

Appendix G

The QA/QC Procedures and Results

HIGH VOLUME AIR SAMPLER
SITE VISIT LOG SHEET

Site Name: RE Site No.: Am 1
 Date of visit: 19-3-2002 Hour of Visit: 11.05
 Staff name: W.L. Mak HVAS S/N: 2198
 Used filter paper no.: L046 New filter paper no.: L048
 Type of filter: Glass-fibre

I. Ambient Conditions

Temperature, $T_a = \frac{273 + 26.0}{299}$ K Pressure, $P_a = 1016$ mb

II. Correction of manometer reading

Calibration orifice No.	Manometer reading (ΔH_{STD}) corresponds to $Q_{STD} = 40 \text{ ft}^3/\text{min}$.	Manometer reading at site conditions
EV08B01	5.1 (4/01)	$\Delta H_a = 1.500(P_a/T_a) = \underline{\hspace{2cm}}$
✓EV08B02	5.0 (3/01)	$\Delta H_a = 1.471(P_a/T_a) = \underline{4.99}$

Manometer reading before calibration: 4.90

Adjustment of flow controller (Y/N): Y

Manometer reading after calibration: 5.00

Note: Manometer reading corrected to ambient conditions: $\Delta H_a = \Delta H_{STD}(P_a/P_{STD})(T_{STD}/T_a)$

III. General Conditions of HVAS

IV. Remarks

HIGH VOLUME AIR SAMPLER
SITE VISIT LOG SHEET

Site Name: E. G Site No.: AM 2
 Date of visit: 19-3-2002 Hour of Visit: 10 10
 Staff name: W. L. MAK HVAS S/N: 2195
 Used filter paper no.: L047 New filter paper no.: L049
 Type of filter: Glass-fibre

I. Ambient Conditions

Temperature, $T_a = \frac{273 + 23.0}{296}$ K Pressure, $P_a = 1020$ mb

II. Correction of manometer reading

Calibration orifice No.	Manometer reading (ΔH_{STD}) corresponds to $Q_{STD} = 40 \text{ ft}^3/\text{min}$.	Manometer reading at site conditions
EV08B01	5.1 (4/01)	$\Delta H_a - 1.500(P_a/T_a) = \underline{\hspace{2cm}}$
✓EV08B02	5.0 (3/01)	$\Delta H_a = 1.471(P_a/T_a) = \underline{5.07}$

Manometer reading before calibration: 4.90

Adjustment of flow controller (Y/N): Y

Manometer reading after calibration: 5.10

Note: Manometer reading corrected to ambient conditions: $\Delta H_a = \Delta H_{STD}(P_a/P_{STD})(T_{STD}/T_a)$

III. General Conditions of HVAS

IV. Remarks

PARTISOL TSP SAMPLER
SITE VISIT LOG SHEET

Site Name Askoyan Site Number AM3
 Date of Visit 1P-3-2002 Hour of Visit 10:45
 Staff Name H.K. TSANG Partisol S/N: 2000B205500001
 Used Filter No.: PA62 New Filter No.: PA63
 Ambient temperature: 22.8°C Ambient pressure: 1021

I. General Services

1. Replace control unit Large In-line Filter X
2. Clean the sample inlet head ✓
3. Clean sample tube X
4. Clean / Replace pump head ✓
5. Clean / Replace piston X

II. Operational Audits (3 months interval as recommended by manufacturer)

1. Temperature Check (Ambient temperature $\pm 2^\circ\text{C}$)
 _____ $^\circ\text{C}$ Calibration: Y/N _____ $^\circ\text{C}$
 Before After
2. Pressure Check (Ambient pressure ± 20 mbar)(factor = 0.000987)
 _____ mbar Calibration: Y/N _____ mbar
 Before After
3. Flow Check (16.7 \pm 1.1 litre/min)
 _____ cc/min Calibration: Y/N _____ cc/min
 Before After

III. Remarks

THE HONGKONG ELECTRIC CO., LTD.
LAMMA POWER STATION EXTENSION
TEOM 1400A CONTINUOUS DUST MONITOR
DATA QUALITY ASSURANCE LOG SHEET

