

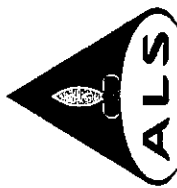
Sampling Boreholes	Sampling Depth (mbgl)	Arsenic Concentration (mg/kg dry soil)	Report No.
<b>Fanling North (FLN)</b>			
FLN-BH07	0.5	6	HK1113335
	1.0	4	HK1113335
	1.5	6	HK1113335
	3.10-3.55	8	HK1113424
	6.50-6.95	3	HK1113424
	10.50-10.95	1	HK1113612
	16.55-17.00	3	HK1113692
	20.60-21.05	3	HK1113692
	24.65-25.10	2	HK1113898
FLN-BH08	0.5	14	HK1113898
	1.0	12	HK1113898
	1.5	14	HK1113898
	3.05-3.50	6	HK1113899
FLN-BH10	1.0	60	HK1113206
	1.5	50	HK1113206
	2.0	50	HK1113206
	3.55-4.00	43	HK1113206
	7.60-8.05	7	HK1113335
	11.65-12.10	15	HK1113335
FLN-BH12	0.6	37	HK1112316
	1.10	42	HK1112316
	1.60	41	HK1112316
	2.00	38	HK1112316
	3.55-4.00	23	HK1112556
	7.60-8.05	34	HK1112556
FLN-BH14	0.5	50	HK1112112
	1.0	22	HK1112112
	1.5	28	HK1112112
	2.0	30	HK1112112
	3.55-4.00	16	HK1112113
FLN-BH19	0.5	18	HK1114174
	1.0	21	HK1114174
	1.5	19	HK1114174
	2.0	25	HK1114174
	3.55-4.00	3	HK1114174
	8.95-9.40	4	HK1114377
	14.10-14.55	3	HK1114550
FLN-BH20	0.5	16	HK1112687
	1.0	18	HK1112687
	1.5	13	HK1112687
	3.05-3.50	9	HK1112690

Sampling Boreholes	Sampling Depth (mbgl)	Arsenic Concentration (mg/kg dry soil)	Report No.
	10.65-11.10	46	HK1112820
	14.70-15.15	18	HK1112958
FLN-BH22	0.5	35	HK1111185
	1.0	41	HK1111185
	1.5	4	HK1111185
	3.05-3.50	14	HK1111309

# ALS Technichem (HK) Pty Ltd

## ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



### CERTIFICATE OF ANALYSIS

Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Contact : IR POPHIL LAM  
Address : GEOTECHNICAL PROJECTS DIVISION, GEOTECHNICAL ENGINEERING OFFICE, 23/F., KWUN TONG VIEW, 410 KWUN TONG ROAD, KOWLOON, HONG KONG  
E-mail : Pophilkiam@cedd.gov.hk  
Telephone : +852 2716 8609  
Facsimile : +852 2715 7572  
Project : AGREEMENT NO CE 61.2007(CE) - NORTH EAST NEW TERRITORIES DEVELOPMENT AREAS  
Order number : GE/2009/16.20  
C-O-C number : H009876  
Site : PING CHE, YIN KONG & FANLING

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 : ----

Page : 1 of 5  
Work Order : HK1111185

Date Samples Received : 17-MAY-2011  
Issue Date : 26-MAY-2011  
No. of samples received : 7  
No. of samples analysed : 7

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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

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

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Page Number : 2 of 5  
Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Work Order : HK1111185

### **General Comments**

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24-MAY-2011

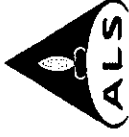
Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
Specific comments for Work Order: HK1111185

Project Name: Agreement No. CE 61/2007(CE) - North East New Territories Development Areas, Planning and Engineering Study Ground Investigation Phase 2 and Laboratory Testing Service  
(Batch 2).

Sample(s) were received in a chilled condition.

Soil sample(s) analysed on an as received basis. Result(s) reported on a dry weight basis.

Soil sample(s) as received, digested by In-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.



Page Number : 3 of 5  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK111185

### Analytical Results

Compound	CAS Number	LOR	Unit	Client sample ID
EA/ED: Physical and Aggregate Properties				
EA055: Moisture Content (dried @ 103°C)		0.1	%	KTN-BH28 7.60-8.05M 17-MAY-2011 09:30 HK1111185-001
EG: Metals and Major Cations				
EG020: Arsenic	7440-38-2	1	mg/kg	PC/TKL-BH31 3.15-3.60M 17-MAY-2011 11:00 HK1111185-002
				PC/TKL-BH33 23.30-23.75M 17-MAY-2011 13:30 HK1111185-003
				PC/TKL-BH31 7.20-7.65M 17-MAY-2011 16:30 HK1111185-004
				FLN-BH22 0.5M 17-MAY-2011 14:00 HK1111185-005



Page Number : 4 of 5  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK1111185

Compound	Client sample ID		CAS Number	LOR	Unit
	FLN-BH22	FLN-BH22			
EA055: Moisture Content (dried @ 103°C)	1.0M 17-MAY-2011 14:45 HK1111185-006	1.5M 17-MAY-2011 15:30 HK1111185-007		0.1	%
EG: Metals and Major Cations			7440-38-2	1	mg/kg
EG020: Arsenic					41
					4



Page Number : 5 of 5  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK111185

**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	
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 1794803)</b>									
HK111185-002	PC/TKL-BH31	3.15-3.60M	EA055: Moisture Content (dried @ 103°C)		0.1	%	14.2	15.7	9.6
HK111185-001	KTN-BH28	7.60-8.05M	EA055: Moisture Content (dried @ 103°C)		0.1	%	23.4	23.5	0.0
<b>EG: Metals and Major Cations (QC Lot: 1799217)</b>									
HK111185-002	PC/TKL-BH31	3.15-3.60M	EG020: Arsenic	7440-38-2	1	mg/kg	3	2	0.0
HK1111309-006	Anonymous		EG020: Arsenic	7440-38-2	1	mg/kg	28	24	16.2

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

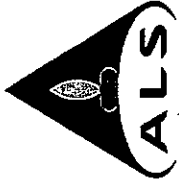
Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report								
Method: Compound	CAS Number	LOR	Unit	Spike Concentration	LCS	Spike Recovery (%)	DCS	Recovery Limits (%)	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 1799217)	7440-38-2	1	mg/kg	5 mg/kg	89.2	<1	---	85	115	---	---	---
EG020: Arsenic												

**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
<b>EG: Metals and Major Cations (QC Lot: 1799217)</b>													
HK111185-001	KTN-BH28	7.60-8.05M	EG020: Arsenic	7440-38-2	5 mg/kg	# Not Determined	---	---	75	125	---	---	---

# ALS Technichem (HK) Pty Ltd

## ALS Laboratory Group ANALYTICAL CHEMISTRY & TESTING SERVICES



### CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: IR POPHIL LAM	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1111309
Address	: GEOTECHNICAL PROJECTS DIVISION, GEOTECHNICAL ENGINEERING OFFICE, 23/F., KWUN TONG VIEW, 410 KWUN TONG ROAD, KOWLOON, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Pophilkiam@cedd.gov.hk	E-mail	: Godfrey.Chan@alsenviro.com	Date Samples Received	: 18-MAY-2011
Telephone	: +852 2716 8609	Telephone	: +852 2610 1044	Issue Date	: 27-MAY-2011
Facsimile	: +852 2715 7572	Facsimile	: +852 2610 2021	No. of samples received	: 6
Project	: AGREEMENT NO CE 61_2007(CE) - NORTH EAST NEW TERRITORIES DEVELOPMENT AREAS	Quote number	: ----	No. of samples analysed	: 6
Order number	: GE/2009/16.20				
C-O-C number	: H009877				
Site	: PING CHE, YIN KONG & FANLING				

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Signatories

Fung Lim Chee, Richard

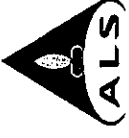
Position

General Manager

Authorised results for

Inorganics





Page Number : 2 of 6  
Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Work Order : HK1111309

### General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 25-MAY-2011

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: HK1111309

Project Name: Agreement No. CE 6/1/2007(CE) - North East New Territories Development Areas, Planning and Engineering Study Ground Investigation Phase 2 and Laboratory Testing Service (Batch 2).

Sample(s) were received in a chilled condition.

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

Soil sample(s) analysed on an as received basis. Result(s) reported on a dry weight basis.

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

Soil sample(s) as received, digested by in-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.



