



Lam Geotechnics Limited

Ground Investigation & Instrumentation Professionals

華益土力有限公司

Our Ref: LG29024/1.0/070/10
Date : 26th January 2010

By Hand

Mott MacDonald Hong Kong Limited
7/F West Wing Office Building
New World Centre
20 Salisbury Road
Tsimshatsui
Kowloon

Attention: Mr. Kyaw Nyein *MN*
Dear Sirs,

Contract No. CV/2009/13
Kwai Tsing Container Basin – Marine Ground Investigation
Submission of Records and Reports

Please find attached the following documents.

Document	No. of Copy	Description
Daily Site Record	---	---
Preliminary Log	---	---
Laboratory Testing Report for Section 1	1	12 x TBT report for Interstitial water ALS WO No. HK0924254, HK0924257, HK0924260, HK0924615, HK0924847, HK0924853, HK0924855, HK0924856 HK0924857, HK0924886, HK0924888, HK0924890
Final Fieldwork Report with Photographs	---	---
Others (Specify)	---	---

Remarks: For your record.

Yours faithfully,
For and on behalf of
LAM GEOTECHNICS LIMITED

Yee Chin Ming
Geotechnical Engineer
Encl.
SY/cl

To	Action/Item	Copy	Sign	Date
1 <i>YCM</i>			<i>YCM</i>	26/1/10
2 <i>SL</i>				
3 <i>Beng Hin</i>				
4				

Rec'd *CMM* 26 JAN 2010
File NO *J259083/05-06/22/10*

11/F, Centre Point, 181-185 Gloucester Road, Wanchai, Hong Kong
Tel: (852) 2882-3939
Website: www.lamgeo.com

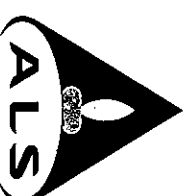
Fax: (852) 2882-3331
Email: info@lamgeo.com



OHSAAS 18001:2007
Certificate No.: CC 170

ISO 14001:2004
Certificate No.: CC 151

ISO 9001:2008
Certificate No.: CC 116



ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
ALS TECHNICHEM (HK) Pty Ltd
Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: D174

Batch: HK0924260
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 16/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 1
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin Oxide was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

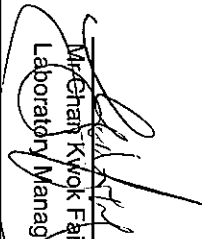
Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0924260-001	S1-2	14/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
11/F Chung Shun Knitting Centre
1--3 Wing Yip Street
Kwai Chung
HONG KONG

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


Mr. Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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Melbourne Singapore
Sydney Kuala Lumpur
Newcastle Bogor

AMERICAS
Vancouver Santiago
Lima Antofagasta

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
Part of the **ALS Laboratory Group**
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 www.alsenviro.com
A Campbell Brothers Limited Company



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020091
Folder No : 0909050
Page No : 1 of 2
Date of Issue : 07/01/2010

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

Sample Description : 1 interstitial water sample was delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 07/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Sample No	Analysis Date	Parameter Unit	Tributyl tin (ng TBTVL)	Surrogate Compound Recovery (%)
HKO924260-1	WT-0912-0346	11/12/2009	Method Code WTM-TBT-1	WTM-TBT-1	WTM-TBT-1
				<15	100

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.
(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.
(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO) ▶	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO) ▶	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphosphate Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphosphate Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-PCB-2	USEPA 8082
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-TRCB-1	USEPA 8082
TriButyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	TriButyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141 A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane (C₉).

▶C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane (C₁₀) and N-octacosane (C₂₈).

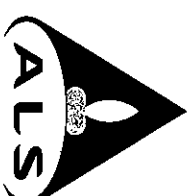
Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: S1-3

Batch: HK0924890
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 24/11/2009
DATE OF ISSUE: 16/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 1
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

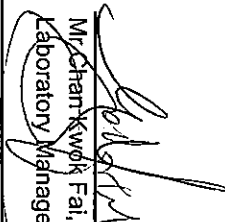
Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0924890-001	S1-3	24/11/2009

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: hongkong@alsenviro.com


Mr. Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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Melbourne Singapore
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AMERICAS
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Santiago
Amtofagasta
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

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**

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 www.alsenviro.com

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Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020098
Folder No : 0909057
Page No : 1 of 2
Date of Issue : 07/01/2010

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

Sample Description : 1 interstitial water sample was delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 07/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBTL)	Surrogate Compound Recovery (%)
HK0924890-1	Method Code	WTM-TBT-1	WTM-TBT-1	WTM-TBT-1
	Sample No	Analysis Date	11/12/2009	11/12/2009
	WT-0912-0353		<15	100

Approval Signatory:

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TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorus Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-PCB-2	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-TPCB-1	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-HENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

▲C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency

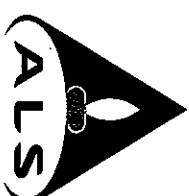
Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd

Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI, HONG KONG
PROJECT ID: LG29024
SITE: S4

Batch: HK0924254
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 13/11/2009
DATE OF ISSUE: 20/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 1
ORDER: CV/2009/13

COMMENTS

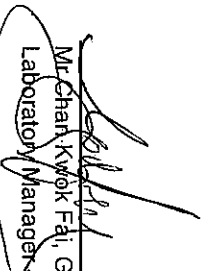
Samples analysed on an as received basis. Results reported on an as received basis. Tributyl tin was subcontracted and tested by Hong Kong Productivity Council. Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0924254-1	S4 0-0.9M	13/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
11/F Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
HONG KONG
Phone: 852-2610 1044
Fax: 852-2610 2021
Email: hongkong@alsenviro.com


Mr. Chaik Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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Brisbane	Vancouver
Melbourne	Santiago
Sydney	Antofagasta
Newcastle	Lima

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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

Part of the ALS Laboratory Group

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 www.alsenviro.com

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Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020102
Folder No : 0909061
Page No : 1 of 2
Date of Issue : 07/01/2010

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

Sample Description : 1 interstitial water sample was delivered by the client.

Sample Received Date : 01/12/2009 Test Completed Date : 07/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBT/L)	Surrogate Compound Recovery (%)
HK0924254-1	Method Code	WTM-TBT-1	WTM-TBT-1	WTM-TBT-1
	Sample No	Analysis Date	11/12/2009	11/12/2009
	WT-0912-0357		<15	100

Approval Signatory:

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TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorate Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphorate Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	USEPA 8082
TriButyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	TriButyl Tin (TBT)	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
II. Sediment/Soil					
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OCP-1	In house based on USEPA 8141 A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks:

*C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

Reference Notes:

▲C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

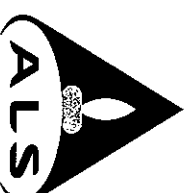
USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: S5-1

Batch: HK0924886
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 24/11/2009
DATE OF ISSUE: 16/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 1
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0924886-001	S5-1	24/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
11/F Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
HONG KONG

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

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Vancouver
Santiago
Antofagasta
Lima

Abbreviations: % SPK REC denotes percentage spike recovery

CHK denotes duplicate check sample

LOR denotes limit of reporting

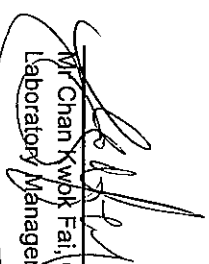
LCS % REC denotes Laboratory Control Sample percentage recovery

Part of the **ALS Technichem IHKI Pty Ltd**
ALS Technichem IHKI 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 www.alsenviro.com

A Campbell Brothers Limited Company


Mr Chan Ywok Fai, Godfrey
Laboratory Manager - Hong Kong



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020099
Folder No : 0909058
Page No : 1 of 2
Date of Issue : 07/01/2010

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

Sample Description : 1 interstitial water sample was delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 07/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBT/L)	Surrogate Compound Recovery (%)
HK0924886-1	Method Code	WTM-TBT-1	WTM-TBT-1	WTM-TBT-1
	Sample No	Analysis Date	11/12/2009	11/12/2009
	WT-0912-0354		<15	100

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphate Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphate Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TPCB-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

▲C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

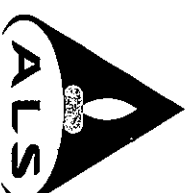
Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: S5-4

Batch: HK0924888
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 24/11/2009
DATE OF ISSUE: 16/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 1
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

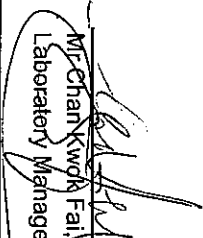
Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0924888-001	S5-4	24/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
11/F Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
HONG KONG

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


Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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AUSTRALIA	AMERICAS
Brisbane	Hong Kong
Melbourne	Singapore
Sydney	Kuala Lumpur
Newcastle	Bogor

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

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Part of the **ALS Laboratory Group**

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 **www.alsenviro.com**
A Campbell Brothers Limited Company



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020097
Folder No : 0909056
Page No : 1 of 2
Date of Issue : 07/01/2010

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

Sample Description : 1 interstitial water sample was delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 07/01/2010

Approved Signatory : Pung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBT/L)	Surrogate Compound Recovery (%)
HK0924888-1	Method Code	WTM-TBT-1	11/12/2009	WTM-TBT-1
	Sample No	WT-0912-0352	11/12/2009	11/12/2009
	Analysis Date		<15	100

Approval Signatory:

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TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorus Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polymeric Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polymeric Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-nethylpentane (C₆) and n-nonane(C₉).

▲ C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

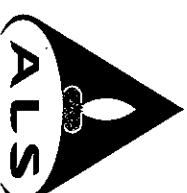
Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research,27, 1-18, 1989

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI, HONG KONG
PROJECT ID: LG29024
SITE: S6

Batch: HK0924257
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 16/11/2009
DATE OF ISSUE: 20/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 2
ORDER: CV/2009/13

COMMENTS

Samples analysed on an as received basis. Results reported on an as received basis. Tributyl tin was subcontracted and tested by Hong Kong Productivity Council. Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

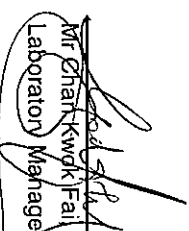
Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0924257-2	S6 0.9-1.9M	14/11/2009
HK0924257-3	S6 1.9-2.9M	14/11/2009

ISSUING LABORATORY: HONG KONG

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ALS Technichem (HK) Pty Ltd
11/F- Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
HONG KONG

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


Mr Zhan Kwok Fai
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

AUSTRALIA	AMERICAS
Brisbane	Vancouver
Melbourne	Santiago
Sydney	Amtotagassta
Newcastle	Lima

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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
Part of the **ALS Laboratory Group**
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 www.alsenviro.com
A Campbell Brothers Limited Company



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020103
Folder No : 0909062
Page No : 1 of 2
Date of Issue : 07/01/2010

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

Sample Description : 2 interstitial water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 07/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBTL)	Surrogate Compound Recovery (%)
	Method Code		WTM-TBT-1	WTM-TBT-1
	Sample No	Analysis Date	11/12/2009	11/12/2009
HK0924257-2	WT-0912-0358		<15	100
HK0924257-3	WT-0912-0359		<15	100

Approval Signatory:

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TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₄ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₄ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₄ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₄ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorus Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOI-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOI-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-FOPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-nmethylpentane (C₆) and n-nonane(C₉).

▲C₁₀-C₂₄ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency

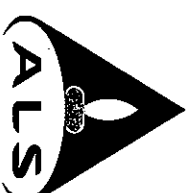
Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd

Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI, HONG KONG
PROJECT ID: LG29024
SITE: S13

Batch: HK0924615
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 18/11/2009
DATE OF ISSUE: 20/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 1
ORDER: CV/2009/13

COMMENTS

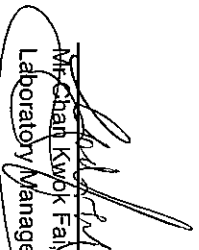
Samples analysed on an as received basis. Results reported on an as received basis.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0924615-1	S13	18/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
11/F Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
HONG KONG
Phone: 852-2610 1044
Fax: 852-2610 2021
Email: hongkong@alsenviro.com


Mr. Chah Kwok Fai
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

AUSTRALIA	AMERICAS
Brisbane	Vancouver
Melbourne	Santiago
Sydney	Antofagasta
Newcastle	Limá
	Bogor

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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

Part of the ALS Laboratory Group

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 www.alsenviro.com

A Campbell Brothers Limited Company



**Hong Kong
Productivity Council**
香港生產力促進局



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020092
Folder No : 0909051
Page No : 1 of 2
Date of Issue : 07/01/2010

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

Sample Description : 1 interstitial water sample was delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 07/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBTL)	Surrogate Compound Recovery (%)
HK0924615-1	Method Code	WTM-TBT-1		
	Sample No	WT-0912-0347		
	Analysis Date	11/12/2009	<15	91

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Approval Signatory:

Hong Kong TST P.O. Box 99027 Hong Kong • HKPC Building, 78 Tat Chee Avenue, Kowloon, Hong Kong
Head Office Tel: (852) 2788 5678 • Fax: (852) 2788 5900 • Telex: 32842 HKPC HX
香港總部 香港尖沙咀郵政信箱 99027號 • 香港九龍蓬之路 78號 生產力大樓



TESTING METHODS – ORGANICS

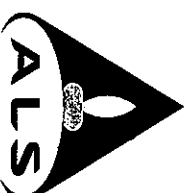
Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons	WTM-GRO-1	USEPA 8015B	Petroleum Hydrocarbons	WTM-DRO-1	USEPA 8015B
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	SEDIMENT-DRO-2	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-OCP-1	USEPA 8081	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-OCP-1	USEPA 8081
Organochlorine Pesticides (OCP)	WTM-OPP-1	USEPA 8141	Organochlorine Pesticides (OCP)	SEDIMENT-OPP-1	USEPA 8141
Organophosphate Pesticides (OPP)	WTM-PAH-1	USEPA 8270C	Organophosphate Pesticides (OPP)	SEDIMENT-PAH-1	USEPA 8270C
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-VOC-1	USEPA 8260B	Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-VOC-1	USEPA 8260B
Trihalomethane (THM)	WTM-P-PCB-1	USEPA 8260B	Trihalomethane (THM)	SEDIMENT-P-PCB-2	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-PCB-1	USEPA 8082	Volatile Organic Compounds (VOCs)	SEDIMENT-TPCB-1	USEPA 8082
Polychlorinated Biphenyls (PCBs)	WTM-TBT-1	Krone <i>et al</i>	Polychlorinated Biphenyls (PCBs)	SEDIMENT-TBT-1	USEPA 8082
Tributyl Tin (TBT)	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-PHENOL-1	USEPA 8270C
Phenols			Phenols		
II. Sediment/Soil					
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-O-PP-1	In house based on USEPA 8141A	HS1004	HS1004, Testing Guideline on Degradable Containers and Bags	
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane (C₉).

▲C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research,27, 1-18, 1989



ALS Laboratory Group
 ANALYTICAL CHEMISTRY & TESTING SERVICES
ALS TECHNICHEM (HK) Pty Ltd
 Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
 181-185 GLOUCESTER ROAD,
 WANCHAI,
 HONG KONG.
PROJECT: LG29024
SITE: S14

Batch: HK0924853
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 24/11/2009
DATE OF ISSUE: 16/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 1
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
 Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
 Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0924853-001	S14	24/11/2009

ISSUING LABORATORY: HONG KONG

Address
 ALS Technichem (HK) Pty Ltd
 11/F Chung Shun Knitting Centre
 1-3 Wing Yip Street
 Kwai Chung
 HONG KONG

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

Mr Chant Kwok Fai, Godfrey
 Laboratory Manager - Hong Kong

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 Phone: 852-2610 1044 Fax: 852-2610 2021 www.alsenviro.com
 A Campbell Brothers Limited Company

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



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020094
Folder No : 0909053
Page No : 1 of 2
Date of Issue : 07/01/2010

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

Sample Description : 1 interstitial water sample was delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 07/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBTL)	Surrogate Compound Recovery (%)
HK0924853-1	Method Code	WTM-TBT-1		WTM-TBT-1
	Sample No	WT-0912-0349	11/12/2009	11/12/2009
	Analysis Date		<15	96

Approval Signatory:

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TESTING METHODS – ORGANICS

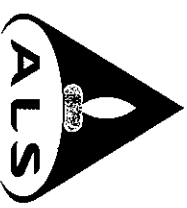
Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorus Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	USEPA 8082
TriButyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TPCB-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	TriButyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method			
Organophosphorus Pesticide	SEDIMENT-OCP-1	In house based on USEPA 8141A			
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
IV. Degradable Containers & Bags					
			HS1004		HS1004, Testing Guideline on Degradable Containers and Bags
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

▲C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research, 27, 1-18, 1989



ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
ALS TECHNICHEM (HK) Pty Ltd
Environmental Division

CERTIFICATE OF ANALYSIS

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CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: S18

Batch: HK0924855
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 24/11/2009
DATE OF ISSUE: 16/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 1
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0924855-001	S18	24/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
11/F Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
HONG KONG

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

Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

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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

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A Campbell Brothers Limited Company



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020095
Folder No : 0909054
Page No : 1 of 2
Date of Issue : 07/01/2010

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

Sample Description : 1 interstitial water sample was delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 07/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBT/L)	Surrogate Compound Recovery (%)
HK0924855-1	Method Code	WTM-TBT-1	11/12/2009	WTM-TBT-1
	Sample No	WT-0912-0350	11/12/2009	11/12/2009
	Analysis Date		<15	100

Approval Signatory:

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TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₄ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₄ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₄ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₄ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphate Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphate Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TPCB-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks:

*C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).
▲C₁₀-C₂₄ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

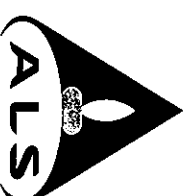
Reference Notes:

USEPA – United States Environmental Protection Agency
Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: S29

Batch: HK0924856
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 24/11/2009
DATE OF ISSUE: 16/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 1
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

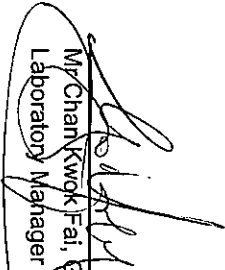
Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0924856-001	S29	24/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
11/F Chung Shun Knitting Centre
1-3 Wing Yip Street
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HONG KONG

Phone: 852-2610 1044
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My Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

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Phone: 852-2610 1044 **Fax:** 852-2610 2021 **www.alsenviro.com**
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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



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : F0020093
Folder No : 0909052
Page No : 1 of 2
Date of Issue : 07/01/2010

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

Sample Description : 1 interstitial water sample was delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 07/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBTL)	Surrogate Compound Recovery (%)
HK0924856-1	Method Code	WTM-TBT-1		WTM-TBT-1
	Sample No	WT-0912-0348	11/12/2009	11/12/2009
	Analysis Date		<15	100

Approval Signatory:

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TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	II. Sediment/Soil		
Petroleum Hydrocarbons			BTEX	SEDIMENT-BTEX-1	USEPA 8260B
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	Petroleum Hydrocarbons		
C ₁₀ -C ₂₈ Diesel range organics (DRO) ▶	WTM-DRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO) ▶	SEDIMENT-DRO-1	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorus Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-P-CB-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-P-CB-2	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-VOC-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-TPCB-1	USEPA 8082
TriButyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	TriButyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and 1-nonane(C₉).

▶ C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

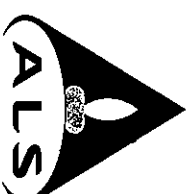
Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 14/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: D272

Batch: HK0924857
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 24/11/2009
DATE OF ISSUE: 16/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 1
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0924857-001	D272	24/11/2009

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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AMERICAS
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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
Part of the **ALS Laboratory Group**

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 www.alsenviro.com

A Campbell Brothers Limited Company

Mr. Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020100
Folder No : 0909059
Page No : 1 of 2
Date of Issue : 07/01/2010

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

Sample Description : 1 interstitial water sample was delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 07/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBTL)	Surrogate Compound Recovery (%)
HK0924857-1	Method Code	WTM-TBT-1	WTM-TBT-1	WTM-TBT-1
	Sample No	Analysis Date	11/12/2009	11/12/2009
	WT-0912-0355		<15	100

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.
(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.
(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₅ Diesel range organics (DRO) ↓	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₅ Diesel range organics (DRO) ↓	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₅ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₅ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphosphate Pesticides (OPP)	WTM-OCP-1	USEPA 8141	Organophosphosphate Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-PCB-2	USEPA 8082
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-TPCB-1	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-PHENOL-1	USEPA 8270C
II. Sediment/Soil					
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane (C₉).

↓ C₆-C₂₅ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane (C₁₀) and N-octacosane (C₂₈).

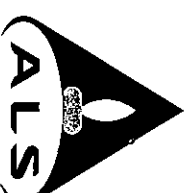
Reference Notes: USEPA -- United States Environmental Protection Agency

Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: D378

Batch: HK0924847
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 24/11/2009
DATE OF ISSUE: 16/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 1
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

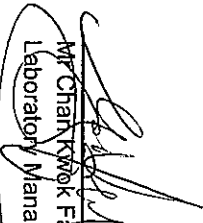
Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0924847-001	D378 0-0.9M	24/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
11/F Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
HONG KONG

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


Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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AUSTRALIA
Brisbane Hong Kong
Melbourne Singapore
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Newcastle Bogor

AMERICAS
Vancouver
Santiago
Amtofagasta
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

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A Campbell Brothers Limited Company



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020101
Folder No : 0909060
Page No : 1 of 2
Date of Issue : 07/01/2010

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

Sample Description : 1 interstitial water sample was delivered by the client.

Sample Received Date : 01/12/2009 Test Completed Date : 07/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Sample No	Analysis Date	Parameter	Unit	Tributyl tin (ng TBT/L)	Surrogate Compound Recovery (%)
HK0924847-1	WT-0912-0356	11/12/2009			<15	99

Approval Signatory:

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TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorus Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Tributyl Tin (TBT)	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
II. Sediment/Soil					
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

▲C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency
Krone *et al* – Marine Environmental research,27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925132
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 16-NOV-2009
Order number	: CV/2009/13			Issue Date	: 10-DEC-2009
C-O-C number	: H006852			No. of samples received	: 3
Site	: S1-2			No. of samples analysed	: 3

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925132

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.
Sample(s) were received in an ambient condition.
Elutriate sample(s) analysed and reported on an as received basis.
Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories	Position	Authorised results for
Anh Ngoc Huynh	Senior Chemist	Organics
PP 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
Tel +852 2610 1044 Fax: +852 2610 2021 www.alsenviro.com

A Campbell Brothers Limited Company



Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID	S1-2 0-0.9M	S1-2 0.9-1.9M	S1-2 ELUTRIATE BLANK
				Client sampling date / time	14-NOV-2009 12:30	14-NOV-2009 12:30	18-NOV-2009 11:00
Compound	CAS Number	LOR	Unit	HK0925132-001	HK0925132-002	HK0925132-003	
ED/EK: Inorganic Nonmetallic Parameters							
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	0.6	0.8	<0.1	
EG: Metals and Major Cations - Filtered							
EG020: Arsenic	7440-38-2	10	µg/L	14	16	<10	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	
EG020: Nickel	7440-02-0	1	µg/L	1	<1	<1	
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)							
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2	
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8	
EP-065A: PCB Single Congeners							
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	



Sub-Matrix: ELUTRIATE

Client sample ID

Client sampling date / time

				S1-2 0-0.9M 14-NOV-2009 12:30 HK0925132-001	S1-2 0.9-1.9M 14-NOV-2009 12:30 HK0925132-002	S1-2 ELUTRIATE BLANK 18-NOV-2009 11:00 HK0925132-003
Compound	CAS Number	LOR	Unit			
EP-065A: PCB Single Congeners - Continued						
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05
EP-067A: Organochlorine Pesticides (OC)						
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates						
Surrogate control limits listed at end of this report.						
Nitrobenzene -d5	4165-60-0	0.1	%	50.6	56.0	50.6
4-Terphenyl-d14	1718-51-0	0.1	%	87.7	88.3	82.8
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate						
Surrogate control limits listed at end of this report.						
Decachlorobiphenyl	2051-24-3	0.1	%	107	84.2	98.2
EP-067S: Pesticide Surrogate						
Surrogate control limits listed at end of this report.						
Tetrachlorometaxylene	877-09-8	0.1	%	58.0	55.9	50.3
Dibutylchlorendate	1770-80-5	0.1	%	107	98.6	98.6



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1179379)								
HK0925187-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	16	15	6.4
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0
HK0925176-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	12	13	8.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1179379)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	112	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	104	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	115	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	105	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	97.2	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	108	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	102	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	95.6	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	102	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178947)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	58.1	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	56.5	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	56.0	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	53.1	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	60.8	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	59.6	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	69.4	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	70.8	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178947) - Continued											
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	73.4	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	73.2	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	77.6	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	76.1	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	72.4	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	66.7	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	74.8	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1171670)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	96.2	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	98.7	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	85.2	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	81.9	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	89.6	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	91.4	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	89.1	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	102	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	82.9	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	84.8	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	98.8	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	83.3	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	86.8	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	87.2	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	82.1	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	82.3	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	84.4	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1174456)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	120	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	79.0	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	120	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	39.7	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	110	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	120	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	87.7	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	119	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	102	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	94.0	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	76.9	---	3	151	---	---

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



Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report				RPD (%)	
					Spike Recovery (%) MS	MSD	Recovery Limits (%) Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1179379)										
HK0925132-001	S1-2 0-0.9M	EG020: Arsenic	7440-38-2	100 µg/L	98.0	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	95.0	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	110	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	98.2	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	92.9	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	102	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	108	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	93.5	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	96.2	---	75	125	---	---

Surrogate Control Limits

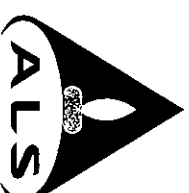
Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd

Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F, CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: S1-2

Batch: HK0925132
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 16/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 3
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

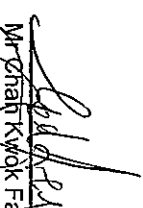
Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925132-001	S1-2	14/11/2009
HK0925132-002	S1-2	14/11/2009
HK0925132-003	S1-2	14/11/2009

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: hongkong@alsenviro.com


Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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AUSTRALIA	AMERICAS
Brisbane	Hong Kong
Melbourne	Singapore
Sydney	Kuala Lumpur
Newcastle	Bogor

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
Part of the **ALS Laboratory Group**
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 **www.alsenviro.com**
A Campbell Brothers Limited Company



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020062
Folder No : 0909018
Page No : 1 of 2
Date of Issue : 22/12/2009

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

Sample Description : 3 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009 Test Completed Date : 22/12/2009

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBTL)	Surrogate Compound Recovery (%)
HK0925132-1	Method Code	WTM-TBT-1	WTM-TBT-1	WTM-TBT-1
	Sample No	Analysis Date	01/12/2009	01/12/2009
HK0925132-2	WT-0912-0241		<10	100
HK0925132-2	WT-0912-0242		<11	98
HK0925132-3	WT-0912-0243		<8	89

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons	WTM-GRO-1	USEPA 8015B	Petroleum Hydrocarbons	WTM-DRO-1	USEPA 8015B
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO) ^	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO) ^	SEDIMENT-DRO-2	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-OCP-1	USEPA 8081	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-OCP-1	USEPA 8081
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8141	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8141
Organophosphate Pesticides (OPP)	WTM-PAH-1	USEPA 8270C	Organophosphate Pesticides (OPP)	SEDIMENT-PAH-1	USEPA 8270C
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-VOC-1	USEPA 8260B	Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-VOC-1	USEPA 8260B
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8082
Volatile Organic Compounds (VOCs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	USEPA 8082
Polychlorinated Biphenyls (PCBs)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Tributyl Tin (TBT)	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
Phenols			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks:

*C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

Reference Notes:

^ C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

USEPA – United States Environmental Protection Agency
Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925079
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 11-NOV-2009
Order number	: CV/2009/13			Issue Date	: 10-DEC-2009
C-O-C number	: H010001			No. of samples received	: 4
Site	: S2			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925079

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

Anh Ngoc Huynh

PP Fung Lim Chee, Richard

Position

Senior Chemist
General Manager

Authorised results for

Organics
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
Tel: +852 2610 1044 Fax: +852 2610 2021 www.alsenviro.com

A Campbell Brothers Limited Company



Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID	S2	S2	S2	S2
				Client sampling date / time	0-0.9M	0.9-1.9M	1.9-2.9M	ELUTRIATE BLANK
				11-NOV-2009 16:30	11-NOV-2009 16:30	11-NOV-2009 16:30	13-NOV-2009 08:00	
Compound	CAS Number	LOR	Unit	HK0925079-001	HK0925079-002	HK0925079-003	HK0925079-004	
ED/EK: Inorganic Nonmetallic Parameters								
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	<0.1	<0.1	<0.1	<0.1	
EG: Metals and Major Cations - Filtered								
EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	<10	<10	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	<10	
EG020: Copper	7440-50-8	1	µg/L	<1	<1	1	3	
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
EG020: Nickel	7440-02-0	1	µg/L	1	1	2	2	
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	<1	
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10	
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)								
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	<0.4	
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2	<2.2	
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8	<6.8	
EP-065A: PCB Single Congeners								
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	



Sub-Matrix: ELUTRIATE

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	S2	S2	S2	S2
				0-0.9M	0.9-1.9M	1.9-2.9M	ELUTRIATE BLANK
				11-NOV-2009 16:30	11-NOV-2009 16:30	11-NOV-2009 16:30	13-NOV-2009 08:00
				HK0925079-001	HK0925079-002	HK0925079-003	HK0925079-004
EP-065A: PCB Single Congeners - Continued							
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
EP-067A: Organochlorine Pesticides (OC)							
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.
Nitrobenzene -d5	4165-60-0	0.1	%	50.4	58.9	65.8	53.2
4-Terphenyl-d14	1718-51-0	0.1	%	70.1	72.0	72.2	70.7
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.
Decachlorobiphenyl	2051-24-3	0.1	%	99.9	106	104	115
EP-067S: Pesticide Surrogate							Surrogate control limits listed at end of this report.
Tetrachlorometaxylene	877-09-8	0.1	%	52.4	51.4	53.4	53.6
Dibutylchlorendate	1770-80-5	0.1	%	60.8	56.0	57.4	56.8



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 (%)	
EG: Metals and Major Cations - Filtered (QC Lot: 1178806)									
HK0925091-004	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	0.2	0.3	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	3	3	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	1	1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)		
						LCS	DCS	Low	High	Value	Control Limit	
EG: Metals and Major Cations - Filtered (QC Lot: 1178806)												
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	89.7	---	85	115	---	---	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	102	---	85	115	---	---	
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	104	---	85	115	---	---	
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	101	---	85	115	---	---	
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	106	---	85	115	---	---	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	100	---	85	115	---	---	
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	107	---	85	115	---	---	
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	91.4	---	85	115	---	---	
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	94.2	---	85	115	---	---	
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178904)												
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	65.9	---	50	130	---	---	
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	67.3	---	50	130	---	---	
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	64.1	---	50	130	---	---	
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	53.8	---	50	130	---	---	
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	57.4	---	50	130	---	---	
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	67.0	---	50	130	---	---	
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	80.6	---	50	130	---	---	
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	88.2	---	50	130	---	---	
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	73.5	---	50	130	---	---	
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	84.3	---	50	130	---	---	
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	75.1	---	50	130	---	---	
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	65.1	---	50	130	---	---	
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	65.0	---	50	130	---	---	
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	50.8	---	50	130	---	---	
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	81.8	---	50	130	---	---	
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---	



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low High		RPD (%) Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178904) - Continued											
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1171678)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	94.3	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	91.0	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	89.6	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	93.1	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	91.2	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	99.4	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	86.1	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	82.7	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	84.2	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	83.3	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	94.8	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	85.7	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	89.7	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	82.3	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	85.7	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	81.1	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	89.2	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1171671)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	62.9	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	74.4	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	78.6	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	30.8	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	60.4	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	60.4	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	75.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	92.5	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	58.2	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	59.3	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	62.8	---	3	151	---	---

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

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%) MS	MSD	Recovery Limits (%) Low High		RPD (%) Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178806)										
HK0925079-001	S2 0-0.9M	EG020: Arsenic	7440-38-2	100 µg/L	98.2	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	101	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	110	---	75	125	---	---

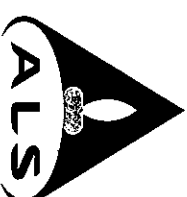


Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report		Recovery Limits (%)		RPD (%)	
					Spike Recovery (%) MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178806) - Continued										
HK0925079-001	S2 0-0.9M	EG020: Copper	7440-50-8	100 µg/L	113	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	106	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	95.5	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	104	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	88.8	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	109	---	75	125	---	---

Surrogate Control Limits

Compound	CAS Number	Recovery Limits (%)	
		Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130



ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
ALS TECHNICHEM (HK) Pty Ltd
Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: S2

Batch: HK0925079
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 11/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 4
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

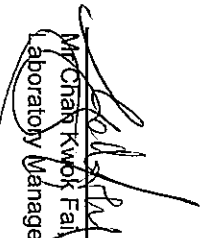
Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925079-001	S2	11/11/2009
HK0925079-002	S2	11/11/2009
HK0925079-003	S2	11/11/2009
HK0925079-004	S2	13/11/2009

ISSUING LABORATORY: HONG KONG

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ALS Technichem (HK) Pty Ltd
11/F Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
HONG KONG

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Mr Chan Kwok Fai Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.

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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

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**
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 **www.alsenviro.com**
A Campbell Brothers Limited Company



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020061
Folder No : 0909017
Page No : 1 of 2
Date of Issue : 22/12/2009

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

Sample Description : 4 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 22/12/2009

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBTL)	Surrogate Compound Recovery (%)
Sample No	Method Code	Analysis Date	WTM-TBT-1	WTM-TBT-1
HK0925079-1	WT-0912-0237	01/12/2009	<11	87
HK0925079-2	WT-0912-0238		<9	87
HK0925079-3	WT-0912-0239		<10	100
HK0925079-4	WT-0912-0240		<11	98

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)†	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)†	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorus Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-P-CB-2	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-T-PCB-1	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and 1-nonane(C₉).

†C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925331
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 30-NOV-2009
Order number	: CV/2009/13			Issue Date	: 07-JAN-2010
C-O-C number	: H008062			No. of samples received	: 4
Site	: S3			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 10-DEC-2009
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: HK0925331

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.
Sample(s) were received in an ambient condition.
Elutriate sample(s) analysed and reported on an as received basis.
Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories	Position	Authorised results for
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A Campbell Brothers Limited Company



Analytical Results

Sub-Matrix: ELUTRIATE

Client sample ID

Client sampling date / time

				S3 0-0.9M	S3 0.9-1.9M	S3 1.9-2.9M	S3 ELUTRIATE BLANK
				14-NOV-2009 15:00	14-NOV-2009 15:00	14-NOV-2009 15:00	28-NOV-2009 10:00
Compound	CAS Number	LOR	Unit	HK0925331-001	HK0925331-002	HK0925331-003	HK0925331-004
ED/EK: Inorganic Nonmetallic Parameters							
EK055K: Unionized Ammonia (as N)	----	0.1	mg/L	<0.1	<0.1	<0.1	<0.1
EG: Metals and Major Cations - Filtered							
EG020: Arsenic	7440-38-2	10	µg/L	21	27	<10	<10
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	<10
EG020: Copper	7440-50-8	1	µg/L	<1	1	<1	2
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1	<1
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)							
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Indeno(1,2,3,cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Low M.W. PAHs	----	2.2	µg/L	<2.2	<2.2	<2.2	<2.2
High M.W. PAHs	----	6.8	µg/L	<6.8	<6.8	<6.8	<6.8
EP-065A: PCB Single Congeners							
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	<0.05



Sub-Matrix: ELUTRIATE				Client sample ID			
				S3	S3	S3	S3
				0-0.9M	0.9-1.9M	1.9-2.9M	ELUTRIATE BLANK
Client sampling date / time				14-NOV-2009 15:00	14-NOV-2009 15:00	14-NOV-2009 15:00	28-NOV-2009 10:00
Compound	CAS Number	LOR	Unit	HK0925331-001	HK0925331-002	HK0925331-003	HK0925331-004
EP-065A: PCB Single Congeners - Continued							
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 169	32774-16-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
EP-067A: Organochlorine Pesticides (OC)							
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.
Nitrobenzene -d5	4165-60-0	0.1	%	52.7	69.3	93.5	61.4
4-Terphenyl-d14	1718-51-0	0.1	%	74.6	76.7	81.9	86.3
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.
Decachlorobiphenyl	2051-24-3	0.1	%	83.7	79.3	85.0	91.6
EP-067S: Pesticide Surrogate							Surrogate control limits listed at end of this report.
Tetrachlorometaxylene	877-09-8	0.1	%	54.6	54.4	52.3	58.6
Dibutylchloroendate	1770-80-5	0.1	%	107	106	116	121



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1187890)								
HK0925331-002	S3 0.9-1.9M	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	1	1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	27	28	3.6
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					LCS	DCS	Low	High	Value	Control Limit	
EG: Metals and Major Cations - Filtered (QC Lot: 1187890)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	108	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	97.0	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	104	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	94.4	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	94.8	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	101	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	100	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	90.8	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	95.8	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1182435)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	96.8	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	77.3	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	77.9	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	95.1	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	102	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	91.7	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	95.2	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	83.7	---	50	130	---	---
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	97.5	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	107	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	105	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	90.9	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	97.9	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	91.8	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	93.0	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1182435) - Continued											
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1179512)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	80.1	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	82.1	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	88.3	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	84.9	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	87.8	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	82.2	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	110	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	107	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	110	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	118	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	110	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	108	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	102	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	93.7	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	107	---	50	130	---	---
PCB 169	32774-16-6	0.01	µg/L	<0.01	.1 µg/L	98.4	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	104	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1179507)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	77.2	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	101	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	64.8	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	35.6	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	89.3	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	92.1	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	98.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	107	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	108	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	65.0	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	80.1	---	3	151	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1182436)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	71.5	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	81.3	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	91.7	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	83.2	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	88.5	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	75.6	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	93.1	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	77.6	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	77.0	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	79.9	---	53	145	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1182436) - Continued											
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	73.5	---	3	151	---	---

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

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1187890)										
HK0925331-001	S3 0-0.9M	EG020: Arsenic	7440-38-2	100 µg/L	113	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	95.1	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	101	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	101	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	105	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	102	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	108	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	87.0	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	94.4	---	75	125	---	---

Surrogate Control Limits

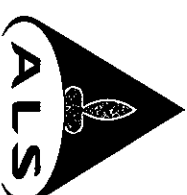
Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorodate	1770-80-5	50	130

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd

Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI, HONG KONG
PROJECT ID: LG29024
SITE: S3

Batch: HK0925331
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 30/11/2009
DATE OF ISSUE: 20/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 4
ORDER: CV/2009/13

COMMENTS

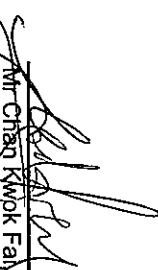
Samples analysed on an as received basis. Results reported on an as received basis. Tributyl tin was subcontracted and tested by Hong Kong Productivity Council. Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925331001	S3 0-0.9M	14/11/2009
HK0925331002	S3 0.9-1.9M	14/11/2009
HK0925331003	S3 1.9-2.9M	14/11/2009
HK0925331004	S3 ELUTRIATE BLANK	28/11/2009

ISSUING LABORATORY: HONG KONG

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Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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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
Part of the **ALS Laboratory Group**
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Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020299
Folder No : 0909453
Page No : 1 of 2
Date of Issue : 09/01/2010

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

Sample Description : 4 elutriate water samples were delivered by the client.

Sample Received Date : 11/12/2009

Test Completed Date : 08/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBT/L)	Surrogate Compound Recovery (%)
Sample No	Method Code	Analysis Date	WTM-TBT-1	WTM-TBT-1
HK0925331-1	WT-0912-1764	15/12/2009	<15	98
HK0925331-2	WT-0912-1765		<15	97
HK0925331-3	WT-0912-1766		<15	77
HK0925331-4	WT-0912-1767		<15	83

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ ^a -C ₂₈ Diesel range organics (DRO) ^b	WTM-DRO-1	USEPA 8015B	C ₁₀ ^a -C ₂₈ Diesel range organics (DRO) ^b	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ ^a -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ ^a -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorus Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polychlorinated Biphenyls (PCBs)	WTM-PAH-1	USEPA 8270C	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-PCB-2	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-1	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Tributyl Tin (TBT)	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A	HS1004	HS1004, Testing Guideline on Degradable Containers and Bags	
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

^aC₁₀^a-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency
Krone *et al* – Marine Environmental research,27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 7
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925098
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 13-NOV-2009
Order number	: CV/2009/13			Issue Date	: 10-DEC-2009
C-O-C number	: H006847			No. of samples received	: 4
Site	: S4			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925098

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.
Sample(s) were received in an ambient condition.
Elutriate sample(s) analysed and reported on an as received basis.
Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

Anh Ngoc Huynh

PF Fung Lim Chee, Richard

Position

Senior Chemist
General Manager

Authorised results for

Organics
Inorganics

ALS Laboratory Group

Trading Name: ALS Technichem (HK) Pty Ltd
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Analytical Results

Sub-Matrix: ELUTRIATE

Sub-Matrix: ELUTRIATE				Client sample ID	S4 0-0.9M	S4 0.9-1.9M	S4 1.9-2.9M	S4 ELUTRIATE BLANK
Client sampling date / time				13-NOV-2009 10:30	13-NOV-2009 10:30	13-NOV-2009 10:30	13-NOV-2009 08:00	
Compound	CAS Number	LOR	Unit	HK0925098-001	HK0925098-002	HK0925098-003	HK0925098-004	
ED/EK: Inorganic Nonmetallic Parameters								
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	<0.1	<0.1	<0.1	<0.1	
EG: Metals and Major Cations - Filtered								
EG020: Arsenic	7440-38-2	10	µg/L	16	22	<10	<10	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	0.4	
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	<10	
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	<1	
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1	1	
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	<1	
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10	
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)								
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	<0.4	
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2	<2.2	
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8	<6.8	
EP-065A: PCB Single Congeners								
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	



Sub-Matrix: ELUTRIATE				Client sample ID			
Client sampling date / time				S4	S4	S4	S4
				0-0.9M	0.9-1.9M	1.9-2.9M	ELUTRIATE BLANK
				13-NOV-2009 10:30	13-NOV-2009 10:30	13-NOV-2009 10:30	13-NOV-2009 08:00
Compound	CAS Number	LOR	Unit	HK0925098-001	HK0925098-002	HK0925098-003	HK0925098-004
EP-065A: PCB Single Congeners - Continued							
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
EP-067A: Organochlorine Pesticides (OC)							
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.
Nitrobenzene -d5	4165-60-0	0.1	%	50.9	52.7	53.0	51.9
4-Terphenyl-d14	1718-51-0	0.1	%	59.9	63.0	72.7	78.4
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.
Decachlorobiphenyl	2051-24-3	0.1	%	67.0	80.5	82.1	89.7
EP-067S: Pesticide Surrogate							Surrogate control limits listed at end of this report.
Tetrachlorometaxylene	877-09-8	0.1	%	57.5	51.3	53.4	54.8
Dibutylchlorendate	1770-80-5	0.1	%	51.5	50.6	56.6	62.6



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 (%)	
EG: Metals and Major Cations - Filtered (QC Lot: 1178806)									
HK0925091-004	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	0.2	0.3	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	3	3	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	1	1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0	
EG: Metals and Major Cations - Filtered (QC Lot: 1178807)									
HK0925098-004	S4 ELUTRIATE BLANK	EG020: Cadmium	7440-43-9	0.2	µg/L	0.4	0.5	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	1	1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)		
						LCS	DCS	Low	High	Value	Control Limit	
EG: Metals and Major Cations - Filtered (QC Lot: 1178806)												
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	89.7	----	85	115	----	----	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	102	----	85	115	----	----	
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	104	----	85	115	----	----	
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	101	----	85	115	----	----	
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	106	----	85	115	----	----	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	100	----	85	115	----	----	
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	107	----	85	115	----	----	
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	91.4	----	85	115	----	----	
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	94.2	----	85	115	----	----	
EG: Metals and Major Cations - Filtered (QC Lot: 1178807)												
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	90.8	----	85	115	----	----	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	103	----	85	115	----	----	
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	100	----	85	115	----	----	
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	105	----	85	115	----	----	
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	99.8	----	85	115	----	----	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	108	----	85	115	----	----	
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	108	----	85	115	----	----	



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	Control Limit
						LCS	DCS	Low	High	Value	
EG: Metals and Major Cations - Filtered (QC Lot: 1178807) - Continued											
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	89.4	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	110	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178843)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	54.3	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	59.6	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	53.7	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	50.5	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	61.9	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	56.7	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	82.3	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	86.6	---	50	130	---	---
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	75.7	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	85.8	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	76.8	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	69.0	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	72.6	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	# 44.6	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	68.1	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1174459)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	90.6	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	84.5	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	85.7	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	86.1	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	96.6	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	93.7	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	84.2	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	93.7	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	80.7	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	98.2	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	87.8	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	88.3	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	91.4	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	85.5	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	83.0	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	85.8	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	85.0	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1171662)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	61.1	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	84.1	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	73.3	---	51	136	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1171662) - Continued											
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	70.4	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	68.5	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	78.5	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	78.0	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	81.6	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	80.6	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	75.5	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	124	---	3	151	---	---

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

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178806)										
HK0925079-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	98.2	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	101	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	110	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	113	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	106	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	95.5	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	104	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	88.8	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	109	---	75	125	---	---
EG: Metals and Major Cations - Filtered (QC Lot: 1178807)										
HK0925098-003	S4 1.9-2.9M	EG020: Arsenic	7440-38-2	100 µg/L	109	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	99.0	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	96.2	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	91.8	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	100	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	110	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	108	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	88.1	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	103	---	75	125	---	---

Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130



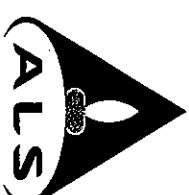
Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates - Continued			
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd

Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI, HONG KONG
PROJECT ID: LG29024
SITE: S4

Batch: HK0925098
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 13/11/2009
DATE OF ISSUE: 20/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 4
ORDER: CV/2009/13

COMMENTS

Samples analysed on an as received basis. Results reported on an as received basis. Tributyl tin was subcontracted and tested by Hong Kong Productivity Council. Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925098-1 (HK0924254-4)	S4 0-0.9M	13/11/2009
HK0925098-2 (HK0924254-5)	S4 0.9-1.9M	13/11/2009
HK0925098-3 (HK0924254-6)	S4 1.9-2.9M	13/11/2009
HK0925098-4 (HK0924254-7)	S4 Elutriate Blank	13/11/2009

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: hongkong@alsenviro.com

Mr. Ghan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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AUSTRALIA	AMERICAS
Brisbane Melbourne Sydney Newcastle	Vancouver Santiago Antofagasta 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

Part of the **ALS Technichem (HK) Pty Ltd**

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Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0019911
Folder No : 0908822
Page No : 1 of 2
Date of Issue : 17/12/2009

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

Sample Description : 4 elutriate water samples were delivered by the client.

Sample Received Date : 25/11/2009

Test Completed Date : 17/12/2009

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBTL)	Surrogate Compound Recovery (%)
HK0924254-4	Method Code	WTM-TBT-1	01/12/2009	01/12/2009
	Sample No	WT-0911-2873	<8	99
HK0924254-5	WT-0911-2874	<9	110	
HK0924254-6	WT-0911-2875	<15	100	
HK0924254-7	WT-0911-2876	<11	100	

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.
(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.
(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₁₆ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₁₆ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphosphate Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphosphate Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	USEPA 8082
TriButyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	TriButyl Tin (TBT)	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
II. Sediment/Soil					
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141 A	HS1004	HS1004, Testing Guideline on Degradable Containers and Bags	
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-nmethylpentane (C₆) and n-nonane(C₉).

▲C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency
Krone *et al* – Marine Environmental research,27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925194
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 20-NOV-2009
Order number	: CV/2009/13			Issue Date	: 17-DEC-2009
C-O-C number	: H010024			No. of samples received	: 3
Site	: S5-2			No. of samples analysed	: 3

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925194

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories	Position	Authorised results for
Anh Ngoc Huynh	Senior Chemist	Organics
PP 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
Tel +852 2610 1044 Fax: +852 2610 2021 www.alsenviro.com

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Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID		
				S5-2 0-0.9M	S5-2 0.9-1.9M	S5-2 ELUTRIATE BLANK
				20-NOV-2009 12:00	20-NOV-2009 12:00	20-NOV-2009 12:00
				HK0925194-001	HK0925194-002	HK0925194-003
Compound	CAS Number	LOR	Unit	Client sampling date / time		
ED/EK: Inorganic Nonmetallic Parameters						
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	0.4	<0.1	<0.1
EG: Metals and Major Cations - Filtered						
EG020: Arsenic	7440-38-2	10	µg/L	17	21	<10
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)						
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2
Benzo(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8
EP-065A: PCB Single Congeners						
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05



Sub-Matrix: ELUTRIATE				Client sample ID	S5-2 0-0.9M	S5-2 0.9-1.9M	S5-2 ELUTRIATE BLANK		
Client sampling date / time				20-NOV-2009 12:00	20-NOV-2009 12:00	20-NOV-2009 12:00			
Compound	CAS Number	LOR	Unit	HK0925194-001	HK0925194-002	HK0925194-003			
EP-065A: PCB Single Congeners - Continued									
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05			
EP-067A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5			
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0			
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5			
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5			
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5			
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5			
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5			
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5			
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5			
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5			
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0			
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.		
Nitrobenzene -d5	4165-60-0	0.1	%	51.7	62.7	52.8			
4-Terphenyl-d14	1718-51-0	0.1	%	84.4	70.2	74.4			
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.		
Decachlorobiphenyl	2051-24-3	0.1	%	84.9	60.9	64.1			
EP-067S: Pesticide Surrogate							Surrogate control limits listed at end of this report.		
Tetrachlorometaxylene	877-09-8	0.1	%	51.9	64.2	56.3			
Dibutylchlorendate	1770-80-5	0.1	%	115	106	100			



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 (%)	
EG: Metals and Major Cations - Filtered (QC Lot: 1180497)									
HK0924957-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0	
HK0924975-001	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180497)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	108	----	85	115	----	----
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	96.9	----	85	115	----	----
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	95.6	----	85	115	----	----
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	99.7	----	85	115	----	----
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	95.5	----	85	115	----	----
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	103	----	85	115	----	----
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	98.5	----	85	115	----	----
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	92.8	----	85	115	----	----
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	105	----	85	115	----	----
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179455)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	50.2	----	50	130	----	----
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	58.0	----	50	130	----	----
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	59.3	----	50	130	----	----
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	53.3	----	50	130	----	----
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	52.2	----	50	130	----	----
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	54.2	----	50	130	----	----
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	69.2	----	50	130	----	----
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	70.0	----	50	130	----	----



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179455) - Continued											
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	70.9	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	73.3	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	76.7	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	69.5	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	64.7	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	61.4	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	67.0	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1179454)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	1 µg/L	112	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	1 µg/L	91.9	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	1 µg/L	113	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	1 µg/L	90.3	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	1 µg/L	85.1	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	1 µg/L	111	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	1 µg/L	83.8	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	1 µg/L	87.3	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	1 µg/L	81.1	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	1 µg/L	84.2	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	1 µg/L	82.0	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	1 µg/L	89.6	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	1 µg/L	80.8	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	1 µg/L	83.9	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	1 µg/L	88.0	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	1 µg/L	91.3	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	1 µg/L	87.7	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1179151)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	51.1	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	65.4	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	78.3	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	55.4	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	60.7	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	79.9	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	78.5	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	88.0	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	88.0	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	90.2	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	85.6	---	3	151	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1179456)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	74.9	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	76.4	---	40	134	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1179456) - Continued											
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	85.6	----	51	136	----	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	38.0	----	1	138	----	----
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	94.1	----	32	139	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	106	----	54	134	----	----
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	94.2	----	53	143	----	----
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	93.3	----	57	156	----	----
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	98.4	----	54	159	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	85.4	----	53	145	----	----
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	21.6	----	3	151	----	----

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

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180497)										
HK0924956-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	112	----	75	125	----	----
		EG020: Cadmium	7440-43-9	100 µg/L	97.8	----	75	125	----	----
		EG020: Chromium	7440-47-3	100 µg/L	93.7	----	75	125	----	----
		EG020: Copper	7440-50-8	100 µg/L	106	----	75	125	----	----
		EG020: Lead	7439-92-1	100 µg/L	98.4	----	75	125	----	----
		EG020: Mercury	7439-97-6	2 µg/L	104	----	75	125	----	----
		EG020: Nickel	7440-02-0	100 µg/L	99.5	----	75	125	----	----
		EG020: Silver	7440-22-4	100 µg/L	94.7	----	75	125	----	----
		EG020: Zinc	7440-66-6	100 µg/L	90.3	----	75	125	----	----

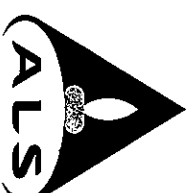
Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: S5-2

Batch: HK0925194
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 20/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 3
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

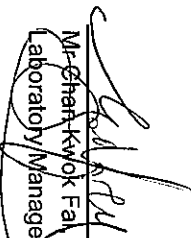
Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925194-001	S5-2	19/11/2009
HK0925194-002	S5-2	19/11/2009
HK0925194-003	S5-2	19/11/2009

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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Mr. Chan Kwok Fai Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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AUSTRALIA	AMERICAS
Brisbane	Vancouver
Melbourne	Santiago
Sydney	Antofagasta
Newcastle	Limá

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
Part of the **ALS Laboratory Group**

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 www.alsenviro.com

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Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020072

Folder No : 0909029

Page No : 1 of 2

Date of Issue : 04/01/2010

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

Sample Description : 3 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 04/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Sample No	Analysis Date	Parameter Unit	Tributyl tin (ng TBT/L)	Surrogate Compound Recovery (%)
HK0925194-1	WT-0912-0284	03/12/2009	Method Code W/TM-TBT-1	03/12/2009	W/TM-TBT-1 03/12/2009
HK0925194-2	WT-0912-0285			<12	96
HK0925194-3	WT-0912-0286			<9	99

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₄ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₄ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₄ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₄ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphosphate Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphosphate Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-naphthylpentane (C₆) and n-nonane(C₉).

▲C₁₀-C₂₄ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₄).

Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925105
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 16-NOV-2009
Order number	: CV/2009/13			Issue Date	: 09-DEC-2009
C-O-C number	: H006851			No. of samples received	: 4
Site	: S6			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925105

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.
Sample(s) were received in an ambient condition.
Elutriate sample(s) analysed and reported on an as received basis.
Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

Anh Ngoc Huynh
Fung Lim Chee, Richard

Position

Senior Chemist
General Manager

Authorised results for

Organics
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
Tel +852 2610 1044 Fax: +852 2610 2021 www.alsenviro.com

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Analytical Results

Sub-Matrix: ELUTRIATE

Client sample ID

Client sampling date / time

				S6 0-0.9M	S6 0.9-1.9M	S6 1.9-2.9M	S6 ELUTRIATE BLANK
				14-NOV-2009 10:30	14-NOV-2009 10:30	14-NOV-2009 10:30	14-NOV-2009 10:30
				HK0925105-001	HK0925105-002	HK0925105-003	HK0925105-004
Compound	CAS Number	LOR	Unit				
ED/EK: Inorganic Nonmetallic Parameters							
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	0.7	0.7	0.7	<0.1
EG: Metals and Major Cations - Filtered							
EG020: Arsenic	7440-38-2	10	µg/L	23	33	30	<10
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	<10
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	<1
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1	<1
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)							
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Indeno(1,2,3,cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2	<2.2
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8	<6.8
EP-065A: PCB Single Congeners							
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	<0.05



Sub-Matrix: ELUTRIATE

Client sample ID

Client sampling date / time

				S6 0-0.9M	S6 0.9-1.9M	S6 1.9-2.9M	S6 ELUTRIATE BLANK
				14-NOV-2009 10:30	14-NOV-2009 10:30	14-NOV-2009 10:30	14-NOV-2009 10:30
				HK0925105-001	HK0925105-002	HK0925105-003	HK0925105-004
Compound	CAS Number	LOR	Unit				
EP-065A: PCB Single Congeners - Continued							
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
EP-067A: Organochlorine Pesticides (OC)							
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							
Nitrobenzene -d5	4165-60-0	0.1	%	55.1	56.8	58.1	58.3
4-Terphenyl-d14	1718-51-0	0.1	%	83.7	98.6	96.9	99.0
Surrogate control limits listed at end of this report.							
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							
Decachlorobiphenyl	2051-24-3	0.1	%	102	96.1	103	93.1
Surrogate control limits listed at end of this report.							
EP-067S: Pesticide Surrogate							
Tetrachlorometaxylene	877-09-8	0.1	%	53.2	55.3	56.6	53.0
Dibutylchlorendate	1770-80-5	0.1	%	70.2	78.3	75.0	78.5
Surrogate control limits listed at end of this report.							



