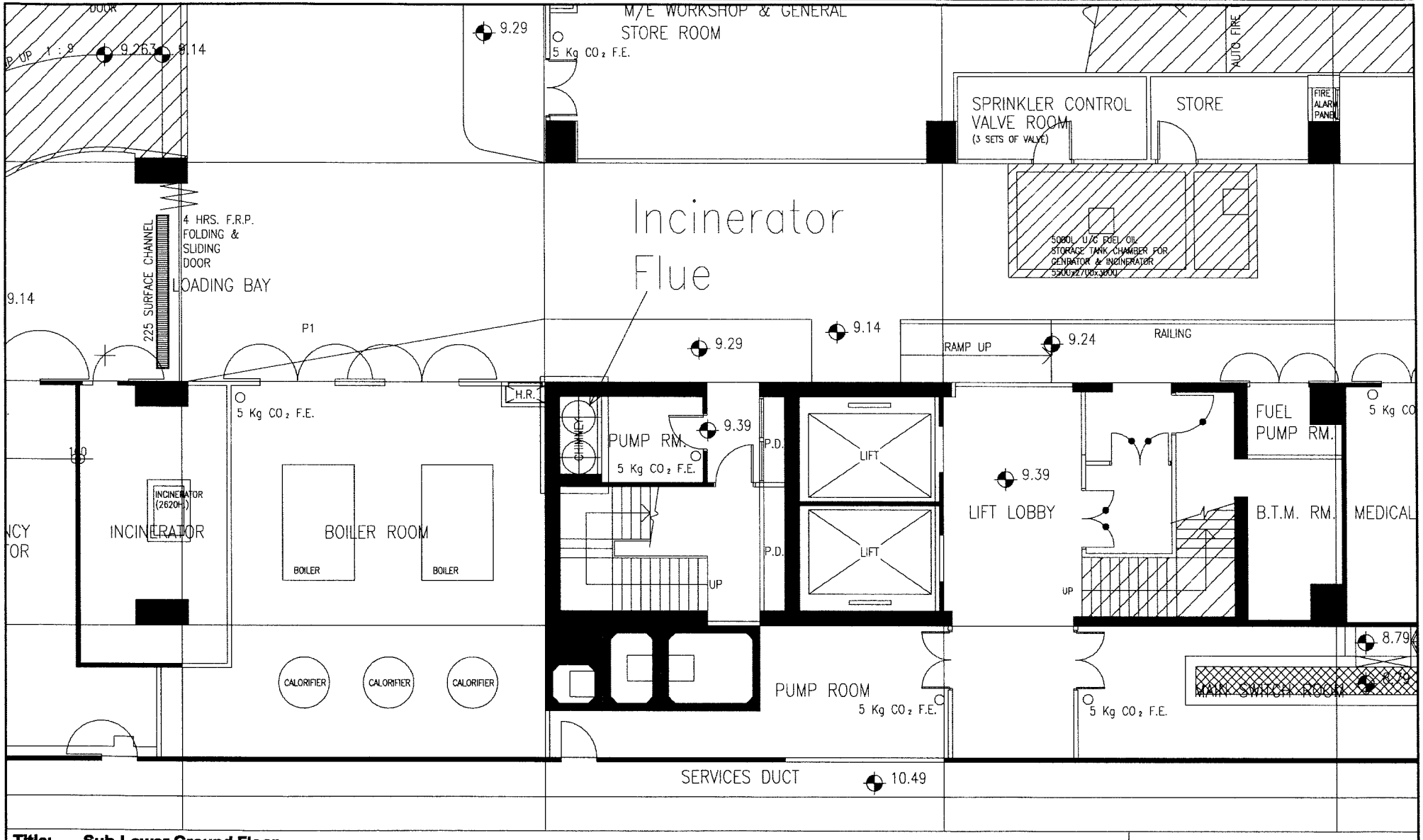
Appendix A

Location of Incinerator Flue



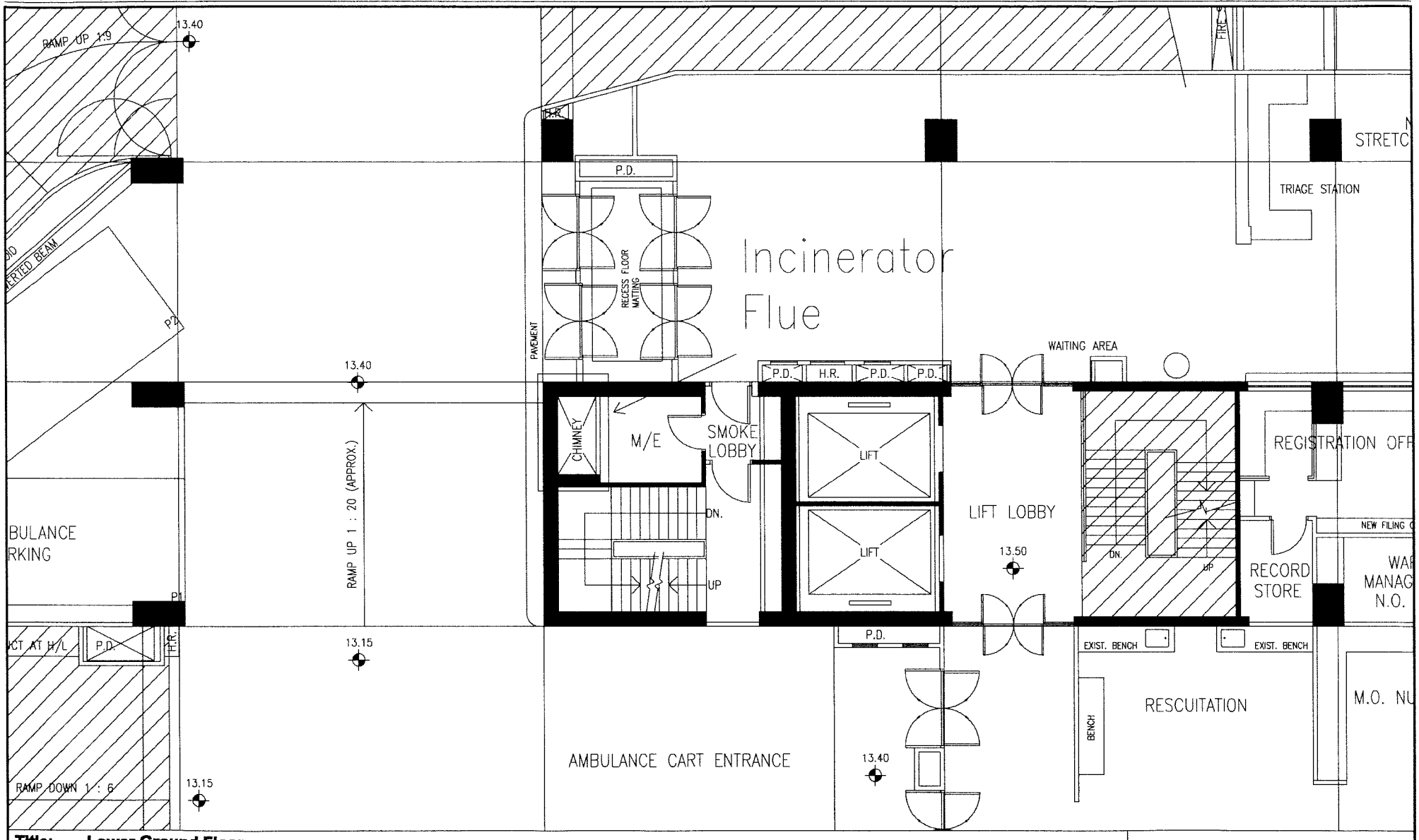
Title: **Sub-Lower Ground Floor**

CH2M HILL (China) Limited

Project: **Decommissioning and Disposal of a Clinical Waste Incinerator at Tang Shiu Kin Hospital**

Scale: NTS

Appendix A1



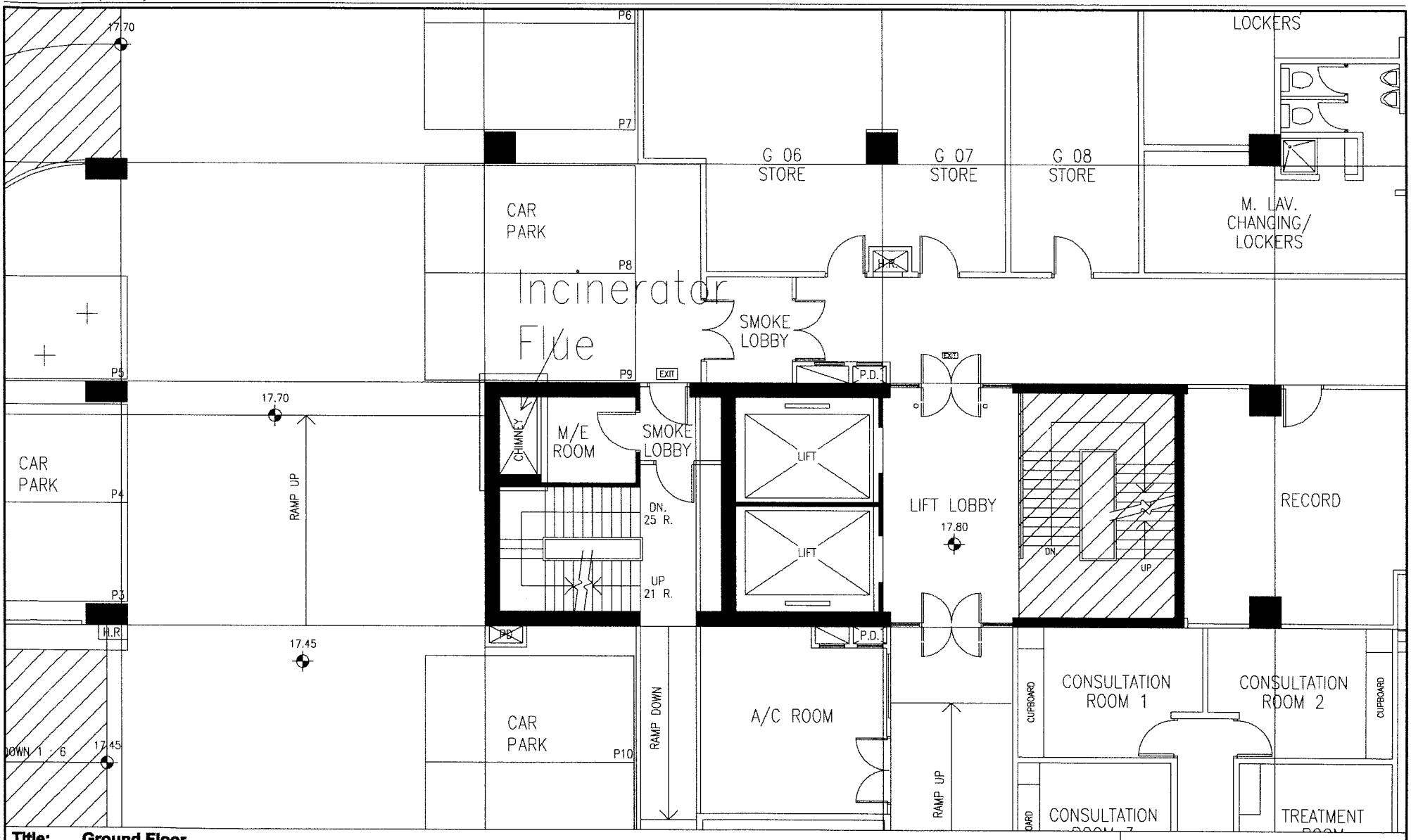
Title: **Lower Ground Floor**

CH2M HILL (China) Limited

Project: **Decommissioning and Disposal of a Clinical Waste Incinerator at Tang Shiu Kin Hospital**

Scale: **NTS**

Appendix A2



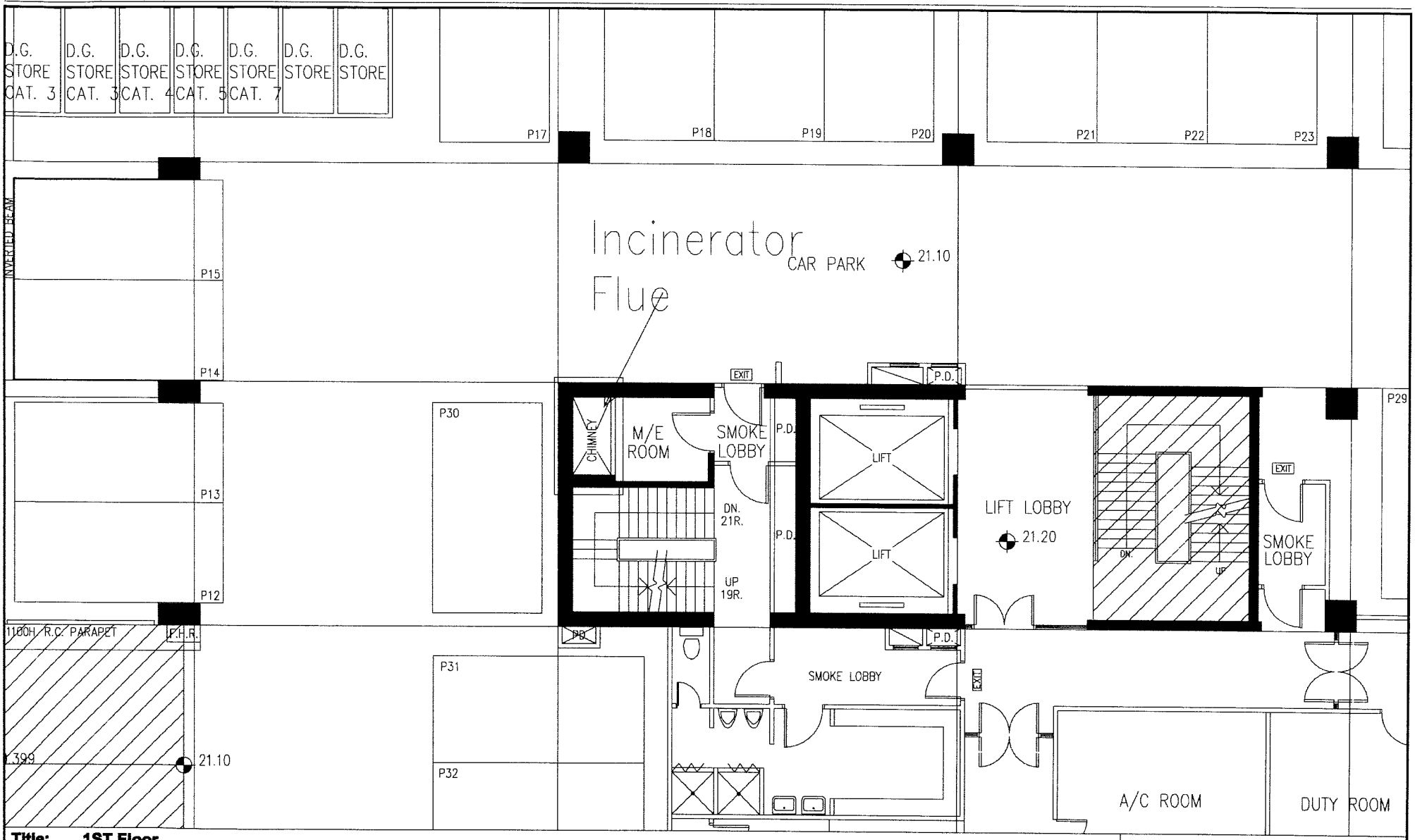
Title: **Ground Floor**

CH2M HILL (China) Limited

Project: **Decommissioning and Disposal of a Clinical Waste Incinerator at Tang Shiu Kin Hospital**