Page Number : 3 of 6  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK1111309

**Analytical Results**

Sub-Matrix: SOIL

Compound	CAS Number	Client sample ID	
		LOR	Unit
EA/ED: Physical and Aggregate Properties			
EA055: Moisture Content (dried @ 103°C)	---	0.1	%
EG: Metals and Major Cations			
EG020: Arsenic	7440-38-2	1	mg/kg

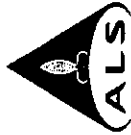
  

Client sample ID	Client sampling date / time	Unit	Value
FLN-BH22 3.05-3.50M	18-MAY-2011 09:30	HK1111309-001	19.4
FLN-BH22 3.05-3.50M (DUPLICATE)	18-MAY-2011 09:30	HK1111309-002	11.5
PC/TKL-BH33 27.35-27.80M	18-MAY-2011 11:00	HK1111309-005	20.1
KTN-BH28 12.20-12.65M	18-MAY-2011 15:00	HK1111309-006	17.5

Page Number : 4 of 6

Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

Work Order : HK1111309



Sub-Matrix: WATER

Compound	CAS Number	LOR	Unit	Client sample ID	Client sampling date / time
EG020: Arsenic	7440-38-2	10	µg/L	FLN-BH22 3.05-3.50M (EQUIPMENT BLANK)	18-MAY-2011 09:40
				FLN-BH22 3.05-3.50M (FIELD BLANK)	18-MAY-2011 09:50
					HK1111309-003
					HK1111309-004
					<10
					<10



**Laboratory Duplicate (DUP) Report**

Matrix: SOIL		Laboratory Duplicate (DUP) Report	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 1799238)</b>			
HK1111263-006	Anonymous	EA055: Moisture Content (dried @ 103°C)	---
HK1111263-016	Anonymous	EA055: Moisture Content (dried @ 103°C)	---
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 1799239)</b>			
HK1111309-002	FLN-BH22 3.05-3.50M (DUPLICATE)	EA055: Moisture Content (dried @ 103°C)	---
<b>EG: Metals and Major Cations (QC Lot: 1799217)</b>			
HK111185-002	Anonymous	EG020: Arsenic	7440-38-2
HK1111309-006	KTN-BH28 12.20-12.65M	EG020: Arsenic	7440-38-2
Matrix: WATER			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number
<b>EG: Metals and Major Cations - Filtered (QC Lot: 1802454)</b>			
HK1111309-004	FLN-BH22 3.05-3.50M (FIELD BLANK)	EG020: Arsenic	7440-38-2

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

Matrix: SOIL		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report	
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg
Matrix: WATER					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L

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

Matrix: SOIL		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number
EG020: Arsenic	7440-38-2	5 mg/kg	# Not Determined
Matrix: WATER			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number
EG020: Arsenic	7440-38-2	5 mg/kg	# Not Determined



Matrix: WATER

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

Laboratory sample ID	Client sample ID	Method: Compound	Spike Concentration	CAS Number	Spike Recovery (%)			Recovery Limits (%)			Value	RPD (%)	Control Limit
					MS	MSD	MSD	Low	High	High			

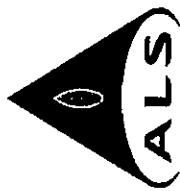
EG: Metals and Major Cations - Filtered (QC Lot: 1802454)

HK1111309-003 FLN-BH22 3.05-3.50M  
 (EQUIPMENT BLANK) EG020: Arsenic

7440-38-2	100 µg/L	91.8	---	75	125	---	---
-----------	----------	------	-----	----	-----	-----	-----

# ALS Technichem (HK) Pty Ltd

**ALS Laboratory Group**  
ANALYTICAL CHEMISTRY & TESTING SERVICES



## CERTIFICATE OF ANALYSIS

Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Contact : IR POPHIL LAM  
Address : GEOTECHNICAL PROJECTS DIVISION, GEOTECHNICAL ENGINEERING OFFICE, 23/F., KWUN TONG VIEW, 410 KWUN TONG ROAD, KOWLOON, HONG KONG  
E-mail : Pophilkiam@cedd.gov.hk  
Telephone : +852 2716 8609  
Facsimile : +852 2715 7572  
Project : AGREEMENT NO CE 61\_2007(CE) - NORTH EAST NEW TERRITORIES DEVELOPMENT AREAS  
Order number : GE/2009/16.20  
C-O-C number : H009901  
Site : TONG HANG, FANLING

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 : ----

Date Samples Received : 26-MAY-2011  
Issue Date : 03-JUN-2011  
No. of samples received : 4  
No. of samples analysed : 4

Page : 1 of 4

Work Order : HK1112112

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

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Page Number : 2 of 4  
Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Work Order : HK1112112

### 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: HK1112112

Project Name: Agreement No. CE 61/2007(CE) - North East New Territories Development Areas, Planning and Engineering Study Ground Investigation Phase 2 and Laboratory Testing Service (Batch 2).

Sample(s) were received in a chilled condition.

Soil sample(s) analysed on an as received basis. Result(s) reported on a dry weight basis.

Soil sample(s) as received, digested by in-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.

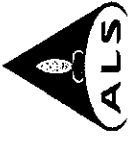


Page Number : 3 of 4  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK1112112

**Analytical Results**

Compound	CAS Number	LOR	Unit	Client sample ID			
				Client sampling date / time	FLN-BH14	FLN-BH14	FLN-BH14
EA055: Moisture Content (dried @ 103°C)		0.1	%	26-MAY-2011 09:00	26-MAY-2011 09:30	26-MAY-2011 10:00	26-MAY-2011 10:30
EG: Metals and Major Cations				HK1112112-001	HK1112112-002	HK1112112-003	HK1112112-004
EG020: Arsenic	7440-38-2	1	mg/kg	11.6	13.7	14.0	16.3
				50	22	28	30





Page Number : 4 of 4  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK1112112

**Laboratory Duplicate (DUP) Report**

Matrix: SOIL		Laboratory Duplicate (DUP) Report	
Laboratory sample ID	Client sample ID	Original Result	Duplicate Result
EAI/ED: Physical and Aggregate Properties (QC Lot: 1811262)			
HK1112112-001	FLN-BH14 0.5M	11.6	11.7
EA055: Moisture Content (dried @ 103°C)			
LOR		0.1	
EG: Metals and Major Cations (QC Lot: 1813135)			
HK1112112-002	FLN-BH14 1.0M	22	18
HK1112183-001	Anonymous	18	18
Unit		%	
Method: Compound			
CAS Number			
EAI/ED: Physical and Aggregate Properties (QC Lot: 1811262)			
EG020: Arsenic			
EG020: Arsenic			
RPD (%)			1.4
Control Limit			17.2
Control Limit			0.0

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

Matrix: SOIL		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report	
Laboratory sample ID	Client sample ID	Result	Spike Concentration	Recovery Limits (%)	RPD (%)
EG: Metals and Major Cations (QC Lot: 1813135)					
EG020: Arsenic	7440-38-2	<1	5 mg/kg	85	115
Unit			mg/kg		
Method: Compound					
CAS Number					
LOR			92.8		
Spike Recovery (%)					
DCS					
Value					
Control Limit					

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

Matrix: SOIL		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report	
Laboratory sample ID	Client sample ID	Spike Concentration	Recovery Limits (%)
EG: Metals and Major Cations (QC Lot: 1813135)			
HK1112112-001	FLN-BH14 0.5M	5 mg/kg	75
Method: Compound			
CAS Number			
LOR			
Spike Recovery (%)			
MSD			
Value			
Control Limit			
# Not Determined			
125			

# ALS Technichem (HK) Pty Ltd

**ALS Laboratory Group**  
ANALYTICAL CHEMISTRY & TESTING SERVICES



## CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 4
Contact	: IR POPHIL LAM	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1112113
Address	: GEOTECHNICAL PROJECTS DIVISION, GEOTECHNICAL ENGINEERING OFFICE, 23/F., KWUN TONG VIEW, 410 KWUN TONG ROAD, KOWLOON, HONG KONG	Address	: 1/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Pophilkiam@cedd.gov.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2716 8609	Telephone	: +852 2610 1044		
Facsimile	: +852 2715 7572	Facsimile	: +852 2610 2021		
Project	: AGREEMENT NO CE 61_2007(CE) - NORTH EAST NEW TERRITORIES DEVELOPMENT AREAS	Quote number	: ----	Date Samples Received	: 27-MAY-2011
Order number	: GE/2009/16.20			Issue Date	: 03-JUN-2011
C-O-C number	: H009902			No. of samples received	: 1
Site	: TONG HANG, FANLING			No. of samples analysed	: 1

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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

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Page Number : 2 of 4  
Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Work Order : HK1112113

### General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 31-MAY-2011

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: **HK1112113**

Project Name: Agreement No. CE 61/2007(CE) - North East New Territories Development Areas, Planning and Engineering Study Ground Investigation Phase 2 and Laboratory Testing Service (Batch 2).

Sample(s) were received in a chilled condition.

Soil sample(s) analysed on an as received basis. Result(s) reported on a dry weight basis.

Soil sample(s) as received, digested by in-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.



Page Number : 3 of 4  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK1112113

**Analytical Results**

Sub-Matrix: SOIL

Compound	Client sample ID		Client sampling date / time	
	CAS Number	LOR	Unit	Unit
EA055: Physical and Aggregate Properties				
EA055: Moisture Content (dried @ 103°C)	---	0.1	%	20.8
EG: Metals and Major Cations				
EG020: Arsenic	7440-38-2	1	mg/kg	16



Page Number : 4 of 4  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK1112113

### 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	
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 1811262)</b>								
HK1112112-001	Anonymous	EA055: Moisture Content (dried @ 103°C)		0.1	%	11.6	11.7	1.4
<b>EG: Metals and Major Cations (QC Lot: 1813135)</b>								
HK1112112-002	Anonymous	EG020: Arsenic	7440-38-2	1	mg/kg	22	18	17.2
HK1112183-001	Anonymous	EG020: Arsenic	7440-38-2	1	mg/kg	18	18	0.0

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

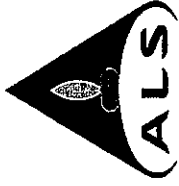
Method Blank (MB) Report	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
	Spike Concentration	LCS	Spike Recovery (%)	DCS	Recovery Limits (%)	RPD (%)
Matrix: SOIL						
Method: Compound						
EG: Metals and Major Cations (QC Lot: 1813135)						
EG020: Arsenic	5 mg/kg	92.8	85	115		

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

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report			
					MS	MSD	Recovery Limits (%)	RPD (%)
<b>EG: Metals and Major Cations (QC Lot: 1813135)</b>								
HK1112112-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	# Not Determined	75	125	

# ALS Technichem (HK) Pty Ltd

**ALS Laboratory Group**  
ANALYTICAL CHEMISTRY & TESTING SERVICES



## CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 5
Contact	: IR POPHIL LAM	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1112316
Address	: GEOTECHNICAL PROJECTS DIVISION, GEOTECHNICAL ENGINEERING OFFICE, 23/F., KWUN TONG VIEW, 410 KWUN TONG ROAD, KOWLOON, HONG KONG	Address	: 1/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Pophilkiam@cedd.gov.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2716 8609	Telephone	: +852 2610 1044		
Facsimile	: +852 2715 7572	Facsimile	: +852 2610 2021		
Project	: AGREEMENT NO CE 61 2007(CE) - NORTH EAST NEW TERRITORIES DEVELOPMENT	Quote number	: ----	Date Samples Received	: 01-JUN-2011
Order number	: GE/2009/16.20			Issue Date	: 13-JUN-2011
C-O-C number	: H009903			No. of samples received	: 7
Site	: TONG HANG, FANLING			No. of samples analysed	: 7

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Signatories

Richard 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

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Page Number : 2 of 5  
Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Work Order : HK1112316

### General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 11-JUN-2011

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: HK1112316

Project Name: Agreement No. CE 61/2007(CE) - North East New Territories Development Areas, Planning and Engineering Study Ground Investigation Phase 2 and Laboratory Testing Service (Batch 2).