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1178807)								
HK0925098-004	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	0.4	0.5	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	1	1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	Recovery Limits (%)		RPD (%)		
					LCS	DCS	Low	High	Value	Control Limit		
EG: Metals and Major Cations - Filtered (QC Lot: 1178807)												
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	90.8	---	85	115	---	---	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	103	---	85	115	---	---	
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	100	---	85	115	---	---	
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	105	---	85	115	---	---	
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	99.8	---	85	115	---	---	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	108	---	85	115	---	---	
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	108	---	85	115	---	---	
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	89.4	---	85	115	---	---	
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	110	---	85	115	---	---	
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178843)												
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	54.3	---	50	130	---	---	
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	59.6	---	50	130	---	---	
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	53.7	---	50	130	---	---	
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	50.5	---	50	130	---	---	
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	61.9	---	50	130	---	---	
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	56.7	---	50	130	---	---	
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	82.3	---	50	130	---	---	
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	86.6	---	50	130	---	---	
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	75.7	---	50	130	---	---	
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	85.8	---	50	130	---	---	
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	76.8	---	50	130	---	---	
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	69.0	---	50	130	---	---	
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	72.6	---	50	130	---	---	
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	# 44.6	---	50	130	---	---	
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	68.1	---	50	130	---	---	
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---	



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178843) - Continued											
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1174459)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	90.6	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	84.5	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	85.7	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	86.1	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	96.6	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	93.7	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	84.2	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	93.7	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	80.7	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	98.2	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	87.8	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	88.3	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	91.4	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	85.5	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	83.0	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	85.8	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	85.0	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1171671)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	62.9	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	74.4	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	78.6	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	30.8	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	60.4	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	60.4	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	75.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	92.5	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	58.2	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	59.3	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	62.8	---	3	151	---	---

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

Matrix: WATER			Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report							
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178807)										
HK0925098-003	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	109	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	99.0	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	96.2	---	75	125	---	---



Matrix: WATER

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

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178807) - Continued										
HK0925098-003	Anonymous	EG020: Copper	7440-50-8	100 µg/L	91.8	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	100	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	110	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	108	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	88.1	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	103	---	75	125	---	---

Surrogate Control Limits

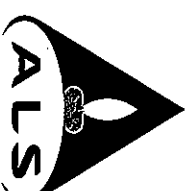
Sub-Matrix: ELUTRIATE

Compound	CAS Number	Recovery Limits (%)	
		Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorodate	1770-80-5	50	130

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI, HONG KONG
PROJECT ID: LG29024
SITE: S6

Batch: HK0925105
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 16/11/2009
DATE OF ISSUE: 20/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 4
ORDER: CV/2009/13

COMMENTS


Samples analysed on an as received basis. Results reported on an as received basis. Tributyl tin was subcontracted and tested by Hong Kong Productivity Council. Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925105-1 (HK0924257-4)	S6 0-0.9M	14/11/2009
HK0925105-2 (HK0924257-5)	S6 0.9-1.9M	14/11/2009
HK0925105-3 (HK0924257-6)	S6 1.9-2.9M	14/11/2009
HK0925105-4 (HK0924257-7)	S6 Elutriate Blank	14/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
11/F Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
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Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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AMERICAS
Vancouver
Santiago
Ampofagasta
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

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**
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 **www.alsenviro.com**
A Campbell Brothers Limited Company



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0019913

Folder No : 0908824

Page No : 1 of 2

Date of Issue : 17/12/2009

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

Sample Description : 4 elutriate water samples were delivered by the client.

Sample Received Date : 25/11/2009

Test Completed Date : 17/12/2009

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Sample No	Analysis Date	Parameter Unit	Tributyl tin (ng TBT/L)	Surrogate Compound Recovery (%)
HK0924257-4	WT-0911-2881	01/12/2009	Method Code WTM-TBT-1	01/12/2009	WTM-TBT-1 01/12/2009
HK0924257-5	WT-0911-2882			<9	99
HK0924257-6	WT-0911-2883			21	77
HK0924257-7	WT-0911-2884			<10	100

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ *-C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ *-C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphosphate Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphosphate Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-VOC-2	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-1	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Tributyl Tin (TBT)	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
II. Sediment/Soil					
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A	HS1004	HS1004, Testing Guide/line on Degradable Containers and Bags	
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

▲C₁₀*-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency
Krone *et al* – Marine Environmental research,27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 7
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925111
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 16-NOV-2009
Order number	: CV/2009/13			Issue Date	: 10-DEC-2009
C-O-C number	: H006854			No. of samples received	: 4
Site	: S7			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925111

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

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Authorised results for

Organics

Inorganics

ALS Laboratory Group

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A Campbell Brothers Limited Company



Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID	S7	S7	S7	S7
				Client sampling date / time	0-0.9M	0.9-1.9M	1.9-2.9M	ELUTRIATE BLANK
Compound	CAS Number	LOR	Unit	14-NOV-2009 17:00	14-NOV-2009 17:00	14-NOV-2009 17:00	18-NOV-2009 09:00	
				HK0925111-001	HK0925111-002	HK0925111-003	HK0925111-004	
ED/EK: Inorganic Nonmetallic Parameters								
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	0.6	0.7	0.6	<0.1	
EG: Metals and Major Cations - Filtered								
EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	<10	<10	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	<10	
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	<1	
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
EG020: Nickel	7440-02-0	1	µg/L	2	1	1	<1	
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	<1	
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10	
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)								
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	<0.4	
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2	<2.2	
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8	<6.8	
EP-065A: PCB Single Congeners								
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	



Sub-Matrix: ELUTRIATE

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	S7	S7	S7	S7
				0-0.9M	0.9-1.9M	1.9-2.9M	ELUTRIATE BLANK
				14-NOV-2009 17:00	14-NOV-2009 17:00	14-NOV-2009 17:00	18-NOV-2009 09:00
				HK0925111-001	HK0925111-002	HK0925111-003	HK0925111-004
EP-065A: PCB Single Congeners - Continued							
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
EP-067A: Organochlorine Pesticides (OC)							
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							
Surrogate control limits listed at end of this report.							
Nitrobenzene -d5	4165-60-0	0.1	%	61.1	64.2	65.5	52.7
4-Terphenyl-d14	1718-51-0	0.1	%	84.7	89.4	91.6	84.9
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							
Surrogate control limits listed at end of this report.							
Decachlorobiphenyl	2051-24-3	0.1	%	95.1	90.7	97.8	108
EP-067S: Pesticide Surrogate							
Surrogate control limits listed at end of this report.							
Tetrachlorometaxylene	877-09-8	0.1	%	55.2	55.8	51.8	54.9
Dibutylchlorendate	1770-80-5	0.1	%	70.0	68.4	70.0	75.2



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 (%)	
EG: Metals and Major Cations - Filtered (QC Lot: 1178810)									
HK0925111-004	S7 ELUTRIATE BLANK	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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			
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	RPD (%)							
					LCS	DCS	Low	High	Value	Control Limit					
EG: Metals and Major Cations - Filtered (QC Lot: 1178810)															
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	90.8	85	115	---	---					
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	103	85	115	---	---					
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	100	85	115	---	---					
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	105	85	115	---	---					
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	99.8	85	115	---	---					
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	108	85	115	---	---					
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	109	85	115	---	---					
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	88.9	85	115	---	---					
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	110	85	115	---	---					
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178844)															
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	50.3	50	130	---	---					
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	61.2	50	130	---	---					
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	52.1	50	130	---	---					
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	50.2	50	130	---	---					
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	59.5	50	130	---	---					
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	54.8	50	130	---	---					
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	75.4	50	130	---	---					
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	79.9	50	130	---	---					
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	68.0	50	130	---	---					
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	78.1	50	130	---	---					
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	68.8	50	130	---	---					
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	61.3	50	130	---	---					
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	88.6	50	130	---	---					
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	54.6	50	130	---	---					
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	82.4	50	130	---	---					
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---					



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178844) - Continued											
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1171670)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	96.2	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	98.7	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	85.2	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	81.9	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	89.6	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	91.4	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	89.1	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	102	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	82.9	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	84.8	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	98.8	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	83.3	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	86.8	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	87.2	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	82.1	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	82.3	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	84.4	---	50	130	---	---
EP-065A: PCB Single Congeners (QC Lot: 1179459)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	82.1	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	82.4	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	83.6	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	84.6	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	91.6	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	90.6	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	89.7	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	80.8	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	88.2	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	85.6	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	86.3	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	83.3	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	88.9	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	85.3	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	86.6	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	84.6	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	83.3	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1171671)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	62.9	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	74.4	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	78.6	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	30.8	---	1	138	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low High		RPD (%) Value	Control Limit
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1171671) - Continued											
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	60.4	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	60.4	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	75.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	92.5	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	58.2	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	59.3	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	62.8	---	3	151	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1179456)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	74.9	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	76.4	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	85.6	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	38.0	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	94.1	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	106	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	94.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	93.3	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	98.4	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	85.4	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	21.6	---	3	151	---	---

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

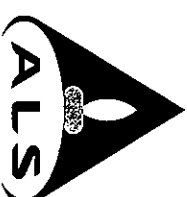
Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%) MS	MSD	Recovery Limits (%) Low High		RPD (%) Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178810)										
HK0925108-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	92.0	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	99.0	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	96.2	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	91.8	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	100	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	104	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	113	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	92.7	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	103	---	75	125	---	---

Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130



Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates - Continued			
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130



ALS Laboratory Group
 ANALYTICAL CHEMISTRY & TESTING SERVICES
ALS TECHNICHEM (HK) Pty Ltd
 Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
 181-185 GLOUCESTER ROAD,
 WANCHAI,
 HONG KONG.
PROJECT: LG29024
SITE: S7

Batch: HK0925111
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 16/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 4
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
 Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
 Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925111-001	S7	14/11/2009
HK0925111-002	S7	14/11/2009
HK0925111-003	S7	14/11/2009
HK0925111-004	S7	18/11/2009

ISSUING LABORATORY: HONG KONG

Address
 ALS Technichem (HK) Pty Ltd
 11/F Chung Shun Knitting Centre
 1-3 Wing Yip Street
 Kwai Chung
 HONG KONG

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

Mr. Chan Kwok Fat, Godfrey
 Laboratory Manager, Hong Kong

Other ALS Environmental Laboratories This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.

AUSTRALIA
 Brisbane Hong Kong
 Melbourne Singapore
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AMERICAS
 Vancouver
 Santiago
 Antofagasta
 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

ALS Technichem (HK) Pty Ltd
 Part of the **ALS Laboratory Group**
 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 **www.alsenviro.com**
 A Campbell Brothers Limited Company



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020086

Folder No : 0909045

Page No : 1 of 2

Date of Issue : 05/01/2010

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

Sample Description : 4 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 05/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Sample No	Analysis Date	Parameter Unit	Tributyl tin (ng TBT/L)	Surrogate Compound Recovery (%)
HK0925111-1	WT-0912-0329	04/12/2009	WTM-TBT-1	<15	100
HK0925111-2	WT-0912-0330			<15	100
HK0925111-3	WT-0912-0331			<15	92
HK0925111-4	WT-0912-0332			<15	100

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	II. Sediment/Soil		
Petroleum Hydrocarbons			BTEX	SEDIMENT-BTEX-1	USEPA 8260B
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	Petroleum Hydrocarbons		
C ₁₀ -C ₂₄ Diesel range organics (DRO) ↓	WTM-DRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₄ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₄ Diesel range organics (DRO) ↓	SEDIMENT-DRO-1	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	C ₁₀ -C ₂₄ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organophosphosphate Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Organophosphosphate Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Volatile Organic Compounds (VOCs)	SEDIMENT-PCB-2	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Polychlorinated Biphenyls (PCBs)	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Total PCBs	SEDIMENT-TBT-1	Krone <i>et al</i>
			Tributyl Tin (TBT)	SEDIMENT-PHENOL-1	USEPA 8270C
			Phenols		
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A	HS1004	HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

↓ C₁₀-C₂₄ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research,27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925088
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 12-NOV-2009
Order number	: CV/2009/13			Issue Date	: 10-DEC-2009
C-O-C number	: H006843			No. of samples received	: 3
Site	: S8			No. of samples analysed	: 3

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925088

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories	Position	Authorised results for
Anh Ngoc Huynh	Senior Chemist	Organics
PP 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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Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID	S8	S8	S8
					0-0.9M	0.9-1.9M	ELUTRIATE BLANK
				Client sampling date / time	12-NOV-2009 10:30	12-NOV-2009 10:30	13-NOV-2009 09:00
Compound	CAS Number	LOR	Unit	HK0925088-001	HK0925088-002	HK0925088-003	
ED/EK: Inorganic Nonmetallic Parameters							
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	<0.1	<0.1	<0.1	
EG: Metals and Major Cations - Filtered							
EG020: Arsenic	7440-38-2	10	µg/L	12	<10	<10	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	
EG020: Copper	7440-50-8	1	µg/L	<1	<1	2	
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	
EG020: Nickel	7440-02-0	1	µg/L	1	1	2	
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)							
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2	
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8	
EP-065A: PCB Single Congeners							
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	



Sub-Matrix: ELUTRIATE

				Client sample ID	S8	S8	S8
				Client sampling date / time	0-0.9M	0.9-1.9M	ELUTRIATE BLANK
					12-NOV-2009 10:30	12-NOV-2009 10:30	13-NOV-2009 09:00
Compound	CAS Number	LOR	Unit	HK0925088-001	HK0925088-002	HK0925088-003	
EP-065A: PCB Single Congeners - Continued							
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	
EP-067A: Organochlorine Pesticides (OC)							
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0	
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							
Nitrobenzene -d5	4165-60-0	0.1	%	66.1	69.2	75.6	Surrogate control limits listed at end of this report.
4-Terphenyl-d14	1718-51-0	0.1	%	80.1	70.1	66.2	
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							
Decachlorobiphenyl	2051-24-3	0.1	%	81.6	74.4	97.8	Surrogate control limits listed at end of this report.
EP-067S: Pesticide Surrogate							
Tetrachlorometaxylene	877-09-8	0.1	%	53.0	51.4	50.8	Surrogate control limits listed at end of this report.
Dibutylchloroendate	1770-80-5	0.1	%	51.1	55.7	53.7	



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 (%)	
EG: Metals and Major Cations - Filtered (QC Lot: 1178806)									
HK0925091-004	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	0.2	0.3	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	3	3	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	1	1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	RPD (%)	Value	Control Limit	
					LCS	DCS	Low	High			
EG: Metals and Major Cations - Filtered (QC Lot: 1178806)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	89.7	---	85	115	---	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	102	---	85	115	---	
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	104	---	85	115	---	
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	101	---	85	115	---	
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	106	---	85	115	---	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	100	---	85	115	---	
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	107	---	85	115	---	
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	91.4	---	85	115	---	
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	94.2	---	85	115	---	
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178905)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	73.5	---	50	130	---	
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	64.6	---	50	130	---	
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	69.0	---	50	130	---	
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	61.2	---	50	130	---	
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	69.3	---	50	130	---	
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	63.6	---	50	130	---	
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	78.6	---	50	130	---	
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	83.5	---	50	130	---	
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	76.0	---	50	130	---	
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	86.5	---	50	130	---	
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	78.6	---	50	130	---	
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	71.2	---	50	130	---	
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	81.3	---	50	130	---	
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	# 43.6	---	50	130	---	
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	77.6	---	50	130	---	
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low High		RPD (%) Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178905) - Continued											
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1171678)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	94.3	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	91.0	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	89.6	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	93.1	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	91.2	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	99.4	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	86.1	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	82.7	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	84.2	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	83.3	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	94.8	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	85.7	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	89.7	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	82.3	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	85.7	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	81.1	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	89.2	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1171671)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	62.9	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	74.4	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	78.6	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	30.8	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	60.4	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	60.4	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	75.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	92.5	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	58.2	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	59.3	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	62.8	---	3	151	---	---

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

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%) MS	MSD	Recovery Limits (%) Low High		RPD (%) Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178806)										
HK0925079-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	98.2	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	101	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	110	---	75	125	---	---



Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178806) - Continued										
HK0925079-001	Anonymous	EG020: Copper	7440-50-8	100 µg/L	113	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	106	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	95.5	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	104	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	88.8	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	109	---	75	125	---	---

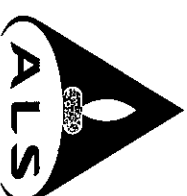
Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorodate	1770-80-5	50	130

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: S8

Batch: HK0925088
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 12/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 3
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

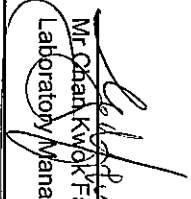
Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925088-001	S8	12/11/2009
HK0925088-002	S8	12/11/2009
HK0925088-003	S8	13/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
11/F Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
HONG KONG

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


Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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AUSTRALIA	AMERICAS
Brisbane	Vancouver
Melbourne	Santiago
Sydney	Antofagasta
Newcastle	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

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**
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 **www.alsenviro.com**

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Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020081

Folder No : 0909040

Page No : 1 of 2

Date of Issue : 05/01/2010

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

Sample Description : 3 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 05/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Sample No	Analysis Date	Parameter Unit	Tributyl tin (ng TBT/L)	Surrogate Compound Recovery (%)
HK0925088-1	WT-0912-0313	04/12/2009	Method Code WTM-TBT-1	WTM-TBT-1	WTM-TBT-1
HK0925088-2	WT-0912-0314			<15	100
HK0925088-3	WT-0912-0315			<15	96

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX					
Petroleum Hydrocarbons	WTM-BTEX-1	USEPA 8260B	SEDIMENT-BTEX-1	USEPA 8260B	
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	WTM-DRO-1	USEPA 8015B	
C ₁₀ -C ₂₄ Diesel range organics (DRO) ▶	WTM-DRO-1	USEPA 8015B	SEDIMENT-DRO-1	USEPA 8015B	
C ₁₀ -C ₂₄ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	SEDIMENT-DRO-2	USEPA 8015B	
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	SEDIMENT-OCP-1	USEPA 8081	
Organophosphosphate Pesticides (OPP)	WTM-OPP-1	USEPA 8141	SEDIMENT-OPP-1	USEPA 8141	
Polyuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	SEDIMENT-PAH-1	USEPA 8270C	
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	WTM-VOC-1	USEPA 8260B	
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	SEDIMENT-PCB-2	USEPA 8082	
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	SEDIMENT-TPCB-1	USEPA 8082	
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	SEDIMENT-TBT-1	USEPA 8270C	
Phenols	WTM-HENOL-1	USEPA 8270C	SEDIMENT-PHENOL-1	USEPA 8270C	
II. Sediment/Soil					
BTEX					
Petroleum Hydrocarbons			SEDIMENT-BTEX-1	USEPA 8260B	
C ₆ -C ₉ Gasoline range organics (GRO)*			WTM-DRO-1	USEPA 8015B	
C ₁₀ -C ₂₄ Diesel range organics (DRO) ▶			SEDIMENT-DRO-1	USEPA 8015B	
C ₁₀ -C ₂₄ Petroleum Hydrocarbons			SEDIMENT-DRO-2	USEPA 8015B	
Organochlorine Pesticides (OCP)			SEDIMENT-OCP-1	USEPA 8081	
Organophosphosphate Pesticides (OPP)			SEDIMENT-OPP-1	USEPA 8141	
Polyuclear Aromatic Hydrocarbons (PAHs)			SEDIMENT-PAH-1	USEPA 8270C	
Trihalomethane (THM)			WTM-VOC-1	USEPA 8260B	
Volatile Organic Compounds (VOCs)			SEDIMENT-PCB-2	USEPA 8082	
Polychlorinated Biphenyls (PCBs)			SEDIMENT-TPCB-1	USEPA 8082	
Total PCBs			SEDIMENT-TBT-1	USEPA 8270C	
Tributyl Tin (TBT)			SEDIMENT-PHENOL-1	USEPA 8270C	
Phenols					
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	HS1004	HS1004, Testing	Guideline on
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		Degradable	Containers and
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082		Containers and	Bags
IV. Degradable Containers & Bags					
			HS1004	HS1004, Testing	Guideline on
				Degradable	Containers and
				Containers and	Bags
V. Food & Biota Samples					
Polyuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

▶ C₁₀-C₂₄ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency
Krone *et al* – Marine Environmental research,27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925195
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 20-NOV-2009
Order number	: CV/2009/13			Issue Date	: 17-DEC-2009
C-O-C number	: H010023			No. of samples received	: 3
Site	: S9			No. of samples analysed	: 3

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925195

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

Anh Ngoc Huynh

Fung Lim Chee, Richard

Position

Senior Chemist

General Manager

Authorised results for

Organics

Inorganics

ALS Laboratory Group

Trading Name: ALS Technichem (HK) Pty Ltd

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Tel +852 2610 1044 Fax: +852 2610 2021 www.alsenviro.com

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Analytical Results

Sub-Matrix: ELUTRIATE

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	S9 0-0.9M 20-NOV-2009 10:00 HK0925195-001	S9 0.9-1.9M 20-NOV-2009 10:00 HK0925195-002	S9 ELUTRIATE BLANK 20-NOV-2009 10:00 HK0925195-003
ED/EK: Inorganic Nonmetallic Parameters						
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	<0.1	<0.1	<0.1
EG: Metals and Major Cations - Filtered						
EG020: Arsenic	7440-38-2	10	µg/L	14	18	<10
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10
EG020: Copper	7440-50-8	1	µg/L	<1	<1	1
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)						
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8
EP-065A: PCB Single Congeners						
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05



Sub-Matrix: ELUTRIATE

Client sample ID

				S9 0-0.9M 20-NOV-2009 10:00 HK0925195-001	S9 0.9-1.9M 20-NOV-2009 10:00 HK0925195-002	S9 ELUTRIATE BLANK 20-NOV-2009 10:00 HK0925195-003		
Client sampling date / time								
Compound	CAS Number	LOR	Unit					
EP-065A: PCB Single Congeners - Continued								
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05		
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05		
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05		
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05		
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05		
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05		
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05		
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05		
EP-067A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5		
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0		
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5		
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5		
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5		
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5		
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5		
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5		
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5		
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5		
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0		
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
Nitrobenzene -d5	4165-60-0	0.1	%	58.9	58.8	55.2		
4-Terphenyl-d14	1718-51-0	0.1	%	80.5	78.7	86.1		
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	74.3	87.7	83.2		
EP-067S: Pesticide Surrogate							Surrogate control limits listed at end of this report.	
Tetrachlorometaxylene	877-09-8	0.1	%	55.1	51.7	52.2		
Dibutylchloroendate	1770-80-5	0.1	%	105	96.2	99.7		



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1180497)								
HK0924957-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0
HK0924975-001	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180497)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	108	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	96.9	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	95.6	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	99.7	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	95.5	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	103	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	98.5	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	92.8	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	105	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179455)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	50.2	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	58.0	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	59.3	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	53.3	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	52.2	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	54.2	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	69.2	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	70.0	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low High		RPD (%) Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179455) - Continued											
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	70.9	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	73.3	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	76.7	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	69.5	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	64.7	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	61.4	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	67.0	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1179454)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	112	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	91.9	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	113	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	90.3	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	85.1	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	111	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	83.8	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	87.3	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	81.1	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	84.2	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	82.0	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	89.6	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	80.8	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	83.9	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	88.0	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	91.3	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	87.7	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1179456)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	74.9	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	76.4	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	85.6	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	38.0	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	94.1	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	106	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	94.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	93.3	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	98.4	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	85.4	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	21.6	---	3	151	---	---

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



Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180497)										
HK0924956-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	112	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	97.8	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	93.7	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	106	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	98.4	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	104	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	99.5	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	94.7	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	90.3	---	75	125	---	---

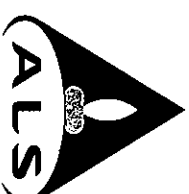
Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: S9

Batch: HK0925195
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 20/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 3
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

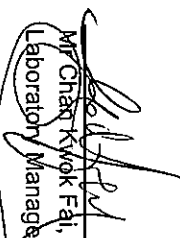
Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925195-001	S9	20/11/2009
HK0925195-002	S9	20/11/2009
HK0925195-003	S9	20/11/2009

ISSUING LABORATORY: HONG KONG

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ALS Technichem (HK) Pty Ltd
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Kwai Chung
HONG KONG

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Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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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

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**

11/F, Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, N.T., H.K.
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A Campbell Brothers Limited Company



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020073

Folder No : 0909030

Page No : 1 of 2

Date of Issue : 04/01/2010

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

Sample Description : 3 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 04/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBT/L)	Surrogate Compound Recovery (%)
HK0925195-1	Sample No	Analysis Date	03/12/2009	03/12/2009
	WT-0912-0287		<12	92
HK0925195-2	WT-0912-0288		<9	93
HK0925195-3	WT-0912-0289		<9	93

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)↗	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)↗	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorus Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-P-CB-2	USEPA 8082
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-TRCB-1	USEPA 8082
TriButyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	Krone <i>et al</i>
Phenols	WTM-HENOL-1	USEPA 8270C	TriButyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method			
Organophosphorus Pesticide	SEDIMENT-OCP-1	In house based on USEPA 8141A			
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
IV. Degradable Containers & Bags					
			HS1004		HS1004, Testing Guideline on Degradable Containers and Bags
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

↗C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research,27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925091
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 12-NOV-2009
Order number	: CV/2009/13			Issue Date	: 10-DEC-2009
C-O-C number	: H006844			No. of samples received	: 4
Site	: S10			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925091

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.
Sample(s) were received in an ambient condition.
Elutriate sample(s) analysed and reported on an as received basis.
Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

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

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A Campbell Brothers Limited Company



Analytical Results

Sub-Matrix: ELUTRIATE

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	S10	S10	S10	S10
				0-0.9M	0.9-1.9M	1.9-2.9M	ELUTRIATE BLANK
				12-NOV-2009 13:30	12-NOV-2009 13:30	12-NOV-2009 13:30	13-NOV-2009 10:00
				HK0925091-001	HK0925091-002	HK0925091-003	HK0925091-004
ED/EK: Inorganic Nonmetallic Parameters							
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	<0.1	<0.1	<0.1	<0.1
EG: Metals and Major Cations - Filtered							
EG020: Arsenic	7440-38-2	10	µg/L	21	<10	<10	<10
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	0.2
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	<10
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	3
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1	1
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)							
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Low M.W. PAHs	----	2.2	µg/L	<2.2	<2.2	<2.2	<2.2
High M.W. PAHs	----	6.8	µg/L	<6.8	<6.8	<6.8	<6.8
EP-065A: PCB Single Congeners							
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	<0.05



Sub-Matrix: ELUTRIATE				Client sample ID	S10 0-0.9M	S10 0.9-1.9M	S10 1.9-2.9M	S10 ELUTRIATE BLANK
Client sampling date / time				12-NOV-2009 13:30	12-NOV-2009 13:30	12-NOV-2009 13:30	13-NOV-2009 10:00	
Compound	CAS Number	LOR	Unit	HK0925091-001	HK0925091-002	HK0925091-003	HK0925091-004	
EP-065A: PCB Single Congeners - Continued								
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
EP-067A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								
								Surrogate control limits listed at end of this report.
Nitrobenzene -d5	4165-60-0	0.1	%	85.3	68.2	81.8	82.0	
4-Terphenyl-d14	1718-51-0	0.1	%	81.2	68.9	73.5	86.2	
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate								
								Surrogate control limits listed at end of this report.
Decachlorobiphenyl	2051-24-3	0.1	%	73.2	74.7	85.1	81.4	
EP-067S: Pesticide Surrogate								
								Surrogate control limits listed at end of this report.
Tetrachlorometaxylene	877-09-8	0.1	%	51.0	53.7	55.3	50.9	
Dibutylchlorendate	1770-80-5	0.1	%	56.2	53.6	51.5	68.3	



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 (%)	
EG: Metals and Major Cations - Filtered (QC Lot: 1178806)									
HK0925091-004	S10 ELUTRIATE BLANK	EG020: Cadmium	7440-43-9	0.2	µg/L	0.2	0.3	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	3	3	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	1	1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	RPD (%)	Value	Control Limit	
					LCS	DCS	Low High				
EG: Metals and Major Cations - Filtered (QC Lot: 1178806)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	89.7	---	85 115	---	---	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	102	---	85 115	---	---	
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	104	---	85 115	---	---	
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	101	---	85 115	---	---	
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	106	---	85 115	---	---	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	100	---	85 115	---	---	
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	107	---	85 115	---	---	
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	91.4	---	85 115	---	---	
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	94.2	---	85 115	---	---	
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178905)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	73.5	---	50 130	---	---	
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	64.6	---	50 130	---	---	
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	69.0	---	50 130	---	---	
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	61.2	---	50 130	---	---	
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	69.3	---	50 130	---	---	
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	63.6	---	50 130	---	---	
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	78.6	---	50 130	---	---	
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	83.5	---	50 130	---	---	
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	76.0	---	50 130	---	---	
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	86.5	---	50 130	---	---	
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	78.6	---	50 130	---	---	
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	71.2	---	50 130	---	---	
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	81.3	---	50 130	---	---	
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	# 43.6	---	50 130	---	---	
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	77.6	---	50 130	---	---	
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178905) - Continued											
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1171678)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	94.3	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	91.0	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	89.6	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	93.1	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	91.2	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	99.4	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	86.1	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	82.7	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	84.2	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	83.3	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	94.8	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	85.7	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	89.7	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	82.3	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	85.7	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	81.1	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	89.2	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1171671)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	62.9	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	74.4	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	78.6	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	30.8	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	60.4	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	60.4	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	75.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	92.5	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	58.2	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	59.3	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	62.8	---	3	151	---	---

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

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178806)										
HK0925079-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	98.2	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	101	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	110	---	75	125	---	---



Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178806) - Continued										
HK0925079-001	Anonymous	EG020: Copper	7440-50-8	100 µg/L	113	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	106	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	95.5	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	104	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	88.8	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	109	---	75	125	---	---

Surrogate Control Limits

Compound	CAS Number	Recovery Limits (%)	
		Low	High
Sub-Matrix: ELUTRIATE			
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchloroendate	1770-80-5	50	130

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd

Environmental Division



CERTIFICATE OF ANALYSIS

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WANCHAI, HONG KONG
PROJECT ID: LG29024
SITE: S10

Batch: HK0925091
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 12/11/2009
DATE OF ISSUE: 20/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 4
ORDER: CV/2009/13

COMMENTS

Samples analysed on an as received basis. Results reported on an as received basis. Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

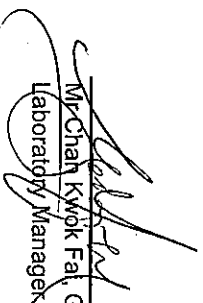
Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925091-1 (HK0924250-4)	S10 0-0.9M	12/11/2009
HK0925091-2 (HK0924250-5)	S10 0.9-1.9M	12/11/2009
HK0925091-3 (HK0924250-6)	S10 1.9-2.9M	12/11/2009
HK0925091-4 (HK0924250-7)	S10 Elutriate Blank	13/11/2009

ISSUING LABORATORY: HONG KONG

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Mr Chah Kwok Fai, Godfrey
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Other ALS Environmental Laboratories

AUSTRALIA	AMERICAS
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Melbourne	Santiago
Sydney	Arntofagasta
Newcastle	Lima

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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

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Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0019908

Folder No : 0908819

Page No : 1 of 2

Date of Issue : 15/12/2009

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

Sample Description : 4 elutriate water samples were delivered by the client.

Sample Received Date : 25/11/2009

Test Completed Date : 15/12/2009

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBVL)	Surrogate Compound Recovery (%)
HK0924250-4	Sample No	Analysis Date	WTM-TBT-1 01/12/2009	WTM-TBT-1 01/12/2009
	WT-0911-2861		<12	100
HK0924250-5	WT-0911-2862		<12	100
HK0924250-6	WT-0911-2863		<12	100
HK0924250-7	WT-0911-2864		<9	100

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B			
Petroleum Hydrocarbons			BTEX	SEDIMENT-BTEX-1	USEPA 8260B
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ ⁺ -C ₂₈ Diesel range organics (DRO)†	WTM-DRO-1	USEPA 8015B	C ₁₀ ⁺ -C ₂₈ Diesel range organics (DRO)†	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ ⁺ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ ⁺ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorus Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polyuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polyuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-PCB-2	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-TPCB-1	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-PHENOL-1	USEPA 8270C
II. Sediment/Soil					
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A	HS1004	HS1004, Testing	Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

†C₁₀⁺-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research,27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925126
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 16-NOV-2009
Order number	: CV/2009/13			Issue Date	: 10-DEC-2009
C-O-C number	: H006855			No. of samples received	: 3
Site	: S11			No. of samples analysed	: 3

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925126

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories	Position	Authorised results for
Anh Ngoc Huynh	Senior Chemist	Organics
PP 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
Tel +852 2610 1044 Fax: +852 2610 2021 www.alsenviro.com

A Campbell Brothers Limited Company



Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID	S11 0-0.9M [16-NOV-2009] HK0925126-001	S11 0.9-1.9M [16-NOV-2009] HK0925126-002	S11 ELUTRIATE BLANK 18-NOV-2009 10:00 HK0925126-003
				Client sampling date / time			
Compound	CAS Number	LOR	Unit				
ED/EK: Inorganic Nonmetallic Parameters							
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L		<0.1	<0.1	<0.1
EG: Metals and Major Cations - Filtered							
EG020: Arsenic	7440-38-2	10	µg/L		28	<10	<10
EG020: Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2
EG020: Chromium	7440-47-3	10	µg/L		<10	<10	<10
EG020: Copper	7440-50-8	1	µg/L		<1	<1	<1
EG020: Lead	7439-92-1	1	µg/L		<1	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L		<0.5	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L		<1	<1	<1
EG020: Silver	7440-22-4	1	µg/L		<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L		<10	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)							
Naphthalene	91-20-3	0.2	µg/L		<0.2	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L		<0.2	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L		<0.2	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L		<0.2	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L		<0.2	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L		<0.2	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L		<0.2	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L		<0.2	<0.2	<0.2
Benz(a)anthracene	56-55-3	0.2	µg/L		<0.2	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L		<0.2	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L		<0.4	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L		<0.2	<0.2	<0.2
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L		<0.2	<0.2	<0.2
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L		<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L		<0.2	<0.2	<0.2
Low M.W. PAHs	---	2.2	µg/L		<2.2	<2.2	<2.2
High M.W. PAHs	---	6.8	µg/L		<6.8	<6.8	<6.8
EP-065A: PCB Single Congeners							
PCB 8	34883-43-7	0.05	µg/L		<0.05	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L		<0.05	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L		<0.05	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L		<0.05	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L		<0.05	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L		<0.05	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L		<0.05	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L		<0.05	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L		<0.05	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L		<0.05	<0.05	<0.05



Sub-Matrix: ELUTRIATE

Client sample ID

Client sampling date / time

				S11 0-0.9M [16-NOV-2009] HK0925126-001	S11 0.9-1.9M [16-NOV-2009] HK0925126-002	S11 ELUTRIATE BLANK 18-NOV-2009 10:00 HK0925126-003
Compound	CAS Number	LOR	Unit			
EP-065A: PCB Single Congeners - Continued						
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05
EP-067A: Organochlorine Pesticides (OC)						
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates						
Nitrobenzene -d5	4165-60-0	0.1	%	59.0	51.8	61.0
4-Terphenyl-d14	1718-51-0	0.1	%	76.7	86.9	86.9
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate						
Decachlorobiphenyl	2051-24-3	0.1	%	94.5	100	67.3
EP-067S: Pesticide Surrogate						
Tetrachlorometaxylene	877-09-8	0.1	%	50.1	56.6	55.3
Dibutylchloredate	1770-80-5	0.1	%	109	106	101

Surrogate control limits listed at end of this report.

Surrogate control limits listed at end of this report.

Surrogate control limits listed at end of this report.



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 (%)	
EG: Metals and Major Cations - Filtered (QC Lot: 1178810)									
HK0925111-004	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	RPD (%)			
					LCS	DCS	Low High	Value Control Limit			
EG: Metals and Major Cations - Filtered (QC Lot: 1178810)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	90.8	85 115	----	----		
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	103	85 115	----	----		
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	100	85 115	----	----		
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	105	85 115	----	----		
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	99.8	85 115	----	----		
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	108	85 115	----	----		
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	109	85 115	----	----		
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	88.9	85 115	----	----		
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	110	85 115	----	----		
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178951)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	50.8	50 130	----	----		
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	52.6	50 130	----	----		
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	51.6	50 130	----	----		
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	50.3	50 130	----	----		
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	60.5	50 130	----	----		
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	60.2	50 130	----	----		
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	54.5	50 130	----	----		
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	54.9	50 130	----	----		
Benzo(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	58.0	50 130	----	----		
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	57.3	50 130	----	----		
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	62.9	50 130	----	----		
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	60.1	50 130	----	----		
Indeno(1,2,3,cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	57.2	50 130	----	----		
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	53.0	50 130	----	----		
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	59.4	50 130	----	----		
Low M.W. PAHs	----	2.2	µg/L	<2.2	----	----	----	----	----		



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178951) - Continued											
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1171670)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	96.2	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	98.7	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	85.2	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	81.9	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	89.6	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	91.4	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	89.1	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	102	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	82.9	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	84.8	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	98.8	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	83.3	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	86.8	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	87.2	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	82.1	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	82.3	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	84.4	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1174456)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	120	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	79.0	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	120	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	39.7	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	110	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	120	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	87.7	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	119	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	102	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	94.0	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	76.9	---	3	151	---	---

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

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178810)										
HK0925108-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	92.0	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	99.0	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	96.2	---	75	125	---	---



Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178810) - Continued										
HK0925108-001	Anonymous	EG020: Copper	7440-50-8	100 µg/L	91.8	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	100	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	104	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	113	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	92.7	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	103	---	75	125	---	---

Surrogate Control Limits

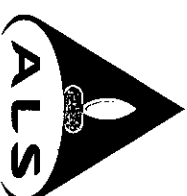
Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd

Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI, HONG KONG
PROJECT ID: LG29024
SITE: S11

Batch: HK0925126
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 16/11/2009
DATE OF ISSUE: 20/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 3
ORDER: CV/2009/13

COMMENTS

Samples analysed on an as received basis. Results reported on an as received basis. Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925126-1 (HK09224377-3)	S11 0-0.9M	16/11/2009
HK0925126-2 (HK09224377-4)	S11 0.9-1.9M	16/11/2009
HK0925126-3 (HK09224377-5)	S11 Elutriate Blank	18/11/2009

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

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Wai Chan Kwok-Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

AUSTRALIA	AMERICAS
Brisbane	Vancouver
Melbourne	Singapore
Sydney	Kuala Lumpur
Newcastle	Bogor
	Lima

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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
Part of the **ALS Laboratory Group**
11/F, Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, N.T., H.K.
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Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0019914

Folder No : 0908825

Page No : 1 of 2

Date of Issue : 17/12/2009

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

Sample Description : 3 elutriate water samples were delivered by the client.

Sample Received Date : 25/11/2009

Test Completed Date : 17/12/2009

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBT/L)	Surrogate Compound Recovery (%)
HK0924377-3	Method Code	WTM-TBT-1	01/12/2009	WTM-TBT-1 01/12/2009
	Sample No	WT-0911-2885	<10	80
HK0924377-4	Method Code	WT-0911-2886	<9	78
HK0924377-5	Method Code	WT-0911-2887	<9	77

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.
(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.
(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	II. Sediment/Soil		
Petroleum Hydrocarbons			BTEX	SEDIMENT-BTEX-1	USEPA 8260B
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₆ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₆ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphosphate Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphosphate Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	USEPA 8082
TriButyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TPCB-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	TriButyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141 A	HS1004	HS1004, Testing Guideline on Degradable Containers and Bags	
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biotin Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

▲C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-tetacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925100
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 13-NOV-2009
Order number	: CV/2009/13			Issue Date	: 09-DEC-2009
C-O-C number	: H006848			No. of samples received	: 4
Site	: S12			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925100

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories	Position	Authorised results for
Anh Ngoc Huynh	Senior Chemist	Organics
PP Fung Lim Chee, Richard	General Manager	Inorganics

ALS Laboratory Group

Trading Name: ALS Technichem (HK) Pty Ltd

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Tel +852 2610 1044 Fax: +852 2610 2021 www.alsenviro.com

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Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID			
				S12 0-0.9M	S12 0.9-1.9M	S12 1.9-2.9M	S12 ELUTRIATE BLANK
				13-NOV-2009 13:00	13-NOV-2009 13:00	13-NOV-2009 13:00	13-NOV-2009 14:00
				HK0925100-001	HK0925100-002	HK0925100-003	HK0925100-004
Compound	CAS Number	LOR	Unit				
ED/EK: Inorganic Nonmetallic Parameters							
EK055K: Unionized Ammonia (as N)	----	0.1	mg/L	<0.1	<0.1	<0.1	<0.1
EG: Metals and Major Cations - Filtered							
EG020: Arsenic	7440-38-2	10	µg/L	31	32	<10	<10
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	0.3
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	<10
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	<1
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1	<1
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)							
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Indeno(1,2,3-cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Low M.W. PAHs	----	2.2	µg/L	<2.2	<2.2	<2.2	<2.2
High M.W. PAHs	----	6.8	µg/L	<6.8	<6.8	<6.8	<6.8
EP-065A: PCB Single Congeners							
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	<0.05



Sub-Matrix: ELUTRIATE				Client sample ID			
				S12	S12	S12	S12
				0-0.9M	0.9-1.9M	1.9-2.9M	ELUTRIATE BLANK
Client sampling date / time				13-NOV-2009 13:00	13-NOV-2009 13:00	13-NOV-2009 13:00	13-NOV-2009 14:00
Compound	CAS Number	LOR	Unit	HK0925100-001	HK0925100-002	HK0925100-003	HK0925100-004
EP-065A: PCB Single Congeners - Continued							
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 137	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
EP-067A: Organochlorine Pesticides (OC)							
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
beta- & gamma-BHC	319-85-7	58-89-9	1.0	<1.0	<1.0	<1.0	<1.0
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							
Nitrobenzene -d5	4165-60-0	0.1	%	55.3	52.8	51.6	54.4
4-Terphenyl-d14	1718-51-0	0.1	%	92.3	69.9	50.2	75.1
Surrogate control limits listed at end of this report.							
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							
Decachlorobiphenyl	2051-24-3	0.1	%	69.4	62.1	54.3	60.3
Surrogate control limits listed at end of this report.							
EP-067S: Pesticide Surrogate							
Tetrachlorometaxylene	877-09-8	0.1	%	52.0	53.0	52.3	51.9
Dibutylchlorendate	1770-80-5	0.1	%	79.6	63.6	54.4	64.4
Surrogate control limits listed at end of this report.							



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1178807)								
HK0925098-004	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	0.4	0.5	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	1	1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178807)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	90.8	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	103	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	100	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	105	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	99.8	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	108	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	108	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	89.4	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	110	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178843)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	54.3	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	59.6	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	53.7	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	50.5	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	61.9	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	56.7	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	82.3	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	86.6	---	50	130	---	---
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	75.7	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	85.8	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	76.8	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	69.0	---	50	130	---	---
Indeno(1,2,3-cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	72.6	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	# 44.6	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	68.1	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178843) - Continued											
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1174459)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	90.6	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	84.5	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	85.7	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	86.1	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	96.6	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	93.7	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	84.2	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	93.7	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	80.7	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	98.2	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	87.8	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	88.3	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	91.4	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	85.5	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	83.0	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	85.8	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	85.0	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1171662)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	61.1	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	84.1	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	73.3	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	70.4	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	68.5	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	78.5	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	78.0	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	81.6	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	80.6	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	75.5	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	124	---	3	151	---	---

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

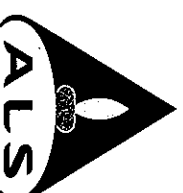
Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178807)										
HK0925098-003	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	109	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	99.0	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	96.2	---	75	125	---	---



Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178807) - Continued										
HK0925098-003	Anonymous	EG020: Copper	7440-50-8	100 µg/L	91.8	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	100	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	110	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	108	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	88.1	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	103	---	75	125	---	---

Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchloredate	1770-80-5	50	130



ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
ALS TECHNICHEM (HK) Pty Ltd
Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI, HONG KONG
PROJECT ID: LG29024
SITE: S12

Batch: HK0925100
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 13/11/2009
DATE OF ISSUE: 20/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 4
ORDER: CV/2009/13

COMMENTS

Samples analysed on an as received basis. Results reported on an as received basis. Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925100-1 (HK0924253-4)	S12 0.0.9M	13/11/2009
HK0925100-2 (HK0924253-5)	S12 0.9-1.9M	13/11/2009
HK0925100-3 (HK0924253-6)	S12 1.9-2.9M	13/11/2009
HK0925100-4 (HK0924253-7)	S12 Elutriate Blank	13/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
11/F Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
HONG KONG
Phone: 852-2610 1044
Fax: 852-2610 2021
Email: hongkong@alsenviro.com

M. Brian Kwok Fall, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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Vancouver
Santiago
Amtotagassta
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

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**
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 www.alsenviro.com
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Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0019910

Folder No : 0908821

Page No : 1 of 2

Date of Issue : 17/12/2009

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

Sample Description : 4 elutriate water samples were delivered by the client.

Sample Received Date : 25/11/2009

Test Completed Date : 17/12/2009

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Sample No	Analysis Date	Parameter Unit	Tributyl tin (ng TBT/L) WTM-TBT-1	Tripropyl tin % of Recovery (%) WTM-TBT-1
HK0924253-4	WT-0911-2869	01/12/2009		<9	99
HK0924253-5	WT-0911-2870			<8	96
HK0924253-6	WT-0911-2871			<8	96
HK0924253-7	WT-0911-2872			<10	100

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	II. Sediment/Soil		
Petroleum Hydrocarbons			BTEX	SEDIMENT-BTEX-1	USEPA 8260B
C ₂ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	Petroleum Hydrocarbons		
C ₁₀ -C ₂₅ Diesel range organics (DRO)↗	WTM-DRO-1	USEPA 8015B	C ₂ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₅ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₅ Diesel range organics (DRO)↗	SEDIMENT-DRO-1	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	C ₁₀ -C ₂₅ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organophosphorus Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Polyuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Polyuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Volatile Organic Compounds (VOCs)	SEDIMENT-PCB-2	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Total PCBs	SEDIMENT-TBT-1	Krone <i>et al</i>
			Tributyl Tin (TBT)	SEDIMENT-PHENOL-1	USEPA 8270C
			Phenols		
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polyuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks:

*C₂-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₂) and n-nonane(C₉).

Reference Notes:

↗ C₁₀-C₂₅ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

USEPA – United States Environmental Protection Agency
Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925333
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 30-NOV-2009
Order number	: CV/2009/13			Issue Date	: 06-JAN-2010
C-O-C number	: H008062			No. of samples received	: 2
Site	: S13			No. of samples analysed	: 2

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 10-DEC-2009
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: HK0925333

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.
Sample(s) were received in an ambient condition.
Elutriate sample(s) analysed and reported on an as received basis.
Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

Anh Ngoc Huynh
PP Fung Lim Chee, Richard

Position

Senior Chemist
General Manager

Authorised results for

Organics
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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Analytical Results

Sub-Matrix: ELUTRIATE

Client sample ID

S13

S13
ELUTRIATE BLANK

Client sampling date / time

18-NOV-2009 15:00

28-NOV-2009 12:00

Compound	CAS Number	LOR	Unit	HK0925333-001	HK0925333-002
ED/EK: Inorganic Nonmetallic Parameters					
EK055K: Unionized Ammonia (as N)	----	0.1	mg/L	0.1	<0.1
EG: Metals and Major Cations - Filtered					
EG020: Arsenic	7440-38-2	10	µg/L	<10	<10
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2
EG020: Chromium	7440-47-3	10	µg/L	<10	<10
EG020: Copper	7440-50-8	1	µg/L	<1	3
EG020: Lead	7439-92-1	1	µg/L	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L	<1	<1
EG020: Silver	7440-22-4	1	µg/L	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)					
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2
Low M.W. PAHs	----	2.2	µg/L	<2.2	<2.2
High M.W. PAHs	----	6.8	µg/L	<6.8	<6.8
EP-065A: PCB Single Congeners					
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05



Sub-Matrix: ELUTRIATE				Client sample ID			
				S13	S13		
				18-NOV-2009 15:00	28-NOV-2009 12:00		
Client sampling date / time				HK0925333-001	HK0925333-002		
Compound	CAS Number	LOR	Unit				
EP-065A: PCB Single Congeners - Continued							
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05		
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05		
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05		
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05		
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05		
PCB 169	32774-16-6	0.05	µg/L	<0.05	<0.05		
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05		
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05		
EP-067A: Organochlorine Pesticides (OC)							
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5		
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0		
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5		
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5		
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5		
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5		
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5		
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5		
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5		
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5		
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0		
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates						Surrogate control limits listed at end of this report.	
Nitrobenzene -d5	4165-60-0	0.1	%	82.6	81.1		
4-Terphenyl-d14	1718-51-0	0.1	%	92.0	90.3		
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate						Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	96.3	101		
EP-067S: Pesticide Surrogate						Surrogate control limits listed at end of this report.	
Tetrachlorometaxylene	877-09-8	0.1	%	52.8	58.7		
Dibutylchlorendate	1770-80-5	0.1	%	123	119		



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1187890)								
HK0925331-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	1	1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	27	28	3.6
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1187890)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	108	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	97.0	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	104	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	94.4	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	94.8	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	101	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	100	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	90.8	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	95.8	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1182435)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	96.8	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	77.3	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	77.9	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	95.1	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	102	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	91.7	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	95.2	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	83.7	---	50	130	---	---
Benzo(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	97.5	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	107	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	105	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	90.9	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	97.9	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	91.8	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	93.0	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1182435) - Continued											
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1179512)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	80.1	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	82.1	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	88.3	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	84.9	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	87.8	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	82.2	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	110	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	107	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	110	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	118	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	110	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	108	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	102	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	93.7	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	107	---	50	130	---	---
PCB 169	32774-16-6	0.01	µg/L	<0.01	.1 µg/L	98.4	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	104	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1182436)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	71.5	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	81.3	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	91.7	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	83.2	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	88.5	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	75.6	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	93.1	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	77.6	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	77.0	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	79.9	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	73.5	---	3	151	---	---

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

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1187890)										
HK0925331-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	113	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	95.1	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	101	---	75	125	---	---

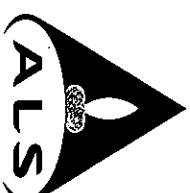


Matrix: WATER

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number		MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1187890) - Continued										
HK0925331-001	Anonymous	EG020: Copper	7440-50-8	100 µg/L	101	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	105	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	102	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	108	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	87.0	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	94.4	---	75	125	---	---

Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchloredate	1770-80-5	50	130



ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
ALS TECHNICHEM (HK) Pty Ltd
Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI, HONG KONG
PROJECT ID: LG29024
SITE: S13

Batch: HK0925333
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 30/11/2009
DATE OF ISSUE: 20/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 2
ORDER: CV/2009/13

COMMENTS

Samples analysed on an as received basis. Results reported on an as received basis. Tributyl tin was subcontracted and tested by Hong Kong Productivity Council. Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925333001	S13	18/11/2009
HK0925333002	S13 ELUTRIATE BLANK	Elutriate Water 28/11/2009

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: hongkong@alsenviro.com

Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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Abbreviations: % SPIK REC denotes percentage spike recovery

CHK denotes duplicate check sample

LOR denotes limit of reporting

LCS % REC denotes Laboratory Control Sample percentage recovery

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Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020300

Folder No : 0909454

Page No : 1 of 2

Date of Issue : 09/01/2010

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

Sample Description : 2 elutriate water samples were delivered by the client.

Sample Received Date : 11/12/2009


Test Completed Date : 08/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBTL)	Surrogate Compound Recovery (%)
HK0925333-1	Method Code	WTM-TBT-1	15/12/2009	WTM-TBT-1 15/12/2009
	Sample No	WT-0912-1768	<15	88
HK0925333-2	Method Code	WT-0912-1769	<15	89

Approval Signatory:


Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.
(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.
(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	II. Sediment/Soil		
Petroleum Hydrocarbons			BTEX	SEDIMENT-BTEX-1	USEPA 8260B
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	Petroleum Hydrocarbons		
C ₁₀ -C ₂₈ Diesel range organics (DRO) ▶	WTM-DRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO) ▶	SEDIMENT-DRO-1	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organophosphosphate Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Organophosphosphate Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Total PCBs	SEDIMENT-PCB-1	USEPA 8082
			Tributyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141 A	HS1004	HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

▶C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency
Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0924956
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 24-NOV-2009
Order number	: CV/2009/13			Issue Date	: 17-DEC-2009
C-O-C number	: H010033			No. of samples received	: 2
Site	: S14			No. of samples analysed	: 2

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0924956

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.
Sample(s) were received in an ambient condition.
Elutriate sample(s) analysed and reported on an as received basis.
Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories	Position	Authorised results for
Anh Ngoc Huynh	Senior Chemist	Organics
PP Fung Lim Chee, Richard	General Manager	Inorganics

ALS Laboratory Group
Trading Name: ALS Technichem (HK) Pty Ltd
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Analytical Results

Sub-Matrix: ELUTRIATE

Client sample ID

S14

S14
ELUTRIATE BLANK

Client sampling date / time

24-NOV-2009 09:00

24-NOV-2009 09:00

HK0924956-001

HK0924956-002

Compound	CAS Number	LOR	Unit	HK0924956-001	HK0924956-002
ED/EK: Inorganic Nonmetallic Parameters					
EK055K: Unionized Ammonia (as N)	----	0.1	mg/L	<0.1	<0.1
EG: Metals and Major Cations - Filtered					
EG020: Arsenic	7440-38-2	10	µg/L	13	<10
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2
EG020: Chromium	7440-47-3	10	µg/L	<10	<10
EG020: Copper	7440-50-8	1	µg/L	<1	<1
EG020: Lead	7439-92-1	1	µg/L	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L	<1	<1
EG020: Silver	7440-22-4	1	µg/L	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)					
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2
Benzo(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2
Indeno(1,2,3-cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2
Low M.W. PAHs	----	2.2	µg/L	<2.2	<2.2
High M.W. PAHs	----	6.8	µg/L	<6.8	<6.8
EP-065A: PCB Single Congeners					
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05



Page Number : 3 of 6
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK0924956

Sub-Matrix: ELUTRIATE				Client sample ID		S14		S14	
				Client sampling date / time		24-NOV-2009 09:00		ELUTRIATE BLANK	
				24-NOV-2009 09:00		24-NOV-2009 09:00			
Compound	CAS Number	LOR	Unit	HK0924956-001	HK0924956-002				
EP-065A: PCB Single Congeners - Continued									
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05				
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05				
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05				
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05				
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05				
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05				
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05				
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05				
EP-067A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5				
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0				
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5				
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5				
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5				
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5				
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5				
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5				
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5				
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5				
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0				
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
Surrogate control limits listed at end of this report.									
Nitrobenzene -d5	4165-60-0	0.1	%	58.3	50.3				
4-Terphenyl-d14	1718-51-0	0.1	%	81.4	88.5				
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
Surrogate control limits listed at end of this report.									
Decachlorobiphenyl	2051-24-3	0.1	%	97.7	79.9				
EP-067S: Pesticide Surrogate									
Surrogate control limits listed at end of this report.									
Tetrachlorometaxylene	877-09-8	0.1	%	53.2	56.5				
Dibutylchloroendate	1770-80-5	0.1	%	107	119				



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 (%)	
EG: Metals and Major Cations - Filtered (QC Lot: 1180497)									
HK0924957-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0	
HK0924975-001	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180497)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	108	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	96.9	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	95.6	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	99.7	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	95.5	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	103	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	98.5	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	92.8	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	105	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179511)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	54.9	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	52.8	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	61.8	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	52.8	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	61.5	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	61.3	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	68.8	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	73.1	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low High		RPD (%) Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179511) - Continued											
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	61.5	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	81.8	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	67.6	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	66.7	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	76.7	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	54.4	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	60.5	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1179504)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	0.1 µg/L	80.8	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	0.1 µg/L	88.7	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	0.1 µg/L	84.6	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	0.1 µg/L	85.0	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	0.1 µg/L	84.0	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	0.1 µg/L	88.4	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	0.1 µg/L	89.1	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	0.1 µg/L	95.8	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	0.1 µg/L	91.5	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	0.1 µg/L	91.4	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	0.1 µg/L	91.2	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	0.1 µg/L	94.8	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	0.1 µg/L	95.3	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	0.1 µg/L	90.4	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	0.1 µg/L	89.8	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	0.1 µg/L	88.3	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	0.1 µg/L	88.9	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1179507)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	77.2	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	101	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	64.8	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	35.6	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	89.3	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	92.1	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	98.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	107	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	108	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	65.0	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	80.1	---	3	151	---	---

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



Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180497)										
HK0924956-001	S14	EG020: Arsenic	7440-38-2	100 µg/L	112	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	97.8	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	93.7	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	106	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	98.4	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	104	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	99.5	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	94.7	---	75	125	---	---
		EG020: Zinc	7440-86-6	100 µg/L	90.3	---	75	125	---	---

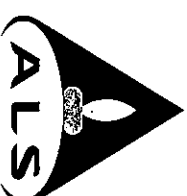
Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchloredate	1770-80-5	50	130

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: S14

Batch: HK0924956
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 24/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 2
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

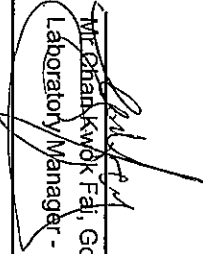
Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0924956-001	S14	24/11/2009
HK0924956-002	S14	ELUTRIATE BLANK 24/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
11/F Chung Shun Knitting Centre
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Kwai Chung
HONG KONG

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Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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AUSTRALIA	AMERICAS
Brisbane	Vancouver
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Newcastle	Bogor

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
Part of the **ALS Laboratory Group**

11/F, Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, N.T., H.K.
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Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020164

Folder No : 0909144

Page No : 1 of 2

Date of Issue : 07/01/2010

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

Sample Description : 2 elutriate water samples were delivered by the client.