Month : MARCH Year : 2002

Reservoir (AM1)					
Date	Frequency (Hz) (260 - 280)	Noise (< 0.1)	Operation Mode (Mode 4)	Main Flow (l/min) (0.94 - 1.06)	Aux. Flow (l/min) (14.67 - 16.67)
6/3/02	260.31	0.031	4	1.00	15.65
12/3/02	261.08	0.022	4	1.00	15.63
18/3/02	260.72	0.037	4	1.00	15.65
24/3/02	260.53	0.038	4	1.00	15.65
30/3/02	260.32	0.004	4	1.00	15.63

East Gate (AM2)					
Date	Frequency (Hz) (230 - 250)	Noise (< 0.1)	Operation Mode (Mode 4)	Main Flow (l/min) (0.94 - 1.06)	Aux. Flow (l/min) (14.67 - 16.67)
6/3/02	245.17	0.038	4	1.00	15.66
12/3/02	244.72	0.038	4	1.00	15.65
18/3/02	244.66	0.027	4	0.99	15.65
24/3/02	245.33	0.037	4	1.00	15.65
30/3/02	245.21	0.019	4	1.00	15.65

Ash Lagoon (AM3)					
Date	Frequency (Hz) (230 - 250)	Noise (< 0.1)	Operation Mode (Mode 4)	Main Flow (l/min) (0.94 - 1.06)	Aux. Flow (l/min) (14.67 - 16.67)
6/3/02	246.22	0.033	4	0.99	15.64
12/3/02	245.76	0.023	4	0.99	15.63
18/3/02	245.53	0.025	4	1.00	15.64
24/3/02	245.26	0.035	4	0.99	15.64
30/3/02	245.08	0.032	4	0.99	15.65

Maintenance Record			
	Reservoir	East Gate	Ash Lagoon
TEOM Filter Exchange	✓	✓	✓
Clean TSP Inlet	✓	✓	✓
Replace flow in-line filter			
Pump Repair			
Leak Check	✓	✓	
Flow Audit	✓	✓	
Flow Controller Calibration			
A/C filter cleaning	✓	✓	✓

Remarks:

Prepared by : *Shi.*

Checked by : *Ch*

THE HONGKONG ELECTRIC CO., LTD.
LAMMA POWER STATION EXTENSION
NOISE MONITORING STATION
SITE VISIT LOG SHEET

Location Ash Lagoon/~~Ching Lam~~*

Date 15 - 3 - 2002 Time 11:19

Equipment Rion NA-27 Sound Level Meter

Serial Number 00111465/00111466/~~00111467~~*

Staff Attended W.L. MAK, H.K. TSANG

1. Calibration

Acoustic calibrator used Rion NC-74

Calibration level before adjustment (dB(A)) 93.9

Calibration level after adjustment (dB(A)) 94

2. Weather Conditions

a. ~~Sunny/fine/cloudy/showery/heavy rain*~~

b. ~~Strong wind/breeze/calm*~~

3. Remark/Observation

Note: * - Please delete where inappropriate

THE HONGKONG ELECTRIC CO., LTD.
LAMMA POWER STATION EXTENSION
NOISE MONITORING STATION
SITE VISIT LOG SHEET

Location ~~Ash Lagoon~~/Ching Lam*

Date 11-3-2002 Time 13:45

Equipment Rion NA-27 Sound Level Meter

Serial Number 00111465/00111466/00111467*

Staff Attended H.K. TSANG

1. Calibration

Acoustic calibrator used Rion NC-74

Calibration level before adjustment (dB(A)) 94.0

Calibration level after adjustment (dB(A)) 94

2. Weather Conditions

a. ~~Sunny/fine/cloudy/showery/heavy rain*~~

b. ~~Strong wind/breeze/calm*~~

3. Remark/Observation

Note: * - Please delete where inappropriate

Equipment Calibration Record

Site: Lamma Power Station Extension – Transmission System Construction

Noise Equipment Used: Rion NL-14 sound level meter

Calibrator Used: B&K 4231 sound level calibrator

Measurement Location: N4 – Pak Kok Tsui No. 2

Date	Calibration Level before Measurement (dB(A))	Calibration Level after Measurement (dB(A))	Calibrated by
06/03/2002	94.0	94.0	T. M. Chan
08/03/2002	94.0	94.0	T. M. Fung
11/03/2002	94.0	94.0	T. M. Fung
15/03/2002	94.0	94.0	T. M. Chan
20/03/2002	94.0	94.0	T. M. Fung
22/03/2002	94.0	94.0	T. M. Chan
25/03/2002	94.0	94.0	T. M. Fung
27/03/2002	94.0	94.0	T. M. Chan