Scale: **NTS**

Appendix A3



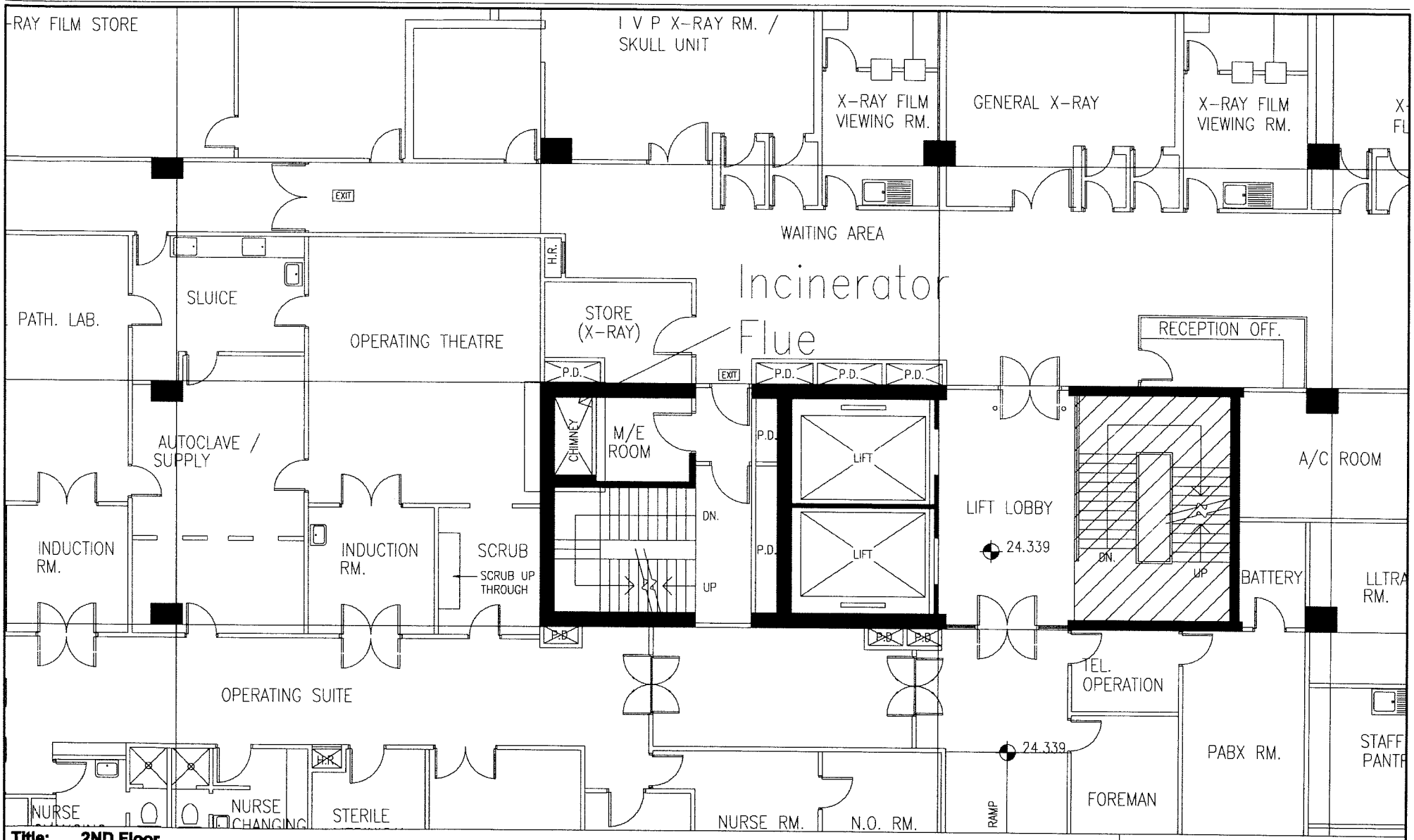
Title: **1ST Floor**

CH2M HILL (China) Limited

Project: **Decommissioning and Disposal of a Clinical Waste Incinerator at Tang Shiu Kin Hospital**

Scale: **NTS**

Appendix A4



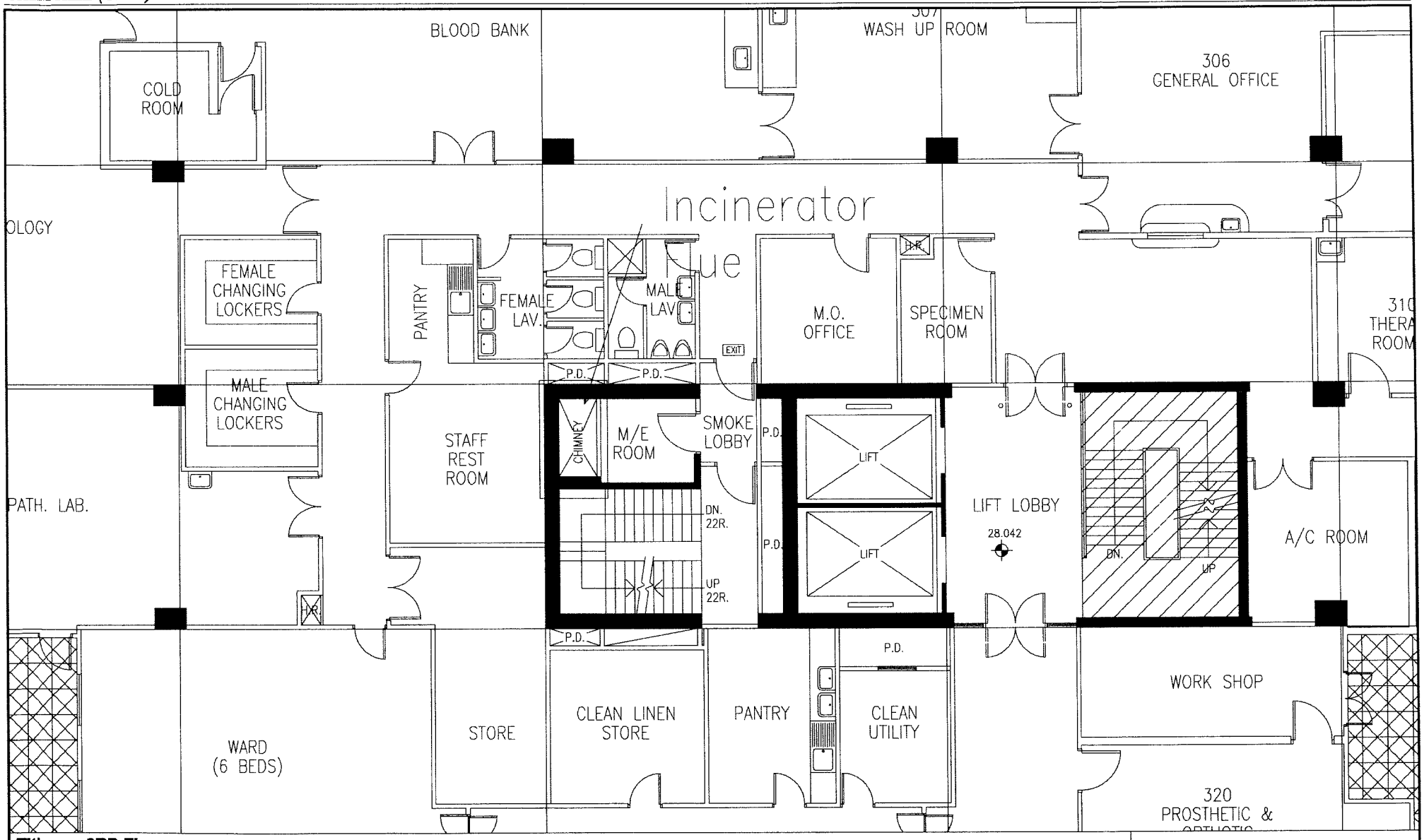
Title: **2ND Floor**

CH2M HILL (China) Limited

Project: **Decommissioning and Disposal of a Clinical Waste Incinerator at Tang Shiu Kin Hospital**

Scale: **NTS**

Appendix A5



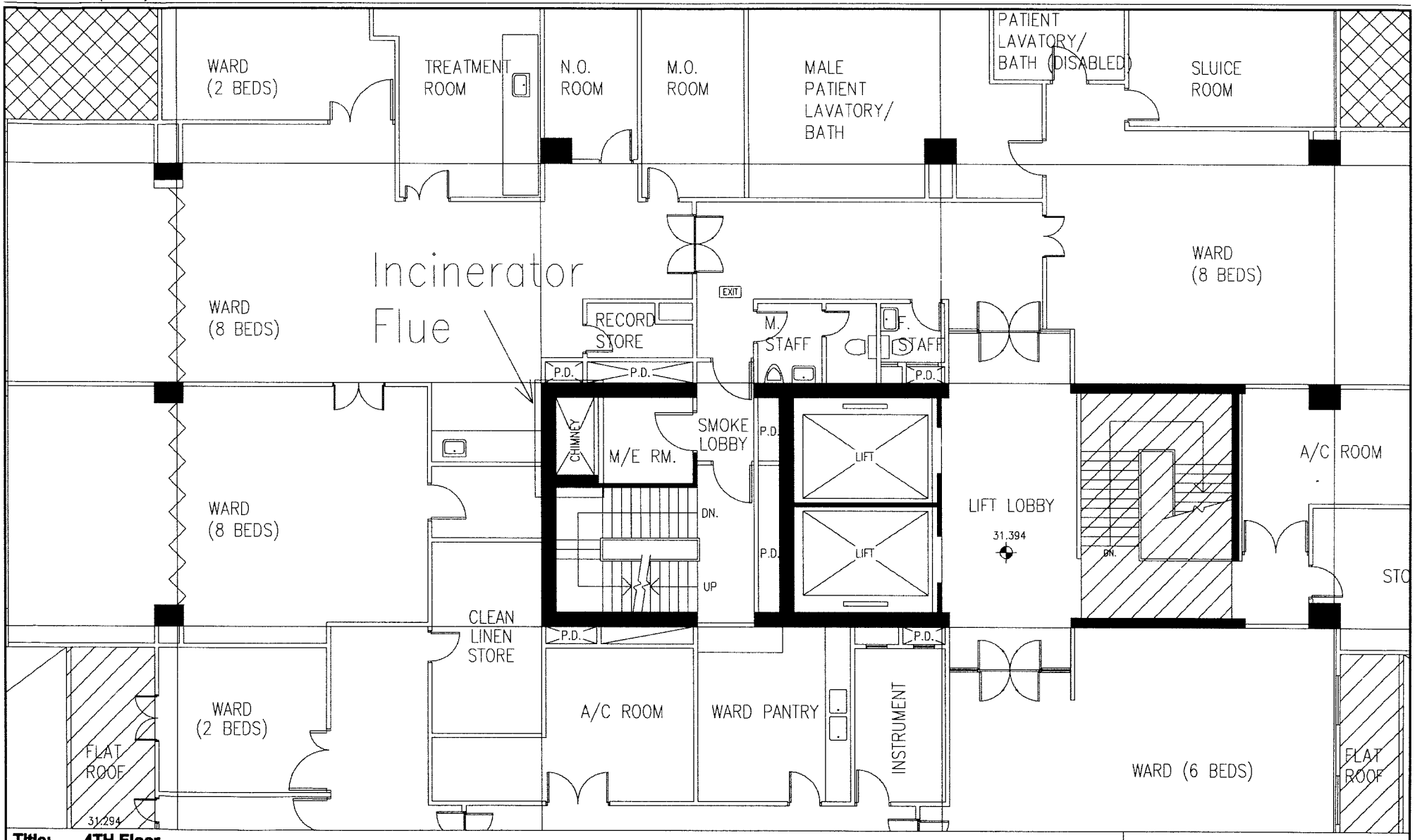
Title: **3RD Floor**

CH2M HILL (China) Limited

Project: **Decommissioning and Disposal of a Clinical Waste Incinerator at Tang Shiu Kin Hospital**

Scale: **NTS**

Appendix A6



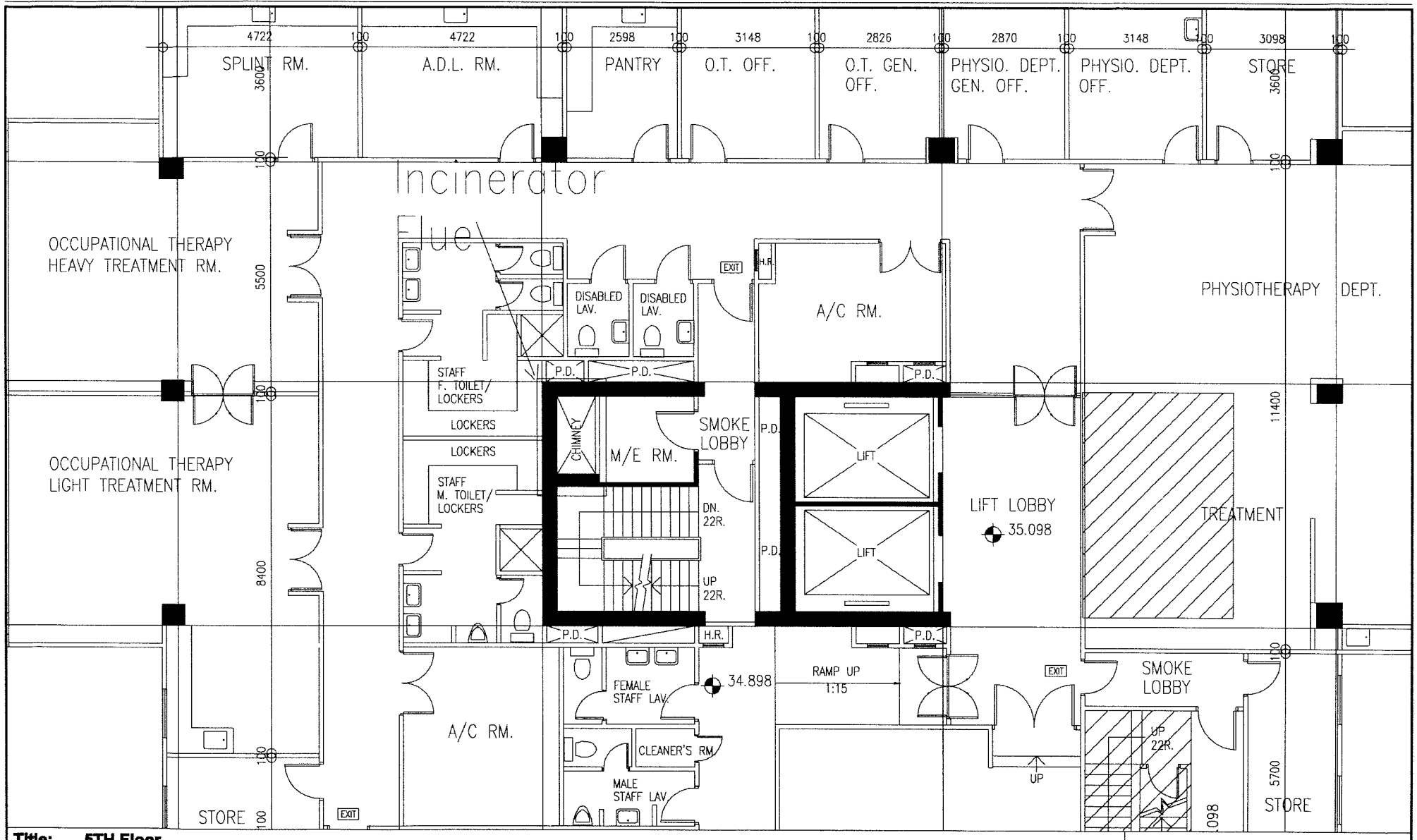
Title: **4TH Floor**

CH2M HILL (China) Limited

Project: **Decommissioning and Disposal of a Clinical Waste Incinerator at Tang Shiu Kin Hospital**