Sample(s) were received in a chilled condition.

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

Soil sample(s) analysed on an as received basis. Result(s) reported on a dry weight basis.

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

Soil sample(s) as received, digested by in-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.

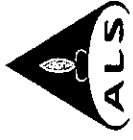


Page Number : 3 of 5  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK112316

**Analytical Results**

Compound	CAS Number	LOR	Unit	Client sample ID	Client sampling date / time	FLN-BH12 0.6M 01-JUN-2011 11:00 HK112316-001	FLN-BH12 1.10M 01-JUN-2011 11:30 HK112316-002	FLN-BH12 1.10M (DUPLICATE) 01-JUN-2011 11:30 HK112316-003	FLN-BH12 1.60M 01-JUN-2011 13:00 HK112316-006	FLN-BH12 2.00M 01-JUN-2011 14:00 HK112316-007
EAJED: Physical and Aggregate Properties						19.8	18.7	19.4	19.8	20.4
EA055: Moisture Content (dried @ 103°C)		0.1	%							
EG: Metals and Major Cations										
EG020: Arsenic	7440-38-2	1	mg/kg			37	42	51	41	38





Page Number : 4 of 5  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK112316

Sub-Matrix: WATER		Client sample ID	
Compound	CAS Number	Client sampling date / time	Unit
EG: Metals and Major Cations - Filtered	7440-38-2	01-JUN-2011 11:40	µg/L
EG020: Arsenic	10	01-JUN-2011 11:45	<10
		FLN-BH12 1.10M (EQUIPMENT BLANK) HK112316-004	<10
		FLN-BH12 1.10M (FIELD BLANK) HK112316-005	<10



**Laboratory Duplicate (DUP) Report**

Matrix: SOIL		Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 1816152)</b>								
HK1112218-001	Anonymous	EA055: Moisture Content (dried @ 103°C)		0.1	%	20.5	20.2	1.4
<b>EG: Metals and Major Cations (QC Lot: 1819699)</b>								
HK1112316-002	FLN-BH12 1.10M	EG020: Arsenic	7440-38-2	1	mg/kg	42	42	0.0
HK1112556-002	Anonymous	EG020: Arsenic	7440-38-2	1	mg/kg	34	39	14.1
<b>Matrix: WATER</b>								
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
HK1112316-005	FLN-BH12 1.10M (FIELD BLANK)	EG020: Arsenic	7440-38-2	10	µg/L	<10	<10	0.0

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

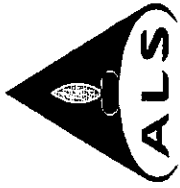
Matrix: SOIL		Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report								
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	LCS	DCS	Recovery Limits (%)	Low	High	Value	Control Limit	RPD (%)
<b>EG: Metals and Major Cations (QC Lot: 1819699)</b>														
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	107	107	---	85	115	---	---	---	---
<b>Matrix: WATER</b>														
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	LCS	DCS	Recovery Limits (%)	Low	High	Value	Control Limit	RPD (%)
<b>EG: Metals and Major Cations - Filtered (QC Lot: 1814392)</b>														
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	90.9	90.9	---	85	115	---	---	---	---

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

Matrix: SOIL		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
<b>EG: Metals and Major Cations (QC Lot: 1819699)</b>											
HK1112316-001	FLN-BH12 0.6M	EG020: Arsenic	7440-38-2	5 mg/kg	---	---	75	125	---	---	---
<b>Matrix: WATER</b>											
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	MS	MSD	Recovery Limits (%)	Low	High	Value	Control Limit
<b>EG: Metals and Major Cations - Filtered (QC Lot: 1814392)</b>											
HK1112316-004	FLN-BH12 1.10M (EQUIPMENT BLANK)	EG020: Arsenic	7440-38-2	100 µg/L	102	---	75	125	---	---	---

# ALS Technichem (HK) Pty Ltd

**ALS Laboratory Group**  
ANALYTICAL CHEMISTRY & TESTING SERVICES



## CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 4
Contact	: IR POPHIL LAM	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1112556
Address	: GEOTECHNICAL PROJECTS DIVISION, GEOTECHNICAL ENGINEERING OFFICE, 23/F., KWUN TONG VIEW, 410 KWUN TONG ROAD, KOWLOON, HONG KONG	Address	: 1/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Pophilkiam@cedd.gov.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2716 8609	Telephone	: +852 2610 1044	Date Samples Received	: 02-JUN-2011
Facsimile	: +852 2715 7572	Facsimile	: +852 2610 2021	Issue Date	: 13-JUN-2011
Project	: AGREEMENT NO CE 61_2007(CE) - NORTH EAST NEW TERRITORIES DEVELOPMENT AREAS	Quote number	: ----	No. of samples received	: 2
Order number	: GE/2009/16.20			No. of samples analysed	: 2
C-O-C number	: H009904				
Site	: TONG HANG, FANLING				

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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

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Page Number : 2 of 4  
Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Work Order : HK1112556

### **General Comments**

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11-JUN-2011

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: **HK1112556**

Project Name: Agreement No. CE 61/2007(CE) - North East New Territories Development Areas, Planning and Engineering Study Ground Investigation Phase 2 and Laboratory Testing Service (Batch 2).

Sample(s) were received in a chilled condition.

Soil sample(s) analysed on an as received basis. Result(s) reported on a dry weight basis.

Soil sample(s) as received, digested by In-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.



Page Number : 3 of 4  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK1112556

**Analytical Results**

Sub-Matrix: SOIL

Compound	CAS Number	LOR	Unit	Client sample ID	
				Client sampling date / time	Client sample ID
EA/ED: Physical and Aggregate Properties					
EA055: Moisture Content (dried @ 103°C)		0.1	%	23.1	FLN-BH12 3.55-4.00M 02-JUN-2011 10:30 HK1112556-001
EG: Metals and Major Cations					
EG020: Arsenic	7440-38-2	1	mg/kg	23	FLN-BH12 7.60-8.05M 02-JUN-2011 14:00 HK1112556-002
				17.2	
				34	



**Laboratory Duplicate (DUP) Report**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report		
				LOR	Unit	RPD (%)
<b>EAIED: Physical and Aggregate Properties (QC Lot: 1819722)</b>						
HK1112387-001	Anonymous	EA055: Moisture Content (diried @ 103°C)	---	0.1	%	4.9
HK1112562-001	Anonymous	EA055: Moisture Content (diried @ 103°C)	---	0.1	%	1.7
<b>EG: Metals and Major Cations (QC Lot: 1819699)</b>						
HK1112316-002	Anonymous	EG020: Arsenic	7440-38-2	1	mg/kg	0.0
HK1112556-002	FLN-BH12 7.60-8.05M	EG020: Arsenic	7440-38-2	1	mg/kg	14.1

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

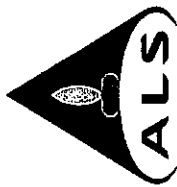
Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
		LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	Value	Control Limit	RPD (%)
EG: Metals and Major Cations (QC Lot: 1819699)	7440-38-2	1	mg/kg	<1	5 mg/kg	107	85	115	---	---
EG020: Arsenic										

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

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Matrix Spike Recovery (%)			Matrix Spike Duplicate (MSD) Report		
					MS	MSD	Recovery Limits (%)	Value	Control Limit	RPD (%)
EG: Metals and Major Cations (QC Lot: 1819699)	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	# Not Determined	---	75	125	---	---
HK1112316-001	Anonymous									

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**ALS Laboratory Group**  
ANALYTICAL CHEMISTRY & TESTING SERVICES



## CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 5
Contact	: IR POPHIL LAM	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1112687
Address	: GEOTECHNICAL PROJECTS DIVISION, GEOTECHNICAL ENGINEERING OFFICE, 23/F., KWUN TONG VIEW, 410 KWUN TONG ROAD, KOWLOON, HONG KONG	Address	: 1/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Pophilkiam@cedd.gov.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2716 8609	Telephone	: +852 2610 1044		
Facsimile	: +852 2715 7572	Facsimile	: +852 2610 2021		
Project	: AGREEMENT NO CE 61_2007(CE) - NORTH EAST NEW TERRITORIES DEVELOPMENT AREAS	Quote number	: ----	Date Samples Received	: 03-JUN-2011
Order number	: GE/2009/16.20			Issue Date	: 15-JUN-2011
C-O-C number	: H009905			No. of samples received	: 5
Site	: FANLING, HO SHEUNG HEUNG			No. of samples analysed	: 4

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Signatories

PPfung Lim Chee, Richard 

Position

General Manager

Authorised results for

Inorganics



Page Number : 2 of 5  
Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Work Order : HK1112687

### General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 13-JUN-2011

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: **HK1112687**

Project Name: Agreement No. CE 61/2007(CE) - North East New Territories Development Areas, Planning and Engineering Study Ground Investigation Phase 2 and Laboratory Testing Service (Batch 2).

