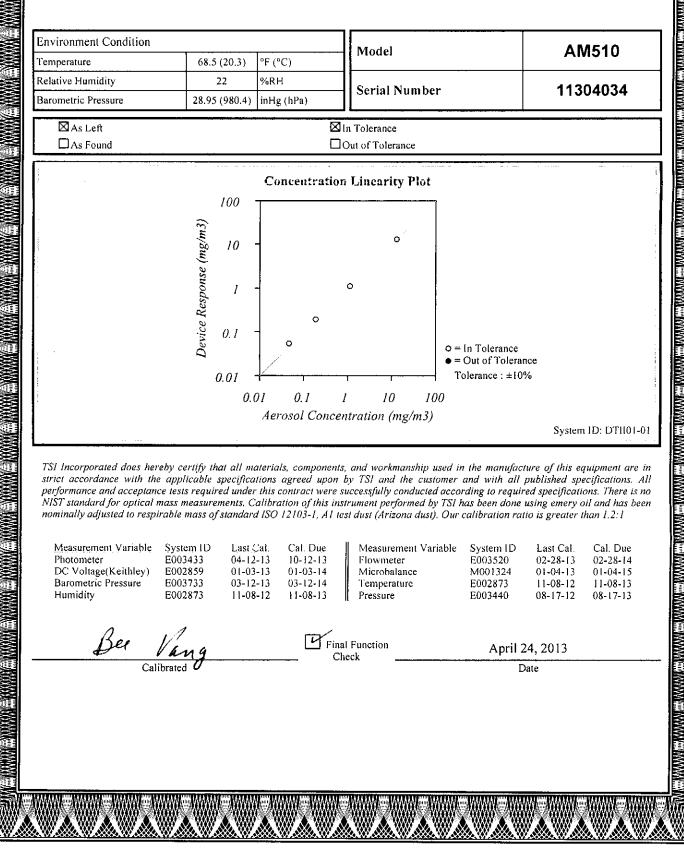
#### ALS Technichem (HK) Pty Ltd ALS Environmental





#### **CERTIFICATE OF CALIBRATION AND TESTING**

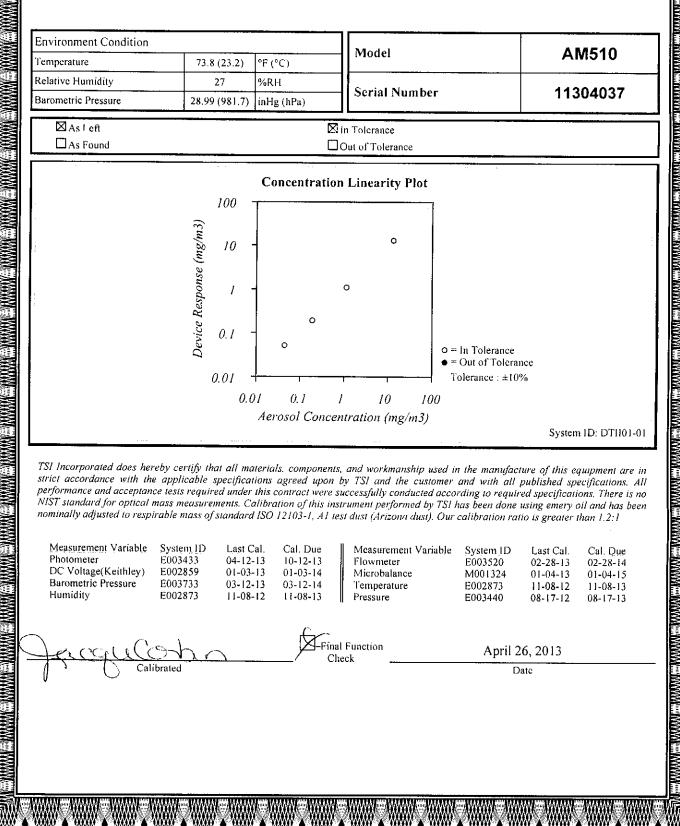
TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com





### **CERTIFICATE OF CALIBRATION AND TESTING**

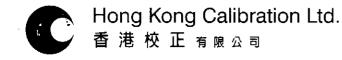
TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com





# **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			Model	AM510
Temperature	73.8 (23.2)	°F(°C)		ANDIO
Relative Humidity	27	%RH	Serial Number	11304038
Barometric Pressure	28.99 (981.7)	inHg (hPa)		
As Left			In Tolerance Duit of Tolerance	
		Concentratio	on Linearity Plot	
	100	[		
	Device Response (mg/m3)		o	
	Respons		0	
	-	0	o = In Tolerai ● = Out of To	lerance
	0.01		Tolerance ;	±10%
	0.0		1 10 100 entration (mg/m3)	
		ner obor cone	entration (mg/m3)	System ID: DTII01-01
strict accordance with the apply performance and acceptance tests NIST standard for optical mass m	cable specifica, required under easurements, C mass of standard m ID Last C 433 04-12- 859 01-03- 733 03-12-	tions agreed upon this contract were alibration of this in USO 12103-1 A1 1 Cal. Cal. Due -13 10-12-13 -13 01-03-14 -13 03-12-14	ts, and workmanship used in the man. by TSI and the customer and with successfully conducted according to re- strument performed by TSI has been d test dust (Arizona dust). Our calibration Measurement Variable System 1 Flowmeter E003520 Microbalance M00132 Temperature E002873 Pressure E003440	all published specifications. All quired specifications. There is no one using emery oil and has been a ratio is greater than 1.2:1 D Last Cal. Cal. Due 0 02-28-13 02-28-14 4 01-04-13 01-04-15 11-08-12 11-08-13
Jacque Co	bin		al Function Ap	ril 26, 2013
Calibrated		/		Date



Certificate No.	28552		Page	1	of	2	Pages
Customer :	Environmental Pioneers and Soluti	ions Limited					
Address :	Flat A, 19/F., Chai Wan Industri	ial Centre Building, 2	21 Lee Chung St	reet. (	Chai '	War	η. ΗΚ.
Order No. :			Date of receip				11-Dec-12
Item Tested			•				
Description	: Laser Dust Monitor						
Manufacturer	: SIBATA						
Model :	LD-3B		Serial No.	:	0950	)27	
Test Condit	ions						
Date of Test :	18-Dec-12		Supply Voltag	e :			
Ambient Temp	erature : (23 ± 3)°C		Relative Humi			£ 25	)%
Test Specifi	cations		••••••••••••••••				,
Calibration chec	ck.						
Ref. Document/	Procedure : Manufacturer recom	mended method (gr	avimetric), Z28.				
Test Results	·	·····					
rest result	•						
The results are	shown in the attached page(s).						
Main Test equip	ment used:						
Equipment No.	Description	<u>Cert. No.</u>		Trac	eable	e to	
S136B	Stop Watch	26077			-PRC		
S156	Analytical Balance	27964		NIM	-PRC	;	
S207B	Std. Flowmeter	20588			PRC		
overloading, mis-ha	this Calibration Certificate only relate to t vance for the equipment long term drift, v ndling, or the capability of any other labor age resulting from the use of the equipment	ariations with environment ratory to repeat the meas	ntal changes, vibratio	on and	shock	durin	nd transnortation
The test equipment The test results app	used for calibration are traceable to Inter ly to the above Unit-Under-Test only	national System of Units	(SI).				
Calibrated by :	Dorothy Cheuk	Appı Date:	roved by :	Steve	) e Kwa	A an	eve_

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

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#### Certificate No. 28552

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Results :

Applied Value (µg/m <sup>3</sup> )	UUT Measured Value (K=1.9) ( $\mu$ g/m <sup>3</sup> ), (cpm)
695.2	694.6

