

MTR Corporation Limited

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

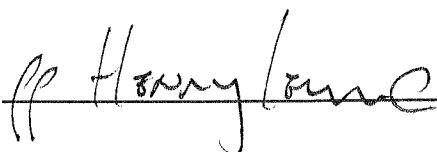
Supplementary Contamination Assessment Report
for Shek Kong Stabling Sidings (SSS)
Works Area II (Revision D)

Verified by: 
Position: Independent Environmental Checker
Date: 24 February 2012

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Maeda-China State Joint Venture

Supplementary Contamination
Assessment Report for Shek Kong
Stabling Sidings (SSS) Works Area
II (Revision D)

February 2012

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Maeda-China State Joint Venture

Supplementary Contamination Assessment Report for Shek Kong Stabling Sidings (SSS) Works Area II (Revision D)

February 2012

Reference 0125309

For and on behalf of
ERM-Hong Kong, Limited

Approved by: Dr. Robin Kennish

Signed:



Position: Partner

Date: 24 February 2012

This report has been prepared by ERM-Hong Kong, Limited with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client.

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1.1 BACKGROUND FOR LAND CONTAMINATION ASSESSMENT OF XRL

The Guangzhou-Shenzhen-Hong Kong Express Rail Link (XRL) is an express rail link connecting Hong Kong, Shenzhen and Guangzhou. The terminal of the XRL will be West Kowloon in Hong Kong and Shibi in Guangzhou, with Futian and Longhua in Shenzhen and Humen in Dongguan as intermediate stations. The Hong Kong section of the XRL project will comprise of a 26 km long underground rail line on a dedicated track from the proposed West Kowloon terminus to the border at Huanggang, where it will connect with the XRL Mainland section (the Project).

The Project is a Designated Project under the *Environmental Impact Assessment Ordinance* (EIAO). An Environmental Impact Assessment (EIA) for the XRL Hong Kong section was conducted and approved under the EIAO on 28 September 2009 (Register No. AEIAR - 143/2009).

During the EIA stage, a Land Contamination Assessment (LCA) was conducted to assess the presence and extent of land contamination associated with the historical and current operations along the proposed alignment. A Contamination Assessment Plan, attached as Appendix 9.1 of the EIA Report, has been approved by EPD (hereinafter refer as 'Approved CAP'). However, access to some Works Areas along the proposed alignment was restricted at the time of EIA study and therefore further LCA is needed after land resumption and prior to the commencement of construction works. Intrusive site investigation works including soil and groundwater sampling and testing have been completed for accessible Works Areas during the EIA stage. A Contamination Assessment Report/ Remediation Action Plan (hereinafter refer as 'Approved CAR/RAP'), attached as Appendix 9.2 of the EIA Report, has also been approved by EPD.

An Environmental Permit (EP-349/2009) of the Project was granted on 16 October 2009 and subsequently varied by the Director of Environmental Protection (DEP) with the latest Environmental Permit (EP349/2009/E) issued on 3 February 2012. In accordance with Condition 2.21 of the EP, the Permit Holder shall carry out further LCA in accordance with the EIA Report and Approved CAP. Further site appraisal and Stage 2 Site Investigation (SI) shall be carried out when individual site access is granted to ascertain contaminating sources and hotspots of contamination. The site appraisal and Stage 2 SI results shall be submitted as a Revised Contamination Assessment Plan (hereinafter refer as 'Revised CAP') and a Supplementary Contamination Assessment Report (hereinafter refer as 'Supplementary CAR') respectively for EPD approval.

Construction works of the XRL within the Shek Kong Stabling Siding (SSS) Works Area are undertaken by two contracts, namely Express Rail Link Contract 823a – Tai Kong Po to Tse Uk Tsuen Tunnels (XRL 823a) and Express Rail Link Contract 823b – Shek Kong Stabling Sidings and Emergency Rescue Siding (XRL 823b). Maeda-China State Joint Venture (MCJV) has been awarded as the main contractor of XRL 823a by MTR Corporation Limited (MTRC) on July 2010.

Owing to the land resumption progress and construction programme, the SSS Works Area was sub-divided into three Works Areas that two of these were found within the project boundary of the XRL 823a contract, namely Works Area I and Works Area II. Based on the above mentioned EIA and EP requirements, MCJV has commissioned ERM-Hong Kong, Limited (ERM) to undertake further LCA for Works Area II, covering Sites I and L identified in the Approved CAP. *Figure 1.2, Annex A* shows the locations of these two Sites. Site inspection was carried out after individual site access is granted to ascertain contaminative sources and hotspots of contamination. The Revised CAP for Sites I and L was approved by EPD on 11th August 2011.

In accordance with the approved Revised CAP, intrusive SI works have been conducted for Works Area II and were completed. This Supplementary CAR has been prepared based on the SI results. If contamination is found, Remediation Action Plan(s) (RAP) shall be submitted to EPD for approval.

2.1

SUMMARY OF THE APPROVED SITE INVESTIGATION PLAN

The approved Revised CAP presented the site appraisal findings obtained in the Approved CAP and after land resumption at Sites I and L.

Update of site conditions have been made based on the review of any major changes in site settings from that observed and reported in the Approved CAP.

In the approved CAP during the EIA stage, Site I was identified as vehicle repairing workshop. However, in accordance with the site appraisal results in the approved Revised CAP after land resumption, Site I should be divided into Sites I1 and I2 that Site I2 was identified as pigsty and no historical contaminating industrial activities were conducted at Site I2 so far. Therefore, no further SI was proposed in the approved Revised CAP for Site I2.

According to the approved Revised CAP, a total of three hotspot sampling locations and one supplementary sampling location were proposed at the Sites I1 and L. *Table 2.1* summarises the approximate area and proposed sampling locations of each Site. *Table 2.2* provides information on the coordinates of the approved locations, the rationale for the selected borehole locations, and parameters to be analysed. *Figure 2.1, Annex A*, shows the locations of these sampling locations.

Table 2.1 Summary of the Approved Site Investigation Plan

Site ID	Potential Contaminating Land Use	Approximate Area of the Site (m ²) #	Completed Sampling Locations during Stage 1 SI	Approved Sampling Locations for Stage 2 SI
I1	Private vehicle parking area with minor repairing activities	250	0	2
L	Vehicle Repair Workshop	200	0	2
Total			0	4
Note:				
# The areas of contaminating industrial activities were based on approved Revised CAP.				

Table 2.2 *Approved Sampling and Analysis Plan for Site I1 and L*

Sampling Locations ID	Coordinate	Hotspots Identified or Supplementary Locations	Sample Depths (m below base of concrete, m bbc)	Soil	Groundwater	
				Parameters to be Analysed (a), (b), (c),	Sample Depths (m)	Parameters to be Analysed (a), (b), (d),
I1-01	E 826760.798 N 833671.366	Vehicle parking shed with repairing tools	0.5, 1.5, 3.0, 4.5, 6.0	Lead, Chromium III, Chromium VI, Copper, Zinc, Petroleum Carbon Ranges, VOCs, SVOCs	At static groundwater level, if encountered	Petroleum Carbon Ranges, VOCs, SVOCs
I1-02	E 833664.350 N 826754.144	Supplementary				
L-01	E 826751.284 N 833636.791	Vehicle Repair Area	0.5, 1.5, 3.0, 4.5, 6.0	Lead, Chromium III, Chromium VI, Copper, Zinc, Petroleum Carbon Ranges, VOCs, SVOCs	At static groundwater level, if encountered	Petroleum Carbon Ranges, VOCs, SVOCs
L-02	E 826756.732 N 833640.673	Lube oil storage area				

Notes:

(a) Petroleum Carbon Ranges: C6 to C8, C9 to C16, and C17 to C35;

(b) VOCs: Acetone, Benzene, Bromodichloromethane, 2- Butanone, Chloroform, Ethylbenzene, Methyl tert-Butyl Ether, Methylene Chloride, Styrene, Tetrachloroethene, Toluene, Trichloroethene, and Xylenes (Total);

(c) SVOCs for Soil: Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, bis-(2-Ethylhexyl)phthalate, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Fluorene, Hexachlorobenzene, Indeno(1,2,3-cd)pyrene, Naphthalene, Phenanthrene, Phenol, and Pyrene; and

(d) SVOCs for Groundwater: Acenaphthene, Acenaphthylene, Anthracene, Benzo(b)fluoranthene, Chrysene, Fluoranthene, Fluorene, Hexachlorobenzene, Naphthalene, Phenanthrene, and Pyrene

3.1 STAGE 2 INTRUSIVE SITE INVESTIGATION

Stage 2 Intrusive SI works for the Sites I1 and L were carried out by Shun Bong Drilling Engineering (Hong Kong) Limited (Shun Bong). All site works were supervised by an ERM land contamination specialist.

A total of four boreholes were constructed at the sampling locations in accordance with the approved Revised CAP. Groundwater was encountered in all four boreholes. The boreholes were converted to groundwater monitoring wells and one groundwater sample per location was collected after the groundwater levels had been stabilized. *Annex B* presents the borehole logging report providing information on the soil strata at the boreholes and the selected photographs during intrusive SI.

3.1.2 Soil Sample Collection

Utility scanning was performed at all trial pit/ borehole locations prior to ground disturbance to ensure clearance of underground structures.

An inspection pit was excavated by hand down to 1.5m below base of concrete (bbc) at each of the sampling locations before the drilling of the boreholes in order to perform underground utility clearance. In accordance to the approved Revised CAP, boreholes were advanced by means of dry rotary drilling methods as far as practicable. Soil samples were taken at 0.5m, 1.5m, 3 – 3.45m, 4.5 – 4.95m, and 6.0 – 6.45m bbc. *Table 3.1* presents the as-built coordinates of the sampling locations, sampling depths, the number of samples collected, and any deviation from the approved Revised CAP.

Undisturbed samples were collected at 3.0-3.45m and 4.5-4.95m bbc, using U76 samplers. All soil samples were placed into laboratory supplied pre-cleaned glass jars and labeled with a permanent waterproof marker.

It should be noted that for all four boring locations, soil type of mainly medium to coarse gravels was encountered at the depth of around 5.0-6.45m bbc. As a result, samples at the depth of 6.0m-6.45m bbc were not suitable for laboratory analysis and therefore the sampling of soil at this depth could not be carried out.

During drilling, the presence of volatile organic compounds (VOCs) was tested for using a Photo-ionisation Detector (PID) provided and calibrated by an accredited HOKLAS laboratory. If any suspected materials are encountered during the borehole drilling, sampling and testing for parameters recommended in the CAP should be undertaken to verify any contamination. No discolouration or odour of the soil samples was observed and no significant detection of VOCs from the PID readings during the intrusive SI.

One groundwater sample was collected from each borehole after the groundwater monitoring well had been developed and water levels stabilized. *Annex C* illustrates the groundwater monitoring well of each borehole location. The groundwater monitoring wells were developed by bailing at least five times the liquid volume, in order to remove standing water and allow for replenishment. During the intrusive SI, no evidence of NAPL in groundwater (visual or by olfactory) was apparent. Static Groundwater Levels measured are shown in *Table 3.1*.

All groundwater samples were then taken using disposable bailers (one per location). The samples were placed directly into laboratory supplied clean sampling bottles supplied by the accredited HOKLAS laboratory.

Table 3.1 *Summary of Stage 2 Intrusive SI works conducted at Site I1 and L*

Site	As-built Coordinates	Sampling Depth (m bbc)	Constructed Borehole Depth (m bbc)	Deviation From the Approved Revised CAP	Number of Soil Samples Collected	Number of Groundwater Samples Collected	Borehole Ground Level (mPD)	Static Groundwater Level (m bbc)
I1-01	E 826760.961 N 833671.314	0.5, 1.5, 3-3.45 4.5-4.95	6.45	Medium to coarse gravel encountered at around 5.0-6.45m bbc, thus sample not suitable for laboratory analysis.	5*	1	11.24	4.77
I1-02	E 826754.141 N 833664.221	0.5, 1.5, 3-3.45 4.5-4.95	6.45	Medium to coarse gravel encountered at around 5.0-6.45m bbc, thus sample not suitable for laboratory analysis.	4	1	10.93	4.87
L-01	E 826750.869 N 833635.103	0.5, 1.5, 3-3.45 4.5-4.95	6.20	Medium to coarse gravel encountered at around 5.0-6.45m bbc, thus sample not suitable for laboratory analysis.	4	1	11.32	4.57
L-02	E 826755.576 N 833640.029	0.5, 1.5, 3-3.45 4.5-4.95	6.25	Medium to coarse gravel encountered at around 5.0-6.45m bbc, thus sample not suitable for laboratory analysis.	4	2*	11.27	4.22
Notes:								
* One soil duplicate sample was collected at I1-01 3.0-3.45m bbc and one groundwater duplicate sample was collected at L-02.								

3.1.4

Decontamination Procedures

Sampling equipment used during the course of the intrusive SI was thoroughly decontaminated, to minimize the potential for cross-contamination.

The equipment used for sample collection was not the same as that used to advance the borehole.

During sampling and decontamination activities, disposable latex/nitrile gloves were worn to prevent transfer of contaminants from other sources. Clean latex gloves were changed before each new sample was collected. Whenever possible, a new set of sampling equipment was used for each sampling event. When this was not possible, the equipment was cleaned with Decon 90 detergent between each sampling event.

All equipment that came into contact with the subsurface soil was decontaminated using Decon 90 detergent and water, with a distilled water rinse to clean all smaller pieces of equipment, in particular those used to sample materials such as sampling cores, hand excavation and grab samples. This cleaning procedure was repeated after use at each borehole to avoid potential cross contamination between boreholes, and during sampling, to ensure that any contamination from the surface of the site does not affect deeper substrata or the groundwater.

Larger equipment and sampling materials were steam cleaned using mains water, where possible, or at a minimum pressure jet washed with tap water.

3.1.5

Quality Control and Quality Assurance (QA/QC)

To ensure the quality control and quality assurance of the sampling procedures and laboratory analysis, different QA/QC measures have been taken in this Project.

Laboratory QA/QC Procedures

The following laboratory QA/QC program was implemented in order to ensure that the data obtained are accurate and representative of actual soil and groundwater conditions:

- Duplicate sample;
- Field blank;
- Equipment blank; and
- Trip blank.

Analysis of soil and groundwater samples was carried out by ALS Technichem Limited (ALS) which is a HOKLAS accredited analytical laboratory.

Duplicate Sample

A total of 20 samples (16 soil and 4 groundwater) samples were collected from the borehole. According to the approved Revised CAP, one duplicate sample is required for every 20 samples (soil and groundwater) collected. As a result, two duplicate samples were collected.

One soil duplicate sample was collected from I1-01 (3.0-3.45m bbc), and one groundwater duplicate sample was taken from borehole location L-02.

The duplicate samples were collected on a random basis and submitted to the HOKLAS accredited laboratory for analysis of full suite of parameters as the original sample.

Field Blank Samples

One field blank sample was taken for every 20 samples collected during the land contamination investigation as per the approved Revised CAP. A total of one field blank sample was collected from the Sites.

Equipment Blank Sample

One equipment blank sample was taken for every 20 samples collected after decontamination procedures had been followed. A total of one equipment blank sample was collected from the Sites.

Trip Blank

A total of four trip blanks (one trip blank per trip) was submitted and analysed for VOCs to account for any potential cross-contamination as part of QA/QC.

3.1.6 Handling of samples

All samples were transported under chain-of-custody documentation, in clean coolers with ice packs. Samples were collected by the accredited HOKLAS laboratory on a daily basis or as soon as possible after collection, noting the recommended maximum holding times. Analysis of soil and groundwater samples was carried out by ALS Technichem Limited (ALS) which is a HOKLAS accredited analytical laboratory.

4.1 ASSESSMENT CRITERIA FOR SOIL AND GROUNDWATER CONTAMINATION

The *RBRGs Guidance Manual* and the *RBRGs Guidance Note* were issued by EPD on 15 August 2007 and were effective immediately onwards (with a transitional period of 3 months). The RBRGs were developed for four different post-restoration land-use scenarios namely: urban residential, rural residential, industrial and public parks.

Based on the approved Revised CAP, it has found that the Sites were mainly used as vehicle parking and repairing, construction material storage and abandoned factory and will become railway stabling sidings after the completion of the Project. *Table 4.1* presents the current and future land use classifications of the Sites I (I1 and I2) and L. Future land use of the Sites I1 and L was classified as Industrial Land Use according to the *RBRGs Guidance Note*.

Table 4.1 *Current and Future Land Uses of the Sites*

Site ID	Current Use	Corresponding Current RBRGs Land Use Reference	Future Land Use (Operation Phase)	Corresponding RBRGs Land Use Reference
Site I1	Vehicle parking, abandoned pigsty and storage of construction and demolition waste.	Industrial	Railway Facility	Industrial
Site I2	Abandoned pigsty	Rural Residential	Railway Facility	Industrial
Site L	Vehicle repairing workshop composed of a freight container, a lube storage area, and repair area.	Industrial	Railway Facility	Industrial

RBRGs for Soil and Groundwater, used in conjunction with Soil Saturation Limits (C_{sat}) and Solubility Limits, set the remediation goals for soil and groundwater respectively. *Annex D* presents the *Tables 2.1* and *2.2* of the *RBRGs Guidance Manual* which list the RBRGs for Soil and Groundwater. Detected concentrations of Chemicals of Concern (CoCs) in soil and/or groundwater at the Sites were compared to the RBRGs for Soil and Groundwater for Industrial Land Use, C_{sat} and Solubility Limits.

5.1 SOIL ANALYTICAL RESULTS

In total, 17 soil samples (including one soil duplicate sample) were collected from four boreholes for laboratory analysis. The soil results from the Sites are presented in *Annex E* and summarised in *Table 5.1*, as required by the *RBRGs Guidance Manual*. Relevant laboratory analytical reports are included in *Annex F*.

5.1.1 Comparison of Soil Analysis Results against RBRGs and C_{sat}

All detected concentrations of the CoCs in the soil samples collected from the Sites were below the RBRGs for Soil for Industrial Land Use and the C_{sat} . The results indicate that no significant contamination of the CoCs is present in the soils tested at Sites I1 and L.

Table 5.1 **Soil Analytical Results Summary**

Parameter	Frequency of Detection (x/y) ^(a)	Range of Detected Conc. (mg/kg)	Range of Method Reporting Limit (mg/kg)	Referenced Analytical Method	Relevant Land Use Category ^(b)	RBRGs for Industrial (mg/kg)	C _{sat} (mg/kg)	Maximum Concentration Exceeds	
								RBRGs	C _{sat}
Metals									
Chromium (VI)	0/17	BDL	1	USEPA 8260	Industrial	1,960	N/A	None	None
Chromium (III)	17/17	3-67	1	USEPA 8260	Industrial	10,000	N/A	None	None
Copper	17/17	3-114	1	USEPA 8260	Industrial	10,000	N/A	None	None
Lead	17/17	21-113	1	USEPA 8260	Industrial	2,290	N/A	None	None
Zinc	17/17	27-205	1	USEPA 8260	Industrial	10,000	N/A	None	None
Petroleum Carbon Ranges									
C ₆ -C ₈	0/17	BDL	5	USEPA 8015	Industrial	10,000	1,000	None	None
C ₉ -C ₁₆	0/17	BDL	200	USEPA 8015	Industrial	10,000	3,000	None	None
C ₁₇ -C ₃₅	0/17	BDL	500	USEPA 8015	Industrial	10,000	5,000	None	None
VOC ^(c)									
Various	0/17	BDL	0.2 - 50	USEPA 8260	Industrial	Var	Var	None	None
SVOC ^(d)									
Various	0/17	BDL	0.2 - 5	USEPA 8270	Industrial	Var	Var	None	None
Notes:									
Table based on Standard Form 3.2 of the <i>RBRGs Guidance Manual</i>									
(a) x = number of samples above laboratory reporting limit, y = number of samples analysed									
(b) RBRGs for the industrial land use was used for this Project									
(c) VOCs: Acetone, Benzene, Bromodichloromethane, 2- Butanone, Chloroform, Ethylbenzene, Methyl tert-Butyl Ether, Methylene Chloride, Styrene, Tetrachloroethene, Toluene, Trichloroethene, and Xylenes (Total)									
(d) SVOCs: Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, bis-(2-Ethylhexyl)phthalate, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Fluorene, Hexachlorobenzene, Indeno(1,2,3-cd)pyrene, Naphthalene, Phenanthrene, Phenol, and Pyrene.									
N/A - Not Applicable (no C _{sat} Limits were available for these parameters)									
BDL - Below Detection Limit / Below Reporting Limit									
Var. - Various RBRGs for Soil and C _{sat} for individual compound									

5.2 GROUNDWATER ANALYTICAL RESULTS

Groundwater monitoring wells were installed at each of the borehole locations and groundwater samples were collected. In total, five water samples (including one groundwater duplicate sample) were collected from Site I1 and L for the laboratory analysis. These results are presented in *Table 5.2 and Annex E*. Relevant laboratory analytical reports are included in *Annex F*.

5.2.1 *Comparison of Groundwater Analysis Results against RBRGs and Solubility Limits*

The groundwater analytical results were compared against the RBRGs for Groundwater for Industrial Land Use and Solubility Limits for the CoCs, as presented in *Table 5.2*. None of the detected concentrations were above the RBRGs for Groundwater or Solubility Limits.

