

MTR Corporation Limited

HONG KONG SECTION OF GUANGZHOU –
SHENZHEN – HONG KONG EXPRESS RAIL LINK
(No. EP-349/2009)

Contamination Assessment Report
for Lai Chi Kok Works Area
(Revision B)

Verified by:



Position:

Independent Environmental Checker

Date:

3 September 2010

MTR Corporation Limited

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Glenn Frommer
Environmental Team Leader
- 1 SEP 2010

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1. INTRODUCTION

- 1.1 AECOM Asia Company Limited (AECOM) was commissioned by MTR Corporation Limited as the environmental consultant to undertake the supplementary land contamination assessment at Lai Chi Kok Works Area (LCW) (i.e. Site K) under the Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link (XRL). The Hong Kong Section of the XRL will be a 26-km long underground rail line on a dedicated track that runs from the terminus located in West Kowloon to the boundary at Huanggang.
- 1.2 An Environmental Impact Assessment (EIA) for the Hong Kong Section of XRL was conducted and approved under the Environmental Impact Assessment Ordinance (EIAO) on 28 September 2009 (Register No. AEIAR-143/2009). An Environmental Permit (EP) No. EP-349/2009 was granted by the Director of Environmental Protection (DEP) on 16 October 2009.
- 1.3 During the time of EIA Study, some of the land lots/facilities within the development area were not fully surveyed and/or assessed due to site constraints. In this respect, the approved EIA specifies those inaccessible lots/facilities needed to be further assessed after land resumption and prior to the commencement of the constructions works at respective site. Pursuant to EP Condition 2.21, revised contamination assessment plan (CAP) with updated sampling and testing schedule based on respective site condition, supplementary contamination assessment reports (CARs) and if contamination found, supplementary remediation action plan (RAP) should be submitted to Environmental Protection Department (EPD) for approval prior to the commencement of works.
- 1.4 A revised CAP (rCAP) which outlined the sampling locations as well as the testing schedule for site investigation within Site K (Subject Area) was submitted and approved by EPD on 12 April 2010. In general, the approved revised rCAP proposed one borehole to be drilled for soil and groundwater sampling and testing within the Subject Area.
- 1.5 The site Investigation (SI) works for land contamination assessment in the Subject Area was commenced on 13 May 2009 and completed on 16 May 2009. The SI works, including rotary drilling of boreholes, logging of ground materials and groundwater sampling were all conducted by Geotechnics and Concrete Engineering (Hong Kong) Limited (GCE) while laboratory analyses were carried out by ALS Technichem (HK) Pty Limited (ALS) under GCL appointment. In view of the fact that no difference in site condition was found in both the site visits conducted in October 2009 and during the course of EIA in November 2008 as delineated in the approved EIA, no change of operation/site condition at Site K was observed and the SI results obtained in May 2009 were considered to be valid for this supplementary contamination assessment. AECOM collated all the information for the preparation of this supplementary Contamination Assessment Report (SuppCAR).

Objectives

- 1.6 The objectives of this SuppCAR are to summarize findings of the SI (including fieldworks and laboratory analyses) and to determine the nature and extent of contamination based on the findings of the SI (**Section 3**). Once contamination is confirmed, remediation proposal suggesting appropriate remediation actions for the contaminated area will be provided in the supplementary RAP.
- 1.7 This suppCAR is submitted to seek approval from the DEP.

2. FINDINGS OF APPROVED CAP AND THE APPROVED SUPPLEMENTARY CAP

- 2.1 According to both the approved CAP and the approved rCAP, the land contamination concern at Site K mainly aroused from the chemical storage area located at close proximity and as a conservative approach, a borehole was proposed within the Subject Area to assess the site

condition in general. Detailed rationale for selecting sampling locations in the rCAP is shown in **Appendix A**.

3. CONTAMINATION ASSESSMENT REPORT

Assessment Methodology

Soil Boring and Sampling

- 3.1 The SI works at Site K were carried out from 13 to 16 May 2009 and only one borehole was constructed at Site K in LCW according to the approved rCAP/EIA. Figure **NOL/ERL/300/C/XRL/ENS/M57/526** shows the location of the as-built borehole.
- 3.2 Soil samples were generally collected at about 0.5m, 1.5m, 3m, 4.5m and 6m below base of existing concrete level (BBC). Where inspection pit was excavated, disturbed samples were collected at 0.5m and 1.5m while undisturbed samples were collected at other depths. All sampling works were under supervision of land contamination specialist from MTR and in accordance with the approved rCAP/EIA.
- 3.3 During the SI, one soil sample could not be collected at the planned depths of the proposed borehole locations. Deviation from original sample collection plan is summarized in **Table 3.1**. A total of 4 soil samples were collected for laboratory analysis.

Table 3.1 Changes to Sample Collection due to Site Constraints

Borehole	Sampling Depth	Changes Made	Justification
Sample Collection			
2108/XRL/K01	4.5m BBC	No sample collected for testing	High gravel content and insufficient sample size for testing

- 3.4 Before drilling, the sampler and all equipment in contact with the ground were reported to be thoroughly decontaminated prior to use at each borehole by laboratory-grade detergent and steam-cleaning/ high-pressure hot water jet.
- 3.5 Soil samples were reported to be properly labeled and stored in cool boxes at around 4°C until delivered to the analytical laboratory. All the collected soil samples were analyzed by ALS in accordance with the analysis schedules as detailed in the CAP.

Strata Logging

- 3.6 Strata logging for boreholes was undertaken during the course of drilling and sampling by qualified geologists. The logs included the general stratigraphic descriptions, depth of soil sampling, sample notation and level of groundwater (if encountered). The presence of rocks/boulders/cobbles and foreign materials such as metals, wood and plastics was also recorded.

Groundwater Sampling

- 3.7 After completion of soil sampling, one groundwater sample was collected at the borehole (2108/XRL/K-01). Groundwater monitoring well, however, was not installed due to the objection of site tenant as advised by GCE. Of primary importance in the collection of groundwater samples is the need to collect a sample that is representative of water quality in the adjacent aquifer, therefore, although a standpipe was not installed in the borehole, prior to groundwater sampling, the open bore initially developed to remove sediment and then allowed to stand for a day to enable water levels to equilibrate and residual fines to settle. Groundwater was then purged from the borehole and once water levels had re-equilibrated, representative fresh groundwater samples were collected. The groundwater sample was collected by using a clean decontaminated bailer and immediate after

collection, groundwater sample was transferred to new, clean laboratory prepared amber type sample containers. The groundwater sample was placed in the labeled glass jars with zero headspace and promptly sealed with a septum lined cap. The sample was subsequently stored in cool box at about 4°C and delivered to analytical laboratory on the same day. The sampling was conducted in accordance with the procedures detailed in the approved rCAP/EIA. The groundwater sample was analyzed in accordance with the analysis schedules detailed in the approved rCAP (**Appendix A**). It should be noted that the samples obtained are considered to represent groundwater from the portion of the aquifer where contaminants may migrate. The land contamination specialist who supervised the sampling process also considered the samples collected to be suitable for chemical testing, therefore installation of a groundwater monitoring well is not considered necessary to provide additionally beneficial site investigation information. The chemical results also support no significant impact on water quality therefore the results are considered to be representative and valid.

Assessment Criteria

Criteria for Soil and Groundwater Contamination

- 3.8 The assessment methodology is adopted in accordance with the *Guidance Note for Contaminated Land Assessment and Remediation* (Guidance Note 1), *Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management* (Guidance Manual) and *Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards, and Car Repair/Dismantling Workshops* (Guidance Note 2) issued by the EPD.
- 3.9 Interpretation of results has made reference to those Risk-based Remediation Goals (RBRGs) presented in *Table 2.1* and *Table 2.2* as stipulated in the Guidance Manual.
- 3.10 The new RBRGs were developed based on a risk assessment approach to suit the local environmental conditions and community needs in Hong Kong. Decisions on contaminated soil and groundwater remediation are based on the nature and extent of the potential risks that are posed to human receptors as a result of exposure to chemicals in the soil and/or groundwater. RBRGs are developed for four different land use scenarios reflecting the typical physical settings in Hong Kong under which people could be exposed to contaminated soil and groundwater. A description of each land use scenario is as follows:
- Urban residential – Sites located in an urban area where main activities involve habitation by individuals. The typical physical setting is a high rise residential building situated in a housing estate that has amenity facilities such as landscaped yards and children's playgrounds. The receptors are residents who stay indoors most of the time except for a short period each day, during which they are outdoors and have the chance of being in direct contact with soil at landscaping or play areas within the estate.
 - Rural residential – Sites located in a rural area where the main activities involve habitation by individuals. These sites typically have village-type houses or low rise residential blocks surrounded by open space. The receptors are rural residents who stay at home and spend some time each day outdoors on activities such as gardening or light sports. The degree of contact with the soil under the rural setting is more than that under the urban setting both in terms of the intensity and frequency of contact.
 - Industrial – Any site where activities involve manufacturing, chemical or petrochemical processing, storage of raw materials, transport operations, energy production or transmission, etc. Receptors include those at sites where part of the operation is carried out directly on land and the workers are more likely to be exposed to soil than those working in multi-storey factory buildings.
 - Public parks – Receptors include individuals and families who frequent parks and play areas where there is contact with soil present in lawns, walkways, gardens and play areas. Parks are considered to be predominantly hard covered with limited areas of predominantly landscaped soil. Furthermore, public parks are not considered to have buildings present on them.

- 3.11 In addition to the RBRGs, screening criteria (soil saturation limits, C_{sat} , developed for Non-aqueous Phase Liquid [NAPL] in soil and water solubility limits for NAPL in groundwater) for the more mobile organic chemicals must be considered to determine whether a site requires further action.
- 3.12 Since Site K involves the construction of a new railway, the Industrial RBRG levels should be adopted for this land contamination assessment. The relevant soil and groundwater RBRGs for this land contamination study including C_{sat} and the Solubility Limits are selectively presented in **Table 3.2**.

Table 3.2 Relevant RBRG Levels for Soil and Groundwater Contamination

Chemical	Soil (mg/kg)		Groundwater (µg/L)	
	RBRGs for Industrial	Soil Saturation Limits	RBRGs for Industrial	Solubility Limits
VOCs				
Acetone	10,000	***	10,000,000	***
Benzene	9.21	336	54,000	1,750,000
Bromodichloromethane	2.85	1,030	26,200	6,740,000
2-Butanone	10,000	***	10,000,000	***
Chloroform	1.54	1,100	11,300	7,920,000
Ethylbenzene	8,240	138	10,000,000	169,000
Methyl tert-Butyl Ether	70.1	2,380	1,810,000	***
Methylene Chloride	13.9	921	224,000	***
Styrene	10,000	497	10,000,000	310,000
Tetrachloroethene	0.777	97.1	2,950	200,000
Toluene	10,000	235	10,000,000	526,000
Trichloroethene	5.68	488	14,200	1,100,000
Xylenes (Total)	1,230	150	1,570,000	175,000
SVOCs				
Acenaphthene	10,000	60.2	10,000,000	4,240
Acenaphthylene	10,000	19.8	10,000,000	3,930
Anthracene	10,000	2.56	10,000,000	43.4
Benzo(a)anthracene	91.8	NA	NA	NA
Benzo(a)pyrene	9.18	NA	NA	NA
Benzo(b)fluoranthene	17.8	NA	7,530	1.5
Benzo(g,h,i)perylene	10,000	NA	NA	NA
Benzo(k)fluoranthene	918	NA	NA	NA
bis-(2-Ethylhexyl)phthalate	91.8	NA	NA	NA
Chrysene	1,140	NA	812,000	1.6
Dibenzo(a,h)anthracene	9.18	NA	NA	NA
Fluoranthene	10,000	NA	10,000,000	206
Fluorene	10,000	54.7	10,000,000	1,980
Hexachlorobenzene	0.582	NA	695	6,200
Indeno(1,2,3-cd)pyrene	91.8	NA	NA	NA
Naphthalene	453	125	862,000	31,000
Phenanthrene	10,000	28	10,000,000	1000
Phenol	10,000	7,260	NA	NA
Pyrene	10,000	NA	10,000,000	135
Metals				
Cadmium	653	NA	NA	NA
Chromium III	10,000	NA	NA	NA
Chromium VI	1,960	NA	NA	NA
Copper	10,000	NA	NA	NA
Lead	2,290	NA	NA	NA
Mercury	38.4	NA	6,790	NA

Chemical	Soil (mg/kg)		Groundwater (µg/L)	
	RBRGs for Industrial	Soil Saturation Limits	RBRGs for Industrial	Solubility Limits
Nickel	10,000	NA	NA	NA
Zinc	10,000	NA	NA	NA
Petroleum Carbon Ranges				
C ₆ - C ₈	10,000	1000	1,150,000	5,230
C ₉ - C ₁₆	10,000	3000	9,980,000	2,800
C ₁₇ - C ₃₅	10,000	5000	178,000	2,800
PCBs				
PCB	0.748	NA	5,110	31
Other Inorganic Compounds				
Cyanide, Free	10,000	NA	NA	NA

Note: NA - Not Available

*** indicates that the C_{sat} value/ solubility limit exceeds the 'ceiling limit' therefore the RBRG applies

Results and Interpretation

Field Records

- 3.13 The SI works were undertaken in accordance with the sampling plan detailed in the approved rCAP/EIA. Soil boring logs are presented in **Appendix B**.
- 3.14 Reported from GCE, no distinctive, characteristic smell of soil and groundwater sample exhibiting signs of contamination was noticeable and no LNAPL was found at K-01 during SI.