Remarks : 1. UUT : Unit-Under-Test

2. Uncertainty  $\pm$  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 1.0 to 1.9

----- 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-5025A

Date - Ap Operator		Rootsmeter Orifice I.I	•	438320 1941	Ta (K) - Pa (mm) -	296 - 751.84
PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1 2 3 4 5	NA NA NA NA NA	NA NA NA NA NA	1.00 1.00 1.00 1.00 1.00	1.4710 1.0370 0.9270 0.8840 0.7300	3.3 6.4 7.9 8.8 12.8	2.00 4.00 5.00 5.50 8.00

#### DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9916 0.9874 0.9854 0.9843 0.9790	0.6741 0.9521 1.0630 1.1134 1.3410	$1.4113 \\ 1.9959 \\ 2.2315 \\ 2.3405 \\ 2.8227$		0.9956 0.9914 0.9894 0.9883 0.9829	0.6768 0.9560 1.0673 1.1180 1.3465	0.8874 1.2549 1.4030 1.4715 1.7747
Qstd slop intercept coefficie	= (b) =	2.11662 -0.01714 0.99999		Qa slope intercept coefficie	= (d) =	1.32539 -0.01078 0.99999
y axis =	SQRT [H2O (H	2a/760) (298/1	[a)]	y axis =	SQRT [H20 (1	[a/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

Location: Tai Po Tsai Date: October 28, 2013 Sampler: TE-5170 MFC (Serial # : 2039) Tech: Sam Wong	

		COL	NDITIONS		
Barometric Pressure	(in Hg):	39.88	Corrected Pressure	(mm Hg):	1013
Temperature	(deg F):	77	Temperature	(deg K):	298
Average Press.	(in Hg):	29.88	Corrected Average	(mm Hg):	759
Average Temp.	(deg F):	77	Average Temp.	(deg K):	298

CALIBRATION ORIFICE						
	TE-5025A	Qstd Slope: Qstd Intercept:	2.11662 -0.01714			
Serial#:	1941	Date Certified:	April 9, 2013			

CALIBRATIONS								
Plate or Test #	H2O (in)	Qstd (m3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION			
1	12.20	1.913	58.0	66.96	Slope =	34.3035		
2	10.20	1.750	52.0	60.03	Intercept =	0.9400		
3	8.20	1.570	48.0	55.42	Corr. coeff.=	0.9989		
4	5.20	1.252	38.0	43.87				
5	3.20	0.984	30.0	34.63	<pre># of Observations:</pre>	5		

Calculations

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)

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-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		Date:	October 28, 2013
Sampler: TE-300-310X	(Serial # : 0873)	Tech:	Sam Wong
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	(		

		CO	NDITIONS		
Barometric Pressure	(in Hg):	39.88	Corrected Pressure	(mm Hg):	1013
Temperature	(deg F):	77	Temperature	(deg K):	298
Average Press.	(in Hg):	29.88	Corrected Average	(mm Hg):	759
Average Temp.	(deg F):	77	Average Temp.	(deg K):	298

CALIBRATION ORIFICE						
Make:	Tisch	Ostd Slope:	2.11662			
	TE-5025A	Qstd Intercept:	-0.01714			
Serial#:	1941	Date Certified:	April 9, 2013			

CALIBRATIONS								
Plate or Test #	H2O (in)	Qstd (m3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION			
1	12.40	1.929	59.0	68.11	Slope =	34.9675		
2	10.00	1.733	52.0	60.03	Intercept =	0.0580		
3	8.40	1.589	48.0	55.42	Corr. coeff.=	0.9994		
4	5.20	1.252	38.0	43.87				
5	3.20	0.984	30.0	34.63	<pre># of Observations:</pre>	5		

Calculations

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)

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-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)		October 28, 2013 Sam Wong				

		CO	NDITIONS		
Barometric Pressure	(in Hg):	39.88	Corrected Pressure	(mm Hg):	1013
Temperature	(deg F):	77	Temperature	(deg K):	298
Average Press.	(in Hg):	29.88	Corrected Average	(mm Hg):	759
Average Temp.	(deg F):	77	Average Temp.	(deg K):	298

CALIBRATION ORIFICE						
Make: Model: Serial#:	TE-5025A	Qstd Slope: Qstd Intercept: Date Certified:	2.11662 -0.01714 April 9, 2013			

CALIBRATIONS								
Plate or Test #	H2O (in)	Qstd (m3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION			
1	12.20	1.913	58.0	66.96	Slope =	34.5739		
2	10.20	1.750	52.0	60.03	Intercept =	0.1024		
3	8.00	1.551	46.0	53.11	Corr. coeff.=	0.9989		
4	5.20	1.252	38.0	43.87				
5	3.30	0.999	30.0	34.63	<pre># of Observations:</pre>	5		

Calculations

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)

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-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)	October 28, 2013 Sam Wong
-		

		COI	NDITIONS		
Barometric Pressure	(in Hg):	39.88	Corrected Pressure	(mm Hg):	1013
Temperature	(deg F):	77	Temperature	(deg K):	298
Average Press.	(in Hg):	29.88	Corrected Average	(mm Hg):	759
Average Temp.	(deg F):	77	Average Temp.	(deg K):	298

CALIBRATION ORIFICE				
Make: Model: Serial#:	TE-5025A	Qstd Slope: Qstd Intercept: Date Certified:	2.11662 -0.01714 April 9, 2013	

CALIBRATIONS						
Plate or Test #	H2O (in)	Qstd (m3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
1	12.20	1.913	58.0	66.96	Slope =	34.6371
2	10.20	1.750	53.0	61.19	Intercept =	0.3436
3	8.00	1.551	46.0	53.11	Corr. coeff.=	0.9991
4	5.20	1.252	38.0	43.87		
5	3.20	0.984	30.0	34.63	<pre># of Observations:</pre>	5

Calculations

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)

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

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

# **Appendix D**

Construction Noise Monitoring Data

#### Noise Monitoring Data Sheet

Monitoring Loca	tion	N1	N2	N3	N4
Monitoring Meth	od	Freefield	Freefield	Freefield	Façade
Date of Monitori	ng	5/11/2013	5/11/2013	5/11/2013	5/11/2013
Weather Conditi	ion	Cloudy	Cloudy	Cloudy	Cloudy
Measurement S	tart Time (hh:mm)	9:06	9:41	10:25	11:01
Measurement Ti	ime Length (mins)	30 r	nins	30 r	nins
SLM Model & S/	/N	SVAN	N 955	SVA	N 955
Wind Speed (m/	/s)	<5, southeast	<5, northeast	<5, northeast	<5, northeast
	L <sub>eq</sub> (dB(A))	67.5	65.2	66.5	66.4
Measurement Results	L <sub>10</sub> (dB(A))	71.3	72.3	67.7	67.3
Roound	L <sub>90</sub> (dB(A))	61.7	55.2	64.9	65.2
Major Construct During Monitorir	ion Noise Source(s) ng	Nil	Piling	Piling	Piling
Other Noise Sou Monitoring	urce(s) During	Background noise	Background noise	Background noise	Background noise Traffic noise

<u>Name</u>

<u>Signature</u>

Date

Perpared by:

Lai Chi Hang

Hay

<u>5/11/2013</u>

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#### Noise Monitoring Data Sheet

Monitoring Location		N1	N2	N3	N4
Monitoring Meth	od	Freefield	Freefield	Freefield	Façade
Date of Monitori	ng	11/11/2013	11/11/2013	11/11/2013	11/11/2013
Weather Condit	ion	Cloudy	Cloudy	Cloudy	Cloudy
Measurement S	tart Time (hh:mm)	9:02	9:37	10:13	10:50
Measurement T	ime Length (mins)	30 r	nins	30 r	nins
SLM Model & S/	/N	SVA	N 955	SVAN	N 955
Wind Speed (m/	/s)	<5, East	<5, East	<5, East	<5, East
	L <sub>eq</sub> (dB(A))	65.1	61.7	69.7	66.8
Measurement Results	L <sub>10</sub> (dB(A))	66.8	63.0	72.6	67.7
Results	L <sub>90</sub> (dB(A))	63.1	57.8	61.2	65.2
Major Construct During Monitorir	ion Noise Source(s) ng	Nil	Nil	Nil	Nil
Other Noise Sou Monitoring	urce(s) During	Background noise Sweeping	Background noise	Background noise Other construction activities is observed	Background noise Traffic noise