All metal concentrations were within the RBRGs for Groundwater and Solubility Limits. All other analytical parameters were found below the detection limits of reporting, which were below the RBRGs for Groundwater and Solubility Limits.

Table 5.2 **Groundwater Analytical Results Summary**

Parameter	Frequency of Detection (x/y) ^(a)	Range of Detected Concentration (ug/L)	Range of Method Reporting Limit (ug/L)	Referenced Analytical Method	Relevant Land Use Category ^(b)	RBRGs for Industrial (ug/L)	Solubility Limit (ug/L)	Maximum Concentration Exceeds	
								RBRGs	Solubility
TPH									
C ₆ -C ₈	0/5	BDL	20	USEPA 8015	Industrial	1,150,000	5,230	None	None
C ₉ -C ₁₆	0/5	BDL	500	USEPA 8015	Industrial	9,980,000	2,800	None	None
C ₁₇ -C ₃₅	0/5	BDL	500	USEPA 8015	Industrial	178,000	2,800	None	None
VOC ^(c)									
Various	0/5	BDL	5 – 50	USEPA 8260	Industrial	Var	Var	None	None
SVOCs ^(d)									
Various	0/5	BDL	2 – 4	USEPA 8270	Industrial	Var	Var	None	None

Notes:

Table based on Standard Form 3.3 of the *RBRGs Guidance Manual*

(a) x = number of samples above laboratory reporting limit, y = number of samples analysed

(b) RBRGs for the industrial land use was used for this Project

(c) VOCs: Acetone, Benzene, Bromodichloromethane, 2- Butanone, Chloroform, Ethylbenzene, Methyl tert-Butyl Ether, Methylene Chloride, Styrene, Tetrachloroethene, Toluene, Trichloroethene, and Xylenes (Total)

(d) SVOCs: Acenaphthene, Acenphthylene, Anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Fluoranthene, Fluorene, Hexachlorobenzene, Naphthalene, Phenanthrene and Pyrene

BDL - Below Detection Limit / Below Reporting Limit

Var. - Various RBRGs for Groundwater and Solubility Limits for individual compound

5.3 QUALITY CONTROL/QUALITY ASSURANCE

A QA/QC programme was incorporated into the land contamination investigation for the project. The program included collection and analysis of field QA/QC samples and laboratory internal QA/QC samples.

5.3.2 Field QA/QC

The field QA/QC samples included one duplicate soil sample, one duplicate groundwater sample, one equipment blank samples, one field blank sample and four trip blank samples.

The soil field duplicate sample was collected from I-01 (3.0-3.45 m bbc), while the field duplicate groundwater sample was collected from groundwater monitoring well L-02. The field duplicate samples were analysed for the same suite of parameters as the original samples.

The relative percentage difference (RPD) was used to assess the sample collection and laboratory analysis reproducibility and precision. In accordance with the USEPA's guidance, RPDs were only calculated for the duplicate samples results that were higher than two times of the method detection limits. The USEPA acceptable limits for the RPDs are less than 50% for a soil sample and 30% for a groundwater sample.

The RPDs calculated for the soil duplicate collected from I1-01 (0-66.7%) and groundwater duplicate collected from L-02 (0%) indicated the RPD level is above the acceptable limit of 50% for soil and within the acceptable limit of 30% for groundwater. Nonetheless, as the detectable amounts were considerably small for most parameters (in the single or double digits range) and no parameters have exceeded the RBRGs, the soil results are still considered suitable to use.

Throughout the sampling period, one rinsate equipment blank sample was taken on the 9th December 2010 after decontamination procedures had been followed and no evidence of cross contamination was found.

5.3.3 Laboratory QA/QC Data

The laboratory QA/QC sample results, including method blank, single control spike, matrix spike, surrogate recoveries and other internal laboratory QA/QC, met their respective requirements. A copy of laboratory chemical testing reports is attached in *Annex F*.

Based on the analytical results, soil samples collected from Sites I1 and L did not contain CoCs exceeding the RBRGs for Soil for Industrial Land Use or C_{sat} . Moreover, only relatively low concentrations of metals were obtained from the samples. The highest value of 205 mgkg⁻¹ of Zinc for sample I1-02 4.5-4.95m was detected in comparison of 2,290 -10,000 mgkg⁻¹ of the RBRGs for Soil. Analytical results of Petroleum Carbon Ranges, VOCs and SVOCs were reported below the detection limits.

For groundwater samples analytical results, all water samples collected from Site I1 and L did not contain contaminants exceeding the RBRGs for Groundwater for Industrial Land Use and Solubility Limits. All tested parameters (petroleum carbon ranges, VOCs, and SVOCs) were reported below the detection limits.

In conclusion, the analytical results indicated that no exceedance of RBRGs for Industrial Land Use has been observed from the soil and groundwater samples obtained from Site I1 and L. Also, field observations indicated that no visual or olfactory evidence of contaminations were detected during samplings (no odours, decolourisation of soil, nor non-aqueous phase liquid). Based on the above findings, soil and groundwater remediation at the Sites I1 and L is not warranted.

Annex A

Figures

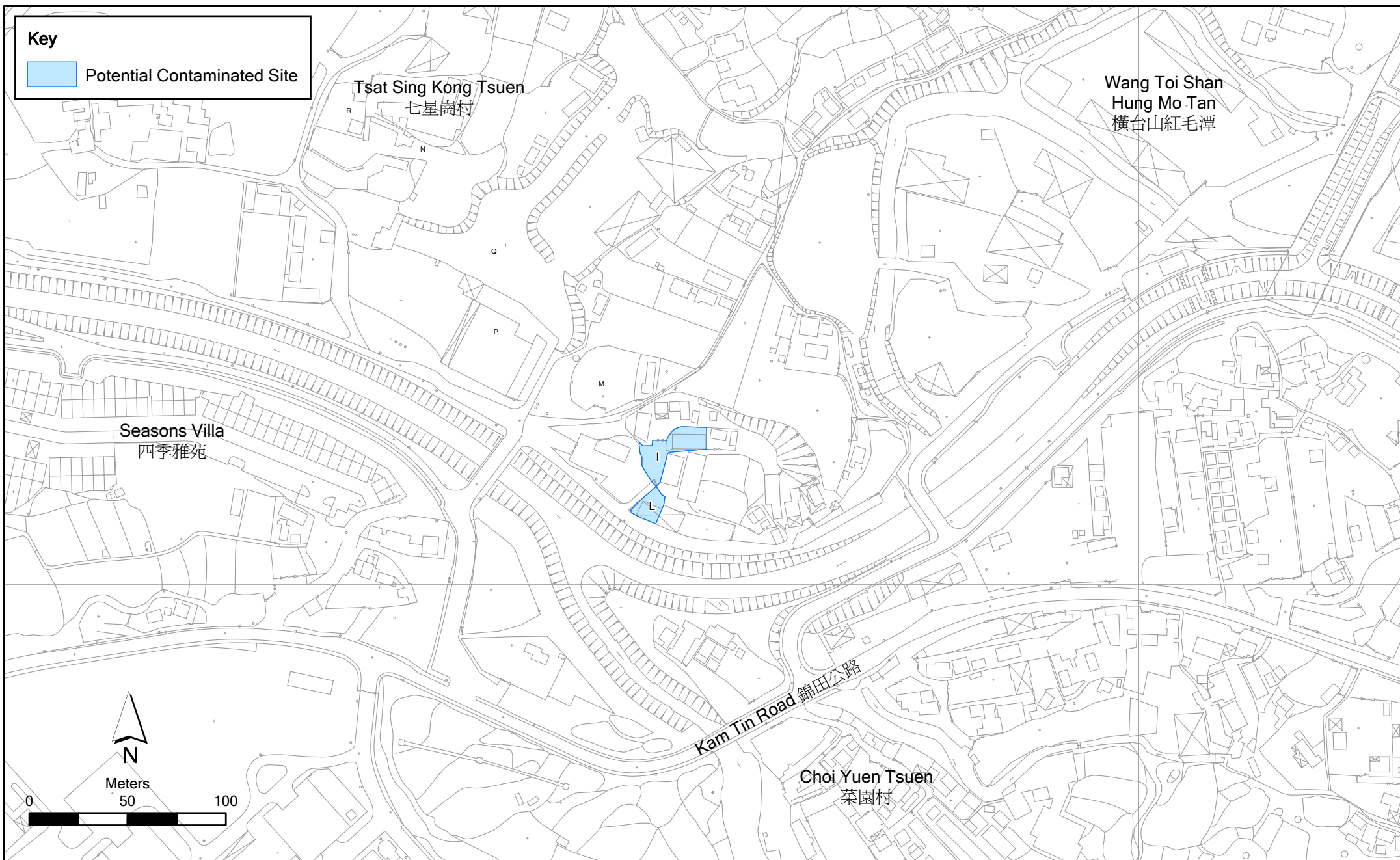


Figure 1.2

Location of Site I and Site L

The Express Rail Link Contract 823A-
Tai Kong Po to Tse Uk Tsuen Tunnels (XRL 823A)

File: 0125309_Contaminated site_I and L.mxd
Date: 29/03/2011

Environmental
Resources
Management





Figure 2.1

Hotspots and Supplementary Site Investigation Locations at Site I1 and L

The Express Rail Link Contract 823A –
Tai Kong Po to Tse Uk Tsuen Tunnels (XRL 823A)

FILE: 0125309c2
DATE: 21/09/2011

Environmental
Resources
Management



Annex B

Borehole Logging Report and Selected Photographs

Shun Bong Drilling Engineering (HK) Ltd.		JOB NO. _____	
DRILLHOLE LOG		HOLE NO. I01	
		SHEET 1 of 1	
		DATE from 8/12/2010 to 9/12/2010	
PROJECT XRL 823a - Tai Kong Po to Tse Uk Tsuen Tunnels			
METHOD ROTARY		CO-ORDINATES	
Rig & No. SB06		N 833671.314 E 826760.961	
FLUSHING MEDIUM DRY		ORIENTATION VERTICAL	
		ROCK CORE BIT	
		HOLE DIA. PX, HX	
		REFERENCE LEVEL +11.240 mPD	

Drilling Progress	Casing depth/size	Water level/time/date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
08.12.10	PX								A	+11.240	0.000			Yellowish brown, very silty, fine to coarse SAND (FILL)
									B	+10.740	0.500			
										+9.740	1.500			Stiff, brown, SILT/CLAY (FILL)
	3.00 PX HX							54 bls	1	+8.240	3.000			Grey, silty, fine SAND (FILL)
										+7.790	3.450			
										+6.740	4.500			
08.12.10								89 bls	2	+6.290	4.950			Yellowish brown, slightly silty, fine to coarse SAND (FILL)
09.12.10										+5.240	6.000			
	6.00 HX							100 bls (s)	3	+4.790	6.450			Yellowish brown, angular, medium to coarse GRAVEL of rock fragments (FILL)
09.12.10														End of drillhole at 6.45m

Legend:

- Small Disturbed Sample
- Large Disturbed Sample
- ▬ SPT Liner Sample
- ▬ U76 Undisturbed Sample
- ▬ U100 Undisturbed Sample
- ▬ Mazier Sample (70mm)
- ▬ Piston Sample
- ▲ Water Sample
- ▼ Water Level
- ⬇ Standard Penetration Test
- ⬇ Permeability Test
- ⬇ Piezometer Tip
- ⬇ Standpipe
- ⬇ In-situ Vane Shear Test

LOGGED H.C.Yeung

DATE 15/12/2010

CHECKED W.T.Chan

DATE 16/12/2010

REMARKS

Inspection pit was excavated to 1.50m depth by hand tools

Standpipe installed at 6.20m

BOREHOLE LOG REFERENCE LV: XRL823A GPL STANDARD GDT: 24/1/11

Shun Bong Drilling Engineering (HK) Ltd.		JOB NO. _____	
DRILLHOLE LOG		HOLE NO. I02	
		SHEET 1 of 1	
		DATE from 9/12/2010 to 9/12/2010	
PROJECT XRL 823a - Tai Kong Po to Tse Uk Tsuen Tunnels			
METHOD ROTARY		CO-ORDINATES	
Rig & No. SB06		N 833664.221 E 826754.141	
FLUSHING MEDIUM DRY		ORIENTATION VERTICAL	
		ROCK CORE BIT	
		HOLE DIA. PX, HX	
		REFERENCE LEVEL +10.933 mPD	

Drilling Progress	Casing depth/size	Water level/time/date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
09.12.10	PX								A	+10.933	0.000			Very stiff, brown, SILT/CLAY (FILL)
									B	+10.433	0.500			
	3.00 PX HX							49 bls	1	+7.933	3.000			Very stiff, greyish brown, sandy SILT (FILL)
										+7.483	3.450			
	6.00 HX							86 bls	2	+6.433	4.500			Brown, slightly silty, fine to coarse SAND (FILL)
										+5.983	4.950			
09.12.10								100 bls (s)	3	+4.933	6.000			Yellowish brown, angular, medium to coarse GRAVEL of rock fragments (FILL)
										+4.483	6.450			
														End of drillhole at 6.45m

Legend:

- Small Disturbed Sample
- Large Disturbed Sample
- ▬ SPT Liner Sample
- ▬ U76 Undisturbed Sample
- ▬ U100 Undisturbed Sample
- ▬ Mazier Sample (70mm)
- ▬ Piston Sample
- ▲ Water Sample
- ▼ Water Level
- ⊥ Standard Penetration Test
- ⊕ Permeability Test
- ⊞ Piezometer Tip
- ⊞ Standpipe
- ∨ In-situ Vane Shear Test

LOGGED H.C.Yeung

DATE 15/12/2010

CHECKED W.T.Chan

DATE 16/12/2010

REMARKS

Inspection pit was excavated to 1.50m depth by hand tools

Standpipe installed at 6.25m

BOREHOLE LOG REFERENCE LV: XRL823A GPL STANDARD GDT: 24/1/11

Shun Bong Drilling Engineering (HK) Ltd.										JOB NO. _____ HOLE NO. L01 SHEET 1 of 1 DATE from 7/12/2010 to 8/12/2010	
DRILLHOLE LOG											
PROJECT XRL 823a - Tai Kong Po to Tse Uk Tsuen Tunnels											
METHOD ROTARY Rig & No. FDRS-7				CO-ORDINATES N 833635.103 E 826750.869				ROCK CORE BIT HOLE DIA. PX, HX			
FLUSHING MEDIUM DRY				ORIENTATION VERTICAL				REFERENCE LEVEL +11.320 mPD			

Drilling Progress	Casing depth/size	Water level/time/date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
07.12.10	PX								A Inspection Pit B	+11.320	0.000			Yellowish brown, slightly silty, fine to coarse SAND with gravel of rock and ground tile fragments (FILL)
										+10.820	0.500			
07.12.10 08.12.10	3.00 PX HX							48 bls	1	+8.320	3.000			Dark brown, very silty, clayey, fine to coarse SAND (FILL)
										+7.870	3.450			
08.12.10	6.00 HX							51 bls	2	+6.820	4.500			Very stiff, grey, slightly sandy SILT (FILL)
											+6.370		4.950	
08.12.10								88 bls (s)	3	+5.320	6.000			Reddish brown, slightly silty, clayey, fine to coarse SAND with occasional gravel to cobble of rock fragments (FILL)
											+5.120		6.200	
														Brown, slightly silty, sandy, fine to coarse GRAVEL of rock fragments (FILL) End of drillhole at 6.20m

● Small Disturbed Sample ■ Large Disturbed Sample ▬ SPT Liner Sample ■ U76 Undisturbed Sample ■ U100 Undisturbed Sample ▬ Mazier Sample (70mm) ▬ Piston Sample ▲ Water Sample ▼ Water Level ┆ Standard Penetration Test ◆ Permeability Test ■ Piezometer Tip □ Standpipe ∨ In-situ Vane Shear Test	LOGGED <u>H.C.Yeung</u> DATE <u>15/12/2010</u> CHECKED <u>W.T.Chan</u> DATE <u>16/12/2010</u>	REMARKS Inspection pit was excavated to 1.50m depth by hand tools Standpipe installed at 6.20m
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Shun Bong Drilling Engineering (HK) Ltd.										JOB NO. _____ HOLE NO. L02 SHEET 1 of 1 DATE from 8/12/2010 to 8/12/2010	
DRILLHOLE LOG											
PROJECT XRL 823a - Tai Kong Po to Tse Uk Tsuen Tunnels											
METHOD ROTARY Rig & No. FDRS-7				CO-ORDINATES N 833640.029 E 826755.576				ROCK CORE BIT HOLE DIA. PX, HX			
FLUSHING MEDIUM DRY				ORIENTATION VERTICAL				REFERENCE LEVEL +11.273 mPD			

Drilling Progress	Casing depth/size	Water level/time/date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description						
08.12.10	PX								A Inspection Pit B	+11.273	0.000			Dark brown, very silty, clayey, fine to coarse SAND (FILL)						
										+10.773	0.500									
	3.00 PX HX									+9.773	1.500					Very stiff, brown, SILT/CLAY (FILL)				
										+8.273	3.000									
										36 bls	+7.823						3.450			Brown, slightly silty, fine to coarse SAND with occasional gravel of rock fragments (FILL)
											+6.773						4.500			
										54 bls	+6.323						4.950			
											+5.273						6.000			
										6.00 HX	+5.023						6.250			Yellowish brown, slightly silty, sandy, subangular fine to coarse GRAVEL of rock fragments (FILL) End of drillhole at 6.25m
											+5.023						6.250			
08.12.10								102 bls (s)												

● Small Disturbed Sample ■ Large Disturbed Sample ▬ SPT Liner Sample ▬ U76 Undisturbed Sample ▬ U100 Undisturbed Sample ▬ Mazier Sample (70mm) ▬ Piston Sample ▲ Water Sample ▼ Water Level ┆ Standard Penetration Test ◆ Permeability Test ■ Piezometer Tip □ Standpipe ∨ In-situ Vane Shear Test	LOGGED <u>H.C.Yeung</u> DATE <u>15/12/2010</u> CHECKED <u>W.T.Chan</u> DATE <u>16/12/2010</u>	REMARKS Inspection pit was excavated to 1.50m depth by hand tools Standpipe installed at 6.25m
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BOREHOLE LOG REFERENCE LV: XRL823A GPL STANDARD GDT: 24/1/11

Site I

	
Hand digging of inspection pit at I1-01.	Completed inspection pit at I1-01.
	
Rotary drilling at I1-02.	Soil samples logging on site.
	
Collection of U76 sampling.	Site I1 was paved with concrete during SI.

Site L

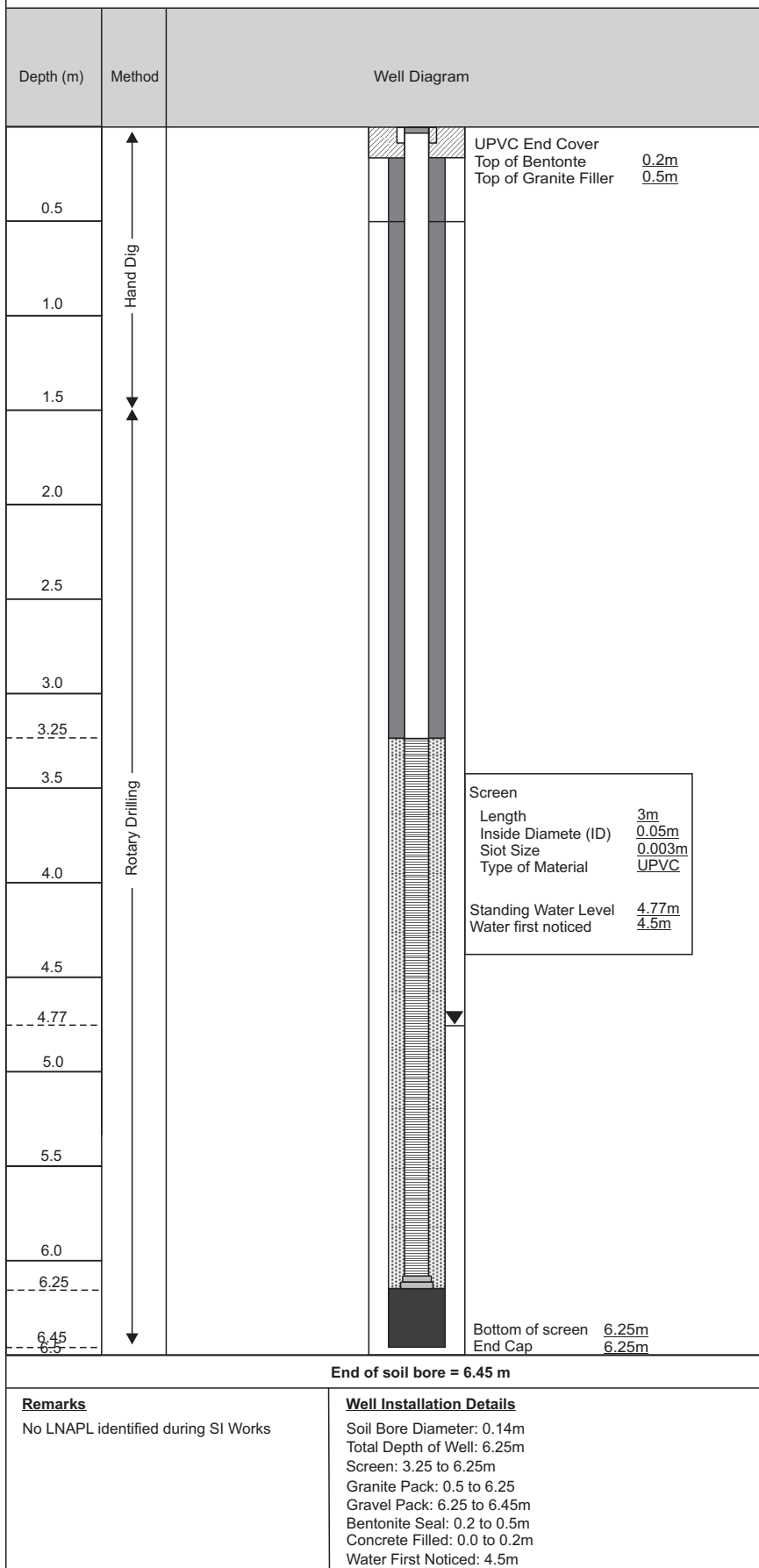
	
Completed inspection pit at Site L.	Decontaminated drilling equipment.
	