Scale: **NTS**

Appendix A7



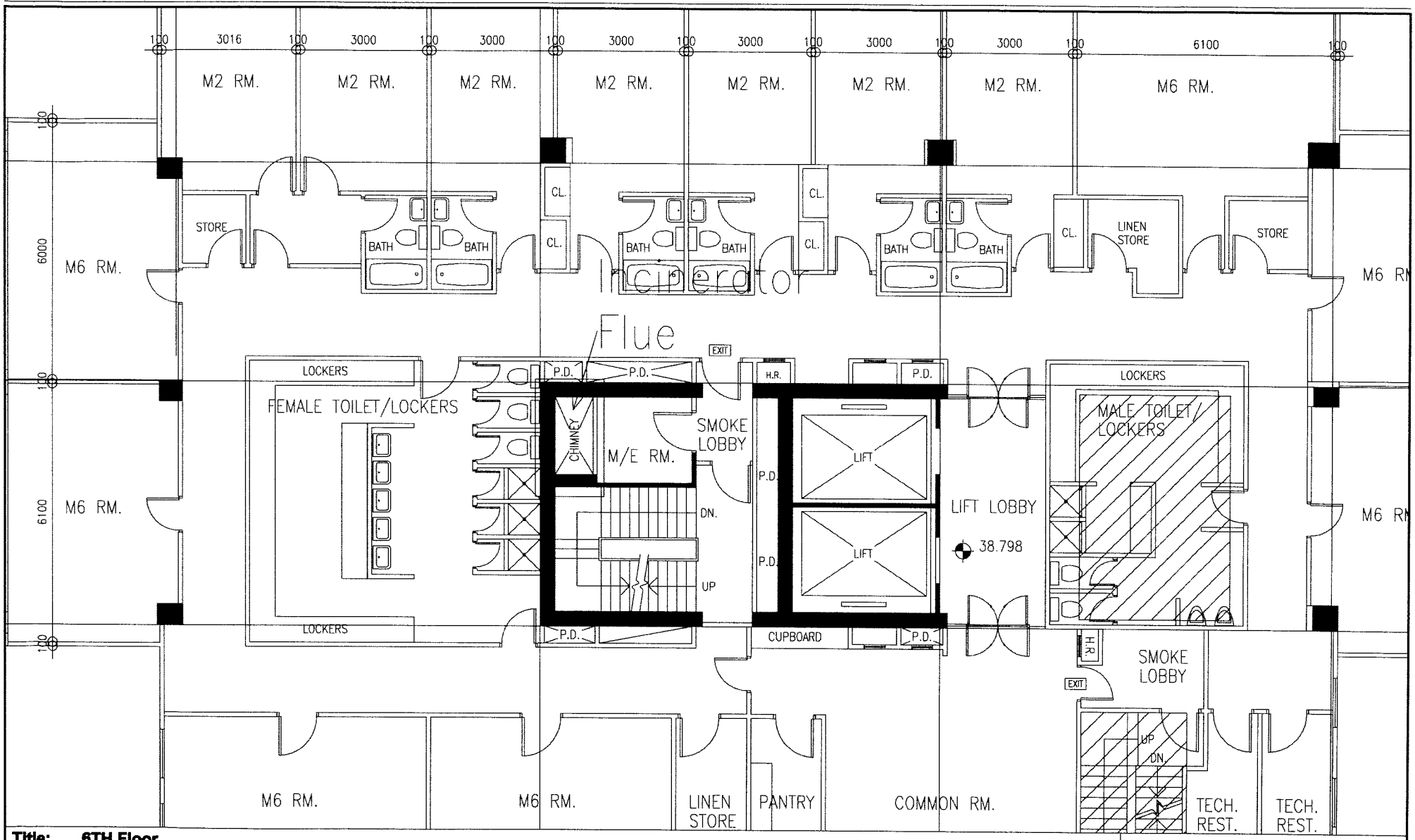
Title: **5TH Floor**

CH2M HILL (China) Limited

Project: **Decommissioning and Disposal of a Clinical Waste Incinerator at Tang Shiu Kin Hospital**

Scale: **NTS**

Appendix A8



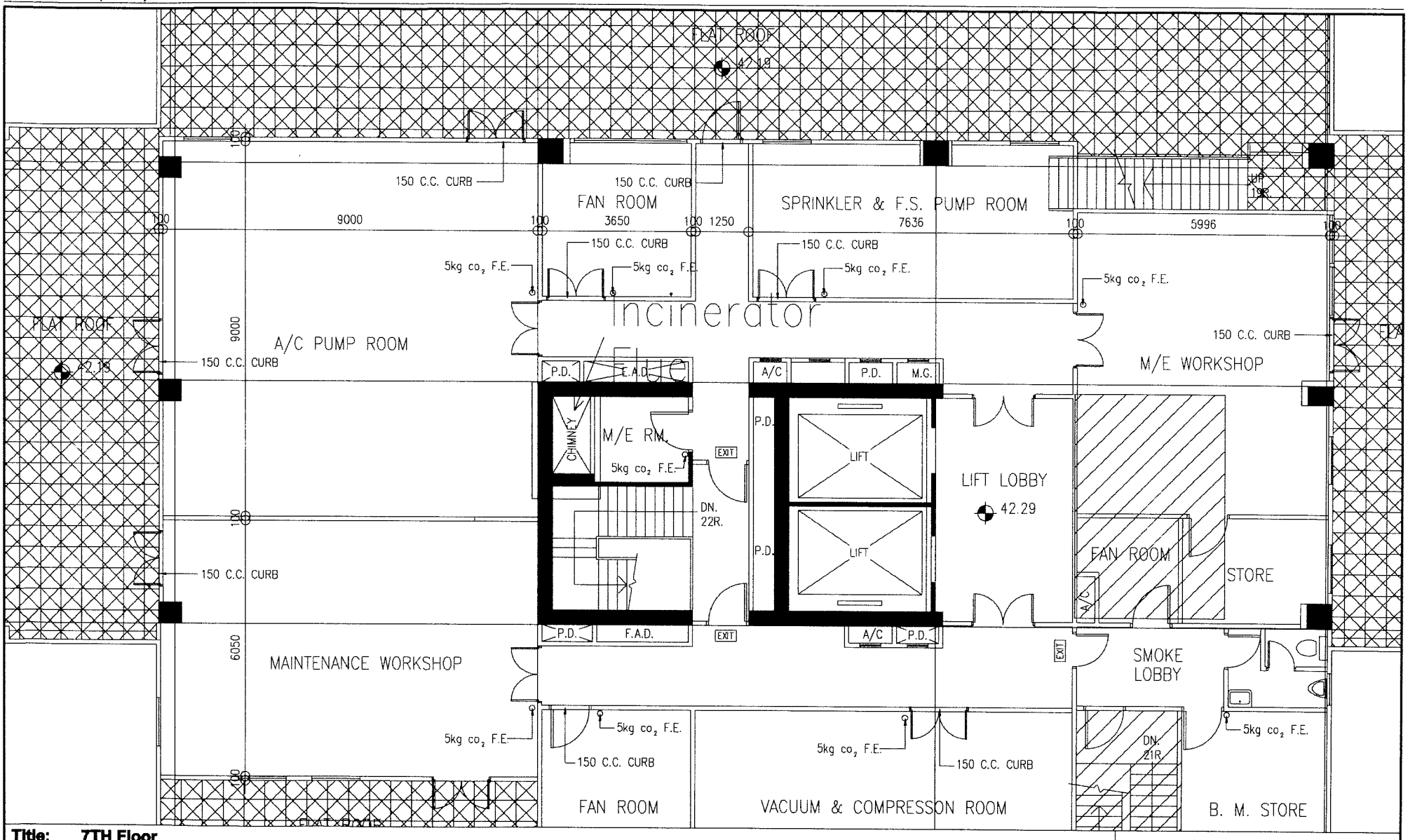
Title: 6TH Floor

Project: Decommissioning and Disposal of a Clinical Waste Incinerator at Tang Shiu Kin Hospital

CH2M HILL (China) Limited

Scale: NTS

Appendix A9



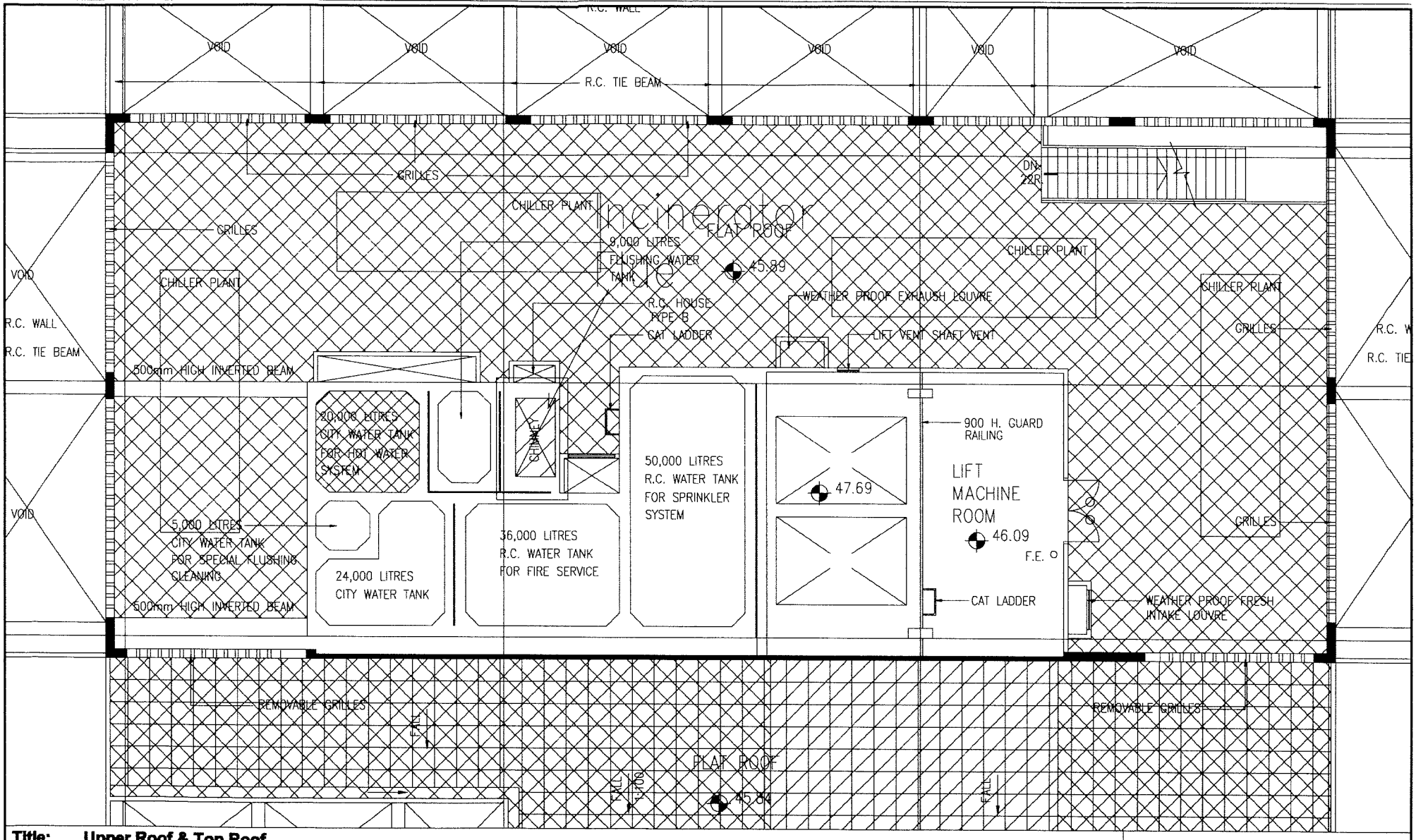
Title: **7TH Floor**

CH2M HILL (China) Limited

Project: **Decommissioning and Disposal of a Clinical Waste Incinerator at Tang Shiu Kin Hospital**

Scale: **NTS**

Appendix A10



Title: **Upper Roof & Top Roof**

CH2M HILL (China) Limited

Project: **Decommissioning and Disposal of a Clinical Waste Incinerator at Tang Shiu Kin Hospital**

Scale: NTS

Appendix A11

Appendix B

Laboratory Report

For ash samples collected from combustion furnace

ALS TECHNICHEM (HK) Pty Ltd

ALS Environmental

CERTIFICATE OF ANALYSIS

CONTACT:	MS PETULA SHAM	**Batch:**	HK16879
CLIENT:	CH2M HILL (CHINA) LIMITED	**Sub Batch:**	0
ADDRESS:	28/F SIU ON CENTRE	**LABORATORY:**	HONG KONG
	188 LOCKHART ROAD	**DATE RECEIVED:**	27/08/2002
	WANCHAI HONG KONG	**DATE OF ISSUE:**	11/09/2002
ORDER No.:		**SAMPLE TYPE:**	INCINERATOR ASH
PROJECT:		**No. of SAMPLES:**	3

COMMENTS

Samples were collected by ALS Technichem (HK) Staff on:27 August.2002.
Samples as received, digested by In-house method based on USEPA method 3051, prior to the determation of metals. Some metals may give biasing low results using this digestion method when compared with so-called "total" digestion methods. Results reported on a dry weight basis. The completion date of analysis is 09 September,2002.