<u>Name</u>

Signature

Date

Perpared by:

<u>Lai Chi Hang</u>

Hay

<u>11/11/2013</u>

#### Noise Monitoring Data Sheet

Monitoring Location		N1	N2	N3	N4
Monitoring Meth	od	Freefield	Freefield	Freefield	Façade
Date of Monitori	ng	16/11/2013	16/11/2013	16/11/2013	16/11/2013
Weather Conditi	ion	Sunny	Sunny	Sunny	Sunny
Measurement S	tart Time (hh:mm)	9:00	9:35	10:12	10:48
Measurement Ti	ime Length (mins)	30 r	nins	30 n	nins
SLM Model & S/	/N	SVAN	N 955	SVAN	N 955
Wind Speed (m/	/s)	<5, Northeast	<5, Northeast	<5, Northeast	<5, Northeast
	L <sub>eq</sub> (dB(A))	65.2	59.5	71.4	68.7
Measurement Results	$I = (d \mathbf{R}(\mathbf{A}))$	66.9	60.4	73.4	71.2
Results	L <sub>90</sub> (dB(A))	62.8	55.1	64.8	64.3
Major Construct During Monitorir	ion Noise Source(s) ng	Nil	Nil	Nil	Nil
Other Noise Source(s) During Monitoring		Background noise	Background noise	Background noise House construction works is observed	Background noise Traffic noise

<u>Name</u>

Signature

Date

Perpared by:

Lai Chi Hang

Hay

<u>16/11/2013</u>

#### Noise Monitoring Data Sheet

Monitoring Loca	tion	N1	N2	N3	N4
Monitoring Meth	od	Freefield	Freefield	Freefield	Façade
Date of Monitori	ng	22/11/2013	22/11/2013	22/11/2013	22/11/2013
Weather Conditi	ion	Overcast	Overcast	Overcast	Overcast
Measurement S	tart Time (hh:mm)	10:50	10:14	9:38	9:02
Measurement Ti	ime Length (mins)	30 r	nins	30 r	nins
SLM Model & S/	/N	SVA	N 955	SVA	N 955
Wind Speed (m/	/s)	<5, Northeast	<5, Northeast	<5, Northeast	<5, Northeast
	L <sub>eq</sub> (dB(A))	60.0	62.0	62.8	65.9
Measurement Results	L <sub>10</sub> (dB(A))	62.6	63.8	64.1	69.1
results	L <sub>90</sub> (dB(A))	53.6	56.1	59.4	62.3
Major Construct During Monitorir	ion Noise Source(s) ng	Nil	Nil	Nil	Nil
Other Noise Source(s) During Monitoring		Background noise	Background noise Other construction site working	Background noise	Background noise Traffic noise

<u>Name</u>

Signature

Date

Perpared by:

Lai Chi Hang

Hay

<u>22/11/2013</u>

#### Noise Monitoring Data Sheet

Monitoring Location		N1	N2	N3	N4
Monitoring Meth	od	Freefield	Freefield	Freefield	Façade
Date of Monitori	ng	28/11/2013	28/11/2013	28/11/2013	28/11/2013
Weather Conditi	ion	Sunny	Sunny	Sunny	Sunny
Measurement S	tart Time (hh:mm)	9:03	9:39	10:15	10:52
Measurement Ti	ime Length (mins)	30 r	nins	30 n	nins
SLM Model & S/	/N	SVA	N 955	SVAN	N 955
Wind Speed (m/	′s)	<5, North	<5, North	<5, North	<5, North
	L <sub>eq</sub> (dB(A))	63.6	61.8	66.9	73.1
Measurement Results		65.8	62.3	67.6	75.1
results	L <sub>90</sub> (dB(A))	58.7	57.2	64.4	66.6
Major Construct During Monitorir	ion Noise Source(s) ng	Nil	Nil	Nil	Nil
Other Noise Sou Monitoring	urce(s) During	Background noise	Background noise	Background noise House construction is observed	Background noise Traffic noise

<u>Name</u>

Signature

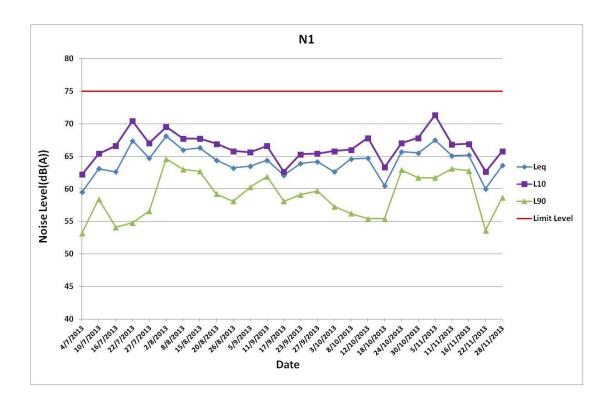
Date

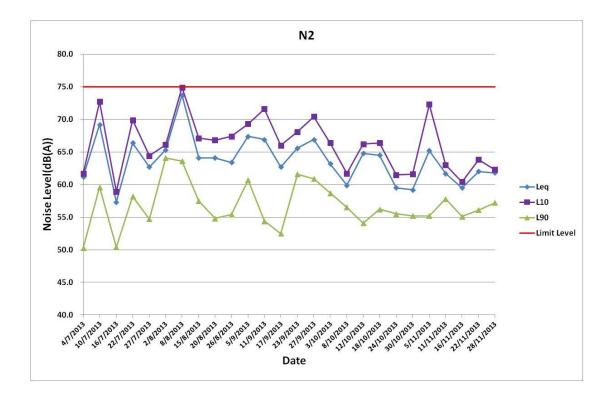
Perpared by:

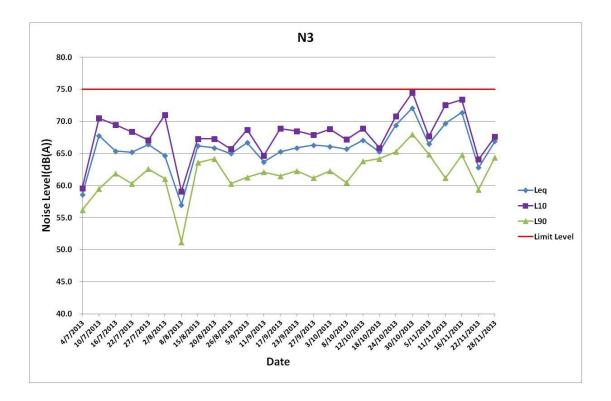
<u>Lai Chi Hang</u>

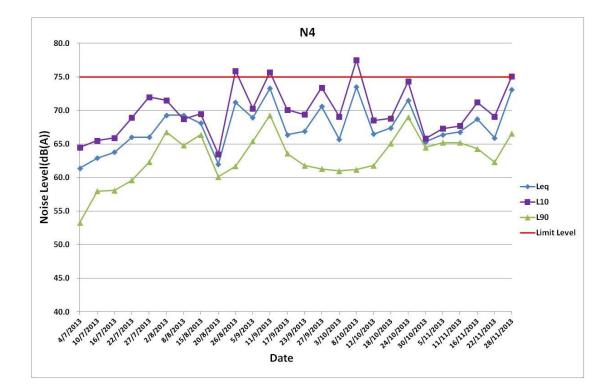
Hay

<u>28/11/2013</u>









# Appendix E

Water Quality Monitoring Data

Date of Sampling : 2/11/2013

Weather : Cloudy

Monitoring Location	W1	W2
Time (hhmm)	10:00	10:30
Water Depth (m)	<1	<1
pH value	8.23	7.98
Temperature (°C)	23.8	23.8
Turbidity (NTU)	4.0	5.8
DO (mg/L)	7.92	8.16
DO Saturation (%)	80%	85%
Suspended Solids (mg/L)	<2	<2