Potential headroom problem at L-01.	Rotary drilling at L-01.
	
Well development at L-02.	Site L was a vehicle repair workshop during SI.

Annex C

Groundwater Monitoring Well Diagrams

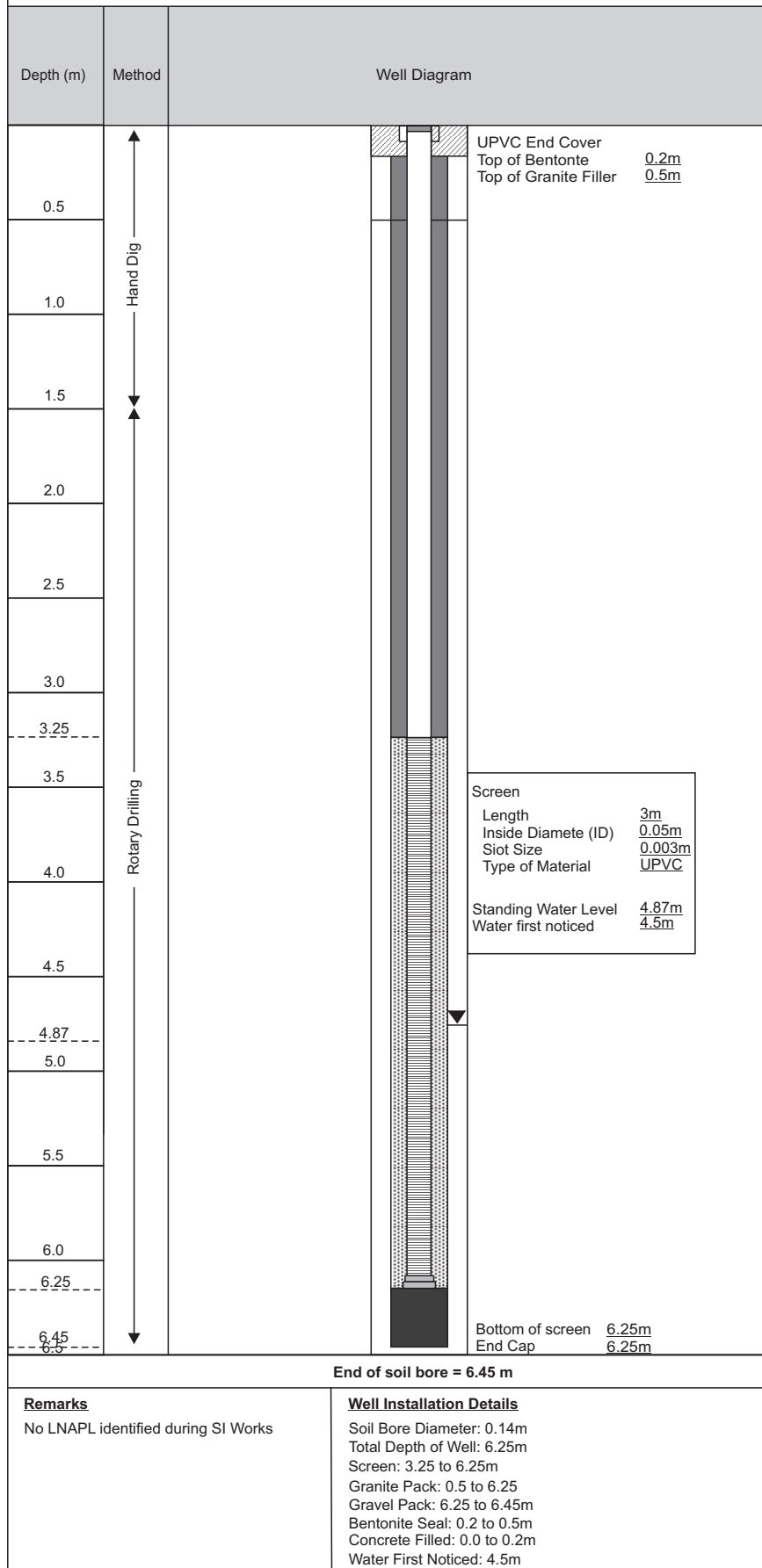
Project Title : 823a SIR Site I1 & L
 Coordinates : E826760.961, N833671.314
 Ground Level Elevation: + 11.240 mPD

Hole No. : I1 - 01
 Installation Date : 09 Dec 2010
 Driller : Shun Bong Drilling Engineering (HK) Ltd.



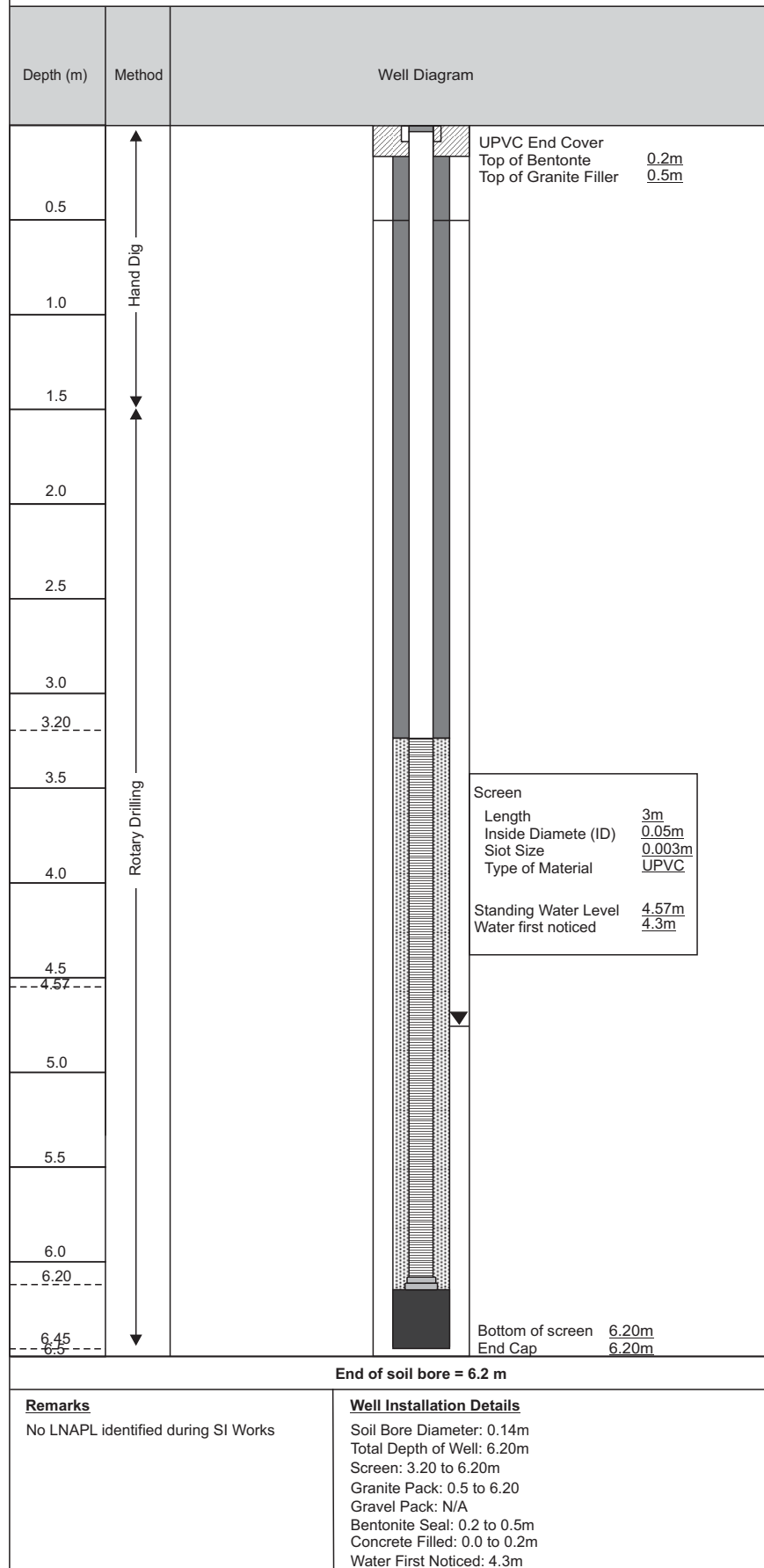
Project Title : 823a SIR Site I1 & L
 Coordinates : E826754.141, N833664.221
 Ground Level Elevation: + 10.933 mPD

Hole No. : I1 - 02
 Installation Date : 09 Dec 2010
 Driller : Shun Bong Drilling Engineering (HK) Ltd.



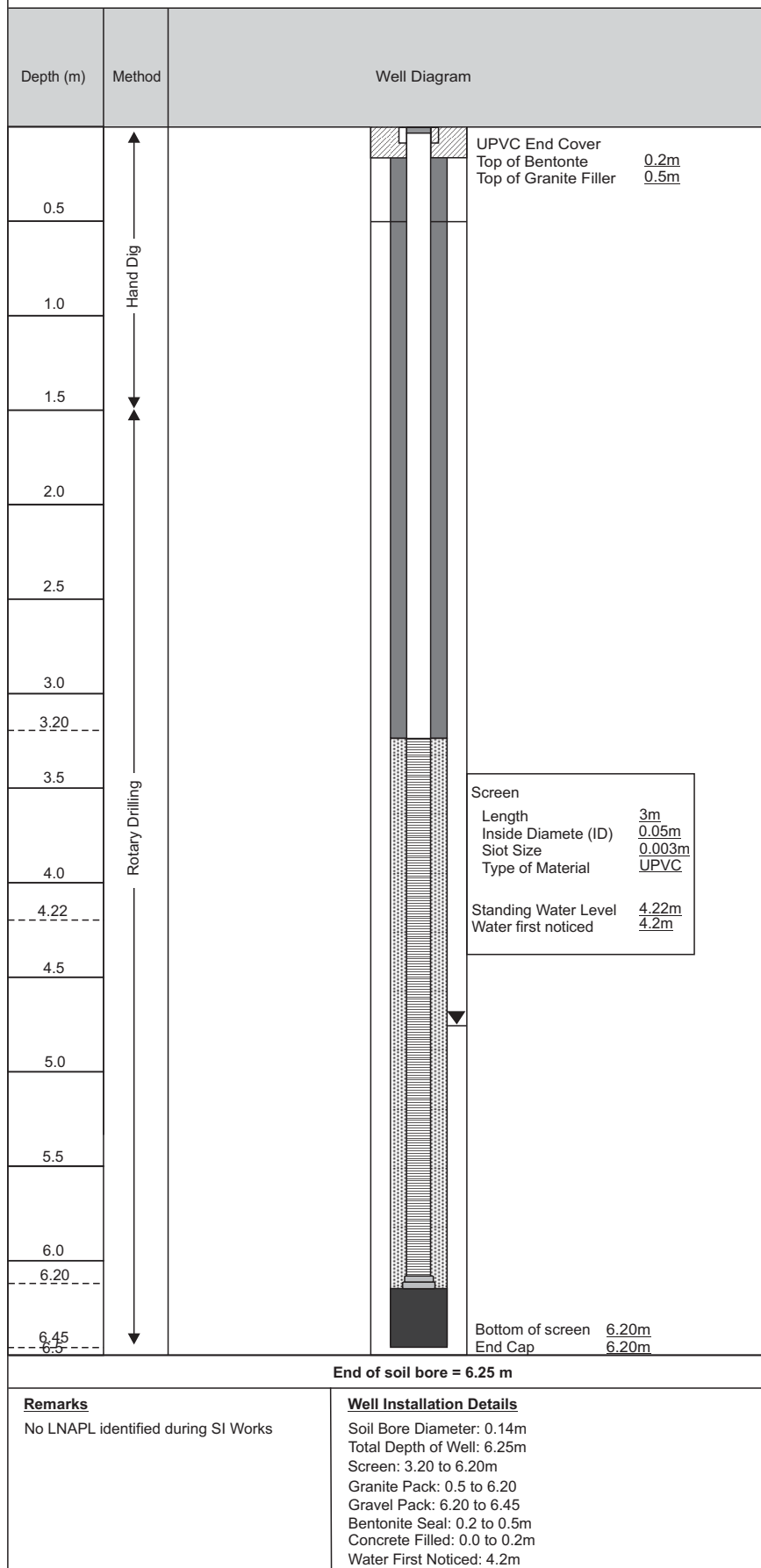
Project Title : 823a SIR Site I1 & L
 Coordinates : E826750.869, N833635.103
 Ground Level Elevation: + 11.320 mPD

Hole No. : L - 01
 Installation Date : 08 Dec 2010
 Driller : Shun Bong Drilling Engineering (HK) Ltd.



Project Title : 823a SIR Site I1 & L
 Coordinates : E826755.576, N833640.029
 Ground Level Elevation: + 11.273 mPD

Hole No. : L - 02
 Installation Date : 08 Dec 2010
 Driller : Shun Bong Drilling Engineering (HK) Ltd.



Annex D

RBRGs Soil and Groundwater Limits

Table 2.1
Risk-Based Remediation Goals (RBRGs) for Soil & Soil Saturation Limit

Chemical	Risk-Based Remediation Goals for Soil				Soil Saturation Limit (C _{sat}) (mg/kg)
	Urban Residential (mg/kg)	Rural Residential (mg/kg)	Industrial (mg/kg)	Public Parks (mg/kg)	
VOCs					
Acetone	9.59E+03	4.26E+03	1.00E+04*	1.00E+04*	***
Benzene	7.04E-01	2.79E-01	9.21E+00	4.22E+01	3.36E+02
Bromodichloromethane	3.17E-01	1.29E-01	2.85E+00	1.34E+01	1.03E+03
2-Butanone	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	***
Chloroform	1.32E-01	5.29E-02	1.54E+00	2.53E+02	1.10E+03
Ethylbenzene	7.09E+02	2.98E+02	8.24E+03	1.00E+04*	1.38E+02
Methyl tert-Butyl Ether	6.88E+00	2.80E+00	7.01E+01	5.05E+02	2.38E+03
Methylene Chloride	1.30E+00	5.29E-01	1.39E+01	1.28E+02	9.21E+02
Styrene	3.22E+03	1.54E+03	1.00E+04*	1.00E+04*	4.97E+02
Tetrachloroethene	1.01E-01	4.44E-02	7.77E-01	1.84E+00	9.71E+01
Toluene	1.44E+03	7.05E+02	1.00E+04*	1.00E+04*	2.35E+02
Trichloroethene	5.23E-01	2.11E-01	5.68E+00	6.94E+01	4.88E+02
Xylenes (Total)	9.50E+01	3.68E+01	1.23E+03	1.00E+04*	1.50E+02
SVOCs					
Acenaphthene	3.51E+03	3.28E+03	1.00E+04*	1.00E+04*	6.02E+01
Acenaphthylene	2.34E+03	1.51E+03	1.00E+04*	1.00E+04*	1.98E+01
Anthracene	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	2.56E+00
Benzo(a)anthracene	1.20E+01	1.14E+01	9.18E+01	3.83E+01	
Benzo(a)pyrene	1.20E+00	1.14E+00	9.18E+00	3.83E+00	
Benzo(b)fluoranthene	9.88E+00	1.01E+01	1.78E+01	2.04E+01	
Benzo(g,h,i)perylene	1.80E+03	1.71E+03	1.00E+04*	5.74E+03	
Benzo(k)fluoranthene	1.20E+02	1.14E+02	9.18E+02	3.83E+02	
bis-(2-Ethylhexyl)phthalate	3.00E+01	2.80E+01	9.18E+01	9.42E+01	
Chrysene	8.71E+02	9.19E+02	1.14E+03	1.54E+03	
Dibenzo(a,h)anthracene	1.20E+00	1.14E+00	9.18E+00	3.83E+00	
Fluoranthene	2.40E+03	2.27E+03	1.00E+04*	7.62E+03	
Fluorene	2.38E+03	2.25E+03	1.00E+04*	7.45E+03	5.47E+01
Hexachlorobenzene	2.43E-01	2.20E-01	5.82E-01	7.13E-01	
Indeno(1,2,3-cd)pyrene	1.20E+01	1.14E+01	9.18E+01	3.83E+01	
Naphthalene	1.82E+02	8.56E+01	4.53E+02	9.14E+02	1.25E+02
Phenanthrene	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	2.80E+01
Phenol	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	7.26E+03
Pyrene	1.80E+03	1.71E+03	1.00E+04*	5.72E+03	
Metals					
Antimony	2.95E+01	2.91E+01	2.61E+02	9.79E+01	
Arsenic	2.21E+01	2.18E+01	1.96E+02	7.35E+01	
Barium	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	
Cadmium	7.38E+01	7.28E+01	6.53E+02	2.45E+02	
Chromium III	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	
Chromium VI	2.21E+02	2.18E+02	1.96E+03	7.35E+02	
Cobalt	1.48E+03	1.46E+03	1.00E+04*	4.90E+03	
Copper	2.95E+03	2.91E+03	1.00E+04*	9.79E+03	
Lead	2.58E+02	2.55E+02	2.29E+03	8.57E+02	
Manganese	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	
Mercury	1.10E+01	6.52E+00	3.84E+01	4.56E+01	
Molybdenum	3.69E+02	3.64E+02	3.26E+03	1.22E+03	
Nickel	1.48E+03	1.46E+03	1.00E+04*	4.90E+03	
Tin	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	
Zinc	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	
Dioxins / PCBs					
Dioxins (I-TEQ)	1.00E-03	1.00E-03	5.00E-03	1.00E-03	
PCBs	2.36E-01	2.26E-01	7.48E-01	7.56E-01	
Petroleum Carbon Ranges					
C6 - C8	1.41E+03	5.45E+02	1.00E+04*	1.00E+04*	1.00E+03
C9 - C16	2.24E+03	1.33E+03	1.00E+04*	1.00E+04*	3.00E+03
C17 - C35	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	5.00E+03
Other Inorganic Compounds					
Cyanide, free	1.48E+03	1.46E+03	1.00E+04*	4.90E+03	
Organometallics					
TBTO	2.21E+01	2.18E+01	1.96E+02	7.35E+01	

Notes:

- (1) For Dioxins, the cleanup levels in USEPA Office of Solid Waste and Emergency Response (OSWER) Directive of 1998 have been adopted. The OSWER Directive value of 1 ppb for residential use has been applied to the scenarios of "Urban Residential", "Rural Residential", and "Public Parks", while the low end of the range of values for industrial, 5 ppb, has been applied to the scenario of "Industrial".
- (2) Soil saturation limits for petroleum carbon ranges taken from the Canada-Wide Standards for Petroleum Hydrocarbons in Soil, CCME 2000.
- (3) * indicates a 'ceiling limit' concentration.
- (4) *** indicates that the C_{sat} value exceeds the 'ceiling limit' therefore the RBRG applies.