Sample(s) were received in a chilled condition.

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

Soil sample(s) analysed on an as received basis. Result(s) reported on a dry weight basis.

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

Soil sample(s) as received, digested by In-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.





Page Number : 3 of 5  
Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Work Order : HK1112687

### Analytical Results

Sub-Matrix: SOIL

Compound	CAS Number	Client sample ID	
		Client sampling date / time	Unit
EAJED: Physical and Aggregate Properties			
EA055: Moisture Content (dried @ 103°C)	---	0.1	%
EG: Metals and Major Cations			
EG020: Arsenic	7440-38-2	1	mg/kg

Client sample ID	FLN-BH20 0.5M [03-JUN-2011] HK1112687-001	FLN-BH20 1.0M [03-JUN-2011] HK1112687-002	FLN-BH20 1.5M [03-JUN-2011] HK1112687-003
	13.8	13.4	9.0
	16	18	13



Sub-Matrix: WATER		Client sample ID		Client sampling date / time	
Compound	CAS Number	LOR	Unit		
EG: Metals and Major Cations - Filtered	7440-38-2	10	µg/L	KTN-BH25 6.8M	03-JUN-2011 17:40
EG020: Arsenic				HK1112687-004	
					<10



### Laboratory Duplicate (DUP) Report

Matrix: SOIL		Method: Compound		Laboratory Duplicate (DUP) Report		
Laboratory sample ID	Client sample ID	CAS Number	Unit	Original Result	Duplicate Result	RPD (%)
<b>EAIJED: Physical and Aggregate Properties (QC Lot: 1821747)</b>						
HK1112620-001	Anonymous		%	43.4	43.3	0.0
HK1112692-001	Anonymous		%	15.2	16.4	7.6
<b>EG: Metals and Major Cations (QC Lot: 1825671)</b>						
HK1112687-002	FLN-BH20 1.0M	7440-38-2	mg/kg	18	19	0.0
HK1112831-001	Anonymous	7440-38-2	mg/kg	8	9	0.0
<b>Matrix: WATER</b>						
Laboratory sample ID	Client sample ID	CAS Number	Unit	Original Result	Duplicate Result	RPD (%)
<b>EG: Metals and Major Cations - Filtered (QC Lot: 1823853)</b>						
HK1112626-002	Anonymous	7440-38-2	µg/L	<10	<10	0.0

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

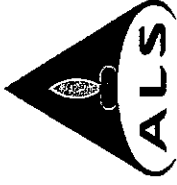
Matrix: SOIL		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report							
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	LCS	DCS	Recovery Limits (%)	Recovery Limits (%)	Value	Control Limit
<b>EG: Metals and Major Cations (QC Lot: 1825671)</b>											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	89.5		85	115		
<b>Matrix: WATER</b>											
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	LCS	DCS	Recovery Limits (%)	Recovery Limits (%)	Value	Control Limit
<b>EG: Metals and Major Cations - Filtered (QC Lot: 1823853)</b>											
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L	92.5		85	115		

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

Matrix: SOIL		Method: Compound		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	CAS Number	Unit	Spike Concentration	MS	MSD	Recovery Limits (%)	Recovery Limits (%)	Value	Control Limit
<b>EG: Metals and Major Cations (QC Lot: 1825671)</b>										
HK1112687-001	FLN-BH20 0.5M	7440-38-2	mg/kg	5 mg/kg	81.0		75	125		
<b>Matrix: WATER</b>										
Laboratory sample ID	Client sample ID	CAS Number	Unit	Spike Concentration	MS	MSD	Recovery Limits (%)	Recovery Limits (%)	Value	Control Limit
<b>EG: Metals and Major Cations - Filtered (QC Lot: 1823853)</b>										
HK1112626-001	Anonymous	7440-38-2	µg/L	100 µg/L	97.6		75	125		

# ALS Technichem (HK) Pty Ltd

**ALS Laboratory Group**  
ANALYTICAL CHEMISTRY & TESTING SERVICES



## CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 4
Contact	: IR POPHIL LAM	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1112690
Address	: GEOTECHNICAL PROJECTS DIVISION, GEOTECHNICAL ENGINEERING OFFICE, 23/F., KWUN TONG VIEW, 410 KWUN TONG ROAD, KOWLOON, HONG KONG	Address	: 1/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Pophilkiam@cedd.gov.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2716 8609	Telephone	: +852 2610 1044		
Facsimile	: +852 2715 7572	Facsimile	: +852 2610 2021		
Project	: AGREEMENT NO CE 61_2007(CE) - NORTH EAST NEW TERRITORIES DEVELOPMENT AREAS	Quote number	: ----	Date Samples Received	: 04-JUN-2011
Order number	: GE/2009/16.20			Issue Date	: 15-JUN-2011
C-O-C number	: H020404			No. of samples received	: 1
Site	: FANLING			No. of samples analysed	: 1

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Signatories

Richard 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

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Page Number : 2 of 4  
Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Work Order : HK1112690

### General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 13-JUN-2011

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: HK1112690

Project Name: Agreement No. CE 61/2007(CE) - North East New Territories Development Areas, Planning and Engineering Study Ground Investigation Phase 2 and Laboratory Testing Service (Batch 2).

Sample(s) were received in a chilled condition.

Soil sample(s) analysed on an as received basis. Result(s) reported on a dry weight basis.

Soil sample(s) as received, digested by in-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.



Page Number : 3 of 4  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK1112690

**Analytical Results**

Sub-Matrix: SOIL

Compound	CAS Number	LOR	Unit	Client sample ID	Client sampling date / time
EA/ED: Physical and Aggregate Properties				FLN-BH20	
EA055: Moisture Content (dried @ 103° C)	---	0.1	%	3.05-3.50M	04-JUN-2011 11:00
EG: Metals and Major Cations				HK1112690-001	
EG020: Arsenic	7440-38-2	1	mg/kg		
					12.8
					9



Page Number : 4 of 4  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK1112690

### 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			
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 1821747)</b>							
HK1112620-001	Anonymous	EA055: Moisture Content (dried @ 103°C)		0.1	%	43.4	43.3
HK1112692-001	Anonymous	EA055: Moisture Content (dried @ 103°C)		0.1	%	15.2	16.4
<b>EG: Metals and Major Cations (QC Lot: 1825671)</b>							
HK1112687-002	Anonymous	EG020: Arsenic	7440-38-2	1	mg/kg	18	19
HK1112831-001	Anonymous	EG020: Arsenic	7440-38-2	1	mg/kg	8	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	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	RPD (%)
		Result	Low	High	Value	Control Limit	
EG: Metals and Major Cations (QC Lot: 1825671)	7440-38-2	<1	mg/kg	89.5	85	115	
EG020: Arsenic							

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

Matrix: SOIL		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 (%)	RPD (%)
		Result	Low	High	Value	Control Limit		
EG: Metals and Major Cations (QC Lot: 1825671)	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	81.0	75	125	
HK1112687-001								

# ALS Technichem (HK) Pty Ltd

**ALS Laboratory Group**  
ANALYTICAL CHEMISTRY & TESTING SERVICES



## CERTIFICATE OF ANALYSIS

Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Contact : IR POPHIL LAM  
Address : GEOTECHNICAL PROJECTS DIVISION,  
GEOTECHNICAL ENGINEERING OFFICE,  
23/F., KWUN TONG VIEW,  
410 KWUN TONG ROAD, KOWLOON, HONG KONG  
E-mail : Pophilkiam@cedd.gov.hk  
Telephone : +852 2716 8609  
Facsimile : +852 2715 7572  
Project : AGREEMENT NO CE 61.2007(CE) - NORTH EAST NEW TERRITORIES DEVELOPMENT AREAS  
Order number : GE/2009/16.20  
C-O-C number : H009906  
Site : FANLING

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 : ----

Page : 1 of 4  
Work Order : HK1112820

Date Samples Received : 07-JUN-2011  
Issue Date : 16-JUN-2011  
No. of samples received : 1  
No. of samples analysed : 1

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Signatories

Mr 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

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Page Number : 2 of 4  
Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Work Order : HK1112820

### **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: HK1112820

Project Name: Agreement No. CE 61/2007(CE) - North East New Territories Development Areas, Planning and Engineering Study Ground Investigation Phase 2 and Laboratory Testing Service (Batch 2).

Sample(s) were received in a chilled condition.

Soil sample(s) analysed on an as received basis. Result(s) reported on a dry weight basis.

Soil sample(s) as received, digested by in-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.