Remark or Observation :

<u>Name</u>

<u>Signature</u>

Date

Prepared By : Lau Kai Chung Lau Kai Chung

Date of Sampling : 5/11/2013

Weather : Sunny

Monitoring Location	W1	W2
Time (hhmm)	13:00	13:30
Water Depth (m)	<1	<1
pH value	8.15	7.91
Temperature (°C)	23.7	23.8
Turbidity (NTU)	5.5	6.0
DO (mg/L)	7.91	7.38
DO Saturation (%)	80%	70%
Suspended Solids (mg/L)	2.0	2.0

Remark or Observation :

<u>Name</u>

<u>Signature</u>

Date

Prepared By : Lau Kai Chung Lau Kai Chung

Date of Sampling : 7/11/2013

Weather : Sunny

Monitoring Location	W1	W2
Time (hhmm)	14:00	14:35
Water Depth (m)	<1	<1
pH value	7.91	8.23
Temperature (°C)	23.5	23.4
Turbidity (NTU)	5.8	6.1
DO (mg/L)	8.20	7.56
DO Saturation (%)	95%	80%
Suspended Solids (mg/L)	<2	<2

Remark or Observation :

<u>Name</u>

<u>Signature</u>

Date

Prepared By : Lau Kai Chung Lau Kai Chung

Date of Sampling : 9/11/2013

Weather : Sunny

Monitoring Location	W1	W2
Time (hhmm)	13:00	13:30
Water Depth (m)	<1	<1
pH value	8.10	7.87
Temperature (°C)	24.1	24
Turbidity (NTU)	5.6	6.0
DO (mg/L)	7.98	8.20
DO Saturation (%)	80%	85%
Suspended Solids (mg/L)	4.0	3.0

Remark or Observation :

<u>Name</u>

<u>Signature</u>

Date

Prepared By : Lau Kai Chung Lau Kai Chung

Date of Sampling : 12/11/2013

Weather: Sunny

Monitoring Location	W1	W2
Time (hhmm)	16:00	16:30
Water Depth (m)	<1	<1
pH value	8.01	7.87
Temperature (°C)	21.9	22
Turbidity (NTU)	5.3	4.0
DO (mg/L)	8.16	7.99
DO Saturation (%)	85%	80%
Suspended Solids (mg/L)	4.0	5.0

Remark or Observation : \_\_\_\_\_ Turbid water was oberved.

<u>Name</u>

<u>Signature</u>

Date

 Prepared By :
 Lau Kai Chung
 Lau Kai Chung
 12/11/2013

Date of Sampling : 14/11/2013

Weather: Cloudy

Monitoring Location	W1	W2
Time (hhmm)	11:00	11:30
Water Depth (m)	<1	<1
pH value	7.97	8.20
Temperature (°C)	23.5	23.7
Turbidity (NTU)	5.1	6.1
DO (mg/L)	8.17	7.95
DO Saturation (%)	85%	80%
Suspended Solids (mg/L)	6.0	5.0

Remark or Observation :

<u>Name</u>

<u>Signature</u>

Date

Prepared By : Lau Kai Chung Lau Kai Chung

Date of Sampling : 16/11/2013

Weather: Sunny

Monitoring Location	W1	W2
Time (hhmm)	13:00	13:30
Water Depth (m)	<1	<1
pH value	7.87	7.90
Temperature (°C)	22.8	23.1
Turbidity (NTU)	4.5	5.3
DO (mg/L)	8.16	7.97
DO Saturation (%)	85%	80%
Suspended Solids (mg/L)	3.0	3.0

Remark or Observation :

<u>Name</u>

<u>Signature</u>

Date

Prepared By : Lau Kai Chung Lau Kai Chung

Date of Sampling : 19/11/2013

Weather: Sunny

	14/4	14/0
Monitoring Location	W1	W2
Time (hhmm)	10:30	11:00
Water Depth (m)	<1	<1
pH value	7.80	8.20
Temperature (°C)	22.1	22.3
Turbidity (NTU)	5.3	4.8
DO (mg/L)	7.80	7.93
DO Saturation (%)	84%	88%
Suspended Solids (mg/L)	3.0	3.0

Remark or Observation :

or Observation :			
	Name	Signature	Date
Prepared By :	Lau Kai Chung	Lau Kai Chung	19/11/2013
Prepared By :			

Date of Sampling : 21/11/2013

Weather : Sunny

Monitoring Location	W1	W2
Time (hhmm)	13:00	13:30
Water Depth (m)	<1	<1
pH value	7.80	7.87
Temperature (°C)	23.4	23.1
Turbidity (NTU)	4.8	5.3
DO (mg/L)	7.80	8.23
DO Saturation (%)	83%	98%
Suspended Solids (mg/L)	4.0	3.0

Remark or Observation :

<u>Name</u>

<u>Signature</u>

Date

Prepared By : Lau Kai Chung Lau Kai Chung

Date of Sampling : 23/11/2013

Weather: Sunny

Monitoring Location	W1	W2
Time (hhmm)	16:00	16:30
Water Depth (m)	<1	<1
pH value	7.89	7.83
Temperature (°C)	23.1	23.1
Turbidity (NTU)	6.0	6.0
DO (mg/L)	7.57	7.80
DO Saturation (%)	80%	83%
Suspended Solids (mg/L)	3.0	3.0

Remark or Observation :

<u>Name</u>

<u>Signature</u>

Date

Prepared By : Lau Kai Chung Lau Kai Chung

Date of Sampling : 26/11/2013

Weather : Cloudy

Monitoring Location	W1	W2
Time (hhmm)	13:00	13:30
Water Depth (m)	<1	<1
pH value	8.20	7.98
Temperature (°C)	23.1	23.3
Turbidity (NTU)	4.5	5.1
DO (mg/L)	7.81	7.90
DO Saturation (%)	85%	85%
Suspended Solids (mg/L)	4.0	5.0

Remark or Observation :

<u>Name</u>

<u>Signature</u>

Date

Prepared By : Lau Kai Chung Lau Kai Chung

Date of Sampling : 28/11/2013

Weather: Sunny

Monitoring Location	W1	W2
Time (hhmm)	13:00	13:30
Water Depth (m)	<1	<1
pH value	8.13	8.05
Temperature (°C)	22.8	22.8
Turbidity (NTU)	4.5	4.5
DO (mg/L)	7.88	7.74
DO Saturation (%)	80%	78%
Suspended Solids (mg/L)	4.0	4.0

Remark or Observation :

<u>Name</u>

<u>Signature</u>

Date

Prepared By : Lau Kai Chung Lau Kai Chung

Date of Sampling : 30/11/2013

Weather : Cloudy

Monitoring Location	W1	W2
Time (hhmm)	16:00	16:30
Water Depth (m)	<1	<1
pH value	7.92	8.15
Temperature (°C)	21.7	21.5
Turbidity (NTU)	4.9	6.0
DO (mg/L)	7.88	8.15
DO Saturation (%)	85%	90%
Suspended Solids (mg/L)	<2	<2

Remark or Observation :

<u>Name</u>

<u>Signature</u>

Date

Prepared By : Lau Kai Chung Lau Kai Chung

# ALS Technichem (HK) Pty Ltd

### **ALS Laboratory Group**

ANALYTICAL CHEMISTRY & TESTING SERVICES



### CERTIFICATE OF ANALYSIS

Client	ENVIRONMENTAL PIONEERS & SOLUTIONS	Laboratory	: ALS Technichem HK Pty Ltd	Page	፡ 1 of 3
Contact	: MR ALLEN CHAN	Contact	: Fung Lim Chee, Richard	Work Order	HK1330597
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 Telephone Facsimile	: allenchan@epsl.com.hk : +852 2558 7699 :	E-mail Telephone Facsimile	∶ Richard.Fung@alsglobal.com ⊱ +852 2610 1044 ∶ +852 2610 2021		
Project Order number C-O-C number Site	: TAI PO TSAI : : :	Quote number	:	Date Samples Received Issue Date No. of samples received No. of samples analysed	: 06-NOV-2013 : 14-NOV-2013 : 4 : 4