Table 2.2
Risk-Based Remediation Goals (RBRGs) for Groundwater and Solubility Limit

Chemical	Risk-Based Remediation Goals for Groundwater			Solubility Limit (mg/L)
	Urban Residential (mg/L)	Rural Residential (mg/L)	Industrial (mg/L)	
VOCs				
Acetone	1.00E+04*	1.00E+04*	1.00E+04*	***
Benzene	3.86E+00	1.49E+00	5.40E+01	1.75E+03
Bromodichloromethane	2.22E+00	8.71E-01	2.62E+01	6.74E+03
2-Butanone	1.00E+04*	1.00E+04*	1.00E+04*	***
Chloroform	9.56E-01	3.82E-01	1.13E+01	7.92E+03
Ethylbenzene	1.02E+03	3.91E+02	1.00E+04*	1.69E+02
Methyl tert-Butyl Ether	1.53E+02	6.11E+01	1.81E+03	***
Methylene Chloride	1.90E+01	7.59E+00	2.24E+02	***
Styrene	3.02E+03	1.16E+03	1.00E+04*	3.10E+02
Tetrachloroethene	2.50E-01	9.96E-02	2.95E+00	2.00E+02
Toluene	5.11E+03	1.97E+03	1.00E+04*	5.26E+02
Trichloroethene	1.21E+00	4.81E-01	1.42E+01	1.10E+03
Xylenes (Total)	1.12E+02	4.33E+01	1.57E+03	1.75E+02
SVOCs				
Acenaphthene	1.00E+04*	7.09E+03	1.00E+04*	4.24E+00
Acenaphthylene	1.41E+03	5.42E+02	1.00E+04*	3.93E+00
Anthracene	1.00E+04*	1.00E+04*	1.00E+04*	4.34E-02
Benzo(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene	5.39E-01	2.03E-01	7.53E+00	1.50E-03
Benzo(g,h,i)perylene				
Benzo(k)fluoranthene				
bis-(2-Ethylhexyl)phthalate				
Chrysene	5.81E+01	2.19E+01	8.12E+02	1.60E-03
Dibenzo(a,h)anthracene				
Fluoranthene	1.00E+04*	1.00E+04*	1.00E+04*	2.06E-01
Fluorene	1.00E+04*	1.00E+04*	1.00E+04*	1.98E+00
Hexachlorobenzene	5.89E-02	2.34E-02	6.95E-01	6.20E+00
Indeno(1,2,3-cd)pyrene				
Naphthalene	6.17E+01	2.37E+01	8.62E+02	3.10E+01
Phenanthrene	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+00
Phenol				
Pyrene	1.00E+04*	1.00E+04*	1.00E+04*	1.35E-01
Metals				
Antimony				
Arsenic				
Barium				
Cadmium				
Chromium III				
Chromium VI				
Cobalt				
Copper				
Lead				
Manganese				
Mercury	4.86E-01	1.84E-01	6.79E+00	
Molybdenum				
Nickel				
Tin				
Zinc				
Dioxins / PCBs				
Dioxins (I-TEQ)				
PCBs	4.33E-01	1.71E-01	5.11E+00	3.10E-02
Petroleum Carbon Ranges				
C6 - C8	8.22E+01	3.17E+01	1.15E+03	5.23E+00
C9 - C16	7.14E+02	2.76E+02	9.98E+03	2.80E+00
C17 - C35	1.28E+01	4.93E+00	1.78E+02	2.80E+00
Other Inorganic Compounds				
Cyanide, free				
Organometallics				
TBTO				

Notes:

- (1) Blank indicates that RBRG could not be calculated because the toxicity or physical/chemical values were unavailable, or the condition of Henry's Law Constant > 1.00E-05 was not met for the inhalation pathway.
- (2) Water solubilities for Petroleum Carbon Range aliphatic C9-C16 and greater than C16 generally are considered to be effectively zero and therefore the aromatic solubility for C9-C16 is used.
- (3) * indicates a 'ceiling limit' concentration.
- (4) *** indicates that the solubility limit exceeds the 'ceiling limit' therefore the RBRG applies.

Annex E

Summary of Laboratory Analytical Results

THE SUMMARY OF THE LABORATORY ANALYTICAL RESULTS WITH REFERENCE TO THE RBRGS SOIL AND SATURATION LIMITS FOR SITE I1

Parameters	RBRGs for Soil (mg/kg) ^(a)	Soil Saturation Limit (C _{sat}) (mg/kg) ^(a)	LOR (mg/kg)	I1-01 ^(c) 0.5m HK1028964	I1-01 ^(c) 1.5m HK1028964	I1-01 ^(c) 3.0-3.45m ^(b) HK1029120	I1-01 ^(c) 4.5-4.95m HK1029120	I1-02 ^(c) 0.5m HK1028964	I1-02 ^(c) 1.5m HK1028964	I1-02 ^(c) 3.0-3.45m HK1029328	I1-02 ^(c) 4.5-4.95m HK1029328
Metals											
Copper	10,000	NA	1	20	9	6	27	10	6	114	49
Lead	2,290	NA	1	83	62	38	52	47	44	49	89
Zinc	10,000	NA	1	114	107	57	61	84	64	116	205
Trivalent Chromium	10,000	NA	1	67	9	8	6	8	6	6	10
Hexavalent Chromium	1,960	NA	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Petroleum Carbon Ranges											
C ₆ -C ₈	10,000	1,000	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
C ₉ -C ₁₆	10,000	3,000	200	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
C ₁₇ -C ₃₅	10,000	5,000	500	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
VOCs ^(a)											
Acetone	10,000	NA	50	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzene	9.21	336	0.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Bromodichloromethane	2.85	1,030	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
2-Butanone	10,000	NA	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chloroform	1.54	1,100	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ethylbenzene	8,240	138	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methyl tert-Butyl Ether	70.1	2,380	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methylene Chloride	13.9	921	2.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Styrene	10,000	497	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Tetrachloroethene	0.777	97.1	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Toluene	10,000	235	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Trichloroethene	5.68	488	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Xylenes (Total)	1,230	150	1.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
SVOCs ^(b)											
Acenaphthene	10,000	60.2	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Acenaphthylene	10,000	19.8	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Anthracene	10,000	2.56	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(a)anthracene	91.8	NA	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(a)pyrene	9.18	NA	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(b)fluoranthene	17.8	NA	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(k)fluoranthene	918	NA	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(g,h,i)perylene	10,000	NA	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Parameters	RBRGs for Soil (mg/kg) ^(a)	Soil Saturation Limit (C _{sat}) (mg/kg) ^(a)	LOR (mg/kg)	I1-01 ^(c) 0.5m HK1028964	I1-01 ^(c) 1.5m HK1028964	I1-01 ^(c) 3.0-3.45m ^(b) HK1029120	I1-01 ^(c) 4.5-4.95m HK1029120	I1-02 ^(c) 0.5m HK1028964	I1-02 ^(c) 1.5m HK1028964	I1-02 ^(c) 3.0-3.45m HK1029328	I1-02 ^(c) 4.5-4.95m HK1029328
Bis-(2-Ethylhexyl)phthalate	91.8	NA	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chrysene	1,140	NA	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Dibenzo(a,h)anthracene	9.18	NA	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Fluoranthene	10,000	NA	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Fluorene	10,000	54.7	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Hexachlorobenzene	0.582	NA	0.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Indeno(1,2,3-cd)pyrene	91.8	NA	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Naphthalene	453	125	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Phenanthrene	10,000	28	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Phenol	10,000	7,260	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Perylene	NA	NA	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Pyrene	10,000	NA	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Notes:

(a) RBRGs for Soil for Industrial Land Use and Soil Saturation Limits were used for comparisons of results in this Project.

(b) A duplicate sample was taken from this location; the higher of the two results is reported in this table.

(c) Samples collected in Site I1 (herein expressed as I1-01 and I1-02) were expressed as I-01 and I-02 in the laboratory reports.

NA – No respective RBRGs for Soil/Solubility values available for these chemicals.

LOR – Limit of Reporting indicates the detection limits of the analytical results.

BDL – Below Detection Limit indicate the concentration is lower than the limit of reporting.

Bold results - Samples with contaminant concentrations exceeding RBRGs for Soil/Soil Saturation Limit.

THE SUMMARY OF THE LABORATORY ANALYTICAL RESULTS WITH REFERENCE TO THE RBRGS SOIL AND SATURATION LIMITS FOR SITE L

Parameters	RBRGs for Soil (mg/kg) ^(a)	Soil Saturation Limit (C _{sat}) (mg/kg) ^(a)	LOR (mg/kg)	L-01 0.5m HK1028964	L-01 1.5m HK1028964	L-01 3.0-3.45m HK1029120	L-01 4.5-4.95m HK1029120	L-02 0.5m HK1028964	L-02 1.5m HK1028964	L-02 3.0-3.45m HK1029120	L-02 4.5-4.95m HK1029328
Metals											
Copper	10,000	NA	1	16	21	3	58	13	10	14	24
Lead	2,290	NA	1	79	75	21	113	67	31	34	51
Zinc	10,000	NA	1	108	174	27	134	135	74	71	188
Trivalent Chromium	10,000	NA	1	14	13	3	17	13	7	8	8
Hexavalent Chromium	1,960	NA	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Petroleum Carbon Ranges											
C ₆ -C ₈	10,000	1,000	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
C ₉ -C ₁₆	10,000	3,000	200	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
C ₁₇ -C ₃₅	10,000	5,000	500	BDL	BDL	BDL	BDL	BDL	840	BDL	BDL
VOCs											
Acetone	10,000	NA	50	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzene	9.21	336	0.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Bromodichloromethane	2.85	1,030	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
2-Butanone	10,000	NA	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chloroform	1.54	1,100	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ethylbenzene	8,240	138	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methyl tert-Butyl Ether	70.1	2,380	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methylene Chloride	13.9	921	2.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Styrene	10,000	497	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Tetrachloroethene	0.777	97.1	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Toluene	10,000	235	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Trichloroethene	5.68	488	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Xylenes (Total)	1,230	150	1.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
SVOCs											
Acenaphthene	10,000	60.2	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Acenaphthylene	10,000	19.8	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Anthracene	10,000	2.56	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(a)anthracene	91.8	NA	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(a)pyrene	9.18	NA	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(b)fluoranthene	17.8	NA	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(k)fluoranthene	918	NA	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(g,h,i)perylene	10,000	NA	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Parameters	RBRGs for Soil (mg/kg) ^(a)	Soil Saturation Limit (C _{sat}) (mg/kg) ^(a)	LOR (mg/kg)	L-01 0.5m HK1028964	L-01 1.5m HK1028964	L-01 3.0-3.45m HK1029120	L-01 4.5-4.95m HK1029120	L-02 0.5m HK1028964	L-02 1.5m HK1028964	L-02 3.0-3.45m HK1029120	L-02 4.5-4.95m HK1029328
Bis-(2-Ethylhexyl)phthalate	91.8	NA	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chrysene	1,140	NA	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Dibenzo(a,h)anthracene	9.18	NA	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Fluoranthene	10,000	NA	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Fluorene	10,000	54.7	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Hexachlorobenzene	0.582	NA	0.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Indeno(1,2,3-cd)pyrene	91.8	NA	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Naphthalene	453	125	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Phenanthrene	10,000	28	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Phenol	10,000	7,260	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Perylene	NA	NA	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Pyrene	10,000	NA	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Notes:

(a) RBRGs for Soil for Industrial Land Use and Saturation Limits were used for comparisons of results for this Project.

NA - No respective RBRGs for Soil/Solubility values available for these chemicals.

LOR - Limit of Reporting indicates the detection limits of the analytical results.

BDL - Below Detection Limit indicate the concentration is lower than the limit of reporting.

Bold results - Samples with contaminant concentrations exceeding RBRGs for Soil/Soil Saturation Limit.

THE SUMMARY OF THE LABORATORY ANALYTICAL RESULTS WITH REFERENCE TO THE RBRGS GROUNDWATER AND SOLUBILITY LIMITS

Parameters	RBRGs for Groundwater (µg/L) ^(a)	Solubility Limit (µg/L) ^(a)	LOR (µg/L)	L-01 HK1029581	L-02 ^(b) DUP HK1029581	I1-01 ^(c) HK1029581	I1-02 ^(c) HK1029581
Petroleum Carbon Ranges							
C ₆ -C ₈	1,150,000	5,230	20	BDL	BDL	BDL	BDL
C ₉ -C ₁₆	9,980,000	2,800	500	BDL	BDL	BDL	BDL
C ₁₇ -C ₃₅	178,000	2,800	500	BDL	BDL	BDL	BDL
VOCs							
Acetone	10,000,000	NA	50	BDL	BDL	BDL	BDL
Benzene	54,000	1,750,000	5	BDL	BDL	BDL	BDL
Bromodichloromethane	26,200	6,740,000	5	BDL	BDL	BDL	BDL
2-Butanone	10,000,000	NA	50	BDL	BDL	BDL	BDL
Chloroform	11,300	7,920,000	5	BDL	BDL	BDL	BDL
Ethylbenzene	10,000,000	169,000	5	BDL	BDL	BDL	BDL
Methyl tert-Butyl Ether	1,810,000	NA	5	BDL	BDL	BDL	BDL
Methylene Chloride	224,000	NA	50	BDL	BDL	BDL	BDL
Styrene	10,000,000	310,000	5	BDL	BDL	BDL	BDL
Tetrachloroethene	2,950	200,000	5	BDL	BDL	BDL	BDL
Toluene	10,000,000	526,000	5	BDL	BDL	BDL	BDL
Trichloroethene	14,200	1,100,000	5	BDL	BDL	BDL	BDL
Xylenes (Total)	1,570,000	175,000	15	BDL	BDL	BDL	BDL
SVOCs							
Acenaphthene	10,000,000	4,240	2	BDL	BDL	BDL	BDL
Acenaphthylene	10,000,000	3,930	2	BDL	BDL	BDL	BDL
Anthracene	10,000,000	43.4	2	BDL	BDL	BDL	BDL
Benzo(b) & Benzo(k) fluoranthene	7,530	1.5	4	BDL	BDL	BDL	BDL
Chrysene	812,000	1.6	2	BDL	BDL	BDL	BDL
Fluoranthene	10,000,000	206	2	BDL	BDL	BDL	BDL
Fluorene	10,000,000	1,980	2	BDL	BDL	BDL	BDL
Hexachlorobenzene	695	6,200	4	BDL	BDL	BDL	BDL
Naphthalene	862,000	31,000	2	BDL	BDL	BDL	BDL
Phenanthrene	10,000,000	1,000	2	BDL	BDL	BDL	BDL
Pyrene	10,000,000	135	2	BDL	BDL	BDL	BDL

Notes:

- (a) RBRGs for Groundwater for Industrial Land Use and Solubility Limits were used for comparisons of results for this Project.
- (b) A duplicate sample was taken from this location; the higher of the two results is reported in this table, in this case, both samples did not have concentration above the detection level.
- (c) Samples collected in Site I1 (herein expressed as I1-01 and I1-02) were expressed as I-01 and I-02 in the laboratory reports.

LOR – Limit of Reporting indicates the detection limits of the analytical results.

BDL – Below Detection Limit indicate the concentration is lower than the limit of reporting.

Bold results - Samples with contaminant concentrations exceeding RBRGs for Groundwater/Solubility Limit.

Annex F

Laboratory Analytical Result
of Site I & L

**Supplementary Contamination Assessment Report
for Shek Kong Stabling Sidings (SSS) Works Area II
(Revision D)**

Index of Annex F

Report Number	Lab Report Reference
A	HK1028964
B	HK1029120
C	HK1029328
D	HK1029581

**Supplementary Contamination Assessment Report
for Shek Kong Stabling Sidings (SSS) Works Area II
(Revision D)**

Soil Samples				
Sampling Locations	I1-01	I1-01	I1-01 +dup	I1-01
Sampling Depth	0.5m	1.5m	3.0-3.45m	4.5-4.95m
Sampling Date	6-Dec-10	6-Dec-10	8-Dec-10	8-Dec-10
Report Number	Report A	Report A	Report B	Report B

Soil Samples				
Sampling Locations	L-01	L-01	L-01	L-01
Sampling Depth	0.5m	1.5m	3.0-3.45m	4.5-4.95m
Sampling Date	6-Dec-10	6-Dec-10	8-Dec-10	8-Dec-10
Report Number	Report A	Report A	Report B	Report B

Groundwater Samples				
Sampling Locations	L-01	L-02 +dup	I1-01	I1-02
Sampling Date	13-Dec-10	13-Dec-10	13-Dec-10	13-Dec-10
Report Number	Report D	Report D	Report D	Report D

Soil Samples				
Sampling Locations	I1-02	I1-02	I1-02	I1-02
Sampling Depth	0.5m	1.5m	3.0-3.45m	4.5-4.95m
Sampling Date	6-Dec-10	6-Dec-10	9-Dec-10	9-Dec-10
Report Number	Report A	Report A	Report C	Report C

Soil Samples				
Sampling Locations	L-02	L-02	L-02	L-02
Sampling Depth	0.5m	1.5m	3.0-3.45m	4.5-4.95m
Sampling Date	6-Dec-10	6-Dec-10	8-Dec-10	9-Dec-10
Report Number	Report A	Report A	Report B	Report C

Note:

Samples collected in Site I1 (herein expressed as I1-01 and I1-02) were expressed as I-01 and I-02 in the laboratory reports.

Report No. A

HK1028964



CERTIFICATE OF ANALYSIS

Client	: ERM HONG KONG	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 15
Contact	: MR ANGUS CHOI	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1028964
Address	: 21/F, LINCOLN HOUSE, 979 KING'S ROAD, TAIKOO PLACE, ISLAND EAST, QUARRY BAY, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong	Amendment	: 1
E-mail	: angus.choi@erm.com	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2271 3000	Telephone	: +852 2610 1044		
Facsimile	: +852 2723 5660	Facsimile	: +852 2610 2021		
Project	: XRL 823A 0125309	Quote number	: HK/1393a/2010	Date Samples Received	: 06-DEC-2010
Order number	: ----			Issue Date	: 15-DEC-2010
C-O-C number	: H010620			No. of samples received	: 10
Site	: TAI KONG PO			No. of samples analysed	: 10

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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 sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 13-DEC-2010

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

Specific comments for Work Order: **HK1028964**

Sample(s) were received in a chilled condition.

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

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

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

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



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Sub-Matrix: SOIL				Client sample ID	L01 0.5M	L01 1.5M	L02 0.5M	L02 1.5M	I02 0.5M
				Client sampling date / time	06-DEC-2010 11:30	06-DEC-2010 11:55	06-DEC-2010 14:05	06-DEC-2010 14:30	06-DEC-2010 15:10
Compound	CAS Number	LOR	Unit	HK1028964-001	HK1028964-002	HK1028964-003	HK1028964-004	HK1028964-005	
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%	13.7	15.2	14.7	18.5	21.4	
EG: Metals and Major Cations									
EG020: Copper	7440-50-8	1	mg/kg	16	21	13	10	10	
EG020: Lead	7439-92-1	1	mg/kg	79	75	67	31	47	
EG020: Zinc	7440-66-6	1	mg/kg	108	174	135	74	84	
EG049: Trivalent Chromium	16065-83-1	1	mg/kg	14	13	13	7	8	
EG3060: Hexavalent Chromium	18540-29-9	1	mg/kg	<1	<1	<1	<1	<1	
EP-071HK: Total Petroleum Hydrocarbons (TPH)									
C6 - C8 Fraction	----	5	mg/kg	<5	<5	<5	<5	<5	
C9 - C16 Fraction	----	200	mg/kg	<200	<200	<200	<200	<200	
C17 - C35 Fraction	----	500	mg/kg	<500	<500	<500	840	<500	
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH)									
Benzene	71-43-2	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	
Toluene	108-88-3	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	
Ethylbenzene	100-41-4	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	
meta- & para-Xylene	108-38-3 106-42-3	1.00	mg/kg	<1.00	<1.00	<1.00	<1.00	<1.00	
Styrene	100-42-5	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	
ortho-Xylene	95-47-6	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	
EP-074B: Oxygenated Compounds									
2-Propanone (Acetone)	67-64-1	50	mg/kg	<50	<50	<50	<50	<50	
2-Butanone (MEK)	78-93-3	5.0	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	
EP-074E: Halogenated Aliphatics									
Methylene chloride	75-09-2	2.5	mg/kg	<2.5	<2.5	<2.5	<2.5	<2.5	
Trichloroethene	79-01-6	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	
Tetrachloroethene	127-18-4	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	
EP-074G: Trihalomethanes (THM)									
Chloroform	67-66-3	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	
Bromodichloromethane	75-27-4	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	
EP-074L: Methyl-tert-butyl Ether									
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500	
EP076HK: Acenaphthylene	208-96-8	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500	
EP076HK: Acenaphthene	83-32-9	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500	



Sub-Matrix: SOIL				Client sample ID	L01 0.5M	L01 1.5M	L02 0.5M	L02 1.5M	I02 0.5M
Client sampling date / time					06-DEC-2010 11:30	06-DEC-2010 11:55	06-DEC-2010 14:05	06-DEC-2010 14:30	06-DEC-2010 15:10
Compound	CAS Number	LOR	Unit		HK1028964-001	HK1028964-002	HK1028964-003	HK1028964-004	HK1028964-005
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued									
EP076HK: Fluorene	86-73-7	0.500	mg/kg		<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Phenanthrene	85-01-8	0.500	mg/kg		<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Anthracene	120-12-7	0.500	mg/kg		<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Fluoranthene	206-44-0	0.500	mg/kg		<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Pyrene	129-00-0	0.500	mg/kg		<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Benz(a)anthracene	56-55-3	0.500	mg/kg		<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Chrysene	218-01-9	0.500	mg/kg		<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Benzo(b)fluoranthene	205-99-2	0.500	mg/kg		<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Benzo(k)fluoranthene	207-08-9	0.500	mg/kg		<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Benzo(a)pyrene	50-32-8	0.500	mg/kg		<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Perylene	198-55-0	0.500	mg/kg		<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	0.500	mg/kg		<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Dibenz(a,h)anthracene	53-70-3	0.500	mg/kg		<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Benzo(g,h,i)perylene	191-24-2	0.500	mg/kg		<0.500	<0.500	<0.500	<0.500	<0.500
EP-076B: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate									
EP076HK: Phenol	108-95-2	0.50	mg/kg		<0.50	<0.50	<0.50	<0.50	<0.50
EP076HK: Hexachlorobenzene (HCB)	118-74-1	0.200	mg/kg		<0.200	<0.200	<0.200	<0.200	<0.200
EP076HK: Bis(2-ethylhexyl)phthalate	117-81-7	5.00	mg/kg		<5.00	<5.00	<5.00	<5.00	<5.00
EP-080S: TPH(Volatile)/BTEX Surrogate Surrogate control limits listed at end of this report.									
Dibromofluoromethane	1868-53-7	0.1	%		104	97.4	96.3	94.0	95.3
Toluene-D8	2037-26-5	0.1	%		96.8	95.3	87.4	96.6	95.4
4-Bromofluorobenzene	460-00-4	0.1	%		120	116	113	114	114
EP-074S: VOC Surrogates Surrogate control limits listed at end of this report.									
Dibromofluoromethane	1868-53-7	0.1	%		104	97.4	96.3	94.0	95.3
Toluene-D8	2037-26-5	0.1	%		96.8	95.3	87.4	96.6	95.4
4-Bromofluorobenzene	460-00-4	0.1	%		120	116	113	114	114
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates Surrogate control limits listed at end of this report.									
2-Fluorobiphenyl	321-60-8	0.1	%		92.0	99.0	106	101	69.8
4-Terphenyl-d14	1718-51-0	0.1	%		77.4	87.7	98.4	99.0	101