Measurement Location: N5 – Pak Kok Tsui No. 8

Date	Calibration Level before Measurement (dB(A))	Calibration Level after Measurement (dB(A))	Calibrated by
06/03/2002	94.0	94.0	M. S. Kong
08/03/2002	94.0	94.0	M. S. Kong
11/03/2002	94.0	94.0	M. S. Kong
15/03/2002	94.0	94.0	M. S. Kong
20/03/2002	94.0	94.0	M. S. Kong
22/03/2002	94.0	94.0	M. S. Kong
25/03/2002	94.0	94.0	M. S. Kong
27/03/2002	94.0	94.0	T. M. Chan

Note: Measurement accepted as valid only if the calibration levels from before and after the noise measurement agreed to within 1.0 dB.



Approved by: DANIEL SUM

Date: 31/03/2002

Equipment Calibration Record

Equipment No.	--	Equipment description	YSI 6820 Multi-parameter Water Quality Monitor/ Hydrolab Datasonde 4a
Calibration method reference	--	Calibration equipment used (if any)	--

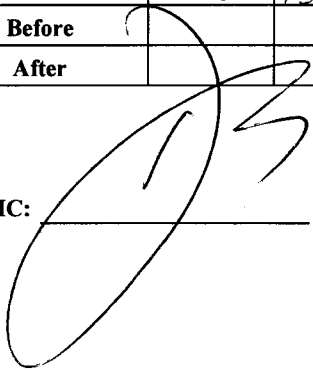
	pH	DO	Turbidity
Use of Reference material (if any)	pH 6.86 & 10.01 buffer RM ESG-006 RM ESG-007	--	0 NTU & 100 NTU
Permissible tolerance of calibration	± 0.12 pH	±5%	±5%

Calibration Result

Date	Standard	pH		DO	Turbidity		Calibrated by
		6.86	10.01	100%	0	100	
1/3/02	Before	6.87	9.97	97.1%	-0.2	100.8	ij
	After	6.86	10.01	100%	0.0	100.0	
4/3/02	Before	6.87	9.99	98.2	1.3	101.7	ij
	After	6.86	10.01	100	0.0	100.0	
6/3/02	Before	6.85	10.08	99.4	0.7	101.4	ij
	After	6.86	10.01	100	0.0	100.0	
8/3/02	Before	6.84	10.12	97.3	2.1	99.5	ij
	After	6.86	10.01	100	0.0	100.0	
11/3/02	Before	6.82	10.11	98.4	1.1	101.6	ij
	After	6.86	10.01	100.0	0.0	100.0	
13/3/02	Before	6.80	10.10	96.5	0.8	102.5	TAllen
	After	6.86	10.01	100.0	0.0	100.0	
15/3/02	Before	6.80	9.96	97.3	0.1	101.5	TAllen
	After	6.86	10.01	100.0	0.0	100.0	
18/3/02	Before	6.84	10.08	98.2	0.4	103.3	TAllen
	After	6.86	10.01	100.0	0.0	100.0	
20/3/02	Before	6.83	10.03	97.7	1.2	102.8	ij
	After	6.86	10.01	100.0	0.0	100.0	
22/3/02	Before	6.90	10.05	113.4	-0.8	103.3	TAllen
	After	6.86	10.01	100.0	0.0	100.0	
25/3/02	Before	6.84	9.87	98.5	1.2	101.7	ij
	After	6.86	10.01	100.0	0.0	100.0	
27/3/02	Before	6.81	10.05	98.7	-2.6	93.6	TAllen
	After	6.86	10.01	100.0	0.0	100.0	
29/3/02	Before	6.83	9.99	99.5	1.4	103.2	L.
	After	6.86	10.01	100.0	0.0	100.0	
	Before						
	After						