NOTES

This is the Final Report and supersedes any preliminary reports 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,
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Kwai Chung, N.T.,
HONG KONG.

Phone: 852-2610 1044
Fax: 852-2610 2021
Email: alshk@alshk.com.hk

Richard L C Fung
General Manager - Hong Kong

Other ALS Environmental Laboratories

AUSTRALASIA		*AMERICAS*
Brisbane	*Hong Kong*	*Vancouver*
Melbourne	*Singapore*	*Santiago*
Sydney	*Kuala Lumpur*	*Antofagasta*
Newcastle	*Bogor*	*Lima*

Abbreviations: % SPK REC denotes percentage spike recovery
CHK denotes duplicate check sample
LOR denotes limit of reporting
LCS % REC denotes Laboratory Control Sample percentage recovery

Batch: HK16879
Sub Batch: 0
Date of Issue: 11/09/2002
Client: CH2M HILL (CHINA) LIMITED
Client Reference:

CERTIFICATE OF ANALYSIS

				SAMPLE IDENTIFICATION		
		Laboratory I.D.		1	2	3
		Date Sampled				
METHOD	ANALYSIS DESCRIPTION	UNIT	LOR	SAMPLE 1	SAMPLE 2	SAMPLE 3
EA-055	Moisture Content (dried @ 103°C)	%	0.1	1.8	1.2	0.9
EG-020	Arsenic	mg/kg	0.5	3.4	3.1	2.1
EG-020	Barium	mg/kg	0.05	273	283	217
EG-020	Cadmium	mg/kg	0.01	0.31	0.14	0.50
EG-020	Cobalt	mg/kg	0.05	5.37	4.27	2.37
EG-020	Chromium	mg/kg	0.05	35.9	32.2	24.9
EG-020	Copper	mg/kg	0.05	213	1630	75.0
EG-020	Molybdenum	mg/kg	0.05	17.7	4.97	18.7
EG-020	Nickel	mg/kg	0.05	39.7	36.6	28.8
EG-020	Lead	mg/kg	0.05	19.3	16.6	14.1
EG-020	Tin	mg/kg	0.05	3.13	2.57	3.63
EG-020	Zinc	mg/kg	0.5	211	409	134
EG-035	Mercury	mg/kg	0.02	0.70	0.46	0.50

Batch: HK16879
Sub Batch: 0
Date of Issue: 11/09/2002
Client: CH2M HILL (CHINA) LIMITED
Client Reference:

QUALITY CONTROL REPORT

METHOD	ANALYSIS DESCRIPTION	UNIT	LOR	SAMPLE IDENTIFICATION									
	Laboratory I.D.			200	201								
	Date Sampled												
				BLANK	LCS % REC								
				CHECKS AND SPIKES									
EA-055	Moisture Content (dried @ 103°C)	%	0.1	---	---								
EG-020	Arsenic	mg/kg	0.5	<0.5	99%								
EG-020	Barium	mg/kg	0.05	<0.05	97%								
EG-020	Cadmium	mg/kg	0.01	<0.01	96%								
EG-020	Cobalt	mg/kg	0.05	<0.05	99%								
EG-020	Chromium	mg/kg	0.05	<0.05	96%								
EG-020	Copper	mg/kg	0.05	<0.05	100%								
EG-020	Molybdenum	mg/kg	0.05	<0.05	102%								
EG-020	Nickel	mg/kg	0.05	<0.05	98%								
EG-020	Lead	mg/kg	0.05	<0.05	100%								
EG-020	Tin	mg/kg	0.05	<0.05	100%								
EG-020	Zinc	mg/kg	0.5	<0.5	90%								
EG-035	Mercury	mg/kg	0.02	<0.02	83%								

ALS TECHNICHEM (HK) Pty Ltd

ALS Environmental

CERTIFICATE OF ANALYSIS

CONTACT:	MS PETULA SHAM	**Batch:**	HK16879
CLIENT:	CH2M HILL (CHINA) LIMITED	**Sub Batch:**	1
ADDRESS:	28/F SIU ON CENTRE	**LABORATORY:**	HONG KONG
	188 LOCKHART ROAD	**DATE RECEIVED:**	27/08/2002
	WANCHAI HONG KONG	**DATE OF ISSUE:**	11/09/2002
ORDER No.:		**SAMPLE TYPE:**	INCINERATOR ASH
PROJECT:		**No. of SAMPLES:**	3

COMMENTS

Samples analysed on an as received basis. Results reported on a dry weight basis. Sample preparation techniques: Semivolatile - Separatory Funnel and Tumbler, Volatile - Purge & Trap. Sample analysis techniques: Semivolatile components - GC/MS; TPH - GC/FID; Volatile components - GC/MS; Pesticides - GC/ECD, GC/MS. Refer to the attached appendix for quality control data.

NOTES

This is the Final Report and supersedes any preliminary reports 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
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Chung Shun Knitting Centre,
1-3 Wing Yip Street
Kwai Chung, N.T.,
HONG KONG.

Phone: 852-2610 1044
Fax: 852-2610 2021
Email: alshk@alshk.com.hk

Desmond K F Poon
Assistant Supervisor - Organics

Abbreviations: *% SPK REC denotes percentage spike recovery*
CHK denotes duplicate check sample
LOR denotes limit of reporting
LCS % REC denotes Laboratory Control Sample percentage recovery

Batch: HK16879
Sub Batch: 1
Date of Issue: 11/09/2002
Client: CH2M HILL (CHINA) LIMITED
Client Reference:

CERTIFICATE OF ANALYSIS

				SAMPLE IDENTIFICATION								
	Laboratory I.D.			1	2	3						
	Date Sampled											
METHOD	ANALYSIS DESCRIPTION	UNIT	LOR	SAMPLE 1	SAMPLE 2	SAMPLE 3						
EA-055	Moisture Content (dried @ 105°C)	%	0.1	1.6	1.2	0.9						
EP-066-SS	TOTAL POLYCHLORINATED BIPHENYLS	mg/kg	0.1	<0.1	<0.1	<0.1						
EP-065S-SS	**POLYCHLORINATED BIPHENYLS SURROGATES**											
EP-065S-SS	Tetrachloro-m-xylene	%	20	92	100	61						
EP-065S-SS	Dibutylchlorendate	%	20	99	96	96						

ALS TECHNICHEM (HK) Pty Ltd

ALS Environmental

CERTIFICATE OF ANALYSIS

CONTACT:	MS PETULA SHAM	**Batch:**	HK16879
CLIENT:	CH2M HILL (CHINA) LIMITED	**Sub Batch:**	2
ADDRESS:	28/F SIU ON CENTRE	**LABORATORY:**	HONG KONG
	188 LOCKHART ROAD	**DATE RECEIVED:**	27/08/2002
	WANCHAI HONG KONG	**DATE OF ISSUE:**	11/09/2002
ORDER No.:		**SAMPLE TYPE:**	INCINERATOR ASH
PROJECT:		**No. of SAMPLES:**	3

COMMENTS

Samples analysed on an as received basis. Results reported on a dry weight basis. Sample preparation techniques: Semivolatile - Separatory Funnel and Tumbler. Volatile - Purge & Trap. Sample analysis techniques: Semivolatile components - GC/MS; TPH - GC/FID; Volatile components - GC/MS; Pesticides - GC/ECD, GC/MS. Refer to the attached appendix for quality control data.

NOTES

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

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Kwai Chung, N.T.,
HONG KONG.

Phone: 852-2610 1044
Fax: 852-2610 2021
Email: alshk@alshk.com.hk

Desmond K F Poon
Assistant Supervisor - Organics

Abbreviations: % SPK REC denotes percentage spike recovery; CHK denotes duplicate check sample; LOR denotes limit of reporting; LCS % REC denotes Laboratory Control Sample percentage recovery

Batch: HK16879
Sub Batch: 2
Date of Issue: 11/09/2002
Client: CH2M HILL (CHINA) LIMITED
Client Reference:

CERTIFICATE OF ANALYSIS

				SAMPLE IDENTIFICATION		
		Laboratory I.D.		1	2	3
		Date Sampled				
METHOD	ANALYSIS DESCRIPTION	UNIT	LOR	SAMPLE 1	SAMPLE 2	SAMPLE 3
EA-055	Moisture Content (dried @ 103°C)	%	0.1	1.8	1.2	0.9
EP-075B-SS	**POLYNUCLEAR AROMATICS**					
EP-075B-SS	Naphthalene	mg/kg	0.5	10.3	39.7	21.0
EP-075B-SS	Acenaphthylene	mg/kg	0.5	<0.5	<0.5	<0.5
EP-075B-SS	Acenaphthene	mg/kg	0.5	<0.5	<0.5	<0.5
EP-075B-SS	Fluorene	mg/kg	0.5	<0.5	<0.5	<0.5
EP-075B-SS	Phenanthrene	mg/kg	0.5	<0.5	<0.5	<0.5
EP-075B-SS	Anthracene	mg/kg	0.5	<0.5	<0.5	<0.5
EP-075B-SS	Fluoranthene	mg/kg	0.5	<0.5	<0.5	<0.5
EP-075B-SS	Pyrene	mg/kg	0.5	<0.5	<0.5	<0.5
EP-075B-SS	Benz(a)anthracene	mg/kg	0.5	<0.5	<0.5	<0.5
EP-075B-SS	Chrysene	mg/kg	0.5	<0.5	<0.5	<0.5
EP-075B-SS	Benzo(b) & (k)fluoranthene	mg/kg	1	<1	<1	<1
EP-075B-SS	Benzo(a)pyrene	mg/kg	0.5	<0.5	<0.5	<0.5
EP-075B-SS	Indeno(1,2,3-cd)pyrene	mg/kg	0.5	<0.5	<0.5	<0.5
EP-075B-SS	Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	<0.5	<0.5
EP-075B-SS	Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	<0.5	<0.5
EP-075T-SS	**BASE/NEUTRAL EXTRACTABLE SURROGATES**					
EP-075T-SS	Nitrobenzene-d5	%	20	85	90	67
EP-075T-SS	2-Fluorobiphenyl	%	20	80	79	52
EP-075T-SS	p-Terphenyl-d14	%	20	29	26	35

ALS TECHNICHEM (HK) Pty Ltd

ALS Environmental

CERTIFICATE OF ANALYSIS

CONTACT:	MS PETULA SHAM	**Batch:**	HK16879
CLIENT:	CH2M HILL (CHINA) LIMITED	**Sub Batch:**	3
ADDRESS:	28/F SIU ON CENTRE	**LABORATORY:**	HONG KONG
	188 LOCKHART ROAD	**DATE RECEIVED:**	27/08/2002
	WANCHAI HONG KONG	**DATE OF ISSUE:**	04/10/2002
ORDER No.:		**SAMPLE TYPE:**	INCINERATOR ASH
PROJECT:		**No. of SAMPLES:**	3

COMMENTS

Three ash samples, #1, 2, and 3 were received from client. Dioxin analysis were subcontracted and tested by Maxxam Analytics Inc. Maxxam Analytics Inc detailed report is attached.

TESTING METHODS

The analysis is based on USEPA 8290

NOTES

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

ISSUING LABORATORY: HONG KONG

Address

ALS Technichem (HK) Pty Ltd

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

Phone: 852-2610 1044
Fax: 852-2610 2021
Email: alshk@alshk.com.hk

Richard L C Fung
General Manager- Hong Kong

Abbreviations: *% SPK REC denotes percentage spike recovery*
CHK denotes duplicate check sample
LOR denotes limit of reporting
LCS % REC denotes Laboratory Control Sample percentage recovery

ALS TECHNICHEM (HK) PTY LTD
11/F, Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, N.T., H.K.
Phone: 852-2610 1044 Fax: 852 2610 2021

CERTIFICATE OF ANALYSIS

Maxxam Analytics Inc report is attached
for the analysis of Dioxins in Incinerator Ash.
This attach report contains a total of 7 pages.

Maxxam Analytics Inc

ALS TECHNICHEM (HK)
11/F CHUNG SHUN KNITTING CTR
1-3 WING YIP ST
KWAI CHUNG NT, –
HONG KONG

Attention: Desmond Poon

Report Date: 2002/10/03

Your P.O. #: P14265
Your Project #: HK16879

ANALYTICAL REPORT

MAXXAM JOB #: A227914
Received: 2002/08/29, 13:58

Sample Matrix: SOLID
Samples Received: 3

Analyses	Number of Tests	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Dibenzo-Dioxins/Furans	3	2002/09/16	2002/09/25	SOP# TO 1013	SW846 - 8290

MAXXAM ANALYTICS INC.

RAYMOND MCNEIL, B.Sc., C.Chem.
Senior Analyst - HRMS

Total pages: 1

Maxxam Analytics Inc

DIBENZO-DIOXINS/FURANS IN SOLID

MAXXAM JOB #: A227914
MAXXAM SAMPLE #: 852068
Sampling Date: 2002/08/27

PROJECT NAME:
PROJECT #: HK16879
Report Date: 2002/10/03

CONC. UNITS = ppt = pg/g
RL Units = ppt = pg/g

	HK16879-#1		TOXIC EQUIVALENCY			RECOVERIES OF C13 SURROGATE	
Compounds	CONC.	RL	I-TEF	TEQ(RL)	TEQ(0.5RL)	pg SPIKED	% RECOVERED
2,3,7,8-Tetra CDD *	0.0000	1.0000	1.00000	0.00000	0.00000	1000	37
Total Tetra CDD	8.0000	1.0000					
1,2,3,7,8-Penta CDD	0.0000	2.0000	0.50000	0.00000	0.00000	1000	38
Total Penta CDD	0.0000	2.0000					
1,2,3,4,7,8-Hexa CDD	0.0000	4.0000	0.10000	0.00000	0.00000		
1,2,3,6,7,8-Hexa CDD	10.7000	4.0000	0.10000	1.07000	1.07000	1000	31
1,2,3,7,8,9-Hexa CDD	0.0000	4.0000	0.10000	0.00000	0.00000		
Total Hexa CDD	112.0000	4.0000					
1,2,3,4,6,7,8-Hepta CDD	115.0000	3.0000	0.01000	1.15000	1.15000	1000	38
Total Hepta CDD	259.0000	3.0000					
Octa CDD	926.0000	4.0000	0.00100	0.92600	0.92600	2000	35
2,3,7,8-Tetra CDF **	8.0000	1.0000	0.10000	0.80000	0.80000	1000	30
Total Tetra CDF	64.6000	1.0000					
1,2,3,7,8-Penta CDF	5.0000	2.0000	0.05000	0.25000	0.25000	1000	57
2,3,4,7,8-Penta CDF	10.0000	2.0000	0.50000	5.00000	5.00000		
Total Penta CDF	90.7000	2.0000					
1,2,3,4,7,8-Hexa CDF	35.3000	4.0000	0.10000	3.53000	3.53000	1000	73
1,2,3,6,7,8-Hexa CDF	14.4000	4.0000	0.10000	1.44000	1.44000		
1,2,3,7,8,9-Hexa CDF	14.1000	4.0000	0.10000	1.41000	1.41000		
2,3,4,6,7,8-Hexa CDF	0.0000	4.0000	0.10000	0.00000	0.00000		
Total Hexa CDF	152.0000	4.0000					
1,2,3,4,6,7,8-Hepta CDF	81.0000	3.0000	0.01000	0.81000	0.81000	1000	54
1,2,3,4,7,8,9-Hepta CDF	0.0000	3.0000	0.01000	0.00000	0.00000		
Total Hepta CDF	104.0000	3.0000					
Octa CDF	67.1000	4.0000	0.00100	0.06710	0.06710		
TOTAL TOXIC EQUIVALENCY				16.45310	16.45310		

* CDD = CHLORO DIBENZO-P-DIOXIN
** CDF = CHLORO DIBENZOFURAN
RL = REPORTING LIMIT
0.0000 = U = NOT DETECTED
TR = TRACE AMOUNT DETECTED
2,3,7,8-TCDF VALUE IS FROM CONFIRMATION COLUMN.
SOME SURROGATE RECOVERIES ARE OUTSIDE CONTROL LIMITS. THE CORRESPONDING DATA IS THEREFORE OUT OF CONTROL. SOME MDL'S ARE RAISED DUE TO MATRIX EFFECTS.