#### **General Comments**

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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: **HK1330597** 

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					

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Analytical Results

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Sub-Matrix: WATER			Client sample ID	W1	W2	W1	W2	
		Client sa	mpling date / time	[02-NOV-2013]	[02-NOV-2013]	[05-NOV-2013]	[05-NOV-2013]	
Compound	CAS Number	LOR	Unit	HK1330597-001	HK1330597-002	HK1330597-003	HK1330597-004	
EA/ED: Physical and Aggregate Properties								
EA025: Suspended Solids (SS)		2	mg/L	<2	<2	<2	<2	



#### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)			
EA/ED: Physical ar	nd Aggregate Propertie	s (QC Lot: 3148968)									
HK1330451-001	Anonymous	EA025: Suspended Solids (SS)		2	mg/L	<2	<2	0.0			
HK1330699-005	Anonymous	EA025: Suspended Solids (SS)		2	mg/L	17	18	0.0			
EA/ED: Physical ar	nd Aggregate Propertie	s (QC Lot: 3151540)									
HK1330537-001	Anonymous	EA025: Suspended Solids (SS)		2	mg/L	<2	<2	0.0			
HK1330572-004	Anonymous	EA025: Suspended Solids (SS)		2	mg/L	4	3	0.0			

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

Matrix: WATER		Method Blank (ME	3) Report	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report							
					Spike	Spike Ree	covery (%)	Recovery	Limits (%)	RI	PD (%)
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Proper	ties (QC Lot: 3148968)										
EA025: Suspended Solids (SS)		2	mg/L	<2	10 mg/L	102		86	112		
EA/ED: Physical and Aggregate Proper	ties (QC Lot: 3151540)										
EA025: Suspended Solids (SS)		2	mg/L	<2	10 mg/L	98.5		86	112		

#### 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	Laboratory	: ALS Technichem HK Pty Ltd	Page	፡ 1 of 3
Contact	: MR ALLEN CHAN	Contact	: Fung Lim Chee, Richard	Work Order	HK1331456
Address	<ul> <li>FLAT A, 19/F, CHAI WAN INDUSTRIAL CENTRE BUILDING,</li> <li>20 LEE CHUNG STREET,</li> <li>CHAI WAN HONG KONG</li> </ul>	Address	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail Telephone Facsimile	: allenchan@epsl.com.hk : +852 2558 7699 :	E-mail Telephone Facsimile	: Richard.Fung@alsglobal.com : +852 2610 1044 : +852 2610 2021		
Project Order number C-O-C number Site	: TAI PO TSAI : : :	Quote number	:	Date Samples Received Issue Date No. of samples received No. of samples analysed	: 13-NOV-2013 : 22-NOV-2013 : 4 : 4

#### **General Comments**

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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: **HK1331456** 

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				

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Analytical Results

, maly lieur recourte								
Sub-Matrix: WATER			Client sample ID	W1	W2	W1	W2	
		Client sa	mpling date / time	[07-NOV-2013]	[07-NOV-2013]	[09-NOV-2013]	[09-NOV-2013]	
Compound	CAS Number	LOR	Unit	HK1331456-001	HK1331456-002	HK1331456-003	HK1331456-004	
EA/ED: Physical and Aggregate Properties								
EA025: Suspended Solids (SS)		2	mg/L	<2	<2	4	3	



#### Laboratory Duplicate (DUP) Report

Matrix: WATER					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)			
EA/ED: Physical an	d Aggregate Properties (QC	Lot: 3162192)									
HK1330851-001	Anonymous	EA025: Suspended Solids (SS)		2	mg/L	69	68	1.6			
HK1331436-003	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 Blank (ME	3) Report	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Spike Recove		covery (%)	very (%) Recovery Limits (%)		RPD (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	DCS	Low Hi	igh	Value	Control Limit
EA/ED: Physical and Aggregate Proper	rties (QC Lot: 3162192)										
EA025: Suspended Solids (SS)		2	mg/L	<2	10 mg/L	100		86 1	12		

#### 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	Laboratory	: ALS Technichem HK Pty Ltd	Page	፡ 1 of 3
Contact	: MR ALLEN CHAN	Contact	: Fung Lim Chee, Richard	Work Order	<sup>+</sup> HK1331823
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 Telephone Facsimile	: allenchan@epsl.com.hk : +852 2558 7699 :	E-mail Telephone Facsimile	: Richard.Fung@alsglobal.com : +852 2610 1044 : +852 2610 2021		
Project Order number C-O-C number Site	: TAI PO TSAI : : :	Quote number	:	Date Samples Received Issue Date No. of samples received No. of samples analysed	: 16-NOV-2013 : 26-NOV-2013 : 4 : 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: 18-NOV-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: **HK1331823** 

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				

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Analytical Results

,								
Sub-Matrix: WATER			Client sample ID	W1	W2	W1	W2	
		Client sa	mpling date / time	[12-NOV-2013]	[12-NOV-2013]	[14-NOV-2013]	[14-NOV-2013]	
Compound	CAS Number	LOR	Unit	HK1331823-001	HK1331823-002	HK1331823-003	HK1331823-004	
EA/ED: Physical and Aggregate Properties								
EA025: Suspended Solids (SS)		2	mg/L	4	5	6	5	



#### Laboratory Duplicate (DUP) Report

Matrix: WATER					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Client sample ID Method: Compound CAS Number				Original Result	Duplicate Result	RPD (%)			
EA/ED: Physical an	nd Aggregate Properties (	QC Lot: 3165023)									
HK1331810-001	Anonymous	EA025: Suspended Solids (SS)		2	mg/L	10	10	0.0			
HK1331825-001	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 Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Red	covery (%)	Recovery	Limits (%)	RI	PD (%)
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 3165023)											
EA025: Suspended Solids (SS)		2	mg/L	<2	10 mg/L	102		86	112		

#### 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	Laboratory	: ALS Technichem HK Pty Ltd	Page	፡ 1 of 3
Contact	: MR ALLEN CHAN	Contact	: Fung Lim Chee, Richard	Work Order	<sup>+</sup> HK1332088
Address	<sup>:</sup> 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 Telephone Facsimile	: allenchan@epsl.com.hk : +852 2558 7699 :	E-mail Telephone Facsimile	∶ Richard.Fung@alsglobal.com ⊱ +852 2610 1044 ∶ +852 2610 2021		
Project Order number C-O-C number Site	: TAI PO TSAI : : :	Quote number	:	Date Samples Received Issue Date No. of samples received No. of samples analysed	: 19-NOV-2013 : 28-NOV-2013 : 4 : 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: 25-NOV-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: HK1332088

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

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Analytical Results

·····, ····,									
ub-Matrix: WATER Client sample ID		W1	W2	W1	W2				
Client sampling date / time			[16-NOV-2013]	[16-NOV-2013]	[19-NOV-2013]	[19-NOV-2013]			
Compound	CAS Number	LOR	Unit	HK1332088-001	HK1332088-002	HK1332088-003	HK1332088-004		
EA/ED: Physical and Aggregate Properties									
EA025: Suspended Solids (SS)		2	mg/L	3	3	3	3		



#### Laboratory Duplicate (DUP) Report

Matrix: WATER					Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)				
EA/ED: Physical an	d Aggregate Properties	s (QC Lot: 3176418)										
HK1332085-001	Anonymous	EA025: Suspended Solids (SS)		0.1	mg/L	3.6	3.4	5.7				
HK1332127-003	Anonymous	EA025: Suspended Solids (SS)		2	mg/L	2	2	0.0				
EA/ED: Physical an	EA/ED: Physical and Aggregate Properties (QC Lot: 3178010)											
HK1332088-003	W1	EA025: Suspended Solids (SS)		2	mg/L	3	3	0.0				
HK1332139-001	Anonymous	EA025: Suspended Solids (SS)		2	mg/L	5	5	0.0				

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

Matrix: WATER			Method Blank (MI	3) Report	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Re	covery (%)	Recovery	Limits (%)	RI	PD (%)
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 3176418)											
EA025: Suspended Solids (SS)		2	mg/L	<2	10 mg/L	99.5		86	112		
EA/ED: Physical and Aggregate Properties (QC Lot: 3178010)											
EA025: Suspended Solids (SS)		2	mg/L	<2	10 mg/L	102		86	112		

#### 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	HK1333092
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 Telephone Facsimile	: allenchan@epsl.com.hk : +852 2558 7699 :	E-mail Telephone Facsimile	: Richard.Fung@alsglobal.com : +852 2610 1044 : +852 2610 2021		
Project Order number C-O-C number Site	: TAI PO TSAI : : :	Quote number	:	Date Samples Received Issue Date No. of samples received No. of samples analysed	: 29-NOV-2013 : 10-DEC-2013 : 4 : 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-DEC-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: **HK1333092** 

Communa (a) ware mining our frame client by ALC Technichers (III)

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.