Approved by EMC: _____

Date: _____



2/10/02

SUMMARY OF QUALITY CONTROL DATA - QC SAMPLES RESULTS

Parameter	Control Limit	QC ID	Measured Value	QC ID	Measured Value	QC ID	Measured Value	QC ID	Measured Value	QC ID	Measured Value	QC ID	Measured Value
Suspended Solids mg/L	8.9 - 10.3	QC0203004	9.5	QC0203007	9.8	QC0203113	10.0	QC0203018	9.8	QC0203021	9.3	QC0203326	9.7
		QC0203104	9.5	QC0203107	9.6	QC0203213	9.3	QC0203118	10.1	QC0203121	10.0	QC0203426	9.7
		QC0203204	9.3	QC0203207	9.3	QC0203313	9.9	QC0203218	9.3	QC0203221	9.3	QC0203526	9.9
		QC0203304	9.6	QC0203307	9.4	QC0203413	9.4	QC0203318	9.9	QC0203321	9.5	QC0203626	9.8
		QC0203005	9.6	QC0203409	9.8	QC0203114	9.3	QC0203019	10.0	QC0203423	10.0	QC0203028	9.5
		QC0203105	9.8	QC0203509	9.8	QC0203214	9.8	QC0203119	9.6	QC0203523	10.0	QC0203128	9.8
		QC0203205	9.7	QC0203609	10.0	QC0203314	9.7	QC0203219	9.6	QC0203623	9.4	QC0203228	9.8
		QC0203405	9.5	QC0203709	9.5	QC0203414	10.2	QC0203319	9.3	QC0203723	9.4		

Total: 47

SUMMARY OF QUALITY CONTROL DATA - BLANK RESULTS

Parameter	Control Limit	Blank ID	Measured Value	Blank ID	Measured Value	Blank ID	Measured Value	Blank ID	Measured Value	Blank ID	Measured Value	Blank ID	Measured Value
Suspended Solids mg/L	< 1	BK0203004	<1	BK0203007	<1	BK0203113	<1	BK0203018	<1	BK0203021	<1	BK0203326	< 1
		BK0203104	<1	BK0203107	<1	BK0203213	<1	BK0203118	<1	BK0203121	<1	BK0203426	< 1
		BK0203204	<1	BK0203207	<1	BK0203313	<1	BK0203218	<1	BK0203221	<1	BK0203526	< 1
		BK0203304	<1	BK0203307	<1	BK0203413	<1	BK0203318	<1	BK0203321	<1	BK0203626	< 1
		BK0203005	<1	BK0203409	<1	BK0203114	<1	BK0203019	<1	BK0203423	<1	BK0203028	< 1
		BK0203105	<1	BK0203509	<1	BK0203214	<1	BK0203119	<1	BK0203523	<1	BK0203128	< 1
		BK0203205	<1	BK0203609	<1	BK0203314	<1	BK0203219	<1	BK0203623	<1	BK0203228	< 1
		BK0203405	<1	BK0203709	<1	BK0203414	<1	BK0203319	<1	BK0203723	<1		

Total: 47

SUMMARY OF QUALITY CONTROL DATA - DUPLICATE RESULTS

Parameter	Control Limit	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value
Suspended Solids mg/L	exceed 20%		5.9		5.6		4.5		5.5		4.3		8.4
		WC0203657	5.9	WC0203847	6.6	WC0204192	4.9	WC0204511	5.7	WC0204841	4.1	WC0205181	8.6
			11.6		7.3		4.9		8.8		8.0		8.8
		WC0203672	12.4	WC0203862	7.1	WC0204207	4.7	WC0204526	8.8	WC0204856	7.8	WC0205432	10.0
			8.2		5.4		8.1		5.3		6.4		8.9
		WC0203693	8.8	WC0203883	6.4	WC0204228	7.9	WC0204547	5.1	WC0204827	7.0	WC0205217	8.5
			9.8		7.9		9.4		8.0		9.2		9.8
		WC0203708	9.8	WC0203898	7.5	WC0204243	9.2	WC0204562	7.8	WC0204892	9.0	WC0205232	8.6
			6.2		7.8		8.2		5.2		9.1		5.9
		WC0203748	5.8	WC0204025	7.6	WC0204356	8.4	WC0204652	5.0	WC0204993	9.3	WC0205381	6.1
			7.5		13.1		6.0		6.5		6.3		5.3
		WC0203763	6.7	WC0204040	14.3	WC0204371	7.2	WC0204667	7.3	WC0205008	6.9	Wc0205396	5.5
			5.2		11.0		3.9		5.8		4.5		5.2
		WC0203784	5.4	WC0204061	10.0	WC0204392	4.5	WC0204688	6.0	WC0205029	4.3	WC0205417	6.6
			5.0		15.0		3.1		6.8		4.3		
		WC0203799	5.6	WC0204076	14.6	WC0204407	3.7	WC0204703	5.6	WC0205044	3.9		