Sample Received Date : 03/12/2009

Test Completed Date : 07/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Sample No	Analysis Date	Parameter Unit	Tributyl tin (ng TBTL)	Surrogate Compound Recovery (%)
HK0924956-1	WT-0912-0826	11/12/2009	Method Code WTM-TBT-1	11/12/2009	WTM-TBT-1 11/12/2009
HK0924956-2	WT-0912-0827			<15	84

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₄ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₄ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₄ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₄ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorus Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Thalomonethane (THM)	WTM-VOC-1	USEPA 8260B	Thalomonethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-PCB-2	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-1	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-nethylpentane (C₆) and 1-nonan(C₉).

▲C₁₀-C₂₄ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₄).

Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925102
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 13-NOV-2009
Order number	: CV/2009/13			Issue Date	: 09-DEC-2009
C-O-C number	: H006849			No. of samples received	: 4
Site	: S15			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925102

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

Anh Ngoc Huynh

PP Fung Lim Chee, Richard

Position

Senior Chemist

General Manager

Authorised results for

Organics

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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Analytical Results

Sub-Matrix: ELUTRIATE

Sub-Matrix: ELUTRIATE				Client sample ID			
Client sampling date / time				S15	S15	S15	S15
				0-0.9M	0.9-1.9M	1.9-2.9M	ELUTRIATE BLANK
				13-NOV-2009 15:00	13-NOV-2009 15:00	13-NOV-2009 15:00	13-NOV-2009 15:00
Compound	CAS Number	LOR	Unit	HK0925102-001	HK0925102-002	HK0925102-003	HK0925102-004
ED/EK: Inorganic Nonmetallic Parameters							
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	<0.1	<0.1	<0.1	<0.1
EG: Metals and Major Cations - Filtered							
EG020: Arsenic	7440-38-2	10	µg/L	31	11	<10	<10
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	0.3
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	<10
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	<1
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1	1
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)							
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2	<2.2
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8	<6.8
EP-065A: PCB Single Congeners							
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	<0.05



Sub-Matrix: ELUTRIATE

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	S15	S15	S15	S15
				0-0.9M	0.9-1.9M	1.9-2.9M	ELUTRIATE BLANK
				13-NOV-2009 15:00	13-NOV-2009 15:00	13-NOV-2009 15:00	13-NOV-2009 15:00
				HK0925102-001	HK0925102-002	HK0925102-003	HK0925102-004
EP-065A: PCB Single Congeners - Continued							
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
EP-067A: Organochlorine Pesticides (OC)							
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							
Nitrobenzene -d5	4165-60-0	0.1	%	54.8	53.9	51.7	54.4
4-Terphenyl-d14	1718-51-0	0.1	%	92.6	80.8	91.6	80.4
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							
Decachlorobiphenyl	2051-24-3	0.1	%	81.8	101	114	92.4
EP-067S: Pesticide Surrogate							
Tetrachlorometaxylene	877-09-8	0.1	%	50.6	51.2	51.5	53.8
Dibutylchlorendate	1770-80-5	0.1	%	81.3	70.6	74.9	72.6

Surrogate control limits listed at end of this report.

Surrogate control limits listed at end of this report.

Surrogate control limits listed at end of this report.



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 (%)	
EG: Metals and Major Cations - Filtered (QC Lot: 1178807)									
HK0925098-004	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	0.4	0.5	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	1	1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	RPD (%)			
					LCS	DCS	Low	High	Value	Control Limit	
EG: Metals and Major Cations - Filtered (QC Lot: 1178807)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	90.8	---	85	115	---	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	103	---	85	115	---	
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	100	---	85	115	---	
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	105	---	85	115	---	
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	99.8	---	85	115	---	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	108	---	85	115	---	
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	108	---	85	115	---	
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	89.4	---	85	115	---	
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	110	---	85	115	---	
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178843)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	54.3	---	50	130	---	
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	59.6	---	50	130	---	
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	53.7	---	50	130	---	
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	50.5	---	50	130	---	
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	61.9	---	50	130	---	
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	56.7	---	50	130	---	
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	82.3	---	50	130	---	
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	86.6	---	50	130	---	
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	75.7	---	50	130	---	
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	85.8	---	50	130	---	
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	76.8	---	50	130	---	
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	69.0	---	50	130	---	
Indeno(1,2,3-cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	72.6	---	50	130	---	
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	# 44.6	---	50	130	---	
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	68.1	---	50	130	---	
Low M.W. PAHs	----	2.2	µg/L	<2.2	----	----	---	----	----	----	



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low High		RPD (%) Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178843) - Continued											
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1174459)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	90.6	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	84.5	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	85.7	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	86.1	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	96.6	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	93.7	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	84.2	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	93.7	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	80.7	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	98.2	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	87.8	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	88.3	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	91.4	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	85.5	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	83.0	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	85.8	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	85.0	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1171662)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	61.1	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	84.1	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	73.3	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	70.4	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	68.5	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	78.5	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	78.0	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	81.6	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	80.6	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	75.5	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	124	---	3	151	---	---

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

Matrix: WATER			Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report							
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%) MS	MSD	Recovery Limits (%) Low High		RPD (%) Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178807)										
HK0925098-003	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	109	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	99.0	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	96.2	---	75	125	---	---

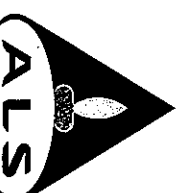


Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
				MS	MSD	Low	High	Value	Control Limit	
EG: Metals and Major Cations - Filtered (QC Lot: 1178807) - Continued										
HK0925098-003	Anonymous	EG020: Copper	7440-50-8	100 µg/L	91.8	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	100	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	110	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	108	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	88.1	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	103	---	75	125	---	---

Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchloredate	1770-80-5	50	130



ALS Laboratory Group
 ANALYTICAL CHEMISTRY & TESTING SERVICES
ALS TECHNICHEM (HK) Pty Ltd
 Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
 181-185 GLOUCESTER ROAD,
 WANCHAI, HONG KONG
PROJECT ID: LG29024
SITE: S15

Batch: HK0925102
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 13/11/2009
DATE OF ISSUE: 20/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 4
ORDER: CV/2009/13

COMMENTS

Samples analysed on an as received basis. Results reported on an as received basis. Tributyl tin was subcontracted and tested by Hong Kong Productivity Council. Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925102-1 (HK0924255-4)	S15 0-0.9M	13/11/2009
HK0925102-2 (HK0924255-5)	S15 0.9-1.9M	13/11/2009
HK0925102-3 (HK0924255-6)	S15 1.9-2.9M	13/11/2009
HK0925102-4 (HK0924255-7)	S15 Elutriate Blank	13/11/2009

ISSUING LABORATORY: HONG KONG

Address
 ALS Technichem (HK) Pty Ltd
 11/F Chung Shun Knitting Centre
 1-3 Wing Yip Street
 Kwai Chung
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Phone: 852-2610 1044
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Godfrey Fai
 Mr. Sham Kwok Fai, Godfrey
 Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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AUSTRALIA
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 Santiago
 Artofagasta
 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

ALS Technichem (HK) Pty Ltd
 Part of the **ALS Laboratory Group**
 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 www.alsenviro.com
 A Campbell Brothers Limited Company



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0019912

Folder No : 0908823

Page No : 1 of 2

Date of Issue : 17/12/2009

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

Sample Description : 4 elutriate water samples were delivered by the client.

Sample Received Date : 25/11/2009

Test Completed Date : 17/12/2009

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Sample No	Analysis Date	Parameter Unit	Tributyl tin (ng TBTL)	Surrogate Compound Recovery (%)
HK0924255-4	WT-0911-2877	01/12/2009	Method Code WTM-TBT-1	63	WTM-TBT-1 01/12/2009 99
HK0924255-5	WT-0911-2878			<9	87
HK0924255-6	WT-0911-2879			<10	89
HK0924255-7	WT-0911-2880			<10	100

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
-----------	--------	-----------	-----------	--------	-----------

I. Water/Wastewater

BTEX	WTM-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons	WTM-GRO-1	USEPA 8015B
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO) ▶	WTM-DRO-2	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-OCP-1	USEPA 8081
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8141
Organophosphorus Pesticides (OPP)	WTM-PAH-1	USEPA 8270C
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-VOC-1	USEPA 8260B
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-PCB-1	USEPA 8082
Polychlorinated Biphenyls (PCBs)	WTM-TBT-1	USEPA 8082
Tributyl Tin (TBT)	WTM-HENOL-1	USEPA 8270C
Phenols		

II. Sediment/Soil

BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons	WTM-DRO-1	USEPA 8015B
C ₆ -C ₉ Gasoline range organics (GRO)*	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO) ▶	SEDIMENT-DRO-2	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-OCP-1	USEPA 8081
Organochlorine Pesticides (OCP)	SEDIMENT-OPP-1	USEPA 8141
Organophosphorus Pesticides (OPP)	SEDIMENT-PAH-1	USEPA 8270C
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-VOC-1	USEPA 8260B
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	SEDIMENT-PCB-2	USEPA 8082
Polychlorinated Biphenyls (PCBs)	SEDIMENT-TPCB-1	USEPA 8082
Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Tributyl Tin (TBT)	SEDIMENT-PHENOL-1	USEPA 8270C
Phenols		

III. Chinese Medicines

Pesticides Residues	TCM-OCP-1	In house method
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082

IV. Degradable Containers & Bags

	HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
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V. Food & Biota Samples

Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B

Remarks:

*C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane (C₉).
▶C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane (C₁₀) and N-octacosane (C₂₈).

Reference Notes:

USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925096
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 12-NOV-2009
Order number	: CV/2009/13			Issue Date	: 10-DEC-2009
C-O-C number	: H006846			No. of samples received	: 3
Site	: S17			No. of samples analysed	: 3

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925096

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories	Position	Authorised results for
Anh Ngoc Huynh	Senior Chemist	Organics
PP Fung Lim Chee, Richard	General Manager	Inorganics

ALS Laboratory Group
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A Campbell Brothers Limited Company



Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID		
				S17 0-0.9M	S17 0.9-1.9M	S17 ELUTRIATE BLANK
				12-NOV-2009 17:00	12-NOV-2009 17:00	13-NOV-2009 15:00
				HK0925096-001	HK0925096-002	HK0925096-003
Compound	CAS Number	LOR	Unit	Client sampling date / time		
ED/EK: Inorganic Nonmetallic Parameters						
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	<0.1	<0.1	<0.1
EG: Metals and Major Cations - Filtered						
EG020: Arsenic	7440-38-2	10	µg/L	11	23	<10
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.3
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10
EG020: Copper	7440-50-8	1	µg/L	<1	<1	2
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	1
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)						
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8
EP-065A: PCB Single Congeners						
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05



Sub-Matrix: ELUTRIATE

Sub-Matrix: ELUTRIATE				Client sample ID	S17 0-0.9M	S17 0.9-1.9M	S17 ELUTRIATE BLANK
Client sampling date / time				12-NOV-2009 17:00	12-NOV-2009 17:00	13-NOV-2009 15:00	
Compound	CAS Number	LOR	Unit	HK0925096-001	HK0925096-002	HK0925096-003	
EP-065A: PCB Single Congeners - Continued							
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	
EP-067A: Organochlorine Pesticides (OC)							
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0	
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							
Nitrobenzene -d5	4165-60-0	0.1	%	86.8	89.7	88.8	Surrogate control limits listed at end of this report.
4-Terphenyl-d14	1718-51-0	0.1	%	60.6	75.6	73.7	
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							
Decachlorobiphenyl	2051-24-3	0.1	%	108	74.9	74.4	Surrogate control limits listed at end of this report.
EP-067S: Pesticide Surrogate							
Tetrachlorometaxylene	877-09-8	0.1	%	56.2	51.8	51.6	Surrogate control limits listed at end of this report.
Dibutylchlorendate	1770-80-5	0.1	%	59.4	56.8	56.4	



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 (%)	
EG: Metals and Major Cations - Filtered (QC Lot: 1178806)									
HK0925091-004	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	0.2	0.3	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	3	3	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	1	1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)		
					LCS	DCS	Low	High	Value	Control Limit		
EG: Metals and Major Cations - Filtered (QC Lot: 1178806)												
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	89.7	---	85	115	---	---	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	102	---	85	115	---	---	
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	104	---	85	115	---	---	
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	101	---	85	115	---	---	
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	106	---	85	115	---	---	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	100	---	85	115	---	---	
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	107	---	85	115	---	---	
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	91.4	---	85	115	---	---	
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	94.2	---	85	115	---	---	
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178905)												
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	73.5	---	50	130	---	---	
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	64.6	---	50	130	---	---	
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	69.0	---	50	130	---	---	
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	61.2	---	50	130	---	---	
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	69.3	---	50	130	---	---	
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	63.6	---	50	130	---	---	
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	78.6	---	50	130	---	---	
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	83.5	---	50	130	---	---	
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	76.0	---	50	130	---	---	
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	86.5	---	50	130	---	---	
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	78.6	---	50	130	---	---	
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	71.2	---	50	130	---	---	
Indeno(1,2,3-cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	81.3	---	50	130	---	---	
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	# 43.6	---	50	130	---	---	
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	77.6	---	50	130	---	---	
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---	



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178905) - Continued											
High M.W. PAHs		6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1171678)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	94.3	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	91.0	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	89.6	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	93.1	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	91.2	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	99.4	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	86.1	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	82.7	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	84.2	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	83.3	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	94.8	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	85.7	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	89.7	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	82.3	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	85.7	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	81.1	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	89.2	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1174456)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	120	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	79.0	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	120	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	39.7	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	110	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	120	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	87.7	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	119	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	102	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	94.0	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	76.9	---	3	151	---	---

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

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178806)										
HK0925079-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	98.2	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	101	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	110	---	75	125	---	---



Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178806) - Continued										
HK0925079-001	Anonymous	EG020: Copper	7440-50-8	100 µg/L	113	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	106	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	95.5	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	104	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	88.8	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	109	---	75	125	---	---

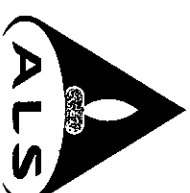
Surrogate Control Limits

Compound	CAS Number	Recovery Limits (%)	
		Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchloredate	1770-80-5	50	130

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: S17

Batch: HK0925096
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 12/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 3
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

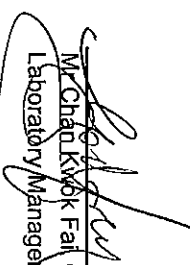
Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925096-001	S17	12/11/2009
HK0925096-002	S17	12/11/2009
HK0925096-003	S17	13/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
11/F Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
HONG KONG

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


Mr. Chan Kwok Fai
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.

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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

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**
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 www.alsenviro.com
A Campbell Brothers Limited Company



Environment & Product Innovation Laboratory

Test Report No : T0020082

Folder No : 0909041

Page No : 1 of 2

Date of Issue : 05/01/2010

TEST REPORT

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

Sample Description : 3 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 05/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Sample No	Analysis Date	Parameter Unit	Tributyl tin (ng TBTL)	Surrogate Compound Recovery (%)
			Method Code	WTM-TBT-1	WTM-TBT-1
				04/12/2009	04/12/2009
HK0925096-1	WT-0912-0316			<15	100
HK0925096-2	WT-0912-0317			<15	93
HK0925096-3	WT-0912-0318			<15	88

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	II. Sediment/Soil		
Petroleum Hydrocarbons			BTEX	SEDIMENT-BTEX-1	USEPA 8260B
C ₉ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₉ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₁₄ Diesel range organics (DRO)↗	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₁₄ Diesel range organics (DRO)↗	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphosphate Pesticides (OPP)	WTM-OCP-1	USEPA 8141	Organophosphosphate Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-PCB-2	USEPA 8082
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-1	USEPA 8082
TriButyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	TriButyl Tin (TBT)	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A	HS1004	HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₉-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₉) and n-nonane(C₉).

Reference Notes: ↗ C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).
USEPA – United States Environmental Protection Agency
Krone *et al* – Marine Environmental research,27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0924957
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 24-NOV-2009
Order number	: CV/2009/13			Issue Date	: 17-DEC-2009
C-O-C number	: H010034			No. of samples received	: 2
Site	: S18			No. of samples analysed	: 2

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0924957

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

Anh Ngoc Huynh

Fung Lim Chee, Richard

Position

Senior Chemist

General Manager

Authorised results for

Organics

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
Tel +852 2610 1044 Fax: +852 2610 2021 www.alsenviro.com

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Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID	S18	S18			
				Client sampling date / time	24-NOV-2009 10:00	ELUTRIATE BLANK	24-NOV-2009 10:00		
Compound	CAS Number	LOR	Unit	HK0924957-001	HK0924957-002				
ED/EK: Inorganic Nonmetallic Parameters									
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	0.2	<0.1				
EG: Metals and Major Cations - Filtered									
EG020: Arsenic	7440-38-2	10	µg/L	14	<10				
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2				
EG020: Chromium	7440-47-3	10	µg/L	<10	<10				
EG020: Copper	7440-50-8	1	µg/L	<1	<1				
EG020: Lead	7439-92-1	1	µg/L	<1	<1				
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5				
EG020: Nickel	7440-02-0	1	µg/L	<1	<1				
EG020: Silver	7440-22-4	1	µg/L	<1	<1				
EG020: Zinc	7440-66-6	10	µg/L	<10	<10				
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)									
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2				
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2				
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2				
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2				
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2				
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2				
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2				
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2				
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2				
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2				
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4				
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2				
Indeno(1,2,3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2				
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2				
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2				
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2				
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8				
EP-065A: PCB Single Congeners									
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05				
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05				
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05				
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05				
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05				
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05				
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05				
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05				
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05				
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05				



Sub-Matrix: ELUTRIATE				Client sample ID	S18	S18			
				Client sampling date / time	24-NOV-2009 10:00	ELUTRIATE BLANK 24-NOV-2009 10:00			
Compound	CAS Number	LOR	Unit	HK0924957-001	HK0924957-002				
EP-065A: PCB Single Congeners - Continued									
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05				
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05				
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05				
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05				
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05				
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05				
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05				
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05				
EP-067A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5				
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0				
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5				
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5				
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5				
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5				
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5				
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5				
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5				
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5				
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0				
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
Surrogate control limits listed at end of this report.									
Nitrobenzene -d5	4165-60-0	0.1	%	60.5	50.4				
4-Terphenyl-d14	1718-51-0	0.1	%	85.5	83.2				
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
Surrogate control limits listed at end of this report.									
Decachlorobiphenyl	2051-24-3	0.1	%	96.2	105				
EP-067S: Pesticide Surrogate									
Surrogate control limits listed at end of this report.									
Tetrachlorometaxylene	877-09-8	0.1	%	55.8	54.1				
Dibutylchlorendate	1770-80-5	0.1	%	107	95.7				



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1180497)								
HK0924957-002	S18 ELUTRIATE BLANK	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
HK0924975-001	Anonymous	EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0
		EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0		
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	RPD (%)			
					LCS	DCS	Low	High	Value	Control Limit	
EG: Metals and Major Cations - Filtered (QC Lot: 1180497)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	108	---	85	115	---	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	96.9	---	85	115	---	
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	95.6	---	85	115	---	
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	99.7	---	85	115	---	
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	95.5	---	85	115	---	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	103	---	85	115	---	
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	98.5	---	85	115	---	
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	92.8	---	85	115	---	
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	105	---	85	115	---	
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179511)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	54.9	---	50	130	---	
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	52.8	---	50	130	---	
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	61.8	---	50	130	---	
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	52.8	---	50	130	---	
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	61.5	---	50	130	---	
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	61.3	---	50	130	---	
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	68.8	---	50	130	---	
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	73.1	---	50	130	---	



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179511) - Continued											
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	61.5	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	81.8	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	67.6	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	66.7	---	50	130	---	---
Indeno(1,2,3-cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	76.7	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	54.4	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	60.5	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1179504)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	0.1 µg/L	80.8	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	0.1 µg/L	88.7	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	0.1 µg/L	84.6	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	0.1 µg/L	85.0	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	0.1 µg/L	84.0	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	0.1 µg/L	88.4	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	0.1 µg/L	89.1	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	0.1 µg/L	95.8	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	0.1 µg/L	91.5	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	0.1 µg/L	91.4	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	0.1 µg/L	91.2	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	0.1 µg/L	94.8	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	0.1 µg/L	95.3	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	0.1 µg/L	90.4	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	0.1 µg/L	89.8	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	0.1 µg/L	88.3	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	0.1 µg/L	88.9	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1179507)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	77.2	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	101	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	64.8	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	35.6	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	89.3	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	92.1	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	98.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	107	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	108	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	65.0	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	80.1	---	3	151	---	---

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



Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180497)										
HK0924956-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	112	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	97.8	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	93.7	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	106	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	98.4	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	104	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	99.5	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	94.7	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	90.3	---	75	125	---	---

Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchloredate	1770-80-5	50	130

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: S18

Batch: HK0924957
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 24/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 2
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

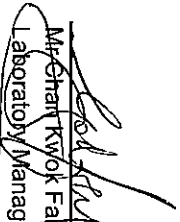
Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0924957-001	S18	24/11/2009
HK0924957-002	S18	ELUTRIATE BLANK 24/11/2009

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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Mr. Ghan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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AUSTRALIA	AMERICAS
Brisbane	Hong Kong
Melbourne	Singapore
Sydney	Kuala Lumpur
Newcastle	Bogor

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
Part of the **ALS Laboratory Group**
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Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020160
Folder No : 0909140
Page No : 1 of 2
Date of Issue : 07/01/2010

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

Sample Description : 2 elutriate water samples were delivered by the client.

Sample Received Date : 03/12/2009

Test Completed Date : 07/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBTL)	Surrogate Compound Recovery (%)
HK0924957-1	Method Code	WTM-TBT-1	11/12/2009	WTM-TBT-1
	Sample No	WT-0912-0816		11/12/2009
	Analysis Date			
HK0924957-2	WT-0912-0817		<15	94

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons	WTM-GRO-1	USEPA 8015B	Petroleum Hydrocarbons	WTM-DRO-1	USEPA 8015B
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)↗	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)↗	SEDIMENT-DRO-2	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-OCP-1	USEPA 8081	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-OCP-1	USEPA 8081
Organochlorine Pesticides (OCP)	WTM-OPP-1	USEPA 8141	Organochlorine Pesticides (OCP)	SEDIMENT-OPP-1	USEPA 8141
Organophosphorus Pesticides (OPP)	WTM-PAH-1	USEPA 8270C	Organophosphorus Pesticides (OPP)	SEDIMENT-PAH-1	USEPA 8270C
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-VOC-1	USEPA 8260B	Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-VOC-1	USEPA 8260B
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-PCB-1	USEPA 8082	Volatile Organic Compounds (VOCs)	SEDIMENT-PCB-2	USEPA 8082
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-TBT-1	Krone <i>et al</i>	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-TPCB-1	USEPA 8082
Tributyl Tin (TBT)	WTM-HENOL-1	USEPA 8270C	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols			Tributyl Tin (TBT)	SEDIMENT-PHENOL-1	USEPA 8270C
Phenols			Phenols		
II. Sediment/Soil					
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A	HS1004	HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

↗C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research,27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925093
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 12-NOV-2009
Order number	: CV/2009/13			Issue Date	: 10-DEC-2009
C-O-C number	: H006845			No. of samples received	: 4
Site	: S19			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925093

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories	Position	Authorised results for
Anh Ngoc Huynh	Senior Chemist	Organics
PP 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
Tel: +852 2610 1044 Fax: +852 2610 2021 www.alsenviro.com

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Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID			
				S19 0-0.9M	S19 0.9-1.9M	S19 1.9-2.9M	S19 ELUTRIATE BLANK
				12-NOV-2009 15:00	12-NOV-2009 15:00	12-NOV-2009 15:00	13-NOV-2009 11:00
				HK0925093-001	HK0925093-002	HK0925093-003	HK0925093-004
Compound	CAS Number	LOR	Unit	Client sampling date / time			
ED/EK: Inorganic Nonmetallic Parameters							
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	<0.1	<0.1	<0.1	<0.1
EG: Metals and Major Cations - Filtered							
EG020: Arsenic	7440-38-2	10	µg/L	<10	14	<10	<10
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	0.7
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	<10
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	1
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1	2
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)							
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2	<2.2
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8	<6.8
EP-065A: PCB Single Congeners							
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	<0.05



Sub-Matrix: ELUTRIATE				Client sample ID	S19 0-0.9M	S19 0.9-1.9M	S19 1.9-2.9M	S19 ELUTRIATE BLANK
Client sampling date / time				12-NOV-2009 15:00	12-NOV-2009 15:00	12-NOV-2009 15:00	13-NOV-2009 11:00	
Compound	CAS Number	LOR	Unit	HK0925093-001	HK0925093-002	HK0925093-003	HK0925093-004	
EP-065A: PCB Single Congeners - Continued								
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
EP-067A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								
Surrogate control limits listed at end of this report.								
Nitrobenzene -d5	4165-60-0	0.1	%	60.7	82.6	62.5	64.8	
4-Terphenyl-d14	1718-51-0	0.1	%	62.6	62.2	60.0	70.9	
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate								
Surrogate control limits listed at end of this report.								
Decachlorobiphenyl	2051-24-3	0.1	%	78.4	106	79.3	101	
EP-067S: Pesticide Surrogate								
Surrogate control limits listed at end of this report.								
Tetrachlorometaxylene	877-09-8	0.1	%	64.5	58.6	58.2	62.0	
Dibutylchlorendate	1770-80-5	0.1	%	57.0	61.0	54.6	52.4	



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1178806)								
HK0925091-004	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	0.2	0.3	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	3	3	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	1	1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					LCS	DCS	Low	High	Value	Control Limit	
EG: Metals and Major Cations - Filtered (QC Lot: 1178806)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	89.7	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	102	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	104	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	101	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	106	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	100	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	107	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	91.4	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	94.2	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178905)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	73.5	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	64.6	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	69.0	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	61.2	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	69.3	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	63.6	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	78.6	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	83.5	---	50	130	---	---
Benzo(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	76.0	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	86.5	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	78.6	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	71.2	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	81.3	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	# 43.6	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	77.6	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178905) - Continued											
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1171678)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	94.3	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	91.0	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	89.6	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	93.1	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	91.2	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	99.4	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	86.1	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	82.7	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	84.2	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	83.3	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	94.8	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	85.7	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	89.7	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	82.3	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	85.7	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	81.1	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	89.2	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1174456)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	120	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	79.0	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	120	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	39.7	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	110	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	120	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	87.7	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	119	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	102	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	94.0	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	76.9	---	3	151	---	---

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

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%) MS	MSD	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178806)										
HK0925079-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	98.2	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	101	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	110	---	75	125	---	---



Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178806) - Continued										
HK0925079-001	Anonymous	EG020: Copper	7440-50-8	100 µg/L	113	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	106	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	95.5	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	104	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	88.8	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	109	---	75	125	---	---

Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0019909

Folder No : 0908820

Page No : 1 of 2

Date of Issue : 15/12/2009

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

Sample Description : 4 elutriate water samples were delivered by the client.

Sample Received Date : 25/11/2009

Test Completed Date : 15/12/2009

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

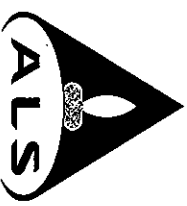
Sample Name	Parameter	Unit	Tributyl tin (ng TBT/l)	Surrogate Compound Recovery (%)
HK0924251-4	Sample No	Analysis Date	WTM-TBT-1	WTM-TBT-1
	WT-0911-2865	01/12/2009	<12	100
HK0924251-5	WT-0911-2866		<11	100
HK0924251-6	WT-0911-2867		<10	98
HK0924251-7	WT-0911-2868		<9	100

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



ALS Laboratory Group
 ANALYTICAL CHEMISTRY & TESTING SERVICES
ALS TECHNICHEM (HK) Pty Ltd
 Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
 181-185 GLOUCESTER ROAD,
 WANCHAI, HONG KONG
PROJECT ID: LG29024
SITE: S19

Batch: HK0925093
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 12/11/2009
DATE OF ISSUE: 20/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 4
ORDER: CV/2009/13

COMMENTS

Samples analysed on an as received basis. Results reported on an as received basis. Tributyl tin was subcontracted and tested by Hong Kong Productivity Council. Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925093-1 (HK0924251-4)	S19 0-0.9M	12/11/2009
HK0925093-2 (HK0924251-5)	S19 0.9-1.9M	12/11/2009
HK0925093-3 (HK0924251-6)	S19 1.9-2.9M	12/11/2009
HK0925093-4 (HK0924251-7)	S19 Elutriate Blank	13/11/2009

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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Mr. Chan Kwok-Fai, Godfrey
 Laboratory Manager, Hong Kong

Other ALS Environmental Laboratories

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AMERICAS
 Vancouver
 Santiago
 Antofagasta
 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*

ALS Technichem (HK) Pty Ltd
 Part of the **ALS Laboratory Group**
 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 www.alsenviro.com
 A Campbell Brothers Limited Company



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)↗	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)↗	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphate Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphate Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-PCB-2	USEPA 8082
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-TPCB-1	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-PHENOL-1	USEPA 8270C
II. Sediment/Soil					
III. Chinese Medicines					
Pesticides Residues	TCCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A	HS1004	HS1004, Testing Guideline on Degradable Containers and Bags	
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

↗ C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency
Krone *et al* – Marine Environmental research,27, 1-18, 1989



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925103
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 13-NOV-2009
Order number	: CV/2009/13			Issue Date	: 10-DEC-2009
C-O-C number	: H006850			No. of samples received	: 4
Site	: S21			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925103

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.
Sample(s) were received in an ambient condition.
Elutriate sample(s) analysed and reported on an as received basis.
Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories	Position	Authorised results for
Anh Ngoc Huynh	Senior Chemist	Organics
PP Fung Lim Chee, Richard	General Manager	Inorganics



Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID	S21 0-0.9M	S21 0.9-1.9M	S21 1.9-2.9M	S21 ELUTRIATE BLANK
				Client sampling date / time	13-NOV-2009 17:00	13-NOV-2009 17:00	13-NOV-2009 17:00	13-NOV-2009 16:00
Compound	CAS Number	LOR	Unit	HK0925103-001	HK0925103-002	HK0925103-003	HK0925103-004	
ED/EK: Inorganic Nonmetallic Parameters								
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1
EG: Metals and Major Cations - Filtered								
EG020: Arsenic	7440-38-2	10	µg/L	16	15	18	<10	<10
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	0.5	0.5
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	<10	<10
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	1	1
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	1	1	1
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)								
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2	<2.2	<2.2
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8	<6.8	<6.8
EP-065A: PCB Single Congeners								
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05



Sub-Matrix: ELUTRIATE				Client sample ID			
Client sampling date / time				S21 0-0.9M	S21 0.9-1.9M	S21 1.9-2.9M	S21 ELUTRIATE BLANK
13-NOV-2009 17:00				13-NOV-2009 17:00	13-NOV-2009 17:00	13-NOV-2009 17:00	13-NOV-2009 16:00
Compound	CAS Number	LOR	Unit	HK0925103-001	HK0925103-002	HK0925103-003	HK0925103-004
EP-065A: PCB Single Congeners - Continued							
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
EP-067A: Organochlorine Pesticides (OC)							
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.
Nitrobenzene -d5	4165-60-0	0.1	%	52.9	54.3	66.3	50.4
4-Terphenyl-d14	1718-51-0	0.1	%	81.6	90.7	86.1	87.5
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.
Decachlorobiphenyl	2051-24-3	0.1	%	102	89.0	91.9	103
EP-067S: Pesticide Surrogate							Surrogate control limits listed at end of this report.
Tetrachlorometaxylene	877-09-8	0.1	%	54.0	52.8	50.2	52.0
Dibutylchlorendate	1770-80-5	0.1	%	70.5	73.5	69.5	70.9



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1178807)								
HK0925098-004	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	0.4	0.5	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	1	1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	Value	RPD (%) Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178807)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	90.8	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	103	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	100	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	105	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	99.8	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	108	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	108	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	89.4	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	110	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178843)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	54.3	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	59.6	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	53.7	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	50.5	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	61.9	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	56.7	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	82.3	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	86.6	---	50	130	---	---
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	75.7	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	85.8	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	76.8	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	69.0	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	72.6	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	# 44.6	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	68.1	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---



Page Number : 5 of 6
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK0925103

Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) DCS	Low	High	RPD (%) Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178843) - Continued											
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1174459)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	90.6	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	84.5	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	85.7	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	86.1	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	96.6	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	93.7	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	84.2	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	93.7	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	80.7	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	98.2	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	87.8	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	88.3	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	91.4	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	85.5	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	83.0	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	85.8	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	85.0	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1171662)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	61.1	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	84.1	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	73.3	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	70.4	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	68.5	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	78.5	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	78.0	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	81.6	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	80.6	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	75.5	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	124	---	3	151	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1171671)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	62.9	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	74.4	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	78.6	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	30.8	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	60.4	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	60.4	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	75.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	92.5	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	58.2	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	59.3	---	53	145	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) DCS	Recovery Limits (%) Low	Recovery Limits (%) High	RPD (%) Value	RPD (%) Control Limit
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1171671) - Continued											
4.4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	62.8	---	3	151	---	---

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

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%) MS	Spike Recovery (%) MSD	Recovery Limits (%) Low	Recovery Limits (%) High	RPD (%) Value	RPD (%) Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178807)										
HK0925098-003	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	109	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	99.0	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	96.2	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	91.8	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	100	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	110	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	108	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	88.1	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	103	---	75	125	---	---

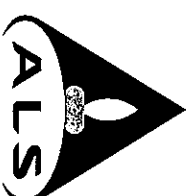
Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: S21

Batch: HK0925103
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 13/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 4
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925103-001	S21	13/11/2009
HK0925103-002	S21	13/11/2009
HK0925103-003	S21	13/11/2009
HK0925103-004	S21	13/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
11/F Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
HONG KONG
Phone: 852-2610 1044
Fax: 852-2610 2021
Email: hongkong@alsenviro.com

Other ALS Environmental Laboratories

AUSTRALIA	AMERICAS
Brisbane Melbourne Sydney Newcastle	Vancouver Santiago Amlafagasta Lima

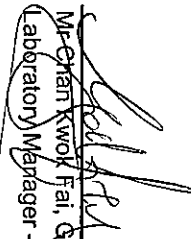
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Abbreviations: % SPK REC denotes percentage spike recovery

CHK denotes duplicate check sample

LOR denotes limit of reporting

LCS % REC denotes Laboratory Control Sample percentage recovery


Mr. Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**

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 www.alsenviro.com

A Campbell Brothers Limited Company



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020085

Folder No : 0909044

Page No : 1 of 2

Date of Issue : 05/01/2010

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

Sample Description : 4 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 05/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Sample No	Method Code	Analysis Date	Parameter Unit	Tributyl tin (ng TBT/L)	Surrogate Compound Recovery (%)
HK0925103-1	WT-0912-0325	WTM-TBT-1	04/12/2009		<15	100
HK0925103-2	WT-0912-0326				<15	100
HK0925103-3	WT-0912-0327				<15	90
HK0925103-4	WT-0912-0328				<15	93

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX Petroleum Hydrocarbons C ₆ -C ₉ Gasoline range organics (GRO)* C ₁₀ -C ₂₄ Diesel range organics (DRO)▲ C ₁₀ -C ₂₄ Petroleum Hydrocarbons Organochlorine Pesticides (OCP) Organophosphorus Pesticides (OPP) Polynuclear Aromatic Hydrocarbons (PAHs) Trihalomethane (THM) Volatile Organic Compounds (VOCs) Polychlorinated Biphenyls (PCBs) Tributyl Tin (TBT) Phenols	WTM-BTEX-1	USEPA 8260B	BTEX Petroleum Hydrocarbons C ₆ -C ₉ Gasoline range organics (GRO)* C ₁₀ -C ₂₄ Diesel range organics (DRO)▲ C ₁₀ -C ₂₄ Petroleum Hydrocarbons Organochlorine Pesticides (OCP) Organophosphorus Pesticides (OPP) Polynuclear Aromatic Hydrocarbons (PAHs) Trihalomethane (THM) Volatile Organic Compounds (VOCs) Polychlorinated Biphenyls (PCBs) Tributyl Tin (TBT) Phenols	WTM-DRO-1 WTM-DRO-1 WTM-DRO-2 WTM-OCP-1 WTM-OPP-1 WTM-PAH-1 WTM-VOC-1 WTM-VOC-1 WTM-PCB-1 WTM-TBT-1 WTM-PHENOL-1	USEPA 8015B USEPA 8015B USEPA 8015B USEPA 8081 USEPA 8141 USEPA 8270C USEPA 8260B USEPA 8260B USEPA 8082 Krone <i>et al</i> USEPA 8270C
II. Sediment/Soil					
BTEX Petroleum Hydrocarbons C ₆ -C ₉ Gasoline range organics (GRO)* C ₁₀ -C ₂₄ Diesel range organics (DRO)▲ C ₁₀ -C ₂₄ Petroleum Hydrocarbons Organochlorine Pesticides (OCP) Organophosphorus Pesticides (OPP) Polynuclear Aromatic Hydrocarbons (PAHs) Trihalomethane (THM) Volatile Organic Compounds (VOCs) Polychlorinated Biphenyls (PCBs) Total PCBs Tributyl Tin (TBT) Phenols	SEDIMENT-BTEX-1	USEPA 8260B	BTEX Petroleum Hydrocarbons C ₆ -C ₉ Gasoline range organics (GRO)* C ₁₀ -C ₂₄ Diesel range organics (DRO)▲ C ₁₀ -C ₂₄ Petroleum Hydrocarbons Organochlorine Pesticides (OCP) Organophosphorus Pesticides (OPP) Polynuclear Aromatic Hydrocarbons (PAHs) Trihalomethane (THM) Volatile Organic Compounds (VOCs) Polychlorinated Biphenyls (PCBs) Total PCBs Tributyl Tin (TBT) Phenols	WTM-DRO-1 SEDIMENT-DRO-1 SEDIMENT-DRO-2 SEDIMENT-OCP-1 SEDIMENT-OPP-1 SEDIMENT-PAH-1 WTM-VOC-1 SEDIMENT-PCB-2 SEDIMENT-TPCB-1 SEDIMENT-TBT-1 SEDIMENT-PHENOL-1	USEPA 8015B USEPA 8015B USEPA 8015B USEPA 8081 USEPA 8141 USEPA 8270C USEPA 8260B USEPA 8082 USEPA 8082 USEPA 8082 Krone <i>et al</i> USEPA 8270C
III. Chinese Medicines Pesticides Residues Organophosphorus Pesticide Polychlorinated Biphenyls (PCBs)					
	TCM-OCP-1 SEDIMENT-OPP-1	In house method In house based on USEPA 8141A			
	SEDIMENT-PCB-2	In house based on USEPA 8082			
IV. Degradable Containers & Bags					
	HS1004	HS1004, Testing Guideline on Degradable Containers and Bags			
V. Food & Biota Samples Polynuclear Aromatic Hydrocarbons (PAHs) Organochlorinated Pesticides (OCPs)					
	FD-PAH-1 FD-OCP-1	In house based on USEPA 8279C In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane (C₉).

▲C₁₀-C₂₄ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency
Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0924962
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 24-NOV-2009
Order number	: CV/2009/13			Issue Date	: 17-DEC-2009
C-O-C number	: H010035			No. of samples received	: 2
Site	: S29			No. of samples analysed	: 2

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0924962

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

Anh Ngoc Huynh

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Position

Senior Chemist

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Authorised results for

Organics

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ALS Laboratory Group

Trading Name: ALS Technichem (HK) Pty Ltd

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A Campbell Brothers Limited Company



Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID	S29	S29			
				Client sampling date / time	24-NOV-2009 11:00	ELUTRIATE BLANK	24-NOV-2009 11:00		
Compound	CAS Number	LOR	Unit	HK0924962-001	HK0924962-002				
ED/EK: Inorganic Nonmetallic Parameters									
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	<0.1	<0.1				
EG: Metals and Major Cations - Filtered									
EG020: Arsenic	7440-38-2	10	µg/L	<10	<10				
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2				
EG020: Chromium	7440-47-3	10	µg/L	<10	<10				
EG020: Copper	7440-50-8	1	µg/L	<1	<1				
EG020: Lead	7439-92-1	1	µg/L	<1	<1				
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5				
EG020: Nickel	7440-02-0	1	µg/L	1	<1				
EG020: Silver	7440-22-4	1	µg/L	<1	<1				
EG020: Zinc	7440-66-6	10	µg/L	<10	<10				
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)									
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2				
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2				
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2				
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2				
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2				
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2				
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2				
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2				
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2				
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2				
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4				
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2				
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2				
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2				
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2				
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2				
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8				
EP-065A: PCB Single Congeners									
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05				
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05				
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05				
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05				
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05				
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05				
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05				
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05				
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05				
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05				



Sub-Matrix: ELUTRIATE				Client sample ID	S29	S29			
				Client sampling date / time	24-NOV-2009 11:00	ELUTRIATE BLANK 24-NOV-2009 11:00			
Compound	CAS Number	LOR	Unit	HK0924962-001	HK0924962-002				
EP-065A: PCB Single Congeners - Continued									
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05				
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05				
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05				
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05				
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05				
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05				
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05				
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05				
EP-067A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5				
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0				
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5				
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5				
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5				
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5				
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5				
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5				
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5				
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5				
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0				
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.		
Nitrobenzene -d5	4165-60-0	0.1	%	53.5	52.2				
4-Terphenyl-d14	1718-51-0	0.1	%	74.1	81.3				
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.		
Decachlorobiphenyl	2051-24-3	0.1	%	94.9	82.6				
EP-067S: Pesticide Surrogate							Surrogate control limits listed at end of this report.		
Tetrachlorometaxylene	877-09-8	0.1	%	53.9	72.1				
Dibutylchloredate	1770-80-5	0.1	%	88.3	63.6				



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1180497)								
HK0924957-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0
HK0924975-001	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180497)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	108	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	96.9	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	95.6	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	99.7	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	95.5	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	103	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	98.5	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	92.8	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	105	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179511)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	54.9	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	52.8	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	61.8	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	52.8	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	61.5	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	61.3	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	68.8	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	73.1	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179511) - Continued											
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	61.5	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	81.8	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	67.6	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	66.7	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	76.7	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	54.4	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	60.5	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1179512)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	80.1	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	82.1	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	88.3	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	84.9	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	87.8	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	82.2	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	110	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	107	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	110	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	118	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	110	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	108	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	102	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	93.7	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	107	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	98.4	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	104	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1179507)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	77.2	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	101	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	64.8	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	35.6	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	89.3	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	92.1	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	98.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	107	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	108	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	65.0	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	80.1	---	3	151	---	---

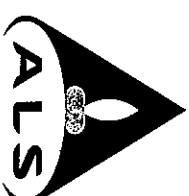
Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report



Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180497)										
HK0924956-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	112	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	97.8	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	93.7	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	106	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	98.4	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	104	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	99.5	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	94.7	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	90.3	---	75	125	---	---

Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: S29

Batch: HK0924962
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 24/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 2
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tribuyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

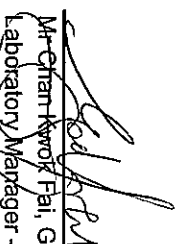
Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0924962-001	S29	24/11/2009
HK0924962-002	S29	ELUTRIATE BLANK 24/11/2009

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: hongkong@alsenviro.com


Mr. Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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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
Part of the **ALS Laboratory Group**
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 **www.alsenviro.com**
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Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020165
Folder No : 0909145
Page No : 1 of 2
Date of Issue : 07/01/2010

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

Sample Description : 2 elutriate water samples were delivered by the client.

Sample Received Date : 03/12/2009

Test Completed Date : 07/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBT/L)	Surrogate Compound Recovery (%)
HK0924962-1	Method Code	WTM-TBT-1	11/12/2009	WTM-TBT-1
	Sample No	WT-0912-0828		11/12/2009
	Analysis Date			
HK0924962-2	WT-0912-0829		<15	83

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorus Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TRCB-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TGM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A	HS1004	HS1004, Testing Guideline on Degradable Containers and Bags	
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

▲C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency
Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925159
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 17-NOV-2009
Order number	: CV/2009/13			Issue Date	: 10-DEC-2009
C-O-C number	: H006232			No. of samples received	: 4
Site	: S30			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925159

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

Anh Ngoc Huynh

PP Fung Lim Chee, Richard

Position

Senior Chemist

General Manager

Authorised results for

Organics

Inorganics

ALS Laboratory Group

Trading Name: ALS Technichem (HK) Pty Ltd

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Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID	S30	S30	S30	S30
					0-0.9M	0.9-1.9M	1.9-2.9M	ELUTRIATE BLANK
				Client sampling date / time	17-NOV-2009 11:30	17-NOV-2009 11:30	17-NOV-2009 11:30	18-NOV-2009 15:00
Compound	CAS Number	LOR	Unit	HK0925159-001	HK0925159-002	HK0925159-003	HK0925159-004	
ED/EK: Inorganic Nonmetallic Parameters								
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	0.7	0.7	0.8	<0.1	
EG: Metals and Major Cations - Filtered								
EG020: Arsenic	7440-38-2	10	µg/L	16	17	23	<10	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	<10	
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	<1	
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
EG020: Nickel	7440-02-0	1	µg/L	<1	1	<1	<1	
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	<1	
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10	
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)								
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	<0.4	
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2	<2.2	
High M.W. PAHs	----	6.8	µg/L	<6.8	<6.8	<6.8	<6.8	
EP-065A: PCB Single Congeners								
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	



Sub-Matrix: ELUTRIATE				Client sample ID	S30 0-0.9M	S30 0.9-1.9M	S30 1.9-2.9M	S30 ELUTRIATE BLANK
Client sampling date / time				17-NOV-2009 11:30	17-NOV-2009 11:30	17-NOV-2009 11:30	18-NOV-2009 15:00	
Compound	CAS Number	LOR	Unit	HK0925159-001	HK0925159-002	HK0925159-003	HK0925159-004	
EP-065A: PCB Single Congeners - Continued								
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
EP-067A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
beta- & gamma-BHC	319-85-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								
Surrogate control limits listed at end of this report.								
Nitrobenzene -d5	4165-60-0	0.1	%	55.9	52.6	54.4	50.6	
4-Terphenyl-d14	1718-51-0	0.1	%	61.9	75.7	82.2	71.6	
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate								
Surrogate control limits listed at end of this report.								
Decachlorobiphenyl	2051-24-3	0.1	%	83.6	105	103	93.8	
EP-067S: Pesticide Surrogate								
Surrogate control limits listed at end of this report.								
Tetrachlorometaxylene	877-09-8	0.1	%	54.1	59.7	55.3	51.9	
Dibutylchlorendate	1770-80-5	0.1	%	86.2	98.8	103	78.1	



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1178811)								
HK0925159-002	S30 0.9-1.9M	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	1	1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	17	18	5.7
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0
		HK0925163-003	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2
EG020: Mercury	7439-97-6			0.5	µg/L	<0.5	<0.5	0.0
EG020: Copper	7440-50-8			1	µg/L	<1	<1	0.0
EG020: Lead	7439-92-1			1	µg/L	<1	<1	0.0
EG020: Nickel	7440-02-0			1	µg/L	<1	<1	0.0
EG020: Silver	7440-22-4			1	µg/L	<1	<1	0.0
EG020: Arsenic	7440-38-2			10	µg/L	<10	<10	0.0
EG020: Chromium	7440-47-3			10	µg/L	<10	<10	0.0
EG020: Zinc	7440-66-6			10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178811)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	89.7	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	102	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	104	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	101	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	97.9	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	102	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	88.3	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	91.4	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	94.2	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178968)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	55.8	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	60.3	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	79.2	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	64.6	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	53.9	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	57.2	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	77.3	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	82.5	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	Recovery (%) DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178968) - Continued											
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	85.5	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	93.8	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	89.9	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	84.2	---	50	130	---	---
Indeno(1,2,3-cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	73.3	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	69.6	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	87.8	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1174449)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	98.6	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	93.7	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	91.2	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	83.6	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	83.0	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	90.2	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	89.1	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	82.7	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	92.3	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	93.1	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	92.4	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	93.0	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	98.9	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	92.9	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	91.2	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	95.1	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	91.0	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1174446)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	69.6	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	89.3	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	108	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	97.7	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	88.1	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	110	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	113	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	112	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	108	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	125	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	116	---	3	151	---	---

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

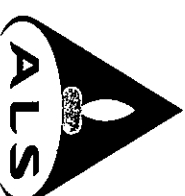


Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
				MS	MSD	Low	High	Value	Control Limit	
EG: Metals and Major Cations - Filtered (QC Lot: 1178811)										
HK0925156-003	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	100	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	101	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	103	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	113	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	92.9	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	100	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	97.9	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	88.8	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	109	---	75	125	---	---

Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchloredate	1770-80-5	50	130



ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
ALS TECHNICHEM (HK) Pty Ltd
Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: S30

Batch: HK0925159
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 17/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 4
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.


Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925159-001	S30	17/11/2009
HK0925159-002	S30	17/11/2009
HK0925159-003	S30	17/11/2009
HK0925159-004	S30	18/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
11/F Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
HONG KONG

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


Mr. Chan Kwok Fai, Godfrey
Laboratory Manager, Hong Kong

Other ALS Environmental Laboratories This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.

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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
Part of the **ALS Laboratory Group**
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 www.alsenviro.com
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Environment & Product Innovation Laboratory

Test Report No : T0020088

Folder No : 0909047

Page No : 1 of 2

Date of Issue : 06/01/2010

TEST REPORT

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

Sample Description : 4 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 05/01/2010

Approved Signatory: Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBT/L)	Surrogate Compound Recovery (%)
	Method Code		WTM-TBT-1	WTM-TBT-1
	Sample No	Analysis Date	04/12/2009	04/12/2009
HK0925159-1	WT-0912-0337		<15	100
HK0925159-2	WT-0912-0338		<15	100
HK0925159-3	WT-0912-0339		<15	100
HK0925159-4	WT-0912-0340		<15	100

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

- (2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.
(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorus Pesticides (OPP)	WTM-OCP-1	USEPA 8141	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-PCB-2	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-TPCB-1	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-PHENOL-1	USEPA 8270C
II. Sediment/Soil					
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

▲C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency
Krone *et al* – Marine Environmental research,27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 7
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925156
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 17-NOV-2009
Order number	: CV/2009/13			Issue Date	: 10-DEC-2009
C-O-C number	: H006231			No. of samples received	: 4
Site	: S32			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925156

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.
Sample(s) were received in an ambient condition.
Elutriate sample(s) analysed and reported on an as received basis.
Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

Anh Ngoc Huynh

PP Fung Lim Chee, Richard

Position

Senior Chemist
General Manager

Authorised results for

Organics
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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Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID	S32	S32	S32	S32
				Client sampling date / time	0-0.9M	0.9-1.9M	1.9-2.9M	ELUTRIATE BLANK
				17-NOV-2009 13:30	17-NOV-2009 13:30	17-NOV-2009 13:30	18-NOV-2009 16:00	
Compound	CAS Number	LOR	Unit	HK0925156-001	HK0925156-002	HK0925156-003	HK0925156-004	
ED/EK: Inorganic Nonmetallic Parameters								
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	0.2	0.6	0.6	<0.1	
EG: Metals and Major Cations - Filtered								
EG020: Arsenic	7440-38-2	10	µg/L	32	16	<10	<10	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	<10	
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	<1	
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1	<1	
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	<1	
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10	
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)								
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	<0.4	
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2	<2.2	
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8	<6.8	
EP-065A: PCB Single Congeners								
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	



Sub-Matrix: ELUTRIATE				Client sample ID			
				S32	S32	S32	S32
				0-0.9M	0.9-1.9M	1.9-2.9M	ELUTRIATE BLANK
				17-NOV-2009 13:30	17-NOV-2009 13:30	17-NOV-2009 13:30	18-NOV-2009 16:00
				HK0925156-001	HK0925156-002	HK0925156-003	HK0925156-004
Compound	CAS Number	LOR	Unit	Client sampling date / time			
EP-065A: PCB Single Congeners - Continued							
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
EP-067A: Organochlorine Pesticides (OC)							
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.
Nitrobenzene -d5	4165-60-0	0.1	%	51.2	52.2	56.1	54.1
4-Terphenyl-d14	1718-51-0	0.1	%	77.2	86.2	66.3	79.4
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.
Decachlorobiphenyl	2051-24-3	0.1	%	101	82.0	87.2	103
EP-067S: Pesticide Surrogate							Surrogate control limits listed at end of this report.
Tetrachlorometaxylene	877-09-8	0.1	%	50.8	53.6	50.6	60.6
Dibutylchlorendate	1770-80-5	0.1	%	104	111	84.8	108



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 (%)	
EG: Metals and Major Cations - Filtered (QC Lot: 1178810)									
HK0925111-004	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0	
EG: Metals and Major Cations - Filtered (QC Lot: 1178811)									
HK0925159-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	1	1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	17	18	5.7	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0	
HK0925163-003	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)		
						LCS	DCS	Low	High	Value	Control Limit	
EG: Metals and Major Cations - Filtered (QC Lot: 1178810)												
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	90.8	---	85	115	---	---	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	103	---	85	115	---	---	
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	100	---	85	115	---	---	
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	105	---	85	115	---	---	
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	99.8	---	85	115	---	---	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	108	---	85	115	---	---	
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	109	---	85	115	---	---	
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	88.9	---	85	115	---	---	



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178810) - Continued											
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	110	---	85	115	---	---
EG: Metals and Major Cations - Filtered (QC Lot: 1178811)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	89.7	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	102	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	104	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	101	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	97.9	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	102	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	88.3	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	91.4	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	94.2	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178968)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	55.8	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	60.3	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	79.2	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	64.6	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	53.9	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	57.2	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	77.3	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	82.5	---	50	130	---	---
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	85.5	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	93.8	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	89.9	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	84.2	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	73.3	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	69.6	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	87.8	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1171678)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	94.3	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	91.0	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	89.6	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	93.1	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	91.2	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	99.4	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	86.1	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	82.7	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	84.2	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	83.3	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	94.8	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	85.7	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EP-065A: PCB Single Congeners (QC Lot: 1171678) - Continued											
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	89.7	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	82.3	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	85.7	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	81.1	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	89.2	---	50	130	---	---
EP-065A: PCB Single Congeners (QC Lot: 1174449)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	98.6	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	93.7	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	91.2	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	83.6	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	83.0	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	90.2	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	89.1	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	82.7	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	92.3	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	93.1	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	92.4	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	93.0	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	98.9	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	92.9	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	91.2	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	95.1	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	91.0	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1174446)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	69.6	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	89.3	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	108	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	97.7	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	88.1	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	110	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	113	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	112	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	108	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	125	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	116	---	3	151	---	---

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

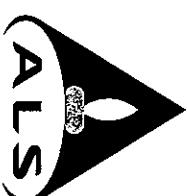
Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178810)										



Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178810) - Continued										
HK0925108-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	92.0	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	99.0	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	96.2	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	91.8	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	100	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	104	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	113	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	92.7	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	103	---	75	125	---	---
EG: Metals and Major Cations - Filtered (QC Lot: 1178811)										
HK0925156-003	S32 1.9-2.9M	EG020: Arsenic	7440-38-2	100 µg/L	100	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	101	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	103	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	113	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	92.9	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	100	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	97.9	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	88.8	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	109	---	75	125	---	---

Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130



ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
ALS TECHNICHEM (HK) Pty Ltd
Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: S32

Batch: HK0925156
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 17/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 4
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.


Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925156-001	S32	17/11/2009
HK0925156-002	S32	17/11/2009
HK0925156-003	S32	17/11/2009
HK0925156-004	S32	18/11/2009

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: hongkong@alsenviro.com


Mr. Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories *This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.*

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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

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**
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A Campbell Brothers Limited Company



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020089
Folder No : 0909048
Page No : 1 of 2
Date of Issue : 07/01/2010

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

Sample Description : 4 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 07/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBT/l)	Tripropyl tin % of Recovery (%)
Sample No	Method Code	Analysis Date	WTM-TBT-1	WTM-TBT-1
HK0925156-1	WT-0912-0341	11/12/2009	<15	95
HK0925156-2	WT-0912-0342		<15	100
HK0925156-3	WT-0912-0343		<15	94
HK0925156-4	WT-0912-0344		<15	95

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₄ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₄ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₄ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₄ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorus Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-P-CB-2	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-P-CB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-T-CB-1	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Tributyl Tin (TBT)	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
II. Sediment/Soil					
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A	HS1004	HS1004, Testing Guideline on Degradable Containers and Bags	
Polychlorinated Biphenyls (PCBs)	SEDIMENT-P-CB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-nmethylpentane (C₆) and n-nonane(C₉).

▲C₁₀-C₂₄ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925160
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 17-NOV-2009
Order number	: CV/2009/13			Issue Date	: 17-DEC-2009
C-O-C number	: H006230			No. of samples received	: 4
Site	: S34			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925160

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

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Authorised results for

Organics

Inorganics

ALS Laboratory Group

Trading Name: ALS Technichem (HK) Pty Ltd

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A Campbell Brothers Limited Company



Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID			
				S34 0-0.9M	S34 0.9-1.9M	S34 1.9-2.9M	S34 ELUTRIATE BLANK
				17-NOV-2009 15:30	17-NOV-2009 15:30	17-NOV-2009 15:30	21-NOV-2009 09:00
				HK0925160-001	HK0925160-002	HK0925160-003	HK0925160-004
Compound	CAS Number	LOR	Unit	Client sampling date / time			
ED/EK: Inorganic Nonmetallic Parameters							
EK055K: Unionized Ammonia (as N)	----	0.1	mg/L	0.1	0.3	0.3	<0.1
EG: Metals and Major Cations - Filtered							
EG020: Arsenic	7440-38-2	10	µg/L	<10	10	12	<10
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	<10
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	<1
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L	<1	1	<1	<1
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)							
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2	<2.2
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8	<6.8
EP-065A: PCB Single Congeners							
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	<0.05



Sub-Matrix: ELUTRIATE				Client sample ID	S34 0-0.9M	S34 0.9-1.9M	S34 1.9-2.9M	S34 ELUTRIATE BLANK
Client sampling date / time				17-NOV-2009 15:30	17-NOV-2009 15:30	17-NOV-2009 15:30	21-NOV-2009 09:00	
Compound	CAS Number	LOR	Unit	HK0925160-001	HK0925160-002	HK0925160-003	HK0925160-004	
EP-065A: PCB Single Congeners - Continued								
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
EP-067A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
Nitrobenzene -d5	4165-60-0	0.1	%	64.0	58.6	54.1	52.4	
4-Terphenyl-d14	1718-51-0	0.1	%	73.5	76.8	82.8	66.9	
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	76.5	114	86.3	88.1	
EP-067S: Pesticide Surrogate							Surrogate control limits listed at end of this report.	
Tetrachlorometaxylene	877-09-8	0.1	%	53.8	52.0	51.6	57.4	
Dibutylchlorendate	1770-80-5	0.1	%	57.2	70.2	73.6	59.6	



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 (%)	
EG: Metals and Major Cations - Filtered (QC Lot: 1179379)									
HK0925187-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	16	15	6.4	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0	
HK0925176-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	12	13	8.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1179379)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	112	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	104	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	115	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	105	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	97.2	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	108	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	102	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	95.6	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	102	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179150)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	52.4	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	52.4	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	# 46.3	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	# 40.8	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	61.7	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	67.8	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	62.6	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	68.7	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low High		RPD (%) Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179150) - Continued											
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	77.2	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	84.3	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	84.3	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	80.4	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	68.6	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	68.0	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	84.1	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1178992)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	106	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	83.2	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	92.5	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	88.5	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	81.7	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	83.1	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	95.8	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	101	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	100	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	97.0	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	97.0	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	86.1	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	99.9	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	96.2	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	97.9	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	98.6	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	97.1	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1178991)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	50.5	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	63.2	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	68.1	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	62.4	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	55.7	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	69.8	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	69.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	73.7	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	75.8	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	75.4	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	79.4	---	3	151	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1179151)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	51.1	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	65.4	---	40	134	---	---



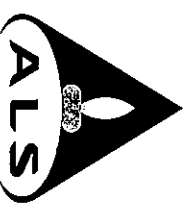
Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					Concentration	LCS	DCS	Low	High	Value	Control Limit
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1179151) - Continued											
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	78.3	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	55.4	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	60.7	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	79.9	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	78.5	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	88.0	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	88.0	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	90.2	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	85.6	---	3	151	---	---

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

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
				Concentration	MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1179379)										
HK0925132-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	98.0	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	95.0	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	110	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	98.2	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	92.9	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	102	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	108	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	93.5	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	96.2	---	75	125	---	---

Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130



ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
ALS TECHNICHEM (HK) Pty Ltd
Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: S34

Batch: HK0925160
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 17/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 4
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925160-001	S34	17/11/2009
HK0925160-002	S34	17/11/2009
HK0925160-003	S34	17/11/2009
HK0925160-004	S34	21/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
11/F Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
HONG KONG

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

Mr. Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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Antofagasta
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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
Part of the **ALS Laboratory Group**
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Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020065

Folder No : 0909021

Page No : 1 of 2

Date of Issue : 23/12/2009

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

Sample Description : 4 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 22/12/2009

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBT/l)	Surrogate Compound Recovery (%)
	Method Code		WTM-TBT-1	WTM-TBT-1
	Sample No	Analysis Date	01/12/2009	01/12/2009
HK0925160-1	WT-0912-0252		<13	89
HK0925160-2	WT-0912-0253		<12	94
HK0925160-3	WT-0912-0254		<12	89
HK0925160-4	WT-0912-0255		<13	99

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₂ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₂ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorus Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polyuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polyuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-PCB-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TQM-OCP-1	In house method			
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A			
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			
IV. Degradable Containers & Bags					
			HS1004		HS1004, Testing Guideline on Degradable Containers and Bags

Remarks: *C₂-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-nmethylpentane (C₂) and n-nonane(C₉).

▲C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research,27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 7
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925187
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 18-NOV-2009
Order number	: CV/2009/13			Issue Date	: 11-DEC-2009
C-O-C number	: H010015			No. of samples received	: 4
Site	: S35			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925187

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

Anh Ngoc Huynh

PP Fung Lim Chee, Richard

Position

Senior Chemist

General Manager

Authorised results for

Organics

Inorganics

ALS Laboratory Group

Trading Name: ALS Technichem (HK) Pty Ltd

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Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID		Client sampling date / time	
				S35 0-0.9M	S35 0.9-1.9M	S35 1.9-2.9M	S35 ELUTRIATE BLANK
				18-NOV-2009 17:30	18-NOV-2009 17:30	18-NOV-2009 17:30	21-NOV-2009 15:00
Compound	CAS Number	LOR	Unit	HK0925187-001	HK0925187-002	HK0925187-003	HK0925187-004
ED/EK: Inorganic Nonmetallic Parameters							
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	0.4	0.5	0.5	<0.1
EG: Metals and Major Cations - Filtered							
EG020: Arsenic	7440-38-2	10	µg/L	16	16	18	<10
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	<10
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	<1
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1	<1
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)							
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2	<2.2
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8	<6.8
EP-065A: PCB Single Congeners							
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	<0.05



Sub-Matrix: ELUTRIATE				Client sample ID			
				S35	S35	S35	S35
				0-0.9M	0.9-1.9M	1.9-2.9M	ELUTRIATE BLANK
				18-NOV-2009 17:30	18-NOV-2009 17:30	18-NOV-2009 17:30	21-NOV-2009 15:00
				HK0925187-001	HK0925187-002	HK0925187-003	HK0925187-004
Compound	CAS Number	LOR	Unit	Client sampling date / time			
EP-065A: PCB Single Congeners - Continued							
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
EP-067A: Organochlorine Pesticides (OC)							
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.
Nitrobenzene -d5	4165-60-0	0.1	%	59.1	58.0	56.1	54.9
4-Terphenyl-d14	1718-51-0	0.1	%	74.5	76.6	91.9	88.9
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.
Decachlorobiphenyl	2051-24-3	0.1	%	98.1	86.8	95.8	95.2
EP-067S: Pesticide Surrogate							Surrogate control limits listed at end of this report.
Tetrachlorometaxylene	877-09-8	0.1	%	54.2	55.2	53.2	52.6
Dibutylchloroendate	1770-80-5	0.1	%	68.9	68.5	75.4	76.2



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1179380)								
HK0925187-001	S35 0-0.9M	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	16	15	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0
		HK0925185-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2
EG020: Mercury	7439-97-6			0.5	µg/L	<0.5	<0.5	0.0
EG020: Copper	7440-50-8			1	µg/L	<1	<1	0.0
EG020: Lead	7439-92-1			1	µg/L	<1	<1	0.0
EG020: Nickel	7440-02-0			1	µg/L	<1	<1	0.0
EG020: Silver	7440-22-4			1	µg/L	<1	<1	0.0
EG020: Arsenic	7440-38-2			10	µg/L	19	19	0.0
EG020: Chromium	7440-47-3			10	µg/L	<10	<10	0.0
EG020: Zinc	7440-66-6			10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1179380)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	104	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	93.1	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	98.9	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	110	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	94.6	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	104	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	101	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	93.4	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	100	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178990)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	53.5	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	53.6	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	64.9	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	54.4	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	58.2	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	55.9	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	75.7	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	81.8	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178990) - Continued											
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	87.1	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	93.2	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	91.6	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	86.0	---	50	130	---	---
Indeno(1,2,3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	82.6	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	72.8	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	93.2	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1174449)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	98.6	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	93.7	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	91.2	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	83.6	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	83.0	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	90.2	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	89.1	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	82.7	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	92.3	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	93.1	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	92.4	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	93.0	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	98.9	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	92.9	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	91.2	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	95.1	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	91.0	---	50	130	---	---
EP-065A: PCB Single Congeners (QC Lot: 1178992)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	106	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	83.2	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	92.5	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	88.5	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	81.7	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	83.1	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	95.8	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	101	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	100	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	97.0	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	97.0	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	86.1	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	99.9	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	96.2	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) DCS	Low	High	RPD (%) Value	Control Limit
EP-065A: PCB Single Congeners (QC Lot: 1178992) - Continued											
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	97.9	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	98.6	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	97.1	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1178991)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	50.5	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	63.2	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	68.1	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	62.4	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	55.7	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	69.8	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	69.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	73.7	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	75.8	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	75.4	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	79.4	---	3	151	---	---

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

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%) MS	Recovery Limits (%) MSD	Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1179380)										
HK0925177-002	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	124	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	92.4	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	99.6	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	99.6	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	102	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	109	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	113	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	95.5	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	104	---	75	125	---	---

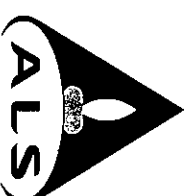
Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130



Page Number : 7 of 7
Client : LAM GEOTECHNICS LIMITED
Work Order : HK0925187

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130



ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
ALS TECHNICHEM (HK) Pty Ltd
Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: S35

Batch: HK0925187
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 18/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 4
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tribuyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

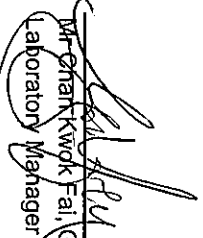
Sample Details

<i>ALS Lab ID</i>	<i>Sample ID</i>	<i>Date of Sampling</i>
HK0925187-001	S35	18/11/2009
HK0925187-002	S35	18/11/2009
HK0925187-003	S35	18/11/2009
HK0925187-004	S35	21/11/2009

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: hongkong@alsenviro.com


Mr. Mark Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories *This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.*

AUSTRALIA **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

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**
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 www.alsenviro.com
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Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020071

Folder No : 0909028

Page No : 1 of 2

Date of Issue : 04/01/2010

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

Sample Description : 4 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 04/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Sample No	Analysis Date	Parameter Unit	Tributyl tin (ng TBTL)	Surrogate Compound Recovery (%)
HK0925187-1	WT-0912-0280	03/12/2009	WTM-TBT-1	<11	96
HK0925187-2	WT-0912-0281			<12	91
HK0925187-3	WT-0912-0282			<12	96
HK0925187-4	WT-0912-0283			<12	91

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	II. Sediment/Soil		
Petroleum Hydrocarbons			BTEX	SEDIMENT-BTEX-1	USEPA 8260B
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	Petroleum Hydrocarbons		
C ₁₀ -C ₂₈ Diesel range organics (DRO)↗	WTM-DRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)↗	SEDIMENT-DRO-1	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organophosphate Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Organophosphate Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Volatile Organic Compounds (VOCs)	SEDIMENT-PCB-2	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Polychlorinated Biphenyls (PCBs)	SEDIMENT-TPCB-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
			Tributyl Tin (TBT)	SEDIMENT-PHENOL-1	USEPA 8270C
			Phenols		
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A	HS1004	HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

↗ C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency
Krone *et al* – Marine Environmental research,27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 7
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925163
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 19-NOV-2009
Order number	: CV/2009/13			Issue Date	: 17-DEC-2009
C-O-C number	: H010021			No. of samples received	: 3
Site	: S40			No. of samples analysed	: 3

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 29-NOV-2009
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: HK0925163

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.
Sample(s) were received in an ambient condition.
Elutriate sample(s) analysed and reported on an as received basis.
Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories	Position	Authorised results for
Anh Ngoc Huynh	Senior Chemist	Organics
ppFung 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
Tel: +852 2610 1044 Fax: +852 2610 2021 www.alsenviro.com

A Campbell Brothers Limited Company



Analytical Results

Sub-Matrix: ELUTRIATE

Client sample ID

Client sampling date / time

				S40 0-0.9M	S40 0.9-1.9M	S40 ELUTRIATE BLANK
				19-NOV-2009 14:30	19-NOV-2009 14:30	19-NOV-2009 14:30
				HK0925163-001	HK0925163-002	HK0925163-003
Compound	CAS Number	LOR	Unit			
ED/EK: Inorganic Nonmetallic Parameters						
EK055K: Unionized Ammonia (as N)	----	0.1	mg/L	<0.1	<0.1	<0.1
EG: Metals and Major Cations - Filtered						
EG020: Arsenic	7440-38-2	10	µg/L	18	15	<10
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)						
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2
Low M.W. PAHs	----	2.2	µg/L	<2.2	<2.2	<2.2
High M.W. PAHs	----	6.8	µg/L	<6.8	<6.8	<6.8
EP-065A: PCB Single Congeners						
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05



Sub-Matrix: ELUTRIATE				Client sample ID				
Client sampling date / time				S40 0-0.9M 19-NOV-2009 14:30 HK0925163-001	S40 0.9-1.9M 19-NOV-2009 14:30 HK0925163-002	S40 ELUTRIATE BLANK 19-NOV-2009 14:30 HK0925163-003		
Compound	CAS Number	LOR	Unit					
EP-065A: PCB Single Congeners - Continued								
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05		
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05		
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05		
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05		
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05		
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05		
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05		
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05		
EP-067A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5		
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0		
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5		
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5		
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5		
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5		
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5		
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5		
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5		
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5		
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0		
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
Nitrobenzene -d5	4165-60-0	0.1	%	56.4	73.2	64.7		
4-Terphenyl-d14	1718-51-0	0.1	%	80.8	82.9	85.9		
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	96.8	83.5	79.6		
EP-067S: Pesticide Surrogate							Surrogate control limits listed at end of this report.	
Tetrachlorometaxylene	877-09-8	0.1	%	52.6	61.9	50.4		
Dibutylchlorendate	1770-80-5	0.1	%	66.2	65.7	64.2		



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1178811)								
HK0925159-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	1	1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	17	18	5.7
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0
HK0925163-003	S40 ELUTRIATE BLANK	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178811)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	89.7	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	102	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	104	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	101	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	97.9	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	102	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	88.3	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	91.4	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	94.2	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179453)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	50.0	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	55.1	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	58.8	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	51.8	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	53.1	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	58.9	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	62.4	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	56.4	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) DCS	Low	High	Value	RPD (%) Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179453) - Continued											
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	79.2	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	84.0	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	91.9	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	84.5	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	75.3	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	71.3	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	80.3	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1178992)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	106	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	83.2	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	92.5	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	88.5	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	81.7	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	83.1	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	95.8	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	101	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	100	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	97.0	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	97.0	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	86.1	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	99.9	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	96.2	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	97.9	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	98.6	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	97.1	---	50	130	---	---
EP-065A: PCB Single Congeners (QC Lot: 1179454)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	112	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	91.9	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	113	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	90.3	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	85.1	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	111	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	83.8	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	87.3	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	81.1	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	84.2	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	82.0	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	89.6	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	80.8	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	83.9	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EP-065A: PCB Single Congeners (QC Lot: 1179454) - Continued											
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	88.0	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	91.3	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	87.7	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1179151)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	51.1	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	65.4	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	78.3	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	55.4	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	60.7	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	79.9	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	78.5	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	88.0	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	88.0	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	90.2	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	85.6	---	3	151	---	---

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

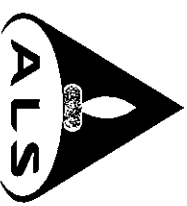
Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178811)										
HK0925156-003	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	100	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	101	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	103	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	113	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	92.9	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	100	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	97.9	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	88.8	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	109	---	75	125	---	---

Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130



Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130



ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
ALS TECHNICHEM (HK) Pty Ltd
Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: S40

Batch: HK0925163
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 19/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 3
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925163-001	S40	19/11/2009
HK0925163-002	S40	19/11/2009
HK0925163-003	S40	19/11/2009

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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Mr Chan Kwok Fai, Godfrey
Laboratory Manager, Hong Kong

Other ALS Environmental Laboratories This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.

AUSTRALIA Brisbane Hong Kong
Melbourne Singapore
Sydney Kuala Lumpur
Newcastle Bogor

AMERICAS Vancouver
Santiago
Amtotagasta
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

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A Campbell Brothers Limited Company



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020080

Folder No : 0909039

Page No : 1 of 2

Date of Issue : 04/01/2010

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

Sample Description : 3 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 04/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBT/L)	Surrogate Compound Recovery (%)
HK0925163-1	Method Code	W/TM-TBT-1	04/12/2009	W/TM-TBT-1 04/12/2009
	Sample No	W/T-0912-0310	<11	94
HK0925163-2	Method Code	W/T-0912-0311	<12	82
HK0925163-3	Method Code	W/T-0912-0312	<12	95

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.
(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₄ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₄ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₄ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₄ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorus Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-PCB-2	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-TPCB-1	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-PHENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-PHENOL-1	USEPA 8270C
II. Sediment/Soil					
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A	HS1004	HS1004, Testing	HS1004, Testing
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082		Guideline on	Guideline on
				Degradable	Degradable
				Containers and	Containers and
				Bags	Bags
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

▲C₁₀-C₂₄ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

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ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925198
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 23-NOV-2009
Order number	: CV/2009/13			Issue Date	: 17-DEC-2009
C-O-C number	: H010027			No. of samples received	: 3
Site	: S44			No. of samples analysed	: 3

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925198

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.
Sample(s) were received in an ambient condition.
Elutriate sample(s) analysed and reported on an as received basis.
Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

Anh Ngoc Huynh

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Position

Senior Chemist
General Manager

Authorised results for

Organics
Inorganics

ALS Laboratory Group

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A Campbell Brothers Limited Company



Analytical Results

Sub-Matrix: ELUTRIATE

Client sample ID

Client sampling date / time

				S44 0-0.9M	S44 0.9-1.9M	S44 ELUTRIATE BLANK		
				21-NOV-2009 13:00	21-NOV-2009 13:00	21-NOV-2009 13:00		
				HK0925198-001	HK0925198-002	HK0925198-003		
Compound	CAS Number	LOR	Unit					
ED/EK: Inorganic Nonmetallic Parameters								
EK055K: Unionized Ammonia (as N)	----	0.1	mg/L	0.3	0.2	<0.1		
EG: Metals and Major Cations - Filtered								
EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	<10		
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2		
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10		
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1		
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1		
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5		
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1		
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1		
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10		
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)								
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2		
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2		
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2		
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2		
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2		
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2		
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2		
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2		
Benzo(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2		
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2		
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4		
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2		
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2		
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2		
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2		
Low M.W. PAHs	----	2.2	µg/L	<2.2	<2.2	<2.2		
High M.W. PAHs	----	6.8	µg/L	<6.8	<6.8	<6.8		
EP-065A: PCB Single Congeners								
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05		
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05		
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05		
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05		
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05		
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05		
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05		
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05		
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05		
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05		



Sub-Matrix: ELUTRIATE				Client sample ID	S44 0-0.9M	S44 0.9-1.9M	S44 ELUTRIATE BLANK		
Client sampling date / time				21-NOV-2009 13:00	21-NOV-2009 13:00	21-NOV-2009 13:00			
Compound	CAS Number	LOR	Unit	HK0925198-001	HK0925198-002	HK0925198-003			
EP-065A: PCB Single Congeners - Continued									
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 137	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05			
EP-067A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5			
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0			
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5			
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5			
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5			
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5			
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5			
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5			
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5			
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5			
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0			
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.		
Nitrobenzene -d5	4165-60-0	0.1	%	57.2	53.0	55.6			
4-Terphenyl-d14	1718-51-0	0.1	%	83.8	62.0	82.8			
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.		
Decachlorobiphenyl	2051-24-3	0.1	%	86.1	82.1	96.5			
EP-067S: Pesticide Surrogate							Surrogate control limits listed at end of this report.		
Tetrachlorometaxylene	877-09-8	0.1	%	50.9	52.2	52.2			
Dibutylchlorendate	1770-80-5	0.1	%	66.9	61.0	69.3			



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1180498)								
HK0925196-001	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0
HK0925204-001	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180498)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	96.5	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	97.7	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	105	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	110	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	97.3	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	102	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	111	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	91.8	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	107	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179003)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	58.4	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	51.6	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	53.1	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	51.5	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	54.5	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	52.8	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	74.6	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	80.9	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low High		RPD (%) Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179003) - Continued											
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	84.5	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	91.9	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	89.4	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	84.8	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	78.7	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	74.1	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	90.2	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1178992)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	106	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	83.2	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	92.5	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	88.5	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	81.7	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	83.1	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	95.8	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	101	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	100	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	97.0	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	97.0	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	86.1	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	99.9	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	96.2	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	97.9	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	98.6	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	97.1	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1178991)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	50.5	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	63.2	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	68.1	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	62.4	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	55.7	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	69.8	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	69.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	73.7	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	75.8	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	75.4	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	79.4	---	3	151	---	---

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



Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180498)										
HK0925196-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	102	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	93.6	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	106	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	105	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	95.4	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	104	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	105	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	91.2	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	104	---	75	125	---	---

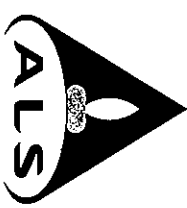
Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchloredate	1770-80-5	50	130

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MRC M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: S44

Batch: HK0925198
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 23/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 3
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

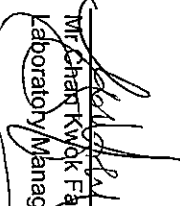
Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925198-001	S44	21/11/2009
HK0925198-002	S44	21/11/2009
HK0925198-003	S44	21/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
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Wai Chak Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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AUSTRALIA	AMERICAS
Brisbane	Vancouver
Melbourne	Santiago
Sydney	Antofagasta
Newcastle	Limá

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
Part of the **ALS Laboratory Group**
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Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020075

Folder No : 0909033

Page No : 1 of 2

Date of Issue : 04/01/2010

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

Sample Description : 3 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 04/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBT/L)	Surrogate Compound Recovery (%)
HK0925198-1	Method Code	WTM-TBT-1	03/12/2009	WTM-TBT-1 03/12/2009
	Sample No	WT-0912-0293	<12	96
HK0925198-2	Method Code	WT-0912-0294	<11	92
HK0925198-3	Method Code	WT-0912-0295	<14	90

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	II. Sediment/Soil		
Petroleum Hydrocarbons			BTEX	SEDIMENT-BTEX-1	USEPA 8260B
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	Petroleum Hydrocarbons		
C ₁₀ -C ₂₅ Diesel range organics (DRO)↗	WTM-DRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₅ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₅ Diesel range organics (DRO)↗	SEDIMENT-DRO-1	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	C ₁₀ -C ₂₅ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organophosphorus Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Total PCBs	SEDIMENT-TPCB-1	USEPA 8082
			Tributyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

↗ C₁₀-C₂₅ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency
Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0924974
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 24-NOV-2009
Order number	: CV/2009/13			Issue Date	: 17-DEC-2009
C-O-C number	: H010041			No. of samples received	: 3
Site	: S47			No. of samples analysed	: 3

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0924974

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories	Position	Authorised results for
Anh Ngoc Huynh	Senior Chemist	Organics
PP Fung Lim Chee, Richard	General Manager	Inorganics

ALS Laboratory Group

Trading Name: ALS Technichem (HK) Pty Ltd

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Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID		
				S47	S47	S47
				0-0.9M	0.9-1.9M	ELUTRIATE BLANK
				24-NOV-2009 12:00	24-NOV-2009 12:00	24-NOV-2009 12:00
Client sampling date / time				HK0924974-001	HK0924974-002	HK0924974-003
Compound	CAS Number	LOR	Unit			
ED/EK: Inorganic Nonmetallic Parameters						
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	<0.1	0.2	<0.1
EG: Metals and Major Cations - Filtered						
EG020: Arsenic	7440-38-2	10	µg/L	17	<10	<10
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)						
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2
Low M.W. PAHs	----	2.2	µg/L	<2.2	<2.2	<2.2
High M.W. PAHs	----	6.8	µg/L	<6.8	<6.8	<6.8
EP-065A: PCB Single Congeners						
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05



Sub-Matrix: ELUTRIATE				Client sample ID			S47		S47		S47	
				Client sampling date / time			0-0.9M		0.9-1.9M		ELUTRIATE BLANK	
				24-NOV-2009 12:00			24-NOV-2009 12:00		24-NOV-2009 12:00			
Compound	CAS Number	LOR	Unit	HK0924974-001	HK0924974-002	HK0924974-003						
EP-065A: PCB Single Congeners - Continued												
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05						
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05						
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05						
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05						
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05						
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05						
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05						
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05						
EP-067A: Organochlorine Pesticides (OC)												
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5						
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0						
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5						
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5						
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5						
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5						
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5						
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5						
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5						
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5						
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0						
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates										Surrogate control limits listed at end of this report.		
Nitrobenzene -d5	4165-60-0	0.1	%	54.6	53.8	52.7						
4-Terphenyl-d14	1718-51-0	0.1	%	86.2	82.4	85.9						
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate										Surrogate control limits listed at end of this report.		
Decachlorobiphenyl	2051-24-3	0.1	%	100	101	87.7						
EP-067S: Pesticide Surrogate										Surrogate control limits listed at end of this report.		
Tetrachlorometaxylene	877-09-8	0.1	%	52.3	54.1	53.2						
Dibutylchlorendate	1770-80-5	0.1	%	94.5	80.7	103						



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1180497)								
HK0924957-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0
HK0924975-001	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180497)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	108	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	96.9	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	95.6	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	99.7	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	95.5	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	103	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	98.5	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	92.8	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	105	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179514)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	54.0	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	53.6	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	68.0	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	54.6	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	66.7	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	51.5	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	68.9	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	73.7	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
		LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low High		RPD (%) Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179514) - Continued											
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	DCS	Low	High	Value	Control Limit
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	69.3	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	81.0	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	73.3	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	70.3	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	86.0	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	55.4	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	67.4	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1179512)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	80.1	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	82.1	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	88.3	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	84.9	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	87.8	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	82.2	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	110	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	107	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	110	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	118	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	110	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	108	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	102	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	93.7	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	107	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	98.4	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	104	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1179507)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	77.2	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	101	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	64.8	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	35.6	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	89.3	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	92.1	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	98.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	107	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	108	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	65.0	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	80.1	---	3	151	---	---

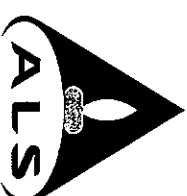
Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report



Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180497)										
HK0924956-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	112	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	97.8	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	93.7	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	106	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	98.4	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	104	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	99.5	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	94.7	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	90.3	---	75	125	---	---

Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130



ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
ALS TECHNICHEM (HK) Pty Ltd
Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: S47

Batch: HK0924974
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 24/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 3
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.


Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0924974-001	S47	24/11/2009
HK0924974-002	S47	24/11/2009
HK0924974-003	S47	24/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
11/F Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
HONG KONG

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


Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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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
Part of the **ALS Laboratory Group**
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 **www.alsenviro.com**
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Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020161

Folder No : 0909141

Page No : 1 of 2

Date of Issue : 07/01/2010

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

Sample Description : 3 water samples were delivered by the client.

Sample Received Date : 03/12/2009

Test Completed Date : 07/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Sample No	Analysis Date	Parameter Unit	Tributyl tin (ng TBT/L)	Surrogate Compound Recovery (%)
HK0924974-1	WT-0912-0818	11/12/2009	WTM-TBT-1	<15	85
HK0924974-2	WT-0912-0819		WTM-TBT-1	<15	83
HK0924974-3	WT-0912-0820		WTM-TBT-1	<15	98

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.
(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.
(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons	WTM-GRO-1	USEPA 8015B	Petroleum Hydrocarbons	WTM-DRO-1	USEPA 8015B
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₄ Diesel range organics (DRO)▲	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₄ Diesel range organics (DRO)▲	SEDIMENT-DRO-2	USEPA 8015B
C ₁₀ -C ₂₄ Petroleum Hydrocarbons	WTM-OCP-1	USEPA 8081	C ₁₀ -C ₂₄ Petroleum Hydrocarbons	SEDIMENT-OCP-1	USEPA 8081
Organochlorine Pesticides (OCP)	WTM-OPP-1	USEPA 8141	Organochlorine Pesticides (OCP)	SEDIMENT-OPP-1	USEPA 8141
Organophosphorus Pesticides (OPP)	WTM-PAH-1	USEPA 8270C	Organophosphorus Pesticides (OPP)	SEDIMENT-PAH-1	USEPA 8270C
Polyuclear Aromatic Hydrocarbons (PAHs)	WTM-VOC-1	USEPA 8260B	Polyuclear Aromatic Hydrocarbons (PAHs)	WTM-VOC-1	USEPA 8260B
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	SEDIMENT-PCB-2	USEPA 8082
Volatile Organic Compounds (VOCs)	WTM-P-CB-1	USEPA 8082	Volatile Organic Compounds (VOCs)	SEDIMENT-TPCB-1	USEPA 8082
Polychlorinated Biphenyls (PCBs)	WTM-TBT-1	Krone <i>et al</i>	Polychlorinated Biphenyls (PCBs)	SEDIMENT-TBT-1	USEPA 8082
Tributyl Tin (TBT)	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-PHENOL-1	USEPA 8270C
Phenols			Phenols		
II. Sediment/Soil					
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A	HS1004	HS1004, Testing	HS1004, Testing
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082		Guideline on	Guideline on
				Degradable	Degradable
				Containers and	Containers and
				Bags	Bags
V. Food & Biota Samples					
Polyuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-nmethylpentane (C₆) and n-nonane(C₉).

▲C₁₀-C₂₄ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research,27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925206
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 23-NOV-2009
Order number	: CV/2009/13			Issue Date	: 17-DEC-2009
C-O-C number	: H010031			No. of samples received	: 4
Site	: S50			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925206

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories	Position	Authorised results for
Anh Ngoc Huynh	Senior Chemist	Organics
PP Fung Lim Chee, Richard	General Manager	Inorganics

ALS Laboratory Group

Trading Name: ALS Technichem (HK) Pty Ltd

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Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID	S50 0-0.9M	S50 0.9-1.9M	S50 1.9-2.9M	S50 ELUTRIATE BLANK
				Client sampling date / time	23-NOV-2009 13:30	23-NOV-2009 13:30	23-NOV-2009 13:30	23-NOV-2009 13:30
Compound	CAS Number	LOR	Unit	HK0925206-001	HK0925206-002	HK0925206-003	HK0925206-004	
ED/EK: Inorganic Nonmetallic Parameters								
EK055K: Unionized Ammonia (as N)	----	0.1	mg/L	0.4	0.4	0.6	<0.1	
EG: Metals and Major Cations - Filtered								
EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	<10	<10	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	<10	
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	1	
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1	<1	
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	<1	
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10	
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)								
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	<0.4	
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Low M.W. PAHs	----	2.2	µg/L	<2.2	<2.2	<2.2	<2.2	
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8	<6.8	
EP-065A: PCB Single Congeners								
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	



Sub-Matrix: ELUTRIATE				Client sample ID	S50 0-0.9M	S50 0.9-1.9M	S50 1.9-2.9M	S50 ELUTRIATE BLANK	
Client sampling date / time				23-NOV-2009 13:30	23-NOV-2009 13:30	23-NOV-2009 13:30	23-NOV-2009 13:30		
Compound	CAS Number	LOR	Unit	HK0925206-001	HK0925206-002	HK0925206-003	HK0925206-004		
EP-065A: PCB Single Congeners - Continued									
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05		
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05		
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05		
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05		
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05		
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05		
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05		
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05		
EP-067A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5		
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0		
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5		
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5		
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5		
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5		
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5		
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5		
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5		
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5		
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0		
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.		
Nitrobenzene -d5	4165-60-0	0.1	%	60.2	51.5	53.0	51.7		
4-Terphenyl-d14	1718-51-0	0.1	%	81.7	78.1	78.7	89.1		
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.		
Decachlorobiphenyl	2051-24-3	0.1	%	87.9	88.8	98.5	99.7		
EP-067S: Pesticide Surrogate							Surrogate control limits listed at end of this report.		
Tetrachlorometaxylene	877-09-8	0.1	%	53.2	52.3	57.8	52.0		
Dibutylchlorendate	1770-80-5	0.1	%	109	117	115	119		



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 (%)	
EG: Metals and Major Cations - Filtered (QC Lot: 1180498)									
HK0925196-001	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0	
HK0925204-001	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180498)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	96.5	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	97.7	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	105	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	110	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	97.3	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	102	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	111	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	91.8	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	107	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179458)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	55.3	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	56.1	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	73.2	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	66.3	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	57.2	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	58.9	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	68.9	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	73.2	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low High		RPD (%) Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179458) - Continued											
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	67.6	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	79.5	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	67.9	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	65.4	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	76.5	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	53.8	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	59.6	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1179459)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	82.1	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	82.4	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	83.6	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	84.6	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	91.6	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	90.6	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	89.7	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	80.8	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	88.2	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	85.6	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	86.3	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	83.3	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	88.9	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	85.3	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	86.6	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	84.6	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	83.3	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1179456)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	74.9	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	76.4	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	85.6	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	38.0	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	94.1	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	106	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	94.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	93.3	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	98.4	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	85.4	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	21.6	---	3	151	---	---

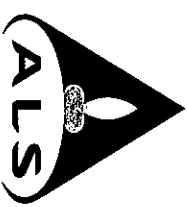
Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report



Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180498)										
HK0925196-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	102	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	93.6	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	106	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	105	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	95.4	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	104	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	105	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	91.2	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	104	---	75	125	---	---

Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchloredate	1770-80-5	50	130



ALS Laboratory Group
 ANALYTICAL CHEMISTRY & TESTING SERVICES
ALS TECHNICHEM (HK) Pty Ltd
 Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
 181-185 GLOUCESTER ROAD,
 WANCHAI,
 HONG KONG.
PROJECT: LG29024
SITE: S50

Batch: HK0925206
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 23/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 4
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
 Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
 Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925206-001	S50	23/11/2009
HK0925206-002	S50	23/11/2009
HK0925206-003	S50	23/11/2009
HK0925206-004	S50	23/11/2009

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: hongkong@alsenviro.com

Mr. Chan Kwok Fai, Godfrey
 Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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 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

ALS Technichem (HK) Pty Ltd
 Part of the **ALS Laboratory Group**
 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 www.alsenviro.com
 A Campbell Brothers Limited Company



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020078

Folder No : 0909036

Page No : 1 of 2

Date of Issue : 04/01/2010

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

Sample Description : 4 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 04/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBTL)	Surrogate Compound Recovery (%)
HK0925206-1	WT-0912-0303	Sample No Analysis Date	WTM-TBT-1 04/12/2009	WTM-TBT-1 04/12/2009
			<12	83
HK0925206-2	WT-0912-0304			
			<11	96
HK0925206-3	WT-0912-0305			
			<12	100
HK0925206-4	WT-0912-0306			
			<12	87

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorus Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-TPCB-2	USEPA 8082
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-TPCB-1	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-PHENOL-1	USEPA 8270C
II. Sediment/Soil					
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks:

*C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).
▲C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes:

USEPA – United States Environmental Protection Agency
Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925109
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 16-NOV-2009
Order number	: CV/2009/13			Issue Date	: 10-DEC-2009
C-O-C number	: H006856			No. of samples received	: 4
Site	: D174			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925109

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

Anh Ngoc Huynh

FF Fung Lim Chee, Richard

Position

Senior Chemist

General Manager

Authorised results for

Organics

Inorganics

ALS Laboratory Group

Trading Name: ALS Technichem (HK) Pty Ltd

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A Campbell Brothers Limited Company



Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID			
				D174 0-0.9M	D174 0.9-1.9M	D174 1.9-2.9M	D174 ELUTRIATE BLANK
				[16-NOV-2009]	[16-NOV-2009]	[16-NOV-2009]	18-NOV-2009 12:00
				HK0925109-001	HK0925109-002	HK0925109-003	HK0925109-004
Compound	CAS Number	LOR	Unit				
ED/EK: Inorganic Nonmetallic Parameters							
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	0.2	0.5	0.5	<0.1
EG: Metals and Major Cations - Filtered							
EG020: Arsenic	7440-38-2	10	µg/L	31	18	10	<10
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	<10
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	<1
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1	<1
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)							
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2	<2.2
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8	<6.8
EP-065A: PCB Single Congeners							
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	<0.05



Sub-Matrix: ELUTRIATE

Client sample ID

Client sampling date / time

				D174 0-0.9M [16-NOV-2009] HK0925109-001	D174 0.9-1.9M [16-NOV-2009] HK0925109-002	D174 1.9-2.9M [16-NOV-2009] HK0925109-003	D174 ELUTRIATE BLANK 18-NOV-2009 12:00 HK0925109-004
Compound	CAS Number	LOR	Unit				
EP-065A: PCB Single Congeners - Continued							
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
EP-067A: Organochlorine Pesticides (OC)							
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.
Nitrobenzene -d5	4165-60-0	0.1	%	55.2	68.0	53.4	61.8
4-Terphenyl-d14	1718-51-0	0.1	%	87.8	86.7	51.6	52.1
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.
Decachlorobiphenyl	2051-24-3	0.1	%	80.5	94.2	66.8	74.5
EP-067S: Pesticide Surrogate							Surrogate control limits listed at end of this report.
Tetrachlorometaxylene	877-09-8	0.1	%	52.5	53.8	122	59.6
Dibutylchlorendate	1770-80-5	0.1	%	111	104	52.4	97.1



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 (%)	
EG: Metals and Major Cations - Filtered (QC Lot: 1178810)									
HK0925111-004	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	RPD (%)			
					LCS	DCS	Low	High	Value	Control Limit	
EG: Metals and Major Cations - Filtered (QC Lot: 1178810)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	90.8	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	103	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	100	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	105	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	99.8	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	108	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	109	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	88.9	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	110	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178951)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	50.8	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	52.6	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	51.6	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	50.3	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	60.5	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	60.2	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	54.5	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	54.9	---	50	130	---	---
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	58.0	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	57.3	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	62.9	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	60.1	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	57.2	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	53.0	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	59.4	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178951) - Continued											
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1171670)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	96.2	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	98.7	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	85.2	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	81.9	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	89.6	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	91.4	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	89.1	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	102	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	82.9	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	84.8	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	98.8	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	83.3	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	86.8	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	87.2	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	82.1	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	82.3	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	84.4	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1174456)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	120	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	79.0	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	120	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	39.7	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	110	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	120	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	87.7	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	119	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	102	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	94.0	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	76.9	---	3	151	---	---

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

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178810)										
HK0925108-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	92.0	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	99.0	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	96.2	---	75	125	---	---

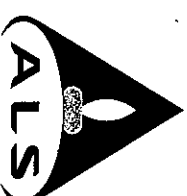


Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report		Recovery Limits (%)		RPD (%)	
					Spike Recovery (%) MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178810) - Continued										
HK0925108-001	Anonymous	EG020: Copper	7440-50-8	100 µg/L	91.8	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	100	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	104	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	113	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	92.7	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	103	---	75	125	---	---

Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130



ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
ALS TECHNICHEM (HK) Pty Ltd
Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: D174

Batch: HK0925109
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 16/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 4
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925109-001	D174	16/11/2009
HK0925109-002	D174	16/11/2009
HK0925109-003	D174	16/11/2009
HK0925109-004	D174	18/11/2009

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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Mr. Shan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

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AUSTRALIA **AMERICAS**

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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

ALS Technichem (HK) Pty Ltd
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A Campbell Brothers Limited Company



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020063

Folder No : 0909019

Page No : 1 of 2

Date of Issue : 23/12/2009

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

Sample Description : 4 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 22/12/2009

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBTL)	Surrogate Compound Recovery (%)
HK0925109-1	Method Code	W/TM-TBT-1	01/12/2009	W/TM-TBT-1 01/12/2009
	Sample No	WT-0912-0244	<9	98
HK0925109-2	Method Code	W/T-0912-0245	<9	98
HK0925109-3	Method Code	WT-0912-0246	<9	94
HK0925109-4	Method Code	WT-0912-0247	<8	94

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DR0-1	USEPA 8015B
C ₁₀ ⁺ -C ₂₈ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ ⁺ -C ₂₈ Diesel range organics (DRO)▲	SEDIMENT-DR0-1	USEPA 8015B
C ₁₀ ⁺ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ ⁺ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DR0-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorus Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-1	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

▲C₁₀⁺-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research,27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925146
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 16-NOV-2009
Order number	: CV/2009/13			Issue Date	: 10-DEC-2009
C-O-C number	: H006858			No. of samples received	: 4
Site	: D196			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925146

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.
Sample(s) were received in an ambient condition.
Elutriate sample(s) analysed and reported on an as received basis.
Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

Anh Ngoc Huynh
Fung Lim Chee, Richard

Position

Senior Chemist
General Manager

Authorised results for

Organics
Inorganics

ALS Laboratory Group

Trading Name: ALS Technichem (HK) Pty Ltd

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A Campbell Brothers Limited Company



Analytical Results

Sub-Matrix: ELUTRIATE

		Client sample ID			D196	D196	D196	D196
		Client sampling date / time			0-0.9M	0.9-1.9M	1.9-2.9M	ELUTRIATE BLANK
					[16-NOV-2009]	[16-NOV-2009]	[16-NOV-2009]	18-NOV-2009 13:00
Compound	CAS Number	LOR	Unit	HK0925146-001	HK0925146-002	HK0925146-003	HK0925146-004	
ED/EK: Inorganic Nonmetallic Parameters								
EK055K: Unionized Ammonia (as N)	----	0.1	mg/L	0.2	0.2	0.3	<0.1	
EG: Metals and Major Cations - Filtered								
EG020: Arsenic	7440-38-2	10	µg/L	31	24	16	<10	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	<10	
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	<1	
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1	<1	
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	<1	
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10	
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)								
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	<0.4	
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2	<2.2	
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8	<6.8	
EP-065A: PCB Single Congeners								
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	



Sub-Matrix: ELUTRIATE				Client sample ID	D196 0-0.9M	D196 0.9-1.9M	D196 1.9-2.9M	D196 ELUTRIATE BLANK
Client sampling date / time				[16-NOV-2009]	[16-NOV-2009]	[16-NOV-2009]	18-NOV-2009 13:00	
Compound	CAS Number	LOR	Unit	HK0925146-001	HK0925146-002	HK0925146-003	HK0925146-004	
EP-065A: PCB Single Congeners - Continued								
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
EP-067A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
beta- & gamma-BHC	319-85-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
Nitrobenzene -d5	4165-60-0	0.1	%	55.4	53.0	58.9	67.4	
4-Terphenyl-d14	1718-51-0	0.1	%	74.5	69.9	84.6	80.7	
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	66.5	96.0	93.5	84.1	
EP-067S: Pesticide Surrogate							Surrogate control limits listed at end of this report.	
Tetrachlorometaxylene	877-09-8	0.1	%	51.9	53.3	52.0	52.4	
Dibutylchlorendate	1770-80-5	0.1	%	100	106	107	92.7	



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1178810)								
HK0925111-004	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)		
						LCS	DCS	Low	High	Value	Control Limit	
EG: Metals and Major Cations - Filtered (QC Lot: 1178810)												
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	90.8	---	85	115	---	---	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	103	---	85	115	---	---	
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	100	---	85	115	---	---	
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	105	---	85	115	---	---	
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	99.8	---	85	115	---	---	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	108	---	85	115	---	---	
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	109	---	85	115	---	---	
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	88.9	---	85	115	---	---	
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	110	---	85	115	---	---	
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178951)												
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	50.8	---	50	130	---	---	
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	52.6	---	50	130	---	---	
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	51.6	---	50	130	---	---	
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	50.3	---	50	130	---	---	
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	60.5	---	50	130	---	---	
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	60.2	---	50	130	---	---	
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	54.5	---	50	130	---	---	
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	54.9	---	50	130	---	---	
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	58.0	---	50	130	---	---	
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	57.3	---	50	130	---	---	
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	62.9	---	50	130	---	---	
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	60.1	---	50	130	---	---	
Indeno(1,2,3-cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	57.2	---	50	130	---	---	
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	53.0	---	50	130	---	---	
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	59.4	---	50	130	---	---	
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---	



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178951) - Continued											
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1171670)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	96.2	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	98.7	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	85.2	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	81.9	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	89.6	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	91.4	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	89.1	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	102	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	82.9	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	84.8	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	98.8	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	83.3	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	86.8	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	87.2	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	82.1	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	82.3	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	84.4	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1174446)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	69.6	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	89.3	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	108	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	97.7	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	88.1	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	110	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	113	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	112	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	108	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	125	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	116	---	3	151	---	---

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

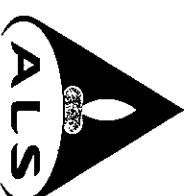
Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178810)										
HK0925108-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	92.0	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	99.0	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	96.2	---	75	125	---	---



Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178810) - Continued										
HK0925108-001	Anonymous	EG020: Copper	7440-50-8	100 µg/L	91.8	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	100	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	104	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	113	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	92.7	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	103	---	75	125	---	---

Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: D196

Batch: HK0925146
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 16/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 4
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

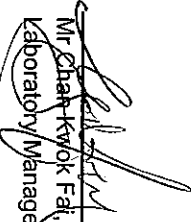
Sample Details

<i>ALS Lab ID</i>	<i>Sample ID</i>	<i>Date of Sampling</i>
HK0925146-001	D196	16/11/2009
HK0925146-002	D196	16/11/2009
HK0925146-003	D196	16/11/2009
HK0925146-004	D196	18/11/2009

ISSUING LABORATORY: HONG KONG

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Mr. Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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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

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**

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Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020064
Folder No : 0909020
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Date of Issue : 23/12/2009

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

Sample Description : 4 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 22/12/2009

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBT/L)	Surrogate Compound Recovery (%)
	Method Code		WTM-TBT-1	WTM-TBT-1
	Sample No	Analysis Date	01/12/2009	01/12/2009
HK0925146-1	WT-0912-0248		<8	90
HK0925146-2	WT-0912-0249		30	90
HK0925146-3	WT-0912-0250		<10	93
HK0925146-4	WT-0912-0251		<8	94

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.
(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.
(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorus Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-1	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-PHENOL-1	USEPA 8270C
II. Sediment/Soil					
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A	HS1004	HS1004, Testing	Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

▲C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research,27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925176
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 18-NOV-2009
Order number	: CV/2009/13			Issue Date	: 11-DEC-2009
C-O-C number	: H010011			No. of samples received	: 4
Site	: D202			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925176

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

Anh Ngoc Huynh

PP Fung Lim Chee, Richard

Position

Senior Chemist

General Manager

Authorised results for

Organics

Inorganics

ALS Laboratory Group

Trading Name: ALS Technichem (HK) Pty Ltd

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A Campbell Brothers Limited Company



Analytical Results

Sub-Matrix: ELUTRIATE

Compound	CAS Number	LOR	Unit	Client sample ID	D202	D202	D202	D202
				Client sampling date / time	0-0.9M	0.9-1.9M	1.9-2.9M	ELUTRIATE BLANK
				18-NOV-2009 09:30	18-NOV-2009 09:30	18-NOV-2009 09:30	18-NOV-2009 09:30	21-NOV-2009 11:00
				HK0925176-001	HK0925176-002	HK0925176-003	HK0925176-003	HK0925176-004
ED/EK: Inorganic Nonmetallic Parameters								
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	0.2	0.4	0.4	0.4	<0.1
EG: Metals and Major Cations - Filtered								
EG020: Arsenic	7440-38-2	10	µg/L	14	12	13	13	<10
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	<10	<10
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	<1	<1
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1	<1	<1
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)								
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2	207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Low M.W. PAHs	----	2.2	µg/L	<2.2	<2.2	<2.2	<2.2	<2.2
High M.W. PAHs	----	6.8	µg/L	<6.8	<6.8	<6.8	<6.8	<6.8
EP-065A: PCB Single Congeners								
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05



Sub-Matrix: ELUTRIATE

Compound	CAS Number	LOR	Unit	Client sample ID	D202	D202	D202	D202
				Client sampling date / time	0-0.9M	0.9-1.9M	1.9-2.9M	ELUTRIATE BLANK
				18-NOV-2009 09:30	18-NOV-2009 09:30	18-NOV-2009 09:30	18-NOV-2009 09:30	21-NOV-2009 11:00
				HK0925176-001	HK0925176-002	HK0925176-003	HK0925176-004	HK0925176-004
EP-065A: PCB Single Congeners - Continued								
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP-067A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								
Nitrobenzene -d5	4165-60-0	0.1	%	60.4	55.2	55.7	50.6	Surrogate control limits listed at end of this report.
4-Terphenyl-d14	1718-51-0	0.1	%	79.7	68.4	63.0	78.7	
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	96.9	96.6	90.7	104	Surrogate control limits listed at end of this report.
EP-067S: Pesticide Surrogate								
Tetrachlorometaxylene	877-09-8	0.1	%	50.1	50.9	54.2	53.1	Surrogate control limits listed at end of this report.
Dibutylchlorendate	1770-80-5	0.1	%	77.7	58.5	67.3	63.9	



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1179379)								
HK0925187-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	16	15	6.4
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0
		HK0925176-002	D202 0.9-1.9M	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2
EG020: Mercury	7439-97-6			0.5	µg/L	<0.5	<0.5	0.0
EG020: Copper	7440-50-8			1	µg/L	<1	<1	0.0
EG020: Lead	7439-92-1			1	µg/L	<1	<1	0.0
EG020: Nickel	7440-02-0			1	µg/L	<1	<1	0.0
EG020: Silver	7440-22-4			1	µg/L	<1	<1	0.0
EG020: Arsenic	7440-38-2			10	µg/L	12	13	8.0
EG020: Chromium	7440-47-3			10	µg/L	<10	<10	0.0
EG020: Zinc	7440-66-6			10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1179379)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	112	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	104	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	115	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	105	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	97.2	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	108	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	102	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	95.6	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	102	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178990)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	53.5	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	53.6	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	64.9	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	54.4	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	58.2	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	55.9	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	75.7	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	81.8	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178990) - Continued											
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	87.1	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	93.2	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	91.6	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	86.0	---	50	130	---	---
Indeno(1,2,3-cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	82.6	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	72.8	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	93.2	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1174449)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	98.6	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	93.7	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	91.2	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	83.6	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	83.0	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	90.2	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	89.1	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	82.7	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	92.3	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	93.1	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	92.4	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	93.0	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	98.9	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	92.9	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	91.2	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	95.1	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	91.0	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1174446)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	69.6	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	89.3	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	108	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	97.7	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	88.1	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	110	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	113	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	112	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	108	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	125	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	116	---	3	151	---	---

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



Matrix: WATER

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

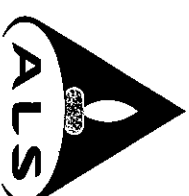
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1179379)										
HK0925132-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	98.0	----	75	125	----	----
		EG020: Cadmium	7440-43-9	100 µg/L	95.0	----	75	125	----	----
		EG020: Chromium	7440-47-3	100 µg/L	110	----	75	125	----	----
		EG020: Copper	7440-50-8	100 µg/L	98.2	----	75	125	----	----
		EG020: Lead	7439-92-1	100 µg/L	92.9	----	75	125	----	----
		EG020: Mercury	7439-97-6	2 µg/L	102	----	75	125	----	----
		EG020: Nickel	7440-02-0	100 µg/L	108	----	75	125	----	----
		EG020: Silver	7440-22-4	100 µg/L	93.5	----	75	125	----	----
		EG020: Zinc	7440-66-6	100 µg/L	96.2	----	75	125	----	----

Surrogate Control Limits

Compound	CAS Number	Recovery Limits (%)	
		Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: D202

Batch: HK0925176
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 18/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 4
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925176-001	D202	18/11/2009
HK0925176-002	D202	18/11/2009
HK0925176-003	D202	18/11/2009
HK0925176-004	D202	21/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
11/F Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
HONG KONG
Phone: 852-2610 1044
Fax: 852-2610 2021
Email: hongkong@alsenviro.com

Mr. Chan Kwok Fai, Godfrey
Laboratory Manager, Hong Kong

Other ALS Environmental Laboratories *This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.*

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Brisbane Hong Kong
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Newcastle Bogor

AMERICAS
Vancouver
Santiago
Antofagasta
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

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**
11/F, Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, N.T., H.K.
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Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020067

Folder No : 0909024

Page No : 1 of 2

Date of Issue : 23/12/2009

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

Sample Description : 4 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 22/12/2009

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBT/L)	Surrogate Compound Recovery (%)
	Method Code		WTM-TBT-1	WTM-TBT-1
	Sample No	Analysis Date	01/12/2009	01/12/2009
HK0925176-1	WT-0912-0264		<12	87
HK0925176-2	WT-0912-0265		<11	96
HK0925176-3	WT-0912-0266		<11	97
HK0925176-4	WT-0912-0267		<15	93

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons	WTM-GRO-1	USEPA 8015B	Petroleum Hydrocarbons	WTM-DRO-1	USEPA 8015B
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	SEDIMENT-DRO-2	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-OCP-1	USEPA 8081	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-OCP-1	USEPA 8081
Organochlorine Pesticides (OCP)	WTM-OPP-1	USEPA 8141	Organochlorine Pesticides (OCP)	SEDIMENT-OPP-1	USEPA 8141
Organophosphorus Pesticides (OPP)	WTM-PAH-1	USEPA 8270C	Organophosphorus Pesticides (OPP)	SEDIMENT-PAH-1	USEPA 8270C
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-VOC-1	USEPA 8260B	Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-VOC-1	USEPA 8260B
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	SEDIMENT-TPCB-2	USEPA 8082
Volatile Organic Compounds (VOCs)	WTM-PCB-1	USEPA 8082	Volatile Organic Compounds (VOCs)	SEDIMENT-TPCB-1	USEPA 8082
Polychlorinated Biphenyls (PCBs)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
TriButyl Tin (TBT)	WTM-HENOL-1	USEPA 8270C	TriButyl Tin (TBT)	SEDIMENT-PHENOL-1	USEPA 8270C
Phenols			Phenols		
II. Sediment/Soil					
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

▲C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 7
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925177
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 18-NOV-2009
Order number	: CV/2009/13			Issue Date	: 17-DEC-2009
C-O-C number	: H010012			No. of samples received	: 4
Site	: D214			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925177

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories	Position	Authorised results for
Anh Ngoc Huynh	Senior Chemist	Organics
pp 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
Tel +852 2610 1044 Fax: +852 2610 2021 www.alsenviro.com

A Campbell Brothers Limited Company



Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID	D214 0-0.9M	D214 0.9-1.9M	D214 1.9-2.9M	D214 ELUTRIATE BLANK
				Client sampling date / time	18-NOV-2009 11:30	18-NOV-2009 11:30	18-NOV-2009 11:30	21-NOV-2009 12:00
Compound	CAS Number	LOR	Unit	HK0925177-001	HK0925177-002	HK0925177-003	HK0925177-004	
ED/EK: Inorganic Nonmetallic Parameters								
EK055K: Unionized Ammonia (as N)	----	0.1	mg/L	0.2	0.6	0.6	<0.1	
EG: Metals and Major Cations - Filtered								
EG020: Arsenic	7440-38-2	10	µg/L	15	16	22	<10	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	<10	
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	<1	
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
EG020: Nickel	7440-02-0	1	µg/L	<1	1	<1	<1	
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	<1	
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10	
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)								
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	<0.4	
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Low M.W. PAHs	----	2.2	µg/L	<2.2	<2.2	<2.2	<2.2	
High M.W. PAHs	----	6.8	µg/L	<6.8	<6.8	<6.8	<6.8	
EP-065A: PCB Single Congeners								
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	



Sub-Matrix: ELUTRIATE				Client sample ID	D214 0-0.9M	D214 0.9-1.9M	D214 1.9-2.9M	D214 ELUTRIATE BLANK
Client sampling date / time				18-NOV-2009 11:30	18-NOV-2009 11:30	18-NOV-2009 11:30	21-NOV-2009 12:00	
Compound	CAS Number	LOR	Unit	HK0925177-001	HK0925177-002	HK0925177-003	HK0925177-004	
EP-065A: PCB Single Congeners - Continued								
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
EP-067A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
beta- & gamma-BHC	319-85-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
Nitrobenzene -d5	4165-60-0	0.1	%	55.1	56.3	51.2	52.5	
4-Terphenyl-d14	1718-51-0	0.1	%	80.0	55.9	70.8	77.8	
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	89.3	102	92.2	83.4	
EP-067S: Pesticide Surrogate							Surrogate control limits listed at end of this report.	
Tetrachlorometaxylene	877-09-8	0.1	%	51.8	55.4	52.2	51.5	
Dibutylchlorendate	1770-80-5	0.1	%	69.2	56.5	64.4	69.5	



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 (%)	
EG: Metals and Major Cations - Filtered (QC Lot: 1179379)									
HK0925187-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	16	15	6.4	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0	
		HK0925176-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2
EG020: Mercury	7439-97-6			0.5	µg/L	<0.5	<0.5	0.0	
EG020: Copper	7440-50-8			1	µg/L	<1	<1	0.0	
EG020: Lead	7439-92-1			1	µg/L	<1	<1	0.0	
EG020: Nickel	7440-02-0			1	µg/L	<1	<1	0.0	
EG020: Silver	7440-22-4			1	µg/L	<1	<1	0.0	
EG020: Arsenic	7440-38-2			10	µg/L	12	13	8.0	
EG020: Chromium	7440-47-3			10	µg/L	<10	<10	0.0	
EG: Metals and Major Cations - Filtered (QC Lot: 1179380)									
HK0925187-001	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	16	15	0.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0	
		HK0925185-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2
EG020: Mercury	7439-97-6			0.5	µg/L	<0.5	<0.5	0.0	
EG020: Copper	7440-50-8			1	µg/L	<1	<1	0.0	
EG020: Lead	7439-92-1			1	µg/L	<1	<1	0.0	
EG020: Nickel	7440-02-0			1	µg/L	<1	<1	0.0	
EG020: Silver	7440-22-4			1	µg/L	<1	<1	0.0	
EG020: Arsenic	7440-38-2			10	µg/L	19	19	0.0	
EG020: Chromium	7440-47-3			10	µg/L	<10	<10	0.0	
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1179379)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	112	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	104	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	115	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	105	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	97.2	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	108	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	102	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	95.6	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	102	---	85	115	---	---
EG: Metals and Major Cations - Filtered (QC Lot: 1179380)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	104	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	93.1	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	98.9	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	110	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	94.6	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	104	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	101	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	93.4	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	100	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178990)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	53.5	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	53.6	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	64.9	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	54.4	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	58.2	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	55.9	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	75.7	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	81.8	---	50	130	---	---
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	87.1	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	93.2	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	91.6	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	86.0	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	82.6	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	72.8	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	93.2	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1174449)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	98.6	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	93.7	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	91.2	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	83.6	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EP-065A: PCB Single Congeners (QC Lot: 1174449) - Continued											
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	83.0	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	90.2	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	89.1	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	82.7	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	92.3	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	93.1	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	92.4	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	93.0	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	98.9	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	92.9	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	91.2	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	95.1	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	91.0	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1178991)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	50.5	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	63.2	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	68.1	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	62.4	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	55.7	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	69.8	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	69.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	73.7	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	75.8	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	75.4	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	79.4	---	3	151	---	---

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

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1179379)										
HK0925132-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	98.0	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	95.0	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	110	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	98.2	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	92.9	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	102	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	108	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	93.5	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	96.2	---	75	125	---	---



Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1179380)										
HK0925177-002	D214 0.9-1.9M	EG020: Arsenic	7440-38-2	100 µg/L	124	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	92.4	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	99.6	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	99.6	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	102	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	109	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	113	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	95.5	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	104	---	75	125	---	---

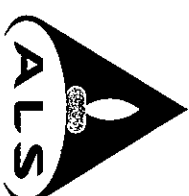
Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchloroendate	1770-80-5	50	130

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.