Sub-Matrix: SOIL				Client sample ID				
Client sampling date / time								
				I02 1.5M	I01 0.5M	I01 1.5M		
				06-DEC-2010 15:30	06-DEC-2010 16:30	06-DEC-2010 16:45		
Compound	CAS Number	LOR	Unit	HK1028964-006	HK1028964-007	HK1028964-008		
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103°C)	----	0.1	%	21.3	15.8	24.7		
EG: Metals and Major Cations								
EG020: Copper	7440-50-8	1	mg/kg	6	20	9		
EG020: Lead	7439-92-1	1	mg/kg	44	83	62		
EG020: Zinc	7440-66-6	1	mg/kg	64	114	107		
EG049: Trivalent Chromium	16065-83-1	1	mg/kg	6	67	9		
EG3060: Hexavalent Chromium	18540-29-9	1	mg/kg	<1	<1	<1		
EP-071HK: Total Petroleum Hydrocarbons (TPH)								
C6 - C8 Fraction	----	5	mg/kg	<5	<5	<5		
C9 - C16 Fraction	----	200	mg/kg	<200	<200	<200		
C17 - C35 Fraction	----	500	mg/kg	<500	<500	<500		
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH)								
Benzene	71-43-2	0.20	mg/kg	<0.20	<0.20	<0.20		
Toluene	108-88-3	0.50	mg/kg	<0.50	<0.50	<0.50		
Ethylbenzene	100-41-4	0.50	mg/kg	<0.50	<0.50	<0.50		
meta- & para-Xylene	108-38-3 106-42-3	1.00	mg/kg	<1.00	<1.00	<1.00		
Styrene	100-42-5	0.50	mg/kg	<0.50	<0.50	<0.50		
ortho-Xylene	95-47-6	0.50	mg/kg	<0.50	<0.50	<0.50		
EP-074B: Oxygenated Compounds								
2-Propanone (Acetone)	67-64-1	50	mg/kg	<50	<50	<50		
2-Butanone (MEK)	78-93-3	5.0	mg/kg	<5.0	<5.0	<5.0		
EP-074E: Halogenated Aliphatics								
Methylene chloride	75-09-2	2.5	mg/kg	<2.5	<2.5	<2.5		
Trichloroethene	79-01-6	0.50	mg/kg	<0.50	<0.50	<0.50		
Tetrachloroethene	127-18-4	0.50	mg/kg	<0.50	<0.50	<0.50		
EP-074G: Trihalomethanes (THM)								
Chloroform	67-66-3	0.50	mg/kg	<0.50	<0.50	<0.50		
Bromodichloromethane	75-27-4	0.50	mg/kg	<0.50	<0.50	<0.50		
EP-074L: Methyl-tert-butyl Ether								
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.50	mg/kg	<0.50	<0.50	<0.50		
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
EP076HK: Naphthalene	91-20-3	0.500	mg/kg	<0.500	<0.500	<0.500		
EP076HK: Acenaphthylene	208-96-8	0.500	mg/kg	<0.500	<0.500	<0.500		
EP076HK: Acenaphthene	83-32-9	0.500	mg/kg	<0.500	<0.500	<0.500		
EP076HK: Fluorene	86-73-7	0.500	mg/kg	<0.500	<0.500	<0.500		
EP076HK: Phenanthrene	85-01-8	0.500	mg/kg	<0.500	<0.500	<0.500		



Sub-Matrix: SOIL				Client sample ID				
Client sampling date / time								
				I02 1.5M	I01 0.5M	I01 1.5M		
				06-DEC-2010 15:30	06-DEC-2010 16:30	06-DEC-2010 16:45		
Compound	CAS Number	LOR	Unit	HK1028964-006	HK1028964-007	HK1028964-008		
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
EP076HK: Anthracene	120-12-7	0.500	mg/kg	<0.500	<0.500	<0.500		
EP076HK: Fluoranthene	206-44-0	0.500	mg/kg	<0.500	<0.500	<0.500		
EP076HK: Pyrene	129-00-0	0.500	mg/kg	<0.500	<0.500	<0.500		
EP076HK: Benz(a)anthracene	56-55-3	0.500	mg/kg	<0.500	<0.500	<0.500		
EP076HK: Chrysene	218-01-9	0.500	mg/kg	<0.500	<0.500	<0.500		
EP076HK: Benzo(b)fluoranthene	205-99-2	0.500	mg/kg	<0.500	<0.500	<0.500		
EP076HK: Benzo(k)fluoranthene	207-08-9	0.500	mg/kg	<0.500	<0.500	<0.500		
EP076HK: Benzo(a)pyrene	50-32-8	0.500	mg/kg	<0.500	<0.500	<0.500		
EP076HK: Perylene	198-55-0	0.500	mg/kg	<0.500	<0.500	<0.500		
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	0.500	mg/kg	<0.500	<0.500	<0.500		
EP076HK: Dibenz(a,h)anthracene	53-70-3	0.500	mg/kg	<0.500	<0.500	<0.500		
EP076HK: Benzo(g,h,i)perylene	191-24-2	0.500	mg/kg	<0.500	<0.500	<0.500		
EP-076B: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate								
EP076HK: Phenol	108-95-2	0.50	mg/kg	<0.50	<0.50	<0.50		
EP076HK: Hexachlorobenzene (HCB)	118-74-1	0.200	mg/kg	<0.200	<0.200	<0.200		
EP076HK: Bis(2-ethylhexyl)phthalate	117-81-7	5.00	mg/kg	<5.00	<5.00	<5.00		
EP-080S: TPH(Volatile)/BTEX Surrogate							Surrogate control limits listed at end of this report.	
Dibromofluoromethane	1868-53-7	0.1	%	95.2	94.4	96.3		
Toluene-D8	2037-26-5	0.1	%	95.0	95.8	95.3		
4-Bromofluorobenzene	460-00-4	0.1	%	114	114	116		
EP-074S: VOC Surrogates							Surrogate control limits listed at end of this report.	
Dibromofluoromethane	1868-53-7	0.1	%	95.2	94.4	96.3		
Toluene-D8	2037-26-5	0.1	%	95.0	95.8	95.3		
4-Bromofluorobenzene	460-00-4	0.1	%	114	114	116		
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
2-Fluorobiphenyl	321-60-8	0.1	%	96.9	75.9	101		
4-Terphenyl-d14	1718-51-0	0.1	%	93.7	82.8	105		



Sub-Matrix: WATER				Client sample ID	FIELD BK	TRIP BK			
				Client sampling date / time	06-DEC-2010 11:30	06-DEC-2010 11:30			
Compound	CAS Number	LOR	Unit		HK1028964-009	HK1028964-010			
EG: Metals and Major Cations									
EG049: Trivalent Chromium	16065-83-1	20	µg/L		<20	----			
EG050: Hexavalent Chromium	18540-29-9	20	µg/L		<20	----			
EG: Metals and Major Cations - Filtered									
EG020: Copper	7440-50-8	1	µg/L		<1	----			
EG020: Lead	7439-92-1	1	µg/L		<1	----			
EG020: Zinc	7440-66-6	10	µg/L		<10	----			
EP-071HK: Total Petroleum Hydrocarbons (TPH)									
C6 - C8 Fraction	----	20	µg/L		<20	----			
C9 - C16 Fraction	----	500	µg/L		<500	----			
C17 - C35 Fraction	----	500	µg/L		<500	----			
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	10	µg/L		<10	<10			
	106-42-3								
Styrene	100-42-5	5	µg/L		<5	<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	<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	----			
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	----			



Sub-Matrix: WATER				Client sample ID	FIELD BK	TRIP BK			
				Client sampling date / time	06-DEC-2010 11:30	06-DEC-2010 11:30			
Compound	CAS Number	LOR	Unit		HK1028964-009	HK1028964-010			
EP-075B: Polyaromatic Hydrocarbons (PAHs) - Continued									
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	----			
Benz(a)anthracene	56-55-3	2	µg/L		<2	----			
Chrysene	218-01-9	2	µg/L		<2	----			
Benzo(b) & Benzo(k)fluoranthene	205-99-2	4	µg/L		<4	----			
	207-08-9								
Benzo(a)pyrene	50-32-8	2	µg/L		<2	----			
Indeno(1,2,3-cd)pyrene	193-39-5	2	µg/L		<2	----			
Dibenz(a,h)anthracene	53-70-3	2	µg/L		<2	----			
Benzo(g,h,i)perylene	191-24-2	2	µg/L		<2	----			
EP-075C: Phthalate Esters									
Bis(2-ethylhexyl)phthalate	117-81-7	20	µg/L		<20	----			
EP-075G: Chlorinated Hydrocarbons									
Hexachlorobenzene (HCB)	118-74-1	4	µg/L		<4	----			
EP-080S: TPH(Volatile)/BTEX Surrogate							Surrogate control limits listed at end of this report.		
Dibromofluoromethane	1868-53-7	0.1	%		114	----			
Toluene-D8	2037-26-5	0.1	%		98.0	----			
4-Bromofluorobenzene	460-00-4	0.1	%		108	----			
EP-074S: VOC Surrogates							Surrogate control limits listed at end of this report.		
Dibromofluoromethane	1868-53-7	0.1	%		114	111			
Toluene-D8	2037-26-5	0.1	%		98.0	92.4			
4-Bromofluorobenzene	460-00-4	0.1	%		108	109			
EP-075S: Acid Extractable Surrogates							Surrogate control limits listed at end of this report.		
2-Fluorophenol	367-12-4	0.1	%		39.8	----			
Phenol-d6	13127-88-3	0.1	%		28.3	----			
2,4,6-Tribromophenol	118-79-6	0.1	%		73.4	----			
EP-075T: Base/Neutral Extractable Surrogates							Surrogate control limits listed at end of this report.		
Nitrobenzene -d5	4165-60-0	0.1	%		72.8	----			
2-Fluorobiphenyl	321-60-8	0.1	%		60.4	----			
4-Terphenyl-d14	1718-51-0	0.1	%		98.3	----			



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: 1594422)								
HK1028964-001	L01 0.5M	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	13.7	12.4	10.0
EG: Metals and Major Cations (QC Lot: 1594701)								
HK1028964-008	I01 1.5M	EG020: Copper	7440-50-8	1	mg/kg	9	8	15.6
		EG020: Lead	7439-92-1	1	mg/kg	62	74	18.0
		EG020: Zinc	7440-66-6	1	mg/kg	107	94	13.2
EG: Metals and Major Cations (QC Lot: 1594703)								
HK1028964-008	I01 1.5M	EG3060: Hexavalent Chromium	18540-29-9	1	mg/kg	<1	<1	0.0
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1588693)								
HK1028699-001	Anonymous	C9 - C16 Fraction	----	200	mg/kg	<200	<200	0.0
		C17 - C35 Fraction	----	500	mg/kg	<500	<500	0.0
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1588695)								
HK1028699-001	Anonymous	C6 - C8 Fraction	----	5	mg/kg	<5	<5	0.0
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1594449)								
HK1028964-002	L01 1.5M	C9 - C16 Fraction	----	200	mg/kg	<200	<200	0.0
		C17 - C35 Fraction	----	500	mg/kg	<500	<500	0.0
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1594451)								
HK1028964-002	L01 1.5M	C6 - C8 Fraction	----	5	mg/kg	<5	<5	0.0
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 1586404)								
HK1028586-001	Anonymous	Benzene	71-43-2	0.20	mg/kg	<0.20	<0.20	0.0
		Toluene	108-88-3	0.50	mg/kg	<0.50	<0.50	0.0
		Ethylbenzene	100-41-4	0.50	mg/kg	<0.50	<0.50	0.0
		Styrene	100-42-5	0.50	mg/kg	<0.50	<0.50	0.0
		ortho-Xylene	95-47-6	0.50	mg/kg	<0.50	<0.50	0.0
		meta- & para-Xylene	108-38-3	1.00	mg/kg	<1.00	<1.00	0.0
EP-074B: Oxygenated Compounds (QC Lot: 1586404)								
HK1028586-001	Anonymous	2-Butanone (MEK)	78-93-3	5.0	mg/kg	<5.0	<5.0	0.0
		2-Propanone (Acetone)	67-64-1	50	mg/kg	<50	<50	0.0
EP-074E: Halogenated Aliphatics (QC Lot: 1586404)								
HK1028586-001	Anonymous	Tetrachloroethene	127-18-4	0.04	mg/kg	<0.04	<0.04	0.0
		Trichloroethene	79-01-6	0.10	mg/kg	<0.10	<0.10	0.0
		Methylene chloride	75-09-2	5	mg/kg	<5	<5	0.0
EP-074G: Trihalomethanes (THM) (QC Lot: 1586404)								
HK1028586-001	Anonymous	Chloroform	67-66-3	0.04	mg/kg	<0.04	<0.04	0.0
		Bromodichloromethane	75-27-4	0.10	mg/kg	<0.10	<0.10	0.0
EP-074L: Methyl-tert-butyl Ether (QC Lot: 1586404)								
HK1028586-001	Anonymous	Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	mg/kg	<0.5	<0.5	0.0
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1588694)								



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1588694) - Continued								
HK1028699-001	Anonymous	EP076HK: Perylene	198-55-0	50	µg/kg	<50	<50	0.0
		EP076HK: Naphthalene	91-20-3	500	µg/kg	<500	<500	0.0
		EP076HK: Acenaphthylene	208-96-8	500	µg/kg	<500	<500	0.0
		EP076HK: Acenaphthene	83-32-9	500	µg/kg	<500	<500	0.0
		EP076HK: Fluorene	86-73-7	500	µg/kg	<500	<500	0.0
		EP076HK: Phenanthrene	85-01-8	500	µg/kg	<500	<500	0.0
		EP076HK: Anthracene	120-12-7	500	µg/kg	<500	<500	0.0
		EP076HK: Fluoranthene	206-44-0	500	µg/kg	<500	<500	0.0
		EP076HK: Pyrene	129-00-0	500	µg/kg	<500	<500	0.0
		EP076HK: Benz(a)anthracene	56-55-3	500	µg/kg	<500	<500	0.0
		EP076HK: Chrysene	218-01-9	500	µg/kg	<500	<500	0.0
		EP076HK: Benzo(b)fluoranthene	205-99-2	500	µg/kg	<500	<500	0.0
		EP076HK: Benzo(k)fluoranthene	207-08-9	500	µg/kg	<500	<500	0.0
		EP076HK: Benzo(a)pyrene	50-32-8	500	µg/kg	<500	<500	0.0
		EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	500	µg/kg	<500	<500	0.0
		EP076HK: Dibenz(a,h)anthracene	53-70-3	500	µg/kg	<500	<500	0.0
		EP076HK: Benzo(g,h,i)perylene	191-24-2	500	µg/kg	<500	<500	0.0
EP-076B: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 1588694)								
HK1028699-001	Anonymous	EP076HK: Phenol	108-95-2	500	µg/kg	<500	<500	0.0
		EP076HK: Hexachlorobenzene (HCB)	118-74-1	500	µg/kg	<500	<500	0.0
		EP076HK: Bis(2-ethylhexyl)phthalate	117-81-7	5000	µg/kg	<5000	<5000	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 (QC Lot: 1598991)								
HK1028703-002	Anonymous	EG050: Hexavalent Chromium	18540-29-9	0.02	mg/L	<0.02	<0.02	0.0
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1590797)								
HK1028813-001	Anonymous	C6 - C8 Fraction	----	0.02	mg/L	<0.02	<0.02	0.0
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 1594506)								
HK1028964-009	FIELD BK	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: 1594506)								
HK1028964-009	FIELD BK	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: 1594506)								
HK1028964-009	FIELD BK	Trichloroethene	79-01-6	5	µg/L	<5	<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 (%)
EP-074E: Halogenated Aliphatics (QC Lot: 1594506) - Continued								
HK1028964-009	FIELD BK	Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0
		Methylene chloride	75-09-2	50	µg/L	<50	<50	0.0
EP-074G: Trihalomethanes (THM) (QC Lot: 1594506)								
HK1028964-009	FIELD BK	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: 1594506)								
HK1028964-009	FIELD BK	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	Spike Recovery (%)		Recovery Limits (%)		RPD (%)		
Method: Compound	CAS Number	LOR	Unit	Result			LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 1594701)												
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	109	----	85	115	----	----	
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	94.2	----	85	115	----	----	
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	106	----	85	115	----	----	
EG: Metals and Major Cations (QC Lot: 1594703)												
EG3060: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<1	40 mg/kg	87.5	----	85	115	----	----	
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1588693)												
C9 - C16 Fraction	----	200	mg/kg	<200	31 mg/kg	91.1	----	57	104	----	----	
C17 - C35 Fraction	----	500	mg/kg	<500	75 mg/kg	95.9	----	54	102	----	----	
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1588695)												
C6 - C8 Fraction	----	5	mg/kg	<5	3 mg/kg	90.0	----	74	129	----	----	
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1594449)												
C9 - C16 Fraction	----	200	mg/kg	<200	31 mg/kg	82.0	----	57	104	----	----	
C17 - C35 Fraction	----	500	mg/kg	<500	75 mg/kg	90.5	----	54	102	----	----	
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1594451)												
C6 - C8 Fraction	----	5	mg/kg	<5	3 mg/kg	79.6	----	74	129	----	----	
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 1586404)												
Benzene	71-43-2	0.04	mg/kg	<0.04	0.16 mg/kg	87.0	----	78	115	----	----	
Toluene	108-88-3	0.04	mg/kg	<0.04	0.16 mg/kg	97.4	----	74	118	----	----	
Ethylbenzene	100-41-4	0.04	mg/kg	<0.04	0.16 mg/kg	94.8	----	75	121	----	----	
meta- & para-Xylene	108-38-3	0.08	mg/kg	<0.08	0.32 mg/kg	99.7	----	80	116	----	----	
	106-42-3											
Styrene	100-42-5	0.04	mg/kg	<0.04	0.16 mg/kg	86.6	----	74	116	----	----	
ortho-Xylene	95-47-6	0.04	mg/kg	<0.04	0.16 mg/kg	111	----	70	127	----	----	
EP-074B: Oxygenated Compounds (QC Lot: 1586404)												
2-Propanone (Acetone)	67-64-1	5.0	mg/kg	<5	----	----	----	----	----	----	----	
2-Butanone (MEK)	78-93-3	0.4	mg/kg	<0.4	1.6 mg/kg	84.1	----	64	132	----	----	



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
EP-074E: Halogenated Aliphatics (QC Lot: 1586404)											
Methylene chloride	75-09-2	5.0	mg/kg	<5	----	----	----	----	----	----	----
Trichloroethene	79-01-6	0.04	mg/kg	<0.04	0.16 mg/kg	92.7	----	83	111	----	----
Tetrachloroethene	127-18-4	0.04	mg/kg	<0.04	0.16 mg/kg	114	----	74	124	----	----
EP-074G: Trihalomethanes (THM) (QC Lot: 1586404)											
Chloroform	67-66-3	0.04	mg/kg	<0.04	0.16 mg/kg	102	----	73	119	----	----
Bromodichloromethane	75-27-4	0.04	mg/kg	<0.04	0.16 mg/kg	102	----	79	109	----	----
EP-074L: Methyl-tert-butyl Ether (QC Lot: 1586404)											
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	mg/kg	<0.5	----	----	----	----	----	----	----
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1588694)											
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	25 µg/kg	88.6	----	38	125	----	----
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	25 µg/kg	82.8	----	42	125	----	----
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	25 µg/kg	89.5	----	45	120	----	----
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	25 µg/kg	90.1	----	38	133	----	----
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	25 µg/kg	92.5	----	41	126	----	----
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	25 µg/kg	87.1	----	45	115	----	----
EP076HK: Fluoranthene	206-44-0	50	µg/kg	<50	25 µg/kg	94.1	----	41	133	----	----
EP076HK: Pyrene	129-00-0	50	µg/kg	<50	25 µg/kg	94.1	----	40	137	----	----
EP076HK: Benz(a)anthracene	56-55-3	50	µg/kg	<50	25 µg/kg	91.7	----	42	123	----	----
EP076HK: Chrysene	218-01-9	50	µg/kg	<50	25 µg/kg	96.6	----	47	130	----	----
EP076HK: Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	25 µg/kg	94.6	----	40	134	----	----
EP076HK: Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	25 µg/kg	93.4	----	51	124	----	----
EP076HK: Benzo(a)pyrene	50-32-8	50	µg/kg	<50	25 µg/kg	84.1	----	38	146	----	----
EP076HK: Perylene	198-55-0	50	µg/kg	<50	25 µg/kg	# Not Determined	----	50	130	----	----
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	25 µg/kg	85.1	----	44	129	----	----
EP076HK: Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	25 µg/kg	91.5	----	46	130	----	----
EP076HK: Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	25 µg/kg	98.2	----	45	136	----	----
EP-076B: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 1588694)											
EP076HK: Phenol	108-95-2	500	µg/kg	<500	25 µg/kg	85.0	----	39	112	----	----
EP076HK: Hexachlorobenzene (HCB)	118-74-1	50	µg/kg	<50	25 µg/kg	88.9	----	52	132	----	----
EP076HK: Bis(2-ethylhexyl)phthalate	117-81-7	1000	µg/kg	<1000	25 µg/kg	91.3	----	74	131	----	----
Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 1598991)											
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: 1594699)											
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	100	----	85	115	----	----
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	102	----	85	115	----	----
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	95.8	----	85	115	----	----