Laboratory Analytical Results for Soil Samples

- 3.15 A summary table of the laboratory testing results with the laboratory reports and standard forms adopted from Guidance Manual for assessing the soil samples are presented in **Appendix C. Table 3.3** below summarizes the soil sampling findings.

Table 3.3 Summary of Laboratory Testing Results for Soil

Location	Site ID	No. of Drillhole	No. of Sample Tested	Compliance to Industrial RBRG	Planned Post-Restoration Land Uses
LCW	K	1	4	All sample results complied	Railway Alignment

- 3.16 The analytical results indicate that the concentrations of Chemicals Of Concern (COCs) at all soil samples comply with the RBRG (industrial). Given site observation indicated no trace of NAPL presence and no exceedance of COCs over relevant RBRG values as shown in laboratory analysis, no remediation is required.

Results of Groundwater Analysis

- 3.17 During the SI, one groundwater sample was collected at K-01. A summary table of the laboratory testing results with the laboratory reports and standard forms adopted from Guidance Manual for assessing groundwater samples are also provided in **Appendix C**.
- 3.18 The detection limits Benzo (b) & Benzo (k) fluoranthene as a combined testing parameter was found greater than the solubility limit of Benzo (b) fluoranthene but not exceeding the relevant RBRG

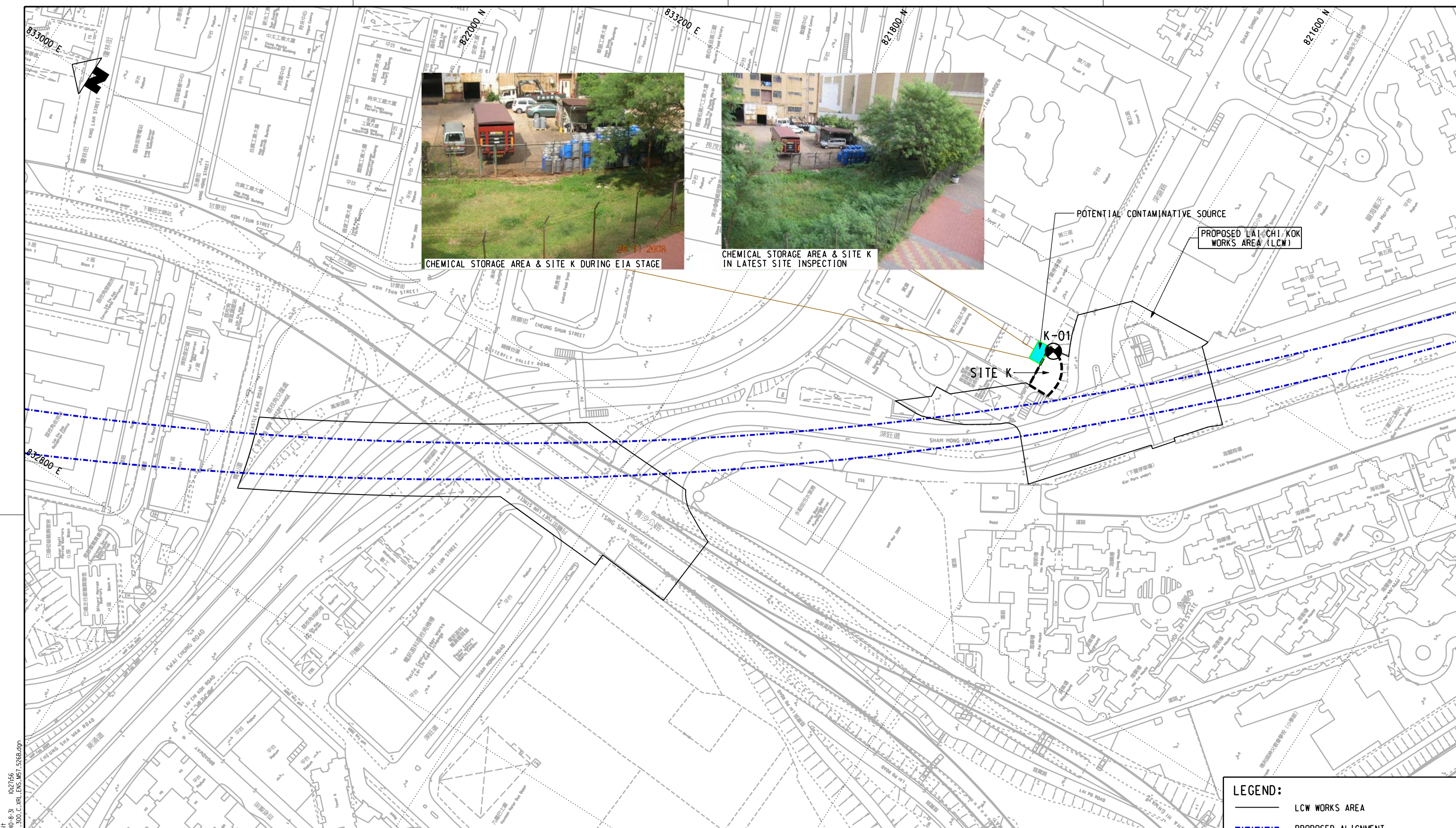
values of Benzo (b) fluoranthene. No relevant RBRG level of Benzo (k) fluoranthene was available for comparison. Since the results of laboratory analysis for Benzo (b) & Benzo (k) fluoranthene were all below detection limits, and no exceedance of relevant RBRG values of Benzo (b) fluoranthene and LNAPL were identified during soil boring, remediation is not considered necessary. For all other parameters, exceedance of industrial RBRGs and solubility limit were not found and cleanup for groundwater is therefore not required.

Results of Field QA/QC Analysis

- 3.19 QA/QC is the practice of making sure that collection and analysis techniques provide precise and accurate information. This process is to ensure the levels of contamination measured in the environmental samples reflect the actual environmental levels and are not due to accidental contamination of the sample or sample container. In this land contamination assessment, 1 set of field blank and equipment blank and 2 sets of trip blanks were sampled and analyzed.
- 3.20 Based on the laboratory analysis, the trip blank samples did not detect any presence of Petroleum Carbon Ranges C6-C8 or BTEX. This indicates that cross-contamination was unlikely during the handling and shipment of the groundwater samples. For equipment blanks and field blanks, laboratory analysis did not detect any presence of analyzed parameters. This indicated that the decontamination of equipment during the sampling activities was conducted adequately and contamination from ambient environment is considered unlikely.
- 3.21 All QA/QC samples were acceptable. A summary table of the laboratory testing results with the laboratory reports for assessing QA/QC samples are also provided in **Appendix C**.

4. CONCLUSIONS AND RECOMMENDATIONS

- 4.1 Site investigation works involving sampling and testing of soil and groundwater have been conducted from 13 May 2009 to 16 May 2009 at Site K with reference to the approved rCAP/EIA. In view of the fact that no difference in site condition was found in both the site visit conducted in October 2009 and during the course of EIA in November 2008 as delineated in the approved rCAP/EIA, change of operation/site condition at Site K was unlikely and the SI results obtained in May 2009 were considered to be valid for this supplementary contamination assessment.
- 4.2 A total of 4 soil samples and 1 groundwater sample were collected at the proposed sampling location at Site K. With concentrations of Chemicals Of Concern (COCs) at all soil and groundwater samples complying with relevant RBRG limits, remediation works are not required at Site K.



LOCATION	SITE ID	SAMPLING LOCATION	COORDINATES		PARAMETERS TESTED*	POST RESTORATION LAND USE	COMPLIANCE TO INDUSTRIAL RBRG LEVELS
			EASTING	NORTHING			
LCW	K	2108/XRL/K01	821631	833158	VOCs, SVOCs, METALS, CYANIDE, PCB	RAILWAY ALIGNMENT	ALL SAMPLE RESULTS COMPLIED

NOTE:
SITE LAYOUT IS INDICATIVE ONLY.
* METALS INCLUDE Cd, CrIII, CrVI, Cu, Pb, Zn, Hg, Ni.

REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

DRAWN	YJP
DESIGNED	TWF
CHECKED	KCC
APPROVED	PL
DATE	21/SEP./2009



EXPRESS RAIL LINK



ORIGINATOR

CADD REF. NOL_ERL_300_C_XRL_ENS_M57_526B.dgn

TITLE			
NOL / ERL-300 SUPP. CAR FOR LCW WORKS AREA AS-BUILT SAMPLING LOCATION			
SCALE		FIGURE NO.	
1 : 2000 (A3)		NOL/ERL/300/C/XRL/ENS/M57/526	
			REV. B

Appendix A

Sampling and Testing Schedule Extracted from Approved CAP/SuppCAP for Lai Chi Kok Works Area (Site K)

Table 4.1 Sampling and Testing Plan for LCW (Site K)

Proposed Sampling Location	Sampling Method	Sample Matrix ^{2,3}		Parameters to be Tested ⁴						Rationale
				Petroleum Carbon Ranges	VOC ⁵	SVOC ⁵	Heavy Metals	PCB	Cyanide	
K-01	Borehole	Soil	0.5m BBC	-	X	X	Cd, CrIII,CrVI, Cu, Hg, Ni, Pb, Zn	X	X	In order to assess the potential land contamination impacts due to chemical spillage of chemicals stored at Feoso's building at close proximity to the site, 1 borehole is proposed.
		Soil	1.5m BBC	-	X	X	Cd, CrIII,CrVI, Cu, Hg, Ni, Pb, Zn	X	X	
		Soil	3.0m BBC	-	X	X	Cd, CrIII,CrVI, Cu, Hg, Ni, Pb, Zn	X	X	
		Soil	4.5m BBC	-	X	X	Cd, CrIII,CrVI, Cu, Hg, Ni, Pb, Zn	X	X	Heavy metals commonly found in dyes are included, together with solvents and cyanide.
		Soil	6.0m BBC	-	X	X	Cd, CrIII,CrVI, Cu, Hg, Ni, Pb, Zn	X	X	
		GW	If present [^]	-	X	X	-Hg only	X	-	

Remarks:

1. Locations are shown in **Figures NOL/ERL/300/C/XRL/ENS/M57/524**.

2. BBC= below base of concrete slab; GW=groundwater

3. Exact sampling depth shall be determined on site and subject to fine adjustment due to site specific conditions (e.g. hard rocks or groundwater encountered (if any)).

4. X = testing proposed

5. Since RBRG value of Benzo(a)anthracene Benzo(a)pyrene, Benzo(g,h,i)perylene Benzo(k)fluoranthene Dibenzo(a,h)anthracene and Indeno(1,2,3-cd)pyrene were not available for groundwater, the captioned chemicals parameters would not be tested in groundwater sample.

[^] Samples will only be collected if groundwater is encountered during SI works.