PROJECT: LG29024
SITE: D214

Batch: HK0925177
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 18/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 4
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.


Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925177-001	D214	18/11/2009
HK0925177-002	D214	18/11/2009
HK0925177-003	D214	18/11/2009
HK0925177-004	D214	21/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
11/F Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
HONG KONG

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


Mr. Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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AUSTRALIA	AMERICAS
Brisbane	Vancouver
Melbourne	Santiago
Sydney	Kuala Lumpur
Newcastle	Bogor

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
Part of the **ALS Laboratory Group**

11/F, Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, N.T., H.K.
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Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020068

Folder No : 0909025

Page No : 1 of 2

Date of Issue : 23/12/2009

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

Sample Description : 4 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 22/12/2009

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Sample No	Analysis Date	Parameter Unit	Tributyl tin (ng TBT/L)	Surrogate Compound Recovery (%)
HK0925177-1	WT-0912-0268	01/12/2009	Method Code WTM-TBT-1	WTM-TBT-1 01/12/2009	WTM-TBT-1 01/12/2009
HK0925177-2	WT-0912-0269			<14	94
HK0925177-3	WT-0912-0270			12	89
HK0925177-4	WT-0912-0271			<14	94

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	II. Sediment/Soil		
Petroleum Hydrocarbons			BTEX		SEDIMENT-BTEX-1
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	Petroleum Hydrocarbons		
C ₁₀ [†] -C ₂₈ Diesel range organics (DRO)↗	WTM-DRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ [†] -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ [†] -C ₂₈ Diesel range organics (DRO)↗	SEDIMENT-DRO-1	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorus Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-TBT-1	USEPA 8270C
Phenols			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A	HS1004	HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

↗ C₁₀[†]-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency
Krone *et al* – Marine Environmental research,27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925108
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 16-NOV-2009
Order number	: CV/2009/13			Issue Date	: 10-DEC-2009
C-O-C number	: H006857			No. of samples received	: 3
Site	: D221			No. of samples analysed	: 3

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925108

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.
Sample(s) were received in an ambient condition.
Elutriate sample(s) analysed and reported on an as received basis.
Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories	Position	Authorised results for
Anh Ngoc Huynh	Senior Chemist	Organics
PP Fung Lim Chee, Richard	General Manager	Inorganics

ALS Laboratory Group
Trading Name: ALS Technichem (HK) Pty Ltd
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Analytical Results

Sub-Matrix: ELUTRIATE

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	D221 0-0.9M [16-NOV-2009] HK0925108-001	D221 0.9-1.9M [16-NOV-2009] HK0925108-002	D221 ELUTRIATE BLANK 18-NOV-2009 14:00 HK0925108-003
ED/EK: Inorganic Nonmetallic Parameters						
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	<0.1	0.1	<0.1
EG: Metals and Major Cations - Filtered						
EG020: Arsenic	7440-38-2	10	µg/L	17	<10	<10
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)						
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8
EP-065A: PCB Single Congeners						
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05



Sub-Matrix: ELUTRIATE

Client sample ID

D221
0-0.9M
[16-NOV-2009]
HK0925108-001

D221
0.9-1.9M
[16-NOV-2009]
HK0925108-002

D221
ELUTRIATE BLANK
18-NOV-2009 14:00
HK0925108-003

Client sampling date / time

Compound	CAS Number	LOR	Unit	D221 0-0.9M [16-NOV-2009] HK0925108-001	D221 0.9-1.9M [16-NOV-2009] HK0925108-002	D221 ELUTRIATE BLANK 18-NOV-2009 14:00 HK0925108-003
EP-065A: PCB Single Congeners - Continued						
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05
EP-067A: Organochlorine Pesticides (OC)						
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates						
Nitrobenzene -d5	4165-60-0	0.1	%	52.2	62.0	58.2
4-Terphenyl-d14	1718-51-0	0.1	%	80.6	83.4	87.6
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate						
Decachlorobiphenyl	2051-24-3	0.1	%	75.7	87.7	97.0
EP-067S: Pesticide Surrogate						
Tetrachlorometaxylene	877-09-8	0.1	%	54.1	64.4	53.0
Dibutylchloroendate	1770-80-5	0.1	%	105	95.5	102

Surrogate control limits listed at end of this report.

Surrogate control limits listed at end of this report.

Surrogate control limits listed at end of this report.



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 (%)	
EG: Metals and Major Cations - Filtered (QC Lot: 1178810)									
HK0925111-004	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178810)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	90.8	----	85	115	----	----
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	103	----	85	115	----	----
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	100	----	85	115	----	----
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	105	----	85	115	----	----
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	99.8	----	85	115	----	----
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	108	----	85	115	----	----
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	109	----	85	115	----	----
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	88.9	----	85	115	----	----
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	110	----	85	115	----	----
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178951)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	50.8	----	50	130	----	----
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	52.6	----	50	130	----	----
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	51.6	----	50	130	----	----
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	50.3	----	50	130	----	----
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	60.5	----	50	130	----	----
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	60.2	----	50	130	----	----
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	54.5	----	50	130	----	----
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	54.9	----	50	130	----	----
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	58.0	----	50	130	----	----
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	57.3	----	50	130	----	----
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	62.9	----	50	130	----	----
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	60.1	----	50	130	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	57.2	----	50	130	----	----
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	53.0	----	50	130	----	----
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	59.4	----	50	130	----	----
Low M.W. PAHs	----	2.2	µg/L	<2.2	----	----	----	----	----	----	----



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low High		RPD (%) Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178951) - Continued											
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1171670)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	96.2	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	98.7	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	85.2	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	81.9	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	89.6	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	91.4	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	89.1	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	102	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	82.9	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	84.8	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	98.8	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	83.3	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	86.8	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	87.2	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	82.1	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	82.3	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	84.4	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1174456)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	120	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	79.0	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	120	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	39.7	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	110	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	120	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	87.7	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	119	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	102	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	94.0	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	76.9	---	3	151	---	---

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

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%) MS MSD		Recovery Limits (%) Low High		RPD (%) Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178810)										
HK0925108-001	D221 0-0.9M	EG020: Arsenic	7440-38-2	100 µg/L	92.0	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	99.0	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	96.2	---	75	125	---	---



Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178810) - Continued										
HK0925108-001	D221 0-0.9M	EG020: Copper	7440-50-8	100 µg/L	91.8	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	100	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	104	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	113	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	92.7	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	103	---	75	125	---	---

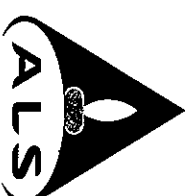
Surrogate Control Limits

Compound	CAS Number	Recovery Limits (%)	
		Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI, HONG KONG
PROJECT ID: LG29024
SITE: D221

Batch: HK0925108
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 16/11/2009
DATE OF ISSUE: 20/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 3
ORDER: CV/2009/13

COMMENTS

Samples analysed on an as received basis. Results reported on an as received basis.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

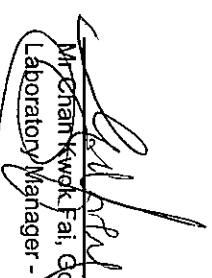
Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925108-1 (HK0924384-3)	D221 0-0.9M	16/11/2009
HK0925108-2 (HK0924384-4)	D221 0.9-1.9M	16/11/2009
HK0925108-3 (HK0924384-5)	D221 Elutriate Blank	18/11/2009

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

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Mr. Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

AUSTRALIA	AMERICAS
Brisbane Melbourne Sydney Newcastle	Vancover Santiago Amitofagasta Lima

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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
Part of the **ALS Laboratory Group**
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 www.alsenviro.com

A Campbell Brothers Limited Company



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0019915
Folder No : 0908826
Page No : 1 of 2
Date of Issue : 17/12/2009

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

Sample Description : 3 elutriate water samples were delivered by the client.

Sample Received Date : 25/11/2009

Test Completed Date : 17/12/2009

Approved Signatory : Pung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBTL)	Surrogate Compound Recovery (%)
	Method Code		WTM-TBT-1	WTM-TBT-1
	Sample No	Analysis Date	01/12/2009	01/12/2009
HK0924384-3	WT-0911-2888		<10	88
HK0924384-4	WT-0911-2889		<10	85
HK0924384-5	WT-0911-2890		<9	92

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ ^a -C ₂₈ Diesel range organics (DRO) ^b	WTM-DRO-1	USEPA 8015B	C ₁₀ ^a -C ₂₈ Diesel range organics (DRO) ^b	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ ^a -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ ^a -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphate Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphate Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8141
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-PCB-2	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-TBT-1	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-PCB-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

^aC₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency
Krone *et al* – Marine Environmental research,27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925179
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong	Amendment	: 1
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com	Date Samples Received	: 18-NOV-2009
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044	Issue Date	: 10-DEC-2009
Facsimile	: ----	Facsimile	: +852 2610 2021	No. of samples received	: 4
Project	: LG29024	Quote number	: HK/1313/2009**	No. of samples analysed	: 4
Order number	: CV/2009/13				
C-O-C number	: H010013				
Site	: D234				

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 29-NOV-2009
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: HK0925179

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

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PP Fung Lim Chee, Richard

Position

Senior Chemist

General Manager

Authorised results for

Organics

Inorganics

ALS Laboratory Group

Trading Name: ALS Technichem (HK) Pty Ltd

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A Campbell Brothers Limited Company



Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID			
				D234 0-0.9M	D234 0.9-1.9M	D234 1.9-2.9M	D234 ELUTRIATE BLANK
				18-NOV-2009 13:30	18-NOV-2009 13:30	18-NOV-2009 13:30	21-NOV-2009 13:00
				HK0925179-001	HK0925179-002	HK0925179-003	HK0925179-004
Compound	CAS Number	LOR	Unit	Client sampling date / time			
ED/EK: Inorganic Nonmetallic Parameters							
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	0.2	0.6	0.7	<0.1
EG: Metals and Major Cations - Filtered							
EG020: Arsenic	7440-38-2	10	µg/L	18	24	32	<10
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	<10
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	<1
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1	<1
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)							
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Dibenz(a.h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2	<2.2
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8	<6.8
EP-065A: PCB Single Congeners							
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	<0.05



Sub-Matrix: ELUTRIATE				Client sample ID			
				D234 0-0.9M	D234 0.9-1.9M	D234 1.9-2.9M	D234 ELUTRIATE BLANK
Client sampling date / time				18-NOV-2009 13:30	18-NOV-2009 13:30	18-NOV-2009 13:30	21-NOV-2009 13:00
Compound	CAS Number	LOR	Unit	HK0925179-001	HK0925179-002	HK0925179-003	HK0925179-004
EP-065A: PCB Single Congeners - Continued							
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
EP-067A: Organochlorine Pesticides (OC)							
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.
Nitrobenzene -d5	4165-60-0	0.1	%	50.4	60.8	68.7	81.6
4-Terphenyl-d14	1718-51-0	0.1	%	72.1	76.6	74.5	94.0
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.
Decachlorobiphenyl	2051-24-3	0.1	%	81.4	85.8	81.5	95.3
EP-067S: Pesticide Surrogate							Surrogate control limits listed at end of this report.
Tetrachlorometaxylene	877-09-8	0.1	%	57.9	56.7	56.1	57.6
Dibutylchlorendate	1770-80-5	0.1	%	56.6	58.4	55.5	64.6



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1179380)								
HK0925187-001	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	16	15	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0
HK0925185-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	19	19	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1179380)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	104	----	85	115	----	----
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	93.1	----	85	115	----	----
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	98.9	----	85	115	----	----
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	110	----	85	115	----	----
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	94.6	----	85	115	----	----
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	104	----	85	115	----	----
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	101	----	85	115	----	----
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	93.4	----	85	115	----	----
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	100	----	85	115	----	----
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179506)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	57.0	----	50	130	----	----
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	53.7	----	50	130	----	----
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	56.4	----	50	130	----	----
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	57.8	----	50	130	----	----
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	56.6	----	50	130	----	----
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	# 48.7	----	50	130	----	----
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	67.9	----	50	130	----	----
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	68.6	----	50	130	----	----



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	Control Limit
						LCS	DCS	Low	High	Value	
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179506) - Continued											
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	69.6	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	72.1	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	76.2	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	69.6	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	62.9	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	60.1	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	67.2	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1179504)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	0.1 µg/L	80.8	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	0.1 µg/L	88.7	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	0.1 µg/L	84.6	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	0.1 µg/L	85.0	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	0.1 µg/L	84.0	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	0.1 µg/L	88.4	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	0.1 µg/L	89.1	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	0.1 µg/L	95.8	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	0.1 µg/L	91.5	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	0.1 µg/L	91.4	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	0.1 µg/L	91.2	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	0.1 µg/L	94.8	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	0.1 µg/L	95.3	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	0.1 µg/L	90.4	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	0.1 µg/L	89.8	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	0.1 µg/L	88.3	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	0.1 µg/L	88.9	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1179456)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	74.9	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	76.4	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	85.6	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	38.0	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	94.1	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	106	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	94.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	93.3	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	98.4	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	85.4	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	21.6	---	3	151	---	---

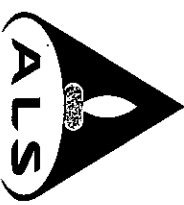
Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report



Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1179380)										
HK0925177-002	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	124	----	75	125	----	----
		EG020: Cadmium	7440-43-9	100 µg/L	92.4	----	75	125	----	----
		EG020: Chromium	7440-47-3	100 µg/L	99.6	----	75	125	----	----
		EG020: Copper	7440-50-8	100 µg/L	99.6	----	75	125	----	----
		EG020: Lead	7439-92-1	100 µg/L	102	----	75	125	----	----
		EG020: Mercury	7439-97-6	2 µg/L	109	----	75	125	----	----
		EG020: Nickel	7440-02-0	100 µg/L	113	----	75	125	----	----
		EG020: Silver	7440-22-4	100 µg/L	95.5	----	75	125	----	----
		EG020: Zinc	7440-66-6	100 µg/L	104	----	75	125	----	----

Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130



ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
ALS TECHNICHEM (HK) Pty Ltd
Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI, HONG KONG
PROJECT ID: LG29024
SITE: D234

Batch: HK0925179
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 18/11/2009
DATE OF ISSUE: 20/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 4
ORDER: CV/2009/13

COMMENTS

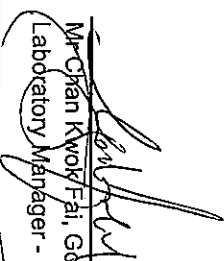
Samples analysed on an as received basis. Results reported on an as received basis. Tributyl tin was subcontracted and tested by Hong Kong Productivity Council. Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925179001	D234	18/11/2009
HK0925179002	D234	18/11/2009
HK0925179003	D234	18/11/2009
HK0925179004	D234	21/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
11/F Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
HONG KONG
Phone: 852-2610 1044
Fax: 852-2610 2021
Email: hongkong@alsenviro.com


Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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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
Part of the **ALS Laboratory Group**
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 **www.alsenviro.com**
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Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020069
Folder No : 0909026
Page No : 1 of 2
Date of Issue : 23/12/2009

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

Sample Description : 4 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 22/12/2009

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBT/l)	Surrogate Compound Recovery (%)
HK0925179-1	Method Code	WTM-TBT-1	01/12/2009	WTM-TBT-1
	Sample No	WT-0912-0272	<9	91
HK0925179-2	Method Code	WT-0912-0273	<11	89
HK0925179-3	Method Code	WT-0912-0274	<11	100
HK0925179-4	Method Code	WT-0912-0275	<12	90

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₅ Diesel range organics (DRO)↕	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₅ Diesel range organics (DRO)↕	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₅ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₅ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphate Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphate Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOI-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOI-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

↕C₁₀-C₂₅ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency
Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925161
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 17-NOV-2009
Order number	: CV/2009/13			Issue Date	: 17-DEC-2009
C-O-C number	: H006233			No. of samples received	: 4
Site	: D238			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925161

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

Anh Ngoc Huynh

PP Fung Lim Chee, Richard

Position

Senior Chemist

General Manager

Authorised results for

Organics

Inorganics

ALS Laboratory Group

Trading Name: ALS Technichem (HK) Pty Ltd

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Tel +852 2610 1044 Fax: +852 2610 2021 www.alsenviro.com

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Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID	D238 0-0.9M	D238 0.9-1.9M	D238 1.9-2.9M	D238 ELUTRIATE BLANK
				Client sampling date / time	17-NOV-2009 10:00	17-NOV-2009 10:00	17-NOV-2009 10:00	18-NOV-2009 17:00
Compound	CAS Number	LOR	Unit	HK0925161-001	HK0925161-002	HK0925161-003	HK0925161-004	
ED/EK: Inorganic Nonmetallic Parameters								
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	1.0	1.2	1.4	<0.1	
EG: Metals and Major Cations - Filtered								
EG020: Arsenic	7440-38-2	10	µg/L	13	14	10	<10	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	<10	
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	<1	
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1	<1	
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	<1	
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10	
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)								
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	<0.4	
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2	<2.2	
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8	<6.8	
EP-065A: PCB Single Congeners								
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	



Sub-Matrix: ELUTRIATE				Client sample ID	D238 0-0.9M	D238 0.9-1.9M	D238 1.9-2.9M	D238 ELUTRIATE BLANK
Client sampling date / time				17-NOV-2009 10:00	17-NOV-2009 10:00	17-NOV-2009 10:00	18-NOV-2009 17:00	
Compound	CAS Number	LOR	Unit	HK0925161-001	HK0925161-002	HK0925161-003	HK0925161-004	
EP-065A: PCB Single Congeners - Continued								
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
EP-067A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								
Surrogate control limits listed at end of this report.								
Nitrobenzene -d5	4165-60-0	0.1	%	60.4	52.9	60.8	52.7	
4-Terphenyl-d14	1718-51-0	0.1	%	61.0	66.3	68.3	66.1	
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate								
Surrogate control limits listed at end of this report.								
Decachlorobiphenyl	2051-24-3	0.1	%	83.5	90.7	97.6	104	
EP-067S: Pesticide Surrogate								
Surrogate control limits listed at end of this report.								
Tetrachlorometaxylene	877-09-8	0.1	%	56.0	55.1	50.4	51.4	
Dibutylchlorendate	1770-80-5	0.1	%	72.5	78.3	71.9	73.0	



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1178811)								
HK0925159-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	1	1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	17	18	5.7
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0
HK0925163-003	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					Concentration	LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178811)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	89.7	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	102	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	104	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	101	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	97.9	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	102	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	88.3	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	91.4	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	94.2	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178968)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	55.8	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	60.3	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	79.2	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	64.6	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	53.9	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	57.2	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	77.3	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	82.5	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low High		RPD (%) Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1178968) - Continued											
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	85.5	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	93.8	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	89.9	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	84.2	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	73.3	---	50	130	---	---
Dibenz(a.h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	69.6	---	50	130	---	---
Benzo(g.h.i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	87.8	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1174449)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	98.6	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	93.7	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	91.2	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	83.6	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	83.0	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	90.2	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	89.1	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	82.7	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	92.3	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	93.1	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	92.4	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	93.0	---	50	130	---	---
PCB 187	52663-88-0	0.01	µg/L	<0.01	.1 µg/L	98.9	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	92.9	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	91.2	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	95.1	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	91.0	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1174446)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	69.6	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	89.3	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	108	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	97.7	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	88.1	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	110	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	113	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	112	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	108	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	125	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	116	---	3	151	---	---

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

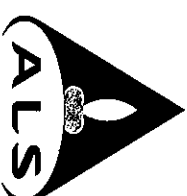


Page Number : 6 of 6
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK0925161

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178811)										
HK0925156-003	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	100	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	101	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	103	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	113	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	92.9	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	100	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	97.9	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	88.8	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	109	---	75	125	---	---

Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130



ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
ALS TECHNICHEM (HK) Pty Ltd
Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: D238

Batch: HK0925161
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 17/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 4
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925161-001	D238	17/11/2009
HK0925161-002	D238	17/11/2009
HK0925161-003	D238	17/11/2009
HK0925161-004	D238	18/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
11/F Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
HONG KONG

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

Mr. Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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AUSTRALIA Brisbane
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Singapore Sydney
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AMERICAS Vancouver
Santiago
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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

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**
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 www.alsenviro.com
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Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020087

Folder No : 0909046

Page No : 1 of 2

Date of Issue : 06/01/2010.

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

Sample Description: 4 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 05/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Sample No	Analysis Date	Parameter Unit	Tributyl tin (ng TBTL)	Surrogate Compound Recovery (%)
HK0925161-1	WT-0912-0333	04/12/2009	WTM-TBT-1	<15	100
HK0925161-2	WT-0912-0334			<15	100
HK0925161-3	WT-0912-0335			<15	88
HK0925161-4	WT-0912-0336			<15	91

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)↗	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)↗	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphate Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphate Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-PCB-2	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-TPCB-1	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-PHENOL-1	USEPA 8270C
II. Sediment/Soil					
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A	HS1004	HS1004, Testing	HS1004, Testing
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082		Guideline on	Guideline on
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C		Degradable	Degradable
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B		Containers and	Containers and
				Bags	Bags

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

↗C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency
Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0924977
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 24-NOV-2009
Order number	: CV/2009/13			Issue Date	: 17-DEC-2009
C-O-C number	: H010036			No. of samples received	: 2
Site	: D272			No. of samples analysed	: 2

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0924977

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

Anh Ngoc Huynh

pp Fung Lim Chee, Richard

Position

Senior Chemist

General Manager

Authorised results for

Organics

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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Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID			
				D272	D272		
				24-NOV-2009 12:00	ELUTRIATE BLANK		
				24-NOV-2009 12:00	24-NOV-2009 12:00		
				HK0924977-001	HK0924977-002		
Compound	CAS Number	LOR	Unit				
ED/EK: Inorganic Nonmetallic Parameters							
EK055K: Unionized Ammonia (as N)	----	0.1	mg/L	<0.1	<0.1		
EG: Metals and Major Cations - Filtered							
EG020: Arsenic	7440-38-2	10	µg/L	<10	<10		
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2		
EG020: Chromium	7440-47-3	10	µg/L	<10	<10		
EG020: Copper	7440-50-8	1	µg/L	<1	<1		
EG020: Lead	7439-92-1	1	µg/L	<1	<1		
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5		
EG020: Nickel	7440-02-0	1	µg/L	1	<1		
EG020: Silver	7440-22-4	1	µg/L	<1	<1		
EG020: Zinc	7440-66-6	10	µg/L	<10	<10		
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)							
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2		
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2		
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2		
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2		
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2		
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2		
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2		
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2		
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2		
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2		
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4		
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2		
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2		
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2		
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2		
Low M.W. PAHs	----	2.2	µg/L	<2.2	<2.2		
High M.W. PAHs	----	6.8	µg/L	<6.8	<6.8		
EP-065A: PCB Single Congeners							
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05		
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05		
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05		
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05		
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05		
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05		
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05		
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05		
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05		
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05		



Sub-Matrix: ELUTRIATE				Client sample ID	D272	D272			
				Client sampling date / time	24-NOV-2009 12:00	ELUTRIATE BLANK	24-NOV-2009 12:00		
Compound	CAS Number	LOR	Unit	HK0924977-001	HK0924977-002				
EP-065A: PCB Single Congeners - Continued									
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05				
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05				
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05				
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05				
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05				
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05				
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05				
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05				
EP-067A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5				
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0				
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5				
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5				
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5				
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5				
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5				
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5				
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5				
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5				
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0				
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.		
Nitrobenzene -d5	4165-60-0	0.1	%	54.9	54.3				
4-Terphenyl-d14	1718-51-0	0.1	%	84.5	82.2				
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.		
Decachlorobiphenyl	2051-24-3	0.1	%	89.0	85.7				
EP-067S: Pesticide Surrogate							Surrogate control limits listed at end of this report.		
Tetrachlorometaxylene	877-09-8	0.1	%	53.2	50.4				
Dibutylchlorendate	1770-80-5	0.1	%	80.8	63.5				



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1180497)								
HK0924957-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0
HK0924975-001	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					Concentration	LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180497)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	108	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	96.9	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	95.6	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	99.7	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	95.5	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	103	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	98.5	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	92.8	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	105	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179511)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	54.9	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	52.8	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	61.8	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	52.8	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	61.5	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	61.3	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	68.8	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	73.1	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low High		RPD (%) Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179511) - Continued											
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	61.5	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	81.8	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	67.6	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	66.7	---	50	130	---	---
Indeno(1,2,3-cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	76.7	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	54.4	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	60.5	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1179512)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	80.1	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	82.1	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	88.3	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	84.9	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	87.8	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	82.2	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	110	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	107	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	110	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	118	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	110	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	108	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	102	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	93.7	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	107	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	98.4	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	104	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1179507)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	77.2	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	101	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	64.8	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	35.6	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	89.3	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	92.1	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	98.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	107	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	108	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	65.0	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	80.1	---	3	151	---	---

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



Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180497)										
HK0924956-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	112	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	97.8	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	93.7	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	106	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	98.4	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	104	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	99.5	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	94.7	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	90.3	---	75	125	---	---

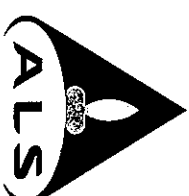
Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: D272

Batch: HK0924977
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 24/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 3
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

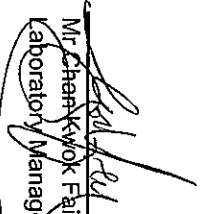
Sample Details

<i>ALS Lab ID</i>	<i>Sample ID</i>	<i>Date of Sampling</i>
HK0924977-001	D272	24/11/2009
HK0924977-002	D272	24/11/2009

ISSUING LABORATORY: HONG KONG

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ALS Technichem (HK) Pty Ltd
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Mr. Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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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

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**
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A Campbell Brothers Limited Company



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020162
Folder No : 0909142
Page No : 1 of 2
Date of Issue : 07/01/2010

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

Sample Description : 2 elutriate water samples were delivered by the client.

Sample Received Date : 03/12/2009

Test Completed Date : 07/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBTL)	Surrogate Compound Recovery (%)
HK0924977-1	Method Code	WTM-TBT-1	11/12/2009	WTM-TBT-1
	Analysis Date			11/12/2009
HK0924977-2	WT-0912-0822		<15	90

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.

Approval Signatory:



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₄ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₄ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₄ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₄ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorus Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Tributyl Tin (TBT)	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guide/line on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

▲C₁₀-C₂₄ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research,27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925185
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 18-NOV-2009
Order number	: CV/2009/13			Issue Date	: 17-DEC-2009
C-O-C number	: H010014			No. of samples received	: 4
Site	: D298			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 29-NOV-2009
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: HK0925185

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

Anh Ngoc Huynh

pp Fung Lim Chee, Richard

Position

Senior Chemist

General Manager

Authorised results for

Organics

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
Tel +852 2610 1044 Fax: +852 2610 2021 www.alsenviro.com

A Campbell Brothers Limited Company



Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID	D298 0-0.9M	D298 0.9-1.9M	D298 1.9-2.9M	D298 ELUTRIATE BLANK
				Client sampling date / time	18-NOV-2009 15:30	18-NOV-2009 15:30	18-NOV-2009 15:30	21-NOV-2009 14:00
Compound	CAS Number	LOR	Unit	HK0925185-001	HK0925185-002	HK0925185-003	HK0925185-004	
ED/EK: Inorganic Nonmetallic Parameters								
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	<0.1	0.4	0.4	<0.1	
EG: Metals and Major Cations - Filtered								
EG020: Arsenic	7440-38-2	10	µg/L	<10	19	21	<10	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	<10	
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	<1	
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1	<1	
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	<1	
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10	
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)								
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	<0.4	
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2	<2.2	
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8	<6.8	
EP-065A: PCB Single Congeners								
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	



Sub-Matrix: ELUTRIATE				Client sample ID	D298 0-0.9M	D298 0.9-1.9M	D298 1.9-2.9M	D298 ELUTRIATE BLANK
Client sampling date / time				18-NOV-2009 15:30	18-NOV-2009 15:30	18-NOV-2009 15:30	21-NOV-2009 14:00	
Compound	CAS Number	LOR	Unit	HK0925185-001	HK0925185-002	HK0925185-003	HK0925185-004	
EP-065A: PCB Single Congeners - Continued								
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
EP-067A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
Nitrobenzene -d5	4165-60-0	0.1	%	54.4	53.4	55.0	61.1	
4-Terphenyl-d14	1718-51-0	0.1	%	78.2	66.6	73.0	87.9	
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	93.4	95.2	96.3	100	
EP-067S: Pesticide Surrogate							Surrogate control limits listed at end of this report.	
Tetrachlorometaxylene	877-09-8	0.1	%	50.6	52.9	59.0	52.7	
Dibutylchlorendate	1770-80-5	0.1	%	55.4	51.2	58.6	63.5	



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 (%)	
EG: Metals and Major Cations - Filtered (QC Lot: 1179380)									
HK0925187-001	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	16	15	0.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0	
HK0925185-002	D298 0.9-1.9M	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	19	19	0.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					Concentration	LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1179380)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	104	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	93.1	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	98.9	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	110	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	94.6	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	104	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	101	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	93.4	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	100	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179506)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	57.0	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	53.7	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	56.4	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	57.8	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	56.6	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	# 48.7	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	67.9	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	68.6	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low High		RPD (%) Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179506) - Continued											
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	69.6	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	72.1	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	76.2	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	69.6	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	62.9	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	60.1	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	67.2	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1179504)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	0.1 µg/L	80.8	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	0.1 µg/L	88.7	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	0.1 µg/L	84.6	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	0.1 µg/L	85.0	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	0.1 µg/L	84.0	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	0.1 µg/L	88.4	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	0.1 µg/L	89.1	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	0.1 µg/L	95.8	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	0.1 µg/L	91.5	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	0.1 µg/L	91.4	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	0.1 µg/L	91.2	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	0.1 µg/L	94.8	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	0.1 µg/L	95.3	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	0.1 µg/L	90.4	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	0.1 µg/L	89.8	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	0.1 µg/L	88.3	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	0.1 µg/L	88.9	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1179507)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	77.2	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	101	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	64.8	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	35.6	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	89.3	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	92.1	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	98.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	107	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	108	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	65.0	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	80.1	---	3	151	---	---

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

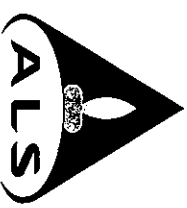


Page Number : 6 of 6
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK0925185

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1179380)										
HK0925177-002	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	124	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	92.4	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	99.6	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	99.6	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	102	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	109	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	113	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	95.5	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	104	---	75	125	---	---

Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchloredate	1770-80-5	50	130



ALS TECHNICHEM (HK) Pty Ltd
Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: D298

Batch: HK0925185
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 18/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 4
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

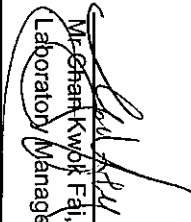
Sample Details

<i>ALS Lab ID</i>	<i>Sample ID</i>	<i>Date of Sampling</i>
HK0925185-001	D298	18/11/2009
HK0925185-002	D298	18/11/2009
HK0925185-003	D298	18/11/2009
HK0925185-004	D298	21/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
11/F Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
HONG KONG

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


Mr. Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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Melbourne Singapore
Sydney Kuala Lumpur
Newcastle Bogor

AMERICAS
Vancouver
Santiago
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



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020070

Folder No : 0909027

Page No : 1 of 2

Date of Issue : 04/01/2010

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

Sample Description : 4 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 04/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBTL)	Surrogate Compound Recovery (%)
	Method Code		WTM-TBT-1	WTM-TBT-1
	Analysis Date		03/12/2009	03/12/2009
HK0925185-1	WT-0912-0276		<11	88
HK0925185-2	WT-0912-0277		<12	94
HK0925185-3	WT-0912-0278		<11	100
HK0925185-4	WT-0912-0279		<12	74

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)↗	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)↗	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphosphate Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphosphate Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-PCB-2	USEPA 8082
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-TBT-1	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A	HS1004	HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

↗ C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research,27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925162
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 17-NOV-2009
Order number	: CV/2009/13			Issue Date	: 17-DEC-2009
C-O-C number	: H006234			No. of samples received	: 4
Site	: D320			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925162

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories	Position	Authorised results for
Anh Ngoc Huynh	Senior Chemist	Organics
PP Fung Lim Chee, Richard	General Manager	Inorganics

ALS Laboratory Group
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A Campbell Brothers Limited Company



Analytical Results

Sub-Matrix: ELUTRIATE

Client sample ID

Client sampling date / time

				D320 0-0.9M 17-NOV-2009 17:30	D320 0.9-1.9M 17-NOV-2009 17:30	D320 1.9-2.9M 17-NOV-2009 17:30	D320 ELUTRIATE BLANK 21-NOV-2009 10:00
Compound	CAS Number	LOR	Unit	HK0925162-001	HK0925162-002	HK0925162-003	HK0925162-004
ED/EK: Inorganic Nonmetallic Parameters							
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	0.2	0.4	0.5	<0.1
EG: Metals and Major Cations - Filtered							
EG020: Arsenic	7440-38-2	10	µg/L	11	13	10	<10
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	<10
EG020: Copper	7440-50-8	1	µg/L	<1	2	<1	<1
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	1	<1
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)							
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	<0.2
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2	<2.2
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8	<6.8
EP-065A: PCB Single Congeners							
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	<0.05



Sub-Matrix: ELUTRIATE				Client sample ID	D320 0-0.9M	D320 0.9-1.9M	D320 1.9-2.9M	D320 ELUTRIATE BLANK
Client sampling date / time				17-NOV-2009 17:30	17-NOV-2009 17:30	17-NOV-2009 17:30	21-NOV-2009 10:00	
Compound	CAS Number	LOR	Unit	HK0925162-001	HK0925162-002	HK0925162-003	HK0925162-004	
EP-065A: PCB Single Congeners - Continued								
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
EP-067A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
Nitrobenzene -d5	4165-60-0	0.1	%	51.6	56.6	51.5	54.8	
4-Terphenyl-d14	1718-51-0	0.1	%	67.2	82.4	81.2	80.2	
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	89.3	92.4	70.4	95.8	
EP-067S: Pesticide Surrogate							Surrogate control limits listed at end of this report.	
Tetrachlorometaxylene	877-09-8	0.1	%	51.3	61.3	56.8	51.6	
Dibutylchlorendate	1770-80-5	0.1	%	75.4	72.3	70.8	75.3	



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 (%)	
EG: Metals and Major Cations - Filtered (QC Lot: 1179379)									
HK0925187-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	16	15	6.4	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
HK0925176-002	Anonymous	EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0	
		EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	12	13	8.0	
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0			
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1179379)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	112	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	104	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	115	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	105	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	97.2	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	108	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	102	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	95.6	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	102	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179150)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	52.4	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	52.4	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	# 46.3	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	# 40.8	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	61.7	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	67.8	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	62.6	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	68.7	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					Concentration	LCS	DCS	Low	High	Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179150) - Continued											
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	77.2	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	84.3	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	84.3	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	80.4	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	68.6	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	68.0	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	84.1	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1178992)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	106	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	83.2	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	92.5	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	88.5	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	81.7	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	83.1	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	95.8	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	101	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	100	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	97.0	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	97.0	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	86.1	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	99.9	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	96.2	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	97.9	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	98.6	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	97.1	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1179151)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	51.1	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	65.4	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	78.3	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	55.4	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	60.7	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	79.9	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	78.5	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	88.0	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	88.0	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	90.2	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	85.6	---	3	151	---	---

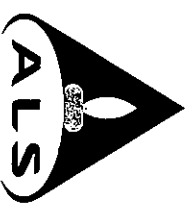
Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report



Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1179379)										
HK0925132-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	98.0	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	95.0	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	110	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	98.2	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	92.9	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	102	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	108	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	93.5	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	96.2	---	75	125	---	---

Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130



ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
ALS TECHNICHEM (HK) Pty Ltd
Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: D320

Batch: HK0925162
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 17/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 4
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.


Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925162-001	D320	17/11/2009
HK0925162-002	D320	17/11/2009
HK0925162-003	D320	17/11/2009
HK0925162-004	D320	21/11/2009

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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Mr. Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.

AUSTRALIA **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

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**
11/F, Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, N.T., H.K.
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A Campbell Brothers Limited Company



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T00200066
Folder No : 0909022
Page No : 1 of 2
Date of Issue : 23/12/2009

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

Sample Description : 4 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 22/12/2009

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBT/L)	Surrogate Compound Recovery (%)
	Method Code		WTM-TBT-1	WTM-TBT-1
	Sample No	Analysis Date	01/12/2009	01/12/2009
HK 0925162-1	WT-0912-0256		<11	92
HK 0925162-2	WT-0912-0257		<9	93
HK 0925162-3	WT-0912-0258		<11	93
HK 0925162-4	WT-0912-0259		<12	98

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO) ↓	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO) ↓	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorus Pesticides (OPP)	WTM-OCP-1	USEPA 8141	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	USEPA 8082
TriButyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	TriButyl Tin (TBT)	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
II. Sediment/Soil					
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141 A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane (C₉).

↑C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane (C₁₀) and N-octacosane (C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency
Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925168
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 19-NOV-2009
Order number	: CV/2009/13			Issue Date	: 11-DEC-2009
C-O-C number	: H010019			No. of samples received	: 3
Site	: D330			No. of samples analysed	: 3

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 29-NOV-2009
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: HK0925168

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

Anh Ngoc Huynh

Fung Lim Chee, Richard

Position

Senior Chemist

General Manager

Authorised results for

Organics

Inorganics

ALS Laboratory Group

Trading Name: ALS Technichem (HK) Pty Ltd

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Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID		
				D330 0-0.9M	D330 0.9-1.9M	D330 ELUTRIATE BLANK
				19-NOV-2009 10:30	19-NOV-2009 10:30	19-NOV-2009 10:30
				HK0925168-001	HK0925168-002	HK0925168-003
Compound	CAS Number	LOR	Unit	Client sampling date / time		
ED/EK: Inorganic Nonmetallic Parameters						
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	<0.1	<0.1	<0.1
EG: Metals and Major Cations - Filtered						
EG020: Arsenic	7440-38-2	10	µg/L	15	12	<10
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L	2	2	<1
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)						
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8
EP-065A: PCB Single Congeners						
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05



Sub-Matrix: ELUTRIATE

Client sample ID

Client sampling date / time

				D330 0-0.9M 19-NOV-2009 10:30 HK0925168-001	D330 0.9-1.9M 19-NOV-2009 10:30 HK0925168-002	D330 ELUTRIATE BLANK 19-NOV-2009 10:30 HK0925168-003
Compound	CAS Number	LOR	Unit			
EP-065A: PCB Single Congeners - Continued						
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05
EP-067A: Organochlorine Pesticides (OC)						
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates						
Nitrobenzene -d5	4165-60-0	0.1	%	59.7	57.5	78.2
4-Terphenyl-d14	1718-51-0	0.1	%	83.0	77.2	86.2
Surrogate control limits listed at end of this report.						
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate						
Decachlorobiphenyl	2051-24-3	0.1	%	80.3	91.2	96.6
Surrogate control limits listed at end of this report.						
EP-067S: Pesticide Surrogate						
Tetrachlorometaxylene	877-09-8	0.1	%	52.3	57.0	62.0
Dibutylchlorendate	1770-80-5	0.1	%	65.2	63.7	72.3
Surrogate control limits listed at end of this report.						



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1178811)								
HK0925159-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	1	1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	17	18	5.7
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0
HK0925163-003	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178811)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	89.7	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	102	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	104	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	101	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	97.9	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	102	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	88.3	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	91.4	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	94.2	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179453)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	50.0	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	55.1	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	58.8	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	51.8	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	53.1	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	58.9	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	62.4	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	56.4	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low High		RPD (%) Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179453) - Continued											
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	79.2	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	84.0	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	91.9	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	84.5	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	75.3	---	50	130	---	---
Dibenz(a.h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	71.3	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	80.3	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1179454)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	112	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	91.9	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	113	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	90.3	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	85.1	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	111	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	83.8	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	87.3	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	81.1	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	84.2	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	82.0	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	89.6	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	80.8	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	83.9	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	88.0	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	91.3	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	87.7	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1179151)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	51.1	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	65.4	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	78.3	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	55.4	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	60.7	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	79.9	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	78.5	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	88.0	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	88.0	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	90.2	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	85.6	---	3	151	---	---

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



Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178811)										
HK0925156-003	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	100	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	101	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	103	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	113	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	92.9	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	100	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	97.9	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	88.8	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	109	---	75	125	---	---

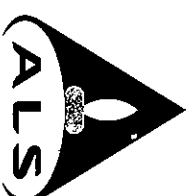
Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: D330

Batch: HK0925168
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 16/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 3
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

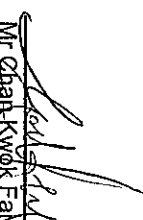
Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925168-001	D330	19/11/2009
HK0925168-002	D330	19/11/2009
HK0925168-003	D330	19/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
11/F Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
HONG KONG

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


Mr. Chak Kwok Fai
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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AUSTRALIA	AMERICAS
Brisbane	Vancover
Melbourne	Santiago
Sydney	Amtofagasta
Newcastle	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

ALS Technichem (HK) Pty Ltd

Part of the **ALS Laboratory Group**
11/F, Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, N.T., H.K.
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A Campbell Brothers Limited Company



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020083
Folder No : 0909042
Page No : 1 of 2
Date of Issue : 05/01/2010

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

Sample Description : 3 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 05/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBTL)	Surrogate Compound Recovery (%)
HK0925168-1	Method Code	W/TM-TBT-1	04/12/2009	W/TM-TBT-1 04/12/2009
	Sample No	WT-0912-0319	<15	100
HK0925168-2	Method Code	W/T-0912-0320	<15	83
HK0925168-3	Method Code	WT-0912-0321	<15	82

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM4-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₉ -C ₉ Gasoline range organics (GRO)*	WTM4-GRO-1	USEPA 8015B	C ₉ -C ₉ Gasoline range organics (GRO)*	WTM4-DRO-1	USEPA 8015B
C ₁₀ -C ₂₄ Diesel range organics (DRO)▲	WTM4-DRO-1	USEPA 8015B	C ₁₀ -C ₂₄ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₄ Petroleum Hydrocarbons	WTM4-DRO-2	USEPA 8015B	C ₁₀ -C ₂₄ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorus Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₉-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₉) and n-nonane(C₉).

▲C₁₀-C₂₄ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research,27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925173
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 19-NOV-2009
Order number	: CV/2009/13			Issue Date	: 17-DEC-2009
C-O-C number	: H010020			No. of samples received	: 4
Site	: D337			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 29-NOV-2009
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: HK0925173

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

Anh Ngoc Huynh

PP Fung Lim Chee, Richard

Position

Senior Chemist

General Manager

Authorised results for

Organics

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
Tel +852 2610 1044 Fax: +852 2610 2021 www.alsenviro.com

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Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID	D337 0-0.9M	D337 0.9-1.9M	D337 1.9-2.9M	D337 ELUTRIATE BLANK
				Client sampling date / time	19-NOV-2009 12:30	19-NOV-2009 12:30	19-NOV-2009 12:30	19-NOV-2009 12:30
Compound	CAS Number	LOR	Unit	HK0925173-001	HK0925173-002	HK0925173-003	HK0925173-004	
ED/EK: Inorganic Nonmetallic Parameters								
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	<0.1	<0.1	<0.1	<0.1	
EG: Metals and Major Cations - Filtered								
EG020: Arsenic	7440-38-2	10	µg/L	14	16	<10	<10	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	<10	
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	<1	
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1	<1	
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	<1	
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10	
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)								
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	<0.4	
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2	<2.2	
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8	<6.8	
EP-065A: PCB Single Congeners								
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	



Sub-Matrix: ELUTRIATE				Client sample ID	D337 0-0.9M	D337 0.9-1.9M	D337 1.9-2.9M	D337 ELUTRIATE BLANK	
Client sampling date / time				19-NOV-2009 12:30	19-NOV-2009 12:30	19-NOV-2009 12:30	19-NOV-2009 12:30		
Compound	CAS Number	LOR	Unit	HK0925173-001	HK0925173-002	HK0925173-003	HK0925173-004		
EP-065A: PCB Single Congeners - Continued									
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05		
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05		
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05		
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05		
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05		
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05		
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05		
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05		
EP-067A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5		
beta- & gamma-BHC	319-85-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0		
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5		
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5		
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5		
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5		
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5		
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5		
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5		
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5		
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0		
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								Surrogate control limits listed at end of this report.	
Nitrobenzene -d5	4165-60-0	0.1	%	58.8	57.0	60.1	52.0		
4-Terphenyl-d14	1718-51-0	0.1	%	79.0	87.8	67.7	73.6		
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate								Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	82.2	98.8	88.0	87.8		
EP-067S: Pesticide Surrogate								Surrogate control limits listed at end of this report.	
Tetrachlorometaxylene	877-09-8	0.1	%	53.3	55.0	56.3	52.9		
Dibutylchlorendate	1770-80-5	0.1	%	69.2	73.8	57.2	64.4		



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 (%)	
EG: Metals and Major Cations - Filtered (QC Lot: 1179379)									
HK0925187-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	16	15	6.4	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0	
HK0925176-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	12	13	8.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1179379)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	112	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	104	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	115	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	105	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	97.2	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	108	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	102	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	95.6	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	102	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179453)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	50.0	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	55.1	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	58.8	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	51.8	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	53.1	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	58.9	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	62.4	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	56.4	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	Control Limit
						LCS	DCS	Low	High	Value	
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179453) - Continued											
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	79.2	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	84.0	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	91.9	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	84.5	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	75.3	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	71.3	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	80.3	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1179454)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	112	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	91.9	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	113	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	90.3	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	85.1	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	111	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	83.8	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	87.3	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	81.1	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	84.2	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	82.0	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	89.6	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	80.8	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	83.9	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	88.0	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	91.3	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	87.7	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1179151)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	51.1	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	65.4	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	78.3	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	55.4	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	60.7	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	79.9	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	78.5	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	88.0	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	88.0	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	90.2	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	85.6	---	3	151	---	---

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

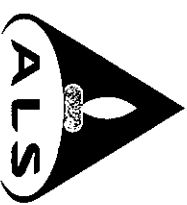


Matrix: WATER

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1179379)										
HK0925132-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	98.0	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	95.0	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	110	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	98.2	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	92.9	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	102	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	108	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	93.5	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	96.2	---	75	125	---	---

Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130



ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
ALS TECHNICHEM (HK) Pty Ltd
Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: D337

Batch: HK0925173
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 19/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 4
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925173-001	D337	19/11/2009
HK0925173-002	D337	19/11/2009
HK0925173-003	D337	19/11/2009
HK0925173-004	D337	19/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
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1-3 Wing Yip Street
Kwai Chung
HONG KONG

Phone: 852-2610 1044
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Laboratory Manager, Hong Kong

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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
Part of the **ALS Laboratory Group**
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Phone: 852-2610 1044 Fax: 852-2610 2021 www.alsenviro.com
A Campbell Brothers Limited Company



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020058
Folder No : 0909023
Page No : 1 of 2
Date of Issue : 22/12/2009

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

Sample Description : 4 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 22/12/2009

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBTL)	Surrogate Compound Recovery (%)
HK0925173-1	Method Code	W/TM-TBT-1	01/12/2009	W/TM-TBT-1
	Sample No	Analysis Date	01/12/2009	01/12/2009
	WT-0912-0260		<10	90
HK0925173-2	WT-0912-0261		<11	92
HK0925173-3	WT-0912-0262		<10	93
HK0925173-4	WT-0912-0263		<8	96

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.
(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.
(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorus Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	USEPA 8082
TriButyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TPCB-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	TriButyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-nethylpentane (C₆) and n-nonane(C₉).