Oct 10 03
BRANKO VRZIC

APPLIED SCIENCE TECHNOLOGIST OACETT ONTARIO BRANKO VRZIC No. 893009

50 Burnhurst Drive, Unit 12, Waterloo, Ontario, Canada N2V 2C5 Tel (519) 747-2575 Toll free (866) 747-8749 Fax: (519) 747-3806 Website: www.maxxam.ca

Maxxam Analytics Inc.

DIBENZO-DIOXINS/FURANS IN SOLID

MAXXAM JOB #: A227914
MAXXAM SAMPLE #: 852090
Sampling Date: 2002/08/27

PROJECT NAME:
PROJECT #: HK16879
Report Date: 2002/10/03

CONC. UNITS = ppt = pg/g
RL Units = ppt = pg/g

	HK16879-#2		TOXIC EQUIVALENCY			RECOVERIES OF C13 SURROGATE	
Compounds	CONC	RL	I-TEF	TEQ(RL)	TEQ(0.5RL)	pg SPIKED	% RECOVERED
2,3,7,8-Tetra CDD *	0.0000	3.0000	1.00000	0.00000	0.00000	1000	74
Total Tetra CDD	62.6000	3.0000					
1,2,3,7,8-Penta CDD	0.0000	6.0000	0.50000	0.00000	0.00000	1000	73
Total Penta CDD	17.8000	6.0000					
1,2,3,4,7,8-Hexa CDD	0.0000	6.0000	0.10000	0.00000	0.00000		
1,2,3,6,7,8-Hexa CDD	0.0000	6.0000	0.10000	0.00000	0.00000	1000	71
1,2,3,7,8,9-Hexa CDD	0.0000	6.0000	0.10000	0.00000	0.00000		
Total Hexa CDD	16.2000	6.0000					
1,2,3,4,6,7,8-Hepta CDD	0.0000	9.0000	0.01000	0.00000	0.00000	1000	50
Total Hepta CDD	17.7000	9.0000					
Octa CDD	24.0000	12.0000	0.00100	0.02400	0.02400	2000	36
2,3,7,8-Tetra CDF **	16.9000	3.0000	0.10000	1.69000	1.69000	1000	49
Total Tetra CDF	437.0000	3.0000					
1,2,3,7,8-Penta CDF	10.8000	6.0000	0.05000	0.54000	0.54000	1000	55
2,3,4,7,8-Penta CDF	12.2000	6.0000	0.50000	6.10000	6.10000		
Total Penta CDF	140.0000	6.0000					
1,2,3,4,7,8-Hexa CDF	15.1000	6.0000	0.10000	1.51000	1.51000	1000	62
1,2,3,6,7,8-Hexa CDF	7.0000	6.0000	0.10000	0.70000	0.70000		
1,2,3,7,8,9-Hexa CDF	0.0000	6.0000	0.10000	0.00000	0.00000		
2,3,4,6,7,8-Hexa CDF	0.0000	6.0000	0.10000	0.00000	0.00000		
Total Hexa CDF	53.3000	6.0000					
1,2,3,4,6,7,8-Hepta CDF	15.1000	9.0000	0.01000	0.15100	0.15100	1000	42
1,2,3,4,7,8,9-Hepta CDF	0.0000	9.0000	0.01000	0.00000	0.00000		
Total Hepta CDF	15.1000	9.0000					
Octa CDF	0.0000	12.0000	0.00100	0.00000	0.00000		
TOTAL TOXIC EQUIVALENCY				10.71500	10.71500		

* CDD = CHLORO DIBENZO-P-DIOXIN
** CDF = CHLORO DIBENZOFURAN
RL = REPORTING LIMIT
0.0000 = U = NOT DETECTED
TR = TRACE AMOUNT DETECTED
2,3,7,8-TCDF VALUE IS FROM CONFIRMATION COLUMN.
SOME SURROGATE RECOVERIES ARE OUTSIDE CONTROL LIMITS. THE CORRESPONDING DATA IS THEREFORE OUT OF CONTROL. SOME MDL'S ARE RAISED DUE TO MATRIX EFFECTS.

Oct 2003

BRANKO VRZIC

APPLIED SCIENCE TECHNOLOGIST
ONTARIO
BRANKO VRZIC

Maxxam Analytics Inc.

DIBENZO-DIOXINS/FURANS IN SOLID

MAXXAM JOB #: A227914
MAXXAM SAMPLE #: 852091
Sampling Date: 2002/05/27

PROJECT NAME:
PROJECT #: HK16879
Report Date: 2002/10/03

CONC. UNITS = ppt = pg/g
RL Units = ppt = pg/g

	HK16879-#3		TOXIC EQUIVALENCY			RECOVERIES OF C13 SURROGATE	
Compounds	CONC	RL	I-TEF	TEQ(RL)	TEQ(0.5RL)	pg SPIKED	% RECOVERED
2,3,7,8 Tetra CDD *	0.0000	3.0000	1.00000	0.00000	0.00000	1000	50
Total Tetra CDD	36.1000	3.0000					
1,2,3,7,8-Penta CDD	0.0000	6.0000	0.50000	0.00000	0.00000	1000	63
Total Penta CDD	28.4000	6.0000					
1,2,3,4,7,8-Hexa CDD	0.0000	6.0000	0.10000	0.00000	0.00000		
1,2,3,6,7,8-Hexa CDD	0.0000	6.0000	0.10000	0.00000	0.00000	1000	65
1,2,3,7,8,9-Hexa CDD	0.0000	6.0000	0.10000	0.00000	0.00000		
Total Hexa CDD	18.2000	6.0000					
1,2,3,4,6,7,8-Hepta CDD	0.0000	9.0000	0.01000	0.00000	0.00000	1000	47
Total Hepta CDD	0.0000	9.0000					
Octa CDD	14.0000	12.0000	0.00100	0.01400	0.01400	2000	38
2,3,7,8-Tetra CDF **	11.0000	3.0000	0.10000	1.10000	1.10000	1000	35
Total Tetra CDF	208.0000	3.0000					
1,2,3,7,8-Penta CDF	8.0000	6.0000	0.05000	0.40000	0.40000	1000	45
2,3,4,7,8-Penta CDF	9.0000	6.0000	0.50000	4.50000	4.50000		
Total Penta CDF	106.0000	6.0000					
1,2,3,4,7,8-Hexa CDF	11.5000	6.0000	0.10000	1.15000	1.15000	1000	54
1,2,3,6,7,8-Hexa CDF	0.0000	6.0000	0.10000	0.00000	0.00000		
1,2,3,7,8,9-Hexa CDF	0.0000	6.0000	0.10000	0.00000	0.00000		
2,3,4,6,7,8-Hexa CDF	0.0000	6.0000	0.10000	0.00000	0.00000		
Total Hexa CDF	40.8000	6.0000					
1,2,3,4,6,7,8-Hepta CDF	10.3000	9.0000	0.01000	0.10300	0.10300	1000	40
1,2,3,4,7,8,9-Hepta CDF	0.0000	9.0000	0.01000	0.00000	0.00000		
Total Hepta CDF	16.4000	9.0000					
Octa CDF	0.0000	12.0000	0.00100	0.00000	0.00000		
TOTAL TOXIC EQUIVALENCY				7.26700	7.26700		

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Oct 3, 2002
BRANKO VRZIC

APPLIED SCIENCE TECHNOLOGIST
ACETT
ONTARIO
BRANKO VRZIC
No. 897009

Maxxam Analytics Inc

DIBENZO-DIOXINS/FURANS IN SOLID

MAXXAM JOB #: A227914
MAXXAM SAMPLE #: SPIKED BLANK

PROJECT NAME:
PROJECT #: HK16879
Report Date: 2002/10/03

CONC. UNITS = ppt = pg/g
RL Units = ppt = pg/g

Compounds	SPIKED BLANK % RECOVERY	RL	TOXIC EQUIVALENCY I-TEF	TEQ(RL)	TEQ(0.5RL)	RECOVERIES OF C13 SURROGATE pg SPIKED	% RECOVERED
2,3,7,8-Tetra CDD *	111	1.0000	1.00000	111.00000	111.00000	1000	51
1,2,3,7,8-Penta CDD	110	2.0000	0.50000	55.00000	55.00000	1000	55
1,2,3,4,7,8-Hexa CDD	93	2.0000	0.10000	9.30000	9.30000		
1,2,3,6,7,8-Hexa CDD	118	2.0000	0.10000	11.80000	11.80000	1000	74
1,2,3,7,8,9-Hexa CDD	111	2.0000	0.10000	11.10000	11.10000		
1,2,3,4,6,7,8-Hepta CDD	110	3.0000	0.01000	1.10000	1.10000	1000	78
Octa CDD	110	4.0000	0.00100	0.11000	0.11000	2000	74
2,3,7,8-Tetra CDF **	106	1.0000	0.10000	10.60000	10.60000	1000	52
1,2,3,7,8-Penta CDF	103	2.0000	0.05000	5.15000	5.15000	1000	58
2,3,4,7,8-Penta CDF	101	2.0000	0.50000	50.50000	50.50000		
1,2,3,4,7,8-Hexa CDF	107	2.0000	0.10000	10.70000	10.70000	1000	70
1,2,3,6,7,8-Hexa CDF	97	2.0000	0.10000	9.70000	9.70000		
1,2,3,7,8,9-Hexa CDF	113	2.0000	0.10000	11.30000	11.30000		
2,3,4,6,7,8-Hexa CDF	96	2.0000	0.10000	9.60000	9.60000		
1,2,3,4,6,7,8-Hepta CDF	110	3.0000	0.01000	1.10000	1.10000	1000	72
1,2,3,4,7,8,9-Hepta CDF	111	3.0000	0.01000	1.11000	1.11000		
Octa CDF	112	4.0000	0.00100	0.11200	0.11200		
TOTAL TOXIC EQUIVALENCY				309.28200	309.28200		

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2002/10/03

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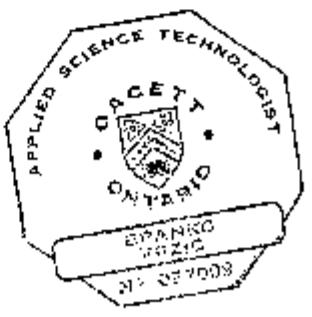

Maxxam

DIBENZO-DIOXINS/FURANS IN SOLID

MAXXAM JOB #: A227314
MAXXAM SAMPLE #: METHOD BLANK

PROJECT NAME:
PROJECT #: HK16879
Report Date: 2002/10/03

CONC. UNITS = ppt = pg/g
RL Units = ppt = pg/g

	METHOD BLANK		TOXIC EQUIVALENCY			RECOVERIES OF C13 SURROGATE	
Compounds	CONC	RL	I-TEF	TEQ(RL)	TEQ(0.5RL)	pg SPIKED	% RECOVERED
2,3,7,8-Tetra CDD *	0.0000	1.0000	1.00000	0.00000	0.00000	1000	40
Total Tetra CDD	0.0000	1.0000					
1,2,3,7,8-Penta CDD	0.0000	2.0000	0.50000	0.00000	0.00000	1000	46
Total Penta CDD	0.0000	2.0000					
1,2,3,4,7,8-Hexa CDD	0.0000	2.0000	0.10000	0.00000	0.00000		
1,2,3,6,7,8-Hexa CDD	0.0000	2.0000	0.10000	0.00000	0.00000	1000	76
1,2,3,7,8,9-Hexa CDD	0.0000	2.0000	0.10000	0.00000	0.00000		
Total Hexa CDD	0.0000	2.0000					
1,2,3,4,6,7,8-Hepta CDD	0.0000	3.0000	0.01000	0.00000	0.00000	1000	75
Total Hepta CDD	0.0000	3.0000					
Octa CDD	0.0000	4.0000	0.00100	0.00000	0.00000	2000	70
2,3,7,8-Tetra CDF **	0.0000	1.0000	0.10000	0.00000	0.00000	1000	40
Total Tetra CDF	0.0000	1.0000					
1,2,3,7,8-Penta CDF	0.0000	2.0000	0.05000	0.00000	0.00000	1000	46
2,3,4,7,8-Penta CDF	0.0000	2.0000	0.50000	0.00000	0.00000		
Total Penta CDF	0.0000	2.0000					
1,2,3,4,7,8-Hexa CDF	0.0000	2.0000	0.10000	0.00000	0.00000	1000	69
1,2,3,6,7,8-Hexa CDF	0.0000	2.0000	0.10000	0.00000	0.00000		
1,2,3,7,8,9-Hexa CDF	0.0000	2.0000	0.10000	0.00000	0.00000		
2,3,4,6,7,8-Hexa CDF	0.0000	2.0000	0.10000	0.00000	0.00000		
Total Hexa CDF	0.0000	2.0000					
1,2,3,4,6,7,8-Hepta CDF	0.0000	3.0000	0.01000	0.00000	0.00000	1000	73
1,2,3,4,7,8,9-Hepta CDF	0.0000	3.0000	0.01000	0.00000	0.00000		
Total Hepta CDF	0.0000	3.0000					
Octa CDF	0.0000	4.0000	0.00100	0.00000	0.00000		
TOTAL TOXIC EQUIVALENCY				0.00000	0.00000		

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2002/10/03
BRANKO VRZIC

APPLIED SCIENCE TECHNOLOGIST
OACETT
ONTARIO

ALS Environmental

ORGANICS QUALITY CONTROL REPORT

BATCH NO.: HK16879 DATE BATCH RECEIVED : 27/08/02

CLIENT : CH2M Hill DATE BATCH COMPLETED : 05/09/02

Method Code	Test	Matrix	QC Lot Number	Date Samples Extracted	Date Samples Analysed
EP-066	PCB	Ash	066S288	29/08/02	31/08/02
EP-075	Semivolatile Scan	Ash	075S350	29/08/02	05/09/02

Desmond K F Poon
Assistant Supervisor - Organics

ALS TECHN CHEM (HK) PTY LTD
11/F., Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, N.T., H.K.
Phone: 852-2610 1044 Fax: 852-2610 2021

BATCH QUALITY CONTROL

ALS EP-066 : POLYCHLORINATED BIPHENYLS

QC LOT No. : 066S288

ANALYST: A. Wong

MATRIX: Ash

COMPOUND	Blank Conc. ug/L	Spike Conc. ug/L	QC Spike Results		Control Limits	
			SCS Conc. ug/L	Rec. %	% Rec.	
					Low	High
Total PCB	<LOR	0.50	0.48	95	63	139

Monochlorobiphenyl	ND	-	0.00
Dichlorobiphenyl	ND	-	0.00
Trichlorobiphenyl	ND	-	0.00
Tetrachlorobiphenyl	ND	-	0.09
Pentachlorobiphenyl	ND	-	0.25
Hexachlorobiphenyl	ND	-	0.13
Heptachlorobiphenyl	ND	-	0.01
Octachlorobiphenyl	ND	-	0.00
Nonachlorobiphenyl	ND	-	0.00
Decachlorobiphenyl	ND	-	0.00

COMMENTS :

1) A set of QC samples which comprise Blank and SCS is done for every 20 samples.