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

#### ALS Laboratory Group Trading Name: ALS Technichem (HK) Pty Ltd 11/F., Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, N.T., Hong Kong

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,								
Sub-Matrix: WATER			Client sample ID	W1	W2	W1	W2	
		Client sa	mpling date / time	[21-NOV-2013]	[21-NOV-2013]	[23-NOV-2013]	[23-NOV-2013]	
Compound	CAS Number	LOR	Unit	HK1333092-001	HK1333092-002	HK1333092-003	HK1333092-004	
EA/ED: Physical and Aggregate Properties								
EA025: Suspended Solids (SS)		2	mg/L	4	3	3	3	



#### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)		
EA/ED: Physical an	d Aggregate Properties (C	QC Lot: 3197898)								
HK1333073-041	Anonymous	EA025: Suspended Solids (SS)		2	mg/L	<2	<2	0.0		
HK1333093-003	Anonymous	EA025: Suspended Solids (SS)		2	mg/L	4	4	0.0		

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

Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Red	Spike Recovery (%)		Recovery Limits (%)		RPD (%)
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (	QC Lot: 3197898)										
EA025: Suspended Solids (SS)		2	mg/L	<2	10 mg/L	98.0		86	112		

#### 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	Laboratory	: ALS Technichem HK Pty Ltd	Page	፡ 1 of 3
Contact	: MR ALLEN CHAN	Contact	: Fung Lim Chee, Richard	Work Order	HK1333093
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 Telephone Facsimile	: allenchan@epsl.com.hk : +852 2558 7699 :	E-mail Telephone Facsimile	∶ Richard.Fung@alsglobal.com ⊱ +852 2610 1044 ∶ +852 2610 2021		
Project Order number C-O-C number Site	: TAI PO TSAI : : :	Quote number	:	Date Samples Received Issue Date No. of samples received No. of samples analysed	: 29-NOV-2013 : 10-DEC-2013 : 4 : 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-DEC-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: **HK1333093** 

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.

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

#### ALS Laboratory Group Trading Name: ALS Technichem (HK) Pty Ltd 11/F., Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, N.T., Hong Kong

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,								
Sub-Matrix: WATER			Client sample ID	W1	W2	W1	W2	
		Client sa	mpling date / time	[26-NOV-2013]	[26-NOV-2013]	[28-NOV-2013]	[28-NOV-2013]	
Compound	CAS Number	LOR	Unit	HK1333093-001	HK1333093-002	HK1333093-003	HK1333093-004	
EA/ED: Physical and Aggregate Properties								
EA025: Suspended Solids (SS)		2	mg/L	4	5	4	4	



#### Laboratory Duplicate (DUP) Report

Matrix: WATER	rix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)			
EA/ED: Physical an	d Aggregate Properties	s (QC Lot: 3190530)									
HK1333071-005	Anonymous	EA025: Suspended Solids (SS)		2	mg/L	15	16	0.0			
HK1333122-001	Anonymous	EA025: Suspended Solids (SS)		2	mg/L	<2	<2	0.0			
EA/ED: Physical an	d Aggregate Properties	s (QC Lot: 3197898)									
HK1333073-041	Anonymous	EA025: Suspended Solids (SS)		2	mg/L	<2	<2	0.0			
HK1333093-003	W1	EA025: Suspended Solids (SS)		2	mg/L	4	4	0.0			

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

Matrix: WATER			Method Blank (MI	3) Report	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Re	covery (%)	Recovery	Limits (%)	R	PD (%)
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properti	es (QC Lot: 3190530)										
EA025: Suspended Solids (SS)		2	mg/L	<2	10 mg/L	98.5		86	112		
EA/ED: Physical and Aggregate Properti	es (QC Lot: 3197898)										
EA025: Suspended Solids (SS)		2	mg/L	<2	10 mg/L	98.0		86	112		

#### 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	Laboratory	: ALS Technichem HK Pty Ltd	Page	፡ 1 of 3
Contact	: MR ALLEN CHAN	Contact	: Fung Lim Chee, Richard	Work Order	<sup>+</sup> HK1333828
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 Telephone Facsimile	: allenchan@epsl.com.hk : +852 2558 7699 :	E-mail Telephone Facsimile	∶ Richard.Fung@alsglobal.com ∶ +852 2610 1044 ∶ +852 2610 2021		
Project Order number C-O-C number Site	: TAI PO TSAI : : :	Quote number	:	Date Samples Received Issue Date No. of samples received No. of samples analysed	: 05-DEC-2013 : 16-DEC-2013 : 4 : 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: 09-DEC-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: HK1333828

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.

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

#### ALS Laboratory Group Trading Name: ALS Technichem (HK) Pty Ltd 11/F., Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, N.T., Hong Kong

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······ <b>·</b>								
Sub-Matrix: WATER			Client sample ID	W1	W2	W1	W2	
		Client sa	ampling date / time	[30-NOV-2013]	[30-NOV-2013]	[03-DEC-2013]	[03-DEC-2013]	
Compound	CAS Number	LOR	Unit	HK1333828-001	HK1333828-002	HK1333828-003	HK1333828-004	
EA/ED: Physical and Aggregate Properties								
EA025: Suspended Solids (SS)		2	mg/L	<2	<2	2	<2	



#### Laboratory Duplicate (DUP) Report

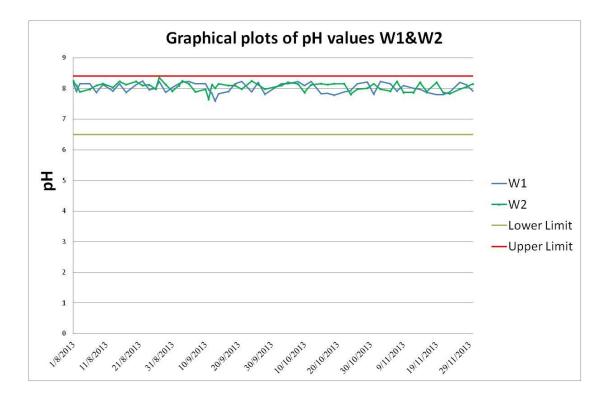
Matrix: WATER					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)			
EA/ED: Physical and	d Aggregate Properties (QC	Lot: 3200691)									
HK1333549-001	Anonymous	EA025: Suspended Solids (SS)		2	mg/L	<2	<2	0.0			
HK1333576-004	Anonymous	EA025: Suspended Solids (SS)		2	mg/L	4	4	0.0			

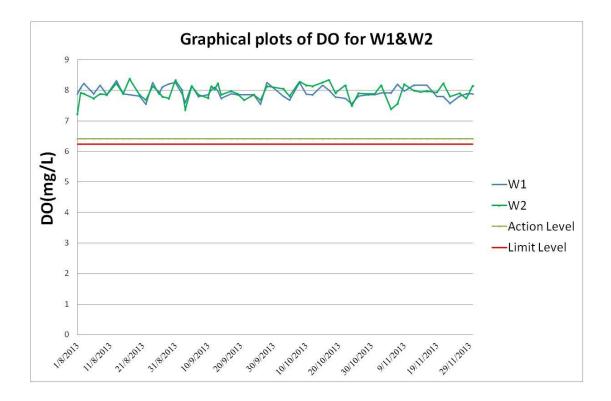
#### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