**Analytical Results**

Sub-Matrix: SOIL

Compound	CAS Number	LOR	Client sample ID	
			Client sampling date / time	Unit
EAJED: Physical and Aggregate Properties			FLN-BH20	
EA055: Moisture Content (dried @ 103° C)		0.1	10.65-11.10M 07-JUN-2011 14:00	
EG: Metals and Major Cations			HK1112820-001	
EG020: Arsenic	7440-38-2	1	16.4	46 mg/kg



Page Number : 4 of 4  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK1112820

**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	
<b>EATED: Physical and Aggregate Properties (QC Lot: 1825687)</b>								
HK1112820-001	FLN-BH20 10.65-11.10M	EA055: Moisture Content (dried @ 103°C)		0.1	%	16.4	17.2	4.8
HK1112903-006	Anonymous	EA055: Moisture Content (dried @ 103°C)		0.1	%	18.0	18.8	4.2
<b>EG: Metals and Major Cations (QC Lot: 1825671)</b>								
HK1112687-002	Anonymous	EG020: Arsenic	7440-38-2	1	mg/kg	18	19	0.0
HK1112831-001	Anonymous	EG020: Arsenic	7440-38-2	1	mg/kg	8	9	0.0

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

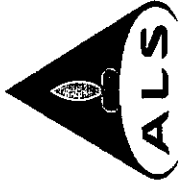
Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report								
Method: Compound	CAS Number	LOR	Unit	Spike Concentration	LCS	Spike Recovery (%)	DCS	Recovery Limits (%)	Low	High	Value	Control Limit
EG020: Arsenic	7440-38-2	1	mg/kg	<1	89.5			85 - 115	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	Control Limit
EG: Metals and Major Cations (QC Lot: 1825671)	HK1112687-001	Anonymous	7440-38-2	5 mg/kg	81.0			75 - 125	75	125		

# ALS Technichem (HK) Pty Ltd

## ALS Laboratory Group ANALYTICAL CHEMISTRY & TESTING SERVICES



### CERTIFICATE OF ANALYSIS

Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Contact : IR POPHIL LAM  
Address : GEOTECHNICAL PROJECTS DIVISION,  
GEOTECHNICAL ENGINEERING OFFICE,  
23/F., KWUN TONG VIEW,  
410 KWUN TONG ROAD, KOWLOON, HONG KONG  
E-mail : Pophilkiam@cedd.gov.hk  
Telephone : +852 2716 8609  
Facsimile : +852 2715 7572  
Project : AGREEMENT NO CE 61\_2007(CE) - NORTH EAST NEW TERRITORIES DEVELOPMENT AREAS  
Order number : GE/2009/16.20  
C-O-C number : H009907  
Site : FANLING

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 : ----  
Page : 1 of 4  
Work Order : HK1112958

Signatories  
P/Fung Lim Chee, Richard

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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

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Page Number : 2 of 4  
Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Work Order : HK1112958

### **General Comments**

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 13-JUN-2011

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: **HK1112958**

Project Name: Agreement No. CE 61/2007(CE) - North East New Territories Development Areas, Planning and Engineering Study Ground Investigation Phase 2 and Laboratory Testing Service (Batch 2).

Sample(s) were received in a chilled condition.

Soil sample(s) analysed on an as received basis. Result(s) reported on a dry weight basis.

Soil sample(s) as received, digested by in-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.



**Analytical Results**

Sub-Matrix: SOIL

Compound	CAS Number	LOR	Client sampling date / time		Client sample ID	
			Unit	Unit	Client sample ID	Client sample ID
<b>EA/ED: Physical and Aggregate Properties</b>						
EA055: Moisture Content (dried @ 103°C)	—	0.1	%	21.1	FLN-BH20 14.70-15.15M 08-JUN-2011 13:30 HK1112958-001	
<b>EG: Metals and Major Cations</b>						
EG020: Arsenic	7440-38-2	1	mg/kg	18		



**Laboratory Duplicate (DUP) Report**

Laboratory sample ID	Client sample ID	Method: Compound	LOR	Unit	Laboratory Duplicate (DUP) Report		RPD (%)
					Original Result	Duplicate Result	
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 1825687)</b>							
HK1112820-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	0.1	%	16.4	17.2	4.8
HK1112903-006	Anonymous	EA055: Moisture Content (dried @ 103°C)	0.1	%	18.0	18.8	4.2
<b>EG: Metals and Major Cations (QC Lot: 1825671)</b>							
HK1112687-002	Anonymous	EG020: Arsenic	1	mg/kg	18	19	0.0
HK1112831-001	Anonymous	EG020: Arsenic	1	mg/kg	8	9	0.0

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

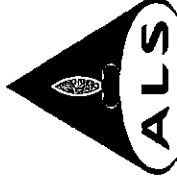
Method Blank (MB) Report	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
	LOR	Unit	Result	Spike Concentration	LCS	Spike Recovery (%)	DCS
EG: Metals and Major Cations (QC Lot: 1825671)	7440-38-2	1	mg/kg	<1	89.5	85	115
EG020: Arsenic				5 mg/kg			

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

Laboratory sample ID	Client sample ID	Method: Compound	Spike Concentration	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report			
				MS	MSD	Recovery Limits (%)	RPD (%)
EG: Metals and Major Cations (QC Lot: 1825671)	7440-38-2	EG020: Arsenic	5 mg/kg	81.0	75	125	
HK1112687-001	Anonymous						

# ALS Technichem (HK) Pty Ltd

**ALS Laboratory Group**  
ANALYTICAL CHEMISTRY & TESTING SERVICES



## CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 4
Contact	: IR POPHIL LAM	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1113206
Address	: GEOTECHNICAL PROJECTS DIVISION, GEOTECHNICAL ENGINEERING OFFICE, 23/F., KWUN TONG VIEW, 410 KWUN TONG ROAD, KOWLOON, HONG KONG	Address	: 1/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Pophilkiam@cedd.gov.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2716 8609	Telephone	: +852 2610 1044		
Facsimile	: +852 2715 7572	Facsimile	: +852 2610 2021		
Project	: AGREEMENT NO CE 61_2007(CE) - NORTH EAST NEW TERRITORIES DEVELOPMENT	Quote number	: ----	Date Samples Received	: 11-JUN-2011
Order number	: GE/2009/16.20			Issue Date	: 21-JUN-2011
C-O-C number	: H009908			No. of samples received	: 4
Site	: FANLING			No. of samples analysed	: 4

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Signatories

FP 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

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Page Number : 2 of 4  
Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Work Order : HK1113206

### General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 16-JUN-2011

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: HK1113206

Project Name: Agreement No. CE 61/2007(CE) - North East New Territories Development Areas, Planning and Engineering Study Ground Investigation Phase 2 and Laboratory Testing Service (Batch 2).

Sample(s) were received in a chilled condition.

Soil sample(s) analysed on an as received basis. Result(s) reported on a dry weight basis.

Soil sample(s) as received, digested by in-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.



Page Number : 3 of 4  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK1113206

**Analytical Results**

Sub-Matrix: SOIL

Compound	CAS Number	LOR	Client sample ID				
			Client sampling date / time	FLN-BH10	FLN-BH10	FLN-BH10	
EA1ED: Physical and Aggregate Properties							
EA055: Moisture Content (dried @ 103°C)		0.1	%	13.2	16.7	17.7	21.6
EG: Metals and Major Cations							
EG020: Arsenic	7440-38-2	1	mg/kg	60	50	50	43



Page Number : 4 of 4  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK1113206

**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				
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 1828406)</b>									
HK1113087-004	Anonymous		EA055: Moisture Content (dried @ 103°C)		0.1	%	11.4	10.7	5.7
HK1113087-014	Anonymous		EA055: Moisture Content (dried @ 103°C)		0.1	%	28.0	29.3	4.5
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 1828407)</b>									
HK1113206-003	FLN-BH10 2.00M		EA055: Moisture Content (dried @ 103°C)		0.1	%	17.7	16.8	5.0
<b>EG: Metals and Major Cations (QC Lot: 1831156)</b>									
HK1113206-002	FLN-BH10 1.50M		EG020: Arsenic	7440-38-2	1	mg/kg	50	58	14.3
HK1113338-001	Anonymous		EG020: Arsenic	7440-38-2	1	mg/kg	16	16	0.0

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

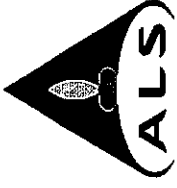
Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report							
Method: Compound	CAS Number	LOR	Unit	Spike Concentration	Spike Recovery (%)	LCS	Recovery Limits (%)	Low	High	Value	RPD (%)
EG: Metals and Major Cations (QC Lot: 1831156)	7440-38-2	1	mg/kg	5 mg/kg	<1	93.8	85 - 115	85	115		
EG020: Arsenic											

**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	Low	High	Value	RPD (%)
<b>EG: Metals and Major Cations (QC Lot: 1831156)</b>												
HK1113206-001	FLN-BH10 1.00M		EG020: Arsenic	7440-38-2	5 mg/kg	# Not Determined			75	125		

# ALS Technichem (HK) Pty Ltd

**ALS Laboratory Group**  
ANALYTICAL CHEMISTRY & TESTING SERVICES



## CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 4
Contact	: IR POPHIL LAM	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1113335
Address	: GEOTECHNICAL PROJECTS DIVISION, GEOTECHNICAL ENGINEERING OFFICE, 23/F., KWUN TONG VIEW, 410 KWUN TONG ROAD, KOWLOON, HONG KONG	Address	: 1/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Pophilkiam@cedd.gov.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2716 8609	Telephone	: +852 2610 1044		
Facsimile	: +852 2715 7572	Facsimile	: +852 2610 2021		
Project	: AGREEMENT NO CE 61_2007(CE) - NORTH EAST NEW TERRITORIES DEVELOPMENT AREAS	Quote number	: ----	Date Samples Received	: 13-JUN-2011
Order number	: GE/2009/16.20			Issue Date	: 21-JUN-2011
C-O-C number	: H009909			No. of samples received	: 5
Site	: SHEUNG SHUI			No. of samples analysed	: 5

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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

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Page Number : 2 of 4  
Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Work Order : HK1113335

### 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: **HK1113335**

Project Name: Agreement No. CE 61/2007(CE) - North East New Territories Development Areas, Planning and Engineering Study Ground Investigation Phase 2 and Laboratory Testing Service (Batch 2).

Sample(s) were received in a chilled condition.

Soil sample(s) analysed on an as received basis. Result(s) reported on a dry weight basis.

Soil sample(s) as received, digested by in-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.