Appendix B
Borehole Log at Site K



GEOTECHNICS & CONCRETE ENGG. (H.K.) LTD.
GROUND INVESTIGATION DEPARTMENT

HOLE NO.
2108/XRL/EDHK01
SHEET **1** OF **1**

DRILLHOLE RECORD

CONTRACT NO. NEX/2108

PROJECT Contract NEX/2108 Ground Investigation Works for Express Rail Link

METHOD Rotary Cored

CO-ORDINATES
E 833157.56
N 821630.99

WORKS ORDER NO. GCE/2008/001/SI/R

MACHINE & NO. DR122

DATE FROM 13/05/2009 TO 15/05/2009

FLUSHING MEDIUM

ORIENTATION Vertical

GROUND LEVEL +3.85 mPD

Drilling Progress	Casing size	Water level (m) & Time	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
13/05/2009	PX	08:00							+3.85	0.00			
			100					1		0.50			Light brown spotted white, fine to coarse SAND with occasional angular fine to medium gravel sized moderately decomposed granite quartz and occasional shell fragments. (FILL)
			100					2		0.95			
			100					3		1.40			
			100					4		1.95			
									+1.45	2.40			
			44				21 bts	5		3.00			Brown, slightly silty fine to coarse SAND with some angular fine to coarse gravel sized moderately decomposed granite fragments. (FILL)
			100				25 bts	6		3.45			
13/05/2009		Dry at 18:00								3.90			
14/05/2009		2.85m at 08:00								4.50			
			0				175 bts	7	-0.65	4.95			Grey, sandy angular medium to coarse GRAVEL sized concrete and moderately decomposed granite fragments. (FILL) From 4.50m to 4.95m and 5.40m to 5.85m : No core recovery.
			0				147 bts	8		5.40			
			0				82 bts	9		5.85			
		0.00m at 18:00	100				97 bts	10	-2.00	6.30			Greyish brown spotted white, slightly silty fine to medium SAND with occasional shell fragments. (FILL) From 6.30m to 6.75m : No core recovery.
14/05/2009		2.85m at 08:00	0				52 bts	11		6.75			
15/05/2009		0.00m at 18:00	100				142 bts	12	-2.50	7.20			Brownish grey spotted white, clayey silty fine to coarse SAND with some angular fine to medium gravel sized moderately decomposed granite, concrete and shell fragments. (FILL) Hole completed at 7.20m.
15/05/2009	PX	7.20							-3.35				

• SMALL DISTURBED SAMPLE
□ LARGE DISTURBED SAMPLE
□ SPT LINER SAMPLE
□ U75 UNDISTURBED SAMPLE
■ U100 UNDISTURBED SAMPLE
□ MAZIER SAMPLE
□ PISTON SAMPLE

△ WATER SAMPLE
▲ PIEZOMETER TIP
□ STANDPIPE
↓ STANDARD PENETRATION TEST
I PERMEABILITY TEST
II IMPRESSION PACKER TEST
V IN-SITU VANE SHEAR TEST
I PACKER TEST

LOGGED Y.K. Lee
DATE 16/05/2009
CHECKED James Lu
DATE 18/05/2009

REMARKS
1. Five bottles of water sample were taken at a depth of 2.80m.
2. Water was used from 3.00m to 7.20m.

Appendix C

**Laboratory Results and Standard Forms 3.2-3.5 adopted from
Guidance Manual**

Full analytical results should be referred to laboratory report

Parameters			VOCs														SVOCs											Petroleum Carbon Ranges					
			Axetone	Benzene	Bromodichloromethane	2-Butanone	Chloroform	Ethylbenzene	Methyl tert-Butyl Ether	Methylene Chloride	Styrene	Tetrachloroethene	Toluene	Trichloroethene	meta- & para-Xylene	ortho-Xylene	Xylenes (Total)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(b) & Benzo(k)fluoranthene	Chrysene	Fluoranthene	Fluorene	Hexachlorobenzene	Naphthalene	Phenanthrene	Pyrene	Mercury	C6 - C8 Fraction	C9 - C16 Fraction	C17 - C28 Fraction	Total Polychlorinated biphenyls
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
			LOR	50	5	5	50	5	5	5	50	5	5	5	5	10	5	15	2	2	2	4	2	2	2	2	4	2	2	2	0.05	20	500
RBRGs of Industrial			10000000*	54000	26200	10000000*	11300	10000000*	1810000	224000	10000000*	2950	10000000*	14200	--	--	1570000	10000000*	10000000*	10000000*	7530	812000	10000000*	10000000*	695	862000	10000000*	10000000*	6790	1150000	9980000	178000	5110
RBRGs of Industrial (for formula)			100000000	54000	26200	100000000	11300	100000000	1810000	224000	100000000	2950	100000000	14200	--	--	1570000	100000000	100000000	100000000	7530	812000	100000000	100000000	695	862000	100000000	100000000	6790	1150000	9980000	178000	5110
Saturation Limit			***	1750000	6740000	***	7920000	169000	***	***	310000	200000	526000	1100000	--	--	175000	4240	3930	43.4	1.5	1.6	206	1980	6200	31000	1000	135	--	5230	2800	2800	31
Sample Location	Sampling Depth (m BBC)	Date of Sampling																															
2108/XRL/K01	2.80	16-Oct-09	<50	<5	<5	<50	<5	<5	<5	<50	<5	<5	<5	<10	<5	<15	<2	<2	<2	<1.4	<1.6	<2	<2	<4	<2	<2	<2	<0.05				<0.01	

Note:
BBC= Below Base of Existing Concrete
LOR= Level of Reporting
*- "ceiling limit" concentration
***= Saturation limit exceeds the "ceiling limit" therefore the RBRG applies
Shaded square indicates exceedance of RBRG Level
888 Square in bolded line indicates exceedance of soil saturation limit
Indicate no sampling of the parameter
Full analytical results should be referred to laboratory report

[illegible]

Note:

BBC= Below Base of Existing Concrete

LOR= Level of Reporting

*= "ceiling limit" concentration

***= Saturation limit exceeds the "ceiling limit" therefore the RBRG applies

	Shaded square indicates exceedance of RBRG Level
888	Square in bolded line indicates exceedance of soil saturation limit
	Indicate no sampling of the parameter

Full analytical results should be referred to laboratory report

Standard Form 3.2 – Soil Data Summary and Comparison to RBRGs and Csat

Chemical	Frequency of detection (x/y)	Range of Detected Concentration	Range of Method Reporting Limit	Analytical Method	Relevant Land Use Categories	Lowest RBRG(s) (mg/kg)	Csat (mg/kg)	Maximum Detected Concentration Exceeds (check if applicable)	
								RBRG	Csat
Volatile Organic Chemicals									
Acetone	0/4	ND	5	EP074	Industrial	10000	***	NA	NA
Benzene	0/4	ND	0.5			9.21	336	NA	NA
Bromodichloromethane	0/4	ND	0.5			2.85	1030	NA	NA
2-Butanone	0/4	ND	5			10000	***	NA	NA
Chloroform	0/4	ND	0.5			1.54	1100	NA	NA
Ethylbenzene	0/4	ND	0.5			8240	138	NA	NA
Methyl tert-Butyl Ether	0/4	ND	5			70.1	2380	NA	NA
Methylene Chloride	0/4	ND	5			13.9	921	NA	NA
Styrene	0/4	ND	0.5			10000	497	NA	NA
Tetrachloroethene	0/4	ND	0.5			0.777	97.1	NA	NA
Toluene	0/4	ND	0.5			10000	235	NA	NA
Trichloroethene	0/4	ND	0.5			5.68	488	NA	NA
Xylenes (Total)	0/4	ND	1.5			1230	150	NA	NA
Semi-Volatile Organic Chemicals									
Acenaphthene	0/4	ND	0.5	EP075	Industrial	10000	60.2	NA	NA
Acenaphthylene	0/4	ND	0.5			10000	19.8	NA	NA
Anthracene	0/4	ND	0.5			10000	2.56	NA	NA
Benzo(a)anthracene	0/4	ND	0.5			91.8	NA	NA	NA
Benzo(a)pyrene	0/4	ND	0.5			9.18	NA	NA	NA
Benzo(b) & Benzo(k) fluoranthene	0/4	ND	1			17.8	NA	NA	NA
Benzo(g,h,i)perylene	0/4	ND	0.5			10000	NA	NA	NA
bis-(2-Ethylhexyl)phthalate	0/4	ND	5			91.8	NA	NA	NA
Chrysene	0/4	ND	0.5			1140	NA	NA	NA
Dibenzo(a,h)anthracene	0/4	ND	0.5			9.18	NA	NA	NA
Fluoranthene	0/4	ND	0.5			10000	NA	NA	NA
Fluorene	0/4	ND	0.5			10000	54.7	NA	NA
Hexachlorobenzene	0/4	ND	0.2			0.582	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0/4	ND	0.5			91.8	NA	NA	NA
Naphthalene	0/4	ND	0.5			453	125	NA	NA
Phenanthrene	0/4	ND	0.5			10000	28	NA	NA
Phenol	0/4	ND	0.5			10000	7260	NA	NA
Pyrene	0/4	ND	0.5			10000	NA	NA	NA
Metals									
Cadmium	0/4	ND	0.2	EG020 for Cd, Cu, Pb, Ni, Zn EG035 for Hg EG025 for Cr	Industrial	653	NA	NA	NA
Chromium III	4/4	4-7	1			10000	NA	NIL	NA
Chromium VI	0/4	ND	1			1960	NA	NA	NA
Copper	4/4	2-4	1			10000	NA	NIL	NA
Lead	4/4	7-12	1			2290	NA	NIL	NA
Mercury	0/4	ND	0.2			38.4	NA	NA	NA
Nickel	4/4	3	1			10000	NA	NIL	NA
Zinc	4/4	16-142	1			10000	NA	NIL	NA
PCBs									
PCBs	0/4	ND	0.1	EP066	Industrial	0.748	NA	NA	NA
Other Inorganic Compound									
Cyanide, free	0/4	ND	1	EK025*	Industrial	10000	NA	NA	NA

Note:
*** indicates that the Csat value exceeds the 'ceiling limit' therefore the RBRG applies
* A new HOKLAS accredited in house method EK026MD has been recently developed by ALS
NIL= Maximum concentration detected is below repective RBRG or solubility limit
NA= Not Applicable
ND= Not Detected

Chemical	Frequency of detection (x/y)	Range of Detected Concentration (µg/L)	Range of Method Reporting Limit (µg/L)	Analytical Method	Relevant Land Use Categories	Lowest RBRG(s) (ug/kg)	Solubility Limit (ug/L)	Maximum Detected Concentration Exceeds (check if applicable)	
								RBRG	Solubility
Volatile Organic Chemicals									
Acetone	0/1	ND	50	EP074	Industrial	10000000	***	NA	NA
Benzene	0/1	ND	5			54000	1750000	NA	NA
Bromodichloromethane	0/1	ND	5			26200	6740000	NA	NA
2-Butanone	0/1	ND	50			10000000	***	NA	NA
Chloroform	0/1	ND	5			11300	7920000	NA	NA
Ethylbenzene	0/1	ND	5			10000000	169000	NA	NA
Methyl tert-Butyl Ether	0/1	ND	5			1810000	***	NA	NA
Methylene Chloride	0/1	ND	50			224000	***	NA	NA
Styrene	0/1	ND	5			10000000	310000	NA	NA
Tetrachloroethene	0/1	ND	5			2950	200000	NA	NA
Toluene	0/1	ND	5			10000000	526000	NA	NA
Trichloroethene	0/1	ND	5			14200	1100000	NA	NA
Xylenes (Total)	0/1	ND	15			1570000	175000	NA	NA
Semi-Volatile Organic Chemicals									
Acenaphthene	0/1	ND	2	EP075	Industrial	10000000	4240	NA	NA
Acenaphthylene	0/1	ND	2			10000000	3930	NA	NA
Anthracene	0/1	ND	2			10000000	43.4	NA	NA
Benzo(b) & Benzo(k) fluoranthene	0/1	ND	4*			7530	1.5	NA	NA
Chrysene	0/1	ND	2*			812000	1.6	NA	NA
Fluoranthene	0/1	ND	2			10000000	206	NA	NA
Fluorene	0/1	ND	2			10000000	1980	NA	NA
Hexachlorobenzene	0/1	ND	4			695	6200	NA	NA
Naphthalene	0/1	ND	2			862000	31000	NA	NA
Phenanthrene	0/1	ND	2			10000000	1000	NA	NA
Pyrene	0/1	ND	2			10000000	135	NA	NA
Metals									
Mercury	0/1	ND	0.05	EG035	Industrial	6790	NA	NA	NA
PCBs									
PCBs	0/1	ND	0.1	EP066	Industrial	5110	NA	NA	NA

Note:

* The reporting limit for Benzo(b) & Benzo(k) fluoranthene and Chrysene are considered higher than the relevant solubility limit. Given both parameters were not detected in all samples and site osbervation did not show any free product, remediation is not considered necessary

*** indicates that the Csat value exceeds the 'ceiling limit' therefore the RBRG applies

Given no detection for all parameters concerned were found in all groundwater samples, Standard Form 3.5 will not be provided

