



CERTIFICATE OF ANALYSIS

Client	: MASS TRANSIT RAILWAY CORPORATION	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 5
Contact	: MR TOM LO	Contact	: Wong Wai Man, Alice	Work Order	: HK0907679
Address	: 6 KO SHAN ROAD, GROUND FLOOR, HUNG HOM, KOWLOON, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong	Amendment	: 1
E-mail	: tom@gce.com.hk	E-mail	: Alice.Wong@alsenviro.com	Date Samples Received	: 25-APR-2009
Telephone	: +852 2365 9123	Telephone	: +852 2610 1044	Issue Date	: 04-MAY-2009
Facsimile	: +852 2765 8034	Facsimile	: +852 2610 2021	No. of samples received	: 4
Project	: ----	Quote number	: ----	No. of samples analysed	: 1
Order number	: ----				
C-O-C number	: ----				
Site	: ----				

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 29-APR-2009

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

Specific comments for Work Order: **HK0907679**

Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.

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

Total Nitrogen is the sum of Total Oxidizable and Total Kjeldahl Nitrogen.

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

Signatories

Fung Lim Chee, Richard

Position

General Manager

Authorised results for

Inorganics

ALS Laboratory Group

Trading Name: **ALS Technichem (HK) Pty Ltd**

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A Campbell Brothers Limited Company



Analytical Results

Sub-Matrix: WATER

Client sample ID

2108/XRL/A4b
 Water Sampling
 Level=-16.92mPD

[25-APR-2009]

Client sampling date / time

HK0907679-004

Compound	CAS Number	LOR	Unit				
EA/ED: Physical and Aggregate Properties							
EA002: pH Value	----	0.1	pH Unit	7.2			
EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	142			
ED030: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1			
ED035: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	40			
ED037: Total Alkalinity as CaCO3	----	1	mg/L	40			
ED/EK: Inorganic Nonmetallic Parameters							
ED041K: Sulphate as SO4 - Turbidimetric	----	1	mg/L	8			
ED045K: Chloride	16887-00-6	1	mg/L	9			
EK055K: Ammonia as N	7664-41-7	0.01	mg/L	0.43			
EK057A: Nitrite as N	----	0.01	mg/L	<0.01			
EK058A: Nitrate as N	14797-55-8	0.01	mg/L	1.85			
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	1.85			
EK061A: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.5			
EK062A: Total Nitrogen as N	----	0.1	mg/L	2.3			
EK071K: Reactive Phosphorus as P	----	0.01	mg/L	<0.01			
EP: Aggregate Organics							
EP005: Total Organic Carbon	----	1	mg/L	2			
EP026C: Chemical Oxygen Demand	----	5	mg/L	9			
EP030: Biochemical Oxygen Demand	----	2	mg/L	3			
EG: Metals and Major Cations - Filtered							
EG025: Calcium	7440-70-2	0.05	mg/L	11.4			
EG025: Potassium	7440-09-7	0.05	mg/L	5.31			
EG025: Magnesium	7439-95-4	0.05	mg/L	2.62			
EG025: Sodium	7440-23-5	0.05	mg/L	6.11			



Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 962104)								
HK0907670-003	Anonymous	EA002: pH Value	----	0.1	pH Unit	7.0	7.0	0.0
HK0907651-003	Anonymous	EA002: pH Value	----	0.1	pH Unit	8.8	8.8	0.0
EA/ED: Physical and Aggregate Properties (QC Lot: 962105)								
HK0907651-003	Anonymous	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	152	152	0.0
HK0907670-003	Anonymous	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	14800	14700	0.3
EA/ED: Physical and Aggregate Properties (QC Lot: 963641)								
HK0907679-004	2108/XRL/A4b Water Sampling Level=-16.92mPD	ED037: Total Alkalinity as CaCO3	----	1	mg/L	40	40	0.0
EA/ED: Physical and Aggregate Properties (QC Lot: 963642)								
HK0907679-004	2108/XRL/A4b Water Sampling Level=-16.92mPD	ED035: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	40	40	0.0
EA/ED: Physical and Aggregate Properties (QC Lot: 963643)								
HK0907679-004	2108/XRL/A4b Water Sampling Level=-16.92mPD	ED030: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 961680)								
HK0907593-002	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	5.51	5.53	0.4
HK0907592-001	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	3.00	3.00	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 961681)								
HK0907670-001	Anonymous	EK057A: Nitrite as N	----	0.01	mg/L	<0.01	<0.01	0.0
HK0907630-001	Anonymous	EK057A: Nitrite as N	----	0.01	mg/L	<0.01	<0.01	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 961766)								
HK0907516-005	Anonymous	EK055K: Ammonia as N	7664-41-7	0.01	mg/L	6.94	6.75	2.8
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 962008)								
HK0907428-007	Anonymous	ED045K: Chloride	16887-00-6	1	mg/L	1	1	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 962022)								
HK0907465-001	Anonymous	ED041K: Sulphate as SO4 - Turbidimetric	----	1	mg/L	19	19	0.0
EP: Aggregate Organics (QC Lot: 962531)								
HK0907424-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	79	76	3.5
EP: Aggregate Organics (QC Lot: 962570)								
HK0907612-001	Anonymous	EP026C: Chemical Oxygen Demand	----	10	mg/L	521	456	13.3
EG: Metals and Major Cations - Filtered (QC Lot: 962597)								
HK0907679-004	2108/XRL/A4b Water Sampling Level=-16.92mPD	EG025: Calcium	7440-70-2	0.05	mg/L	11.4	11.5	0.9
EG: Metals and Major Cations - Filtered (QC Lot: 962598)								
HK0907679-004	2108/XRL/A4b Water Sampling Level=-16.92mPD	EG025: Magnesium	7439-95-4	0.05	mg/L	2.62	2.63	0.4
EG: Metals and Major Cations - Filtered (QC Lot: 962599)								



Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EG: Metals and Major Cations - Filtered (QC Lot: 962599) - Continued								
HK0907679-004	2108/XRL/A4b Water Sampling Level=-16.92mPD	EG025: Sodium	7440-23-5	0.05	mg/L	6.11	6.12	0.2
EG: Metals and Major Cations - Filtered (QC Lot: 962600)								
HK0907679-004	2108/XRL/A4b Water Sampling Level=-16.92mPD	EG025: Potassium	7440-09-7	0.05	mg/L	5.31	5.27	0.8

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

Matrix: WATER			Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration n	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 962105)											
EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	146.9 µS/cm	103	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 961680)											
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.4 mg/L	104	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 961681)											
EK057A: Nitrite as N	----	0.01	mg/L	<0.01	0.4 mg/L	98.8	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 961766)											
EK055K: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	90.6	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 961779)											
EK061A: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	0.5 mg/L	113	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 962008)											
ED045K: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	100	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 962022)											
ED041K: Sulphate as SO4 - Turbidimetric	----	1	mg/L	<1	5 mg/L	101	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 963858)											
EK071K: Reactive Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	101	----	85	115	----	----
EP: Aggregate Organics (QC Lot: 962169)											
EP030: Biochemical Oxygen Demand	----	2	mg/L	----	198 mg/L	94.2	----	85	115	----	----
EP: Aggregate Organics (QC Lot: 962531)											
EP005: Total Organic Carbon	----	1	mg/L	<1	5 mg/L	95.5	----	85	115	----	----
EP: Aggregate Organics (QC Lot: 962570)											
EP026C: Chemical Oxygen Demand	----	2	mg/L	----	250 mg/L	98.1	----	85	115	----	----
EG: Metals and Major Cations - Filtered (QC Lot: 962597)											



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 962597) - Continued											
EG025: Calcium	7440-70-2	0.05	mg/L	<0.05	1000 mg/L	102	----	85	115	----	----
EG: Metals and Major Cations - Filtered (QC Lot: 962598)											
EG025: Magnesium	7439-95-4	0.05	mg/L	<0.05	1000 mg/L	93.2	----	85	115	----	----
EG: Metals and Major Cations - Filtered (QC Lot: 962599)											
EG025: Sodium	7440-23-5	0.05	mg/L	<0.05	1000 mg/L	95.2	----	85	115	----	----
EG: Metals and Major Cations - Filtered (QC Lot: 962600)											
EG025: Potassium	7440-09-7	0.05	mg/L	<0.05	1000 mg/L	98.0	----	85	115	----	----

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

Matrix: WATER					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)		
					MS	MSD	Low	High	Value	Control Limit	
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 961680)											
HK0907593-002	Anonymous	EK059A: Nitrite + Nitrate as N	----	10 mg/L	98.6	----	75	125	----	----	
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 961681)											
HK0907670-002	Anonymous	EK057A: Nitrite as N	----	0.5 mg/L	113	----	75	125	----	----	
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 961766)											
HK0907516-001	Anonymous	EK055K: Ammonia as N	7664-41-7	0.5 mg/L	# Not Determined	----	75	125	----	----	
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 961779)											
HK0907610-001	Anonymous	EK061A: Total Kjeldahl Nitrogen as N	----	5 mg/L	# Not Determined	----	75	125	----	----	
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 962008)											
HK0907287-001	Anonymous	ED045K: Chloride	16887-00-6	500 mg/L	114	----	75	125	----	----	
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 962022)											
HK0907428-013	Anonymous	ED041K: Sulphate as SO4 - Turbidimetric	----	5 mg/L	84.0	----	75	125	----	----	
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 963858)											
HK0907679-004	2108/XRL/A4b Water Sampling Level=-16.92mPD	EK071K: Reactive Phosphorus as P	----	0.5 mg/L	102	----	75	125	----	----	
EP: Aggregate Organics (QC Lot: 962531)											
HK0907424-001	Anonymous	EP005: Total Organic Carbon	----	50 mg/L	94.4	----	75	125	----	----	
EP: Aggregate Organics (QC Lot: 962570)											
HK0907558-002	Anonymous	EP026C: Chemical Oxygen Demand	----	10 mg/L	93.3	----	75	125	----	----	