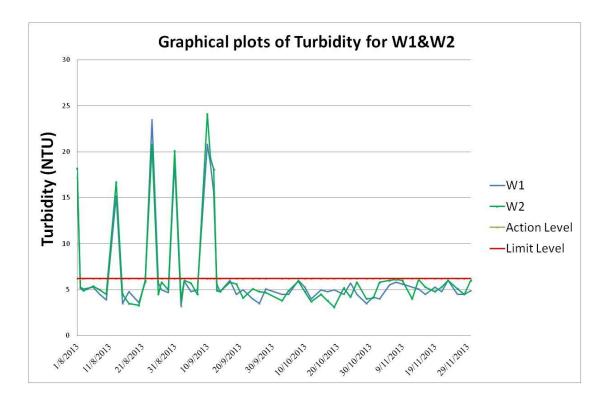
Matrix: WATER			Method Blank (ME	3) Report		Laboratory Con	trol Spike (LCS) and Lab	oratory Control Spike Duplicate	ol Spike Duplicate (DCS) Report				
					Spike	Spike Recovery (%)		Recovery Limits (%)	RF	RPD (%)			
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	DCS	Low High	Value	Control Limit			
EA/ED: Physical and Aggregate Proper	ties (QC Lot: 3200691)												
EA025: Suspended Solids (SS)		2	mg/L	<2	10 mg/L	102		86 112					

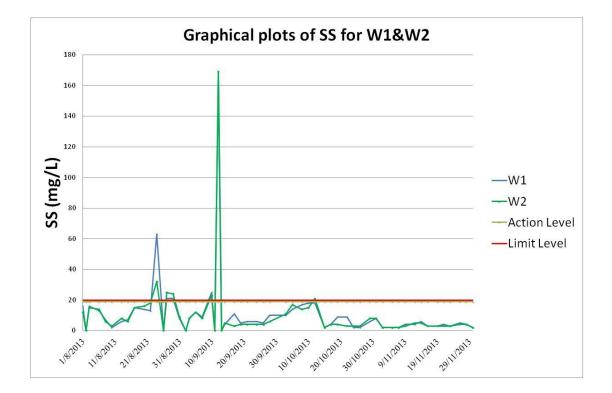
#### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

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







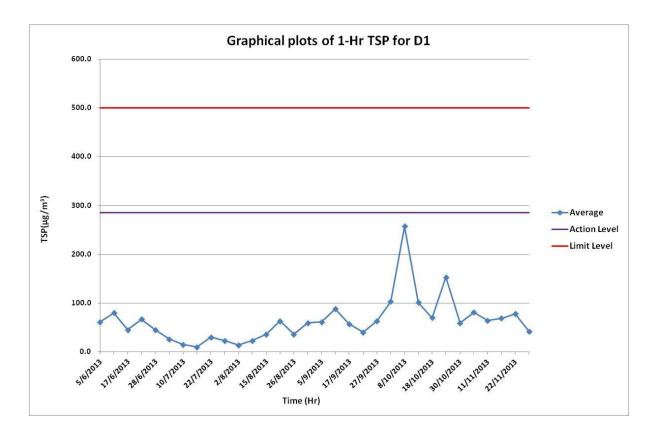


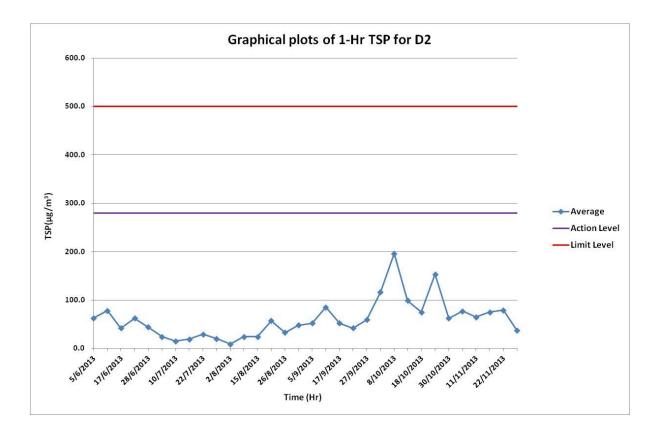
# Appendix F

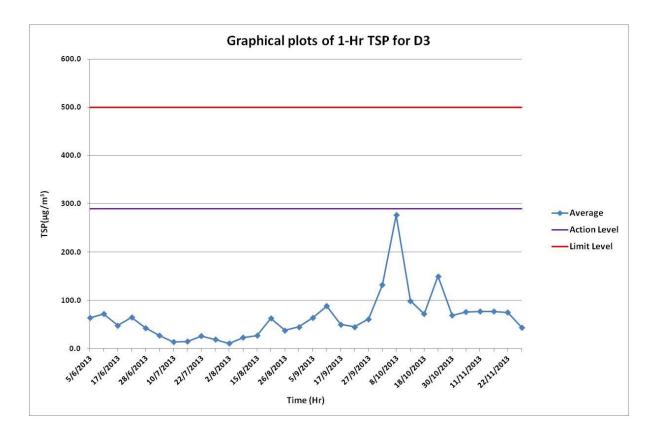
Air Quality Monitoring Data

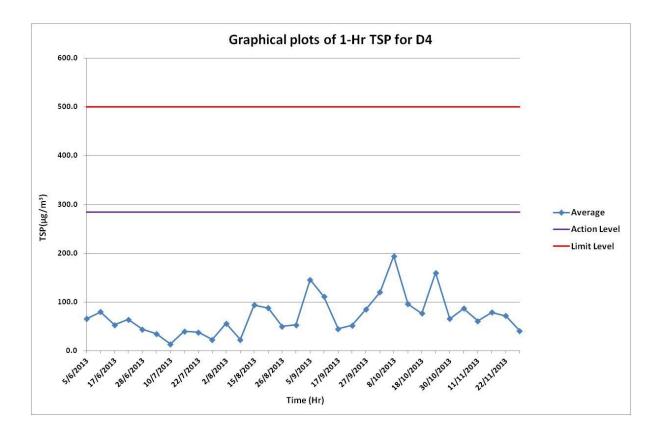
# 1-Hr TSP Monitoring Results

							Loca	tions					
			D1			D2			D3		D4		
Date	Duration	Start Time	TSP Level (ug/m <sup>3</sup> )	Average (ug/m <sup>3</sup> )	Start Time	TSP Level (ug/m <sup>3</sup> )	Average (ug/m <sup>3</sup> )	Start Time	TSP Level (ug/m <sup>3</sup> )	Average (ug/m <sup>3</sup> )	Start Time	TSP Level (ug/m <sup>3</sup> )	Average (ug/m <sup>3</sup> )
		9:23	93		9:30	85		9:33	81		9:38	95	
5/11/2013	1 Hour	10:23	75	81	10:30	73	77	10:33	75	76	10:38	86	87
		11:23	74		11:30	74		11:33	71		11:38	81	
		8:51	75		8:46	71		8:39	111		8:31	69	
11/11/2013	1 Hour	9:51	60	64	9:46	64	65	9:39	60	77	9:31	58	61
		10:51	56		10:46	59		10:39	59		10:31	55	
		8:48	68		8:43	75		8:40	75		8:33	78	
16/11/2013	1 Hour	9:48	69	69	9:43	75	75	9:40	78	77	9:33	79	79
		10:48	69		10:43	75		10:40	79		10:33	80	
		9:53	91		9:58	91		10:04	90		10:12	88	
22/11/2013	1 Hour	10:53	80	78	10:58	80	79	11:04	72	75	11:12	67	72
		11:53	63		11:58	66		12:04	62	-	12:12	62	
		8:46	40		8:42	36		8:36	43		8:29	37	41
28/11/2013	1 Hour	9:46	44	42	9:42	36	37	9:36	46	44	9:29	42	
		10:46	42		10:42	39		10:36	44		10:29	44	