2) QC Acceptance Criteria :

To accept a QC, 80% of target analytes must pass both of the following criteria :

a) Accuracy : Recovery of SCS must fall within the recovery control limits.

b) Blank concentration must be less than LOR.

Control limits are established from the previous 20 QC sets of recovery data.

3) Abbreviations & Explanatory Notes:

QC : Quality Control

Rec. : Recovery

SCS : Single Control Sample - an interference free sample spiked with target analytes.

ND : Not Detected

LOR : Limit of Reporting - lowest concentration of target analytes for reporting.

Conc. : Concentration

* : Recovery falls outside the recommended control limits.

BATCH QUALITY CONTROL

ALS EP-075 : SEMIVOLATILE SCAN

QC LOT No. : 075S350 ANALYST: D. Poon
MATRIX: Soil

COMPOUND	Blank Conc. mg/kg	Spike Level mg/kg	QC SPIKE RESULTS SCS Conc. mg/kg	Rec. %	Control Limits % Recovery Low	High
EP-075A : PHENOLS						
Phenol	<LOR	1.25	0.91	72	58	129
2-Chlorophenol	<LOR	1.25	1.10	88	67	122
2-Methylphenol	<LOR	1.25	0.75	60	44	112
4-Methylphenol	<LOR	1.25	0.86	68	45	118
2-Nitrophenol	<LOR	1.25	1.10	88	46	128
2,4-Dimethylphenol	<LOR	1.25	0.20	16	0	103
2,4-Dichlorophenol	<LOR	1.25	1.08	86	60	114
2,6-Dichlorophenol						
4-Chloro-3-methylphenol	<LOR	1.25	1.15	92	50	121
2,4,6-Trichlorophenol	<LOR	1.25	1.09	87	54	117
2,4,5-Trichlorophenol	<LOR	1.25	1.14	91	59	125
Pentachlorophenol	<LOR	6.25	5.97	95	53	137
EP-075B : POLYAROMATIC HYDROCARBONS						
Naphthalene	<LOR	1.25	1.22	97	71	126
2-Methylnaphthalene	<LOR	1.25	1.34	107	64	128
2-Chloronaphthalene	<LOR	1.25	1.27	102	67	130
Acenaphthalene	<LOR	1.25	1.23	98	69	119
Acenaphthene	<LOR	1.25	1.32	106	78	125
Fluorene	<LOR	1.25	1.34	107	72	128
Phenanthrene	<LOR	1.25	1.41	113	80	125
Anthracene	<LOR	1.25	1.31	105	73	121
Fluoranthrene	<LOR	1.25	1.43	115	74	129
Pyrene	<LOR	1.25	1.40	112	74	131
N-2-Fluorenylacetimide	<LOR	1.25	0.94	75	36	142
Benz(a)anthracene	<LOR	1.25	1.19	95	57	136
Chrysene	<LOR	1.25	1.25	100	57	139
Benzo(b) & (k) fluoranthene	<LOR	2.50	2.39	95	54	148
7,12-Dimethyl benz(a)anthracene	<LOR	1.25	1.21	97	31	204
Benzo(a)pyrene	<LOR	1.25	1.17	93	46	139
3-Methylcholanthrene	<LOR	1.25	1.20	96	41	147
Indeno(1,2,3-cd)pyrene	<LOR	1.25	1.16	92	61	126
Dibenz(a,h)anthracene	<LOR	1.25	0.98	78	65	129
Benzo(g,h,i)perylene	<LOR	1.25	1.22	98	71	131
EP-075C : PHTHALATE ESTERS						
Dimethylphthalate	<LOR	1.25	1.33	106	72	127
Diethylphthalate	<LOR	1.25	1.39	111	78	126
Di-n-butylphthalate	<LOR	1.25	1.68	135	75	148
Benzyl butyl phthalate	<LOR	1.25	1.36	109	68	133
Bis(2-ethylhexyl)phthalate	<LOR	1.25	1.43	114	66	134
Di-n-octylphthalate	<LOR	1.25	1.27	101	60	138
EP-075D : NITROSAMINES						

N-Nitrosomethylethylamine	<LOR	1.25	1.01	80	24	154
N-Nitrosodiethylamine	<LOR	1.25	1.05	84	31	132
N-Nitrosopyrrolidine	<LOR	1.25	1.02	82	3	144
N-Nitrosomorpholine	<LOR	1.25	1.09	87	20	137
N-Nitrosodi-n-propylamine	<LOR	1.25	1.10	88	28	138
N-Nitrosopiperidine	<LOR	1.25	1.08	86	32	127
N-Nitrosodibutylamine	<LOR	1.25	1.13	91	33	128
Diphenylamine & N-Nitrosodiphenylamine	<LOR	2.50	2.19	88	30	152
Diallate	<LOR	1.25	1.36	109	70	132
Methapyrilina	<LOR	1.25	1.12	89	0	169
EP-075E : NITROAROMATICS AND KETONES						
2-Picoline	<LOR	1.25	1.05	84	47	122
Acetophenone	<LOR	1.25	1.24	99	65	134
Nitrobenzene	<LOR	1.25	1.23	98	55	138
Isophorone	<LOR	1.25	1.21	97	63	125
2,6-Dinitrotoluene	<LOR	1.25	1.24	99	56	126
2,4-Dinitrotoluene	<LOR	1.25	1.16	93	48	128
1-Naphthalamine	<LOR	1.25	1.37	109	0	182
4-Nitroquinoline-N-oxide	<LOR	1.25	0.92	74	0	165
5-Nitro-o-toluidine	<LOR	1.25	1.32	105	37	140
Azobenzene	<LOR	1.25	1.30	104	64	128
1,3,5-Trinitrobenzene	<LOR	1.25	1.07	85	29	138
Phenacetin	<LOR	1.25	1.02	81	58	124
4-Aminobiphenyl	<LOR	1.25	1.24	99	6	154
Pentachloronitrobenzene	<LOR	1.25	1.30	104	63	132
Pronamide	<LOR	1.25	1.48	119	73	131
Dimethylaminoazobenzene	<LOR	1.25	1.01	80	52	143
Chlorobenzilate	<LOR	1.25	1.46	117	54	138
EP-075F : HALOETHERS						
Bis(2-chloroethyl)ether	<LOR	1.25	1.10	88	58	128
Bis(2-chloroethoxy)methane	<LOR	1.25	1.24	99	64	129
4-Chlorophenyl phenyl ether	<LOR	1.25	1.36	109	69	130
4-Bromophenyl phenyl ether	<LOR	1.25	1.36	109	68	129
EP-075G : CHLORINATED HYDROCARBONS						
1,3-Dichlorobenzene	<LOR	1.25	1.11	89	63	126
1,4-Dichlorobenzene	<LOR	1.25	1.11	89	65	124
1,2-Dichlorobenzene	<LOR	1.25	1.13	91	65	126
Hexachloroethane	<LOR	1.25	1.11	89	54	127
1,2,4-Trichlorobenzene	<LOR	1.25	1.17	94	65	126
Hexachloropropylene	<LOR	1.25	1.10	88	42	144
Hexachlorobutadiene	<LOR	1.25	1.14	91	61	127
Hexachlorocyclopentadiene	<LOR	6.25	5.14	82	31	132
Pentachlorobenzene	<LOR	1.25	1.31	105	68	136
Hexachlorobenzene	<LOR	1.25	1.36	109	67	127
EP-075H : ANILINES AND BENZIDINES						
Aniline	<LOR	1.25	0.71	57	0	178
4-Chloroaniline	<LOR	1.25	0.79	63	0	154
2-Nitroaniline	<LOR	1.25	1.13	91	57	122
3-Nitroaniline	<LOR	1.25	1.07	85	13	139
Dibenzofuran	<LOR	1.25	1.35	108	62	134
4-Nitroaniline	<LOR	1.25	0.94	75	48	133
Carbazole	<LOR	1.25	1.13	90	35	159
3,3'Dichlorobenzidine	<LOR	1.25	1.40	112	13	158

EP-075I : ORGANOCHLORINE PESTICIDES						
alpha-BHC	<LOR	1.25	1.39	111	72	130
beta- & gamma-BHC	<LOR	2.50	2.86	119	76	136
delta-BHC	<LOR	1.25	1.48	118	81	132
Heptachlor	<LOR	1.25	1.46	116	67	135
Aldrin	<LOR	1.25	1.49	119	77	127
Heptachlorepoxide	<LOR	1.25	1.52	121	67	130
Endosulfan 1	<LOR	1.25	1.53	122	83	127
p,p'-DDE	<LOR	1.25	1.48	118	72	129
Dieldrin	<LOR	1.25	1.46	117	79	134
Endrin	<LOR	1.25	1.45	116	57	132
Endosulfan 2	<LOR	1.25	1.53	122	78	130
p,p'-DDD	<LOR	1.25	1.49	119	74	132
Endosulfan sulfate	<LOR	1.25	1.43	114	66	140
p,p'-DDT	<LOR	1.25	1.38	110	48	136
EP-075J : ORGANOPHOSPHORUS PESTICIDES						
Methanesulfonate methyl	<LOR	1.25	1.14	91	62	138
Methanesulfonate ethyl	<LOR	1.25	1.19	95	63	130
Dichlorvos	<LOR	1.25	1.22	97	59	122
cis-Isofarole	<LOR	0.46	0.46	99	66	131
trans-Isofarole	<LOR	0.79	0.79	101	63	130
Safarole	<LOR	1.25	1.23	98	60	126
Dimethoate	<LOR	1.25	1.24	99	47	137
Diazinon	<LOR	1.25	1.42	114	33	144
Chlorpyrifos methyl	<LOR	1.25	1.47	118	68	132
Malathion	<LOR	1.25	1.45	116	75	135
Fenthion	<LOR	1.25	1.39	111	68	131
Chlorpyrifos	<LOR	1.25	1.48	118	72	138
Pirimphosethyl	<LOR	1.25	1.39	111	76	131
Chlorfenvinphos-E	<LOR	0.15	0.14	92	19	168
Chlorfenvinphos-Z	<LOR	1.10	1.30	118	57	154
Prothiofos	<LOR	1.25	1.29	103	74	134
Ethion	<LOR	1.25	1.44	115	72	140

COMMENTS :

1) A set of QC samples which comprise Blank and SCS is done for every 20 samples.

2) QC Acceptance Criteria :

To accept a QC, 80% of target analytes must pass both of the following criteria :

a) Accuracy : Recovery of SCS must fall within the recovery control limits.

b) Blank concentration must be less than LOR.

Control limits are established from the previous 20 QC sets of recovery data.

3) Abbreviations & Explanatory Notes:

QC : Quality Control

Rec. : Recovery

SCS : Single Control Sample - an interference free sample spiked with target analytes.

ND : Not Detected

LOR : Limit of Reporting - lowest concentration of target analytes for reporting.

Conc. : Concentration

* : Recovery falls outside the recommended control limits.

Maxxam Analytics Inc

DIBENZO-DIOXINS/FURANS IN SOLID

MAXXAM JOB #: A227914
MAXXAM SAMPLE #: METHOD BLANK Duplicate

PROJECT NAME:
PROJECT #: HK16879
Report Date: 2002/10/03

CONC. UNITS = ppt = pg/g
RL Units = ppt = pg/g

Compounds	METHOD BLANK CONC	RL	TOXIC EQUIVALENCY I-TEF	TEQ(RL)	TEQ(0.5RL)	RECOVERIES OF C13 SURROGATE pg SPIKED	% RECOVERED
2,3,7,8-Tetra CDD *	0.0000	1.0000	1.00000	0.00000	0.00000	1000	48
Total Tetra CDD	0.0000	1.0000					
1,2,3,7,8-Penta CDD	0.0000	2.0000	0.50000	0.00000	0.00000	1000	53
Total Penta CDD	0.0000	2.0000					
1,2,3,4,7,8-Hexa CDD	0.0000	2.0000	0.10000	0.00000	0.00000		
1,2,3,6,7,8-Hexa CDD	0.0000	2.0000	0.10000	0.00000	0.00000		
1,2,3,7,8,9-Hexa CDD	0.0000	2.0000	0.10000	0.00000	0.00000	1000	77
Total Hexa CDD	0.0000	2.0000					
1,2,3,4,6,7,8-Hepta CDD	0.0000	3.0000	0.01000	0.00000	0.00000	1000	84
Total Hepta CDD	0.0000	3.0000					
Octa CDD	0.0000	4.0000	0.00100	0.00000	0.00000	2000	80
2,3,7,8-Tetra CDF **	0.0000	1.0000	0.10000	0.00000	0.00000	1000	50
Total Tetra CDF	0.0000	1.0000					
1,2,3,7,8-Penta CDF	0.0000	2.0000	0.05000	0.00000	0.00000	1000	56
2,3,4,7,8-Penta CDF	0.0000	2.0000	0.50000	0.00000	0.00000		
Total Penta CDF	0.0000	2.0000					
1,2,3,4,7,8-Hexa CDF	0.0000	2.0000	0.10000	0.00000	0.00000	1000	76
1,2,3,6,7,8-Hexa CDF	0.0000	2.0000	0.10000	0.00000	0.00000		
1,2,3,7,8,9-Hexa CDF	0.0000	2.0000	0.10000	0.00000	0.00000		
2,3,4,6,7,8-Hexa CDF	0.0000	2.0000	0.10000	0.00000	0.00000		
Total Hexa CDF	0.0000	2.0000					
1,2,3,4,6,7,8-Hepta CDF	0.0000	3.0000	0.01000	0.00000	0.00000	1000	78
1,2,3,4,7,8,9-Hepta CDF	0.0000	3.0000	0.01000	0.00000	0.00000		
Total Hepta CDF	0.0000	3.0000					
Octa CDF	0.0000	4.0000	0.00100	0.00000	0.00000		
TOTAL TOXIC EQUIVALENCY				0.00000	0.00000		

* CDD = CHLORO DIBENZO-P-DIOXIN
** CDF = CHLORO DIBENZOFURAN
RL = REPORTING LIMIT
0.0000 = U = NOT DETECTED
TR = TRACE AMOUNT DETECTED
2,3,7,8-TCDF VALUE IS FROM CONFIRMATION COLUMN.
SOME SURROGATE RECOVERIES ARE OUTSIDE CONTROL LIMITS. THE CORRESPONDING DATA IS THEREFORE OUT OF CONTROL. SOME MDL'S ARE RAISED DUE TO MATRIX EFFECTS.

