

Appendix G

The QA/QC Procedures and Results

HIGH VOLUME AIR SAMPLER
SITE VISIT LOG SHEET

Site Name: R-E Site No.: Am 1
 Date of visit: 18-6-2002 Hour of Visit: 11:00
 Staff name: W. LIMAK HVAS S/N: 2198
 Used filter paper no.: L076 New filter paper no.: L078
 Type of filter: Glass-fibre

I. Ambient Conditions

Temperature, $T_a = \frac{273 + 31.6}{304.6}$ K Pressure, $P_a = \underline{1006}$ mb

II. Correction of manometer reading

Calibration orifice No.	Manometer reading at site conditions corresponds to $Q_{STD} = 40 \text{ ft}^3/\text{min.}$ (inch H_2O)
✓ 1534(04/2002)	$\Delta H_a = 18.0(T_a/P_a) = \underline{5.45}$
1535(04/2002)	$\Delta H_a = 17.9(T_a/P_a) = \underline{\hspace{2cm}}$

Manometer reading before calibration: 5.50
 Adjustment of flow controller (Y/N): N
 Manometer reading after calibration: 5.50

Note: Tolerance Limit of HVAS flow: $\pm 1.0 \text{ ft}^3/\text{min.}$ Corresponding limits for manometer : $\pm 0.2 \text{ inch H}_2\text{O}$

III. General Conditions of HVAS

IV. Remarks

HIGH VOLUME AIR SAMPLER SITE VISIT LOG SHEET

Site Name: EG Site No.: Am 2
 Date of visit: 18-6-2002 Hour of Visit: 1135
 Staff name: W. L. M. K. HVAS S/N: 2195
 Used filter paper no.: 2077 New filter paper no.: 1079
 Type of filter: Glass-fibre

I. Ambient Conditions

Temperature, $T_a = 273 + 34.1$ K Pressure, $P_a = 1010$ mb
 307.1

II. Correction of manometer reading

Calibration orifice No.	Manometer reading at site conditions corresponds to $Q_{STD} = 40 \text{ ft}^3/\text{min}$. (inch H_2O)
✓ 1534(04/2002)	$\Delta H_a = 18.0(T_a/P_a) = 5.47$
1535(04/2002)	$\Delta H_a = 17.9(T_a/P_a) =$

Manometer reading before calibration: 5.60
 Adjustment of flow controller (Y/N): Y
 Manometer reading after calibration: 5.50

Note: Tolerance Limit of HVAS flow: $\pm 1.0 \text{ ft}^3/\text{min}$. Corresponding limits for manometer : $\pm 0.2 \text{ inch H}_2\text{O}$

III. General Conditions of HVAS

IV. Remarks

PARTISOL TSP SAMPLER
SITE VISIT LOG SHEET

Site Name Ash Lagoon Site Number AM 3
Date of Visit 25/6/2022 Hour of Visit 14:15
Staff Name W. LIAK, H.K. ISANG Partisol S/N: 20000 B 205500001
Used Filter No.: PA3P New Filter No.: PA80
Ambient temperature: 31.4°C Ambient pressure: 1001 mbar

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 X
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

MINI VOLUME AIR SAMPLER

SITE VISIT LOG SHEET

Site Name: T.Y.V. Site No.: 4M4
Date of visit: 25-6-20-2 Hour of Visit: 11:20
Staff name: H. K. ISANG MINIVOL S/N: 2050
Used filter paper no.: MF42 New filter paper no.: MF43
Type of filter: ~~Cellulose~~ / Glass-fibre
(Delete as appropriate)

- I. Calibration is performed by using Drycal DC-2 Flow Calibrator
5 Sl/min set point is recommended

500 L Before 500 L After

II. General Service of Mini Vol Air Sampler

1. Clean Rotameter: ✓
2. Clean / replace Pump Valves: X
3. Clean / replace Pump Diaphragms: X
4. Clean Impaction Inlet: X
5. Replace Timer Battery Every 6 months: X
6. Replace Inlet Filter: ✓