NIL= Maximum concentration detected is below ND

NA= Not Applicable

ND= Not Detected

Chemical	List Samples		Concentration (mg/kg)	Check if RBRG Exceeded	Check if Csat Exceeded	Approximate Size of Affected Area* (m ²)
	Sample Number	Sample Depth (m, bgs)				
Metals						
Chromium III	2108/XRL/K01	0.50-1.40	4	NIL	NIL	NIL
	2108/XRL/K01	1.50-2.40	4	NIL	NIL	NIL
	2108/XRL/K01	3.00-3.90	6	NIL	NIL	NIL
	2108/XRL/K01	5.85-6.30	7	NIL	NIL	NIL
Copper	2108/XRL/K01	0.50-1.40	3	NIL	NIL	NIL
	2108/XRL/K01	1.50-2.40	2	NIL	NIL	NIL
	2108/XRL/K01	3.00-3.90	4	NIL	NIL	NIL
	2108/XRL/K01	5.85-6.30	3	NIL	NIL	NIL
Lead	2108/XRL/K01	0.50-1.40	7	NIL	NIL	NIL
	2108/XRL/K01	1.50-2.40	7	NIL	NIL	NIL
	2108/XRL/K01	3.00-3.90	12	NIL	NIL	NIL
	2108/XRL/K01	5.85-6.30	12	NIL	NIL	NIL
Nickel	2108/XRL/K01	0.50-1.40	3	NIL	NIL	NIL
	2108/XRL/K01	1.50-2.40	3	NIL	NIL	NIL
	2108/XRL/K01	3.00-3.90	3	NIL	NIL	NIL
	2108/XRL/K01	5.85-6.30	3	NIL	NIL	NIL
Zinc	2108/XRL/K01	0.50-1.40	16	NIL	NIL	NIL
	2108/XRL/K01	1.50-2.40	16	NIL	NIL	NIL
	2108/XRL/K01	3.00-3.90	54	NIL	NIL	NIL
	2108/XRL/K01	5.85-6.30	142	NIL	NIL	NIL

Note:

NA= Not Applicable

NIL= Maximum concentration detected is below repective RBRG or solubility limit

* = Confirmatory tests would be carried out to further confirm size of affected area



CERTIFICATE OF ANALYSIS

Client	: MASS TRANSIT RAILWAY CORPORATION	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 9
Contact	: MR TOM LO	Contact	: Wong Wai Man, Alice	Work Order	: HK0909698
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		
E-mail	: tom@gce.com.hk	E-mail	: Alice.Wong@alsenviro.com		
Telephone	: +852 2365 9123	Telephone	: +852 2610 1044		
Facsimile	: +852 2765 8034	Facsimile	: +852 2610 2021		
Project	: GROUND INVESTIGATION FOR EXPRESS RAIL LINK	Quote number	: ----	Date Samples Received	: 13-MAY-2009
Order number	: ----			Issue Date	: 29-MAY-2009
C-O-C number	: H004757			No. of samples received	: 4
Site	: ----			No. of samples analysed	: 3

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 29-MAY-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: **HK0909698**

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.

The metal concentrations reported are those determined on the TCLP leachate. Extraction Fluid #1 pH 4.88 - 4.98.

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

Signatories

Anh Ngoc Huynh
Fung Lim Chee, Richard

Position

Senior Chemist
General Manager

Authorised results for

Organics
Inorganics



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

				2108/XRL/K01 (0.50 - 1.40M)	2108/XRL/K01 (1.50 - 2.40M)	2108/XRL/K01 (3.00 - 3.90M)		
				13-MAY-2009 14:00	13-MAY-2009 15:00	13-MAY-2009 16:20		
Compound	CAS Number	LOR	Unit	HK0909698-002	HK0909698-003	HK0909698-004		
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	3.0	3.3	13.6		
ED/EK: Inorganic Nonmetallic Parameters								
EK025: Free Cyanide	----	1	mg/kg	<1	<1	<1		
EG: Metals and Major Cations								
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	<0.2		
EG020: Copper	7440-50-8	1	mg/kg	3	2	4		
EG020: Lead	7439-92-1	1	mg/kg	7	7	12		
EG020: Mercury	7439-97-6	0.2	mg/kg	<0.2	<0.2	<0.2		
EG020: Nickel	7440-02-0	1	mg/kg	3	3	3		
EG020: Zinc	7440-66-6	1	mg/kg	16	16	54		
EG049: Trivalent Chromium	16065-83-1	1	mg/kg	4	4	6		
EG3060: Hexavalent Chromium	18540-29-9	1	mg/kg	<1	<1	<1		
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH)								
Benzene	71-43-2	0.5	mg/kg	<0.5	<0.5	<0.5		
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5		
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5		
meta- & para-Xylene	108-38-3 106-42-3	1.0	mg/kg	<1.0	<1.0	<1.0		
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	<0.5		
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5		
EP-074B: Oxygenated Compounds								
2-Propanone (Acetone)	67-64-1	5	mg/kg	<5	<5	<5		
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	<5		
EP-074E: Halogenated Aliphatics								
Methylene chloride	75-09-2	5	mg/kg	<5	<5	<5		
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	<0.5		
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	<0.5		
EP-074G: Trihalomethanes (THM)								
Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	<0.5		
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	<0.5		
EP-074L: Methyl-tert-butyl Ether								
Methyl tert-Butyl Ether (MTBE)	1634-04-4	5.0	mg/kg	<5.0	<5.0	<5.0		
EP-075A: Phenols								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5		
EP-075B: Polyaromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5		



Sub-Matrix: SOIL				Client sample ID	2108/XRL/K01 (0.50 - 1.40M)	2108/XRL/K01 (1.50 - 2.40M)	2108/XRL/K01 (3.00 - 3.90M)		
Client sampling date / time					13-MAY-2009 14:00	13-MAY-2009 15:00	13-MAY-2009 16:20		
Compound	CAS Number	LOR	Unit		HK0909698-002	HK0909698-003	HK0909698-004		
EP-075B: Polyaromatic Hydrocarbons (PAHs) - Continued									
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5		
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5		
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5		
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5		
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5		
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5		
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5		
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5		
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5		
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg		<1.0	<1.0	<1.0		
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5		
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5		
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5		
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5		
EP-075C: Phthalate Esters									
Bis(2-ethylhexyl)phthalate	117-81-7	5.0	mg/kg		<5.0	<5.0	<5.0		
EP-075G: Chlorinated Hydrocarbons									
Hexachlorobenzene (HCB)	118-74-1	0.2	mg/kg		<0.2	<0.2	<0.2		
EP-066: Polychlorinated Biphenyls									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	<0.1	<0.1		
EP-074S: VOC Surrogates									
								Surrogate control limits listed at end of this report.	
Dibromofluoromethane	1868-53-7	0.1	%		94.9	94.7	94.6		
Toluene-D8	2037-26-5	0.1	%		98.1	97.9	98.2		
4-Bromofluorobenzene	460-00-4	0.1	%		106	106	106		
EP-075S: Acid Extractable Surrogates									
								Surrogate control limits listed at end of this report.	
2-Fluorophenol	367-12-4	0.1	%		78.1	83.9	67.5		
Phenol-d6	13127-88-3	0.1	%		77.4	84.4	69.4		
2.4.6-Tribromophenol	118-79-6	0.1	%		70.6	75.8	74.4		
EP-075T: Base/Neutral Extractable Surrogates									
								Surrogate control limits listed at end of this report.	
Nitrobenzene -d5	4165-60-0	0.1	%		79.6	90.8	68.1		
2-Fluorobiphenyl	321-60-8	0.1	%		81.2	92.6	75.6		
4-Terphenyl-d14	1718-51-0	0.1	%		79.3	84.1	71.0		
EP-066S: PCB Surrogate									
								Surrogate control limits listed at end of this report.	
Tetrachlorometaxylene	877-09-8	0.1	%		69.5	90.8	75.7		
Dibutylchloroendate	1770-80-5	0.1	%		51.7	58.4	53.1		



Sub-Matrix: TCLP LEACHATE				Client sample ID	2108/XRL/K01 (0.50 - 1.40M)	2108/XRL/K01 (1.50 - 2.40M)	2108/XRL/K01 (3.00 - 3.90M)		
				Client sampling date / time	13-MAY-2009 12:00	13-MAY-2009 12:00	13-MAY-2009 12:00		
Compound	CAS Number	LOR	Unit		HK0909698-002	HK0909698-003	HK0909698-004		
EG: Metals and Major Cations - Filtered									
EG020: Mercury	7439-97-6	0.2	mg/L		<0.2	<0.2	<0.2		
Sample Preparation Method									
E-TCLP: Extraction Fluid Number	----	-	--		1	1	1		



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 (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 983931)								
HK0909278-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	43.2	41.6	3.9
HK0909457-004	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	46.4	46.1	0.7
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 988019)								
HK0909698-002	2108/XRL/K01 (0.50 - 1.40M)	EK025: Free Cyanide	----	1	mg/kg	<1	<1	0.0
EG: Metals and Major Cations (QC Lot: 983964)								
HK0909472-002	Anonymous	EG020: Cadmium	7440-43-9	0.01	mg/kg	0.34	0.31	6.5
		EG020: Mercury	7439-97-6	0.02	mg/kg	0.05	0.04	0.0
		EG020: Copper	7440-50-8	0.05	mg/kg	19.8	16.2	20.0
		EG020: Lead	7439-92-1	0.05	mg/kg	46.9	52.1	10.4
		EG020: Nickel	7440-02-0	0.05	mg/kg	2.50	2.58	2.9
		EG020: Zinc	7440-66-6	0.5	mg/kg	94.4	85.5	9.9
EG: Metals and Major Cations (QC Lot: 986482)								
HK0909698-003	2108/XRL/K01 (1.50 - 2.40M)	EG3060: Hexavalent Chromium	18540-29-9	1	mg/kg	<1	<1	0.0
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 978268)								
HK0909289-002	Anonymous	Benzene	71-43-2	0.5	mg/kg	<0.5	<0.5	0.0
		Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0
		Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0
		Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0
		ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0
		meta- & para-Xylene	108-38-3	1.0	mg/kg	<1.0	<1.0	0.0
			106-42-3					
EP-074B: Oxygenated Compounds (QC Lot: 978268)								
HK0909289-002	Anonymous	2-Propanone (Acetone)	67-64-1	5	mg/kg	<5	<5	0.0
		2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.0
EP-074E: Halogenated Aliphatics (QC Lot: 978268)								
HK0909289-002	Anonymous	Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.0
		Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0
		Methylene chloride	75-09-2	5	mg/kg	<5	<5	0.0
EP-074G: Trihalomethanes (THM) (QC Lot: 978268)								
HK0909289-002	Anonymous	Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.0
		Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0
EP-074L: Methyl-tert-butyl Ether (QC Lot: 978268)								
HK0909289-002	Anonymous	Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	mg/kg	<0.5	<0.5	0.0
EP-075A: Phenols (QC Lot: 978266)								
HK0909289-002	Anonymous	Phenol	108-95-2	0.1	mg/kg	<0.1	<0.1	0.0
EP-075B: Polyaromatic Hydrocarbons (PAHs) (QC Lot: 978266)								



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-075B: Polyaromatic Hydrocarbons (PAHs) (QC Lot: 978266) - Continued								
HK0909289-002	Anonymous	Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0
		Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0
		Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0
		Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0
		Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0
		Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0
		Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0
		Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0
		Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0
		Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0
		Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0
		Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0
		Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0
		Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg	<1.0	<1.0	0.0
EP-075C: Phthalate Esters (QC Lot: 978266)								
HK0909289-002	Anonymous	Bis(2-ethylhexyl)phthalate	117-81-7	5.0	mg/kg	<5.0	<5.0	0.0
EP-075G: Chlorinated Hydrocarbons (QC Lot: 978266)								
HK0909289-002	Anonymous	Hexachlorobenzene (HCB)	118-74-1	0.2	mg/kg	<0.2	<0.2	0.0
EP-066: Polychlorinated Biphenyls (QC Lot: 980547)								
HK0909340-001	Anonymous	Total Polychlorinated biphenyls	----	0.1	mg/kg	0.5	0.5	0.0
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: 987387)								
HK0909698-003	2108/XRL/K01 (1.50 - 2.40M)	EG020: Mercury	7439-97-6	0.2	mg/L	<0.2	<0.2	0.0