Branko Vrzic 2003

BRANKO VRZIC

APPLIED SCIENCE TECHNOLOGIST
OACETT
ONTARIO
BRANKO VRZIC
No. 19 1009

ALS Environmental

ORGANICS QUALITY CONTROL REPORT

BATCH NO.: HK16879 DATE BATCH RECEIVED : 27/08/02

CLIENT : CH2M Hill DATE BATCH COMPLETED : 05/09/02

Method Code	Test	Matrix	QC Lot Number	Date Samples Extracted	Date Samples Analysed
EP-066	PCB	Ash	066S288	29/08/02	31/08/02
EP-075	Semivolatile Scan	Ash	075S350	29/08/02	05/09/02

Desmond K F Poon
Assistant Supervisor - Organics

ALS TECHNICHEM (HK) PTY LTD
11/F., Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, N.T., H.K.
Phone: 852-2610 1044 Fax: 852-2610 2021

BATCH QUALITY CONTROL

ALS EP-066 : POLYCHLORINATED BIPHENYLS

QC LOT No. : C66S288

ANALYST: A. Wong

MATRIX: Ash

COMPOUND	Blank Conc. ug/L	Spike Conc. ug/L	QC Spike Results		Control Limits	
			SCS Conc. ug/L	Rec. %	% Rec	
					Low	High
Total PCB	<LOR	0.50	0.48	95	53	139

Monochlorobiphenyl	ND	-	0.00
Dichlorobiphenyl	ND	-	0.00
Trichlorobiphenyl	ND	-	0.00
Tetrachlorobiphenyl	ND	-	0.09
Pentachlorobiphenyl	ND	-	0.25
Hexachlorobiphenyl	ND	-	0.13
Heptachlorobiphenyl	ND	-	0.01
Octachlorobiphenyl	ND	-	0.00
Nonachlorobiphenyl	ND	-	0.00
Decachlorobiphenyl	ND	-	0.00

COMMENTS :

1) A set of QC samples which comprise Blank and SCS is done for every 20 samples.

2) QC Acceptance Criteria :

To accept a QC, 80% of target analytes must pass both of the following criteria :

a) Accuracy : Recovery of SCS must fall within the recovery control limits.

b) Blank concentration must be less than LOR.

Control limits are established from the previous 20 QC sets of recovery data.

3) Abbreviations & Explanatory Notes:

QC : Quality Control

Rec. : Recovery

SCS : Single Control Sample - an interference free sample spiked with target analytes.

ND : Not Detected

LOR : Limit of Reporting - lowest concentration of target analytes for reporting.

Conc. : Concentration

* : Recovery falls outside the recommended control limits.

BATCH QUALITY CONTROL

ALS EP-075 : SEMIVOLATILE SCAN

QC LOT No. : 075S350

ANALYST: D. Poon

MATRIX: Soil

COMPOUND	Blank Conc. mg/kg	Spike Level mg/kg	QC SPIKE RESULTS		Control Limits	
			SCS Conc. mg/kg	Rec. %	% Recovery Low	% Recovery High
EP-075A : PHENOLS						
Phenol	<LOR	1.25	0.91	72	58	129
2-Chlorophenol	<LOR	1.25	1.10	88	67	122
2-Methylphenol	<LOR	1.25	0.75	60	44	112
4-Methylphenol	<LOR	1.25	0.86	69	45	118
2-Nitrophenol	<LOR	1.25	1.10	88	46	128
2,4-Dimethylphenol	<LOR	1.25	0.20	16	0	103
2,4-Dichlorophenol	<LOR	1.25	1.08	86	60	114
2,6-Dichlorophenol	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4-Chloro-3-methylphenol	<LOR	1.25	1.15	92	50	121
2,4,6-Trichlorophenol	<LOR	1.25	1.09	87	54	117
2,4,5-Trichlorophenol	<LOR	1.25	1.14	91	59	125
Pentachlorophenol	<LOR	6.25	5.97	95	53	137
EP-075B : POLYAROMATIC HYDROCARBONS						
Naphthalene	<LOR	1.25	1.22	97	71	126
2-Methylnaphthalene	<LOR	1.25	1.34	107	64	128
2-Chloronaphthalene	<LOR	1.25	1.27	102	67	130
Acenaphthalene	<LOR	1.25	1.23	98	69	119
Acenaphthene	<LOR	1.25	1.32	106	76	126
Fluorene	<LOR	1.25	1.34	107	72	128
Phenanthrene	<LOR	1.25	1.41	113	80	125
Anthracene	<LOR	1.25	1.31	105	73	121
Fluoranthrene	<LOR	1.25	1.43	115	74	129
Pyrene	<LOR	1.25	1.40	112	74	131
N-2-Fluorenylacetimide	<LOR	1.25	0.94	75	36	142
Benz[a]anthracene	<LOR	1.25	1.19	95	57	130
Chrysene	<LOR	1.25	1.25	100	57	139
Benzo(b) & (k) fluoranthene	<LOR	2.50	2.39	95	54	148
7,12-Dimethyl benz(a)anthracene	<LOR	1.25	1.21	97	31	204
Benzo(a)pyrene	<LOR	1.25	1.17	93	46	139
3-Methylcholanthrene	<LOR	1.25	1.20	96	41	147
Indeno(1,2,3-cd)pyrene	<LOR	1.25	1.15	92	61	126
Dibenz(a,h)anthracene	<LOR	1.25	0.98	78	65	129
Benzo(g,h,i)perylene	<LOR	1.25	1.22	98	71	131
EP-075C : PHTHALATE ESTERS						
Dimethylphthalate	<LOR	1.25	1.33	106	72	127
Diethylphthalate	<LOR	1.25	1.39	111	78	126
Di-n-butylphthalate	<LOR	1.25	1.68	135	75	148
Benzyl butyl phthalate	<LOR	1.25	1.36	109	68	133
Bis(2-ethylhexyl)phthalate	<LOR	1.25	1.43	114	68	134
Di-n-octylphthalate	<LOR	1.25	1.27	101	50	138
EP-075D : NITROSAMINES						

N-Nitrosomethylethylamine	<LOR	1.25	1.01	80	24	154
N-Nitrosodiethylamine	<LOR	1.25	1.05	84	31	132
N-Nitrosopyrrolidine	<LOR	1.25	1.02	82	3	144
N-Nitrosomorpholine	<LOR	1.25	1.09	87	20	137
N-Nitrosodi-n-propylamine	<LOR	1.25	1.10	88	28	138
N-Nitrosopiperidine	<LOR	1.25	1.08	86	32	127
N-Nitrosodibutylamine	<LOR	1.25	1.13	91	33	128
Diphenylamine & N-Nitrosodiphenylamine	<LOR	2.50	2.19	88	30	152
Diallate	<LOR	1.25	1.36	109	70	132
Methapyriline	<LOR	1.25	1.12	89	0	169
EP-075E : NITROAROMATICS AND KETONES						
2-Picoline	<LOR	1.25	1.05	84	47	122
Acetophenone	<LOR	1.25	1.24	99	65	134
Nitrobenzene	<LOR	1.25	1.23	98	55	138
Isophorone	<LOR	1.25	1.21	97	63	125
2,6-Dinitrotoluene	<LOR	1.25	1.24	99	56	126
2,4-Dinitrotoluene	<LOR	1.25	1.16	93	48	126
1-Naphthalemine	<LOR	1.25	1.37	109	0	182
4-Nitroquinoline-N-oxide	<LOR	1.25	0.92	74	0	165
5-Nitro-o-toluidine	<LOR	1.25	1.32	105	37	140
Azobenzene	<LOR	1.25	1.30	104	64	128
1,3,5-Trinitrobenzene	<LOR	1.25	1.07	86	29	138
Phenacetin	<LOR	1.25	1.02	81	58	124
4-Aminobiphenyl	<LOR	1.25	1.24	99	5	154
Pentachloronitrobenzene	<LOR	1.25	1.30	104	63	132
Pronamide	<LOR	1.25	1.48	119	73	131
Dimethylaminoazobenzene	<LOR	1.25	1.01	80	52	143
Chlorobenzilate	<LOR	1.25	1.46	117	54	138
EP-075F : HALOETHERS						
Bis(2-chloroethyl)ether	<LOR	1.25	1.10	88	58	126
Bis(2-chloroethoxy)methane	<LOR	1.25	1.24	99	64	129
4-Chlorophenyl phenyl ether	<LOR	1.25	1.36	109	69	130
4-Bromophenyl phenyl ether	<LOR	1.25	1.36	109	68	129
EP-075G : CHLORINATED HYDROCARBONS						
1,3-Dichlorobenzene	<LOR	1.25	1.11	89	63	126
1,4-Dichlorobenzene	<LOR	1.25	1.11	89	65	124
1,2-Dichlorobenzene	<LOR	1.25	1.13	91	65	126
Hexachloroethane	<LOR	1.25	1.11	89	54	127
1,2,4-Trichlorobenzene	<LOR	1.25	1.17	94	65	126
Hexachloropropylene	<LOR	1.25	1.10	88	42	144
Hexachlorobutadiene	<LOR	1.25	1.14	91	61	127
Hexachlorocyclopentadiene	<LOR	6.25	5.14	82	31	132
Pentachlorobenzene	<LOR	1.25	1.31	105	68	138
Hexachlorobenzene	<LOR	1.25	1.36	109	67	127
EP-075H : ANILINES AND BENZIDINES						
Aniline	<LOR	1.25	0.71	57	0	178
4-Chloroaniline	<LOR	1.25	0.79	63	0	154
2-Nitroaniline	<LOR	1.25	1.13	91	57	122
3-Nitroaniline	<LOR	1.25	1.07	85	13	139
Dibenzofuran	<LOR	1.25	1.35	108	62	134
4-Nitroaniline	<LOR	1.25	0.94	75	48	133
Carbazole	<LOR	1.25	1.13	90	36	169
3,3'-Dichlorobenzidine	<LOR	1.25	1.40	112	13	158

EP-075I : ORGANOCHLORINE PESTICIDES						
alpha-BHC	<LOR	1.25	1.39	111	72	130
beta- & gamma-BHC	<LOR	2.50	2.96	119	75	136
delta-BHC	<LOR	1.25	1.48	118	81	132
Heptachlor	<LOR	1.25	1.46	116	67	135
Aldrin	<LOR	1.25	1.49	119	77	127
Heptachlorepoxide	<LOR	1.25	1.52	121	67	133
Endosulfan 1	<LOR	1.25	1.53	122	83	127
p,p'-DDE	<LOR	1.25	1.48	118	72	129
Dieldrin	<LOR	1.25	1.46	117	79	134
Endrin	<LOR	1.25	1.45	116	57	132
Endosulfan 2	<LOR	1.25	1.53	122	70	130
p,p' DDD	<LOR	1.25	1.49	119	74	132
Endosulfan sulfate	<LOR	1.25	1.43	114	66	140
p,p'-DDT	<LOR	1.25	1.38	110	48	136
EP-075J : ORGANOPHOSPHORUS PESTICIDES						
Methanesulfonate methyl	<LOR	1.25	1.14	91	62	138
Methanesulfonate ethyl	<LOR	1.25	1.19	95	63	130
Dichlorvos	<LOR	1.25	1.22	97	59	122
cis-Isofenole	<LOR	0.48	0.48	99	65	131
trans-Isofenole	<LOR	0.79	0.79	101	63	130
Sefenole	<LOR	1.25	1.23	98	60	126
Dimethoate	<LOR	1.25	1.24	99	47	137
Diazinon	<LOR	1.25	1.42	114	33	144
Chlorpyrifos methyl	<LOR	1.25	1.47	118	68	132
Malathion	<LOR	1.25	1.45	116	75	135
Fenthion	<LOR	1.25	1.39	111	68	131
Chlorpyrifos	<LOR	1.25	1.48	118	72	138
Pirimiphosethyl	<LOR	1.25	1.39	111	76	131
Chlorfenvinphos-E	<LOR	0.16	0.14	92	19	169
Chlorfenvinphos-Z	<LOR	1.10	1.30	118	57	154
Prothiofos	<LOR	1.25	1.29	103	74	134
Ethion	<LOR	1.25	1.44	115	72	140

COMMENTS :

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2) QC Acceptance Criteria :

To accept a QC, 80% of target analytes must pass both of the following criteria :

a) Accuracy : Recovery of SCS must fall within the recovery control limits.

b) Blank concentration must be less than LOR.

Control limits are established from the previous 20 QC sets of recovery data.

3) Abbreviations & Explanatory Notes:

QC : Quality Control

Rec. : Recovery

SCS : Single Control Sample - an interference free sample spiked with target analytes.

ND : Not Detected

LOR : Limit of Reporting - lowest concentration of target analytes for reporting.

Conc. : Concentration

* : Recovery falls outside the recommended control limits.