III. Remarks

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

Month : JUNE

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)
4-6-02	269.81	0.037	4	1.00	15.66
10-6-02	261.38	0.048	4	1.00	15.67
16-6-02	261.20	0.034	4	1.01	15.67
22-6-02	261.96	0.043	4	1.00	15.67
28-6-02	261.80	0.044	4	1.00	15.67

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)
4-6-02	245.34	0.041	4	0.99	15.65
10-6-02	245.23	0.038	4	1.00	15.64
16-6-02	245.10	0.03	4	1.00	15.64
22-6-02	245.04	0.061	4	1.00	15.65
28-6-02	245.47	0.041	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)
4-6-02	245.89	0.038	4	0.99	15.64
10-6-02	245.80	0.042	4	0.99	15.64
16-6-02	247.45	0.032	4	0.99	15.64
22-6-02	247.40	0.031	4	0.99	15.64
28-6-02	247.33	0.039	4	1.00	15.64

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:

The TEOM dust monitor at AM1 (Reservoir) was shut down on 16/6/2002 due to air conditioning unit failure. The defect was rectified on 17/6/2002. Make up hourly TSP sampling was carried out on 16/6/2002.

Prepared by : Alan

Checked by : CL

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

Location Ash Lagoon/Ching Lam*

Date 14 - 6 - 2001 Time 10:50

Equipment Rion NA-27 Sound Level Meter

Serial Number 001111465/001111466/001111467*

Staff Attended T.L. CHU, M.L. MAK, H.K. TONG

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 18-6-2002 Time 10:20

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)) 93.8

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

28/3/2001

Equipment Calibration Record

Equipment No.	YSI-6920-1	Equipment Description	YSI 6920 Monitor
Calibration method reference	YSI Calibration Manual	Calibration equipment used (if any)	—

	pH	DO	Turbidity
Use of reference material (if any)	pH 7.004 pH 10.00 buffer HACH Buffer standard	—	ONTU 4 100 NTU Formazin Turbidity standard
Permissible tolerance of calibration	± 0.12 pH	$\pm 5\%$	$\pm 5\%$

Calibration Result

Date	Standard	pH		DO	Turbidity		Calibrated by
		7.00	10.00	100%	0	100	
3/6/02	Before	7.00	10.00	98.8	0	99.4	TS
	After	6.99	9.99	100.4	0.2	100.2	TS
5/6/02	Before	7.02	10.01	100.0	0	99.9	TS
	After	7.00	9.98	99.8	0.4	100.1	TS
7/6/02	Before	6.99	10.01	99.5	0	99.7	TS
	After	7.00	10.00	100.0	-0.1	99.2	TS
10/6/02	Before	6.98	10.00	99.9	0	100.0	TS
	After	7.01	10.02	98.7	0.3	99.5	TS
14/6/02	Before	6.99	10.01	99.6	0	100.6	TS
	After	7.02	9.99	100.2	0.1	99.1	TS
17/6/02	Before	7.00	9.98	100.0	0	99.8	TS
	After	6.98	10.00	99.8	0.2	100.2	TS
18/6/02	Before	7.01	10.00	98.4	0	100.0	TS
	After	7.00	9.98	100.0	0.4	99.6	TS
19/6/02	Before	6.99	10.02	101.2	0.1	101.4	TS
	After	6.99	10.00	100.0	0	100.8	TS
21/6/02	Before	7.01	10.01	97.6	0.7	97.5	TS
	After	7.00	9.98	100.3	0	99.3	TS
24/6/02	Before	7.00	9.99	99.2	0	100.7	TS
	After	6.99	10.01	100.1	0.4	99.5	TS
26/6/02	Before	6.99	10.00	99.5	0.2	100.0	TS
	After	6.98	10.02	98.7	0	100.2	TS
28/6/02	Before	6.98	9.98	100.4	0.3	100.7	TS
	After	7.01	9.99	100.0	0	99.4	TS
	Before						
	After						
	Before						
	After						