Total: 47

SUMMARY OF QUALITY CONTROL DATA - BLIND DUPLICATE RESULTS

Parameter	Control Limit	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value
Suspended Solids mg/L	exceed 20%	WC0203717	10.0	WC0203808	6.8	WC0203907	9.1	WC0204085	6.0	WC0204252	9.4	WC0204416	11.7	WC0204571	6.2	WC0204712	7.8	WC0204901	5.2	WC0205053	10.7	WC0205241	10.6	WC0205441	12.8
			10.1		6.8		11.4		7.8		9.3		12.8		7.1		7.6		4.3		10.1		9.8		12.7
		WC0203718	8.0	WC0203809	14.4	WC0203908	7.3	WC0204086	7.2	WC0204253	10.4	WC0204417	4.7	WC0204572	6.6	WC0204713	12.4	WC0205595	5.5	WC0205054	8.9	WC0205242	8.2	WC0205442	8.8
			7.9		13.0		7.6		7.7		10.1		4.8		6.3		13.6		6.2		8.7		8.6		10.7
		WC0203719	10.6	WC0203810	7.0	WC0203909	7.5	WC0204087	10.4	WC0204254	8.0	WC0204418	10.3	WC0204573	11.2	WC0204714	8.8	WC0205602	6.3	WC0205055	8.7	WC0205243	9.8	WC0205443	9.3
			10.3		6.8		6.7		10.9		7.7		9.8		9.0		9.1		6.1		8.5		9.8		7.7
		WC0203720	12.4	WC0205448	4.4	WC0203910	14.9	WC0204088	12.2	WC0204255	10.2	WC0204419	11.1	WC0204574	8.6	WC0204715	6.0	WC0205597	7.5	WC0205056	7.1	WC0205244	10.0	WC0205444	7.0
			12.0		4.6		15.3		11.1		11.7		10.2		7.6		6.7		7.2		6.6		9.4		7.7
		WC0203721	8.6	WC0203812	10.4	WC0203911	7.3	WC0204089	10.2	WC0204256	7.0	WC0204420	7.5	WC0204575	7.0	WC0204716	6.2	WC0205598	8.7	WC0205057	12.7	WC0205245	10.8	WC0205445	5.8
			8.2		10.3		8.9		9.7		6.7		7.1		7.3		6.4		8.4		12.3		11.2		6.1
		WC0203722	10.0	WC0203813	6.0	WC0203912	3.5	WC0204090	9.6	WC0204257	9.0	WC0204421	7.7	WC0204576	4.2	WC0204717	6.2	WC0205599	14.5	WC0205058	4.7	WC0205246	7.6	WC0205446	5.4
			9.6		5.6		3.8		10.5		9.7		7.1		4.3		6.6		14.6		5.1		7.1		6.2
		WC0203723	8.6	WC0205447	8.4	WC0203913	14.5	WC0204091	8.8	WC0204258	8.8	WC0204422	6.5	WC0204577	8.0	WC0204718	6.4	WC0205600	5.7	WC0205059	7.1	WC0205247	9.0		
			8.2		9.0		13.8		8.2		8.7		6.3		8.0		6.0		5.3		7.5		8.9		
		WC0203724	9.6	WC0203815	7.0	WC0203914	10.5	WC0204092	10.2	WC0204259	8.0	WC0204423	15.5	WC0204578	5.4	WC0204719	7.4	WC0205601	5.1	WC0205060	4.5	WC0205248	9.0		
			9.0		6.3		10.1		10.2		8.6		15.9		5.8		7.8		5.9		4.1		10.0		

Total: 94