▲C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research,27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925165
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 19-NOV-2009
Order number	: CV/2009/13			Issue Date	: 17-DEC-2009
C-O-C number	: H010022			No. of samples received	: 3
Site	: D355			No. of samples analysed	: 3

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 29-NOV-2009
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: HK0925165

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.
Sample(s) were received in an ambient condition.
Elutriate sample(s) analysed and reported on an as received basis.
Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

Anh Ngoc Huynh

pp Fung Lim Chee, Richard

Position

Senior Chemist
General Manager

Authorised results for

Organics
Inorganics

ALS Laboratory Group

Trading Name: ALS Technichem (HK) Pty Ltd

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Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID	D355	D355	D355
				Client sampling date / time	0-0.9M	0.9-1.9M	ELUTRIATE BLANK
				19-NOV-2009 16:30	19-NOV-2009 16:30	19-NOV-2009 16:30	
Compound	CAS Number	LOR	Unit	HK0925165-001	HK0925165-002	HK0925165-003	
ED/EK: Inorganic Nonmetallic Parameters							
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	<0.1	<0.1	<0.1	
EG: Metals and Major Cations - Filtered							
EG020: Arsenic	7440-38-2	10	µg/L	12	13	<10	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	
EG020: Nickel	7440-02-0	1	µg/L	1	1	<1	
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)							
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2	
High M.W. PAHs	----	6.8	µg/L	<6.8	<6.8	<6.8	
EP-065A: PCB Single Congeners							
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	



Sub-Matrix: ELUTRIATE				Client sample ID	D355 0-0.9M	D355 0.9-1.9M	D355 ELUTRIATE BLANK		
Client sampling date / time				19-NOV-2009 16:30	19-NOV-2009 16:30	19-NOV-2009 16:30			
Compound	CAS Number	LOR	Unit	HK0925165-001	HK0925165-002	HK0925165-003			
EP-065A: PCB Single Congeners - Continued									
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05			
EP-067A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5			
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0			
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5			
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5			
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5			
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5			
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5			
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5			
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5			
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5			
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0			
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.		
Nitrobenzene -d5	4165-60-0	0.1	%	62.0	53.4	57.4			
4-Terphenyl-d14	1718-51-0	0.1	%	91.0	88.4	90.7			
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.		
Decachlorobiphenyl	2051-24-3	0.1	%	95.9	93.4	96.2			
EP-067S: Pesticide Surrogate							Surrogate control limits listed at end of this report.		
Tetrachlorometaxylene	877-09-8	0.1	%	51.3	64.0	51.3			
Dibutylchlorendate	1770-80-5	0.1	%	73.0	76.6	74.0			



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1178811)								
HK0925159-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	1	1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	17	18	5.7
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0
HK0925163-003	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178811)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	89.7	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	102	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	104	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	101	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	97.9	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	102	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	88.3	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	91.4	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	94.2	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179453)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	50.0	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	55.1	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	58.8	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	51.8	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	53.1	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	58.9	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	62.4	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	56.4	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
		LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low High		RPD (%) Value
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179453) - Continued										
Method: Compound	CAS Number									
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	79.2	---	50	130	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	84.0	---	50	130	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	91.9	---	50	130	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	84.5	---	50	130	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	75.3	---	50	130	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	71.3	---	50	130	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	80.3	---	50	130	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1179454)										
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	112	---	50	130	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	91.9	---	50	130	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	113	---	50	130	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	90.3	---	50	130	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	85.1	---	50	130	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	111	---	50	130	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	83.8	---	50	130	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	87.3	---	50	130	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	81.1	---	50	130	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	84.2	---	50	130	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	82.0	---	50	130	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	89.6	---	50	130	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	80.8	---	50	130	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	83.9	---	50	130	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	88.0	---	50	130	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	91.3	---	50	130	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	87.7	---	50	130	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1179151)										
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	51.1	---	31	130	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	65.4	---	40	134	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	78.3	---	51	136	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	55.4	---	1	138	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	60.7	---	32	139	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	79.9	---	54	134	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	78.5	---	53	143	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	88.0	---	57	156	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	88.0	---	54	159	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	90.2	---	53	145	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	85.6	---	3	151	---

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



Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1178811)										
HK0925156-003	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	100	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	101	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	103	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	113	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	92.9	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	100	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	97.9	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	88.8	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	109	---	75	125	---	---

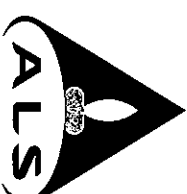
Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: D355

Batch: HK0925165
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 19/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 3
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

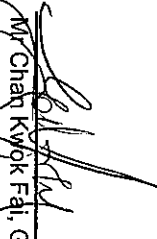
Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925165-001	D355	19/11/2009
HK0925165-002	D355	19/11/2009
HK0925165-003	D355	19/11/2009
	ELUTRIATE BLANK	19/11/2009

ISSUING LABORATORY: HONG KONG

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Mr. Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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AUSTRALIA	AMERICAS
Brisbane	Vancover
Melbourne	Santiago
Sydney	Antofagasta
Newcastle	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

ALS Technichem (HK) Pty Ltd

Part of the **ALS Laboratory Group**

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Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020084

Folder No : 0909043

Page No : 1 of 2

Date of Issue : 05/01/2010

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

Sample Description : 3 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 05/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBT/L)	Surrogate Compound Recovery (%)
HK0925165-1	WT-0912-0322	Method Code Analysis Date	WTM-TBT-1 04/12/2009	WTM-TBT-1 04/12/2009
HK0925165-2	WT-0912-0323		<15	99
HK0925165-3	WT-0912-0324		<15	95

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.
(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphosphate Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphosphate Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-PCB-2	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-TPCB-1	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-PHENOL-1	USEPA 8270C
II. Sediment/Soil					
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A	HS1004	HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

▲C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research,27, 1-18, 1989

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ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925199
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
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Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 23-NOV-2009
Order number	: CV/2009/13			Issue Date	: 17-DEC-2009
C-O-C number	: H010026			No. of samples received	: 3
Site	: D362			No. of samples analysed	: 3

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925199

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

Anh Ngoc Huynh

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Position

Senior Chemist
General Manager

Authorised results for

Organics
Inorganics

ALS Laboratory Group

Trading Name: ALS Technichem (HK) Pty Ltd

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A Campbell Brothers Limited Company



Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID	D362 0-0.9M	D362 0.9-1.9M	D362 ELUTRIATE BLANK		
				Client sampling date / time	21-NOV-2009 11:00	21-NOV-2009 11:00	21-NOV-2009 11:00		
Compound	CAS Number	LOR	Unit	HK0925199-001	HK0925199-002	HK0925199-003			
ED/EK: Inorganic Nonmetallic Parameters									
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	<0.1	0.2	<0.1			
EG: Metals and Major Cations - Filtered									
EG020: Arsenic	7440-38-2	10	µg/L	10	<10	<10			
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2			
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10			
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1			
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1			
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5			
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1			
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1			
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10			
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)									
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2			
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2			
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2			
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2			
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2			
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2			
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2			
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2			
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2			
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2			
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4			
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2			
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2			
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2			
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2			
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2			
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8			
EP-065A: PCB Single Congeners									
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05			



Sub-Matrix: ELUTRIATE				Client sample ID	D362 0-0.9M	D362 0.9-1.9M	D362 ELUTRIATE BLANK		
Client sampling date / time				21-NOV-2009 11:00	21-NOV-2009 11:00	21-NOV-2009 11:00			
Compound	CAS Number	LOR	Unit	HK0925199-001	HK0925199-002	HK0925199-003			
EP-065A: PCB Single Congeners - Continued									
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05			
EP-067A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5			
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0			
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5			
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5			
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5			
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5			
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5			
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5			
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5			
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5			
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0			
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.		
Nitrobenzene -d5	4165-60-0	0.1	%	56.3	57.4	56.0			
4-Terphenyl-d14	1718-51-0	0.1	%	84.3	73.5	82.8			
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.		
Decachlorobiphenyl	2051-24-3	0.1	%	89.7	90.9	97.8			
EP-067S: Pesticide Surrogate							Surrogate control limits listed at end of this report.		
Tetrachlorometaxylene	877-09-8	0.1	%	62.9	54.1	55.8			
Dibutylchlorendate	1770-80-5	0.1	%	73.2	69.0	72.1			



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1180498)								
HK0925196-001	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
HK0925204-001	Anonymous	EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0
		EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0		
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180498)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	96.5	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	97.7	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	105	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	110	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	97.3	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	102	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	111	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	91.8	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	107	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179003)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	58.4	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	51.6	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	53.1	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	51.5	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	54.5	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	52.8	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	74.6	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	80.9	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
		LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Method: Compound	CAS Number					LCS	DCS	Low	High	Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179003) - Continued											
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	84.5	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	91.9	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	89.4	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	84.8	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	78.7	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	74.1	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	90.2	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1178992)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	106	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	83.2	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	92.5	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	88.5	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	81.7	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	83.1	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	95.8	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	101	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	100	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	97.0	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	97.0	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	86.1	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	99.9	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	96.2	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	97.9	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	98.6	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	97.1	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1178991)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	50.5	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	63.2	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	68.1	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	62.4	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	55.7	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	69.8	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	69.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	73.7	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	75.8	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	75.4	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	79.4	---	3	151	---	---

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



Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180498)										
HK0925196-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	102	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	93.6	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	106	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	105	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	95.4	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	104	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	105	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	91.2	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	104	---	75	125	---	---

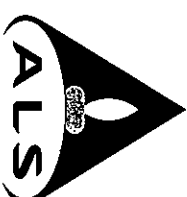
Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchloredate	1770-80-5	50	130

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: D362

Batch: HK0925199
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 23/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 3
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

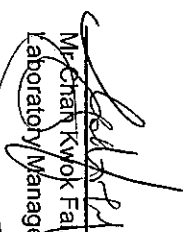
Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925199-001	D362	21/11/2009
HK0925199-002	D362	21/11/2009
HK0925199-003	D362	21/11/2009
	ELUTRIATE BLANK	

ISSUING LABORATORY: HONG KONG

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Mr. Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

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AMERICAS
Vancover
Santiago
Antofagasta
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

ALS Technichem (HK) Pty Ltd

Part of the **ALS Laboratory Group**
11/F, Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, N.T., H.K.
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A Campbell Brothers Limited Company



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No. : T0020076
Folder No. : 0909034
Page No. : 1 of 2
Date of Issue : 04/01/2010

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

Sample Description : 3 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 04/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBT/L)	Surrogate Compound Recovery (%)
Sample No	Method Code	Analysis Date	WTM-TBT-1	WTM-TBT-1
HK0925199-1	WT-0912-0296	03/12/2009	<10	95
HK0925199-2	WT-0912-0297		<13	98
HK0925199-3	WT-0912-0298		<13	91

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphate Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphate Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-P-CB-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-P-CB-2	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-P-CB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-TRCB-1	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

▲C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research,27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925196
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 23-NOV-2009
Order number	: CV/2009/13			Issue Date	: 11-DEC-2009
C-O-C number	: H010028			No. of samples received	: 3
Site	: D374			No. of samples analysed	: 3

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925196

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.
Sample(s) were received in an ambient condition.
Elutriate sample(s) analysed and reported on an as received basis.
Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories	Position	Authorised results for
Anh Ngoc Huynh	Senior Chemist	Organics
pp Fung Lim Chee, Richard	General Manager	Inorganics

ALS Laboratory Group

Trading Name: ALS Technichem (HK) Pty Ltd

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Tel: +852 2610 1044 Fax: +852 2610 2021 www.alsenviro.com

A Campbell Brothers Limited Company



Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID		
				D374	D374	D374
				0-0.9M	0.9-1.9M	ELUTRIATE BLANK
				21-NOV-2009 15:00	21-NOV-2009 15:00	21-NOV-2009 15:00
				HK0925196-001	HK0925196-002	HK0925196-003
Compound	CAS Number	LOR	Unit	Client sampling date / time		
ED/EK: Inorganic Nonmetallic Parameters						
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	0.2	<0.1	<0.1
EG: Metals and Major Cations - Filtered						
EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	<10
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)						
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2
Benzo(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8
EP-065A: PCB Single Congeners						
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05



Sub-Matrix: ELUTRIATE				Client sample ID		
Client sampling date / time				D374 0-0.9M 21-NOV-2009 15:00 HK0925196-001	D374 0.9-1.9M 21-NOV-2009 15:00 HK0925196-002	D374 ELUTRIATE BLANK 21-NOV-2009 15:00 HK0925196-003
Compound	CAS Number	LOR	Unit			
EP-065A: PCB Single Congeners - Continued						
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05
EP-067A: Organochlorine Pesticides (OC)						
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates						
Nitrobenzene -d5	4165-60-0	0.1	%	58.8	57.6	53.7
4-Terphenyl-d14	1718-51-0	0.1	%	85.4	89.1	83.1
Surrogate control limits listed at end of this report.						
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate						
Decachlorobiphenyl	2051-24-3	0.1	%	100	91.8	86.9
Surrogate control limits listed at end of this report.						
EP-067S: Pesticide Surrogate						
Tetrachlorometaxylene	877-09-8	0.1	%	58.3	53.7	53.8
Dibutylchlorendate	1770-80-5	0.1	%	69.3	67.2	66.5
Surrogate control limits listed at end of this report.						



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 (%)	
EG: Metals and Major Cations - Filtered (QC Lot: 1180498)									
HK0925196-001	D374 0-0.9M	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0	
HK0925204-001	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0	
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0	
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0	
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0	
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0	
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0	
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0	
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180498)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	96.5	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	97.7	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	105	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	110	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	97.3	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	102	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	111	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	91.8	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	107	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179003)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	58.4	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	51.6	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	53.1	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	51.5	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	54.5	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	52.8	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	74.6	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	80.9	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	Control Limit
					LCS	DCS	Low	High	Value		
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179003) - Continued											
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	84.5	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	91.9	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	89.4	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	84.8	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	78.7	---	50	130	---	---
Dibenz(a.h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	74.1	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	90.2	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1178992)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	106	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	83.2	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	92.5	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	88.5	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	81.7	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	83.1	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	95.8	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	101	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	100	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	97.0	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	97.0	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	86.1	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	99.9	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	96.2	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	97.9	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	98.6	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	97.1	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1178991)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	50.5	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	63.2	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	68.1	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	62.4	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	55.7	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	69.8	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	69.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	73.7	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	75.8	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	75.4	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	79.4	---	3	151	---	---

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

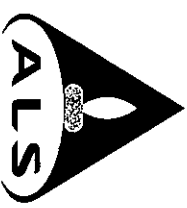


Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180498)										
HK0925196-001	D374 0-0.9M	EG020: Arsenic	7440-38-2	100 µg/L	102	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	93.6	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	106	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	105	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	95.4	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	104	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	105	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	91.2	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	104	---	75	125	---	---

Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130



ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
ALS TECHNICHEM (HK) Pty Ltd
Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: D374

Batch: HK0925196
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 23/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 3
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

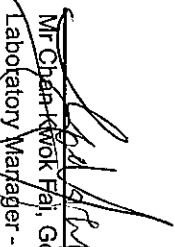
Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925196-001	D374	21/11/2009
HK0925196-002	D374	21/11/2009
HK0925196-003	D374	21/11/2009

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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Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

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AUSTRALIA **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

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**
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A Campbell Brothers Limited Company



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020074
Folder No : 0909032
Page No : 1 of 2
Date of Issue : 04/01/2010

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

Sample Description : 3 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 04/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBT/L)	Surrogate Compound Recovery (%)
Sample No	Method Code	Analysis Date	WTM-TBT-1	WTM-TBT-1
HK0925196-1	WT-0912-0290	03/12/2009	36	94
HK0925196-2	WT-0912-0291		<10	82
HK0925196-3	WT-0912-0292		<10	93

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	II. Sediment/Soil		
Petroleum Hydrocarbons			BTEX	SEDIMENT-BTEX-1	USEPA 8260B
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	Petroleum Hydrocarbons		
C ₁₀ -C ₂₄ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₄ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₄ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	C ₁₀ -C ₂₄ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organophosphate Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Organophosphate Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B
TriButyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	USEPA 8082
Phenols	WTM-PHENOL-1	USEPA 8270C	Total PCBs	SEDIMENT-TPCB-1	USEPA 8082
			TriButyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A	HS1004		HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

▲C₁₀-C₂₄ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0924975
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 24-NOV-2009
Order number	: CV/2009/13			Issue Date	: 17-DEC-2009
C-O-C number	: H010042			No. of samples received	: 3
Site	: D378			No. of samples analysed	: 3

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: **HK0924975**

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.
Sample(s) were received in an ambient condition.
Elutriate sample(s) analysed and reported on an as received basis.
Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories	Position	Authorised results for
Anh Ngoc Huynh	Senior Chemist	Organics
Fung Lim Chee, Richard	General Manager	Inorganics

ALS Laboratory Group
Trading Name: **ALS Technichem (HK) Pty Ltd**
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Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID	D378 0-0.9M	D378 0.9-1.9M	D378 ELUTRIATE BLANK
				Client sampling date / time	24-NOV-2009 14:30	24-NOV-2009 14:30	24-NOV-2009 14:30
Compound	CAS Number	LOR	Unit	HK0924975-001	HK0924975-002	HK0924975-003	
ED/EK: Inorganic Nonmetallic Parameters							
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	<0.1	0.3	<0.1	
EG: Metals and Major Cations - Filtered							
EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	<10	
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10	
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1	
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1	
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)							
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2	
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2	
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2	
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2	
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2	
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2	
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2	
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2	
Benzo(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2	
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2	
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4	
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2	
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2	
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2	
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2	
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2	
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8	
EP-065A: PCB Single Congeners							
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05	
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05	



Sub-Matrix: ELUTRIATE				Client sample ID	D378 0-0.9M	D378 0.9-1.9M	D378 ELUTRIATE BLANK		
Client sampling date / time				24-NOV-2009 14:30	24-NOV-2009 14:30	24-NOV-2009 14:30			
Compound	CAS Number	LOR	Unit	HK0924975-001	HK0924975-002	HK0924975-003			
EP-065A: PCB Single Congeners - Continued									
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05			
EP-067A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5			
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0			
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5			
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5			
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5			
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5			
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5			
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5			
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5			
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5			
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0			
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.		
Nitrobenzene -d5	4165-60-0	0.1	%	62.2	58.1	56.1			
4-Terphenyl-d14	1718-51-0	0.1	%	85.5	77.8	98.5			
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.		
Decachlorobiphenyl	2051-24-3	0.1	%	92.6	101	97.3			
EP-067S: Pesticide Surrogate							Surrogate control limits listed at end of this report.		
Tetrachlorometaxylene	877-09-8	0.1	%	52.0	80.0	51.5			
Dibutylchlorendate	1770-80-5	0.1	%	104	96.3	122			



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1180497)								
HK0924957-002	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0
HK0924975-001	D378 0-0.9M	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180497)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	108	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	96.9	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	95.6	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	99.7	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	95.5	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	103	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	98.5	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	92.8	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	105	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179514)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	54.0	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	53.6	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	68.0	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	54.6	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	66.7	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	51.5	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	68.9	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	73.7	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
		LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
Method: Compound	CAS Number										
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179514) - Continued											
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	69.3	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	81.0	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	73.3	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	70.3	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	86.0	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	55.4	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	67.4	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1179512)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	80.1	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	82.1	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	88.3	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	84.9	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	87.8	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	82.2	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	110	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	107	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	110	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	118	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	110	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	108	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	102	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	93.7	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	107	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	98.4	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	104	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1179507)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	77.2	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	101	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	64.8	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	35.6	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	89.3	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	92.1	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	98.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	107	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	108	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	65.0	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	80.1	---	3	151	---	---

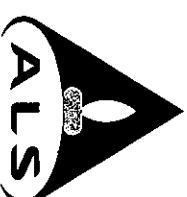
Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report



Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180497)										
HK0924956-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	112	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	97.8	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	93.7	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	106	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	98.4	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	104	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	99.5	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	94.7	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	90.3	---	75	125	---	---

Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130



ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
ALS TECHNICHEM (HK) Pty Ltd
Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: D378

Batch: HK0924975
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 24/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 3
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.

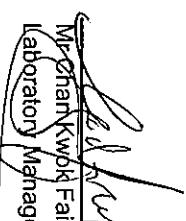
Sample Details

<i>ALS Lab ID</i>	<i>Sample ID</i>	<i>Date of Sampling</i>
HK0924975-001	D378	24/11/2009
HK0924975-002	D378	24/11/2009
HK0924975-003	D378	24/11/2009

ISSUING LABORATORY: HONG KONG

Address
ALS Technichem (HK) Pty Ltd
11/F Chung Shun Knitting Centre
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Kwai Chung
HONG KONG

Phone: 852-2610 1044
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Mr. Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories *This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.*

AUSTRALIA **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

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**
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 **www.alsenviro.com**
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Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020163
Folder No : 0909143
Page No : 1 of 2
Date of Issue : 07/01/2010

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

Sample Description : 3 elutriate water samples were delivered by the client.

Sample Received Date : 03/12/2009

Test Completed Date : 07/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBT/l)	Surrogate Compound Recovery (%)
	Method Code		WTM-TBT-1	WTM-TBT-1
	Sample No	Analysis Date	11/12/2009	11/12/2009
HK0924975-1	WT-0912-0823		<15	100
HK0924975-2	WT-0912-0824		<15	100
HK0924975-3	WT-0912-0825		<15	75

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)↗	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)↗	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphate Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphate Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-PCB-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TGM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A	HS1004	HS1004, Testing	Guideline on
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082		Degradable	Containers and
				Bags	
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-nmethylpentane (C₆) and n-nonane(C₉).

↗C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency
Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925204
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 23-NOV-2009
Order number	: CV/2009/13			Issue Date	: 17-DEC-2009
C-O-C number	: H010030			No. of samples received	: 4
Site	: D381			No. of samples analysed	: 4

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925204

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

<i>Signatories</i>	<i>Position</i>	<i>Authorised results for</i>
Anh Ngoc Huynh	Senior Chemist	Organics
PP 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
Tel +852 2610 1044 Fax: +852 2610 2021 www.alsenviro.com

A Campbell Brothers Limited Company



Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID	D381 0-0.9M	D381 0.9-1.9M	D381 1.9-2.9M	D381 ELUTRIATE BLANK
				Client sampling date / time	23-NOV-2009 11:00	23-NOV-2009 11:00	23-NOV-2009 11:00	23-NOV-2009 11:00
Compound	CAS Number	LOR	Unit		HK0925204-001	HK0925204-002	HK0925204-003	HK0925204-004
ED/EK: Inorganic Nonmetallic Parameters								
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L		0.1	0.3	0.4	<0.1
EG: Metals and Major Cations - Filtered								
EG020: Arsenic	7440-38-2	10	µg/L		<10	<10	<10	<10
EG020: Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2
EG020: Chromium	7440-47-3	10	µg/L		<10	<10	<10	<10
EG020: Copper	7440-50-8	1	µg/L		<1	<1	<1	<1
EG020: Lead	7439-92-1	1	µg/L		<1	<1	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L		<0.5	<0.5	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L		<1	<1	<1	<1
EG020: Silver	7440-22-4	1	µg/L		<1	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L		<10	<10	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)								
Naphthalene	91-20-3	0.2	µg/L		<0.2	<0.2	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L		<0.2	<0.2	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L		<0.2	<0.2	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L		<0.2	<0.2	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L		<0.2	<0.2	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L		<0.2	<0.2	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L		<0.2	<0.2	<0.2	<0.2
Benz(a)anthracene	56-55-3	0.2	µg/L		<0.2	<0.2	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L		<0.4	<0.4	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L		<0.2	<0.2	<0.2	<0.2
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L		<0.2	<0.2	<0.2	<0.2
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L		<0.2	<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L		<0.2	<0.2	<0.2	<0.2
Low M.W. PAHs	---	2.2	µg/L		<2.2	<2.2	<2.2	<2.2
High M.W. PAHs	---	6.8	µg/L		<6.8	<6.8	<6.8	<6.8
EP-065A: PCB Single Congeners								
PCB 8	34883-43-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L		<0.05	<0.05	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L		<0.05	<0.05	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L		<0.05	<0.05	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L		<0.05	<0.05	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L		<0.05	<0.05	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L		<0.05	<0.05	<0.05	<0.05



Sub-Matrix: ELUTRIATE				Client sample ID	D381 0-0.9M	D381 0.9-1.9M	D381 1.9-2.9M	D381 ELUTRIATE BLANK
Client sampling date / time				23-NOV-2009 11:00	23-NOV-2009 11:00	23-NOV-2009 11:00	23-NOV-2009 11:00	
Compound	CAS Number	LOR	Unit	HK0925204-001	HK0925204-002	HK0925204-003	HK0925204-004	
EP-065A: PCB Single Congeners - Continued								
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	
EP-067A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
Nitrobenzene -d5	4165-60-0	0.1	%	57.7	51.4	51.3	51.9	
4-Terphenyl-d14	1718-51-0	0.1	%	65.6	71.1	68.3	82.0	
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	83.8	79.1	96.1	81.8	
EP-067S: Pesticide Surrogate							Surrogate control limits listed at end of this report.	
Tetrachlorometaxylene	877-09-8	0.1	%	55.8	54.7	50.1	56.0	
Dibutylchlorendate	1770-80-5	0.1	%	92.9	109	112	116	



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1180498)								
HK0925196-001	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0
HK0925204-001	D381 0-0.9M	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180498)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	96.5	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	97.7	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	105	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	110	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	97.3	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	102	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	111	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	91.8	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	107	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179458)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	55.3	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	56.1	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	73.2	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	66.3	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	57.2	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	58.9	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	68.9	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	73.2	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
		LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Method: Compound	CAS Number					LCS	DCS	Low	High	Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179458) - Continued											
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	67.6	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	79.5	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	67.9	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	65.4	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	76.5	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	53.8	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	59.6	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1179459)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	.1 µg/L	82.1	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	.1 µg/L	82.4	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	.1 µg/L	83.6	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	.1 µg/L	84.6	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	.1 µg/L	91.6	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	.1 µg/L	90.6	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	.1 µg/L	89.7	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	.1 µg/L	80.8	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	.1 µg/L	88.2	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	.1 µg/L	85.6	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	.1 µg/L	86.3	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	.1 µg/L	83.3	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	.1 µg/L	88.9	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	.1 µg/L	85.3	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	86.6	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	84.6	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	83.3	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1179456)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	74.9	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	76.4	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	85.6	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	38.0	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	94.1	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	106	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	94.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	93.3	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	98.4	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	85.4	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	21.6	---	3	151	---	---

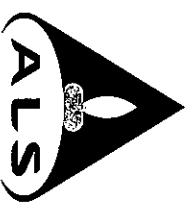
Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report



Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180498)										
HK0925196-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	102	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	93.6	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	106	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	105	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	95.4	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	104	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	105	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	91.2	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	104	---	75	125	---	---

Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130



ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
ALS TECHNICHEM (HK) Pty Ltd
Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT: MR C M YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: D381

Batch: HK0925204
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 23/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 4
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.


Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925204-001	D381	23/11/2009
HK0925204-002	D381	23/11/2009
HK0925204-003	D381	23/11/2009
HK0925204-004	D381	23/11/2009

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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Mr Chan Kwok Fai, Godfrey
Laboratory Manager, Hong Kong

Other ALS Environmental Laboratories This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.

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Vancouver
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Arimotagasta
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

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**
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 www.alsenviro.com
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Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020077
Folder No : 0909035
Page No : 1 of 2
Date of Issue : 04/01/2010

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

Sample Description : 4 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 04/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBT/l)	Surrogate Compound Recovery (%)
HK0925204-1	WT-0912-0299	Sample No Analysis Date	WTM-TBT-1 04/12/2009	WTM-TBT-1 04/12/2009
HK0925204-2	WT-0912-0300		<11	82
HK0925204-3	WT-0912-0301		<11	85
HK0925204-4	WT-0912-0302		<12	77

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphorus Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphorus Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-PCH-2	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-1	USEPA 8082
TriButyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	TriButyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCH-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-nmethylpentane (C₆) and n-nonane(C₉).

▲C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency
Krone *et al* – Marine Environmental research, 27, 1-18, 1989

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: LAM GEOTECHNICS LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 7
Contact	: MR C M YEE	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK0925201
Address	: 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WANCHAI, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Samuel@Lamconstruct.com.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2839 5633	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: LG29024	Quote number	: HK/1313/2009**	Date Samples Received	: 23-NOV-2009
Order number	: CV/2009/13			Issue Date	: 17-DEC-2009
C-O-C number	: H010032			No. of samples received	: 3
Site	: D386			No. of samples analysed	: 3

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-NOV-2009
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: HK0925201

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in an ambient condition.

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

Elutriate sample(s) were filtered prior to dissolved metal analysis.

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

Signatories

Anh Ngoc Huynh

PP Fung Lim Chee, Richard

Position

Senior Chemist

General Manager

Authorised results for

Organics

Inorganics

ALS Laboratory Group

Trading Name: ALS Technichem (HK) Pty Ltd

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Analytical Results

Sub-Matrix: ELUTRIATE

				Client sample ID		
				D386 0-0.9M	D386 0.9-1.9M	D386 ELUTRIATE BLANK
				23-NOV-2009 15:00	23-NOV-2009 15:00	23-NOV-2009 15:00
				HK0925201-001	HK0925201-002	HK0925201-003
Compound	CAS Number	LOR	Unit	Client sampling date / time		
ED/EK: Inorganic Nonmetallic Parameters						
EK055K: Unionized Ammonia (as N)	---	0.1	mg/L	0.4	0.3	<0.1
EG: Metals and Major Cations - Filtered						
EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	<10
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2
EG020: Chromium	7440-47-3	10	µg/L	<10	<10	<10
EG020: Copper	7440-50-8	1	µg/L	<1	<1	1
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5
EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1
EG020: Silver	7440-22-4	1	µg/L	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs)						
Naphthalene	91-20-3	0.2	µg/L	<0.2	<0.2	<0.2
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	<0.2	<0.2
Acenaphthene	83-32-9	0.2	µg/L	<0.2	<0.2	<0.2
Fluorene	86-73-7	0.2	µg/L	<0.2	<0.2	<0.2
Phenanthrene	85-01-8	0.2	µg/L	<0.2	<0.2	<0.2
Anthracene	120-12-7	0.2	µg/L	<0.2	<0.2	<0.2
Fluoranthene	206-44-0	0.2	µg/L	<0.2	<0.2	<0.2
Pyrene	129-00-0	0.2	µg/L	<0.2	<0.2	<0.2
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	<0.2	<0.2
Chrysene	218-01-9	0.2	µg/L	<0.2	<0.2	<0.2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	<0.4	<0.4
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	<0.2	<0.2
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	<0.2	<0.2
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	<0.2	<0.2
Low M.W. PAHs	---	2.2	µg/L	<2.2	<2.2	<2.2
High M.W. PAHs	---	6.8	µg/L	<6.8	<6.8	<6.8
EP-065A: PCB Single Congeners						
PCB 8	34883-43-7	0.05	µg/L	<0.05	<0.05	<0.05
PCB 18	37680-65-2	0.05	µg/L	<0.05	<0.05	<0.05
PCB 28	7012-37-5	0.05	µg/L	<0.05	<0.05	<0.05
PCB 52	35693-99-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 44	41464-39-5	0.05	µg/L	<0.05	<0.05	<0.05
PCB 66	32598-10-0	0.05	µg/L	<0.05	<0.05	<0.05
PCB 101	37680-73-2	0.05	µg/L	<0.05	<0.05	<0.05
PCB 77	32598-13-3	0.05	µg/L	<0.05	<0.05	<0.05
PCB 118	31508-00-6	0.05	µg/L	<0.05	<0.05	<0.05
PCB 153	35065-27-1	0.05	µg/L	<0.05	<0.05	<0.05



Sub-Matrix: ELUTRIATE				Client sample ID	D386 0-0.9M	D386 0.9-1.9M	D386 ELUTRIATE BLANK		
Client sampling date / time				23-NOV-2009 15:00	23-NOV-2009 15:00	23-NOV-2009 15:00			
Compound	CAS Number	LOR	Unit	HK0925201-001	HK0925201-002	HK0925201-003			
EP-065A: PCB Single Congeners - Continued									
PCB 105	32598-14-4	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 126	57465-28-8	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 187	52663-68-0	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 128	38380-07-3	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 180	35065-29-3	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 169	60044-26-0	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 170	35065-30-6	0.05	µg/L	<0.05	<0.05	<0.05			
PCB 138	35065-28-2	0.05	µg/L	<0.05	<0.05	<0.05			
EP-067A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5			
beta- & gamma-BHC	319-85-7 58-89-9	1.0	µg/L	<1.0	<1.0	<1.0			
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5			
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5			
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5			
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5			
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5			
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5			
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5			
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5			
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0			
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.		
Nitrobenzene -d5	4165-60-0	0.1	%	56.0	61.8	72.7			
4-Terphenyl-d14	1718-51-0	0.1	%	74.6	77.5	83.1			
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.		
Decachlorobiphenyl	2051-24-3	0.1	%	97.0	93.1	82.8			
EP-067S: Pesticide Surrogate							Surrogate control limits listed at end of this report.		
Tetrachlorometaxylene	877-09-8	0.1	%	51.5	55.1	51.2			
Dibutylchlorendate	1770-80-5	0.1	%	120	117	115			



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 (%)
EG: Metals and Major Cations - Filtered (QC Lot: 1180498)								
HK0925196-001	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0
HK0925204-001	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Silver	7440-22-4	1	µg/L	<1	<1	0.0
		EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	10	µg/L	<10	<10	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	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						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180498)											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	96.5	---	85	115	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	100 µg/L	97.7	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<10	100 µg/L	105	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	110	---	85	115	---	---
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	97.3	---	85	115	---	---
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	102	---	85	115	---	---
EG020: Nickel	7440-02-0	1	µg/L	<1	100 µg/L	111	---	85	115	---	---
EG020: Silver	7440-22-4	1	µg/L	<1	100 µg/L	91.8	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	107	---	85	115	---	---
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179458)											
Naphthalene	91-20-3	0.2	µg/L	<0.2	1 µg/L	55.3	---	50	130	---	---
Acenaphthylene	208-96-8	0.2	µg/L	<0.2	1 µg/L	56.1	---	50	130	---	---
Acenaphthene	83-32-9	0.2	µg/L	<0.2	1 µg/L	73.2	---	50	130	---	---
Fluorene	86-73-7	0.2	µg/L	<0.2	1 µg/L	66.3	---	50	130	---	---
Phenanthrene	85-01-8	0.2	µg/L	<0.2	1 µg/L	57.2	---	50	130	---	---
Anthracene	120-12-7	0.2	µg/L	<0.2	1 µg/L	58.9	---	50	130	---	---
Fluoranthene	206-44-0	0.2	µg/L	<0.2	1 µg/L	68.9	---	50	130	---	---
Pyrene	129-00-0	0.2	µg/L	<0.2	1 µg/L	73.2	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EP-076: Polycyclic Aromatics Hydrocarbons (PAHs) (QC Lot: 1179458) - Continued											
Benz(a)anthracene	56-55-3	0.2	µg/L	<0.2	1 µg/L	67.6	---	50	130	---	---
Chrysene	218-01-9	0.2	µg/L	<0.2	1 µg/L	79.5	---	50	130	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.4	µg/L	<0.4	2 µg/L	67.9	---	50	130	---	---
Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.2	1 µg/L	65.4	---	50	130	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<0.2	1 µg/L	76.5	---	50	130	---	---
Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	<0.2	1 µg/L	53.8	---	50	130	---	---
Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	<0.2	1 µg/L	59.6	---	50	130	---	---
Low M.W. PAHs	---	2.2	µg/L	<2.2	---	---	---	---	---	---	---
High M.W. PAHs	---	6.8	µg/L	<6.8	---	---	---	---	---	---	---
EP-065A: PCB Single Congeners (QC Lot: 1179454)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	1 µg/L	112	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	1 µg/L	91.9	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	1 µg/L	113	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	1 µg/L	90.3	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	1 µg/L	85.1	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	1 µg/L	111	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	1 µg/L	83.8	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	1 µg/L	87.3	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	1 µg/L	81.1	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	1 µg/L	84.2	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	1 µg/L	82.0	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	1 µg/L	89.6	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	1 µg/L	80.8	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	1 µg/L	83.9	---	50	130	---	---
PCB 180	35065-29-3	0.01	µg/L	<0.01	1 µg/L	88.0	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	1 µg/L	91.3	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	1 µg/L	87.7	---	50	130	---	---
EP-065A: PCB Single Congeners (QC Lot: 1179459)											
PCB 8	34883-43-7	0.01	µg/L	<0.01	1 µg/L	82.1	---	50	130	---	---
PCB 18	37680-65-2	0.01	µg/L	<0.01	1 µg/L	82.4	---	50	130	---	---
PCB 28	7012-37-5	0.01	µg/L	<0.01	1 µg/L	83.6	---	50	130	---	---
PCB 52	35693-99-3	0.01	µg/L	<0.01	1 µg/L	84.6	---	50	130	---	---
PCB 44	41464-39-5	0.01	µg/L	<0.01	1 µg/L	91.6	---	50	130	---	---
PCB 66	32598-10-0	0.01	µg/L	<0.01	1 µg/L	90.6	---	50	130	---	---
PCB 101	37680-73-2	0.01	µg/L	<0.01	1 µg/L	89.7	---	50	130	---	---
PCB 77	32598-13-3	0.01	µg/L	<0.01	1 µg/L	80.8	---	50	130	---	---
PCB 118	31508-00-6	0.01	µg/L	<0.01	1 µg/L	88.2	---	50	130	---	---
PCB 153	35065-27-1	0.01	µg/L	<0.01	1 µg/L	85.6	---	50	130	---	---
PCB 105	32598-14-4	0.01	µg/L	<0.01	1 µg/L	86.3	---	50	130	---	---
PCB 126	57465-28-8	0.01	µg/L	<0.01	1 µg/L	83.3	---	50	130	---	---
PCB 187	52663-68-0	0.01	µg/L	<0.01	1 µg/L	88.9	---	50	130	---	---
PCB 128	38380-07-3	0.01	µg/L	<0.01	1 µg/L	85.3	---	50	130	---	---



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicates (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EP-065A: PCB Single Congeners (QC Lot: 1179459) - Continued											
PCB 180	35065-29-3	0.01	µg/L	<0.01	.1 µg/L	86.6	---	50	130	---	---
PCB 169	60044-26-0	0.01	µg/L	<0.01	.1 µg/L	84.6	---	50	130	---	---
PCB 170	35065-30-6	0.01	µg/L	<0.01	.1 µg/L	83.3	---	50	130	---	---
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1179456)											
alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	74.9	---	31	130	---	---
beta- & gamma-BHC	319-85-7 58-89-9	1	µg/L	<1.0	10 µg/L	76.4	---	40	134	---	---
delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	85.6	---	51	136	---	---
Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	38.0	---	1	138	---	---
Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	94.1	---	32	139	---	---
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	106	---	54	134	---	---
Endosulfan 1	959-98-8	0.5	µg/L	<0.5	5 µg/L	94.2	---	53	143	---	---
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	93.3	---	57	156	---	---
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	98.4	---	54	159	---	---
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	85.4	---	53	145	---	---
4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	21.6	---	3	151	---	---

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

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 1180498)										
HK0925196-001	Anonymous	EG020: Arsenic	7440-38-2	100 µg/L	102	---	75	125	---	---
		EG020: Cadmium	7440-43-9	100 µg/L	93.6	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	106	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	105	---	75	125	---	---
		EG020: Lead	7439-92-1	100 µg/L	95.4	---	75	125	---	---
		EG020: Mercury	7439-97-6	2 µg/L	104	---	75	125	---	---
		EG020: Nickel	7440-02-0	100 µg/L	105	---	75	125	---	---
		EG020: Silver	7440-22-4	100 µg/L	91.2	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	104	---	75	125	---	---

Surrogate Control Limits

Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
Nitrobenzene -d5	4165-60-0	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

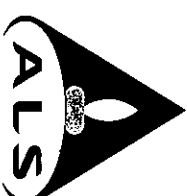


Sub-Matrix: ELUTRIATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division



CERTIFICATE OF ANALYSIS

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CLIENT: LAM GEOTECHNICS LIMITED
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WANCHAI,
HONG KONG.
PROJECT: LG29024
SITE: D386

Batch: HK0925201
Sub-batch: 1
LABORATORY: HONG KONG
DATE RECEIVED: 23/11/2009
DATE OF ISSUE: 13/01/2010
SAMPLE TYPE: WATER
No. of SAMPLES: 3
ORDER: CV/2009/13

COMMENTS

Sample(s) were received in an ambient condition.
Tributyl tin was subcontracted and tested by Hong Kong Productivity Council.
Hong Kong Productivity Council details report was attached. The attached report contains a total of 2 pages.


Sample Details

ALS Lab ID	Sample ID	Date of Sampling
HK0925201-001	D386 0-0.9M	23/11/2009
HK0925201-002	D386 0.9-1.9M	23/11/2009
HK0925201-003	D386 ELUTRIATE BLANK	23/11/2009

ISSUING LABORATORY: HONG KONG

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Sydney	Kuala Lumpur
Newcastle	Bogor

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

Part of the **ALS Laboratory Group**
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 **www.alsenviro.com**
A Campbell Brothers Limited Company



Environment & Product Innovation Laboratory

TEST REPORT

Test Report No : T0020079
Folder No : 0909037
Page No : 1 of 2
Date of Issue : 04/01/2010

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

Sample Description : 3 elutriate water samples were delivered by the client.

Sample Received Date : 01/12/2009

Test Completed Date : 04/01/2010

Approved Signatory : Fung Kam Wing

Remarks : Contact Person : Mr. Ivan Leung. Acceptable range of surrogate compound recovery for water is 68-120%.

Analytical Results:

Sample Name	Parameter	Unit	Tributyl tin (ng TBT/l)	Surrogate Compound Recovery (%)
HK0925201-1	Method Code	WTM-TBT-1	04/12/2009	04/12/2009
	Sample No	WT-0912-0307	<12	92
HK0925201-2	Method Code	WT-0912-0308	<12	98
HK0925201-3	Method Code	WT-0912-0309	<15	86

Approval Signatory:

Notes: (1) This report may not be reproduced except with prior written approval from the issuing laboratory.

(2) Testing Conditions is shown at the back of this report and N.R. refers to test not required by the Client Company.

(3) Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.



TESTING METHODS – ORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
I. Water/Wastewater					
BTEX	WTM-BTEX-1	USEPA 8260B	BTEX	SEDIMENT-BTEX-1	USEPA 8260B
Petroleum Hydrocarbons			Petroleum Hydrocarbons		
C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-GRO-1	USEPA 8015B	C ₆ -C ₉ Gasoline range organics (GRO)*	WTM-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	WTM-DRO-1	USEPA 8015B	C ₁₀ -C ₂₈ Diesel range organics (DRO)▲	SEDIMENT-DRO-1	USEPA 8015B
C ₁₀ -C ₂₈ Petroleum Hydrocarbons	WTM-DRO-2	USEPA 8015B	C ₁₀ -C ₂₈ Petroleum Hydrocarbons	SEDIMENT-DRO-2	USEPA 8015B
Organochlorine Pesticides (OCP)	WTM-OCP-1	USEPA 8081	Organochlorine Pesticides (OCP)	SEDIMENT-OCP-1	USEPA 8081
Organophosphate Pesticides (OPP)	WTM-OPP-1	USEPA 8141	Organophosphate Pesticides (OPP)	SEDIMENT-OPP-1	USEPA 8141
Polynuclear Aromatic Hydrocarbons (PAHs)	WTM-PAH-1	USEPA 8270C	Polynuclear Aromatic Hydrocarbons (PAHs)	SEDIMENT-PAH-1	USEPA 8270C
Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B	Trihalomethane (THM)	WTM-VOC-1	USEPA 8260B
Volatile Organic Compounds (VOCs)	WTM-VOC-1	USEPA 8260B	Volatile Organic Compounds (VOCs)	SEDIMENT-P-CB-2	USEPA 8260B
Polychlorinated Biphenyls (PCBs)	WTM-PCB-1	USEPA 8082	Polychlorinated Biphenyls (PCBs)	SEDIMENT-TPCB-1	USEPA 8082
Tributyl Tin (TBT)	WTM-TBT-1	Krone <i>et al</i>	Total PCBs	SEDIMENT-TBT-1	USEPA 8082
Phenols	WTM-HENOL-1	USEPA 8270C	Tributyl Tin (TBT)	SEDIMENT-TBT-1	Krone <i>et al</i>
			Phenols	SEDIMENT-PHENOL-1	USEPA 8270C
III. Chinese Medicines					
Pesticides Residues	TCM-OCP-1	In house method	IV. Degradable Containers & Bags		
Organophosphorus Pesticide	SEDIMENT-OPP-1	In house based on USEPA 8141A		HS1004	HS1004, Testing Guideline on Degradable Containers and Bags
Polychlorinated Biphenyls (PCBs)	SEDIMENT-PCB-2	In house based on USEPA 8082			
V. Food & Biota Samples					
Polynuclear Aromatic Hydrocarbons (PAHs)	FD-PAH-1	In house based on USEPA 8270C			
Organochlorinated Pesticides (OCPs)	FD-OCP-1	In house based on USEPA 8081B			

Remarks: *C₆-C₉ Gasoline range organics content is defined as the collective concentration of all organics which elute between 2-methylpentane (C₆) and n-nonane(C₉).

▲C₁₀-C₂₈ Diesel range organics content is defined as the collective concentration of all organics which elute between n-decane(C₁₀) and N-octacosane(C₂₈).

Reference Notes: USEPA – United States Environmental Protection Agency

Krone *et al* – Marine Environmental research,27, 1-18, 1989

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division



CERTIFICATE OF ANALYSIS

CONTACT: MR CM YEE
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F, CENTER POINT,
181-185 GLOUCESTER ROAD
WAN CHAI, HONG KONG
ORDER No.: CV/2009/13
PROJECT: LG29024

Batch: HK1013092
LABORATORY: HONG KONG
DATE RECEIVED: --
DATE OF ISSUE: 15/06/2010
SAMPLE TYPE: ELUTRIATE
No. of SAMPLES: 158

COMMENTS

Summary report of various work orders of project LG29024. Detail work order number and ID were listed in the report.

NOTES

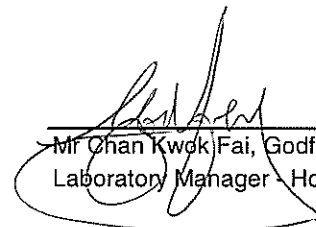
This is the Final Report and supersedes any preliminary report with this batch number.
Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

ISSUING LABORATORY: HONG KONG

Address

ALS Technichem (HK) Pty Ltd
11/F.,
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Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

AUSTRALIA		AMERICAS
Brisbane	Hong Kong	Vancouver
Melbourne	Singapore	Santiago
Sydney	Kuala Lumpur	Amtofagasta
Newcastle	Bogor	Lima

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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

Page 1 of 7

CERTIFICATE OF ANALYSIS



Batch: HK1013092
Date of Issue: 15/06/2010
Client: LAM GEOTECHNICS LIMITED
Client Reference: LG29024

			Analysis Description	Ammonia as N	Unionized Ammonia as N
			UNIT	mg/L	mg/L
			LOR	0.01	0.01
Site		Date Sampled	Laboratory ID		
S1-2	0-0.9M	14/11/2009	HK0925132001	6.96	0.63
S1-2	0.9-1.9M	14/11/2009	HK0925132002	9.26	0.83
S1-2	ELUTRIATE BLANK	14/11/2009	HK0925132003	0.10	<0.10
S2	0-0.9M	11/11/2009	HK0925079001	17.58	<0.10
S2	0.9-1.9M	11/11/2009	HK0925079002	30.80	<0.10
S2	1.9-2.9M	11/11/2009	HK0925079003	2.49	<0.10
S2	ELUTRIATE BLANK	11/11/2009	HK0925079004	0.20	<0.10
S3	0-0.9M	14/11/2009	HK0925331001	9.67	<0.10
S3	0.9-1.9M	14/11/2009	HK0925331002	10.19	<0.10
S3	1.9-2.9M	14/11/2009	HK0925331003	9.27	<0.10
S3	ELUTRIATE BLANK	14/11/2009	HK0925331004	0.35	<0.10
S4	0-0.9M	13/11/2009	HK0925098001	9.55	<0.10
S4	0.9-1.9M	13/11/2009	HK0925098002	16.76	<0.10
S4	1.9-2.9M	13/11/2009	HK0925098003	2.52	<0.10
S4	ELUTRIATE BLANK	13/11/2009	HK0925098004	0.22	<0.10
S5-2	0-0.9M	20/11/2009	HK0925194001	17.13	0.44
S5-2	0.9-1.9M	20/11/2009	HK0925194002	2.61	<0.10
S5-2	ELUTRIATE BLANK	20/11/2009	HK0925194003	0.09	<0.10
S6	0-0.9M	16/11/2009	HK0925105001	7.59	0.68
S6	0.9-1.9M	16/11/2009	HK0925105002	7.55	0.68
S6	1.9-2.9M	16/11/2009	HK0925105003	8.02	0.72
S6	ELUTRIATE BLANK	16/11/2009	HK0925105004	0.10	<0.10
S7	0-0.9M	16/11/2009	HK0925111001	8.81	0.60
S7	0.9-1.9M	16/11/2009	HK0925111002	10.09	0.69
S7	1.9-2.9M	16/11/2009	HK0925111003	9.46	0.64
S7	ELUTRIATE BLANK	16/11/2009	HK0925111004	0.12	<0.10
S8	0-0.9M	16/11/2009	HK0925088001	5.76	<0.10
S8	0.9-1.9M	16/11/2009	HK0925088002	3.76	<0.10
S8	ELUTRIATE BLANK	16/11/2009	HK0925088003	<0.10	<0.10

Comment: Elutriate sample(s) analysed and reported on an as received basis.
 The LOR (Limit of Reporting) is 0.10mg/L since the original LOR is 0.1mg/L during first analysis.
 Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.
 Sample(s) were received in an ambient condition.

ALS Technichem (HK) Pty Ltd

CERTIFICATE OF ANALYSIS



Batch: HK1013092
Date of Issue: 15/06/2010
Client: LAM GEOTECHNICS LIMITED
Client Reference: LG29024

			Analysis Description	Ammonia as N	Unionized Ammonia as N
			UNIT	mg/L	mg/L
			LOR	0.01	0.01
Site		Date Sampled	Laboratory ID		
S9	0-0.9M	20/11/2009	HK0925195001	13.43	<0.10
S9	0.9-1.9M	20/11/2009	HK0925195002	0.70	<0.10
S9	ELUTRIATE BLANK	20/11/2009	HK0925195003	0.29	<0.10
S10	0-0.9M	12/11/2009	HK0925091001	21.07	0.10
S10	0.9-1.9M	12/11/2009	HK0925091002	8.02	<0.10
S10	1.9-2.9M	12/11/2009	HK0925091003	4.58	<0.10
S10	ELUTRIATE BLANK	12/11/2009	HK0925091004	0.23	<0.10
S11	0-0.9M	16/11/2009	HK0925126001	1.11	<0.10
S11	0.9-1.9M	16/11/2009	HK0925126002	1.42	<0.10
S11	ELUTRIATE BLANK	16/11/2009	HK0925126003	<0.10	<0.10
S12	0-0.9M	13/11/2009	HK0925100001	7.82	<0.10
S12	0.9-1.9M	13/11/2009	HK0925100002	4.88	<0.10
S12	1.9-2.9M	13/11/2009	HK0925100003	5.02	<0.10
S12	ELUTRIATE BLANK	13/11/2009	HK0925100004	0.22	<0.10
S13	--	18/11/2009	HK0925333001	3.24	0.11
	ELUTRIATE BLANK	18/11/2009	HK0925333002	0.62	<0.10
S14	--	24/11/2009	HK0924956001	2.54	<0.10
S14	ELUTRIATE BLANK	24/11/2009	HK0924956002	<0.10	<0.10
S15	0-0.9M	13/11/2009	HK0925102001	9.00	<0.10
S15	0.9-1.9M	13/11/2009	HK0925102002	4.89	<0.10
S15	1.9-2.9M	13/11/2009	HK0925102003	4.50	<0.10
S15	ELUTRIATE BLANK	13/11/2009	HK0925102004	0.22	<0.10
S17	0-0.9M	12/11/2009	HK0925096001	5.07	<0.10
S17	0.9-1.9M	12/11/2009	HK0925096002	9.09	<0.10
S17	ELUTRIATE BLANK	12/11/2009	HK0925096003	<0.10	<0.10
S18	--	24/11/2009	HK0924957001	6.07	0.18
	ELUTRIATE BLANK	24/11/2009	HK0924957002	<0.10	<0.10

CERTIFICATE OF ANALYSIS



Batch: HK1013092
Date of Issue: 15/06/2010
Client: LAM GEOTECHNICS LIMITED
Client Reference: LG29024

		Analysis Description		Ammonia as N	Unionized Ammonia as N
		UNIT		mg/L	mg/L
		LOR		0.01	0.01
Site		Date Sampled	Laboratory ID		
S19	0-0.9M	12/11/2009	HK0925093001	9.76	<0.10
S19	0.9-1.9M	12/11/2009	HK0925093002	9.46	<0.10
S19	1.9-2.9M	12/11/2009	HK0925093003	10.26	<0.10
S19	ELUTRIATE BLANK	12/11/2009	HK0925093004	0.25	<0.10
S21	0-0.9M	13/11/2009	HK0925103001	7.53	<0.10
S21	0.9-1.9M	13/11/2009	HK0925103002	7.52	<0.10
S21	1.9-2.9M	13/11/2009	HK0925103003	7.92	<0.10
S21	ELUTRIATE BLANK	13/11/2009	HK0925103004	0.22	<0.10
S29	--	24/11/2009	HK0924962001	1.22	<0.10
S29	ELUTRIATE BLANK	24/11/2009	HK0924962002	<0.10	<0.10
D174	0-0.9M	16/11/2009	HK0925109001	2.23	0.22
D174	0.9-1.9M	16/11/2009	HK0925109002	4.95	0.49
D174	1.9-2.9M	16/11/2009	HK0925109003	5.17	0.51
D174	ELUTRIATE BLANK	16/11/2009	HK0925109004	<0.10	<0.10
D196	0-0.9M	16/11/2009	HK0925146001	2.94	0.26
D196	0.9-1.9M	16/11/2009	HK0925146002	2.87	0.25
D196	1.9-2.9M	16/11/2009	HK0925146003	3.40	0.30
D196	ELUTRIATE BLANK	16/11/2009	HK0925146004	0.12	<0.10
D202	0-0.9M	18/11/2009	HK0925176001	3.57	0.15
D202	0.9-1.9M	18/11/2009	HK0925176002	9.28	0.39
D202	1.9-2.9M	18/11/2009	HK0925176003	10.19	0.43
D202	ELUTRIATE BLANK	18/11/2009	HK0925176004	<0.10	<0.10
D214	0-0.9M	18/11/2009	HK0925177001	3.11	0.18
D214	0.9-1.9M	18/11/2009	HK0925177002	9.99	0.59
D214	1.9-2.9M	18/11/2009	HK0925177003	10.63	0.63
D214	ELUTRIATE BLANK	18/11/2009	HK0925177004	<0.10	<0.10
D221	0-0.9M	16/11/2009	HK0925108001	1.24	<0.10
D221	0.9-1.9M	16/11/2009	HK0925108002	1.66	0.13
D221	ELUTRIATE BLANK	16/11/2009	HK0925108003	0.25	<0.10

CERTIFICATE OF ANALYSIS



Batch: HK1013092
Date of Issue: 15/06/2010
Client: LAM GEOTECHNICS LIMITED
Client Reference: LG29024

		Analysis Description		Ammonia as N	Unionized Ammonia as N
		UNIT		mg/L	mg/L
		LOR		0.01	0.01
Site		Date Sampled	Laboratory ID		
D234	0-0.9M	18/11/2009	HK0925179001	4.00	0.22
D234	0.9-1.9M	18/11/2009	HK0925179002	9.96	0.56
D234	1.9-2.9M	18/11/2009	HK0925179003	11.93	0.67
D234	ELUTRIATE BLANK	18/11/2009	HK0925179004	<0.10	<0.10
D238	0-0.9M	17/11/2009	HK0925161001	14.28	1.04
D238	0.9-1.9M	17/11/2009	HK0925161002	15.79	1.15
D238	1.9-2.9M	17/11/2009	HK0925161003	18.97	1.38
D238	ELUTRIATE BLANK	17/11/2009	HK0925161004	0.16	<0.10
S30	0-0.9M	17/11/2009	HK0925159001	14.45	0.68
S30	0.9-1.9M	17/11/2009	HK0925159002	15.56	0.73
S30	1.9-2.9M	17/11/2009	HK0925159003	17.05	0.80
S30	ELUTRIATE BLANK	17/11/2009	HK0925159004	<0.10	<0.10
D272	--	24/11/2009	HK0924977001	1.19	<0.10
D272	ELUTRIATE BLANK	24/11/2009	HK0924977002	<0.10	<0.10
S32	0-0.9M	17/11/2009	HK0925156001	4.10	0.25
S32	0.9-1.9M	17/11/2009	HK0925156002	9.91	0.59
S32	1.9-2.9M	17/11/2009	HK0925156003	10.71	0.64
S32	ELUTRIATE BLANK	17/11/2009	HK0925156004	<0.10	<0.10
D298	0-0.9M	18/11/2009	HK0925185001	1.02	<0.10
D298	0.9-1.9M	18/11/2009	HK0925185002	12.52	0.42
D298	1.9-2.9M	18/11/2009	HK0925185003	13.31	0.45
D298	ELUTRIATE BLANK	18/11/2009	HK0925185004	<0.10	<0.10
S34	0-0.9M	17/11/2009	HK0925160001	3.90	0.12
S34	0.9-1.9M	17/11/2009	HK0925160002	9.86	0.30
S34	1.9-2.9M	17/11/2009	HK0925160003	10.28	0.32
S34	ELUTRIATE BLANK	17/11/2009	HK0925160004	<0.10	<0.10
S35	0-0.9M	18/11/2009	HK0925187001	12.26	0.42
S35	0.9-1.9M	18/11/2009	HK0925187002	15.26	0.52
S35	1.9-2.9M	18/11/2009	HK0925187003	15.64	0.53
S35	ELUTRIATE BLANK	18/11/2009	HK0925187004	<0.10	<0.10

CERTIFICATE OF ANALYSIS



Batch: HK1013092
Date of Issue: 15/06/2010
Client: LAM GEOTECHNICS LIMITED
Client Reference: LG29024

				Analysis Description	Ammonia as N	Unionized Ammonia as N
				UNIT	mg/L	mg/L
				LOR	0.01	0.01
Site		Date Sampled	Laboratory ID			
D320	0-0.9M	17/11/2009	HK0925162001	4.13	0.18	
D320	0.9-1.9M	17/11/2009	HK0925162002	10.19	0.46	
D320	1.9-2.9M	17/11/2009	HK0925162003	10.36	0.47	
D320	ELUTRIATE BLANK	17/11/2009	HK0925162004	<0.10	<0.10	
D330	0-0.9M	19/11/2009	HK0925168001	0.38	<0.10	
D330	0.9-1.9M	19/11/2009	HK0925168002	0.11	<0.10	
D330	ELUTRIATE BLANK	19/11/2009	HK0925168003	<0.10	<0.10	
D337	0-0.9M	19/11/2009	HK0925173001	0.35	<0.10	
D337	0.9-1.9M	19/11/2009	HK0925173002	0.44	<0.10	
D337	1.9-2.9M	19/11/2009	HK0925173003	0.67	<0.10	
D337	ELUTRIATE BLANK	19/11/2009	HK0925173004	<0.10	<0.10	
S40	0-0.9M	19/11/2009	HK0925163001	0.44	<0.10	
S40	0.9-1.9M	19/11/2009	HK0925163002	1.45	<0.10	
S40	ELUTRIATE BLANK	19/11/2009	HK0925163003	<0.10	<0.10	
D355	0-0.9M	19/11/2009	HK0925165001	1.01	<0.10	
D355	0.9-1.9M	19/11/2009	HK0925165002	0.49	<0.10	
D355	ELUTRIATE BLANK	19/11/2009	HK0925165003	<0.10	<0.10	
D362	0-0.9M	23/11/2009	HK0925199001	2.66	<0.10	
D362	0.9-1.9M	23/11/2009	HK0925199002	8.66	0.22	
D362	ELUTRIATE BLANK	23/11/2009	HK0925199003	<0.10	<0.10	
S44	0-0.9M	23/11/2009	HK0925198001	9.53	0.28	
S44	0.9-1.9M	23/11/2009	HK0925198002	7.51	0.22	
S44	ELUTRIATE BLANK	23/11/2009	HK0925198003	<0.10	<0.10	
D374	0-0.9M	23/11/2009	HK0925196001	7.18	0.22	
D374	0.9-1.9M	23/11/2009	HK0925196002	1.24	<0.10	
D374	ELUTRIATE BLANK	23/11/2009	HK0925196003	<0.10	<0.10	
S47	0-0.9M	24/11/2009	HK0924974001	1.85	<0.10	
S47	0.9-1.9M	24/11/2009	HK0924974002	5.75	0.16	
S47	ELUTRIATE BLANK	24/11/2009	HK0924974003	0.15	<0.10	

CERTIFICATE OF ANALYSIS

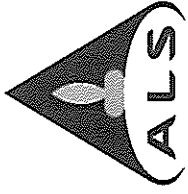


Batch: HK1013092
Date of Issue: 15/06/2010
Client: LAM GEOTECHNICS LIMITED
Client Reference: LG29024

			Analysis Description	Ammonia as N	Unionized Ammonia as N
			UNIT	mg/L	mg/L
			LOR	0.01	0.01
Site		Date Sampled	Laboratory ID		
D378	0-0.9M	24/11/2009	HK0924975001	3.50	<0.10
D378	0.9-1.9M	24/11/2009	HK0924975002	10.93	0.30
D378	ELUTRIATE BLANK	24/11/2009	HK0924975003	0.16	<0.10
D381	0-0.9M	23/11/2009	HK0925204001	3.74	0.13
D381	0.9-1.9M	23/11/2009	HK0925204002	9.95	0.34
D381	1.9-2.9M	23/11/2009	HK0925204003	12.10	0.41
D381	ELUTRIATE BLANK	23/11/2009	HK0925204004	<0.10	<0.10
S50	0-0.9M	23/11/2009	HK0925206001	10.75	0.39
S50	0.9-1.9M	23/11/2009	HK0925206002	11.60	0.42
S50	1.9-2.9M	23/11/2009	HK0925206003	16.35	0.59
S50	ELUTRIATE BLANK	23/11/2009	HK0925206004	<0.10	<0.10
D386	0-0.9M	23/11/2009	HK0925201001	11.34	0.40
D386	0.9-1.9M	23/11/2009	HK0925201002	8.32	0.29
D386	ELUTRIATE BLANK	23/11/2009	HK0925201003	<0.10	<0.10

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
Contact : MR C M YEE
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181-185 GLOUCESTER ROAD,
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Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009701
Site : S1-2

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 -3
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Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011618
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

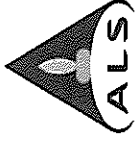
PT Fung Lim Chee, Richard 

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011618, Amendment 1

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 03-JUN-2010
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: HK1011618

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

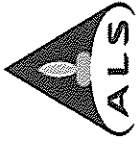
Elutriate sample(s) analysed and reported on an as received basis.



Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011618, Amendment 1

Analytical Results

Sub-Matrix: ELUTRIATE	S1-2	Client sample ID	Client sampling date / time
Compound	CAS Number	LOR	Unit
ED/EK: Inorganic Nonmetallic Parameters			
EK055A: Ammonia as N	7664-41-7	0.01	mg/L
EK055K: Unionized Ammonia (as N)	----	0.01	mg/L
			2.23
			0.16



Page Number : 4 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011618, Amendment 1

Sub-Matrix: SEAWATER		Client sample ID	Client sampling date / time	
Compound	CAS Number	LOR	Unit	
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.15
EK055K: Unionized Ammonia (as N)	---	0.01	mg/L	0.01



Laboratory Duplicate (DUP) Report

Matrix: WATER		Method: Compound		Laboratory Duplicate (DUP) Report			
Laboratory sample ID	Client sample ID	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)							
HK1011796-002	Anonymous	EK055A: Ammonia as N	0.01	mg/L	3.63	3.57	1.7
HK1011796-003	Anonymous	EK055A: Ammonia as N	0.01	mg/L	3.64	3.57	1.9

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

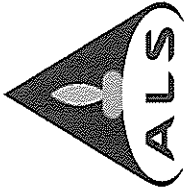
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report							
Method: Compound	CAS Number	LOR	Unit	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	High	Low	Value	Control Limit	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)											
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.5 mg/L	101	<0.01	85	115	---	---	---

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

Matrix: WATER		Method: Compound		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report							
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	MSD	Recovery Limits (%)	High	Low	Value	Control Limit	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)											
HK1011659-001	Anonymous	EK055A: Ammonia as N	0.5 mg/L	124	75	---	125	---	---	---	---

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
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E-mail : Samuel@Lamconstruct.com.hk
Telephone : +852 2839 5633
Facsimile : *****
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009705
Site : S2

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011653
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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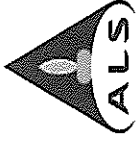
PP Fung Lim Chee, Richard 

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order HK1011653, Amendment 1

General Comments

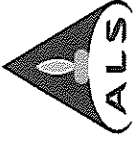
This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 03-JUN-2010
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: HK1011653

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

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



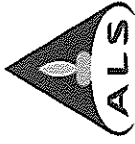
Analytical Results

Sub-Matrix: ELUTRIATE	CAS Number	LOR	Unit	Client sample ID	Client sampling date / time
				S2	29-MAY-2010 11:20
					HK1011653-001
ED/EK: Inorganic Nonmetallic Parameters					
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	13.2	
EK055K: Unionized Ammonia (as N)		0.01	mg/L	1.18	



Sub-Matrix: SEAWATER

Compound	CAS Number	LOR	Client sample ID	
			Client sampling date / time	Unit
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	29-MAY-2010 11:20	0.14 mg/L
EK055K: Unionized Ammonia (as N)	---	0.01	HK1011653-002	0.01 mg/L



Laboratory Duplicate (DUP) Report

Matrix: WATER		Method: Compound		Laboratory Duplicate (DUP) Report			
Laboratory sample ID	Client sample ID	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)							
HK1011796-004	Anonymous	EK055A: Ammonia as N	0.01	mg/L	3.70	3.85	4.0
HK1011688-008	Anonymous	EK055A: Ammonia as N	0.01	mg/L	<0.01	<0.01	0.0

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

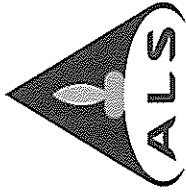
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report							
Method: Compound	CAS Number	LOR	Unit	Spike Concentration	Spike Recovery (%)	LCS	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)											
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.5 mg/L	<0.01	98.6	85 - 115	85	115	---	---

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

Matrix: WATER		Method: Compound		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report							
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	Spike Recovery (%)	MSD	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)											
HK1011744-001	Anonymous	EK055A: Ammonia as N	0.5 mg/L	98.0	---	---	75 - 125	75	125	---	---

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
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Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009701
Site : S3

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011622
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

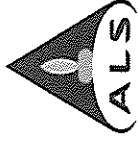
PF Fung Lim Chee, Richard

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011622, Amendment 1

General Comments

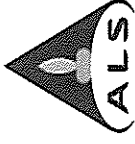
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011622

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

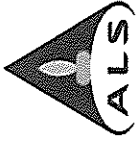
Sample(s) were received in a chilled condition.

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



Analytical Results

Sub-Matrix: ELUTRIATE	Client sample ID	Client sampling date / time	CAS Number	LOR	Unit
	S3	29-MAY-2010 09:00			
		HK1011622-001			
ED/EK: Inorganic Nonmetallic Parameters					
EK055A: Ammonia as N			7664-41-7	0.01	mg/L
EK055K: Unionized Ammonia (as N)			---	0.01	mg/L
				3.03	
				0.28	

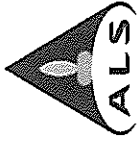


Page Number : 4 of 5

Client : LAM GEOTECHNICS LIMITED

Work Order : HK1011622, Amendment 1

Compound	Client sample ID		LOR	Unit	S3
	CAS Number	Client sampling date / time			
Sub-Matrix: SEAWATER					
ED/EK: Inorganic Nonmetallic Parameters					
EK055A: Ammonia as N	7664-41-7	29-MAY-2010 09:00	0.01	mg/L	0.13
EK055K: Unionized Ammonia (as N)	---	HK1011622-002	0.01	mg/L	0.01



Laboratory Duplicate (DUP) Report

Matrix: WATER		Method: Compound		Laboratory Duplicate (DUP) Report			
Laboratory sample ID	Client sample ID	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)							
HK1011796-002	Anonymous	EK055A: Ammonia as N	0.01	mg/L	3.63	3.57	1.7
HK1011796-003	Anonymous	EK055A: Ammonia as N	0.01	mg/L	3.64	3.57	1.9

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

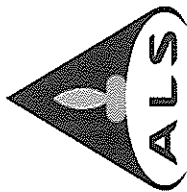
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report								
Method: Compound	CAS Number	LOR	Unit	Spike Concentration	Spike Recovery (%)	LCS	DCS	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)												
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.5 mg/L	<0.01	101	85	115	85	115	---	---

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

Matrix: WATER		Method: Compound		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	MSD	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)										
HK1011659-001	Anonymous	EK055A: Ammonia as N	0.5 mg/L	124	---	75	125	---	---	---

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
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181-185 GLOUCESTER ROAD,
WAN CHAI, HONG KONG
E-mail : Samuel@Lamconstruct.com.hk
Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009705
Site : S4

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011650
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

PP Fung Lim Chee, Richard 

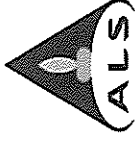
Position

General Manager

Authorised results for

Inorganics

Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011650, Amendment 1



General Comments

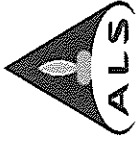
This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 03-JUN-2010
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: HK1011650

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

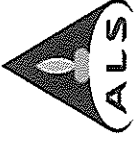
Elutriate sample(s) analysed and reported on an as received basis.



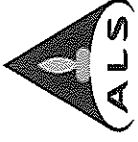
Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011650, Amendment 1

Analytical Results

Sub-Matrix: ELUTRIATE	Client sample ID		Client sampling date / time	
	CAS Number	LOR	Unit	Result
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	4.85
EK055K: Unionized Ammonia (as N)	---	0.01	mg/L	0.44



Sub-Matrix: SEAWATER	Client sample ID		S4
	CAS Number	Client sampling date / time	
Compound	LOR	Unit	HK1011650-002
ED/EK: Inorganic Nonmetallic Parameters			
EK055A: Ammonia as N	7664-41-7	0.01 mg/L	0.11
EK055K: Unionized Ammonia (as N)	---	0.01 mg/L	0.01



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 (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)								
HK1011796-004	Anonymous	EK055A: Ammonia as N	7664-41-7	0.01	mg/L	3.70	3.85	4.0
HK1011688-008	Anonymous	EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01	0.0

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

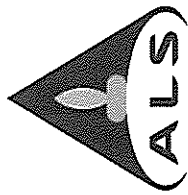
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report								
Method: Compound	CAS Number	LOR	Unit	Spike Concentration	Result	Spike Recovery (%)	DCS	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)												
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.5 mg/L	<0.01	98.6	---	85	115	---	---	---

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

Matrix: WATER		Method: Compound		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	MSD	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)										
HK1011744-001	Anonymous	EK055A: Ammonia as N	0.5 mg/L	98.0	---	75	125	---	---	---

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



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Facsimile : *****
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009701
Site : S5-2

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 -3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011632
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

Position

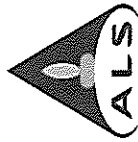
Authorised results for

PP Fung Lim Chee, Richard 

General Manager

Inorganics

Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011632, Amendment 1



General Comments

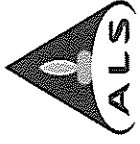
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011632

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

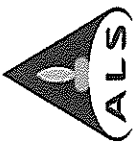
Elutriate sample(s) analysed and reported on an as received basis.



Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011632, Amendment 1

Analytical Results

Sub-Matrix: ELUTRIATE	CAS Number	LOR	Client sample ID	Client sampling date / time
			S5-2	29-MAY-2010 09:15
				HK1011632-001
Compound	CAS Number	LOR	Unit	
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	2.96
EK055K: Unionized Ammonia (as N)	---	0.01	mg/L	0.27

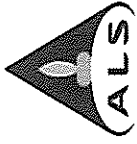


Page Number : 4 of 5

Client : LAM GEOTECHNICS LIMITED

Work Order : HK1011632, Amendment 1

Compound	CAS Number	LOR	Client sample ID	
			Client sampling date / time	Unit
Sub-Matrix: SEAWATER				
ED/EK: Inorganic Nonmetallic Parameters			S5-2	
EK055A: Ammonia as N	7664-41-7	0.01	29-MAY-2010 09:15	
EK055K: Unionized Ammonia (as N)	---	0.01	HK1011632-002	
				0.15
				0.01



Laboratory Duplicate (DUP) Report

Matrix: WATER		Method: Compound		Laboratory Duplicate (DUP) Report			
Laboratory sample ID	Client sample ID	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)							
HK1011796-002	Anonymous	EK055A: Ammonia as N	0.01	mg/L	3.63	3.57	1.7
HK1011796-003	Anonymous	EK055A: Ammonia as N	0.01	mg/L	3.64	3.57	1.9

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

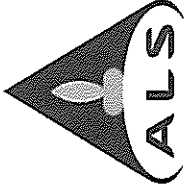
Matrix: WATER				Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report				
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	LCS	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)												
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	101	85	115	---	---	---	---

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

Matrix: WATER		Method: Compound		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	MSD	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)										
HK1011659-001	Anonymous	EK055A: Ammonia as N	0.5 mg/L	124	---	75	125	---	---	---

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
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Telephone : +852 2839 5633
Facsimile : *****
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009705
Site : S6

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
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E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011649
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

PP Fung Lim Chee, Richard

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011649, Amendment 1

General Comments

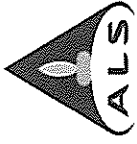
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011649

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

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

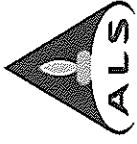


Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011649, Amendment 1

Analytical Results

Sub-Matrix: ELUTRIATE

Compound	CAS Number	LOR	Unit	Client sample ID	Client sampling date / time
ED/EK: Inorganic Nonmetallic Parameters				S6	
EK055A: Ammonia as N	7664-41-7	0.01	mg/L		29-MAY-2010 11:10
EK055K: Unionized Ammonia (as N)	----	0.01	mg/L		HK1011649-001
					8.24
					0.74



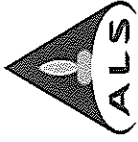
Page Number : 4 of 5

Client : LAM GEOTECHNICS LIMITED

Work Order : HK1011649, Amendment 1

Compound	Client sample ID		LOR	Unit	Client sampling date / time	S6 HK1011649-002
	CAS Number	Unit				
ED/EK: Inorganic Nonmetallic Parameters						
EK055A: Ammonia as N	7664-41-7		0.01	mg/L		0.11
EK055K: Unionized Ammonia (as N)	---		0.01	mg/L		0.01

Sub-Matrix: SEAWATER



Laboratory Duplicate (DUP) Report

Matrix: WATER		Method: Compound		Laboratory Duplicate (DUP) Report			
Laboratory sample ID	Client sample ID	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)							
HK1011796-004	Anonymous	7664-41-7	0.01	mg/L	3.70	3.85	4.0
HK1011688-008	Anonymous	7664-41-7	0.01	mg/L	<0.01	<0.01	0.0

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

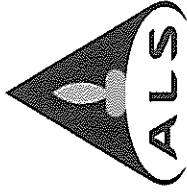
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report									
Method: Compound	CAS Number	LOR	Unit	Spike Concentration	Spike Recovery (%)	LCS	DCS	Recovery Limits (%)	High	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)													
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.5 mg/L	<0.01	98.6	---	85	115	---	---	---	---

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

Matrix: WATER		Method: Compound		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report							
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	MSD	Recovery Limits (%)	High	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)											
HK1011744-001	Anonymous	7664-41-7	0.5 mg/L	98.0	---	75	125	---	---	---	---

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

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Telephone : +852 2839 5633
Facsimile : *****
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009704
Site : S7

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011647
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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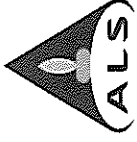
PP Fung Lim Chee, Richard

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011647, Amendment 1

General Comments

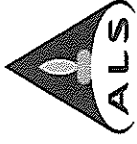
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011647

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

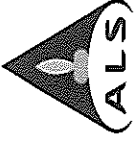
Elutriate sample(s) analysed and reported on an as received basis.



Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011647, Amendment 1

Analytical Results

Sub-Matrix: ELUTRIATE	CAS Number	LOR	Unit	Client sample ID	Client sampling date / time
ED/EK: Inorganic Nonmetallic Parameters				S7	29-MAY-2010 10:55
EK055A: Ammonia as N	7664-41-7	0.01	mg/L		HK1011647-001
EK055K: Unionized Ammonia (as N)		0.01	mg/L		



Page Number : 4 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011647, Amendment 1

Sub-Matrix: SEAWATER		Client sample ID		Client sampling date / time	
Compound	CAS Number	LOR	Unit	S7	HK1011647-002
ED/EK: Inorganic Nonmetallic Parameters					
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.10	
EK055K: Unionized Ammonia (as N)	---	0.01	mg/L	<0.01	



Page Number : 5 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011647, Amendment 1

Laboratory Duplicate (DUP) Report

Laboratory sample ID		Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)									
HK1011796-004	Anonymous		EK055A: Ammonia as N	7664-41-7	0.01	mg/L	3.70	3.85	4.0
HK1011688-008	Anonymous		EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01	0.0

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

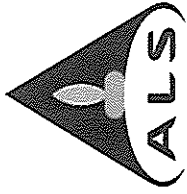
Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report									
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	LCS	Spike Recovery (%)	DCS	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)													
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	98.6	---	---	85	115	---	---	---

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

Laboratory sample ID		Client sample ID	Method: Compound	CAS Number	Spike Concentration	MS	Spike Recovery (%)	MSD	Recovery Limits (%)	Low	High	Value	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)													
HK1011744-001	Anonymous		EK055A: Ammonia as N	7664-41-7	0.5 mg/L	98.0	---	---	75	125	---	---	---

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

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E-mail : Samuel@Lamconstruct.com.hk
Telephone : +852 2839 5633
Facsimile :
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009704
Site : S8

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 -3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011648
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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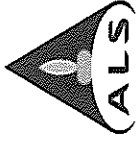
PP Fung Lim Chee, Richard

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011648, Amendment 1

General Comments

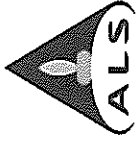
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011648

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

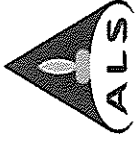
Elutriate sample(s) analysed and reported on an as received basis.



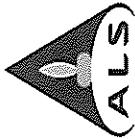
Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011648, Amendment 1

Analytical Results

Sub-Matrix: ELUTRIATE	Client sample ID	Client sampling date / time	
		LOR	Unit
	S8	29-MAY-2010 11:05	
		HK1011648-001	
ED/EK: Inorganic Nonmetallic Parameters			
EK055A: Ammonia as N	7654-41-7	0.01	mg/L
EK055K: Unionized Ammonia (as N)	---	0.01	mg/L
		3.67	
		0.34	



Sub-Matrix: SEAWATER		Client sample ID	Client sampling date / time
Compound	CAS Number	LOR	Unit
ED/EK: Inorganic Nonmetallic Parameters			
EK055A: Ammonia as N	7664-41-7	0.01	mg/L
EK055K: Unionized Ammonia (as N)		0.01	mg/L
			0.11
			0.01



Laboratory Duplicate (DUP) Report

Matrix: WATER		Method: Compound		Laboratory Duplicate (DUP) Report		
Laboratory sample ID	Client sample ID	CAS Number	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)						
HK1011796-004	Anonymous	EK055A: Ammonia as N	mg/L	3.70	3.85	4.0
HK1011688-008	Anonymous	EK055A: Ammonia as N	mg/L	<0.01	<0.01	0.0

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

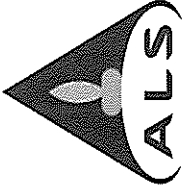
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report			
Method: Compound	CAS Number	LOR	Unit	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)							
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.5 mg/L	98.6	85 - 115	----

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

Matrix: WATER		Method: Compound		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report			
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	MSD	Recovery Limits (%)	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)							
HK1011744-001	Anonymous	EK055A: Ammonia as N	0.5 mg/L	98.0	75 - 125	----	----

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
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Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009704
Site : S10

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 -3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011646
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

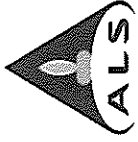
FR Fung Lim Chee, Richard 

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011646, Amendment 1

General Comments

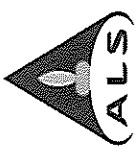
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011646

Result of Unionized ammonia was calculated from $\text{NH}_3\text{-N}$ and in-situ measurement of temperature, pH and Salinity. $\text{NH}_3\text{-N}$ results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

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



Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011646, Amendment 1

Analytical Results

Sub-Matrix: ELUTRIATE	Client sample ID		Client sampling date / time	
	CAS Number	LOR	LOR	Unit
			S10	29-MAY-2010 10:45
			HK1011646-001	
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	1.22
EK055K: Unionized Ammonia (as N)	---	0.01	mg/L	0.11

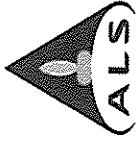
Page Number : 4 of 5

Client : LAM GEOTECHNICS LIMITED

Work Order : HK1011646, Amendment 1



Sub-Matrix: SEAWATER	Client sample ID		S10	29-MAY-2010 10:45	HK1011646-002
	CAS Number	LOR			
ED/EK: Inorganic Nonmetallic Parameters					
EK055A: Ammonia as N	7664-41-7	0.01		0.12	
EK055K: Unionized Ammonia (as N)		0.01		0.01	



Page Number : 5 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011646, Amendment 1

Laboratory Duplicate (DUP) Report

Matrix: WATER		Method: Compound		Laboratory Duplicate (DUP) Report		
Laboratory sample ID	Client sample ID	CAS Number	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)						
HK1011796-004	Anonymous	EK055A: Ammonia as N	mg/L	3.70	3.85	4.0
HK1011688-008	Anonymous	EK055A: Ammonia as N	mg/L	<0.01	<0.01	0.0

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

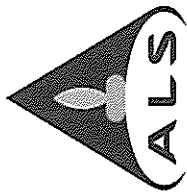
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report			
Method: Compound	CAS Number	LOR	Unit	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)							
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.5 mg/L	98.6	85 - 115	---

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

Matrix: WATER		Method: Compound				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	MSD	Recovery Limits (%)	Low	High	Value	RPD (%)	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)											
HK1011744-001	Anonymous	EK055A: Ammonia as N	0.5 mg/L	98.0	---	75 - 125	75	125	---	---	---

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
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Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009704
Site : S19

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 1/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011645
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

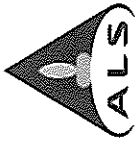
PFFung Lim Chee, Richard 

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011645, Amendment 1

General Comments

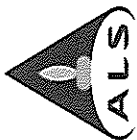
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011645

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

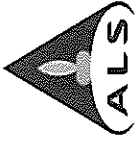
Elutriate sample(s) analysed and reported on an as received basis.



Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011645, Amendment 1

Analytical Results

Compound	CAS Number	LOR	Unit	Client sample ID	Client sampling date / time
Sub-Matrix: ELUTRIATE					
ED/EK: Inorganic Nonmetallic Parameters				S19	29-MAY-2010 10:40
EK055A: Ammonia as N	7664-41-7	0.01	mg/L		
EK055K: Unionized Ammonia (as N)		0.01	mg/L		



Page Number : 4 of 5

Client : LAM GEOTECHNICS LIMITED

Work Order : HK1011645, Amendment 1

Compound	Client sample ID	
	CAS Number	LOR
ED/EK: Inorganic Nonmetallic Parameters		
EK055A: Ammonia as N	7664-41-7	0.01
EK055K: Unionized Ammonia (as N)	----	0.01
		0.14
		0.01

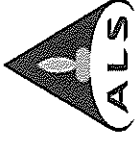
Sub-Matrix: SEAWATER

S19
29-MAY-2010 10:40
HK1011645-002

Client sampling date / time

Unit

mg/L
mg/L



Laboratory Duplicate (DUP) Report

Matrix: WATER		Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	CAS Number	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)						
HK1011796-004	Anonymous	7664-41-7	mg/L	3.70	3.85	4.0
HK1011688-008	Anonymous	7664-41-7	mg/L	<0.01	<0.01	0.0

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

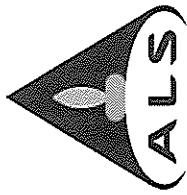
Matrix: WATER		Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	DCS	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)												
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	98.6	---	85	115	---	---	---

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

Matrix: WATER		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report									
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	MSD	Recovery Limits (%)	Low	High	Value	RPD (%)	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)											
HK1011744-001	Anonymous	EK055A: Ammonia as N	0.5 mg/L	98.0	---	75	125	---	---	---	---

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

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Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009703
Site : S21

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
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E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011643
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

PP Fung Lim Chee, Richard 

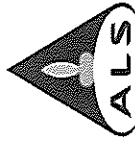
Position

General Manager

Authorised results for

Inorganics

Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011643, Amendment 1



General Comments

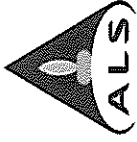
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011643

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

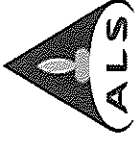
Elutriate sample(s) analysed and reported on an as received basis.



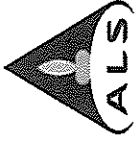
Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011643, Amendment 1

Analytical Results

Sub-Matrix: ELUTRIATE	Client sample ID		Client sampling date / time	
	CAS Number	LOR	Unit	Value
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	1.21
EK055K: Unionized Ammonia (as N)	----	0.01	mg/L	0.10



Sub-Matrix: SEAWATER		Client sample ID		Client sampling date / time	
Compound	CAS Number	LOR	Unit	S21	29-MAY-2010 10:30
ED/EK: Inorganic Nonmetallic Parameters					
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.18	
EK055K: Unionized Ammonia (as N)	---	0.01	mg/L	0.02	



Laboratory Duplicate (DUP) Report

Matrix: WATER		Laboratory Duplicate (DUP) Report	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)			
HK1011796-004	Anonymous	EK055A: Ammonia as N	7664-41-7
HK1011688-008	Anonymous	EK055A: Ammonia as N	7664-41-7
			Original Result
			3.70
			<0.01
			Duplicate Result
			3.85
			<0.01
			RPD (%)
			4.0
			0.0

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

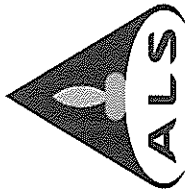
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report	
Method: Compound	CAS Number	LOR	Unit	Spike Concentration	Result
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)					
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.5 mg/L	<0.01
				LCS	98.6
				Recovery Limits (%)	
				Low	85
				High	115
				Value	----
				Control Limit	----

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

Matrix: WATER		Method: Compound		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report	
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	MSD
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)					
HK1011744-001	Anonymous	EK055A: Ammonia as N	0.5 mg/L	98.0	75
				Recovery Limits (%)	
				Low	75
				High	125
				Value	----
				Control Limit	----

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

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Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009702
Site : S30

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

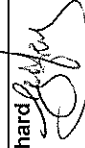
Page : 1 of 5
Work Order : HK1011637
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

Mr Fung Lim Chee, Richard 

Position

General Manager

Authorised results for

Inorganics

Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011637, Amendment 1



General Comments

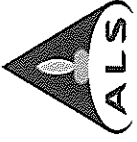
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011637

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

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



Analytical Results

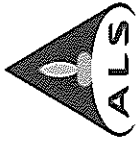
Sub-Matrix: ELUTRIATE

Compound	CAS Number	LOR	Client sample ID	
			Client sampling date / time	Unit
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	29-MAY-2010 10:00	3.43
EK055K: Unionized Ammonia (as N)	---	0.01	HK1011637-001	0.30



Sub-Matrix: SEAWATER		Client sample ID	
Compound	CAS Number	LOR	Unit
ED/EK: Inorganic Nonmetallic Parameters			
EK055A: Ammonia as N	7664-41-7	0.01	mg/L
EK055K: Unionized Ammonia (as N)		0.01	mg/L
			0.24
			0.02

S30
 29-MAY-2010 10:00
 HK1011637-002



Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report		RPD (%)
						Original Result	Duplicate Result	
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)								
HK1011796-002	Anonymous	EK055A: Ammonia as N	7664-41-7	0.01	mg/L	3.63	3.57	1.7
HK1011796-003	Anonymous	EK055A: Ammonia as N	7664-41-7	0.01	mg/L	3.64	3.57	1.9

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

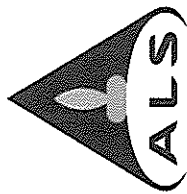
Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report										
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	LCS	Spike Recovery (%)	DCS	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)													
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	101	85	115					

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

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report													
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	MS	Spike Recovery (%)	MSD	Recovery Limits (%)	Low	High	Value	RPD (%)	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)													
HK1011659-001	Anonymous	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	124	75	125						

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

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E-mail : Samuel@Lamconstruct.com.hk
Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009702
Site : S32

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 1/F., Chung Shun Knitting Centre, 1 -3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**


Page : 1 of 5
Work Order : HK1011636
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

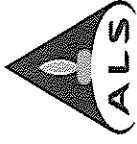
F Fung Lim Chee, Richard 

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011636, Amendment 1

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: HK1011636

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

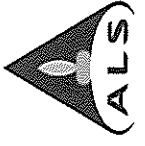
Elutriate sample(s) analysed and reported on an as received basis.



Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011636, Amendment 1

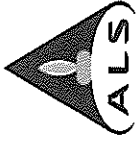
Analytical Results

Compound	CAS Number	Client sample ID	
		Client sampling date / time	Unit
ED/EK: Inorganic Nonmetallic Parameters		S32	
EK055A: Ammonia as N	7664-41-7	29-MAY-2010 09:55	
EK055K: Unionized Ammonia (as N)	----	HK1011636-001	
			3.39
			0.29



Page Number : 4 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011636, Amendment 1

Sub-Matrix: SEAWATER	Client sample ID	Client sampling date / time	CAS Number	LOR	Unit
	S32	29-MAY-2010 09:55			
		HK1011636-002			
ED/EK: Inorganic Nonmetallic Parameters					
EK055A: Ammonia as N			7664-41-7	0.01	mg/L
EK055K: Unionized Ammonia (as N)				0.01	mg/L



Laboratory Duplicate (DUP) Report

Matrix: WATER		Method: Compound		Laboratory Duplicate (DUP) Report			
Laboratory sample ID	Client sample ID	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)							
HK1011796-002	Anonymous	EK055A: Ammonia as N	0.01	mg/L	3.63	3.57	1.7
HK1011796-003	Anonymous	EK055A: Ammonia as N	0.01	mg/L	3.64	3.57	1.9

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

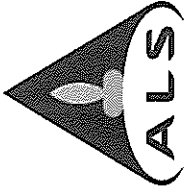
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report			
Method: Compound	CAS Number	LOR	Unit	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)							
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.5 mg/L	101	85 115	---

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

Matrix: WATER		Method: Compound		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	MSD	Recovery Limits (%)	High	Low	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)										
HK1011659-001	Anonymous	EK055A: Ammonia as N	0.5 mg/L	124	---	75 125	125	75	---	---

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

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Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009707
Site : S34

Laboratory : ALS Technichem HK Pty Ltd
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Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011663
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

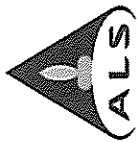
PP Fung Lim Chee, Richard 

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011663, Amendment 1

General Comments

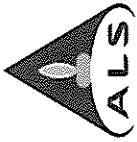
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011663

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

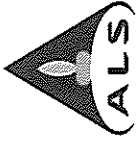
Elutriate sample(s) analysed and reported on an as received basis.



Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011663, Amendment 1

Analytical Results

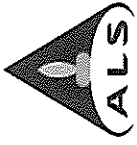
Sub-Matrix: ELUTRIATE	Client sample ID	Client sampling date / time	CAS Number	LOR	Unit
	S34	29-MAY-2010 14:15			
		HK1011663-001			
ED/EK: Inorganic Nonmetallic Parameters					
EK055A: Ammonia as N			7664-41-7	0.01	mg/L
EK055K: Unionized Ammonia (as N)			----	0.01	mg/L



Page Number : 4 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011663, Amendment 1

Compound	Client sample ID	
	CAS Number	Client sampling date / time
ED/EK: Inorganic Nonmetallic Parameters		
EK055A: Ammonia as N	7664-41-7	29-MAY-2010 14:15
EK055K: Unionized Ammonia (as N)	---	HK1011663-002
	LOR	Unit
	0.01	mg/L
	0.01	mg/L
		0.10
		0.01

Sub-Matrix: SEAWATER



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 (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)								
HK1011796-001	Anonymous	EK055A: Ammonia as N	7664-41-7	0.01	mg/L	3.59	3.37	6.3
HK1011744-001	Anonymous	EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.03	0.03	0.0

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

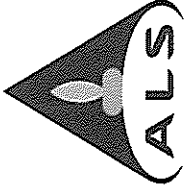
Matrix: WATER		Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	DCS	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	101	----	85	115	----	----	----
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	101	----	85	115	----	----	----

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

Matrix: WATER		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report										
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	MS	Spike Recovery (%)	MSD	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)	EK055A: Ammonia as N		7664-41-7	0.5 mg/L	# Not Determined	75	125	----	75	125	----	----
HK1011796-001	Anonymous		7664-41-7	0.5 mg/L	# Not Determined	75	125	----	75	125	----	----

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

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Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009708
Site : S35

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
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Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011664
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

PP Fung Lim Chee, Richard 

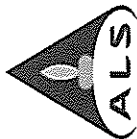
Position

General Manager

Authorised results for

Inorganics

Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011664, Amendment 1



General Comments

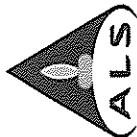
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011664

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

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



Analytical Results

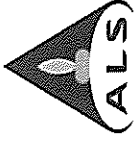
Sub-Matrix: ELUTRIATE

Compound	CAS Number	LOR	Client sample ID	
			Client sampling date / time	Unit
ED/EK: Inorganic Nonmetallic Parameters			S35	
EK055A: Ammonia as N	7664-41-7	0.01	29-MAY-2010 14:25	
EK055K: Unionized Ammonia (as N)	---	0.01	HK1011664-001	
				0.56
				0.05



Page Number : 4 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011664, Amendment 1

Sub-Matrix: SEAWATER		Client sample ID	Client sampling date / time	
Compound	CAS Number	LOR	Unit	
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.09
EK055K: Unionized Ammonia (as N)		0.01	mg/L	<0.01



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 (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)								
HK1011796-001	Anonymous	EK055A: Ammonia as N	7664-41-7	0.01	mg/L	3.59	3.37	6.3
HK1011744-001	Anonymous	EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.03	0.03	0.0

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

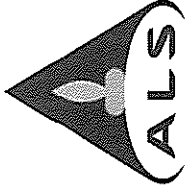
Matrix: WATER		Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	LCS	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)												
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	101	85	115	---	---	---	---

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

Matrix: WATER		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report										
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	MS	Spike Recovery (%)	MSD	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)												
HK1011796-001	Anonymous	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	# Not Determined	75	125	---	---	---	---	---

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

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Telephone : +852 2839 5633
Facsimile : ---
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009707
Site : S44

Laboratory : ALS Technichem HK Pty Ltd
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E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011661
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

PP Fung Lim Chee, Richard

Position

General Manager

Authorised results for

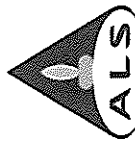
Inorganics

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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A Campbell Brothers Limited Company

Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011661, Amendment 1



General Comments

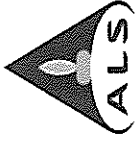
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011661

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

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



Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011661, Amendment 1

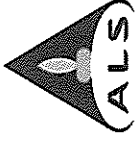
Analytical Results

Sub-Matrix: ELUTRIATE	Client sample ID	Client sampling date / time	LOR	Unit
	S44	29-MAY-2010 13:40		
		HK1011661-001		
Compound	CAS Number	LOR	Unit	
EDIEK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	1.37
EK055K: Unionized Ammonia (as N)	----	0.01	mg/L	0.14



Page Number : 4 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011661, Amendment 1

Compound	CAS Number	LOR	Client sample ID	
			Client sampling date / time	Unit
Sub-Matrix: SEAWATER				
ED/EK: Inorganic Nonmetallic Parameters			S44	
EK055A: Ammonia as N	7664-41-7	0.01	29-MAY-2010 13:40	
EK055K: Unionized Ammonia (as N)		0.01	HK1011661-002	
				0.07
				<0.01



Laboratory Duplicate (DUP) Report

Matrix: WATER		Method: Compound		Laboratory Duplicate (DUP) Report			
Laboratory sample ID	Client sample ID	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)							
HK1011796-001	Anonymous	7664-41-7	0.01	mg/L	3.59	3.37	6.3
HK1011744-001	Anonymous	7664-41-7	0.01	mg/L	0.03	0.03	0.0

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

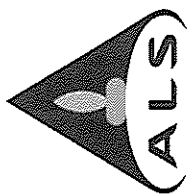
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report									
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	LCS	Spike Recovery (%)	DCS	Recovery Limits (%)	High	Low	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)													
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	101	---	---	85	115	---	---	---

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

Matrix: WATER		Method: Compound		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report							
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	MSD	Recovery Limits (%)	High	Value	Control Limit		
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)											
HK1011796-001	Anonymous	7664-41-7	0.5 mg/L	# Not Determined	---	75	125	---	---		

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

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WAN CHAI, HONG KONG
E-mail : Samuel@Lamconstruct.com.hk
Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009706
Site : S47

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 - 3
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Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK703a/2010**

Page : 1 of 5
Work Order : HK1011658
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

Mr Fung Lim Chee, Richard 

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011658, Amendment 1

General Comments

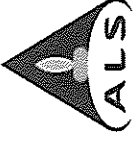
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011658

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

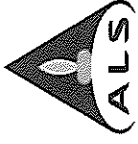
Sample(s) were received in a chilled condition.

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



Analytical Results

Sub-Matrix: ELUTRIATE	Client sample ID		Client sampling date / time	
	CAS Number	LOR	Unit	Value
ED/EK: Inorganic Nonmetallic Parameters				S47
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	29-MAY-2010 13:30
EK055K: Unionized Ammonia (as N)	---	0.01	mg/L	HK1011658-001
				0.66
				0.06

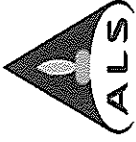


Page Number : 4 of 5

Client : LAM GEOTECHNICS LIMITED

Work Order : HK1011658, Amendment 1

Sub-Matrix: SEAWATER		Client sample ID	Client sampling date / time	
Compound	CAS Number	LOR	Unit	
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.05
EK055K: Unionized Ammonia (as N)	----	0.01	mg/L	<0.01



Laboratory Duplicate (DUP) Report

Matrix: WATER		Method: Compound		Laboratory Duplicate (DUP) Report			
Laboratory sample ID	Client sample ID	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)							
HK1011796-001	Anonymous	7664-41-7	0.01	mg/L	3.59	3.37	6.3
HK1011744-001	Anonymous	7664-41-7	0.01	mg/L	0.03	0.03	0.0

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

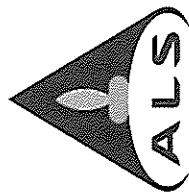
Matrix: WATER				Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	LCS	Spike Recovery (%)	DCS	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)													
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	101	---	---	85	115	---	---	---

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

Matrix: WATER		Method: Compound		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report			
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	MSD	Recovery Limits (%)	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)							
HK1011796-001	Anonymous	7664-41-7	0.5 mg/L	---	---	75	125
				# Not Determined			

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
Contact : MR C M YEE
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E-mail : Samuel@Lamconstruct.com.hk
Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009706
Site : S50

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 -3
Wing Yip Street,
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E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011655
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

PP Fung Lim Chee, Richard

Position

General Manager

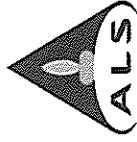
Authorised results for

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
Tel: +852 2610 1044 Fax: +852 2610 2021 www.alsenviro.com

A Campbell Brothers Limited Company



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011655, Amendment 1

General Comments

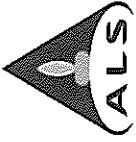
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011655

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

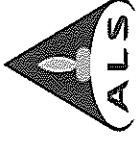
Elutriate sample(s) analysed and reported on an as received basis.



Analytical Results

Sub-Matrix: ELUTRIATE

Compound	CAS Number	LOR	Client sample ID	
			Client sampling date / time	Unit
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	29-MAY-2010 13:15	1.84
EK055K: Unionized Ammonia (as N)		0.01	HK1011655-001	0.19



Page Number : 4 of 5

Client : LAM GEOTECHNICS LIMITED

Work Order : HK1011655, Amendment 1

Sub-Matrix: SEAWATER		Client sample ID	
Compound	CAS Number	LOR	Client sampling date / time
ED/EK: Inorganic Nonmetallic Parameters			S50
EK055A: Ammonia as N	7664-41-7	0.01	29-MAY-2010 13:15
EK055K: Unionized Ammonia (as N)		0.01	HK1011655-002
			0.04
			<0.01



Laboratory Duplicate (DUP) Report

Laboratory sample ID		Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)									
HK1011796-001	Anonymous	EK055A: Ammonia as N		7664-41-7	0.01	mg/L	3.59	3.37	6.3
HK1011744-001	Anonymous	EK055A: Ammonia as N		7664-41-7	0.01	mg/L	0.03	0.03	0.0

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

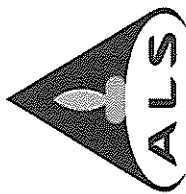
Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report								
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	DCS	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	101	----	85	85	115	----	----
EK055A: Ammonia as N												

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

Laboratory sample				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report								
ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	MS	Spike Recovery (%)	MSD	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)												
HK1011796-001	Anonymous	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	# Not Determined		----	75	75	125	----	----

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
Contact : MR C M YEE
Address : 1/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WAN CHAI, HONG KONG
E-mail : Samuel@Lamconstruct.com.hk
Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009703
Site : D174

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 1/F., Chung Shun Knitting Centre, 1 -3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**


Page : 1 of 5
Work Order : HK1011642
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

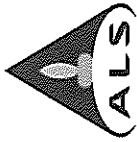
PP Fung Lim Chee, Richard 

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011642, Amendment 1

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 03-JUN-2010
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: HK1011642

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

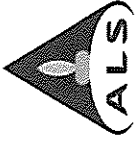
Elutriate sample(s) analysed and reported on an as received basis.



Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011642, Amendment 1

Analytical Results

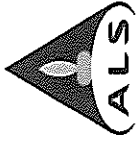
Sub-Matrix: ELUTRIATE	Client sample ID	Client sampling date / time	CAS Number	LOR	Unit
	D174	29-MAY-2010 10:25			
					HK1011642-001
ED/EK: Inorganic Nonmetallic Parameters					
EK055A: Ammonia as N			7664-41-7	0.01	mg/L
EK055K: Unionized Ammonia (as N)			---	0.01	mg/L
				1.63	
				0.14	



Page Number : 4 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011642, Amendment 1

Compound	Client sample ID	
	CAS Number	Client sampling date / time
ED/EK: Inorganic Nonmetallic Parameters		
EK055A: Ammonia as N	7664-41-7	0.01
EK055K: Unionized Ammonia (as N)		0.01
		0.24
		0.02

Sub-Matrix: SEAWATER
 D174
 29-MAY-2010 10:25
 HK1011642-002



Laboratory Duplicate (DUP) Report

Matrix: WATER		Method: Compound		Laboratory Duplicate (DUP) Report			
Laboratory sample ID	Client sample ID	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)							
HK1011796-004	Anonymous	EK055A: Ammonia as N	0.01	mg/L	3.70	3.85	4.0
HK1011688-008	Anonymous	EK055A: Ammonia as N	0.01	mg/L	<0.01	<0.01	0.0

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

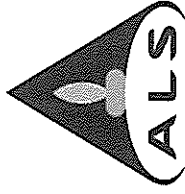
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report								
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	DCS	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)												
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	98.6	---	---	85	115	---	---

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

Matrix: WATER		Method: Compound		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report							
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	Spike Recovery (%)	MSD	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)											
HK1011744-001	Anonymous	EK055A: Ammonia as N	0.5 mg/L	98.0	---	---	---	75	125	---	---

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
Contact : MR C M YEE
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181-185 GLOUCESTER ROAD,
WAN CHAI, HONG KONG
E-mail : Samuel@Laimconstruct.com.hk
Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009701
Site : D196

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011633
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

PP Fung Lim Chee, Richard 

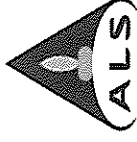
Position

General Manager

Authorised results for

Inorganics

Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011633, Amendment 1



General Comments

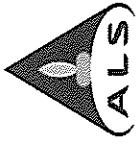
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011633

Result of Unionized ammonia was calculated from NH₃-N and in-situ measurement of temperature, pH and Salinity. NH₃-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

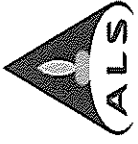
Elutriate sample(s) analysed and reported on an as received basis.



Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011633, Amendment 1

Analytical Results

Sub-Matrix: ELUTRIATE	Client sample ID		Client sampling date / time	
	CAS Number	LOR	Unit	Result
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	3.23
EK055K: Unionized Ammonia (as N)	----	0.01	mg/L	0.27



Page Number : 4 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011633, Amendment 1

Sub-Matrix: SEAWATER		Client sample ID	Client sampling date / time	
Compound	CAS Number	LOR	Unit	
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.23
EK055K: Unionized Ammonia (as N)	---	0.01	mg/L	0.02



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 (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)								
HK1011796-002	Anonymous	EK055A: Ammonia as N	7664-41-7	0.01	mg/L	3.63	3.57	1.7
HK1011796-003	Anonymous	EK055A: Ammonia as N	7664-41-7	0.01	mg/L	3.64	3.57	1.9

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

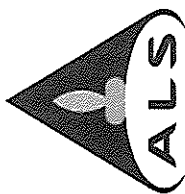
Matrix: WATER		Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report							
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	LCS	Spike Recovery (%)	DCS	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)													
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	101	---	---	85	115	---	---	---

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

Matrix: WATER		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report									
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	MS	MSD	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)											
HK1011659-001	Anonymous	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	124	---	75	125	---	---	---

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



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E-mail : Samuel@Laimconstruct.com.hk
Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009703
Site : D202

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@salsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011641
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

†† Fung Lim Chee, Richard 

Position

General Manager

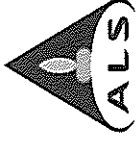
Authorised results for

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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A Campbell Brothers Limited Company



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011641, Amendment 1

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: HK1011641

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

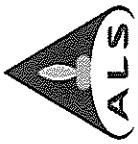
Elutriate sample(s) analysed and reported on an as received basis.



Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011641, Amendment 1

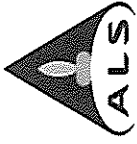
Analytical Results

Compound	CAS Number	LOR	Client sample ID	
			Client sampling date / time	Unit
Sub-Matrix: ELUTRIATE				
D202				
29-MAY-2010 10:20				
HK1011641-001				
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	2.01
EK055K: Unionized Ammonia (as N)	----	0.01	mg/L	0.18



Page Number : 4 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011641, Amendment 1

Compound	Client sample ID	
	CAS Number	Client sampling date / time
ED/EK: Inorganic Nonmetallic Parameters		D202
EK055A: Ammonia as N	7664-41-7	29-MAY-2010 10:20
EK055K: Unionized Ammonia (as N)		HK1011641-002
	LOR	Unit
	0.01	mg/L
	0.01	mg/L



Laboratory Duplicate (DUP) Report

Matrix: WATER		Method: Compound		Laboratory Duplicate (DUP) Report		
Laboratory sample ID	Client sample ID	CAS Number	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)						
HK1011796-002	Anonymous	7664-41-7	mg/L	3.63	3.57	1.7
HK1011796-003	Anonymous	7664-41-7	mg/L	3.64	3.57	1.9
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)						
HK1011796-004	Anonymous	7664-41-7	mg/L	3.70	3.85	4.0
HK1011688-008	Anonymous	7664-41-7	mg/L	<0.01	<0.01	0.0

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

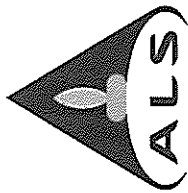
Matrix: WATER				Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	LCS	Spike Recovery (%)	DCS	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)													
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	101	---	---	85	85	115	---	---
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)													
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	98.6	---	---	85	85	115	---	---

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

Matrix: WATER		Method: Compound		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report			
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	MSD	Recovery Limits (%)	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)							
HK1011659-001	Anonymous	7664-41-7	0.5 mg/L	124	---	75	---
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)							
HK1011744-001	Anonymous	7664-41-7	0.5 mg/L	98.0	---	75	---

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
Contact : MR C M YEE
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181-185 GLOUCESTER ROAD,
WAN CHAI, HONG KONG
E-mail : Samuel@Lamconstruct.com.hk
Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009703
Site : D214

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 -3
Wing Yip Street,
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E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011639
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

PP Fung Lim Chee, Richard 

Position

General Manager

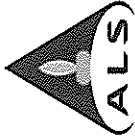
Authorised results for

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
Tel: +852 2610 1044 Fax: +852 2610 2021 www.alsenviro.com

A Campbell Brothers Limited Company



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011639, Amendment 1

General Comments

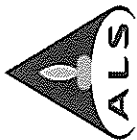
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011639

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

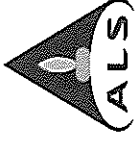
Elutriate sample(s) analysed and reported on an as received basis.



Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011639, Amendment 1

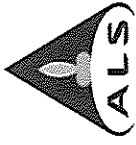
Analytical Results

Compound	CAS Number	LOR	Client sample ID	
			Client sampling date / time	Unit
Sub-Matrix: ELUTRIATE				
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	D214	4.34
EK055K: Unionized Ammonia (as N)	---	0.01	29-MAY-2010 10:10 HK1011639-001	0.38



Page Number : 4 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011639, Amendment 1

Sub-Matrix: SEAWATER		Client sample ID	Client sampling date / time		
Compound	CAS Number	LOR	Unit		
ED/EK: Inorganic Nonmetallic Parameters					
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.20	
EK055K: Unionized Ammonia (as N)	---	0.01	mg/L	0.02	



Laboratory Duplicate (DUP) Report

Matrix: WATER		Method: Compound		Laboratory Duplicate (DUP) Report			
Laboratory sample ID	Client sample ID	CAS Number	Unit	Original Result	Duplicate Result	RPD (%)	
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)							
HK1011796-002	Anonymous	EK055A: Ammonia as N	mg/L	3.63	3.57	1.7	
HK1011796-003	Anonymous	EK055A: Ammonia as N	mg/L	3.64	3.57	1.9	

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

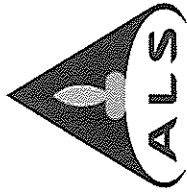
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report								
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	DCS	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)												
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	101	----	85	115	----	----	----

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

Matrix: WATER		Method: Compound				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report				
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	MSD	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)										
HK1011659-001	Anonymous	EK055A: Ammonia as N	0.5 mg/L	124	----	75	125	----	----	----

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
Contact : MR C M YEE
Address : 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WAN CHAI, HONG KONG
E-mail : Samuel@Lamconstruct.com.hk
Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009702
Site : D234

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011635
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

Fung Lim Chee, Richard 

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011635, Amendment 1

General Comments

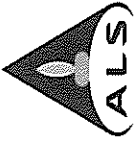
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011635

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

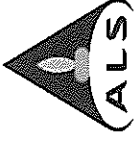
Elutriate sample(s) analysed and reported on an as received basis.



Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011635, Amendment 1

Analytical Results

Sub-Matrix: ELUTRIATE	Client sample ID	Client sampling date / time	CAS Number	LOR	Unit
	D234	29-MAY-2010 09:45			
					HK1011635-001
ED/EK: Inorganic Nonmetallic Parameters					
EK055A: Ammonia as N			7664-41-7	0.01	mg/L
EK055K: Unionized Ammonia (as N)				0.01	mg/L
				1.04	
				0.09	

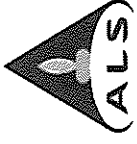


Page Number : 4 of 5

Client : LAM GEOTECHNICS LIMITED

Work Order : HK1011635, Amendment 1

Compound	Client sample ID		D234	29-MAY-2010 09:45	HK1011635-002
	CAS Number	LOR			
ED/EK: Inorganic Nonmetallic Parameters					
EK055A: Ammonia as N	7664-41-7	0.01		0.23	mg/L
EK055K: Unionized Ammonia (as N)	---	0.01		0.02	mg/L



Laboratory Duplicate (DUP) Report

Laboratory sample ID		Client sample ID	Method: Compound	Laboratory Duplicate (DUP) Report			
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	
HK1011796-002	7664-41-7	0.01	mg/L	3.63	3.57	1.7	
Anonymous							
HK1011796-003	7664-41-7	0.01	mg/L	3.64	3.57	1.9	
Anonymous							

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

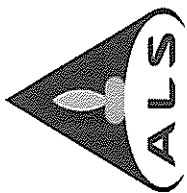
Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report												
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	LCS	DCS	Recovery Limits (%)	Low	High	Value	Control Limit	RPD (%)
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	101	101	85	115	85	115	---	---	---
EK055A: Ammonia as N														

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

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report									
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)	CAS Number	Method: Compound	Spike Concentration	MS	MSD	Recovery Limits (%)	Low	High	Value	Control Limit	RPD (%)
HK1011659-001	7664-41-7	EK055A: Ammonia as N	0.5 mg/L	124	---	---	75	125	---	---	---
Anonymous											

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
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WAN CHAI, HONG KONG
E-mail : Samuel@Laimconstruct.com.hk
Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009702
Site : D238

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 1/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**


Page : 1 of 5
Work Order : HK1011638
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

PP Fung Lim Chee, Richard 

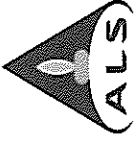
Position

General Manager

Authorised results for

Inorganics

Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011638, Amendment 1



General Comments

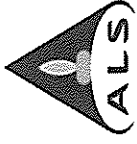
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011638

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

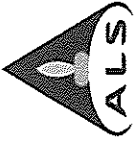
Elutriate sample(s) analysed and reported on an as received basis.



Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011638, Amendment 1

Analytical Results

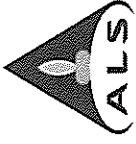
Sub-Matrix: ELUTRIATE	Client sample ID		Client sampling date / time	
	CAS Number	LOR	Unit	Unit
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	3.02
EK055K: Unionized Ammonia (as N)	----	0.01	mg/L	0.25



Page Number : 4 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011638, Amendment 1

Compound	Client sample ID		LOR	Unit	Client sampling date / time	D238 29-MAY-2010 10:05 HK1011638-002
	CAS Number	LOR				
ED/EK: Inorganic Nonmetallic Parameters						
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.28		
EK055K: Unionized Ammonia (as N)	---	0.01	mg/L	0.02		

Sub-Matrix: SEAWATER



Laboratory Duplicate (DUP) Report

Laboratory sample ID		Client sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report		RPD (%)
							Original Result	Duplicate Result	
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)									
HK1011796-002	Anonymous		EK055A: Ammonia as N	7664-41-7	0.01	mg/L	3.63	3.57	1.7
HK1011796-003	Anonymous		EK055A: Ammonia as N	7664-41-7	0.01	mg/L	3.64	3.57	1.9

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

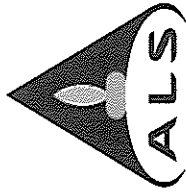
Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report											
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	LCS	Recovery Limits (%)	DCS	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)													
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	101	85	115	---	---	---	---	---

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

Laboratory sample ID		Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)	MS	Recovery Limits (%)	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368712)													
HK1011659-001	Anonymous		EK055A: Ammonia as N	7664-41-7	0.5 mg/L	124	75	125	---	---	---	---	---

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

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Telephone : +852 2839 5633
Facsimile :
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009708
Site : D298

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 1/F., Chung Shun Knitting Centre, 1 -3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011667
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

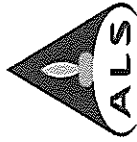
PP Fung Lim Chee, Richard 

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011667, Amendment 1

General Comments

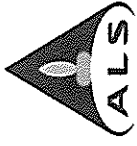
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011667

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

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



Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011667, Amendment 1

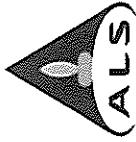
Analytical Results

Compound	CAS Number	LOR	Client sample ID	
			Client sampling date / time	Unit
Sub-Matrix: ELUTRIATE				
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	29-MAY-2010 14:30	0.25
EK055K: Unionized Ammonia (as N)	----	0.01	HK1011667-001	0.02

Page Number : 4 of 5

Client : LAM GEOTECHNICS LIMITED

Work Order : HK1011667, Amendment 1



Sub-Matrix: SEAWATER

Compound	Client sample ID		LOR	Unit	D298 29-MAY-2010 14:30 HK1011667-002
	CAS Number	Client sampling date / time			
ED/EK: Inorganic Nonmetallic Parameters					
EK055A: Ammonia as N	7664-41-7	0.01	0.01	mg/L	0.12
EK055K: Unionized Ammonia (as N)	----	0.01	0.01	mg/L	0.01



Laboratory Duplicate (DUP) Report

Matrix: WATER		Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	CAS Number	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)						
HK1011796-001	Anonymous	7664-41-7	mg/L	3.59	3.37	6.3
HK1011744-001	Anonymous	7664-41-7	mg/L	0.03	0.03	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368716)						
HK1011667-001	D298	7664-41-7	mg/L	0.25	0.24	4.1
HK1011664-001	Anonymous	7664-41-7	mg/L	0.56	0.58	3.5

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

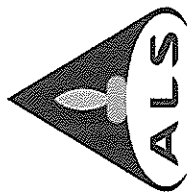
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report										
Method: Compound	CAS Number	LOR	Unit	Spike Concentration	Result	Spike Recovery (%)	LCS	DCS	Recovery Limits (%)	Low	High	Value	Control Limit	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)														
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.5 mg/L	<0.01	101	85	115	85	115	---	---	---	---
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368716)														
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.5 mg/L	<0.01	104	85	115	85	115	---	---	---	---

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

Matrix: WATER		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report									
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	MS	MSD	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)											
HK1011796-001	Anonymous	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	75	125	75	125	---	---	---
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368716)											
HK1011744-016	Anonymous	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	102	125	75	125	---	---	---

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
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E-mail : Samuel@Lamconstruct.com.hk
Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009707
Site : D320

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011662
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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

Signatories

Fung Lim Chee, Richard

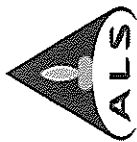
Position

General Manager

Authorised results for

Inorganics

Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011662, Amendment 1



General Comments

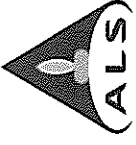
This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 03-JUN-2010
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: HK1011662

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

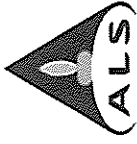
Sample(s) were received in a chilled condition.

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

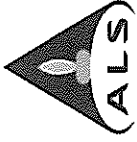


Analytical Results

Sub-Matrix: ELUTRIATE	Client sample ID		Client sampling date / time	
	CAS Number	LOR	Unit	
				D320 29-MAY-2010 14:10 HK1011662-001
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	2.59
EK055K: Unionized Ammonia (as N)		0.01	mg/L	0.25



Sub-Matrix: SEAWATER		Client sample ID	
Compound	CAS Number	Client sampling date / time	Unit
		D320	
		29-MAY-2010 14:10	
		HK1011662-002	
ED/EK: Inorganic Nonmetallic Parameters			
EK055A: Ammonia as N	7664-41-7	0.01	mg/L
EK055K: Unionized Ammonia (as N)	---	0.01	mg/L



Page Number : 5 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011662, Amendment 1

Laboratory Duplicate (DUP) Report

Matrix: WATER		Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	CAS Number	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)						
HK1011796-001	Anonymous	7664-41-7	mg/L	3.59	3.37	6.3
HK1011744-001	Anonymous	7664-41-7	mg/L	0.03	0.03	0.0

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

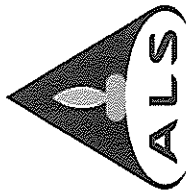
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report								
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	DCS	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)												
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	101	---	85	85	115	---	---

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

Matrix: WATER		Method: Compound		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	Spike Recovery (%)	MSD	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)										
HK1011796-001	Anonymous	7664-41-7	0.5 mg/L	---	---	75	75	125	---	---
				# Not Determined						

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

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Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009707
Site : D374

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
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E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011659
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

PP Fung Lim Chee, Richard 

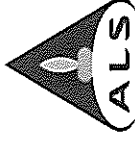
Position

General Manager

Authorised results for

Inorganics

Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011659, Amendment 1



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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 03-JUN-2010
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: HK1011659

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

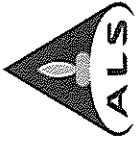
Elutriate sample(s) analysed and reported on an as received basis.



Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011659, Amendment 1

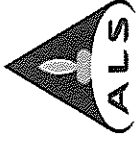
Analytical Results

Compound	CAS Number	LOR	Client sample ID	
			Client sampling date / time	Unit
Sub-Matrix: ELUTRIATE				
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	29-MAY-2010 13:35	0.62
EK055K: Unionized Ammonia (as N)	----	0.01	HK1011659-001	0.06



Page Number : 4 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011659, Amendment 1

Sub-Matrix: SEAWATER		Client sample ID	Client sampling date / time	
Compound	CAS Number	LOR	Unit	
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.07
EK055K: Unionized Ammonia (as N)		0.01	mg/L	<0.01



Laboratory Duplicate (DUP) Report

Laboratory sample ID		Client sample ID		Method: Compound		Laboratory Duplicate (DUP) Report	
Laboratory sample ID	Client sample ID	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)							
HK1011796-001	Anonymous	EK055A: Ammonia as N	0.01	mg/L	3.59	3.37	6.3
HK1011744-001	Anonymous	EK055A: Ammonia as N	0.01	mg/L	0.03	0.03	0.0

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

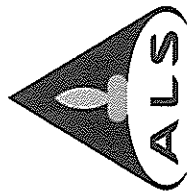
Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report			
Method: Compound	CAS Number	LOR	Unit	Spike Concentration	Spike Recovery (%)	DCS	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)							
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.5 mg/L	<0.01	101	85
							115

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

Laboratory sample ID		Client sample ID		Method: Compound		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report				
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	MSD	Recovery Limits (%)	Low	High	Value	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)										
HK1011796-001	Anonymous	EK055A: Ammonia as N	0.5 mg/L	# Not Determined	----	75	125	----	----	----

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

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Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009706
Site : D378

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 -3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011657
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

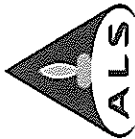
Richard Fung Lim Chee, Richard 

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011657, Amendment 1

General Comments

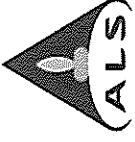
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011657

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

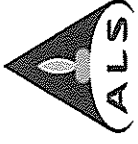
Sample(s) were received in a chilled condition.

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



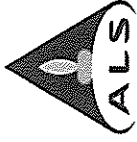
Analytical Results

Sub-Matrix: ELUTRIATE	CAS Number	LOR	Unit	Client sample ID	Client sampling date / time
ED/EK: Inorganic Nonmetallic Parameters				D378	29-MAY-2010 13:25
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	HK1011657-001	
EK055K: Unionized Ammonia (as N)		0.01	mg/L		



Page Number : 4 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011657, Amendment 1

Sub-Matrix: SEAWATER		Client sample ID	Client sampling date / time
Compound	CAS Number	LOR	Unit
ED/EK: Inorganic Nonmetallic Parameters			
EK055A: Ammonia as N	7664-41-7	0.01	mg/L
EK055K: Unionized Ammonia (as N)	---	0.01	mg/L
			0.11
			0.01



Laboratory Duplicate (DUP) Report

Matrix: WATER		Method: Compound		Laboratory Duplicate (DUP) Report			
Laboratory sample ID	Client sample ID	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)							
HK1011796-001	Anonymous	7664-41-7	0.01	mg/L	3.59	3.37	6.3
HK1011744-001	Anonymous	7664-41-7	0.01	mg/L	0.03	0.03	0.0

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

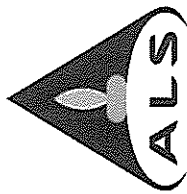
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report			
Method: Compound	CAS Number	LOR	Unit	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)							
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.5 mg/L	101	85 - 115	---

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

Matrix: WATER		Method: Compound		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report			
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	MSD	Recovery Limits (%)	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)							
HK1011796-001	Anonymous	7664-41-7	0.5 mg/L	# Not Determined	---	75 - 125	---

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

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E-mail : Samuel@Lamconstruct.com.hk
Telephone : +852 2839 5633
Facsimile : *****
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009706
Site : D381

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 1/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011656
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

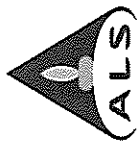

Fung Lim Chee, Richard

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011656, Amendment 1

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: HK1011656

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

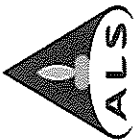
Elutriate sample(s) analysed and reported on an as received basis.



Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011656, Amendment 1

Analytical Results

Sub-Matrix: ELUTRIATE	Client sample ID		Client sampling date / time	
	CAS Number	LOR	Unit	Unit
				D381
				29-MAY-2010 13:20
				HK1011656-001
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	2.19
EK055K: Unionized Ammonia (as N)	----	0.01	mg/L	0.22



Page Number : 4 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011656, Amendment 1

Compound	Sub-Matrix: SEAWATER		Client sample ID	
	CAS Number	LOR	Client sampling date / time	Unit
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	D381 29-MAY-2010 13:20	mg/L
EK055K: Unionized Ammonia (as N)	---	0.01	HK1011656-002	mg/L
				0.05
				<0.01



Laboratory Duplicate (DUP) Report

Laboratory sample ID		Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)									
HK1011796-001	Anonymous		EK055A: Ammonia as N	7664-41-7	0.01	mg/L	3.59	3.37	6.3
HK1011744-001	Anonymous		EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.03	0.03	0.0

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

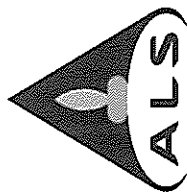
Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report									
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	LCS	Spike Recovery (%)	DCS	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	101	---	---	---	85	115	---	---
EK055A: Ammonia as N													

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

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report											
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	MS	MSD	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)		EK055A: Ammonia as N	7664-41-7	0.5 mg/L	# Not Determined	---	---	75	125	---	---
HK1011796-001	Anonymous										

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
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Telephone : +852 2839 5633
Facsimile : ----
Project : LG28024
Order number : CV/2009/13
C-O-C number : H009705
Site : D386

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
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Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**


Page : 1 of 5
Work Order : HK1011654
Amendment : 1

Date Samples Received : 29-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

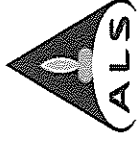
PP Fung Lim Chee, Richard 

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011654, Amendment 1

General Comments

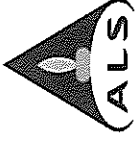
This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 03-JUN-2010
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: HK1011654

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

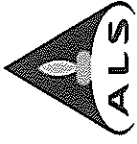
Sample(s) were received in a chilled condition.

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



Analytical Results

Sub-Matrix: ELUTRIATE	Client sample ID	Client sampling date / time	D386	
Compound	CAS Number	LOR	Unit	HK1011654-001
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	1.85
EK058K: Unionized Ammonia (as N)	---	0.01	mg/L	0.19



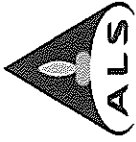
Page Number : 4 of 5

Client : LAM GEOTECHNICS LIMITED

Work Order : HK1011654, Amendment 1

Sub-Matrix: SEAWATER

Compound	Client sample ID	
	CAS Number	Client sampling date / time
ED/EK: Inorganic Nonmetallic Parameters		D386
EK055A: Ammonia as N	7664-41-7	29-MAY-2010 13:05
EK055K: Unionized Ammonia (as N)		HK1011654-002
	LOR	Unit
	0.01	mg/L
	0.01	mg/L
		0.04
		<0.01



Laboratory Duplicate (DUP) Report

Matrix: WATER		Method: Compound		Laboratory Duplicate (DUP) Report			
Laboratory sample ID	Client sample ID	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)							
HK1011796-004	Anonymous	7664-41-7	0.01	mg/L	3.70	3.85	4.0
HK1011688-008	Anonymous	7664-41-7	0.01	mg/L	<0.01	<0.01	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)							
HK1011796-001	Anonymous	7664-41-7	0.01	mg/L	3.59	3.37	6.3
HK1011744-001	Anonymous	7664-41-7	0.01	mg/L	0.03	0.03	0.0

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

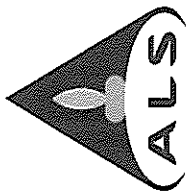
Matrix: WATER				Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Spike Concentration	Result	LCS	Spike Recovery (%)	DCS	Recovery Limits (%)	Low	High	Value	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)													
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.5 mg/L	<0.01	98.6	85	---	85	115	---	---	---
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)													
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.5 mg/L	<0.01	101	85	---	85	115	---	---	---

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

Matrix: WATER		Method: Compound		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report			
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	Spike Recovery (%)	MSD	Recovery Limits (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368714)							
HK1011744-001	Anonymous	7664-41-7	0.5 mg/L	98.0	75	---	125
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1368715)							
HK1011796-001	Anonymous	7664-41-7	0.5 mg/L	# Not Determined	75	---	125

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
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Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009709
Site : S2

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011785
Amendment : 1

Date Samples Received : 31-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

PP Fung Lim Chee, Richard

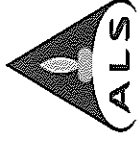
Position

General Manager

Authorised results for

Inorganics

Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011785, Amendment 1



General Comments

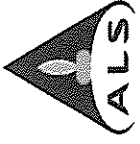
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011785

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

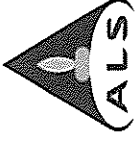
Elutriate sample(s) analysed and reported on an as received basis.



Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011785, Amendment 1

Analytical Results

Sub-Matrix: ELUTRIATE	Client sample ID	Client sampling date / time	S2 (0-0.9M)	
			31-MAY-2010 17:00	HK1011785-001
Compound	CAS Number	LOR	Unit	Unit
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	20.1
EK055K: Unionized Ammonia (as N)	----	0.01	mg/L	1.79

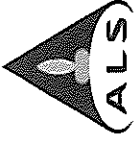


Page Number : 4 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011785, Amendment 1

Sub-Matrix: SEAWATER

Compound	Client sample ID	
	CAS Number	Client sampling date / time
ED/EK: Inorganic Nonmetallic Parameters		S2 (0-0.9M)
EK055A: Ammonia as N	7664-41-7	31-MAY-2010 17:00
EK055K: Unionized Ammonia (as N)	---	HK1011785-002

Compound	LOD	Unit
EK055A: Ammonia as N	0.01	mg/L
EK055K: Unionized Ammonia (as N)	0.01	mg/L



Laboratory Duplicate (DUP) Report

Laboratory sample ID		Client sample ID		Method: Compound		Laboratory Duplicate (DUP) Report			
ED/EK:	Inorganic Nonmetallic Parameters	QC Lot:	1371687	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
HK1011942-001	Anonymous	EK055A:	Ammonia as N	7664-41-7	0.01	mg/L	2.63	2.60	1.1
HK1011932-002	Anonymous	EK055A:	Ammonia as N	7664-41-7	0.01	mg/L	0.14	0.13	7.4

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

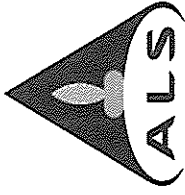
Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report			
Method:	Compound	CAS Number	LOR	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	RPD (%)
ED/EK:	Inorganic Nonmetallic Parameters	QC Lot:	1371687				
EK055A:	Ammonia as N	7664-41-7	0.01	0.5 mg/L	103	85 - 115	---

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

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report			
Laboratory sample ID	Client sample ID	Method: Compound	MSD
ED/EK:	Inorganic Nonmetallic Parameters	QC Lot:	1371687
HK1011942-001	Anonymous	EK055A:	Ammonia as N
			# Not Determined

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

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Facsimile : *****
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009709
Site : S2

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011786
Amendment : 1

Date Samples Received : 31-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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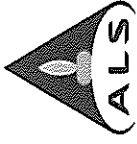
Signatories


Fung Lim Chee, Richard

Position

General Manager

Authorised results for
Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011786, Amendment 1

General Comments

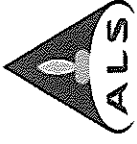
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Key: LOR = Limit of reporting, CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011786

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

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



Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011786, Amendment 1

Analytical Results

Sub-Matrix: ELUTRIATE	Client sample ID	Client sampling date / time	S2 (0.9-1.9M)	
Compound	CAS Number	LOR	Unit	HK1011786-001
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	20.8
EK055K: Unionized Ammonia (as N)	----	0.01	mg/L	1.86



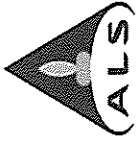
Page Number : 4 of 5

Client : LAM GEOTECHNICS LIMITED

Work Order : HK1011786, Amendment 1

Sub-Matrix: SEAWATER

Compound	CAS Number		Client sampling date / time		Client sample ID
	LOR	Unit	LOR	Unit	
ED/EK: Inorganic Nonmetallic Parameters					
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.18	S2 (0.9-1.9M) 31-MAY-2010 17:00
EK055K: Unionized Ammonia (as N)	---	0.01	mg/L	0.02	HK1011786-002



Laboratory Duplicate (DUP) Report

Matrix: WATER		Laboratory Duplicate (DUP) Report	
Laboratory sample ID	Client sample ID	Method: Compound	Method: Compound
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)			
HK1011942-001	Anonymous	EK055A: Ammonia as N	EK055A: Ammonia as N
HK1011932-002	Anonymous	EK055A: Ammonia as N	EK055A: Ammonia as N

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

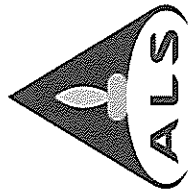
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report	
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)					
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L

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

Matrix: WATER		Method: Compound		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report	
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	MSD	Recovery Limits (%)	Recovery Limits (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)							
HK1011942-001	Anonymous	EK055A: Ammonia as N	0.5 mg/L	75	125	85	115

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
Contact : MR C M YEE
Address : 1/F., CENTRE POINT,
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WAN CHAI, HONG KONG
E-mail : Samuel@Lamconstruct.com.hk
Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009709
Site : S2

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 1/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**


Page : 1 of 5
Work Order : **HK1011787**
Amendment : 1

Date Samples Received : 31-MAY-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

FP Fung Lim Chee, Richard 

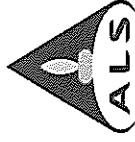
Position

General Manager

Authorised results for

Inorganics

Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011787, Amendment 1



General Comments

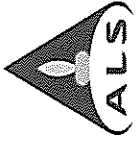
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011787

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

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



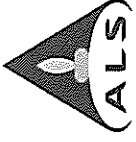
Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011787, Amendment 1

Analytical Results

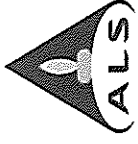
Sub-Matrix: ELUTRIATE Client sample ID: S2 (1.9-2.7M)
 Client sampling date / time: 31-MAY-2010 17:00
 CAS Number: LOR: Unit: HK1011787-001

Compound	CAS Number	LOR	Unit
ED/EK: Inorganic Nonmetallic Parameters			
EK055A: Ammonia as N	7664-41-7	0.01	mg/L
EK055K: Unionized Ammonia (as N)	----	0.01	mg/L

3.21
0.29



Sub-Matrix: SEAWATER		Client sample ID	S2 (1.9-2.7M)	
Compound	CAS Number	Client sampling date / time	LOR	Unit
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	31-MAY-2010 17:00	0.01	mg/L
EK055K: Unionized Ammonia (as N)	---		0.01	mg/L
				0.18
				0.02



Laboratory Duplicate (DUP) Report

Matrix: WATER		Method: Compound		Laboratory Duplicate (DUP) Report		
Laboratory sample ID	Client sample ID	CAS Number	LOR	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)						
HK1011942-001	Anonymous	7664-41-7	0.01	2.63	2.60	1.1
HK1011932-002	Anonymous	7664-41-7	0.01	0.14	0.13	7.4

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

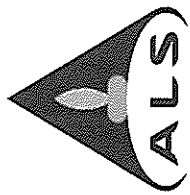
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report			
Method: Compound	CAS Number	LOR	Unit	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)							
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.5 mg/L	103	85 - 115	---

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

Matrix: WATER		Method: Compound		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report			
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	MSD	Recovery Limits (%)	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)							
HK1011942-001	Anonymous	7664-41-7	0.5 mg/L	# Not Determined	---	75 - 125	---

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
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Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009712
Site : S4

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 1/F., Chung Shun Knitting Centre, 1 -3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011932
Amendment : 1

Date Samples Received : 01-JUN-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

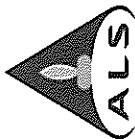
PP Fung Lim Chee, Richard 

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011932, Amendment 1

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 07-JUN-2010
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: HK1011932

Result of Unionized ammonia was calculated from NH₃-N and in-situ measurement of temperature, pH and Salinity. NH₃-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

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

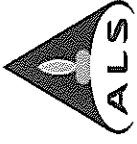


Analytical Results

Sub-Matrix: ELUTRIATE

Client sample ID : S4 (0-0.9M)
 Client sampling date / time : 01-JUN-2010 09:30
 CAS Number : HK1011932-001

Compound	CAS Number	LOR	Unit	Result
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	6.93
EK055K: Unionized Ammonia (as N)	---	0.01	mg/L	0.62



Sub-Matrix: SEAWATER		Client sample ID	
Compound	CAS Number	Client sampling date / time	Unit
ED/EK: Inorganic Nonmetallic Parameters			
EK055A: Ammonia as N	7664-41-7	01-JUN-2010 09:30	mg/L
EK055K: Unionized Ammonia (as N)		HK1011932-002	mg/L



Laboratory Duplicate (DUP) Report

Matrix: WATER		Method: Compound		Laboratory Duplicate (DUP) Report			
Laboratory sample ID	Client sample ID	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)							
HK1011942-001	Anonymous	7664-41-7	0.01	mg/L	2.63	2.60	1.1
HK1011932-002	S4	7664-41-7	0.01	mg/L	0.14	0.13	7.4

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

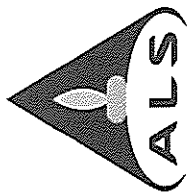
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report									
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	LCS	Spike Recovery (%)	DCS	Recovery Limits (%)	High	Low	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)													
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	103	---	---	85	115	---	---	---

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

Matrix: WATER		Method: Compound		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report								
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	Spike Recovery (%)	MSD	Recovery Limits (%)	High	Low	Value	Control Limit	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)												
HK1011942-001	Anonymous	7664-41-7	0.5 mg/L	75	---	---	---	---	---	---	---	---
				# Not Determined								

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
Contact : MR C M YEE
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E-mail : Samuel@Lamconstruct.com.hk
Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009712
Site : S4

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 1/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011933
Amendment : 1

Date Samples Received : 01-JUN-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

PP Fung Lim Chee, Richard 

Position

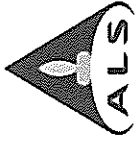
General Manager

Authorised results for

Inorganics

ALS Laboratory Group
Trading Name: ALS Technichem (HK) Pty Ltd
1/F., Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, N.T., Hong Kong
Tel: +852 2610 1044 Fax: +852 2610 2021 www.alsenviro.com

A Campbell Brothers Limited Company



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011933, Amendment 1

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 07-JUN-2010
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: HK1011933

Result of Unionized ammonia was calculated from NH₃-N and in-situ measurement of temperature, pH and Salinity. NH₃-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

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

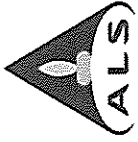


Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011933, Amendment 1

Analytical Results

Sub-Matrix: ELUTRIATE Client sample ID: S4 (0.9-1.9M)
 Client sampling date / time: 01-JUN-2010 09:30
 CAS Number: LOR Unit: HK1011933-001

Compound	CAS Number	LOR	Unit	mg/L	mg/L
ED/EK: Inorganic Nonmetallic Parameters					
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	2.24	
EK055K: Unionized Ammonia (as N)	----	0.01	mg/L	0.20	



Page Number : 4 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011933, Amendment 1

Compound	Client sample ID	
	CAS Number	Client sampling date / time
ED/EK: Inorganic Nonmetallic Parameters		
EK055A: Ammonia as N	7664-41-7	01-JUN-2010 09:30
EK055K: Unionized Ammonia (as N)	---	01-JUN-2010 09:30
		0.13
		0.01

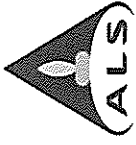
Sub-Matrix: SEAWATER

LOR Unit

S4

01-JUN-2010 09:30
 HK1011933-002

7664-41-7 0.01 mg/L
 --- 0.01 mg/L



Laboratory Duplicate (DUP) Report

Matrix: WATER		Laboratory Duplicate (DUP) Report	
Laboratory sample ID	Client sample ID	Method: Compound	Unit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)			
HK1011942-001	Anonymous	EK055A: Ammonia as N	mg/L
HK1011932-002	Anonymous	EK055A: Ammonia as N	mg/L

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

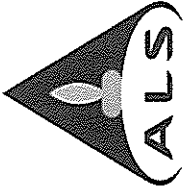
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report			
Method: Compound	CAS Number	LOR	Unit	Spike Concentration	Spike Recovery (%)	DCS	Recovery Limits (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)	7664-41-7	0.01	mg/L	<0.01	103	85	115
EK055A: Ammonia as N							

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

Matrix: WATER		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)	Anonymous	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	75
HK1011942-001	Anonymous				125

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

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Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009712
Site : S4

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 14/F., Chung Shun Knitting Centre, 1 -3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703ai/2010**

Page : 1 of 5
Work Order : HK1011934
Amendment : 1

Date Samples Received : 01-JUN-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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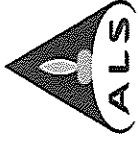
PP Fung Lim Chee, Richard 

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011934, Amendment 1

General Comments

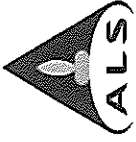
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011934

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

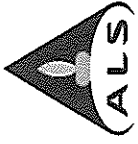
Sample(s) were received in a chilled condition.

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



Analytical Results

Sub-Matrix: ELUTRIATE	Client sample ID	Client sampling date / time	CAS Number	LOR	Unit
	S4 (1.9-2.9M)	01-JUN-2010 09:30			
			7664-41-7	0.01	mg/L
ED/EK: Inorganic Nonmetallic Parameters				0.01	mg/L
EK055A: Ammonia as N					2.06
EK055K: Unionized Ammonia (as N)					0.18



Page Number : 4 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011934, Amendment 1

Compound	CAS Number	LOR	Client sample ID	
			Client sampling date / time	Unit
Sub-Matrix: SEAWATER				
ED/EK: Inorganic Nonmetallic Parameters			S4	
EK055A: Ammonia as N	7664-41-7	0.01	01-JUN-2010 09:30	
EK055K: Unionized Ammonia (as N)	---	0.01	HK1011934-002	



Page Number : 5 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011934, Amendment 1

Laboratory Duplicate (DUP) Report

Laboratory sample ID		Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)									
HK1011942-001	Anonymous		EK055A: Ammonia as N	7664-41-7	0.01	mg/L	2.63	2.60	1.1
HK1011932-002	Anonymous		EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.14	0.13	7.4

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

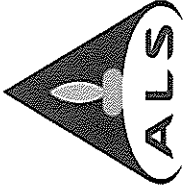
Method Blank (MB) Report					Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	LCS	Spike Recovery (%)	DCS	Recovery Limits (%)	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	103	85	115	---	---	---
EK055A: Ammonia as N											

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

Laboratory sample ID		Client sample ID	Method: Compound	CAS Number	Spike Concentration	MS	MSD	Recovery Limits (%)	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)										
HK1011942-001	Anonymous		EK055A: Ammonia as N	7664-41-7	0.5 mg/L	# Not Determined	---	75	125	---

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
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E-mail : Samuel@Lamconstruct.com.hk
Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009712
Site : S10

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011941
Amendment : 1

Date Samples Received : 01-JUN-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

PP Fung Lim Chee, Richard

Position

General Manager

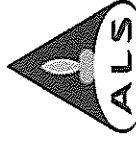
Authorised results for

Inorganics

Page Number : 2 of 5

Client : LAM GEOTECHNICS LIMITED

Work Order : HK1011941, Amendment 1



General Comments

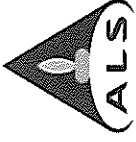
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011941

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

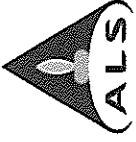
Sample(s) were received in a chilled condition.

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

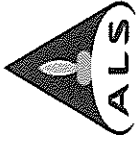


Analytical Results

Sub-Matrix: ELUTRIATE	Client sample ID	
Compound	CAS Number	Client sampling date / time
	LOR	Unit
ED/EK: Inorganic Nonmetallic Parameters		S10 (0-0.9M)
EK055A: Ammonia as N	7664-41-7	01-JUN-2010 18:30
EK055K: Unionized Ammonia (as N)	---	HK1011941-001
	0.01	mg/L
	0.01	mg/L
		2.14
		0.19



Compound	Client sample ID	
	CAS Number	Client sampling date / time
ED/EK: Inorganic Nonmetallic Parameters		
EK055A: Ammonia as N	7664-41-7	01-JUN-2010 18:30
EK055K: Unionized Ammonia (as N)		HK1011941-002
		S10
		0.01
		0.01
		mg/L
		mg/L



Page Number : 5 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011941, Amendment 1

Laboratory Duplicate (DUP) Report

Matrix: WATER		Laboratory Duplicate (DUP) Report	
Laboratory sample ID	Client sample ID	CAS Number	Unit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371688)			
HK1011932-002	Anonymous	7664-41-7	mg/L
HK1011943-002	Anonymous	7664-41-7	mg/L

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

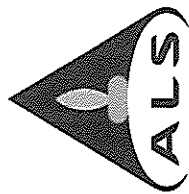
Matrix: WATER		Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report							
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	LCS	Spike Recovery (%)	DCS	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371688)													
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	109				85	115		

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

Matrix: WATER		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report										
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	MS	Spike Recovery (%)	MSD	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371688)												
HK1011785-002	Anonymous	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	104				75	125		

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

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Project : LG29024
Order number : CV/2009/13
C-O-C number : H009712
Site : S10

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 1/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703ai/2010**


Page : 1 of 5
Work Order : HK1011942
Amendment : 1

Date Samples Received : 01-JUN-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

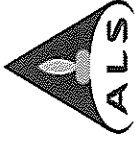
Fung Lim Chee, Richard 

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011942, Amendment 1

General Comments

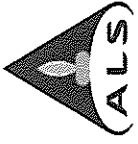
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011942

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

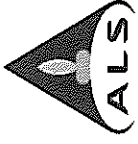
Elutriate sample(s) analysed and reported on an as received basis.



Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011942, Amendment 1

Analytical Results

Sub-Matrix: ELUTRIATE	Client sample ID	Client sampling date / time	CAS Number	LOR	Unit
	S10 (0.9-1.9M)	01-JUN-2010 18:30			
					HK1011942-001
ED/EK: Inorganic Nonmetallic Parameters					
EK055A: Ammonia as N			7664-41-7	0.01	mg/L
EK055K: Unionized Ammonia (as N)			---	0.01	mg/L
					2.63
					0.23



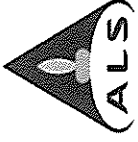
Page Number : 4 of 5

Client : LAM GEOTECHNICS LIMITED

Work Order : HK1011942, Amendment 1

Compound	Client sample ID		LOR	Unit	Client sampling date / time	S10 01-JUN-2010 18:30 HK1011942-002
	CAS Number	Unit				
ED/EK: Inorganic Nonmetallic Parameters						
EK055A: Ammonia as N	7664-41-7		0.01	mg/L		0.11
EK055K: Unionized Ammonia (as N)			0.01	mg/L		0.01

Sub-Matrix: SEAWATER



Laboratory Duplicate (DUP) Report

Matrix: WATER		Method: Compound		Laboratory Duplicate (DUP) Report			
Laboratory sample ID	Client sample ID	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371688)							
HK1011932-002	Anonymous	7664-41-7	0.01	mg/L	0.14	0.13	7.4
HK1011943-002	Anonymous	7664-41-7	0.01	mg/L	0.12	0.11	8.7

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

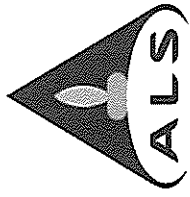
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report									
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	LCS	Spike Recovery (%)	DCS	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371688)													
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	109	---	---	85	115	---	---	---

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

Matrix: WATER		Method: Compound		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report							
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	Spike Recovery (%)	MSD	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371688)											
HK1011785-002	Anonymous	7664-41-7	0.5 mg/L	104	---	---	75	125	---	---	---

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
Contact : MR C M YEE
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WAN CHAI, HONG KONG
E-mail : Samuel@Lamconstruct.com.hk
Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009712
Site : S10

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 1/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011943
Amendment : 1

Date Samples Received : 01-JUN-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

pp Fung Lim Chee, Richard

Position

General Manager

Authorised results for

Inorganics

Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011943, Amendment 1



General Comments

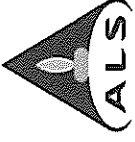
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011943

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

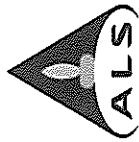
Elutriate sample(s) analysed and reported on an as received basis.



Analytical Results

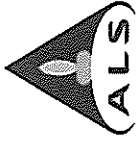
Sub-Matrix: ELUTRIATE

Compound	CAS Number	LOR	Unit	Client sample ID	Client sampling date / time
ED/EK: Inorganic Nonmetallic Parameters				S10 (1.9-2.9M)	01-JUN-2010 18:30
EK055A: Ammonia as N	7664-41-7	0.01	mg/L		
EK055K: Unionized Ammonia (as N)	----	0.01	mg/L		
				HK1011943-001	



Sub-Matrix: SEAWATER

Compound	Client sample ID		LOR	Unit	S10
	CAS Number	Client sampling date / time			
ED/EK: Inorganic Nonmetallic Parameters					
EK055A: Ammonia as N	7664-41-7	01-JUN-2010 18:30	0.01	mg/L	0.12
EK055K: Unionized Ammonia (as N)	---	01-JUN-2010 18:30	0.01	mg/L	0.01



Laboratory Duplicate (DUP) Report

Matrix: WATER		Method: Compound		Laboratory Duplicate (DUP) Report			
Laboratory sample ID	Client sample ID	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371688)							
HK1011932-002	Anonymous	EK055A: Ammonia as N	0.01	mg/L	0.14	0.13	7.4
HK1011943-002	S10	EK055A: Ammonia as N	0.01	mg/L	0.12	0.11	8.7

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

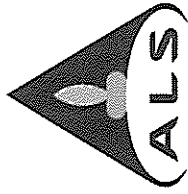
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report									
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	LCS	Spike Recovery (%)	DCS	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371688)													
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	109	85	115	---	85	115	---	---

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

Matrix: WATER		Method: Compound				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	Spike Recovery (%)	MSD	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371688)											
HK1011785-002	Anonymous	EK055A: Ammonia as N	0.5 mg/L	104	75	125	---	75	125	---	---

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
Contact : MR C M YEE
Address : 1/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WAN CHAI, HONG KONG
E-mail : Samuel@Lamconstruct.com.hk
Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009712
Site : S30

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 1/F., Chung Shun Knitting Centre, 1 -3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011938
Amendment : 1

Date Samples Received : 01-JUN-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

Fung Lim Chee, Richard 

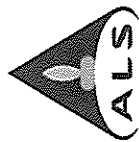
Position

General Manager

Authorised results for

Inorganics

Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011938, Amendment 1



General Comments

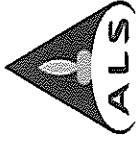
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011938

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

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



Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011938, Amendment 1

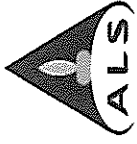
Analytical Results

Compound	CAS Number	LOR	Unit	Client sample ID	Client sampling date / time
ED/EK: Inorganic Nonmetallic Parameters				S30 (0-0.9M)	01-JUN-2010 16:30
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	HK1011938-001	
EK055K: Unionized Ammonia (as N)	----	0.01	mg/L		



Page Number : 4 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011938, Amendment 1

Sub-Matrix: SEAWATER		Client sample ID	Client sampling date / time	
Compound	CAS Number	LOR	Unit	Result
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.11
EK055K: Unionized Ammonia (as N)	----	0.01	mg/L	<0.01



Laboratory Duplicate (DUP) Report

Matrix: WATER		Method: Compound		Laboratory Duplicate (DUP) Report			
Laboratory sample ID	Client sample ID	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)							
HK1011942-001	Anonymous	7664-41-7	0.01	mg/L	2.63	2.60	1.1
HK1011932-002	Anonymous	7664-41-7	0.01	mg/L	0.14	0.13	7.4

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

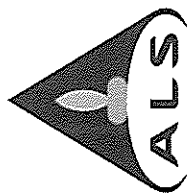
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	High	Low	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)										
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.5 mg/L	103	85	115	---	---	---

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

Matrix: WATER		Method: Compound		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	MSD	Recovery Limits (%)	High	Low	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)										
HK1011942-001	Anonymous	7664-41-7	0.5 mg/L	# Not Determined	---	75	125	---	---	---

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
Contact : MR C M YEE
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Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009712
Site : S30

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011939
Amendment : 1

Date Samples Received : 01-JUN-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

P Fung Lim Chee, Richard

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011939, Amendment 1

General Comments

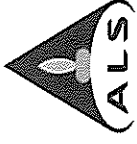
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011939

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

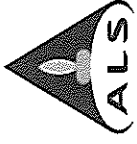
Elutriate sample(s) analysed and reported on an as received basis.



Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011939, Amendment 1

Analytical Results

Sub-Matrix: ELUTRIATE	Client sample ID	Client sampling date / time	CAS Number	LOR	Unit
	S30 (0.9-1.9M)	01-JUN-2010 16:30			
			7664-41-7	0.01	mg/L
			---	0.01	mg/L
ED/EK: Inorganic Nonmetallic Parameters					
EK055A: Ammonia as N					
EK055K: Unionized Ammonia (as N)					
				8.22	
				0.71	



Page Number : 4 of 5

Client : LAM GEOTECHNICS LIMITED

Work Order : HK1011939, Amendment 1

Sub-Matrix: SEAWATER		Client sample ID	Client sampling date / time	
Compound	CAS Number	LOR	Unit	
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	S30 01-JUN-2010 16:30
EK055K: Unionized Ammonia (as N)		0.01	mg/L	HK1011939-002



Laboratory Duplicate (DUP) Report

Matrix: WATER		Method: Compound		Laboratory Duplicate (DUP) Report			
Laboratory sample ID	Client sample ID	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371688)							
HK1011932-002	Anonymous	7664-41-7	0.01	mg/L	0.14	0.13	7.4
HK1011943-002	Anonymous	7664-41-7	0.01	mg/L	0.12	0.11	8.7

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

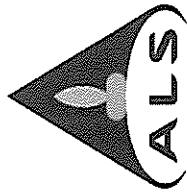
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report									
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	LCS	Spike Recovery (%)	DCS	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371688)													
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	109	---	---	85	115	---	---	---

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

Matrix: WATER		Method: Compound		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report							
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	Spike Recovery (%)	MSD	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371688)											
HK1011785-002	Anonymous	EK055A: Ammonia as N	0.5 mg/L	104	---	---	75	125	---	---	---

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

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Contact : MR C M YEE
Address : 1/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WAN CHAI, HONG KONG
E-mail : Samuel@Lamconstruct.com.hk
Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009712
Site : S30

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011940
Amendment : 1

Date Samples Received : 01-JUN-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

PP Fung Lim Chee, Richard 

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011940, Amendment 1

General Comments

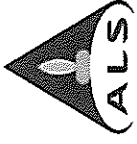
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011940

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

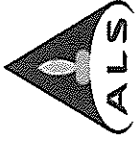
Elutriate sample(s) analysed and reported on an as received basis.



Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011940, Amendment 1

Analytical Results

Sub-Matrix: ELUTRIATE	Client sample ID		Client sampling date / time	
Compound	CAS Number	LOR	Unit	Unit
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	8.44
EK055K: Unionized Ammonia (as N)	---	0.01	mg/L	0.73



Page Number : 4 of 5

Client : LAM GEOTECHNICS LIMITED

Work Order : HK1011940, Amendment 1

Sub-Matrix: SEAWATER		Client sample ID	Client sampling date / time	
Compound	CAS Number	LOR	Unit	
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.13
EK055K: Unionized Ammonia (as N)	----	0.01	mg/L	0.01



Laboratory Duplicate (DUP) Report

Matrix: WATER		Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	CAS Number	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371688)						
HK1011932-002	Anonymous	7664-41-7	mg/L	0.14	0.13	7.4
HK1011943-002	Anonymous	7664-41-7	mg/L	0.12	0.11	8.7

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

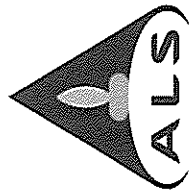
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report								
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	DCS	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371688)												
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	109	---	85	115	---	---	---

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

Matrix: WATER		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report									
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)	MSD	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371688)											
HK1011785-002	Anonymous	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	104	---	75	125	---	---	---

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
Contact : MR C M YEE
Address : 1/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WAN CHAI, HONG KONG
E-mail : Samuel@Lamconstruct.com.hk
Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009712
Site : S35

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 1/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : **HK1011969**
Amendment : 1

Date Samples Received : 02-JUN-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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

Signatories

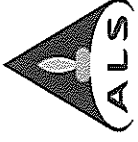
Richard Lim Chee, Fung

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011969, Amendment 1

General Comments

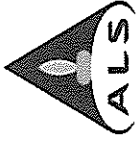
This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 07-JUN-2010
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: HK1011969

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

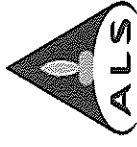
Elutriate sample(s) analysed and reported on an as received basis.



Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011969, Amendment 1

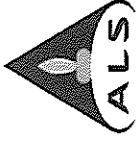
Analytical Results

Sub-Matrix: ELUTRIATE	Client sample ID	Client sampling date / time	S35 (0-0.9M)	
Compound	CAS Number	LOR	Unit	Value
ED/EK: Inorganic Nonmetallic Parameters				
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	1.48
EK055K: Unionized Ammonia (as N)	---	0.01	mg/L	0.14



Sub-Matrix: SEAWATER

Compound	Client sample ID	
	CAS Number	Client sampling date / time
ED/EK: Inorganic Nonmetallic Parameters		S35
EK055A: Ammonia as N	7664-41-7	02-JUN-2010 10:00
EK055K: Unionized Ammonia (as N)	---	HK1011969-002
	LOR	Unit
	0.01	mg/L
	0.01	mg/L



Laboratory Duplicate (DUP) Report

Matrix: WATER		Laboratory Duplicate (DUP) Report	
Laboratory sample ID	Client sample ID	Method: Compound	Unit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371688)			
HK1011932-002	Anonymous	EK055A: Ammonia as N	mg/L
HK1011943-002	Anonymous	EK055A: Ammonia as N	mg/L
		7664-41-7	0.01
		7664-41-7	0.01
		0.14	0.13
		0.12	0.11
			7.4
			8.7

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

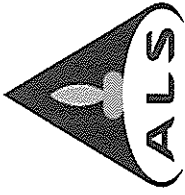
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report	
Method: Compound	CAS Number	LOR	Unit	Spike Concentration	Spike Recovery (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371688)					
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01
				0.5 mg/L	109
					85
					115

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

Matrix: WATER		Method: Compound		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report	
Laboratory sample ID	Client sample ID	CAS Number	Spike Concentration	MS	MSD
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371688)					
HK1011785-002	Anonymous	EK055A: Ammonia as N	0.5 mg/L	104	125
				75	125

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
Contact : MR C M YEE
Address : 11/F., CENTRE POINT,
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Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009712
Site : S35

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011970
Amendment : 1

Date Samples Received : 02-JUN-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

PP Fung Lim Chee, Richard

Position

General Manager

Authorised results for

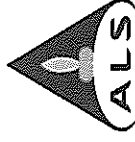
Inorganics

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
Tel: +852 2610 1044 Fax: +852 2610 2021 www.alsenviro.com

A Campbell Brothers Limited Company

Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011970, Amendment 1



General Comments

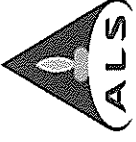
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011970

Result of Unionized ammonia was calculated from NH₃-N and in-situ measurement of temperature, pH and Salinity. NH₃-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

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



Analytical Results

Sub-Matrix: ELUTRIATE

Client sample ID : S35 (0.9-1.9M)
 Client sampling date / time : 02-JUN-2010 10:00
 CAS Number LOR Unit : HK1011970-001

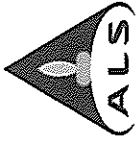
Compound

ED/EK: Inorganic Nonmetallic Parameters

EK055A: Ammonia as N

EK055K: Unionized Ammonia (as N)

CAS Number	LOR	Unit	Value
7664-41-7	0.01	mg/L	0.78
----	0.01	mg/L	0.07



Page Number : 4 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011970, Amendment 1

Sub-Matrix: SEAWATER

Compound	Client sample ID	
	CAS Number	Client sampling date / time
ED/EK: Inorganic Nonmetallic Parameters		S35
EK055A: Ammonia as N	7664-41-7	02-JUN-2010 10:00
EK055K: Unionized Ammonia (as N)		HK1011970-002
	LOR	Unit
	0.01	mg/L
	0.01	mg/L



Laboratory Duplicate (DUP) Report

Matrix: WATER		Laboratory Duplicate (DUP) Report	
Laboratory sample ID	Client sample ID	Method: Compound	Unit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371688)			
HK1011932-002	Anonymous	EK055A: Ammonia as N	mg/L
HK1011943-002	Anonymous	EK055A: Ammonia as N	mg/L
			0.14
			0.13
			0.11
			7.4
			8.7

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

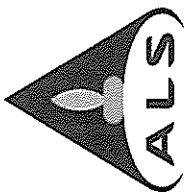
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report	
Method: Compound	CAS Number	LOR	Unit	Spike Concentration	Spike Recovery (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371688)					
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.5 mg/L	<0.01
					109
					85
					115

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

Matrix: WATER		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report	
Laboratory sample ID	Client sample ID	Method: Compound	Unit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371688)			
HK1011785-002	Anonymous	EK055A: Ammonia as N	mg/L
			0.5 mg/L
			104
			75
			125

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

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Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009713
Site : S35

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011972
Amendment : 1

Date Samples Received : 02-JUN-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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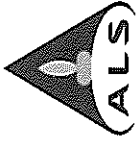
FF Fung Lim Chee, Richard 

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011972, Amendment 1

General Comments

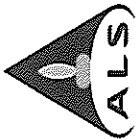
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011972

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

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

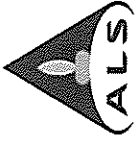


Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011972, Amendment 1

Analytical Results

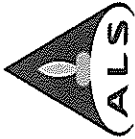
Sub-Matrix: ELUTRIATE

Compound	CAS Number	LOR	Unit	Client sample ID	Client sampling date / time
ED/EK: Inorganic Nonmetallic Parameters				S35 (1.9-2.9M)	02-JUN-2010 10:00
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	HK1011972-001	
EK055K: Unionized Ammonia (as N)	----	0.01	mg/L		



Page Number : 4 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011972, Amendment 1

Sub-Matrix: SEAWATER		Client sample ID	
Compound	CAS Number	Client sampling date / time	Unit
ED/EK: Inorganic Nonmetallic Parameters			
EK055A: Ammonia as N	7664-41-7	02-JUN-2010 10:00	mg/L
EK055K: Unionized Ammonia (as N)	---	HK1011972-002	mg/L
		S35	0.17
			0.02



Laboratory Duplicate (DUP) Report

Laboratory sample ID		Client sample ID		Method: Compound		Laboratory Duplicate (DUP) Report			
ED/EK:	Inorganic Nonmetallic Parameters (QC Lot: 1371688)	Anonymous	Anonymous	Anonymous as N	Anonymous as N	Original Result	Duplicate Result	RPD (%)	
HK1011932-002		7664-41-7	0.01	mg/L	0.14	0.13	7.4		
HK1011943-002		7664-41-7	0.01	mg/L	0.12	0.11	8.7		

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

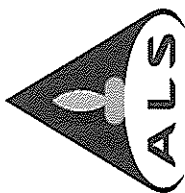
Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report			
Method: Compound	CAS Number	LOR	Unit	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371688)	7664-41-7	0.01	mg/L	0.5 mg/L	109	85	115
EK055A: Ammonia as N							

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

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report												
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	MS	MSD	Recovery Limits (%)	High	Low	Value	RPD (%)	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371688)	Anonymous	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	104	75	125					
HK1011785-002												

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

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Contact : MR C M YEE
Address : 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WAN CHAI, HONG KONG
E-mail : Samuel@Lamconstruct.com.hk
Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009712
Site : D238

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 11/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011935
Amendment : 1

Date Samples Received : 01-JUN-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

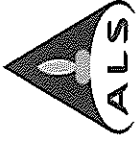
Fung Lim Chee, Richard 

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011935, Amendment 1

General Comments

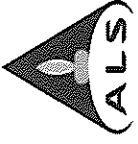
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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
Specific comments for Work Order: HK1011935

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

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



Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011935, Amendment 1

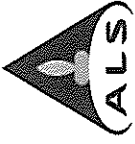
Analytical Results

Sub-Matrix: ELUTRIATE

Client sample ID	D238 (0-0.9M)
Client sampling date / time	01-JUN-2010 13:30
CAS Number	HK1011935-001

Compound	CAS Number	LOR	Unit
ED/EK: Inorganic Nonmetallic Parameters			
EK055A: Ammonia as N	7664-41-7	0.01	mg/L
EK055K: Unionized Ammonia (as N)	---	0.01	mg/L

9.23
0.78



Page Number : 4 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011935, Amendment 1

Sub-Matrix: SEAWATER

D238
 01-JUN-2010 13:30
 HK1011935-002

Client sample ID
 Client sampling date / time

CAS Number LOR Unit

ED/EK: Inorganic Nonmetallic Parameters

EK055A: Ammonia as N

7664-41-7

0.01

mg/L

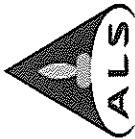
0.20

EK055K: Unionized Ammonia (as N)

0.01

mg/L

0.02



Laboratory Duplicate (DUP) Report

Matrix: WATER		Laboratory Duplicate (DUP) Report	
Laboratory sample ID	Client sample ID	Method: Compound	Compound
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)			
HK1011942-001	Anonymous	EK055A: Ammonia as N	2.63
HK1011932-002	Anonymous	EK055A: Ammonia as N	0.13
			1.1
			7.4

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

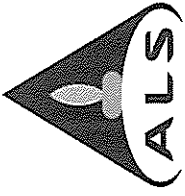
Matrix: WATER		Method Blank (MB) Report		Laboratory Control Spike (LCS) Report		Laboratory Control Spike Duplicate (DCS) Report	
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	DCS
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)							
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	103	85
							115

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

Matrix: WATER		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report	
Laboratory sample ID	Client sample ID	Method: Compound	Compound
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)			
HK1011942-001	Anonymous	EK055A: Ammonia as N	0.5 mg/L
			75
			125

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
Contact : MR C M YEE
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181-185 GLOUCESTER ROAD,
WAN CHAI, HONG KONG
E-mail : Samuel@Lamconstruct.com.hk
Telephone : +852 2839 5633
Facsimile : ----
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009712
Site : D238

Laboratory : ALS Technichem HK Pty Ltd
Contact : Chan Kwok Fai, Godfrey
Address : 1/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011937
Amendment : 1

Date Samples Received : 01-JUN-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

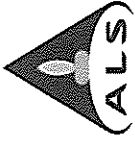
Richard Lim
Richard Lim

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011937, Amendment 1

General Comments

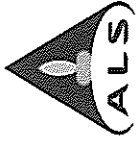
This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 07-JUN-2010
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: HK1011937

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

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

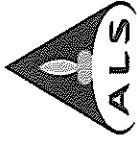


Page Number : 3 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011937, Amendment 1

Analytical Results

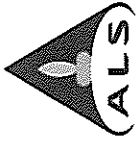
Sub-Matrix: ELUTRIATE

Compound	CAS Number	LOR	Unit	Client sample ID	Client sampling date / time
ED/EK: Inorganic Nonmetallic Parameters				D238 (0.9-1.9M)	01-JUN-2010 13:30
EK055A: Ammonia as N	7664-41-7	0.01	mg/L		
EK055K: Unionized Ammonia (as N)	----	0.01	mg/L		
					HK1011937-001



Page Number : 4 of 5
 Client : LAM GEOTECHNICS LIMITED
 Work Order : HK1011937, Amendment 1

Compound	CAS Number		Client sample ID	
	LOR	Unit	Client sampling date / time	Sub-Matrix: SEAWATER
ED/EK: Inorganic Nonmetallic Parameters				D238
EK055A: Ammonia as N	7664-41-7	0.01 mg/L	01-JUN-2010 13:30	
EK055K: Unionized Ammonia (as N)	---	0.01 mg/L	HK1011937-002	



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 (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)								
HK1011942-001	Anonymous	EK055A: Ammonia as N	7664-41-7	0.01	mg/L	2.63	2.60	1.1
HK1011932-002	Anonymous	EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.14	0.13	7.4

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

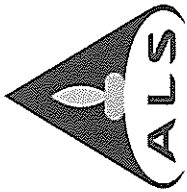
Matrix: WATER		Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	LCS	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)												
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	103	85	115	---	---	---	---

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

Matrix: WATER		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report										
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)	MS	MSD	Recovery Limits (%)	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)												
HK1011942-001	Anonymous	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	75	125	---	---	---	---	---	---
												# Not Determined

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : LAM GEOTECHNICS LIMITED
Contact : MR C M YEE
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E-mail : Samuel@Lamconstruct.com.hk
Telephone : +852 2839 5633
Facsimile : ---
Project : LG29024
Order number : CV/2009/13
C-O-C number : H009712
Site : D238

Laboratory : ALS Technichem HK Pty Ltd
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Address : 11/F., Chung Shun Knitting Centre, 1 - 3
Wing Yip Street,
Kwai Chung, N.T., Hong Kong
E-mail : Godfrey.Chan@alsenviro.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HK/703a/2010**

Page : 1 of 5
Work Order : HK1011936
Amendment : 1

Date Samples Received : 01-JUN-2010
Issue Date : 15-JUN-2010
No. of samples received : 2
No. of samples analysed : 2

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Signatories

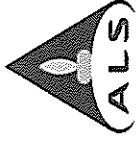
PP Fung Lim Chee, Richard

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011936, Amendment 1

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 07-JUN-2010
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: HK1011936

Result of Unionized ammonia was calculated from NH3-N and in-situ measurement of temperature, pH and Salinity. NH3-N results are determined by the laboratory and in-situ measurement results were provided by the client.

Project Name: Kwai Tsing Container Basin - Marine Ground Investigation.

Sample(s) were received in a chilled condition.

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



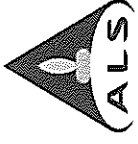
Page Number : 3 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011936, Amendment 1

Analytical Results

Sub-Matrix: ELUTRIATE
Client sample ID: D238 (1.9-2.9M)
Client sampling date / time: 01-JUN-2010 13:30
CAS Number: LOR Unit: HK1011936-001

ED/EK: Inorganic Nonmetallic Parameters

EK055A: Ammonia as N	7664-41-7	0.01	mg/L	13.6
EK055K: Unionized Ammonia (as N)	----	0.01	mg/L	1.15

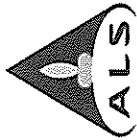


Page Number : 4 of 5
Client : LAM GEOTECHNICS LIMITED
Work Order : HK1011936, Amendment 1

Sub-Matrix: SEAWATER

Client sample ID : D238
Client sampling date / time : 01-JUN-2010 13:30
CAS Number : HK1011936-002

Compound	LOR	Unit
ED/EK: Inorganic Nonmetallic Parameters		
EK055A: Ammonia as N	7664-41-7 0.01	mg/L
EK055K: Unionized Ammonia (as N)	---- 0.01	mg/L



Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Method: Compound	Laboratory Duplicate (DUP) Report		Unit	RPD (%)
			Original Result	Duplicate Result		
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)						
HK1011942-001	Anonymous	EK055A: Ammonia as N	2.63	2.60	mg/L	1.1
HK1011932-002	Anonymous	EK055A: Ammonia as N	0.14	0.13	mg/L	7.4

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

Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report				
Method: Compound	CAS Number	LOR	Unit	Spike Concentration	Spike Recovery (%)	DCS	Recovery Limits (%)
				Concentration	LCS	Low	High
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)	7664-41-7	0.01	mg/L	0.5 mg/L	103	85	115
EK055A: Ammonia as N							

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

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)	MSD	
				Concentration	MS	Low	
					High	Value	
					Control Limit		
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1371687)	Anonymous	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	# Not Determined	75	125
HK1011942-001							