Approved by: Chen

Date: 8/7/2002

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	QC ID	Measured Value
Suspended Solids mg/L	8.9 – 10.3	P0206A21	9.0	P0206A43	10.1	P0206A65	9.4	P0206A87	9.3	P0206B21	9.0	P0206B43	9.5	P0206B65	9.2
		P0206B87	9.0	P0206C21	9.1	P0206C43	9.1	P0206C65	9.3	P0206C87	9.3	P0206D21	9.2	P0206D43	9.3
		P0206D65	10.0	P0206D87	10.0	P0206E21	9.2	P0206E43	9.0	P0206E65	9.4	P0206E87	9.0	P0206F21	9.3
		P0206F43	9.2	P0206F65	9.0	P0206F87	9.3	P0206G21	9.4	P0206G43	9.4	P0206G65	9.7	P0206G87	9.2
		P0206H21	9.4	P0206H43	9.1	P0206H65	9.3	P0206H87	9.0	P0206I21	9.4	P0206I43	9.1	P0206I65	9.3
		P0206I87	9.0	P0206J21	9.6	P0206J43	9.1	P0206J65	9.4	P0206J87	9.8	P0206K21	9.3	P0206K43	9.6
		P0206K65	9.0	P0206K87	9.3	P0206L21	9.8	P0206L43	9.2	P0206L65	9.4	P0206L87	9.1		

Total:48

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	Blank ID	Measured Value
Suspended Solids mg/L	<1	P0206A22	<1	P0206A44	<1	P0206A66	<1	P0206A88	<1	P0206B22	<1	P0206B44	<1	P0206B66	<1
		P0206B88	<1	P0206C22	<1	P0206C44	<1	P0206C66	<1	P0206C88	<1	P0206D22	<1	P0206D44	<1
		P0206D66	<1	P0206D88	<1	P0206E22	<1	P0206E44	<1	P0206E66	<1	P0206E88	<1	P0206F22	<1
		P0206F44	<1	P0206F66	<1	P0206F88	<1	P0206G22	<1	P0206G44	<1	P0206G66	<1	P0206G88	<1
		P0206H22	<1	P0206H44	<1	P0206H66	<1	P0206H88	<1	P0206I22	<1	P0206I44	<1	P0206I66	<1
		P0206I88	<1	P0206J22	<1	P0206J44	<1	P0206J66	<1	P0206J88	<1	P0206K22	<1	P0206K44	<1
		P0206K66	<1	P0206K88	<1	P0206L22	<1	P0206L44	<1	P0206L66	<1	P0206L88	<1		

Total:48

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	Sample ID	Measured Value
Suspended Solids mg/L	Exceed 20%	P0206A19	9.4	P0206A41	3.3	P0206A63	6.5	P0206A85	2.2	P0206B19	16.1	P0206B41	4.2	P0206B63	14.7
			9.2		3		6.6		2.4		16.2		4.3		14.3
		P0206B85	5.5	P0206C19	6.2	P0206C41	3.7	P0206C63	5.6	P0206C85	4.9	P0206D19	6.2	P0206D41	6.7
			6.1		6.5		4.1		4.9		5.3		6.6		6.5
		P0206D63	10.5	P0206D85	10.8	P0206E19	11.2	P0206E41	10.9	P0206E63	12.2	P0206E85	4.7	P0206F19	4.1
			10.9		11.3		10.9		11.4		12.6		5.4		4.6
		P0206F41	5.5	P0206F63	8.4	P0206F85	5.4	P0206G19	4.1	P0206G41	5.9	P0206G63	11.4	P0206G85	5.0
			6.0		8.2		5.1		4.5		6.2		10.8		5.6
		P0206H19	7.0	P0206H41	10.3	P0206H63	6.4	P0206H85	11.3	P0206I19	9.4	P0206I41	6.7	P0206I63	12.4
			7.2		10.0		7.2		10.8		10.0		7.5		12.0
		P0206I85	11.6	P0206J19	11.4	P0206J41	6.9	P0206J63	12.6	P0206J85	13.2	P0206K19	6.8	P0206K41	6.3
			11.2		10.9		7.4		12.9		12.8		7.2		6.7
		P0206K63	10.5	P0206K85	10.2	P0206L19	7.3	P0206L41	4.1	P0206L63	11.5	P0206L85	11.7		
			10.1		10.6		8.2		4.5		10.9		12.0		