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: 987387)								
HK0909698-003	2108/XRL/K01 (1.50 - 2.40M)	EG020: Mercury	7439-97-6	0.2	mg/L	<0.2	<0.2	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							
					Spike Concentratio n	Spike Recovery (%)		Recovery Limits (%)		RPD (%)		
Method: Compound	CAS Number	LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit	
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 988019)												
EK025: Free Cyanide		----	1.0	mg/kg	<1	10 mg/kg	103	----	85	115	----	----
EG: Metals and Major Cations (QC Lot: 983964)												
EG020: Cadmium		7440-43-9	0.2	mg/kg	<0.01	5 mg/kg	85.3	----	85	115	----	----
EG020: Copper		7440-50-8	1	mg/kg	<0.05	5 mg/kg	91.5	----	85	115	----	----
EG020: Lead		7439-92-1	1	mg/kg	<0.05	5 mg/kg	91.0	----	85	115	----	----
EG020: Mercury		7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	102	----	85	115	----	----
EG020: Nickel		7440-02-0	1	mg/kg	<0.05	5 mg/kg	91.4	----	85	115	----	----



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 (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 983964) - Continued											
EG020: Zinc	7440-66-6	1	mg/kg	<0.5	5 mg/kg	88.0	----	85	115	----	----
EG: Metals and Major Cations (QC Lot: 986482)											
EG3060: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<1	40 mg/kg	112	----	85	115	----	----
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 978268)											
Benzene	71-43-2	0.5	mg/kg	<0.5	0.5 mg/kg	111	----	69	141	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	0.5 mg/kg	113	----	68	149	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	0.5 mg/kg	105	----	77	137	----	----
meta- & para-Xylene	108-38-3 106-42-3	1.0	mg/kg	<1.0	1.0 mg/kg	99.1	----	62	160	----	----
Styrene	100-42-5	0.5	mg/kg	<0.5	0.5 mg/kg	97.2	----	79	136	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	0.5 mg/kg	102	----	71	149	----	----
EP-074B: Oxygenated Compounds (QC Lot: 978268)											
2-Butanone (MEK)	78-93-3	5.0	mg/kg	<5	5.0 mg/kg	81.2	----	26	177	----	----
EP-074E: Halogenated Aliphatics (QC Lot: 978268)											
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	0.5 mg/kg	102	----	74	136	----	----
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	0.5 mg/kg	108	----	69	151	----	----
EP-074G: Trihalomethanes (THM) (QC Lot: 978268)											
Chloroform	67-66-3	0.5	mg/kg	<0.5	0.5 mg/kg	96.1	----	69	139	----	----
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	0.5 mg/kg	102	----	71	137	----	----
EP-075A: Phenols (QC Lot: 978266)											
Phenol	108-95-2	0.1	mg/kg	<0.1	0.25 mg/kg	95.5	----	55	100	----	----
EP-075B: Polyaromatic Hydrocarbons (PAHs) (QC Lot: 978266)											
Naphthalene	91-20-3	0.1	mg/kg	<0.1	0.25 mg/kg	92.8	----	68	104	----	----
Acenaphthylene	208-96-8	0.1	mg/kg	<0.1	0.25 mg/kg	90.9	----	72	108	----	----
Acenaphthene	83-32-9	0.1	mg/kg	<0.1	0.25 mg/kg	94.2	----	73	107	----	----
Fluorene	86-73-7	0.1	mg/kg	<0.1	0.25 mg/kg	95.8	----	77	108	----	----
Phenanthrene	85-01-8	0.1	mg/kg	<0.1	0.25 mg/kg	96.4	----	75	112	----	----
Anthracene	120-12-7	0.1	mg/kg	<0.1	0.25 mg/kg	95.1	----	72	114	----	----
Fluoranthene	206-44-0	0.1	mg/kg	<0.1	0.25 mg/kg	96.7	----	74	113	----	----
Pyrene	129-00-0	0.1	mg/kg	<0.1	0.25 mg/kg	98.0	----	75	113	----	----
Benz(a)anthracene	56-55-3	0.1	mg/kg	<0.1	0.25 mg/kg	98.4	----	77	107	----	----
Chrysene	218-01-9	0.1	mg/kg	<0.1	0.25 mg/kg	96.5	----	84	104	----	----
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.2	mg/kg	<0.2	0.50 mg/kg	85.6	----	74	101	----	----
Benzo(a)pyrene	50-32-8	0.1	mg/kg	<0.1	0.25 mg/kg	81.8	----	66	101	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.1	mg/kg	<0.1	0.25 mg/kg	83.1	----	65	110	----	----
Dibenz(a.h)anthracene	53-70-3	0.1	mg/kg	<0.1	0.25 mg/kg	83.8	----	73	95	----	----
Benzo(g.h.i)perylene	191-24-2	0.1	mg/kg	<0.1	0.25 mg/kg	84.4	----	71	97	----	----
EP-075G: Chlorinated Hydrocarbons (QC Lot: 978266)											



Matrix: SOIL		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentratio	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Method: Compound	CAS Number	LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EP-075G: Chlorinated Hydrocarbons (QC Lot: 978266) - Continued											
Hexachlorobenzene (HCB)	118-74-1	0.2	mg/kg	<0.2	0.25 mg/kg	94.1	----	82	104	----	----
EP-066: Polychlorinated Biphenyls (QC Lot: 980547)											
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	0.5 mg/kg	119	----	71	135	----	----
Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentratio	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Method: Compound	CAS Number	LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 987387)											
EG020: Mercury	7439-97-6	0.0001	mg/L	<0.2	0.02 mg/L	96.5	----	85	115	----	----

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

Matrix: SOIL					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						MS	MSD	Low	High	Value	Control Limit
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number								
EG: Metals and Major Cations (QC Lot: 983964)											
HK0909472-001	Anonymous	EG020: Cadmium	7440-43-9	5 mg/kg	88.1	----	75	125	----	----	
		EG020: Copper	7440-50-8	5 mg/kg	# Not Determined	----	75	125	----	----	
		EG020: Lead	7439-92-1	5 mg/kg	# Not Determined	----	75	125	----	----	
		EG020: Mercury	7439-97-6	0.1 mg/kg	81.3	----	75	125	----	----	
		EG020: Nickel	7440-02-0	5 mg/kg	81.5	----	75	125	----	----	
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75	125	----	----	
EG: Metals and Major Cations (QC Lot: 986482)											
HK0909698-002	2108/XRL/K01 (0.50 - 1.40M)	EG3060: Hexavalent Chromium	18540-29-9	40 mg/kg	75.9	----	75	125	----	----	
Matrix: WATER					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						MS	MSD	Low	High	Value	Control Limit
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number								
EG: Metals and Major Cations - Filtered (QC Lot: 987387)											
HK0909698-002	2108/XRL/K01 (0.50 - 1.40M)	EG020: Mercury	7439-97-6	0.02 mg/L	97.5	----	75	125	----	----	

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High



Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-074S: VOC Surrogates			
Dibromofluoromethane	1868-53-7	80	120
Toluene-D8	2037-26-5	81	117
4-Bromofluorobenzene	460-00-4	74	121
EP-075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	25	121
Phenol-d6	13127-88-3	24	113
2,4,6-Tribromophenol	118-79-6	20	122
EP-075T: Base/Neutral Extractable Surrogates			
Nitrobenzene -d5	4165-60-0	23	120
2-Fluorobiphenyl	321-60-8	30	115
4-Terphenyl-d14	1718-51-0	20	137
EP-066S: PCB Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorodate	1770-80-5	50	130



CERTIFICATE OF ANALYSIS

Client	: MASS TRANSIT RAILWAY CORPORATION	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 16
Contact	: MR TOM LO	Contact	: Wong Wai Man, Alice	Work Order	: HK0909772
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		
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Telephone	: +852 2365 9123	Telephone	: +852 2610 1044		
Facsimile	: +852 2765 8034	Facsimile	: +852 2610 2021		
Project	: GROUND INVESTIGATION FOR EXPRESS RAIL LINK	Quote number	: ----	Date Samples Received	: 14-MAY-2009
Order number	: ----			Issue Date	: 01-JUN-2009
C-O-C number	: H004759-H004760			No. of samples received	: 4
Site	: ----			No. of samples analysed	: 4

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

Signatories

Anh Ngoc Huynh
Fung Lim Chee, Richard

Position

Senior Chemist
General Manager

Authorised results for

Organics
Inorganics



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-MAY-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: **HK0909772**

Sample(s) were picked up from client by ALS Technichem (HK) staff 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.

The metal concentrations reported are those determined on the TCLP leachate. Extraction Fluid #1 pH 4.88 - 4.98.

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.



Analytical Results

Sub-Matrix: SOIL

Client sample ID

2108/XRL/K01
(5.85-6.30M)

Client sampling date / time

14-MAY-2009 11:15

Compound	CAS Number	LOR	Unit	HK0909772-004				
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	11.8				
ED/EK: Inorganic Nonmetallic Parameters								
EK025: Free Cyanide	----	1	mg/kg	<1				
EG: Metals and Major Cations								
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2				
EG020: Copper	7440-50-8	1	mg/kg	3				
EG020: Lead	7439-92-1	1	mg/kg	12				
EG020: Mercury	7439-97-6	0.2	mg/kg	<0.2				
EG020: Nickel	7440-02-0	1	mg/kg	3				
EG020: Zinc	7440-66-6	1	mg/kg	142				
EG049: Trivalent Chromium	16065-83-1	1	mg/kg	7				
EG3060: Hexavalent Chromium	18540-29-9	1	mg/kg	<1				
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH)								
Benzene	71-43-2	0.5	mg/kg	<0.5				
Toluene	108-88-3	0.5	mg/kg	<0.5				
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5				
meta- & para-Xylene	108-38-3 106-42-3	1.0	mg/kg	<1.0				
Styrene	100-42-5	0.5	mg/kg	<0.5				
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5				
EP-074B: Oxygenated Compounds								
2-Propanone (Acetone)	67-64-1	5	mg/kg	<5				
2-Butanone (MEK)	78-93-3	5	mg/kg	<5				
EP-074E: Halogenated Aliphatics								
Methylene chloride	75-09-2	5	mg/kg	<5				
Trichloroethene	79-01-6	0.5	mg/kg	<0.5				
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5				
EP-074G: Trihalomethanes (THM)								
Chloroform	67-66-3	0.5	mg/kg	<0.5				
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5				
EP-074L: Methyl-tert-butyl Ether								
Methyl tert-Butyl Ether (MTBE)	1634-04-4	5.0	mg/kg	<5.0				
EP-075A: Phenols								
Phenol	108-95-2	0.5	mg/kg	<0.5				
EP-075B: Polyaromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	0.5	mg/kg	<0.5				



Sub-Matrix: SOIL				Client sample ID	2108/XRL/K01 (5.85-6.30M)				
				Client sampling date / time	14-MAY-2009 11:15				
Compound	CAS Number	LOR	Unit		HK0909772-004				
EP-075B: Polyaromatic Hydrocarbons (PAHs) - Continued									
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5				
Acenaphthene	83-32-9	0.5	mg/kg		<0.5				
Fluorene	86-73-7	0.5	mg/kg		<0.5				
Phenanthrene	85-01-8	0.5	mg/kg		<0.5				
Anthracene	120-12-7	0.5	mg/kg		<0.5				
Fluoranthene	206-44-0	0.5	mg/kg		<0.5				
Pyrene	129-00-0	0.5	mg/kg		<0.5				
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5				
Chrysene	218-01-9	0.5	mg/kg		<0.5				
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg		<1.0				
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5				
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5				
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg		<0.5				
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg		<0.5				
EP-075C: Phthalate Esters									
Bis(2-ethylhexyl)phthalate	117-81-7	5.0	mg/kg		<5.0				
EP-075G: Chlorinated Hydrocarbons									
Hexachlorobenzene (HCB)	118-74-1	0.2	mg/kg		<0.2				
EP-066: Polychlorinated Biphenyls									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1				
EP-074S: VOC Surrogates Surrogate control limits listed at end of this report.									
Dibromofluoromethane	1868-53-7	0.1	%		93.6				
Toluene-D8	2037-26-5	0.1	%		98.9				
4-Bromofluorobenzene	460-00-4	0.1	%		107				
EP-075S: Acid Extractable Surrogates Surrogate control limits listed at end of this report.									
2-Fluorophenol	367-12-4	0.1	%		75.4				
Phenol-d6	13127-88-3	0.1	%		79.5				
2,4,6-Tribromophenol	118-79-6	0.1	%		54.7				
EP-075T: Base/Neutral Extractable Surrogates Surrogate control limits listed at end of this report.									
Nitrobenzene -d5	4165-60-0	0.1	%		83.8				
2-Fluorobiphenyl	321-60-8	0.1	%		81.6				
4-Terphenyl-d14	1718-51-0	0.1	%		93.7				
EP-066S: PCB Surrogate Surrogate control limits listed at end of this report.									
Tetrachlorometaxylene	877-09-8	0.1	%		92.0				
Dibutylchloroendate	1770-80-5	0.1	%		64.4				