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
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1586400)											
C9 - C16 Fraction	----	0.5	mg/L	<0.5	0.25 mg/L	54.7	----	17	170	----	----
C17 - C35 Fraction	----	0.5	mg/L	<0.5	0.5 mg/L	45.6	----	32	143	----	----
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1590797)											
C6 - C8 Fraction	----	0.02	mg/L	<0.02	0.15 mg/L	99.6	----	68	127	----	----
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 1594506)											
Benzene	71-43-2	5	µg/L	<5	10 µg/L	83.4	----	54	132	----	----
Toluene	108-88-3	5	µg/L	<5	10 µg/L	99.6	----	59	128	----	----
Ethylbenzene	100-41-4	5	µg/L	<5	10 µg/L	76.6	----	68	125	----	----
meta- & para-Xylene	108-38-3	10	µg/L	<10	20 µg/L	77.5	----	75	122	----	----
	106-42-3										
Styrene	100-42-5	5	µg/L	<5	10 µg/L	79.4	----	73	119	----	----
ortho-Xylene	95-47-6	5	µg/L	<5	10 µg/L	90.4	----	72	125	----	----
EP-074B: Oxygenated Compounds (QC Lot: 1594506)											
2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	87.8	----	63	126	----	----
EP-074E: Halogenated Aliphatics (QC Lot: 1594506)											
Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	94.5	----	67	125	----	----
Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	101	----	59	126	----	----
EP-074G: Trihalomethanes (THM) (QC Lot: 1594506)											
Chloroform	67-66-3	5	µg/L	<5	10 µg/L	99.2	----	68	123	----	----
Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	102	----	77	120	----	----
EP-075A: Phenols (QC Lot: 1594467)											
Phenol	108-95-2	2	µg/L	<2	5 µg/L	42.4	----	10	100	----	----
EP-075B: Polyaromatic Hydrocarbons (PAHs) (QC Lot: 1594467)											
Naphthalene	91-20-3	2	µg/L	<2	5 µg/L	74.6	----	48	102	----	----
Acenaphthylene	208-96-8	2	µg/L	<2	5 µg/L	71.4	----	43	110	----	----
Acenaphthene	83-32-9	2	µg/L	<2	5 µg/L	73.1	----	45	107	----	----
Fluorene	86-73-7	2	µg/L	<2	5 µg/L	75.9	----	51	104	----	----
Phenanthrene	85-01-8	2	µg/L	<2	5 µg/L	78.0	----	60	107	----	----
Anthracene	120-12-7	2	µg/L	<2	5 µg/L	83.4	----	58	105	----	----
Fluoranthene	206-44-0	2	µg/L	<2	5 µg/L	89.9	----	67	105	----	----
Pyrene	129-00-0	2	µg/L	<2	5 µg/L	92.9	----	65	105	----	----
Benz(a)anthracene	56-55-3	2	µg/L	<2	5 µg/L	91.6	----	64	106	----	----
Chrysene	218-01-9	2	µg/L	<2	5 µg/L	92.8	----	68	114	----	----
Benzo(b) & Benzo(k)fluoranthene	205-99-2	4	µg/L	<4	10 µg/L	95.2	----	53	104	----	----
	207-08-9										
Benzo(a)pyrene	50-32-8	2	µg/L	<2	5 µg/L	76.4	----	52	103	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	5 µg/L	89.4	----	45	107	----	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	5 µg/L	# 93.3	----	43	92	----	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	5 µg/L	95.2	----	42	102	----	----



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
EP-075C: Phthalate Esters (QC Lot: 1594467)												
Bis(2-ethylhexyl)phthalate		117-81-7	20	µg/L	<20	5 µg/L	84.6	----	0	226	----	----
EP-075G: Chlorinated Hydrocarbons (QC Lot: 1594467)												
Hexachlorobenzene (HCB)		118-74-1	4	µg/L	<4	5 µg/L	81.8	----	52	110	----	----

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: 1594701)										
HK1028964-001	L01 0.5M	EG020: Copper	7440-50-8	5 mg/kg	89.0	----	75	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	# Not Determined	----	75	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75	125	----	----
EG: Metals and Major Cations (QC Lot: 1594703)										
HK1028964-001	L01 0.5M	EG3060: Hexavalent Chromium	18540-29-9	40 mg/kg	77.9	----	75	125	----	----
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1588693)										
HK1028813-007	Anonymous	C9 - C16 Fraction	----	31 mg/kg	90.9	----	50	130	----	----
		C17 - C35 Fraction	----	75 mg/kg	88.8	----	50	130	----	----
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1588695)										
HK1028813-007	Anonymous	C6 - C8 Fraction	----	3 mg/kg	81.6	----	50	130	----	----
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1594449)										
HK1028964-003	L02 0.5M	C9 - C16 Fraction	----	31 mg/kg	77.0	----	50	130	----	----
		C17 - C35 Fraction	----	75 mg/kg	67.6	----	50	130	----	----
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1594451)										
HK1028964-003	L02 0.5M	C6 - C8 Fraction	----	3 mg/kg	95.7	----	50	130	----	----

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 (QC Lot: 1598991)											
HK1028703-001	Anonymous	EG050: Hexavalent Chromium	18540-29-9	0.5 mg/L	100	----	75	125	----	----	
EG: Metals and Major Cations - Filtered (QC Lot: 1594699)											
HK1028964-009	FIELD BK	EG020: Copper	7440-50-8	100 µg/L	102	----	75	125	----	----	
		EG020: Lead	7439-92-1	100 µg/L	101	----	75	125	----	----	
		EG020: Zinc	7440-66-6	100 µg/L	98.2	----	75	125	----	----	



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-080S: TPH(Volatile)/BTEX Surrogate			
Dibromofluoromethane	1868-53-7	80	120
Toluene-D8	2037-26-5	81	117
4-Bromofluorobenzene	460-00-4	74	121
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-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	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
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

Report No. B

HK1029120



CERTIFICATE OF ANALYSIS

Client	: ERM HONG KONG	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 13
Contact	: MR ANGUS CHOI	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1029120
Address	: 21/F, LINCOLN HOUSE, 979 KING'S ROAD, TAIKOO PLACE, ISLAND EAST, QUARRY BAY, 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 2271 3000	Telephone	: +852 2610 1044		
Facsimile	: +852 2723 5660	Facsimile	: +852 2610 2021		
Project	: XRL 823A 0125309	Quote number	: HK/1393a/2010	Date Samples Received	: 08-DEC-2010
Order number	: ----			Issue Date	: 15-DEC-2010
C-O-C number	: H010615			No. of samples received	: 7
Site	: SITE I & L			No. of samples analysed	: 7

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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 sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 15-DEC-2010

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

Specific comments for Work Order: **HK1029120**

Sample(s) were received in a chilled condition.

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

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

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

Client sampling date / time

Compound	CAS Number	LOR	Unit	L-01 3.0-3.45	L-01 4.5-4.95	L-02 3.0-3.45	I-01 3.0-3.45	I-01 3.0-3.45B
				[08-DEC-2010]	[08-DEC-2010]	[08-DEC-2010]	[08-DEC-2010]	[08-DEC-2010]
Compound	CAS Number	LOR	Unit	HK1029120-001	HK1029120-002	HK1029120-003	HK1029120-004	HK1029120-005
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103°C)	----	0.1	%	13.7	9.8	10.4	19.2	18.4
EG: Metals and Major Cations								
EG020: Copper	7440-50-8	1	mg/kg	3	58	14	6	4
EG020: Lead	7439-92-1	1	mg/kg	21	113	34	38	30
EG020: Zinc	7440-66-6	1	mg/kg	27	134	71	57	40
EG049: Trivalent Chromium	16065-83-1	1	mg/kg	3	17	8	8	4
EG3060: Hexavalent Chromium	18540-29-9	1	mg/kg	<1	<1	<1	<1	<1
EP-071HK: Total Petroleum Hydrocarbons (TPH)								
C6 - C8 Fraction	----	5	mg/kg	<5	<5	<5	<5	<5
C9 - C16 Fraction	----	200	mg/kg	<200	<200	<200	<200	<200
C17 - C35 Fraction	----	500	mg/kg	<500	<500	<500	<500	<500
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH)								
Benzene	71-43-2	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	108-88-3	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	100-41-4	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
meta- & para-Xylene	108-38-3	1.00	mg/kg	<1.00	<1.00	<1.00	<1.00	<1.00
	106-42-3							
Styrene	100-42-5	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
ortho-Xylene	95-47-6	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
EP-074B: Oxygenated Compounds								
2-Propanone (Acetone)	67-64-1	50	mg/kg	<50	<50	<50	<50	<50
2-Butanone (MEK)	78-93-3	5.0	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0
EP-074E: Halogenated Aliphatics								
Methylene chloride	75-09-2	2.5	mg/kg	<2.5	<2.5	<2.5	<2.5	<2.5
Trichloroethene	79-01-6	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethene	127-18-4	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
EP-074G: Trihalomethanes (THM)								
Chloroform	67-66-3	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	75-27-4	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
EP-074L: Methyl-tert-butyl Ether								
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
EP076HK: Naphthalene	91-20-3	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Acenaphthylene	208-96-8	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500



Sub-Matrix: SOIL				Client sample ID				
				L-01 3.0-3.45	L-01 4.5-4.95	L-02 3.0-3.45	I-01 3.0-3.45	I-01 3.0-3.45B
Client sampling date / time				[08-DEC-2010]	[08-DEC-2010]	[08-DEC-2010]	[08-DEC-2010]	[08-DEC-2010]
Compound	CAS Number	LOR	Unit	HK1029120-001	HK1029120-002	HK1029120-003	HK1029120-004	HK1029120-005
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
EP076HK: Acenaphthene	83-32-9	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Fluorene	86-73-7	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Phenanthrene	85-01-8	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Anthracene	120-12-7	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Fluoranthene	206-44-0	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Pyrene	129-00-0	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Benz(a)anthracene	56-55-3	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Chrysene	218-01-9	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Benzo(b)fluoranthene	205-99-2	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Benzo(k)fluoranthene	207-08-9	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Benzo(a)pyrene	50-32-8	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Perylene	198-55-0	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Indeno(1,2,3-cd)pyrene	193-39-5	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Dibenz(a,h)anthracene	53-70-3	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Benzo(g,h,i)perylene	191-24-2	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP-076B: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate								
EP076HK: Phenol	108-95-2	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
EP076HK: Hexachlorobenzene (HCB)	118-74-1	0.200	mg/kg	<0.200	<0.200	<0.200	<0.200	<0.200
EP076HK: Bis(2-ethylhexyl)phthalate	117-81-7	5.00	mg/kg	<5.00	<5.00	<5.00	<5.00	<5.00
EP-080S: TPH(Volatile)/BTEX Surrogate							Surrogate control limits listed at end of this report.	
Dibromofluoromethane	1868-53-7	0.1	%	98.4	98.5	90.6	91.6	95.6
Toluene-D8	2037-26-5	0.1	%	95.8	98.0	97.0	96.2	97.2
4-Bromofluorobenzene	460-00-4	0.1	%	114	113	112	112	113
EP-074S: VOC Surrogates							Surrogate control limits listed at end of this report.	
Dibromofluoromethane	1868-53-7	0.1	%	98.4	98.5	90.6	91.6	95.6
Toluene-D8	2037-26-5	0.1	%	95.8	98.0	97.0	96.2	97.2
4-Bromofluorobenzene	460-00-4	0.1	%	114	113	112	112	113
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
2-Fluorobiphenyl	321-60-8	0.1	%	103	101	96.0	104	84.4
4-Terphenyl-d14	1718-51-0	0.1	%	92.1	88.6	86.8	86.2	78.0



Sub-Matrix: SOIL			Client sample ID	I-01				
				4.5-4.95				
			Client sampling date / time	[08-DEC-2010]				
Compound	CAS Number	LOR	Unit	HK1029120-006				
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103°C)	----	0.1	%	13.1				
EG: Metals and Major Cations								
EG020: Copper	7440-50-8	1	mg/kg	27				
EG020: Lead	7439-92-1	1	mg/kg	52				
EG020: Zinc	7440-66-6	1	mg/kg	61				
EG049: Trivalent Chromium	16065-83-1	1	mg/kg	6				
EG3060: Hexavalent Chromium	18540-29-9	1	mg/kg	<1				
EP-071HK: Total Petroleum Hydrocarbons (TPH)								
C6 - C8 Fraction	----	5	mg/kg	<5				
C9 - C16 Fraction	----	200	mg/kg	<200				
C17 - C35 Fraction	----	500	mg/kg	<500				
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH)								
Benzene	71-43-2	0.20	mg/kg	<0.20				
Toluene	108-88-3	0.50	mg/kg	<0.50				
Ethylbenzene	100-41-4	0.50	mg/kg	<0.50				
meta- & para-Xylene	108-38-3 106-42-3	1.00	mg/kg	<1.00				
Styrene	100-42-5	0.50	mg/kg	<0.50				
ortho-Xylene	95-47-6	0.50	mg/kg	<0.50				
EP-074B: Oxygenated Compounds								
2-Propanone (Acetone)	67-64-1	50	mg/kg	<50				
2-Butanone (MEK)	78-93-3	5.0	mg/kg	<5.0				
EP-074E: Halogenated Aliphatics								
Methylene chloride	75-09-2	2.5	mg/kg	<2.5				
Trichloroethene	79-01-6	0.50	mg/kg	<0.50				
Tetrachloroethene	127-18-4	0.50	mg/kg	<0.50				
EP-074G: Trihalomethanes (THM)								
Chloroform	67-66-3	0.50	mg/kg	<0.50				
Bromodichloromethane	75-27-4	0.50	mg/kg	<0.50				
EP-074L: Methyl-tert-butyl Ether								
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.50	mg/kg	<0.50				
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
EP076HK: Naphthalene	91-20-3	0.500	mg/kg	<0.500				
EP076HK: Acenaphthylene	208-96-8	0.500	mg/kg	<0.500				
EP076HK: Acenaphthene	83-32-9	0.500	mg/kg	<0.500				
EP076HK: Fluorene	86-73-7	0.500	mg/kg	<0.500				



Sub-Matrix: SOIL				Client sample ID	I-01				
					4.5-4.95				
				Client sampling date / time	[08-DEC-2010]				
Compound	CAS Number	LOR	Unit		HK1029120-006				
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued									
EP076HK: Phenanthrene	85-01-8	0.500	mg/kg		<0.500				
EP076HK: Anthracene	120-12-7	0.500	mg/kg		<0.500				
EP076HK: Fluoranthene	206-44-0	0.500	mg/kg		<0.500				
EP076HK: Pyrene	129-00-0	0.500	mg/kg		<0.500				
EP076HK: Benz(a)anthracene	56-55-3	0.500	mg/kg		<0.500				
EP076HK: Chrysene	218-01-9	0.500	mg/kg		<0.500				
EP076HK: Benzo(b)fluoranthene	205-99-2	0.500	mg/kg		<0.500				
EP076HK: Benzo(k)fluoranthene	207-08-9	0.500	mg/kg		<0.500				
EP076HK: Benzo(a)pyrene	50-32-8	0.500	mg/kg		<0.500				
EP076HK: Perylene	198-55-0	0.500	mg/kg		<0.500				
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	0.500	mg/kg		<0.500				
EP076HK: Dibenzo(a,h)anthracene	53-70-3	0.500	mg/kg		<0.500				
EP076HK: Benzo(g,h,i)perylene	191-24-2	0.500	mg/kg		<0.500				
EP-076B: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate									
EP076HK: Phenol	108-95-2	0.50	mg/kg		<0.50				
EP076HK: Hexachlorobenzene (HCB)	118-74-1	0.200	mg/kg		<0.200				
EP076HK: Bis(2-ethylhexyl)phthalate	117-81-7	5.00	mg/kg		<5.00				
EP-080S: TPH(Volatile)/BTEX Surrogate								Surrogate control limits listed at end of this report.	
Dibromofluoromethane	1868-53-7	0.1	%		81.8				
Toluene-D8	2037-26-5	0.1	%		96.9				
4-Bromofluorobenzene	460-00-4	0.1	%		106				
EP-074S: VOC Surrogates								Surrogate control limits listed at end of this report.	
Dibromofluoromethane	1868-53-7	0.1	%		81.8				
Toluene-D8	2037-26-5	0.1	%		96.9				
4-Bromofluorobenzene	460-00-4	0.1	%		106				
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								Surrogate control limits listed at end of this report.	
2-Fluorobiphenyl	321-60-8	0.1	%		89.0				
4-Terphenyl-d14	1718-51-0	0.1	%		82.4				



Sub-Matrix: WATER				Client sample ID	TRIP BLANK				
				Client sampling date / time	[09-DEC-2010]				
Compound	CAS Number	LOR	Unit		HK1029120-007				
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH)									
Benzene	71-43-2	5	µg/L		<5				
Toluene	108-88-3	5	µg/L		<5				
Ethylbenzene	100-41-4	5	µg/L		<5				
meta- & para-Xylene	108-38-3	10	µg/L		<10				
	106-42-3								
Styrene	100-42-5	5	µg/L		<5				
ortho-Xylene	95-47-6	5	µg/L		<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-074S: VOC Surrogates								Surrogate control limits listed at end of this report.	
Dibromofluoromethane	1868-53-7	0.1	%		99.4				
Toluene-D8	2037-26-5	0.1	%		97.9				
4-Bromofluorobenzene	460-00-4	0.1	%		115				