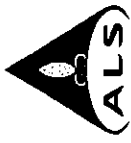


Page Number : 3 of 4  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK1113335

**Analytical Results**

Sub-Matrix: SOIL

Compound	CAS Number	LOR	Unit	Client sample ID	FLN-BH07 0.50M 13-JUN-2011 09:00 HK1113335-001	FLN-BH07 1.00M 13-JUN-2011 09:30 HK1113335-002	FLN-BH07 1.50M 13-JUN-2011 10:00 HK1113335-003	FLN-BH10 7.60-8.05M 13-JUN-2011 09:00 HK1113335-004	FLN-BH10 11.65-12.10M 13-JUN-2011 13:00 HK1113335-005
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103° C)		—	0.1	%	7.7	15.7	15.0	17.2	31.4
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1		mg/kg	6	4	6	7	15



Page Number : 4 of 4  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK1113335

### Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report		RPD (%)
				Original Result	Duplicate Result	
<b>EA/JED: Physical and Aggregate Properties (QC Lot: 1830343)</b>						
HK1113078-003	Anonymous	EA055: Moisture Content (dried @ 103°C)		14.3	13.7	4.8
HK1113339-001	Anonymous	EA055: Moisture Content (dried @ 103°C)		11.8	12.9	8.7
<b>EG: Metals and Major Cations (QC Lot: 1831156)</b>						
HK1113206-002	Anonymous	EG020: Arsenic	7440-38-2	50	58	14.3
HK1113338-001	Anonymous	EG020: Arsenic	7440-38-2	16	16	0.0

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

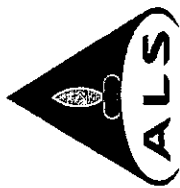
Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report											
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	LCS	Spike Recovery (%)	DCS	Recovery Limits (%)	Low	High	Value	RPD (%)	Control Limit
EG: Metals and Major Cations (QC Lot: 1831156)	7440-38-2	1	mg/kg	<1	5 mg/kg	93.8				85	115			
EG020: Arsenic														

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

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report			RPD (%)	
					MS	MSD	Recovery Limits (%)		
				MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 1831156)	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	# Not Determined	75	125		
HK1113206-001	Anonymous								

# ALS Technichem (HK) Pty Ltd

**ALS Laboratory Group**  
ANALYTICAL CHEMISTRY & TESTING SERVICES



## CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 5
Contact	: IR POPHIL LAM	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1113424
Address	: GEOTECHNICAL PROJECTS DIVISION, GEOTECHNICAL ENGINEERING OFFICE, 23/F., KWUN TONG VIEW, 410 KWUN TONG ROAD, KOWLOON, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Pophilkam@cedd.gov.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2716 8609	Telephone	: +852 2610 1044		
Facsimile	: +852 2715 7572	Facsimile	: +852 2610 2021		
Project	: AGREEMENT NO CE 61 2007(CE) - NORTH EAST NEW TERRITORIES DEVELOPMENT AREAS	Quote number	: ----	Date Samples Received	: 14-JUN-2011
Order number	: GE/2009/16.20			Issue Date	: 24-JUN-2011
C-O-C number	: H009910			No. of samples received	: 5
Site	: SHEUNG SHUI			No. of samples analysed	: 5

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

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Page Number : 2 of 5  
Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Work Order : HK1113424

### 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: HK1113424

Project Name: Agreement No. CE 61/2007(CE) - North East New Territories Development Areas, Planning and Engineering Study Ground Investigation Phase 2 and Laboratory Testing Service (Batch 2).

Sample(s) were received in a chilled condition.

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

Soil sample(s) analysed on an as received basis. Result(s) reported on a dry weight basis.

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

Soil sample(s) as received, digested by in-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.





Page Number : 4 of 5  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK1113424

Sub-Matrix: WATER		Client sample ID	
Compound	CAS Number	Client sampling date / time	Unit
EG: Metals and Major Cations - Filtered	7440-38-2	10	µg/L
EG020: Arsenic			
		FLN-BH07 3.10-3.55M (EQUIPMENT BLANK) 14-JUN-2011 10:20 HK1113424-003	FLN-BH07 3.10-3.55M (FIELD BLANK) 14-JUN-2011 10:20 HK1113424-004
		<10	<10



Page Number : 5 of 5  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK1113424

**Laboratory Duplicate (DUP) Report**

Matrix: SOIL		Laboratory Duplicate (DUP) Report	
Laboratory sample ID	Client sample ID	Method: Compound	Compound
<b>EAJED: Physical and Aggregate Properties (QC Lot: 1834060)</b>			
HK1113552-003	Anonymous	EA055: Moisture Content (dried @ 103°C)	16.1
HK1113437-002	Anonymous	EA055: Moisture Content (dried @ 103°C)	49.5
<b>EG: Metals and Major Cations (QC Lot: 1834034)</b>			
HK1113379-002	Anonymous	EG020: Arsenic	7
HK1113436-002	Anonymous	EG020: Arsenic	5
<b>Matrix: WATER</b>			
Laboratory sample ID	Client sample ID	Method: Compound	Compound
<b>EG: Metals and Major Cations - Filtered (QC Lot: 1838393)</b>			
HK1113424-004	FLN-BH07 3.10-3.55M (FIELD BLANK)	EG020: Arsenic	<10

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

Matrix: SOIL		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration
<b>EG: Metals and Major Cations (QC Lot: 1834034)</b>					
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg
<b>Matrix: WATER</b>					
Method: Compound	CAS Number	LOR	Unit	Result	Concentration
<b>EG: Metals and Major Cations - Filtered (QC Lot: 1838393)</b>					
EG020: Arsenic	7440-38-2	10	µg/L	<10	100 µg/L

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

Matrix: SOIL		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report	
Laboratory sample ID	Client sample ID	Method: Compound	Compound
<b>EG: Metals and Major Cations (QC Lot: 1834034)</b>			
HK1113379-001	Anonymous	EG020: Arsenic	77.3
<b>Matrix: WATER</b>			
Laboratory sample ID	Client sample ID	Method: Compound	Compound
<b>EG: Metals and Major Cations - Filtered (QC Lot: 1838393)</b>			
HK1113552-008	Anonymous	EG020: Arsenic	93.9

# ALS Technichem (HK) Pty Ltd

**ALS Laboratory Group**  
ANALYTICAL CHEMISTRY & TESTING SERVICES



## CERTIFICATE OF ANALYSIS

Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Contact : IR POPHIL LAM  
Address : GEOTECHNICAL PROJECTS DIVISION,  
GEOTECHNICAL ENGINEERING OFFICE,  
23/F., KWUN TONG VIEW,  
410 KWUN TONG ROAD, KOWLOON, HONG KONG

E-mail : Pophilkiam@cedd.gov.hk  
Telephone : +852 2716 8609  
Facsimile : +852 2715 7572  
Project : AGREEMENT NO CE 61\_2007(CE) - NORTH  
EAST NEW TERRITORIES DEVELOPMENT  
AREAS  
Order number : GE/2009/16.20  
C-O-C number : H009911  
Site : SHEUNG SHUI

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

Page : 1 of 4  
Work Order : HK1113612

E-mail : Godfrey.Chan@alsenviro.com  
Telephone : +852 2610 1044  
Facsimile : +852 2610 2021  
Quote number : ----

Date Samples Received : 15-JUN-2011  
Issue Date : 24-JUN-2011  
No. of samples received : 1  
No. of samples analysed : 1

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Signatories  
F F Fung Lim Chee, Richard

Position  
General Manager

Authorised results for  
Inorganics



Page Number : 2 of 4  
Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Work Order : HK1113612

### 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: HK1113612

Project Name: Agreement No. CE 61/2007(CE) - North East New Territories Development Areas, Planning and Engineering Study Ground Investigation Phase 2 and Laboratory Testing Service (Batch 2).

Sample(s) were received in a chilled condition.

Soil sample(s) analysed on an as received basis. Result(s) reported on a dry weight basis.

Soil sample(s) as received, digested by in-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.



Page Number : 3 of 4  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK1113612

**Analytical Results**

Sub-Matrix: SOIL

Compound	Client sample ID	
	CAS Number	Client sampling date / time
EAJED: Physical and Aggregate Properties	FLN-BH07	10.50-10.95M
EA055: Moisture Content (dried @ 103°C)	---	15-JUN-2011 11:30
EG: Metals and Major Cations	LOR	Unit
EG020: Arsenic	7440-38-2	10.7
	1	mg/kg
	1	1



### Laboratory Duplicate (DUP) Report

Matrix: SOIL		Laboratory Duplicate (DUP) Report	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number
<b>EAIED: Physical and Aggregate Properties (QC Lot: 1836415)</b>			
HK1113552-009	Anonymous	EA055: Moisture Content (dried @ 103°C)	
HK1113638-004	Anonymous	EA055: Moisture Content (dried @ 103°C)	
<b>EG: Metals and Major Cations (QC Lot: 1840414)</b>			
HK1113634-001	Anonymous	EG020: Arsenic	7440-38-2

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

Matrix: SOIL		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 (%)
EG: Metals and Major Cations (QC Lot: 1840414)	7440-38-2	1	mg/kg	<1	5 mg/kg	88.3	85 - 115
EG020: Arsenic							

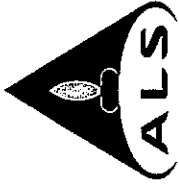
### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: SOIL		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Recovery Limits (%)
EG: Metals and Major Cations (QC Lot: 1840414)	FLN-BH07	10.50-10.95M	EG020: Arsenic	5 mg/kg	75 - 125
HK1113612-001				85.0	



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## CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 4
Contact	: IR POPHIL LAM	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1113692
Address	: GEOTECHNICAL PROJECTS DIVISION, GEOTECHNICAL ENGINEERING OFFICE, 23/F., KWUN TONG VIEW, 410 KWUN TONG ROAD, KOWLOON, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Pophilkiam@cedd.gov.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2716 8609	Telephone	: +852 2610 1044		
Facsimile	: +852 2715 7572	Facsimile	: +852 2610 2021		
Project	: AGREEMENT NO CE 61_2007(CE) - NORTH EAST NEW TERRITORIES DEVELOPMENT AREAS	Quote number	: ----	Date Samples Received	: 16-JUN-2011
Order number	: GE/2009/16.20			Issue Date	: 28-JUN-2011
C-O-C number	: H009912			No. of samples received	: 2
Site	: FANLING			No. of samples analysed	: 2

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Signatories

Mr Fung Lim Chee, Richard

Position

General Manager

Authorised results for

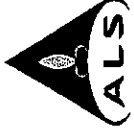
Inorganics

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

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Page Number : 2 of 4  
Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Work Order : HK1113692

### 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: **HK1113692**

Project Name: Agreement No. CE 61/2007(CE) - North East New Territories Development Areas, Planning and Engineering Study Ground Investigation Phase 2 and Laboratory Testing Service (Batch 2).