# D1 24-Hrs TSP Monitoring Results

		W	Wt. of paper (g)			Elapse Time			low Ra	ate (CFM)	Total Volume	TSP Concentration	Weather
Sampling Date	Paper No.	Initial Wt.	Final Wt.	Wt. of dust	Initial	Final	Sampling Hour	Initial	Final	Avg Flow Rate	(m³)	(µg/m <sup>3</sup> )	
05/11/13	205494	2.9530	3.0562	0.1032	2190.16	2214.18	24.02	42	42	42.0	1714.03	60.2090	Cloudy
11/11/13	205498	2.9483	3.0345	0.0862	2214.18	2238.20	24.02	42	42	42.0	1714.03	50.2908	Cloudy
16/11/13	050309	3.6015	3.6984	0.0969	2238.20	2262.22	24.02	42	42	42.0	1714.03	56.5334	Sunny
22/11/13	026031	2.7306	2.8379	0.1073	2262.22	2286.24	24.02	42	42	42.0	1714.03	62.6010	Overcast
28/11/13	026033	2.7312	2.8711	0.1399	2286.24	2310.26	24.02	42	42	42.0	1714.03	81.6205	Sunny

## D2 24-Hrs TSP Monitoring Results

		Wt	Wt. of paper (g)			Elapse Time			low Ra	ate (CFM)	Total Volume	TSP Concentration	Weather
Sampling Date	Paper No.	Initial Wt.	Final Wt.	Wt. of dust	Initial	Final	Sampling Hour	Initial	Final	Avg Flow Rate	(m³)	(µg/m <sup>3</sup> )	
05/11/13	205495	2.9410	3.0513	0.1103	2001.92	2025.93	24.01	42	42	42.0	1713.32	64.3781	Cloudy
11/11/13	205499	2.9513	3.0453	0.0940	2025.93	2049.94	24.01	42	42	42.0	1713.32	54.8644	Cloudy
16/11/13	050310	3.5994	3.7013	0.1019	2049.94	2073.95	24.01	42	42	42.0	1713.32	59.4753	Sunny
22/11/13	205891	2.7393	2.8295	0.0902	2073.95	2097.96	24.01	42	42	42.0	1713.32	52.6464	Overcast
28/11/13	205800	2.6300	2.8579	0.2279	2097.96	2121.97	24.01	42	42	42.0	1713.32	133.0169	Sunny

# D3 24-Hrs TSP Monitoring Results

		Wt	Wt. of paper (g)			Elapse Time				ate (CFM)	Total Volume	TSP Concentration	Weather
Sampling Date	Paper No.	Initial Wt.	Final Wt.	Wt. of dust	Initial	Final	Sampling Hour	Initial	Final	Avg Flow Rate	(m³)	(µg/m <sup>3</sup> )	
05/11/13	205496	2.9658	3.1366	0.1708	2535.46	2559.47	24.01	42	42	42.0	1713.32	99.6897	Cloudy
11/11/13	050308	3.5996	3.6884	0.0888	2559.47	2583.48	24.01	42	42	42.0	1713.32	51.8293	Cloudy
16/11/13	050311	3.6002	3.7904	0.1902	2583.48	2607.49	24.01	42	42	42.0	1713.32	111.0128	Sunny
22/11/13	205892	2.7318	2.9131	0.1813	2607.49	2631.50	24.01	42	42	42.0	1713.32	105.8182	Overcast
28/11/13	205893	2.6930	2.9174	0.2244	2631.50	2655.51	24.01	42	42	42.0	1713.32	130.9741	Sunny

# D4 24-Hrs TSP Monitoring Results

		Wt	Wt. of paper (g)			Elapse Time			low Ra	ate (CFM)	Total Volume	TSP Concentration	Weather
Sampling Date	Paper No.	Initial Wt.	Final Wt.	Wt. of dust	Initial	Final	Sampling Hour	Initial	Final	Avg Flow Rate	(m³)	(µg/m <sup>3</sup> )	
05/11/13	205497	2.9830	3.1310	0.1480	2748.40	2772.42	24.02	42	42	42.0	1714.03	86.3462	Cloudy
11/11/13	205500	2.9514	3.0613	0.1099	2772.42	2796.44	24.02	42	42	42.0	1714.03	64.1179	Cloudy
16/11/13	205790	2.5300	2.8490	0.3190	2796.44	2820.46	24.02	42	42	42.0	1714.03	186.1111	Sunny
22/11/13	205501A	2.7755	2.8287	0.0532	2820.46	2844.48	24.02	42	42	42.0	1714.03	31.0380	Overcast
28/11/13	205894	2.6951	2.7505	0.0554	2844.48	2868.50	24.02	42	42	42.0	1714.03	32.3215	Sunny

# ALS Technichem (HK) Pty Ltd

### **ALS Laboratory Group**

ANALYTICAL CHEMISTRY & TESTING SERVICES



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Project	<u>;</u>	Quote number	:	Date received	2 05-NOV-2013
Order number	<u>;</u>			Date of issue	: 11-DEC-2013
C-O-C number	:			No. of samples	- Received : 20
Site	:				- Analysed : 20

#### **Report Comments**

This report for ALS Technichem (HK) Pty Ltd work order reference HK1333880 supersedes any previous reports with this reference. The completion date of analysis is 10-DEC-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 HK1333880 : Sample(s) were received in an ambient condition. Sample(s) analysed and reported on an as received basis.

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

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Sub-Matrix: FILTER (TSP/RSP)		Compound	HK-TSP: Total	HK-TSP: Initial Weight	HK-TSP: Final Weight	
			Suspended			
			Particulates			 
		LOR Unit	0.0010 g	0.0010 g	0.0010 g	 
Client sample ID	Client sampling date /	Laboratory sample	EA/ED: Physical and	EA/ED: Physical and	EA/ED: Physical and	
	time	ID	Aggregate Properties	Aggregate Properties	Aggregate Properties	
205494	[05-NOV-2013]	HK1333880-001	0.1032	2.9530	3.0562	
205495	[05-NOV-2013]	HK1333880-002	0.1103	2.9410	3.0513	
205496	[05-NOV-2013]	HK1333880-003	0.1708	2.9658	3.1366	
205497	[05-NOV-2013]	HK1333880-004	0.1480	2.9830	3.1310	
205498	[11-NOV-2013]	HK1333880-005	0.0862	2.9483	3.0345	
205499	[11-NOV-2013]	HK1333880-006	0.0940	2.9513	3.0453	
050308	[11-NOV-2013]	HK1333880-007	0.0888	3.5996	3.6884	
205500	[11-NOV-2013]	HK1333880-008	0.1099	2.9514	3.0613	
050309	[16-NOV-2013]	HK1333880-009	0.0969	3.6015	3.6984	
050310	[16-NOV-2013]	HK1333880-010	0.1019	3.5994	3.7013	
050311	[16-NOV-2013]	HK1333880-011	0.1902	3.6002	3.7904	
205790	[16-NOV-2013]	HK1333880-012	0.3190	2.5300	2.8490	
026031	[22-NOV-2013]	HK1333880-013	0.1073	2.7306	2.8379	
205891	[22-NOV-2013]	HK1333880-014	0.0902	2.7393	2.8295	
205892	[22-NOV-2013]	HK1333880-015	0.1813	2.7318	2.9131	
205501A	[22-NOV-2013]	HK1333880-016	0.0532	2.7755	2.8287	
026033	[28-NOV-2013]	HK1333880-017	0.1399	2.7312	2.8711	
205800	[28-NOV-2013]	HK1333880-018	0.2279	2.6300	2.8579	
205893	[28-NOV-2013]	HK1333880-019	0.2244	2.6930	2.9174	
205894	[28-NOV-2013]	HK1333880-020	0.0554	2.6951	2.7505	