Total:48

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%	P0206A10	4.5	P0206A20	5.2	P0206A32	3.0	P0206A42	2.9	P0206A54	3.6	P0206A64	6.2	P0206A76	4.0	P0206A86	2.1	P0206B10	5.3	P0206B20	14.0	P0206B32	6.6	P0206B42	6.7
			4.1		4.9		3.5		2.6		4.0		6.4		3.8		2.3		5.0		13.7		6.7		6.1
		P0206B54	4.9	P0206B64	14.3	P0206B76	13.7	P0206B86	2.6	P0206C10	9.0	P0206C20	5.2	P0206C32	3.6	P0206C42	2.4	P0206C54	27.7	P0206C64	5.8	P0206C76	7.3	P0206C86	5.3
			4.5		13.5		13.6		3.0		9.2		4.9		3.9		2.2		26.7		5.3		7.8		5.4
		P0206D10	10.0	P0206D20	5.3	P0206D32	7.3	P0206D42	11.0	P0206D54	22.7	P0206D64	9.0	P0206D76	8.8	P0206D86	8.3	P0206E10	8.0	P0206E20	7.2	P0206E32	10.9	P0206E42	5.4
			10.3		5.7		6.9		10.7		22.3		8.6		9.1		8.0		8.3		6.8		11.2		5.0
		P0206E54	4.4	P0206E64	6.8	P0206E76	5.5	P0206E86	4.6	P0206F10	4.7	P0206F20	5.4	P0206F32	11.3	P0206F42	5.6	P0206F54	4.1	P0206F64	6.4	P0206F76	5.5	P0206F86	6.1
			4.0		6.4		5.1		4.2		4.3		5.4		10.8		4.8		3.8		6.0		6.0		6.6
		P0206G10	6.2	P0206G20	5.0	P0206G32	11.0	P0206G42	5.2	P0206G54	8.6	P0206G64	4.8	P0206G76	6.4	P0206G86	6.1	P0206H10	6.4	P0206H20	6.7	P0206H32	9.0	P0206H42	5.9
			5.8		5.4		11.5		4.9		8.0		4.7		5.8		5.5		6.0		6.1		8.5		5.3
		P0206H54	10.9	P0206H64	9.8	P0206H76	8.2	P0206H86	7.1	P0206I10	5.3	P0206I20	4.0	P0206I32	10.9	P0206I42	5.4	P0206I54	8.3	P0206I64	10.4	P0206I76	11.7	P0206I86	10.1
			11.1		9.3		7.9		7.5		5.1		4.2		11.4		5.9		7.9		10.1		11.3		9.7
		P0206J10	6.7	P0206J20	6.3	P0206J32	5.1	P0206J42	5.1	P0206J54	18.4	P0206J64	11.0	P0206J76	5.8	P0206J86	6.8	P0206K10	7.3	P0206K20	9.7	P0206K32	8.0	P0206K42	7.0
			6.8		6.1		5.4		4.7		17.3		11.4		5.3		6.6		6.8		9.3		7.6		7.4
		P0206K54	7.9	P0206K64	9.4	P0206K76	6.8	P0206K86	8.1	P0206L10	8.3	P0206L20	7.6	P0206L32	6.7	P0206L42	4.0	P0206L54	8.2	P0206L64	9.5	P0206L76	11.8	P0206L86	8.2
			8.2		9.8		7.1		7.6		7.8		7.1		6.3		4.4		7.6		8.6		12.2		8.1

Total:96