Sample(s) were received in a chilled condition.

Soil sample(s) analysed on an as received basis. Result(s) reported on a dry weight basis.

Soil sample(s) as received, digested by In-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.



Page Number : 3 of 4  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK1113692

**Analytical Results**

Sub-Matrix: SOIL

Compound	CAS Number	LOR	Client sample ID	
			Client sampling date / time	Unit
<b>EA/ED: Physical and Aggregate Properties</b>				
EA055: Moisture Content (dried @ 103°C)		0.1	%	21.2
<b>EG: Metals and Major Cations</b>				
EG020: Arsenic	7440-38-2	1	mg/kg	3



**Laboratory Duplicate (DUP) Report**

Matrix: SOIL		Laboratory Duplicate (DUP) Report	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number
<b>EAJED: Physical and Aggregate Properties (QC Lot: 1836418)</b>			
HK1113665-020	Anonymous	EA055: Moisture Content (dried @ 103°C)	---
HK1113700-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	---
<b>EG: Metals and Major Cations (QC Lot: 1842491)</b>			
HK1113638-002	Anonymous	EG020: Arsenic	7440-38-2
HK1113640-002	Anonymous	EG020: Arsenic	7440-38-2
<b>EG: Metals and Major Cations (QC Lot: 1842492)</b>			
HK1113700-001	Anonymous	EG020: Arsenic	7440-38-2
HK1113702-003	Anonymous	EG020: Arsenic	7440-38-2

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

Matrix: SOIL		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report	
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration
<b>EG: Metals and Major Cations (QC Lot: 1842491)</b>					
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg
<b>EG: Metals and Major Cations (QC Lot: 1842492)</b>					
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg

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

Matrix: SOIL		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number
<b>EG: Metals and Major Cations (QC Lot: 1842491)</b>			
HK1113638-001	Anonymous	EG020: Arsenic	7440-38-2
<b>EG: Metals and Major Cations (QC Lot: 1842492)</b>			
HK1113692-002	FLN-BH07 20.60-21.05M	EG020: Arsenic	7440-38-2

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**ALS Laboratory Group**  
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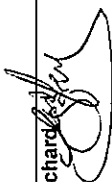


## CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 4
Contact	: IR POPHIL LAM	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1113898
Address	: GEOTECHNICAL PROJECTS DIVISION, GEOTECHNICAL ENGINEERING OFFICE, 23/F., KWUN TONG VIEW, 410 KWUN TONG ROAD, KOWLOON, HONG KONG	Address	: 1/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Pophilkiam@cedd.gov.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2716 8609	Telephone	: +852 2610 1044		
Facsimile	: +852 2715 7572	Facsimile	: +852 2610 2021		
Project	: AGREEMENT NO CE 61_2007(CE) - NORTH EAST NEW TERRITORIES DEVELOPMENT AREAS	Quote number	: ----	Date Samples Received	: 17-JUN-2011
Order number	: GE/2009/16.20			Issue Date	: 29-JUN-2011
C-O-C number	: H009913			No. of samples received	: 4
Site	: SHEUNG SHUI			No. of samples analysed	: 4

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Signatories  
**PP Fung Lim Chee, Richard** 

Position  
**General Manager**  
Authorised results for  
**Inorganics**



Page Number : 2 of 4  
Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Work Order : HK1113898

### General Comments

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28-JUN-2011

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: **HK1113898**

Project Name: Agreement No. CE 61/2007(CE) - North East New Territories Development Areas, Planning and Engineering Study Ground Investigation Phase 2 and Laboratory Testing Service (Batch 2).

Sample(s) were received in a chilled condition.

Soil sample(s) analysed on an as received basis. Result(s) reported on a dry weight basis.

Soil sample(s) as received, digested by In-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.



Page Number : 3 of 4  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK1113898

**Analytical Results**

Compound	CAS Number	LOR	Client sample ID	
			Client sampling date / time	Unit
EA055: Physical and Aggregate Properties			FLN-BH08 0.50M 17-JUN-2011 13:30 HK1113898-001	FLN-BH07 24.65-25.10M 17-JUN-2011 15:00 HK1113898-004
EA055: Moisture Content (dried @ 103°C)		0.1	28.8	12.2
EG: Metals and Major Cations			28.1	27.6
EG020: Arsenic	7440-38-2	1	12	14
			14	2



Page Number : 4 of 4  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK1113898

### 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	
<b>EAI/ED: Physical and Aggregate Properties (QC Lot: 1840418)</b>								
HK1113143-002	Anonymous	EA055: Moisture Content (dried @ 103°C)		0.1	%	13.1	13.6	3.4
HK1113885-008	Anonymous	EA055: Moisture Content (dried @ 103°C)		0.1	%	29.9	29.9	0.0
<b>EG: Metals and Major Cations (QC Lot: 1844617)</b>								
HK1113898-001	FLN-BH08 0.50M	EG020: Arsenic	7440-38-2	1	mg/kg	14	17	18.9
HK1113971-001	Anonymous	EG020: Arsenic	7440-38-2	1	mg/kg	11	11	0.0

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

Method: Compound	CAS Number	LOR	Unit	Result	Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report				
					Spike Concentration	Spike Recovery (%)	LCS	DCS	Recovery Limits (%)	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 1844617)	7440-38-2	1	mg/kg	<1	5 mg/kg	96.4	---	85	115	---	---	---	---
EG020: Arsenic													

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

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	Recovery Limits (%)	Low	High	Value	
EG: Metals and Major Cations (QC Lot: 1844617)	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	97.4	---	75	125	---	---	---
HK1113891-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg							



# ALS Technichem (HK) Pty Ltd

**ALS Laboratory Group**  
ANALYTICAL CHEMISTRY & TESTING SERVICES



## CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 4
Contact	: IR POPHIL LAM	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1113899
Address	: GEOTECHNICAL PROJECTS DIVISION, GEOTECHNICAL ENGINEERING OFFICE, 23/F., KWUN TONG VIEW, 410 KWUN TONG ROAD, KOWLOON, HONG KONG	Address	: 1/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Pophilkiam@cedd.gov.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2716 8609	Telephone	: +852 2610 1044		
Facsimile	: +852 2715 7572	Facsimile	: +852 2610 2021		
Project	: AGREEMENT NO CE 61_2007(CE) - NORTH EAST NEW TERRITORIES DEVELOPMENT AREAS	Quote number	: ----	Date Samples Received	: 18-JUN-2011
Order number	: GE/2009/16.20			Issue Date	: 29-JUN-2011
C-O-C number	: H009914			No. of samples received	: 1
Site	: SHEUNG SHUI			No. of samples analysed	: 1

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Signatories

Richard Fung Lim Chee

Position

General Manager

Authorised results for

Inorganics

ALS Laboratory Group  
ALS Technichem (HK) Pty Ltd

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

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Page Number : 2 of 4  
Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Work Order : HK1113899

### General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 28-JUN-2011

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: **HK1113899**

Project Name: Agreement No. CE 61/2007(CE) - North East New Territories Development Areas, Planning and Engineering Study Ground Investigation Phase 2 and Laboratory Testing Service (Batch 2).

Sample(s) were received in a chilled condition.

Soil sample(s) analysed on an as received basis. Result(s) reported on a dry weight basis.

Soil sample(s) as received, digested by in-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.