Sub-Matrix: TCLP LEACHATE				Client sample ID	2108/XRL/K01 (5.85-6.30M)				
				Client sampling date / time					
Compound	CAS Number	LOR	Unit	HK0909772-004					
EG: Metals and Major Cations - Filtered									
EG020: Mercury	7439-97-6	0.2	mg/L	<0.2					
Sample Preparation Method									
E-TCLP: Extraction Fluid Number	----	-	--	1					



Sub-Matrix: WATER				Client sample ID	2108/XRL/K01 TRIP BLANK	2108/XRL/K01 FIELD BLANK	2108/XRL/K01 EQUIPMENT BLANK DUPLICATE		
Client sampling date / time					[14-MAY-2009]	[14-MAY-2009]	[14-MAY-2009]		
Compound	CAS Number	LOR	Unit		HK0909772-001	HK0909772-002	HK0909772-003		
ED/EK: Inorganic Nonmetallic Parameters									
EK025MD: Free Cyanide	----	0.01	mg/L		----	<0.01	<0.01		
EG: Metals and Major Cations									
EG049: Trivalent Chromium	16065-83-1	0.02	mg/L		----	<0.02	<0.02		
EG050: Hexavalent Chromium	18540-29-9	0.02	mg/L		----	<0.02	<0.02		
EG: Metals and Major Cations - Filtered									
EG020: Cadmium	7440-43-9	0.0002	mg/L		----	<0.0002	<0.0002		
EG020: Copper	7440-50-8	0.001	mg/L		----	<0.001	<0.001		
EG020: Lead	7439-92-1	0.001	mg/L		----	<0.001	<0.001		
EG020: Mercury	7439-97-6	0.0001	mg/L		----	<0.0001	<0.0001		
EG020: Nickel	7440-02-0	0.001	mg/L		----	<0.001	<0.001		
EG020: Zinc	7440-66-6	0.01	mg/L		----	<0.01	<0.01		
EP-071HK: Total Petroleum Hydrocarbons (TPH)									
C6 - C8 Fraction	----	20	µg/L		<20	----	----		
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH)									
Benzene	71-43-2	5	µg/L		<5	<5	<5		
Toluene	108-88-3	5	µg/L		<5	<5	<5		
Ethylbenzene	100-41-4	5	µg/L		<5	<5	<5		
meta- & para-Xylene	108-38-3 106-42-3	10	µg/L		<10	<10	<10		
Styrene	100-42-5	5	µg/L		----	<5	<5		
ortho-Xylene	95-47-6	5	µg/L		<5	<5	<5		
EP-074B: Oxygenated Compounds									
2-Propanone (Acetone)	67-64-1	50	µg/L		----	<50	<50		
2-Butanone (MEK)	78-93-3	50	µg/L		----	<50	<50		
EP-074E: Halogenated Aliphatics									
Methylene chloride	75-09-2	50	µg/L		----	<50	<50		
Trichloroethene	79-01-6	5	µg/L		----	<5	<5		
Tetrachloroethene	127-18-4	5	µg/L		----	<5	<5		
EP-074G: Trihalomethanes (THM)									
Chloroform	67-66-3	5	µg/L		----	<5	<5		
Bromodichloromethane	75-27-4	5	µg/L		----	<5	<5		
EP-074L: Methyl-tert-butyl Ether									
Methyl tert-Butyl Ether (MTBE)	1634-04-4	5	µg/L		----	<5	<5		
EP-075A: Phenols									
Phenol	108-95-2	2	µg/L		----	<2	<2		
EP-075B: Polyaromatic Hydrocarbons (PAHs)									
Naphthalene	91-20-3	2	µg/L		----	<2	<2		



Sub-Matrix: WATER				Client sample ID	2108/XRL/K01 TRIP BLANK	2108/XRL/K01 FIELD BLANK	2108/XRL/K01 EQUIPMENT BLANK DUPLICATE		
Client sampling date / time					[14-MAY-2009]	[14-MAY-2009]	[14-MAY-2009]		
Compound	CAS Number	LOR	Unit		HK0909772-001	HK0909772-002	HK0909772-003		
EP-075B: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued									
Acenaphthylene	208-96-8	2	µg/L	----	<2	<2	<2		
Acenaphthene	83-32-9	2	µg/L	----	<2	<2	<2		
Fluorene	86-73-7	2	µg/L	----	<2	<2	<2		
Phenanthrene	85-01-8	2	µg/L	----	<2	<2	<2		
Anthracene	120-12-7	2	µg/L	----	<2	<2	<2		
Fluoranthene	206-44-0	2	µg/L	----	<2	<2	<2		
Pyrene	129-00-0	2	µg/L	----	<2	<2	<2		
Benz(a)anthracene	56-55-3	2	µg/L	----	<2	<2	<2		
Chrysene	218-01-9	2	µg/L	----	<2	<2	<2		
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	----	<4	<4	<4		
Benzo(a)pyrene	50-32-8	2	µg/L	----	<2	<2	<2		
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	----	<2	<2	<2		
Dibenz(a,h)anthracene	53-70-3	2	µg/L	----	<2	<2	<2		
Benzo(g,h,i)perylene	191-24-2	2	µg/L	----	<2	<2	<2		
EP-075C: Phthalate Esters									
Bis(2-ethylhexyl)phthalate	117-81-7	20	µg/L	----	<20	<20	<20		
EP-075G: Chlorinated Hydrocarbons									
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	----	<4	<4	<4		
EP-066_67: Total Polychlorinated Biphenyls									
Total Polychlorinated biphenyls	----	0.01	µg/L	----	<0.01	<0.01	<0.01		
EP-080S: TPH(Volatile)/BTEX Surrogate								Surrogate control limits listed at end of this report.	
Dibromofluoromethane	1868-53-7	0.1	%	104	----	----	----		
Toluene-D8	2037-26-5	0.1	%	100	----	----	----		
4-Bromofluorobenzene	460-00-4	0.1	%	92.0	----	----	----		
EP-074S: VOC Surrogates								Surrogate control limits listed at end of this report.	
Dibromofluoromethane	1868-53-7	0.1	%	104	103	101			
Toluene-D8	2037-26-5	0.1	%	100	98.6	97.4			
4-Bromofluorobenzene	460-00-4	0.1	%	92.0	90.2	92.5			
EP-075S: Acid Extractable Surrogates								Surrogate control limits listed at end of this report.	
2-Fluorophenol	367-12-4	0.1	%	----	30.7	34.9			
Phenol-d6	13127-88-3	0.1	%	----	33.0	23.7			
2,4,6-Tribromophenol	118-79-6	0.1	%	----	80.0	56.5			
EP-075T: Base/Neutral Extractable Surrogates								Surrogate control limits listed at end of this report.	
Nitrobenzene -d5	4165-60-0	0.1	%	----	56.8	37.4			
2-Fluorobiphenyl	321-60-8	0.1	%	----	59.4	43.5			
4-Terphenyl-d14	1718-51-0	0.1	%	----	92.6	76.6			



Sub-Matrix: WATER				Client sample ID	2108/XRL/K01 TRIP BLANK	2108/XRL/K01 FIELD BLANK	2108/XRL/K01 EQUIPMENT BLANK DUPLICATE		
				Client sampling date / time	[14-MAY-2009]	[14-MAY-2009]	[14-MAY-2009]		
Compound	CAS Number	LOR	Unit		HK0909772-001	HK0909772-002	HK0909772-003		
EP-066S: PCB Surrogate								Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%		----	85.2	80.7		



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 (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 986452)								
HK0909344-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	27.6	27.2	1.7
HK0909953-008	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	14.6	14.3	2.5
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 988019)								
HK0909698-002	Anonymous	EK025: Free Cyanide	----	1	mg/kg	<1	<1	0.0
EG: Metals and Major Cations (QC Lot: 986482)								
HK0909698-003	Anonymous	EG3060: Hexavalent Chromium	18540-29-9	1	mg/kg	<1	<1	0.0
EG: Metals and Major Cations (QC Lot: 988708)								
HK0909770-001	Anonymous	EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Copper	7440-50-8	1	mg/kg	12	14	8.4
		EG020: Lead	7439-92-1	1	mg/kg	7	8	18.3
		EG020: Nickel	7440-02-0	1	mg/kg	3	2	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	236	231	2.0
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 986487)								
HK0909921-001	Anonymous	Benzene	71-43-2	0.5	mg/kg	<0.5	<0.5	0.0
		Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0
		Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0
		Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0
		ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0
		meta- & para-Xylene	108-38-3	1.0	mg/kg	<1.0	<1.0	0.0
EP-074B: Oxygenated Compounds (QC Lot: 986487)								
HK0909921-001	Anonymous	2-Propanone (Acetone)	67-64-1	5	mg/kg	<5	<5	0.0
		2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.0
EP-074E: Halogenated Aliphatics (QC Lot: 986487)								
HK0909921-001	Anonymous	Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.0
		Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0
		Methylene chloride	75-09-2	5	mg/kg	<5	<5	0.0
EP-074G: Trihalomethanes (THM) (QC Lot: 986487)								
HK0909921-001	Anonymous	Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.0
		Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0
EP-074L: Methyl-tert-butyl Ether (QC Lot: 986487)								
HK0909921-001	Anonymous	Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	mg/kg	<0.5	<0.5	0.0
EP-075A: Phenols (QC Lot: 986493)								
HK0909770-001	Anonymous	Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0
EP-075B: Polyaromatic Hydrocarbons (PAHs) (QC Lot: 986493)								
HK0909770-001	Anonymous	Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0
		Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-075B: Polyaromatic Hydrocarbons (PAHs) (QC Lot: 986493) - Continued								
HK0909770-001	Anonymous	Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0
		Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0
		Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0
		Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0
		Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0
		Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0
		Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0
		Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0
		Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0
		Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0
		Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0
		Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg	<1.0	<1.0	0.0
EP-075C: Phthalate Esters (QC Lot: 986493)								
HK0909770-001	Anonymous	Bis(2-ethylhexyl)phthalate	117-81-7	5.0	mg/kg	<5.0	<5.0	0.0
EP-075G: Chlorinated Hydrocarbons (QC Lot: 986493)								
HK0909770-001	Anonymous	Hexachlorobenzene (HCB)	118-74-1	0.2	mg/kg	<0.2	<0.2	0.0
EP-066: Polychlorinated Biphenyls (QC Lot: 980547)								
HK0909340-001	Anonymous	Total Polychlorinated biphenyls	----	0.1	mg/kg	0.5	0.5	0.0
Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 989539)								
HK0909772-003	2108/XRL/K01 EQUIPMENT BLANK DUPLICATE	EK025MD: Free Cyanide	----	0.01	mg/L	<0.01	<0.01	0.0
EG: Metals and Major Cations (QC Lot: 986481)								
HK0909772-003	2108/XRL/K01 EQUIPMENT BLANK DUPLICATE	EG050: Hexavalent Chromium	18540-29-9	0.02	mg/L	<0.02	<0.02	0.0
EG: Metals and Major Cations - Filtered (QC Lot: 987981)								
HK0909772-003	2108/XRL/K01 EQUIPMENT BLANK DUPLICATE	EG020: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0
		EG020: Cadmium	7440-43-9	0.0002	mg/L	<0.0002	<0.0002	0.0
		EG020: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0
		EG020: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0
		EG020: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0
		EG020: Zinc	7440-66-6	0.01	mg/L	<0.01	<0.01	0.0
EG: Metals and Major Cations - Filtered (QC Lot: 991656)								
HK0909772-004	2108/XRL/K01 (5.85-6.30M)	EG020: Mercury	7439-97-6	0.2	mg/L	<0.2	<0.2	0.0
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 985888)								



Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 985888) - Continued								
HK0909769-001	Anonymous	C6 - C8 Fraction	----	0.02	mg/L	<0.02	<0.02	0.0
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 984088)								
HK0909700-001	Anonymous	meta- & para-Xylene	108-38-3	10	µg/L	<10	<10	0.0
			106-42-3					
		Benzene	71-43-2	5	µg/L	<5	<5	0.0
		Toluene	108-88-3	5	µg/L	<5	<5	0.0
		Ethylbenzene	100-41-4	5	µg/L	<5	<5	0.0
		Styrene	100-42-5	5	µg/L	<5	<5	0.0
		ortho-Xylene	95-47-6	5	µg/L	<5	<5	0.0
EP-074B: Oxygenated Compounds (QC Lot: 984088)								
HK0909700-001	Anonymous	2-Propanone (Acetone)	67-64-1	50	µg/L	<50	<50	0.0
		2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0
EP-074E: Halogenated Aliphatics (QC Lot: 984088)								
HK0909700-001	Anonymous	Methylene chloride	75-09-2	5	µg/L	<5	<5	0.0
		Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0
		Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0
EP-074G: Trihalomethanes (THM) (QC Lot: 984088)								
HK0909700-001	Anonymous	Chloroform	67-66-3	5	µg/L	<5	<5	0.0
		Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0
EP-074L: Methyl-tert-butyl Ether (QC Lot: 984088)								
HK0909700-001	Anonymous	Methyl tert-Butyl Ether (MTBE)	1634-04-4	5	µg/L	<5	<5	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						
					Spike Concentration <i>n</i>	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Method: Compound	CAS Number	LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 988019)											
EK025: Free Cyanide	----	1.0	mg/kg	<1	10 mg/kg	103	----	85	115	----	----
EG: Metals and Major Cations (QC Lot: 986482)											
EG3060: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<1	40 mg/kg	112	----	85	115	----	----
EG: Metals and Major Cations (QC Lot: 988708)											
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	5 mg/kg	85.3	----	85	115	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	91.8	----	85	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	85.6	----	85	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	99.2	----	85	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	86.0	----	85	115	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	90.8	----	85	115	----	----
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 986487)											
Benzene	71-43-2	0.5	mg/kg	<0.5	0.5 mg/kg	97.6	----	69	141	----	----



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 Concentratio	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 986487) - Continued											
Toluene	108-88-3	0.5	mg/kg	<0.5	0.5 mg/kg	103	----	68	149	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	0.5 mg/kg	106	----	77	137	----	----
meta- & para-Xylene	108-38-3 106-42-3	1.0	mg/kg	<1.0	1.0 mg/kg	100	----	62	160	----	----
Styrene	100-42-5	0.5	mg/kg	<0.5	0.5 mg/kg	100	----	79	136	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	0.5 mg/kg	103	----	71	149	----	----
EP-074B: Oxygenated Compounds (QC Lot: 986487)											
2-Butanone (MEK)	78-93-3	5.0	mg/kg	<5	5.0 mg/kg	82.1	----	26	177	----	----
EP-074E: Halogenated Aliphatics (QC Lot: 986487)											
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	0.5 mg/kg	99.6	----	74	136	----	----
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	0.5 mg/kg	104	----	69	151	----	----
EP-074G: Trihalomethanes (THM) (QC Lot: 986487)											
Chloroform	67-66-3	0.5	mg/kg	<0.5	0.5 mg/kg	95.4	----	69	139	----	----
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	0.5 mg/kg	99.9	----	71	137	----	----
EP-075A: Phenols (QC Lot: 986493)											
Phenol	108-95-2	0.1	mg/kg	<0.1	0.25 mg/kg	70.4	----	58	100	----	----
EP-075B: Polyaromatic Hydrocarbons (PAHs) (QC Lot: 986493)											
Naphthalene	91-20-3	0.1	mg/kg	<0.1	0.25 mg/kg	77.0	----	71	106	----	----
Acenaphthylene	208-96-8	0.1	mg/kg	<0.1	0.25 mg/kg	77.4	----	75	101	----	----
Acenaphthene	83-32-9	0.1	mg/kg	<0.1	0.25 mg/kg	82.8	----	80	105	----	----
Fluorene	86-73-7	0.1	mg/kg	<0.1	0.25 mg/kg	84.0	----	82	103	----	----
Phenanthrene	85-01-8	0.1	mg/kg	<0.1	0.25 mg/kg	84.5	----	84	106	----	----
Anthracene	120-12-7	0.1	mg/kg	<0.1	0.25 mg/kg	# 84.4	----	85	103	----	----
Fluoranthene	206-44-0	0.1	mg/kg	<0.1	0.25 mg/kg	88.0	----	87	104	----	----
Pyrene	129-00-0	0.1	mg/kg	<0.1	0.25 mg/kg	88.8	----	88	104	----	----
Benz(a)anthracene	56-55-3	0.1	mg/kg	<0.1	0.25 mg/kg	87.0	----	85	105	----	----
Chrysene	218-01-9	0.1	mg/kg	<0.1	0.25 mg/kg	88.6	----	83	104	----	----
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.2	mg/kg	<0.2	0.50 mg/kg	81.3	----	68	117	----	----
Benzo(a)pyrene	50-32-8	0.1	mg/kg	<0.1	0.25 mg/kg	77.8	----	69	105	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.1	mg/kg	<0.1	0.25 mg/kg	92.0	----	69	106	----	----
Dibenz(a.h)anthracene	53-70-3	0.1	mg/kg	<0.1	0.25 mg/kg	75.8	----	74	96	----	----
Benzo(g.h.i)perylene	191-24-2	0.1	mg/kg	<0.1	0.25 mg/kg	74.8	----	70	103	----	----
EP-075G: Chlorinated Hydrocarbons (QC Lot: 986493)											
Hexachlorobenzene (HCB)	118-74-1	0.2	mg/kg	<0.2	0.25 mg/kg	83.4	----	81	106	----	----
EP-066: Polychlorinated Biphenyls (QC Lot: 980547)											
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	0.5 mg/kg	119	----	71	135	----	----

Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
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Matrix: WATER		Method Blank (MB) Report			Spike Concentration	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result		Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 989539)											
EK025MD: Free Cyanide	----	0.01	mg/L	<0.01	0.2 mg/L	103	----	85	115	----	----
EG: Metals and Major Cations (QC Lot: 986481)											
EG050: Hexavalent Chromium	18540-29-9	0.02	mg/L	<0.02	0.5 mg/L	100	----	85	115	----	----
EG: Metals and Major Cations - Filtered (QC Lot: 987981)											
EG020: Cadmium	7440-43-9	0.0002	mg/L	<0.0002	0.1 mg/L	95.0	----	85	115	----	----
EG020: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	101	----	85	115	----	----
EG020: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	91.6	----	85	115	----	----
EG020: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.002 mg/L	85.0	----	85	115	----	----
EG020: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	101	----	85	115	----	----
EG020: Zinc	7440-66-6	0.01	mg/L	<0.01	0.1 mg/L	105	----	85	115	----	----
EG: Metals and Major Cations - Filtered (QC Lot: 991656)											
EG020: Mercury	7439-97-6	0.0001	mg/L	<0.02	0.002 mg/L	99.0	----	85	115	----	----
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 985888)											
C6 - C8 Fraction	----	0.5	mg/L	---- <0.02	0.15 mg/L ----	109 ----	----	78 ----	113 ----	---- ----	---- ----
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 984088)											
Benzene	71-43-2	5	µg/L	<5	10 µg/L	95.4	----	54	132	----	----
Toluene	108-88-3	5	µg/L	<5	10 µg/L	87.8	----	59	128	----	----
Ethylbenzene	100-41-4	5	µg/L	<5	10 µg/L	89.5	----	68	125	----	----
meta- & para-Xylene	108-38-3 106-42-3	10	µg/L	<10	20 µg/L	90.8	----	75	122	----	----
Styrene	100-42-5	5	µg/L	<5	10 µg/L	84.2	----	73	119	----	----
ortho-Xylene	95-47-6	5	µg/L	<5	10 µg/L	91.5	----	72	125	----	----
EP-074B: Oxygenated Compounds (QC Lot: 984088)											
2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	97.1	----	63	126	----	----
EP-074E: Halogenated Aliphatics (QC Lot: 984088)											
Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	97.3	----	67	125	----	----
Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	92.2	----	59	126	----	----
EP-074G: Trihalomethanes (THM) (QC Lot: 984088)											
Chloroform	67-66-3	5	µg/L	<5	10 µg/L	100	----	68	123	----	----
Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	98.4	----	77	120	----	----
EP-075A: Phenols (QC Lot: 986519)											
Phenol	108-95-2	2	µg/L	<2	5 µg/L	41.9	----	9	85	----	----
EP-075B: Polyaromatic Hydrocarbons (PAHs) (QC Lot: 986519)											
Naphthalene	91-20-3	2	µg/L	<2	5 µg/L	# 64.6	----	67	100	----	----
Acenaphthylene	208-96-8	2	µg/L	<2	5 µg/L	76.5	----	64	100	----	----
Acenaphthene	83-32-9	2	µg/L	<2	5 µg/L	78.8	----	53	102	----	----
Fluorene	86-73-7	2	µg/L	<2	5 µg/L	86.0	----	63	103	----	----
Phenanthrene	85-01-8	2	µg/L	<2	5 µg/L	98.7	----	65	102	----	----



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentratio	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
		Method: Compound	CAS Number	LOR		Unit	Result	LCS	DCS	Low	High
EP-075B: Polyaromatic Hydrocarbons (PAHs) (QC Lot: 986519) - Continued											
Anthracene	120-12-7	2	µg/L	<2	5 µg/L	97.4	----	62	102	----	----
Fluoranthene	206-44-0	2	µg/L	<2	5 µg/L	96.4	----	74	107	----	----
Pyrene	129-00-0	2	µg/L	<2	5 µg/L	92.2	----	74	108	----	----
Benz(a)anthracene	56-55-3	2	µg/L	<2	5 µg/L	99.2	----	55	122	----	----
Chrysene	218-01-9	2	µg/L	<2	5 µg/L	94.1	----	64	115	----	----
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	10 µg/L	91.6	----	70	112	----	----
Benzo(a)pyrene	50-32-8	2	µg/L	<2	5 µg/L	90.3	----	64	105	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	5 µg/L	82.5	----	77	106	----	----
Dibenz(a,h)anthracene	53-70-3	2	µg/L	<2	5 µg/L	84.3	----	72	109	----	----
Benzo(g,h,i)perylene	191-24-2	2	µg/L	<2	5 µg/L	84.1	----	73	109	----	----
EP-075C: Phthalate Esters (QC Lot: 986519)											
Bis(2-ethylhexyl)phthalate	117-81-7	20	µg/L	<20	5 µg/L	96.2	----	79	112	----	----
EP-075G: Chlorinated Hydrocarbons (QC Lot: 986519)											
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	5 µg/L	92.9	----	66	107	----	----
EP-066_67: Total Polychlorinated Biphenyls (QC Lot: 986520)											
Total Polychlorinated biphenyls	----	0.01	µg/L	<0.01	0.1 µg/L	110	----	55	140	----	----

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

Matrix: SOIL				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number		MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 986482)										
HK0909698-002	Anonymous	EG3060: Hexavalent Chromium	18540-29-9	40 mg/kg	75.9	----	75	125	----	----
EG: Metals and Major Cations (QC Lot: 988708)										
HK0909344-001	Anonymous	EG020: Cadmium	7440-43-9	5 mg/kg	110	----	75	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	# Not Determined	----	75	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	# Not Determined	----	75	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	90.6	----	75	125	----	----
		EG020: Nickel	7440-02-0	50 mg/kg	94.8	----	75	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75	125	----	----

Matrix: WATER					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
					MS	MSD	Low	High



Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number		MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 989539)										
HK0909772-002	2108/XRL/K01 FIELD BLANK	EK025MD: Free Cyanide	----	0.2 mg/L	109	----	75	125	----	----
EG: Metals and Major Cations (QC Lot: 986481)										
HK0909772-002	2108/XRL/K01 FIELD BLANK	EG050: Hexavalent Chromium	18540-29-9	0.5 mg/L	104	----	75	125	----	----
EG: Metals and Major Cations - Filtered (QC Lot: 987981)										
HK0909772-002	2108/XRL/K01 FIELD BLANK	EG020: Cadmium	7440-43-9	0.1 mg/L	94.8	95.7	75	125	0.9	----
		EG020: Copper	7440-50-8	0.1 mg/L	103	101	75	125	1.7	----
		EG020: Lead	7439-92-1	0.1 mg/L	92.1	91.4	75	125	0.7	----
		EG020: Mercury	7439-97-6	0.002 mg/L	94.5	94.0	75	125	0.5	----
		EG020: Nickel	7440-02-0	0.1 mg/L	105	102	75	125	3.1	----
		EG020: Zinc	7440-66-6	0.1 mg/L	104	106	75	125	2.0	----
EG: Metals and Major Cations - Filtered (QC Lot: 991656)										
HK0909770-001	Anonymous	EG020: Mercury	7439-97-6	0.002 mg/L	101	106	75	125	4.4	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-074S: VOC Surrogates			
Dibromofluoromethane	1868-53-7	80	120
Toluene-D8	2037-26-5	81	117
4-Bromofluorobenzene	460-00-4	74	121
EP-075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	25	121
Phenol-d6	13127-88-3	24	113
2,4,6-Tribromophenol	118-79-6	20	122
EP-075T: Base/Neutral Extractable Surrogates			
Nitrobenzene -d5	4165-60-0	23	120
2-Fluorobiphenyl	321-60-8	30	115
4-Terphenyl-d14	1718-51-0	20	137
EP-066S: PCB Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130
Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-080S: TPH(Volatile)/BTEX Surrogate			
Dibromofluoromethane	1868-53-7	86	118
Toluene-D8	2037-26-5	88	110
4-Bromofluorobenzene	460-00-4	86	115



Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-074S: VOC Surrogates			
Dibromofluoromethane	1868-53-7	86	118
Toluene-D8	2037-26-5	88	110
4-Bromofluorobenzene	460-00-4	86	115
EP-075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	21	100
Phenol-d6	13127-88-3	20	94
2,4,6-Tribromophenol	118-79-6	20	123
EP-075T: Base/Neutral Extractable Surrogates			
Nitrobenzene -d5	4165-60-0	35	114
2-Fluorobiphenyl	321-60-8	43	116
4-Terphenyl-d14	1718-51-0	33	141
EP-066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	50	130



CERTIFICATE OF ANALYSIS

Client	: MASS TRANSIT RAILWAY CORPORATION	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 6
Contact	: MR TOM LO	Contact	: Wong Wai Man, Alice	Work Order	: HK0909769
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		
E-mail	: tom@gce.com.hk	E-mail	: Alice.Wong@alsenviro.com		
Telephone	: +852 2365 9123	Telephone	: +852 2610 1044		
Facsimile	: +852 2765 8034	Facsimile	: +852 2610 2021		
Project	: GROUND INVESTIGATION FOR EXPRESS RAIL LINK	Quote number	: ----	Date Samples Received	: 16-MAY-2009
Order number	: ----			Issue Date	: 01-JUN-2009
C-O-C number	: H006041			No. of samples received	: 2
Site	: ----			No. of samples analysed	: 2

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 25-MAY-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: **HK0909769**

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

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

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

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

Signatories

Anh Ngoc Huynh
Fung Lim Chee, Richard

Position

Senior Chemist
General Manager

Authorised results for

Organics
Inorganics



Analytical Results

Sub-Matrix: WATER

Client sample ID

Client sampling date / time

				2108/XRL/K01 TRIP BLANK [16-MAY-2009]	2108/XRL/K01 2.80M (WATER SAMPLE) 16-MAY-2009 09:15			
Compound	CAS Number	LOR	Unit	HK0909769-001	HK0909769-002			
EG: Metals and Major Cations - Filtered								
EG036: Mercury	7439-97-6	0.05	µg/L	----	<0.05			
EP-071HK: Total Petroleum Hydrocarbons (TPH)								
C6 - C8 Fraction	----	20	µg/L	<20	----			
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH)								
Benzene	71-43-2	5	µg/L	<5	<5			
Toluene	108-88-3	5	µg/L	<5	<5			
Ethylbenzene	100-41-4	5	µg/L	<5	<5			
meta- & para-Xylene	108-38-3 106-42-3	10	µg/L	<10	<10			
Styrene	100-42-5	5	µg/L	----	<5			
ortho-Xylene	95-47-6	5	µg/L	<5	<5			
EP-074B: Oxygenated Compounds								
2-Propanone (Acetone)	67-64-1	50	µg/L	----	<50			
2-Butanone (MEK)	78-93-3	50	µg/L	----	<50			
EP-074E: Halogenated Aliphatics								
Methylene chloride	75-09-2	50	µg/L	----	<50			
Trichloroethene	79-01-6	5	µg/L	----	<5			
Tetrachloroethene	127-18-4	5	µg/L	----	<5			
EP-074G: Trihalomethanes (THM)								
Chloroform	67-66-3	5	µg/L	----	<5			
Bromodichloromethane	75-27-4	5	µg/L	----	<5			
EP-074L: Methyl-tert-butyl Ether								
Methyl tert-Butyl Ether (MTBE)	1634-04-4	5	µg/L	----	<5			
EP-075B: Polyaromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	2	µg/L	----	<2			
Acenaphthylene	208-96-8	2	µg/L	----	<2			
Acenaphthene	83-32-9	2	µg/L	----	<2			
Fluorene	86-73-7	2	µg/L	----	<2			
Phenanthrene	85-01-8	2	µg/L	----	<2			
Anthracene	120-12-7	2	µg/L	----	<2			
Fluoranthene	206-44-0	2	µg/L	----	<2			
Pyrene	129-00-0	2	µg/L	----	<2			
Chrysene	218-01-9	2	µg/L	----	<2			
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	----	<4			
EP-075G: Chlorinated Hydrocarbons								
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	----	<4			



Sub-Matrix: WATER				Client sample ID	2108/XRL/K01 TRIP BLANK	2108/XRL/K01 2.80M (WATER SAMPLE)			
Client sampling date / time					[16-MAY-2009]	16-MAY-2009 09:15			
Compound	CAS Number	LOR	Unit		HK0909769-001	HK0909769-002			
EP-066_67: Total Polychlorinated Biphenyls									
Total Polychlorinated biphenyls	----	0.01	µg/L		----	<0.01			
EP-080S: TPH(Volatile)/BTEX Surrogate									
							Surrogate control limits listed at end of this report.		
Dibromofluoromethane	1868-53-7	0.1	%		100	----			
Toluene-D8	2037-26-5	0.1	%		98.8	----			
4-Bromofluorobenzene	460-00-4	0.1	%		90.8	----			
EP-074S: VOC Surrogates									
							Surrogate control limits listed at end of this report.		
Dibromofluoromethane	1868-53-7	0.1	%		100	97.9			
Toluene-D8	2037-26-5	0.1	%		98.8	101			
4-Bromofluorobenzene	460-00-4	0.1	%		90.8	94.8			
EP-075S: Acid Extractable Surrogates									
							Surrogate control limits listed at end of this report.		
2-Fluorophenol	367-12-4	0.1	%		----	36.6			
Phenol-d6	13127-88-3	0.1	%		----	37.8			
2,4,6-Tribromophenol	118-79-6	0.1	%		----	78.0			
EP-075T: Base/Neutral Extractable Surrogates									
							Surrogate control limits listed at end of this report.		
Nitrobenzene -d5	4165-60-0	0.1	%		----	49.2			
2-Fluorobiphenyl	321-60-8	0.1	%		----	51.2			
4-Terphenyl-d14	1718-51-0	0.1	%		----	86.4			
EP-066S: PCB Surrogate									
							Surrogate control limits listed at end of this report.		
Decachlorobiphenyl	2051-24-3	0.1	%		----	83.6			



Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 985888)								
HK0909769-001	2108/XRL/K01 TRIP BLANK	C6 - C8 Fraction	----	0.02	mg/L	<0.02	<0.02	0.0
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 984088)								
HK0909700-001	Anonymous	meta- & para-Xylene	108-38-3	10	µg/L	<10	<10	0.0
			106-42-3					
		Benzene	71-43-2	5	µg/L	<5	<5	0.0
		Toluene	108-88-3	5	µg/L	<5	<5	0.0
		Ethylbenzene	100-41-4	5	µg/L	<5	<5	0.0
		Styrene	100-42-5	5	µg/L	<5	<5	0.0
		ortho-Xylene	95-47-6	5	µg/L	<5	<5	0.0
EP-074B: Oxygenated Compounds (QC Lot: 984088)								
HK0909700-001	Anonymous	2-Propanone (Acetone)	67-64-1	50	µg/L	<50	<50	0.0
		2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0
EP-074E: Halogenated Aliphatics (QC Lot: 984088)								
HK0909700-001	Anonymous	Methylene chloride	75-09-2	5	µg/L	<5	<5	0.0
		Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0
		Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0
EP-074G: Trihalomethanes (THM) (QC Lot: 984088)								
HK0909700-001	Anonymous	Chloroform	67-66-3	5	µg/L	<5	<5	0.0
		Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0
EP-074L: Methyl-tert-butyl Ether (QC Lot: 984088)								
HK0909700-001	Anonymous	Methyl tert-Butyl Ether (MTBE)	1634-04-4	5	µg/L	<5	<5	0.0

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

Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report							
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)		
		Method: Compound	CAS Number	LOR		Unit	Result	LCS	DCS	Low	High	Value
EG: Metals and Major Cations - Filtered (QC Lot: 986529)												
EG036: Mercury		7439-97-6	0.05	µg/L	<0.05	0.2 µg/L	106	----	85	115	----	----
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 985888)												
C6 - C8 Fraction		----	0.5	mg/L	----	0.15 mg/L	109	----	78	113	----	----
					<0.02	----	----	----	----	----	----	----
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 984088)												
Benzene		71-43-2	5	µg/L	<5	10 µg/L	95.4	----	54	132	----	----
Toluene		108-88-3	5	µg/L	<5	10 µg/L	87.8	----	59	128	----	----
Ethylbenzene		100-41-4	5	µg/L	<5	10 µg/L	89.5	----	68	125	----	----
meta- & para-Xylene		108-38-3 106-42-3	10	µg/L	<10	20 µg/L	90.8	----	75	122	----	----
Styrene		100-42-5	5	µg/L	<5	10 µg/L	84.2	----	73	119	----	----
ortho-Xylene		95-47-6	5	µg/L	<5	10 µg/L	91.5	----	72	125	----	----



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Method: Compound	CAS Number	LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EP-074B: Oxygenated Compounds (QC Lot: 984088)											
2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	97.1	----	63	126	----	----
EP-074E: Halogenated Aliphatics (QC Lot: 984088)											
Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	97.3	----	67	125	----	----
Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	92.2	----	59	126	----	----
EP-074G: Trihalomethanes (THM) (QC Lot: 984088)											
Chloroform	67-66-3	5	µg/L	<5	10 µg/L	100	----	68	123	----	----
Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	98.4	----	77	120	----	----
EP-075B: Polyaromatic Hydrocarbons (PAHs) (QC Lot: 986519)											
Naphthalene	91-20-3	2	µg/L	<2	5 µg/L	# 64.6	----	67	100	----	----
Acenaphthylene	208-96-8	2	µg/L	<2	5 µg/L	76.5	----	64	100	----	----
Acenaphthene	83-32-9	2	µg/L	<2	5 µg/L	78.8	----	53	102	----	----
Fluorene	86-73-7	2	µg/L	<2	5 µg/L	86.0	----	63	103	----	----
Phenanthrene	85-01-8	2	µg/L	<2	5 µg/L	98.7	----	65	102	----	----
Anthracene	120-12-7	2	µg/L	<2	5 µg/L	97.4	----	62	102	----	----
Fluoranthene	206-44-0	2	µg/L	<2	5 µg/L	96.4	----	74	107	----	----
Pyrene	129-00-0	2	µg/L	<2	5 µg/L	92.2	----	74	108	----	----
Chrysene	218-01-9	2	µg/L	<2	5 µg/L	94.1	----	64	115	----	----
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	10 µg/L	91.6	----	70	112	----	----
EP-075G: Chlorinated Hydrocarbons (QC Lot: 986519)											
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	5 µg/L	92.9	----	66	107	----	----
EP-066_67: Total Polychlorinated Biphenyls (QC Lot: 986521)											
Total Polychlorinated biphenyls	----	0.01	µg/L	<0.01	0.1 µg/L	92.5	----	55	140	----	----

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

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number							
EG: Metals and Major Cations - Filtered (QC Lot: 986529)										
HK0909769-002	2108/XRL/K01 2.80M (WATER SAMPLE)	EG036: Mercury	7439-97-6	0.2 µg/L	100	----	75	125	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-080S: TPH(Volatile)/BTEX Surrogate			



Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-080S: TPH(Volatile)/BTEX Surrogate - Continued			
Dibromofluoromethane	1868-53-7	86	118
Toluene-D8	2037-26-5	88	110
4-Bromofluorobenzene	460-00-4	86	115
EP-074S: VOC Surrogates			
Dibromofluoromethane	1868-53-7	86	118
Toluene-D8	2037-26-5	88	110
4-Bromofluorobenzene	460-00-4	86	115
EP-075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	21	100
Phenol-d6	13127-88-3	20	94
2,4,6-Tribromophenol	118-79-6	20	123
EP-075T: Base/Neutral Extractable Surrogates			
Nitrobenzene -d5	4165-60-0	35	114
2-Fluorobiphenyl	321-60-8	43	116
4-Terphenyl-d14	1718-51-0	33	141
EP-066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	50	130