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: 1595937)								
HK1028981-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	5.8	5.7	2.6
HK1029149-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	27.2	28.1	3.3
EG: Metals and Major Cations (QC Lot: 1595868)								
HK1029120-002	L-01 4.5-4.95	EG020: Copper	7440-50-8	1	mg/kg	58	68	16.8
		EG020: Lead	7439-92-1	1	mg/kg	113	113	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	134	133	0.8
EG: Metals and Major Cations (QC Lot: 1600147)								
HK1028864-002	Anonymous	EG3060: Hexavalent Chromium	18540-29-9	1	mg/kg	<1	<1	0.0
HK1029120-005	I-01 3.0-3.45B	EG3060: Hexavalent Chromium	18540-29-9	1	mg/kg	<1	<1	0.0
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1594451)								
HK1028964-002	Anonymous	C6 - C8 Fraction	----	5	mg/kg	<5	<5	0.0
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1596052)								
HK1029120-001	L-01 3.0-3.45	C9 - C16 Fraction	----	200	mg/kg	<200	<200	0.0
		C17 - C35 Fraction	----	500	mg/kg	<500	<500	0.0
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1596497)								
HK1029120-001	L-01 3.0-3.45	C6 - C8 Fraction	----	5	mg/kg	<5	<5	0.0
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 1596496)								
HK1029120-001	L-01 3.0-3.45	Benzene	71-43-2	0.20	mg/kg	<0.20	<0.20	0.0
		Toluene	108-88-3	0.50	mg/kg	<0.50	<0.50	0.0
		Ethylbenzene	100-41-4	0.50	mg/kg	<0.50	<0.50	0.0
		Styrene	100-42-5	0.50	mg/kg	<0.50	<0.50	0.0
		ortho-Xylene	95-47-6	0.50	mg/kg	<0.50	<0.50	0.0
		meta- & para-Xylene	108-38-3	1.00	mg/kg	<1.00	<1.00	0.0
EP-074B: Oxygenated Compounds (QC Lot: 1596496)								
HK1029120-001	L-01 3.0-3.45	2-Butanone (MEK)	78-93-3	5.0	mg/kg	<5.0	<5.0	0.0
		2-Propanone (Acetone)	67-64-1	50	mg/kg	<50	<50	0.0
EP-074E: Halogenated Aliphatics (QC Lot: 1596496)								
HK1029120-001	L-01 3.0-3.45	Trichloroethene	79-01-6	0.50	mg/kg	<0.50	<0.50	0.0
		Tetrachloroethene	127-18-4	0.50	mg/kg	<0.50	<0.50	0.0
		Methylene chloride	75-09-2	2.5	mg/kg	<2.5	<2.5	0.0
EP-074G: Trihalomethanes (THM) (QC Lot: 1596496)								
HK1029120-001	L-01 3.0-3.45	Chloroform	67-66-3	0.50	mg/kg	<0.50	<0.50	0.0
		Bromodichloromethane	75-27-4	0.50	mg/kg	<0.50	<0.50	0.0
EP-074L: Methyl-tert-butyl Ether (QC Lot: 1596496)								
HK1029120-001	L-01 3.0-3.45	Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.50	mg/kg	<0.50	<0.50	0.0
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1594456)								
HK1028876-001	Anonymous	EP076HK: Perylene	198-55-0	50	µg/kg	<50	<50	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-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1594456) - Continued								
HK1028876-001	Anonymous	EP076HK: Naphthalene	91-20-3	500	µg/kg	<500	<500	0.0
		EP076HK: Acenaphthylene	208-96-8	500	µg/kg	<500	<500	0.0
		EP076HK: Acenaphthene	83-32-9	500	µg/kg	<500	<500	0.0
		EP076HK: Fluorene	86-73-7	500	µg/kg	<500	<500	0.0
		EP076HK: Phenanthrene	85-01-8	500	µg/kg	<500	<500	0.0
		EP076HK: Anthracene	120-12-7	500	µg/kg	<500	<500	0.0
		EP076HK: Fluoranthene	206-44-0	500	µg/kg	<500	<500	0.0
		EP076HK: Pyrene	129-00-0	500	µg/kg	<500	<500	0.0
		EP076HK: Benz(a)anthracene	56-55-3	500	µg/kg	<500	<500	0.0
		EP076HK: Chrysene	218-01-9	500	µg/kg	<500	<500	0.0
		EP076HK: Benzo(b)fluoranthene	205-99-2	500	µg/kg	<500	<500	0.0
		EP076HK: Benzo(k)fluoranthene	207-08-9	500	µg/kg	<500	<500	0.0
		EP076HK: Benzo(a)pyrene	50-32-8	500	µg/kg	<500	<500	0.0
		EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	500	µg/kg	<500	<500	0.0
		EP076HK: Dibenz(a,h)anthracene	53-70-3	500	µg/kg	<500	<500	0.0
		EP076HK: Benzo(g,h,i)perylene	191-24-2	500	µg/kg	<500	<500	0.0
EP-076B: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 1594456)								
HK1028876-001	Anonymous	EP076HK: Hexachlorobenzene (HCB)	118-74-1	200	µg/kg	<200	<200	0.0
		EP076HK: Phenol	108-95-2	500	µg/kg	<500	<500	0.0
		EP076HK: Bis(2-ethylhexyl)phthalate	117-81-7	5000	µg/kg	<5000	<5000	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 (%)
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 1594506)								
HK1028964-009	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: 1594506)								
HK1028964-009	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: 1594506)								
HK1028964-009	Anonymous	Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0
		Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0
		Methylene chloride	75-09-2	50	µg/L	<50	<50	0.0
EP-074G: Trihalomethanes (THM) (QC Lot: 1594506)								
HK1028964-009	Anonymous	Chloroform	67-66-3	5	µg/L	<5	<5	0.0
		Bromodichloromethane	75-27-4	5	µg/L	<5	<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 (%)
EP-074L: Methyl-tert-butyl Ether (QC Lot: 1594506)								
HK1028964-009	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						
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: 1595868)											
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	92.1	----	85	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	93.4	----	85	115	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	104	----	85	115	----	----
EG: Metals and Major Cations (QC Lot: 1600147)											
EG3060: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	40 mg/kg	108	----	85	115	----	----
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1594451)											
C6 - C8 Fraction	----	5	mg/kg	<5	3 mg/kg	79.6	----	74	129	----	----
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1596052)											
C9 - C16 Fraction	----	200	mg/kg	<200	31 mg/kg	89.2	----	57	104	----	----
C17 - C35 Fraction	----	500	mg/kg	<500	75 mg/kg	72.7	----	54	102	----	----
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1596497)											
C6 - C8 Fraction	----	5	mg/kg	<5	3 mg/kg	85.3	----	74	129	----	----
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 1596496)											
Benzene	71-43-2	0.04	mg/kg	<0.04	0.16 mg/kg	81.2	----	78	115	----	----
Toluene	108-88-3	0.04	mg/kg	<0.04	0.16 mg/kg	86.2	----	74	118	----	----
Ethylbenzene	100-41-4	0.04	mg/kg	<0.04	0.16 mg/kg	108	----	75	121	----	----
meta- & para-Xylene	108-38-3	0.08	mg/kg	<0.08	0.32 mg/kg	106	----	80	116	----	----
	106-42-3										
Styrene	100-42-5	0.04	mg/kg	<0.04	0.16 mg/kg	98.6	----	74	116	----	----
ortho-Xylene	95-47-6	0.04	mg/kg	<0.04	0.16 mg/kg	111	----	70	127	----	----
EP-074B: Oxygenated Compounds (QC Lot: 1596496)											
2-Propanone (Acetone)	67-64-1	5.0	mg/kg	<5	----	----	----	----	----	----	----
2-Butanone (MEK)	78-93-3	0.4	mg/kg	<0.4	1.6 mg/kg	88.1	----	64	132	----	----
EP-074E: Halogenated Aliphatics (QC Lot: 1596496)											
Methylene chloride	75-09-2	5.0	mg/kg	<5	----	----	----	----	----	----	----
Trichloroethene	79-01-6	0.04	mg/kg	<0.04	0.16 mg/kg	94.7	----	83	111	----	----
Tetrachloroethene	127-18-4	0.04	mg/kg	<0.04	0.16 mg/kg	94.6	----	74	124	----	----
EP-074G: Trihalomethanes (THM) (QC Lot: 1596496)											
Chloroform	67-66-3	0.04	mg/kg	<0.04	0.16 mg/kg	98.5	----	73	119	----	----
Bromodichloromethane	75-27-4	0.04	mg/kg	<0.04	0.16 mg/kg	107	----	79	109	----	----
EP-074L: Methyl-tert-butyl Ether (QC Lot: 1596496)											
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	mg/kg	<0.50	----	----	----	----	----	----	----



Matrix: SOIL		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-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1594456)											
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	108	----	38	125	----	----
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	106	----	42	125	----	----
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	111	----	45	120	----	----
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	111	----	38	133	----	----
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	93.8	----	41	126	----	----
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	107	----	45	115	----	----
EP076HK: Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	113	----	41	133	----	----
EP076HK: Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	113	----	40	137	----	----
EP076HK: Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	81.2	----	42	123	----	----
EP076HK: Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	105	----	47	130	----	----
EP076HK: Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	115	----	40	134	----	----
EP076HK: Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	109	----	51	124	----	----
EP076HK: Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	95.8	----	38	146	----	----
EP076HK: Perylene	198-55-0	50	µg/kg	<50	500 µg/kg	# Not Determined	----	50	130	----	----
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	105	----	44	129	----	----
EP076HK: Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	101	----	46	130	----	----
EP076HK: Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	102	----	45	136	----	----
EP-076B: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 1594456)											
EP076HK: Phenol	108-95-2	500	µg/kg	<500	250 µg/kg	54.3	----	39	112	----	----
EP076HK: Hexachlorobenzene (HCB)	118-74-1	50	µg/kg	<50	250 µg/kg	116	----	52	132	----	----
EP076HK: Bis(2-ethylhexyl)phthalate	117-81-7	1000	µg/kg	<1000	250 µg/kg	87.8	----	74	131	----	----
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-074A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 1594506)											
Benzene	71-43-2	5	µg/L	<5	10 µg/L	83.4	----	54	132	----	----
Toluene	108-88-3	5	µg/L	<5	10 µg/L	99.6	----	59	128	----	----
Ethylbenzene	100-41-4	5	µg/L	<5	10 µg/L	76.6	----	68	125	----	----
meta- & para-Xylene	108-38-3	10	µg/L	<10	20 µg/L	77.5	----	75	122	----	----
	106-42-3										
Styrene	100-42-5	5	µg/L	<5	10 µg/L	79.4	----	73	119	----	----
ortho-Xylene	95-47-6	5	µg/L	<5	10 µg/L	90.4	----	72	125	----	----
EP-074B: Oxygenated Compounds (QC Lot: 1594506)											
2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	87.8	----	63	126	----	----
EP-074E: Halogenated Aliphatics (QC Lot: 1594506)											
Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	94.5	----	67	125	----	----
Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	101	----	59	126	----	----
EP-074G: Trihalomethanes (THM) (QC Lot: 1594506)											
Chloroform	67-66-3	5	µg/L	<5	10 µg/L	99.2	----	68	123	----	----



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-074G: Trihalomethanes (THM) (QC Lot: 1594506) - Continued											
Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	102	----	77	120	----	----

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: 1595868)										
HK1029120-001	L-01 3.0-3.45	EG020: Copper	7440-50-8	5 mg/kg	85.7	----	75	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	82.3	----	75	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75	125	----	----
EG: Metals and Major Cations (QC Lot: 1600147)										
HK1028864-001	Anonymous	EG3060: Hexavalent Chromium	18540-29-9	40 mg/kg	111	----	75	125	----	----
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1594451)										
HK1028964-003	Anonymous	C6 - C8 Fraction	----	3 mg/kg	95.7	----	50	130	----	----
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1596052)										
HK1029120-006	I-01 4.5-4.95	C9 - C16 Fraction	----	31 mg/kg	95.1	----	50	130	----	----
		C17 - C35 Fraction	----	75 mg/kg	107	----	50	130	----	----
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1596497)										
HK1029120-006	I-01 4.5-4.95	C6 - C8 Fraction	----	3 mg/kg	65.0	----	50	130	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-080S: TPH(Volatile)/BTEX Surrogate			
Dibromofluoromethane	1868-53-7	80	120
Toluene-D8	2037-26-5	81	117
4-Bromofluorobenzene	460-00-4	74	121
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-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
Sub-Matrix: WATER		Recovery Limits (%)	



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

Report No. C

HK1029328



CERTIFICATE OF ANALYSIS

Client	: ERM HONG KONG	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 13
Contact	: MR ANGUS CHOI	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1029328
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Telephone	: +852 2271 3000	Telephone	: +852 2610 1044		
Facsimile	: +852 2723 5660	Facsimile	: +852 2610 2021		
Project	: XRL 823A 0125309	Quote number	: HK/1393a/2010	Date Samples Received	: 09-DEC-2010
Order number	: ----			Issue Date	: 16-DEC-2010
C-O-C number	: H010614			No. of samples received	: 5
Site	: SITE I & L			No. of samples analysed	: 5

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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 sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 16-DEC-2010

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

Specific comments for Work Order: **HK1029328**

Sample(s) were received in a chilled condition.

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

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

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

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



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

				L-02 4.5-4.95M [09-DEC-2010]	I-02 3.0-3.45M [09-DEC-2010]	I-02 4.5-4.95M [09-DEC-2010]		
Compound	CAS Number	LOR	Unit	HK1029328-002	HK1029328-003	HK1029328-004		
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103°C)	----	0.1	%	8.9	11.6	11.3		
EG: Metals and Major Cations								
EG020: Copper	7440-50-8	1	mg/kg	24	114	49		
EG020: Lead	7439-92-1	1	mg/kg	51	49	89		
EG020: Zinc	7440-66-6	1	mg/kg	188	116	205		
EG049: Trivalent Chromium	16065-83-1	1	mg/kg	8	6	10		
EG3060: Hexavalent Chromium	18540-29-9	1	mg/kg	<1	<1	<1		
EP-071HK: Total Petroleum Hydrocarbons (TPH)								
C6 - C8 Fraction	----	5	mg/kg	<5	<5	<5		
C9 - C16 Fraction	----	200	mg/kg	<200	<200	<200		
C17 - C35 Fraction	----	500	mg/kg	<500	<500	<500		
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH)								
Benzene	71-43-2	0.20	mg/kg	<0.20	<0.20	<0.20		
Toluene	108-88-3	0.50	mg/kg	<0.50	<0.50	<0.50		
Ethylbenzene	100-41-4	0.50	mg/kg	<0.50	<0.50	<0.50		
meta- & para-Xylene	108-38-3	1.00	mg/kg	<1.00	<1.00	<1.00		
	106-42-3							
Styrene	100-42-5	0.50	mg/kg	<0.50	<0.50	<0.50		
ortho-Xylene	95-47-6	0.50	mg/kg	<0.50	<0.50	<0.50		
EP-074B: Oxygenated Compounds								
2-Propanone (Acetone)	67-64-1	50	mg/kg	<50	<50	<50		
2-Butanone (MEK)	78-93-3	5.0	mg/kg	<5.0	<5.0	<5.0		
EP-074E: Halogenated Aliphatics								
Methylene chloride	75-09-2	2.5	mg/kg	<2.5	<2.5	<2.5		
Trichloroethene	79-01-6	0.50	mg/kg	<0.50	<0.50	<0.50		
Tetrachloroethene	127-18-4	0.50	mg/kg	<0.50	<0.50	<0.50		
EP-074G: Trihalomethanes (THM)								
Chloroform	67-66-3	0.50	mg/kg	<0.50	<0.50	<0.50		
Bromodichloromethane	75-27-4	0.50	mg/kg	<0.50	<0.50	<0.50		
EP-074L: Methyl-tert-butyl Ether								
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.50	mg/kg	<0.50	<0.50	<0.50		
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
EP076HK: Naphthalene	91-20-3	0.500	mg/kg	<0.500	<0.500	<0.500		
EP076HK: Acenaphthylene	208-96-8	0.500	mg/kg	<0.500	<0.500	<0.500		



Sub-Matrix: SOIL				Client sample ID				
					L-02 4.5-4.95M	I-02 3.0-3.45M	I-02 4.5-4.95M	
Client sampling date / time					[09-DEC-2010]	[09-DEC-2010]	[09-DEC-2010]	
Compound	CAS Number	LOR	Unit		HK1029328-002	HK1029328-003	HK1029328-004	
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
EP076HK: Acenaphthene	83-32-9	0.500	mg/kg		<0.500	<0.500	<0.500	
EP076HK: Fluorene	86-73-7	0.500	mg/kg		<0.500	<0.500	<0.500	
EP076HK: Phenanthrene	85-01-8	0.500	mg/kg		<0.500	<0.500	<0.500	
EP076HK: Anthracene	120-12-7	0.500	mg/kg		<0.500	<0.500	<0.500	
EP076HK: Fluoranthene	206-44-0	0.500	mg/kg		<0.500	<0.500	<0.500	
EP076HK: Pyrene	129-00-0	0.500	mg/kg		<0.500	<0.500	<0.500	
EP076HK: Benz(a)anthracene	56-55-3	0.500	mg/kg		<0.500	<0.500	<0.500	
EP076HK: Chrysene	218-01-9	0.500	mg/kg		<0.500	<0.500	<0.500	
EP076HK: Benzo(b)fluoranthene	205-99-2	0.500	mg/kg		<0.500	<0.500	<0.500	
EP076HK: Benzo(k)fluoranthene	207-08-9	0.500	mg/kg		<0.500	<0.500	<0.500	
EP076HK: Benzo(a)pyrene	50-32-8	0.500	mg/kg		<0.500	<0.500	<0.500	
EP076HK: Perylene	198-55-0	0.500	mg/kg		<0.500	<0.500	<0.500	
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	0.500	mg/kg		<0.500	<0.500	<0.500	
EP076HK: Dibenz(a,h)anthracene	53-70-3	0.500	mg/kg		<0.500	<0.500	<0.500	
EP076HK: Benzo(g,h,i)perylene	191-24-2	0.500	mg/kg		<0.500	<0.500	<0.500	
EP-076B: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate								
EP076HK: Phenol	108-95-2	0.50	mg/kg		<0.50	<0.50	<0.50	
EP076HK: Hexachlorobenzene (HCB)	118-74-1	0.200	mg/kg		<0.200	<0.200	<0.200	
EP076HK: Bis(2-ethylhexyl)phthalate	117-81-7	5.00	mg/kg		<5.00	<5.00	<5.00	
EP-080S: TPH(Volatile)/BTEX Surrogate					Surrogate control limits listed at end of this report.			
Dibromofluoromethane	1868-53-7	0.1	%		95.7	95.5	82.6	
Toluene-D8	2037-26-5	0.1	%		97.5	96.2	95.7	
4-Bromofluorobenzene	460-00-4	0.1	%		109	114	106	
EP-074S: VOC Surrogates					Surrogate control limits listed at end of this report.			
Dibromofluoromethane	1868-53-7	0.1	%		95.7	95.5	82.6	
Toluene-D8	2037-26-5	0.1	%		97.5	96.2	95.7	
4-Bromofluorobenzene	460-00-4	0.1	%		109	114	106	
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates					Surrogate control limits listed at end of this report.			
2-Fluorobiphenyl	321-60-8	0.1	%		91.6	93.8	97.6	
4-Terphenyl-d14	1718-51-0	0.1	%		85.2	86.6	86.1	



Sub-Matrix: WATER				Client sample ID	TRIP BLANK	EQ BLK			
				Client sampling date / time	[09-DEC-2010]	[09-DEC-2010]			
Compound	CAS Number	LOR	Unit		HK1029328-001	HK1029328-005			
EG: Metals and Major Cations									
EG049: Trivalent Chromium	16065-83-1	20	µg/L		----	<20			
EG050: Hexavalent Chromium	18540-29-9	20	µg/L		----	<20			
EG: Metals and Major Cations - Filtered									
EG020: Copper	7440-50-8	1	µg/L		----	4			
EG020: Lead	7439-92-1	1	µg/L		----	<1			
EG020: Zinc	7440-66-6	10	µg/L		----	24			
EP-071HK: Total Petroleum Hydrocarbons (TPH)									
C6 - C8 Fraction	----	20	µg/L		----	<20			
C9 - C16 Fraction	----	500	µg/L		----	<500			
C17 - C35 Fraction	----	500	µg/L		----	<500			
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	10	µg/L		<10	<10			
	106-42-3								
Styrene	100-42-5	5	µg/L		<5	<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	<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			
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			



Sub-Matrix: WATER				Client sample ID	TRIP BLANK	EQ BLK			
				Client sampling date / time	[09-DEC-2010]	[09-DEC-2010]			
Compound	CAS Number	LOR	Unit		HK1029328-001	HK1029328-005			
EP-075B: Polyaromatic Hydrocarbons (PAHs) - Continued									
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			
Benz(a)anthracene	56-55-3	2	µg/L		----	<2			
Chrysene	218-01-9	2	µg/L		----	<2			
Benzo(b) & Benzo(k)fluoranthene	205-99-2	4	µg/L		----	<4			
	207-08-9								
Benzo(a)pyrene	50-32-8	2	µg/L		----	<2			
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L		----	<2			
Dibenz(a,h)anthracene	53-70-3	2	µg/L		----	<2			
Benzo(g,h,i)perylene	191-24-2	2	µg/L		----	<2			
EP-075C: Phthalate Esters									
Bis(2-ethylhexyl)phthalate	117-81-7	20	µg/L		----	<20			
EP-075G: Chlorinated Hydrocarbons									
Hexachlorobenzene (HCB)	118-74-1	4	µg/L		----	<4			
EP-080S: TPH(Volatile)/BTEX Surrogate							Surrogate control limits listed at end of this report.		
Dibromofluoromethane	1868-53-7	0.1	%		----	108			
Toluene-D8	2037-26-5	0.1	%		----	97.2			
4-Bromofluorobenzene	460-00-4	0.1	%		----	113			
EP-074S: VOC Surrogates							Surrogate control limits listed at end of this report.		
Dibromofluoromethane	1868-53-7	0.1	%		106	108			
Toluene-D8	2037-26-5	0.1	%		97.4	97.2			
4-Bromofluorobenzene	460-00-4	0.1	%		111	113			
EP-075S: Acid Extractable Surrogates							Surrogate control limits listed at end of this report.		
2-Fluorophenol	367-12-4	0.1	%		----	33.7			
Phenol-d6	13127-88-3	0.1	%		----	27.2			
2,4,6-Tribromophenol	118-79-6	0.1	%		----	28.9			
EP-075T: Base/Neutral Extractable Surrogates							Surrogate control limits listed at end of this report.		
Nitrobenzene -d5	4165-60-0	0.1	%		----	77.5			
2-Fluorobiphenyl	321-60-8	0.1	%		----	68.5			
4-Terphenyl-d14	1718-51-0	0.1	%		----	98.5			