Page Number : 3 of 4  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK113899

**Analytical Results**

Sub-Matrix: SOIL

Compound	CAS Number	LOR	Unit	Client sample ID	
				Client sampling date / time	
EA/ED: Physical and Aggregate Properties				FLN-BH08	
EA055: Moisture Content (dried @ 103° C)	—	0.1	%	3.05-3.50M	
EG: Metals and Major Cations				18-JUN-2011 12:00	
EG020: Arsenic	7440-38-2	1	mg/kg	HK1113899-001	
					20.9
					6



**Laboratory Duplicate (DUP) Report**

Matrix: SOIL		Laboratory Duplicate (DUP) Report	
Laboratory sample ID	Client sample ID	Original Result	Duplicate Result
<b>EAIED: Physical and Aggregate Properties (QC Lot: 1840418)</b>			
HK1113143-002	Anonymous	13.1	13.6
HK1113885-008	Anonymous	29.9	29.9
<b>EG: Metals and Major Cations (QC Lot: 1844617)</b>			
HK1113898-001	Anonymous	14	17
HK1113971-001	Anonymous	11	11

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

Matrix: SOIL			
Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report	
Method: Compound	CAS Number	Spike Concentration	Recovery Limits (%)
EG: Metals and Major Cations (QC Lot: 1844617)	7440-38-2	96.4	85 - 115
EG020: Arsenic	7440-38-2	5 mg/kg	96.4

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

Matrix: SOIL		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report			
Laboratory sample ID	Client sample ID	Spike Concentration	Recovery Limits (%)	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 1844617)	7440-38-2	5 mg/kg	75 - 125	97.4	125
HK1113891-001	Anonymous	5 mg/kg	75	97.4	125

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**ALS Laboratory Group**  
ANALYTICAL CHEMISTRY & TESTING SERVICES



## CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 4
Contact	: IR POPHIL LAM	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1114174
Address	: GEOTECHNICAL PROJECTS DIVISION, GEOTECHNICAL ENGINEERING OFFICE, 23/F., KWUN TONG VIEW, 410 KWUN TONG ROAD, KOWLOON, HONG KONG	Address	: 1/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Pophilkiam@ceedd.gov.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2716 8609	Telephone	: +852 2610 1044		
Facsimile	: +852 2715 7572	Facsimile	: +852 2610 2021		
Project	: AGREEMENT NO CE 61_2007(CE) - NORTH EAST NEW TERRITORIES DEVELOPMENT AREAS	Quote number	: ----	Date Samples Received	: 22-JUN-2011
Order number	: GE/2009/16.20	Issue Date	: 04-JUL-2011	No. of samples received	: 5
C-O-C number	: H009916	No. of samples analysed	: 5		
Site	: FANLING				

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Signatories

PP Fung Lim Chee, Richard

Position

General Manager

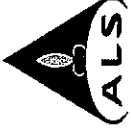
Authorised results for

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

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Page Number : 2 of 4  
Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Work Order : HK1114174

### General Comments

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30-JUN-2011

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: **HK1114174**

Project Name: Agreement No. CE 61/2007(CE) - North East New Territories Development Areas, Planning and Engineering Study Ground Investigation Phase 2 and Laboratory Testing Service (Batch 2).

Sample(s) were received in a chilled condition.

Soil sample(s) analysed on an as received basis. Result(s) reported on a dry weight basis.

Soil sample(s) as received, digested by in-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.



Page Number : 3 of 4  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK1114174

**Analytical Results**

Compound	Client sample ID		Client sampling date / time	Unit	
	CAS Number	LOR			
EA/ED: Physical and Aggregate Properties					
EA055: Moisture Content (dried @ 103°C)	---	0.1	%		
EG: Metals and Major Cations					
EG020: Arsenic	7440-38-2	1	mg/kg		
	FLN-BH19 0.50M 22-JUN-2011 08:30 HK1114174-001	FLN-BH19 1.00M 22-JUN-2011 09:00 HK1114174-002	FLN-BH19 1.50M 22-JUN-2011 09:30 HK1114174-003	FLN-BH19 2.00M 22-JUN-2011 10:00 HK1114174-004	FLN-BH19 3.55-4.00M 22-JUN-2011 13:00 HK1114174-005
	21.2	13.2	21.2	19.8	13.2
	18	21	19	25	3



Page Number : 4 of 4  
 Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 Work Order : HK1114174

**Laboratory Duplicate (DUP) Report**

Matrix: SOIL		Laboratory Duplicate (DUP) Report	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 1846857)</b>			
HK1114167-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	
HK1114174-004	FLN-BH19 2.00M	EA055: Moisture Content (dried @ 103°C)	
<b>EG: Metals and Major Cations (QC Lot: 1850829)</b>			
HK1114171-001	Anonymous	EG020: Arsenic	7440-38-2
HK1114550-001	Anonymous	EG020: Arsenic	7440-38-2

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

Matrix: SOIL		Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report	
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration
EG: Metals and Major Cations (QC Lot: 1850829)	7440-38-2	1	mg/kg	<1	5 mg/kg
EG020: Arsenic					89.1

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

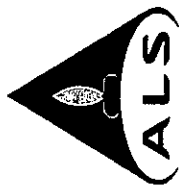
Matrix: SOIL		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	MS
EG: Metals and Major Cations (QC Lot: 1850829)	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	83.8
HK1114170-001	Anonymous				



# ALS Technichem (HK) Pty Ltd

## ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



### CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 4
Contact	: IR POPHIL LAM	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1114377
Address	: GEOTECHNICAL PROJECTS DIVISION, GEOTECHNICAL ENGINEERING OFFICE, 23/F., KWUN TONG VIEW, 410 KWUN TONG ROAD, KOWLOON, HONG KONG	Address	: 1/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Pophilkiam@cedd.gov.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2716 8609	Telephone	: +852 2610 1044		
Facsimile	: +852 2715 7572	Facsimile	: +852 2610 2021		
Project	: AGREEMENT NO CE 61_2007(CE) - NORTH EAST NEW TERRITORIES DEVELOPMENT AREAS	Quote number	: ----	Date Samples Received	: 24-JUN-2011
Order number	: GE/2009/16.20			Issue Date	: 06-JUL-2011
C-O-C number	: H009917			No. of samples received	: 1
Site	: FANLING			No. of samples analysed	: 1

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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

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

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Page Number : 2 of 4  
Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Work Order : HK1114377

### 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: **HK1114377**

Project Name: Agreement No. CE 61/2007(CE) - North East New Territories Development Areas, Planning and Engineering Study Ground Investigation Phase 2 and Laboratory Testing Service (Batch 2).

Sample(s) were received in a chilled condition.

Soil sample(s) analysed on an as received basis. Result(s) reported on a dry weight basis.

Soil sample(s) as received, digested by in-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.



**Analytical Results**

Sub-Matrix: SOIL

Compound	CAS Number	LOR	Client sample ID	
			Client sampling date / time	Unit
EA/ED: Physical and Aggregate Properties			FLNBH19	
EA055: Moisture Content (dried @ 103° C)	---	0.1	8.95-9.40M	
EG: Metals and Major Cations			24-JUN-2011 14:00	
EG020: Arsenic	7440-38-2	1	HK1114377-001	
				20.5
				4



**Laboratory Duplicate (DUP) Report**

Matrix: SOIL		Laboratory Duplicate (DUP) Report	
Laboratory sample ID	Client sample ID	Method: Compound	QC Lot: 1850816
EAJED: Physical and Aggregate Properties (QC Lot: 1850816)	EA055: Moisture Content (dried @ 103°C)	---	---
HK1113955-001	Anonymous	%	48.2
EG: Metals and Major Cations (QC Lot: 1850829)	EG020: Arsenic	mg/kg	12
HK1114171-001	Anonymous	mg/kg	3
HK1114550-001	Anonymous	mg/kg	3

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

Matrix: SOIL		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	DCS	Recovery Limits (%)	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 1850829)	7440-38-2	1	mg/kg	<1	5 mg/kg	89.1	85	115	---	---
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	89.1	85	115	---	---

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

Matrix: SOIL		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
EG: Metals and Major Cations (QC Lot: 1850829)	EG020: Arsenic	7440-38-2	7440-38-2	5 mg/kg	83.8	75	125	---	---
HK1114170-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	83.8	75	125	---	---

# ALS Technichem (HK) Pty Ltd

**ALS Laboratory Group**  
ANALYTICAL CHEMISTRY & TESTING SERVICES



## CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 4
Contact	: IR POPHIL LAM	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1114550
Address	: GEOTECHNICAL PROJECTS DIVISION, GEOTECHNICAL ENGINEERING OFFICE, 23/F., KWUN TONG VIEW, 410 KWUN TONG ROAD, KOWLOON, HONG KONG	Address	: 1/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Pophilkiam@cedd.gov.hk	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2716 8609	Telephone	: +852 2610 1044	Date Samples Received	: 27-JUN-2011
Facsimile	: +852 2715 7572	Facsimile	: +852 2610 2021	Issue Date	: 07-JUL-2011
Project	: AGREEMENT NO CE 61_2007(CE) - NORTH EAST NEW TERRITORIES DEVELOPMENT AREAS	Quote number	: ----	No. of samples received	: 1
Order number	: GE/2009/16.20			No. of samples analysed	: 1
C-O-C number	: H009918				
Site	: FANLING				

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Signatories

Mr 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  
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Page Number : 2 of 4  
Client : CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
Work Order : HK1114550

### General Comments

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30-JUN-2011

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: HK1114550

Project Name: Agreement No. CE 61/2007(CE) - North East New Territories Development Areas, Planning and Engineering Study Ground Investigation Phase 2 and Laboratory Testing Service  
(Batch 2).

Sample(s) were received in a chilled condition.

Soil sample(s) analysed on an as received basis. Result(s) reported on a dry weight basis.

Soil sample(s) as received, digested by In-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.



**Analytical Results**

Sub-Matrix: SOIL

Compound	CAS Number	LOR	Client sample ID	
			Client sampling date / time	Unit
EA/ED: Physical and Aggregate Properties				
EA055: Moisture Content (dried @ 103°C)		0.1	20.5	%
EG: Metals and Major Cations				
EG020: Arsenic	7440-38-2	1	3	mg/kg



### Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EATED: Physical and Aggregate Properties (QC Lot: 1850816)</b>								
HK1113955-001	Anonymous	EA055: Moisture Content (dried @ 103°C)		0.1	%	48.2	48.9	1.6
<b>EG: Metals and Major Cations (QC Lot: 1850829)</b>								
HK1114171-001	Anonymous	EG020: Arsenic	7440-38-2	1	mg/kg	13	12	0.0
HK1114550-001	FLN-BH19 14.10-14.55M	EG020: Arsenic	7440-38-2	1	mg/kg	3	3	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 (%)	LCS	DCS	Recovery Limits (%)	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 1850829)	7440-38-2	1	mg/kg	<1	5 mg/kg	89.1	85	115					
EG020: Arsenic													

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

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report	MS	MSD	Recovery Limits (%)	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 1850829)	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	83.8	75	125					
HK1114170-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	83.8	75	125					