For ash samples collected from incinerator flue

ALS TECHNICHEM (HK) Pty Ltd

PRELIMINARY

ALS Environmental

CERTIFICATE OF ANALYSIS

CONTACT:	MR SIMEON CHENG	**Batch:**	HK17759
CLIENT:	CH2M HILL (CHINA) LIMITED	**Sub Batch:**	0
ADDRESS:	28/F SIU ON CENTRE 188 LOCKHART ROAD WANCHAI HONG KONG	**LABORATORY:**	HONG KONG
		DATE RECEIVED:	08/11/2002
		DATE OF ISSUE:	23/11/2002
ORDER No.:		**SAMPLE TYPE:**	ASH
PROJECT:		**No. of SAMPLES:**	2

COMMENTS

Two ash samples, sample 1 and sample 2 were collected by ALS staff on 6 November 2002.
Dioxin analysis were subcontracted and tested by Maxxam Analytics Inc.
Maxxam Analytics Inc detailed report is attached.
Project Name: 8047MM - Remodeling of Tang Shiu Kin Hospital into an Ambulatory Care Centre
Consultancy for Decommissioning and Demolition of Clinical Waste Incinerator, Laboratory Service

TESTING METHODS

The analysis is based on USEPA 8290

NOTES

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

ISSUING LABORATORY: HONG KONG

Address

ALS Technichem (HK) Pty Ltd

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

Phone: 852-2610 1044
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Email: alshk@alshk.com.hk

Richard L C Fung
General Manager- Hong Kong

Abbreviations: % SPK REC denotes percentage spike recovery
CHK denotes duplicate check sample
LOR denotes limit of reporting
LCS % REC denotes Laboratory Control Sample percentage recovery

ALS TECHNICHEM (HK) PTY LTD
11/F., Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, N.T., H.K.
Phone: 852-2610 1044 Fax: 852-2610 2021

CERTIFICATE OF ANALYSIS

Maxxam Analytics Inc report is attached
for the analysis of Dioxins in Ash.
This attach report contains a total of 4 pages.

DIBENZO-DIOXINS/FURANS IN ASH

MAXXAM JOB #: A237252
MAXXAM SAMPLE #: 901933
Sampling Date: 2002/11/08

PROJECT NAME:
PROJECT #: HK17759
Report Date: 2002/11/22

CONC. UNITS = ppt = pg/g
RL Units = ppt = pg/g

	HK17759 #1 SAMPLE 1		TOXIC EQUIVALENCY			RECOVERIES OF C13 SURROGATES	
Compounds	CONC	RL	I-TEF	TEQ(RL)	TEQ(0.5RL)	pg SPIKED	% RECOVERED
2,3,7,8-Tetra CDD *	989.0000	5.0000	1.00000	989.00000	989.00000	1000	99
Total Tetra CDD	9590.0000	10.0000					
1,2,3,7,8-Penta CDD	2770.0000	10.0000	0.50000	1385.00000	1385.00000	1000	93
Total Penta CDD	12800.0000	10.0000					
1,2,3,4,7,8-Hexa CDD	1150.0000	50.0000	0.10000	115.00000	115.00000		
1,2,3,6,7,8-Hexa CDD	1740.0000	50.0000	0.10000	174.00000	174.00000	1000	43
1,2,3,7,8,9-Hexa CDD	3490.0000	50.0000	0.10000	349.00000	349.00000		
Total Hexa CDD	13200.0000	50.0000					
1,2,3,4,6,7,8-Hepta CDD	31300.0000	50.0000	0.01000	31.30000	31.30000	1000	56
Total Hepta CDD	72200.0000	50.0000					
Octa CDD	144000.0000	200.0000	0.00100	1.44000	1.44000	2000	57
2,3,7,8-Tetra CDF **	4930.0000	10.0000	0.10000	493.00000	493.00000	1000	69
Total Tetra CDF	64920.0000	10.0000					
1,2,3,7,8-Penta CDF	7080.0000	10.0000	0.05000	354.00000	354.00000	1000	124
2,3,4,7,8-Penta CDF	11600.0000	10.0000	0.50000	5800.00000	5800.00000		
Total Penta CDF	90700.0000	10.0000					
1,2,3,4,7,8-Hexa CDF	13900.0000	50.0000	0.10000	1390.00000	1390.00000	1000	67
1,2,3,6,7,8-Hexa CDF	7750.0000	50.0000	0.10000	775.00000	775.00000		
1,2,3,7,8,9-Hexa CDF	585.0000	50.0000	0.10000	58.50000	58.50000		
2,3,4,6,7,8-Hexa CDF	6890.0000	50.0000	0.10000	689.00000	689.00000		
Total Hexa CDF	35300.0000	50.0000					
1,2,3,4,6,7,8-Hepta CDF	11800.0000	50.0000	0.01000	118.00000	118.00000	1000	57
1,2,3,4,7,8,9-Hepta CDF	1700.0000	50.0000	0.01000	17.00000	17.00000		
Total Hepta CDF	14400.0000	50.0000					
Octa CDF	3170.0000	200.0000	0.00100	3.17000	3.17000		
TOTAL TOXIC EQUIVALENCY				12638.4100	12638.4100		

* CDD = CHLORO DIBENZO-P-DIOXIN
** CDF = CHLORO DIBENZOFURAN
RL = REPORTING LIMIT
0.0000 = U = NOT DETECTED
TR = TRACE AMOUNT DETECTED
The surrogates on the spiked blank are out of control; however, the native compounds are with the required 50-120% limits due to isotope dilution corrections.
2378-TCDF has been confirmed.

EDMOND MCNEIL, B.Sc., C.Chem.

DIBENZO-DIOXINS/FURANS IN ASH

MAXXAM JOB #: A237262
MAXXAM SAMPLE #: 901943
Sampling Date: 2002/11/08

PROJECT NAME:
PROJECT # HK1775
Report Date: 2002/11/27

CONC. UNITS = ppt = pg/g
RL Units = ppt = pg/g

Compounds	HK1775 #2 SAMPLE 2 CONC	RL	TOXIC EQUIVALENCY I-TEF	TEQ(RL)	TEQ(0.5RL)	RECOVERIES OF C13 SURROGATES pg SPIKED	% RECOVERED
2,3,7,8-Tetra CDD *	498.0000	5.0000	1.00000	498.00000	498.00000	1000	60
Total Tetra CDD	3620.0000	10.0000					
1,2,3,7,8-Penta CDD	1480.0000	10.0000	0.50000	740.00000	740.00000	1000	61
Total Penta CDD	5160.0000	10.0000					
1,2,3,4,7,8-Hexa CDD	685.0000	50.0000	0.10000	68.50000	68.50000		
1,2,3,6,7,8-Hexa CDD	1090.0000	50.0000	0.10000	109.00000	109.00000	1000	73
1,2,3,7,8,9-Hexa CDD	1870.0000	50.0000	0.10000	187.00000	187.00000		
Total Hexa CDD	5980.0000	50.0000					
1,2,3,4,6,7,8-Hepta CDD	2810.0000	50.0000	0.01000	28.10000	28.10000	1000	70
Total Hepta CDD	3280.0000	50.0000					
Octa CDD	1450.0000	200.0000	0.00100	1.45000	1.45000	2000	64
2,3,7,8-Tetra CDF **	3370.0000	10.0000	0.10000	337.00000	337.00000	1000	67
Total Tetra CDF	27200.0000	10.0000					
* 2,3,7,8-Penta CDF	4480.0000	10.0000	0.06000	224.00000	224.00000	1000	118
2,3,4,7,8-Penta CDF	6080.0000	10.0000	0.50000	3040.00000	3040.00000		
Total Penta CDF	16600.0000	10.0000					
1,2,3,4,7,8-Hexa CDF	7420.0000	50.0000	0.10000	742.00000	742.00000	1000	69
1,2,3,6,7,8-Hexa CDF	4470.0000	50.0000	0.10000	447.00000	447.00000		
1,2,3,7,8,9-Hexa CDF	257.0000	50.0000	0.10000	25.70000	25.70000		
2,3,4,6,7,8-Hexa CDF	3270.0000	50.0000	0.10000	327.00000	327.00000		
Total Hexa CDF	17700.0000	50.0000					
1,2,3,4,6,7,8-Hepta CDF	5280.0000	50.0000	0.01000	52.80000	52.80000	1000	65
1,2,3,4,7,8,9-Hepta CDF	801.0000	50.0000	0.01000	8.01000	8.01000		
Total Hepta CDF	6350.0000	50.0000					
Octa CDF	921.0000	200.0000	0.00100	0.92100	0.92100		
TOTAL TOXIC EQUIVALENCY				8639.48100	8639.48100		

* CDD = CHLORO DIBENZO-P-DIOXIN
** CDF = CHLORO DIBENZOFURAN
RL = REPORTING LIMIT
0.0000 = L = NOT DETECTED
TR = TRACE AMOUNT DETECTED
The surrogates or the spiked blank are out of control; however, the native compounds are with the required 80-120% limits due to isotope dilution corrections.
2378-TCDF has been confirmed.

EDMOND MCNEIL, B.Sc., C.Chem.

DIBENZO-DIOXINS/FURANS IN ASH

MAXXAM JOB #: A237252
MAXXAM SAMPLE #: SPIKED BLANK

PROJECT NAME:
PROJECT #: HC-7769
Report Date: 2002/11/22

CONC. UNITS = ppt = pg/g
RL Units = ppt = pg/g

Compounds	SPIKED BLANK % RECOVERY	RL	TOXIC EQUIVALENCY I-TEF	TEQ(RL)	TEQ(0.5RL)	RECOVERIES OF C13 SURROGATES pg SPIKED	% RECOVERED
2,3,7,8-Tetra CDD *	88	5.0000	1.00000	88.00000	88.00000	1000	12
1,2,3,7,8-Penta CDD	101	10.0000	0.50000	50.50000	50.50000	1000	16
1,2,3,4,7,8-Hexa CDD	97	50.0000	0.10000	9.70000	9.70000		
1,2,3,6,7,8-Hexa CDD	101	50.0000	0.10000	10.10000	10.10000	1000	37
1,2,3,7,8,9-Hexa CDD	99	50.0000	0.10000	9.90000	9.90000		
1,2,3,4,6,7,8-Hepta CDD	89	60.0000	0.01000	0.89000	0.89000	1000	46
Octa CDD	87	200.0000	0.00100	0.08700	0.08700	2000	42
2,3,7,8-Tetra CDF **	103	10.0000	0.10000	10.30000	10.30000	1000	8.3
1,2,3,7,8-Penta CDF	93	10.0000	0.05000	4.65000	4.65000	1000	13
2,3,4,7,8-Penta CDF	96	10.0000	0.50000	48.00000	48.00000		
1,2,3,4,7,8-Hexa CDF	96	50.0000	0.10000	9.60000	9.60000	1000	31
1,2,3,6,7,8-Hexa CDF	92	50.0000	0.10000	9.20000	9.20000		
1,2,3,7,8,9-Hexa CDF	94	50.0000	0.10000	9.40000	9.40000		
2,3,4,6,7,8-Hexa CDF	87	50.0000	0.10000	8.70000	8.70000		
1,2,3,4,6,7,8-Hepta CDF	90	60.0000	0.01000	0.90000	0.90000	1000	40
1,2,3,4,7,8,9-Hepta CDF	91	50.0000	0.01000	0.91000	0.91000		
Octa CDF	89	200.0000	0.00100	0.08900	0.08900		
TOTAL TOXIC EQUIVALENCY				270.32500	270.32800		

* CDD = CHLORO DIBENZO-P-DIOXIN
** CDF = CHLORO DIBENZOFURAN
RL = REPORTING LIMIT
0.0000 = U = NOT DETECTED
TR = TRACE AMOUNT DETECTED
The surrogates on the spiked blank are out of control; however, the native compounds are with the required 80-120% limits due to isotope dilution corrections.
2378-TCDF has been confirmed.

EDMOND MCNEIL, B.Sc., C.Chem.

DIBENZO-DIOXINS/FURANS IN ASH

MAXXAM JOB #: A237262
MAXXAM SAMPLE #: METHOD BLANK

PROJECT NAME:
PROJECT #: HK17759
Report Date: 2002/11/22

CONC. UNITS = ppt = pg/g
RL Units = ppt = pg/g

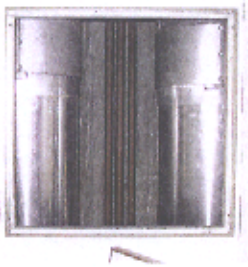
	METHOD BLANK		TOXIC EQUIVALENCY			RECOVERIES OF C13 SURROGATES	
Compounds	CONC	RL	I-TEF	TEQ(RL)	TEQ(0.5RL)	pg SPIKED	% RECOVERED
2,3,7,8-Tetra CDD *	U	5.0000	1.00000	0.00000	0.00000	2000	56
Total Tetra CDD	U	10.0000					
1,2,3,7,8-Penta CDD	U	10.0000	0.50000	0.00000	0.00000	1000	41
Total Penta CDD	U	10.0000					
1,2,3,4,7,8-Hexa CDD	U	50.0000	0.10000	0.00000	0.00000		
1,2,3,6,7,8-Hexa CDD	U	50.0000	0.10000	0.00000	0.00000	1000	86
1,2,3,7,8,9-Hexa CDD	U	50.0000	0.10000	0.00000	0.00000		
Total Hexa CDD	U	50.0000					
1,2,3,4,6,7,8-Hepta CDD	U	50.0000	0.01000	0.00000	0.00000	1000	87
Total Hepta CDD	U	50.0000					
Octa CDD	U	200.0000	0.00100	0.00000	0.00000	2000	68
2,3,7,8-Tetra CDF **	U	10.0000	0.10000	0.00000	0.00000	1000	41
Total Tetra CDF	U	10.0000					
1,2,3,7,8-Penta CDF	U	10.0000	0.05000	0.00000	0.00000	1000	41
2,3,4,7,8-Penta CDF	U	10.0000	0.50000	0.00000	0.00000		
Total Penta CDF	U	10.0000					
1,2,3,4,7,8-Hexa CDF	U	50.0000	0.10000	0.00000	0.00000	1000	77
1,2,3,6,7,8-Hexa CDF	U	50.0000	0.10000	0.00000	0.00000		
1,2,3,7,8,9-Hexa CDF	U	50.0000	0.10000	0.00000	0.00000		
2,3,4,6,7,8-Hexa CDF	U	50.0000	0.10000	0.00000	0.00000		
Total Hexa CDF	U	50.0000					
1,2,3,4,6,7,8-Hepta CDF	U	50.0000	0.01000	0.00000	0.00000	1000	77
1,2,3,4,7,8,9-Hepta CDF	U	50.0000	0.01000	0.00000	0.00000		
Total Hepta CDF	U	50.0000					
Octa CDF	U	200.0000	0.00100	0.00000	0.00000		
TOTAL TOXIC EQUIVALENCY				0.00000	0.00000		

* CDD = CHLORO DIBENZO-P-DIOXIN
** CDF = CHLORO DIBENZOFURAN
RL = REPORTING LIMIT
0.0000 = U = NOT DETECTED
TR = TRACE AMOUNT DETECTED
The surrogates on the spiked blank are out of control; however, the native compounds are with the required 60-120% limits due to isotope dilution corrections.
2378-TCDF has been confirmed.

EDMOND MCNEIL, B.Sc., C.Chem

Appendix C

Photos of the Incinerator and its Flue

		
Incinerator to be demolished	Combustion furnace	Ash residue in furnace
		
Flue pipe within the incinerator room	Incinerator flue pipe in the boiler room	The partition as seen in a typical M/E room
		
Inside the partitioned area (incinerator flue pipe on right)	The vertical incinerator flue pipe section on the lower ground floor has been cut open for inspection	The top section of incinerator flue above roof level