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: 1597334)								
HK1029227-002	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	40.6	40.9	0.6
HK1029234-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	44.2	43.9	0.7
EG: Metals and Major Cations (QC Lot: 1600147)								
HK1028864-002	Anonymous	EG3060: Hexavalent Chromium	18540-29-9	1	mg/kg	<1	<1	0.0
HK1029120-005	Anonymous	EG3060: Hexavalent Chromium	18540-29-9	1	mg/kg	<1	<1	0.0
EG: Metals and Major Cations (QC Lot: 1601178)								
HK1029328-002	L-02 4.5-4.95M	EG020: Copper	7440-50-8	1	mg/kg	24	24	0.0
		EG020: Lead	7439-92-1	1	mg/kg	51	55	6.2
		EG020: Zinc	7440-66-6	1	mg/kg	188	195	3.6
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1596052)								
HK1029120-001	Anonymous	C9 - C16 Fraction	----	200	mg/kg	<200	<200	0.0
		C17 - C35 Fraction	----	500	mg/kg	<500	<500	0.0
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1596497)								
HK1029120-001	Anonymous	C6 - C8 Fraction	----	5	mg/kg	<5	<5	0.0
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 1596496)								
HK1029120-001	Anonymous	Benzene	71-43-2	0.20	mg/kg	<0.20	<0.20	0.0
		Toluene	108-88-3	0.50	mg/kg	<0.50	<0.50	0.0
		Ethylbenzene	100-41-4	0.50	mg/kg	<0.50	<0.50	0.0
		Styrene	100-42-5	0.50	mg/kg	<0.50	<0.50	0.0
		ortho-Xylene	95-47-6	0.50	mg/kg	<0.50	<0.50	0.0
		meta- & para-Xylene	108-38-3	1.00	mg/kg	<1.00	<1.00	0.0
		106-42-3						
EP-074B: Oxygenated Compounds (QC Lot: 1596496)								
HK1029120-001	Anonymous	2-Butanone (MEK)	78-93-3	5.0	mg/kg	<5.0	<5.0	0.0
		2-Propanone (Acetone)	67-64-1	50	mg/kg	<50	<50	0.0
EP-074E: Halogenated Aliphatics (QC Lot: 1596496)								
HK1029120-001	Anonymous	Trichloroethene	79-01-6	0.50	mg/kg	<0.50	<0.50	0.0
		Tetrachloroethene	127-18-4	0.50	mg/kg	<0.50	<0.50	0.0
		Methylene chloride	75-09-2	2.5	mg/kg	<2.5	<2.5	0.0
EP-074G: Trihalomethanes (THM) (QC Lot: 1596496)								
HK1029120-001	Anonymous	Chloroform	67-66-3	0.50	mg/kg	<0.50	<0.50	0.0
		Bromodichloromethane	75-27-4	0.50	mg/kg	<0.50	<0.50	0.0
EP-074L: Methyl-tert-butyl Ether (QC Lot: 1596496)								
HK1029120-001	Anonymous	Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.50	mg/kg	<0.50	<0.50	0.0
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1594456)								
HK1028876-001	Anonymous	EP076HK: Perylene	198-55-0	50	µg/kg	<50	<50	0.0
		EP076HK: Naphthalene	91-20-3	500	µg/kg	<500	<500	0.0
		EP076HK: Acenaphthylene	208-96-8	500	µg/kg	<500	<500	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-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1594456) - Continued								
HK1028876-001	Anonymous	EP076HK: Acenaphthene	83-32-9	500	µg/kg	<500	<500	0.0
		EP076HK: Fluorene	86-73-7	500	µg/kg	<500	<500	0.0
		EP076HK: Phenanthrene	85-01-8	500	µg/kg	<500	<500	0.0
		EP076HK: Anthracene	120-12-7	500	µg/kg	<500	<500	0.0
		EP076HK: Fluoranthene	206-44-0	500	µg/kg	<500	<500	0.0
		EP076HK: Pyrene	129-00-0	500	µg/kg	<500	<500	0.0
		EP076HK: Benz(a)anthracene	56-55-3	500	µg/kg	<500	<500	0.0
		EP076HK: Chrysene	218-01-9	500	µg/kg	<500	<500	0.0
		EP076HK: Benzo(b)fluoranthene	205-99-2	500	µg/kg	<500	<500	0.0
		EP076HK: Benzo(k)fluoranthene	207-08-9	500	µg/kg	<500	<500	0.0
		EP076HK: Benzo(a)pyrene	50-32-8	500	µg/kg	<500	<500	0.0
		EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	500	µg/kg	<500	<500	0.0
		EP076HK: Dibenz(a,h)anthracene	53-70-3	500	µg/kg	<500	<500	0.0
		EP076HK: Benzo(g,h,i)perylene	191-24-2	500	µg/kg	<500	<500	0.0
EP-076B: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 1594456)								
HK1028876-001	Anonymous	EP076HK: Hexachlorobenzene (HCB)	118-74-1	200	µg/kg	<200	<200	0.0
		EP076HK: Phenol	108-95-2	500	µg/kg	<500	<500	0.0
		EP076HK: Bis(2-ethylhexyl)phthalate	117-81-7	5000	µg/kg	<5000	<5000	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 (QC Lot: 1598991)								
HK1028703-002	Anonymous	EG050: Hexavalent Chromium	18540-29-9	0.02	mg/L	<0.02	<0.02	0.0
EG: Metals and Major Cations - Filtered (QC Lot: 1597972)								
HK1028989-004	Anonymous	EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1590797)								
HK1028813-001	Anonymous	C6 - C8 Fraction	----	0.02	mg/L	<0.02	<0.02	0.0
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 1594506)								
HK1028964-009	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: 1594506)								
HK1028964-009	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: 1594506)								



Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-074E: Halogenated Aliphatics (QC Lot: 1594506) - Continued								
HK1028964-009	Anonymous	Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0
		Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0
		Methylene chloride	75-09-2	50	µg/L	<50	<50	0.0
EP-074G: Trihalomethanes (THM) (QC Lot: 1594506)								
HK1028964-009	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: 1594506)								
HK1028964-009	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					
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: 1600147)											
EG3060: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	40 mg/kg	108	----	85	115	----	----
EG: Metals and Major Cations (QC Lot: 1601178)											
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	113	----	85	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	92.0	----	85	115	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	110	----	85	115	----	----
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1596052)											
C9 - C16 Fraction	----	200	mg/kg	<200	31 mg/kg	89.2	----	57	104	----	----
C17 - C35 Fraction	----	500	mg/kg	<500	75 mg/kg	72.7	----	54	102	----	----
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1596497)											
C6 - C8 Fraction	----	5	mg/kg	<5	3 mg/kg	85.3	----	74	129	----	----
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 1596496)											
Benzene	71-43-2	0.04	mg/kg	<0.04	0.16 mg/kg	81.2	----	78	115	----	----
Toluene	108-88-3	0.04	mg/kg	<0.04	0.16 mg/kg	86.2	----	74	118	----	----
Ethylbenzene	100-41-4	0.04	mg/kg	<0.04	0.16 mg/kg	108	----	75	121	----	----
meta- & para-Xylene	108-38-3	0.08	mg/kg	<0.08	0.32 mg/kg	106	----	80	116	----	----
	106-42-3										
Styrene	100-42-5	0.04	mg/kg	<0.04	0.16 mg/kg	98.6	----	74	116	----	----
ortho-Xylene	95-47-6	0.04	mg/kg	<0.04	0.16 mg/kg	111	----	70	127	----	----
EP-074B: Oxygenated Compounds (QC Lot: 1596496)											
2-Propanone (Acetone)	67-64-1	5.0	mg/kg	<5	----	----	----	----	----	----	----
2-Butanone (MEK)	78-93-3	0.4	mg/kg	<0.4	1.6 mg/kg	88.1	----	64	132	----	----
EP-074E: Halogenated Aliphatics (QC Lot: 1596496)											
Methylene chloride	75-09-2	5.0	mg/kg	<5	----	----	----	----	----	----	----
Trichloroethene	79-01-6	0.04	mg/kg	<0.04	0.16 mg/kg	94.7	----	83	111	----	----
Tetrachloroethene	127-18-4	0.04	mg/kg	<0.04	0.16 mg/kg	94.6	----	74	124	----	----



Matrix: SOIL		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-074G: Trihalomethanes (THM) (QC Lot: 1596496)											
Chloroform	67-66-3	0.04	mg/kg	<0.04	0.16 mg/kg	98.5	----	73	119	----	----
Bromodichloromethane	75-27-4	0.04	mg/kg	<0.04	0.16 mg/kg	107	----	79	109	----	----
EP-074L: Methyl-tert-butyl Ether (QC Lot: 1596496)											
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	mg/kg	<0.50	----	----	----	----	----	----	----
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1594456)											
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	108	----	38	125	----	----
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	106	----	42	125	----	----
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	111	----	45	120	----	----
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	111	----	38	133	----	----
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	93.8	----	41	126	----	----
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	107	----	45	115	----	----
EP076HK: Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	113	----	41	133	----	----
EP076HK: Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	113	----	40	137	----	----
EP076HK: Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	81.2	----	42	123	----	----
EP076HK: Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	105	----	47	130	----	----
EP076HK: Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	115	----	40	134	----	----
EP076HK: Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	109	----	51	124	----	----
EP076HK: Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	95.8	----	38	146	----	----
EP076HK: Perylene	198-55-0	50	µg/kg	<50	500 µg/kg	# Not Determined	----	50	130	----	----
EP076HK: Indeno(1,2,3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	105	----	44	129	----	----
EP076HK: Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	101	----	46	130	----	----
EP076HK: Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	102	----	45	136	----	----
EP-076B: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 1594456)											
EP076HK: Phenol	108-95-2	500	µg/kg	<500	250 µg/kg	54.3	----	39	112	----	----
EP076HK: Hexachlorobenzene (HCB)	118-74-1	50	µg/kg	<50	250 µg/kg	116	----	52	132	----	----
EP076HK: Bis(2-ethylhexyl)phthalate	117-81-7	1000	µg/kg	<1000	250 µg/kg	87.8	----	74	131	----	----
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
EG: Metals and Major Cations (QC Lot: 1598991)											
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: 1597972)											
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	99.2	----	85	115	----	----
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	104	----	85	115	----	----
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	95.6	----	85	115	----	----
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1590797)											
C6 - C8 Fraction	----	0.02	mg/L	<0.02	0.15 mg/L	99.6	----	68	127	----	----
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1597144)											



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-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1597144) - Continued											
C9 - C16 Fraction	----	0.5	mg/L	<0.5	0.25 mg/L	106	----	17	170	----	----
C17 - C35 Fraction	----	0.5	mg/L	<0.5	0.5 mg/L	101	----	32	143	----	----
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 1594506)											
Benzene	71-43-2	5	µg/L	<5	10 µg/L	83.4	----	54	132	----	----
Toluene	108-88-3	5	µg/L	<5	10 µg/L	99.6	----	59	128	----	----
Ethylbenzene	100-41-4	5	µg/L	<5	10 µg/L	76.6	----	68	125	----	----
meta- & para-Xylene	108-38-3	10	µg/L	<10	20 µg/L	77.5	----	75	122	----	----
	106-42-3										
Styrene	100-42-5	5	µg/L	<5	10 µg/L	79.4	----	73	119	----	----
ortho-Xylene	95-47-6	5	µg/L	<5	10 µg/L	90.4	----	72	125	----	----
EP-074B: Oxygenated Compounds (QC Lot: 1594506)											
2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	87.8	----	63	126	----	----
EP-074E: Halogenated Aliphatics (QC Lot: 1594506)											
Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	94.5	----	67	125	----	----
Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	101	----	59	126	----	----
EP-074G: Trihalomethanes (THM) (QC Lot: 1594506)											
Chloroform	67-66-3	5	µg/L	<5	10 µg/L	99.2	----	68	123	----	----
Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	102	----	77	120	----	----
EP-075A: Phenols (QC Lot: 1594467)											
Phenol	108-95-2	2	µg/L	<2	5 µg/L	42.4	----	10	100	----	----
EP-075B: Polyaromatic Hydrocarbons (PAHs) (QC Lot: 1594467)											
Naphthalene	91-20-3	2	µg/L	<2	5 µg/L	74.6	----	48	102	----	----
Acenaphthylene	208-96-8	2	µg/L	<2	5 µg/L	71.4	----	43	110	----	----
Acenaphthene	83-32-9	2	µg/L	<2	5 µg/L	73.1	----	45	107	----	----
Fluorene	86-73-7	2	µg/L	<2	5 µg/L	75.9	----	51	104	----	----
Phenanthrene	85-01-8	2	µg/L	<2	5 µg/L	78.0	----	60	107	----	----
Anthracene	120-12-7	2	µg/L	<2	5 µg/L	83.4	----	58	105	----	----
Fluoranthene	206-44-0	2	µg/L	<2	5 µg/L	89.9	----	67	105	----	----
Pyrene	129-00-0	2	µg/L	<2	5 µg/L	92.9	----	65	105	----	----
Benz(a)anthracene	56-55-3	2	µg/L	<2	5 µg/L	91.6	----	64	106	----	----
Chrysene	218-01-9	2	µg/L	<2	5 µg/L	92.8	----	68	114	----	----
Benzo(b) & Benzo(k)fluoranthene	205-99-2	4	µg/L	<4	10 µg/L	95.2	----	53	104	----	----
	207-08-9										
Benzo(a)pyrene	50-32-8	2	µg/L	<2	5 µg/L	76.4	----	52	103	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	5 µg/L	89.4	----	45	107	----	----
Dibenz(a,h)anthracene	53-70-3	2	µg/L	<2	5 µg/L	# 93.3	----	43	92	----	----
Benzo(g,h,i)perylene	191-24-2	2	µg/L	<2	5 µg/L	95.2	----	42	102	----	----
EP-075C: Phthalate Esters (QC Lot: 1594467)											
Bis(2-ethylhexyl)phthalate	117-81-7	20	µg/L	<20	5 µg/L	84.6	----	0	226	----	----



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-075G: Chlorinated Hydrocarbons (QC Lot: 1594467)												
Hexachlorobenzene (HCB)		118-74-1	4	µg/L	<4	5 µg/L	81.8	----	52	110	----	----

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: 1600147)											
HK1028864-001	Anonymous	EG3060: Hexavalent Chromium	18540-29-9	40 mg/kg	111	----	75	125	----	----	
EG: Metals and Major Cations (QC Lot: 1601178)											
HK1028980-001	Anonymous	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: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75	125	----	----	
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1596052)											
HK1029120-006	Anonymous	C9 - C16 Fraction	----	31 mg/kg	95.1	----	50	130	----	----	
		C17 - C35 Fraction	----	75 mg/kg	107	----	50	130	----	----	
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1596497)											
HK1029120-006	Anonymous	C6 - C8 Fraction	----	3 mg/kg	65.0	----	50	130	----	----	

Matrix: WATER					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID		Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 1598991)											
HK1028703-001		Anonymous	EG050: Hexavalent Chromium	18540-29-9	0.5 mg/L	100	----	75	125	----	----
EG: Metals and Major Cations - Filtered (QC Lot: 1597972)											
HK1028989-002		Anonymous	EG020: Copper	7440-50-8	100 µg/L	106	----	75	125	----	----
			EG020: Lead	7439-92-1	100 µg/L	97.2	----	75	125	----	----
			EG020: Zinc	7440-66-6	100 µg/L	100	----	75	125	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-080S: TPH(Volatile)/BTEX Surrogate			
Dibromofluoromethane	1868-53-7	80	120



Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-080S: TPH(Volatile)/BTEX Surrogate - Continued			
Toluene-D8	2037-26-5	81	117
4-Bromofluorobenzene	460-00-4	74	121
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-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	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
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

Report No. D

HK1029581



CERTIFICATE OF ANALYSIS

Client	: ERM HONG KONG	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 8
Contact	: MR ANGUS CHOI	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1029581
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E-mail	: angus.choi@erm.com	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2271 3000	Telephone	: +852 2610 1044		
Facsimile	: +852 2723 5660	Facsimile	: +852 2610 2021		
Project	: XRL 823A 0125309	Quote number	: HK/1393a/2010	Date Samples Received	: 13-DEC-2010
Order number	: ----			Issue Date	: 17-DEC-2010
C-O-C number	: H010616			No. of samples received	: 6
Site	: SITE I & L			No. of samples analysed	: 6

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 15-DEC-2010

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

Specific comments for Work Order: **HK1029581**

Sample(s) were received in a chilled condition.

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

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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

Position

Senior Chemist

Authorised results for

Organics



Analytical Results

Sub-Matrix: WATER

Client sample ID

Client sampling date / time

				TRIP BLANK	L-01	L-02	I-01	I-02
				[13-DEC-2010]	[13-DEC-2010]	[13-DEC-2010]	[13-DEC-2010]	[13-DEC-2010]
Compound	CAS Number	LOR	Unit	HK1029581-001	HK1029581-002	HK1029581-003	HK1029581-004	HK1029581-005
EP-071HK: Total Petroleum Hydrocarbons (TPH)								
C6 - C8 Fraction	----	20	µg/L	----	<20	<20	<20	<20
C9 - C16 Fraction	----	500	µg/L	----	<500	<500	<500	<500
C17 - C35 Fraction	----	500	µg/L	----	<500	<500	<500	<500
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH)								
Benzene	71-43-2	5	µg/L	<5	<5	<5	<5	<5
Toluene	108-88-3	5	µg/L	<5	<5	<5	<5	<5
Ethylbenzene	100-41-4	5	µg/L	<5	<5	<5	<5	<5
meta- & para-Xylene	108-38-3 106-42-3	10	µg/L	<10	<10	<10	<10	<10
Styrene	100-42-5	5	µg/L	<5	<5	<5	<5	<5
ortho-Xylene	95-47-6	5	µg/L	<5	<5	<5	<5	<5
EP-074B: Oxygenated Compounds								
2-Propanone (Acetone)	67-64-1	50	µg/L	<50	<50	<50	<50	<50
2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	<50	<50	<50
EP-074E: Halogenated Aliphatics								
Methylene chloride	75-09-2	50	µg/L	<50	<50	<50	<50	<50
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	<5	<5
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	<5	<5
EP-074G: Trihalomethanes (THM)								
Chloroform	67-66-3	5	µg/L	<5	<5	<5	<5	<5
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	<5	<5	<5
EP-074L: Methyl-tert-butyl Ether								
Methyl tert-Butyl Ether (MTBE)	1634-04-4	5	µg/L	<5	<5	<5	<5	<5
EP-075B: Polyaromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	2	µg/L	----	<2	<2	<2	<2
Acenaphthylene	208-96-8	2	µg/L	----	<2	<2	<2	<2
Acenaphthene	83-32-9	2	µg/L	----	<2	<2	<2	<2
Fluorene	86-73-7	2	µg/L	----	<2	<2	<2	<2
Phenanthrene	85-01-8	2	µg/L	----	<2	<2	<2	<2
Anthracene	120-12-7	2	µg/L	----	<2	<2	<2	<2
Fluoranthene	206-44-0	2	µg/L	----	<2	<2	<2	<2
Pyrene	129-00-0	2	µg/L	----	<2	<2	<2	<2
Chrysene	218-01-9	2	µg/L	----	<2	<2	<2	<2
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	----	<4	<4	<4	<4



Sub-Matrix: WATER				Client sample ID	TRIP BLANK	L-01	L-02	I-01	I-02
Client sampling date / time					[13-DEC-2010]	[13-DEC-2010]	[13-DEC-2010]	[13-DEC-2010]	[13-DEC-2010]
Compound	CAS Number	LOR	Unit		HK1029581-001	HK1029581-002	HK1029581-003	HK1029581-004	HK1029581-005
EP-075G: Chlorinated Hydrocarbons									
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	----	<4	<4	<4	<4	<4
EP-080S: TPH(Volatile)/BTEX Surrogate									
					Surrogate control limits listed at end of this report.				
Dibromofluoromethane	1868-53-7	0.1	%	----	106	108	106	108	108
Toluene-D8	2037-26-5	0.1	%	----	97.8	97.1	98.6	97.0	97.0
4-Bromofluorobenzene	460-00-4	0.1	%	----	113	111	114	110	110
EP-074S: VOC Surrogates									
					Surrogate control limits listed at end of this report.				
Dibromofluoromethane	1868-53-7	0.1	%	106	106	108	106	108	108
Toluene-D8	2037-26-5	0.1	%	98.0	97.8	97.1	98.6	97.0	97.0
4-Bromofluorobenzene	460-00-4	0.1	%	110	113	111	114	110	110
EP-075S: Acid Extractable Surrogates									
					Surrogate control limits listed at end of this report.				
2-Fluorophenol	367-12-4	0.1	%	----	51.2	48.6	52.9	52.2	52.2
Phenol-d6	13127-88-3	0.1	%	----	42.7	40.9	41.6	44.7	44.7
2,4,6-Tribromophenol	118-79-6	0.1	%	----	92.3	82.1	82.0	81.6	81.6
EP-075T: Base/Neutral Extractable Surrogates									
					Surrogate control limits listed at end of this report.				
Nitrobenzene -d5	4165-60-0	0.1	%	----	97.2	81.0	84.7	86.7	86.7
2-Fluorobiphenyl	321-60-8	0.1	%	----	87.4	71.8	79.8	81.2	81.2
4-Terphenyl-d14	1718-51-0	0.1	%	----	99.4	87.0	89.4	92.1	92.1



Sub-Matrix: WATER				Client sample ID	L-02 (DUP)			
				Client sampling date / time	[13-DEC-2010]			
Compound	CAS Number	LOR	Unit	HK1029581-006				
EP-071HK: Total Petroleum Hydrocarbons (TPH)								
C6 - C8 Fraction	----	20	µg/L	<20				
C9 - C16 Fraction	----	500	µg/L	<500				
C17 - C35 Fraction	----	500	µg/L	<500				
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH)								
Benzene	71-43-2	5	µg/L	<5				
Toluene	108-88-3	5	µg/L	<5				
Ethylbenzene	100-41-4	5	µg/L	<5				
meta- & para-Xylene	108-38-3	10	µg/L	<10				
	106-42-3							
Styrene	100-42-5	5	µg/L	<5				
ortho-Xylene	95-47-6	5	µg/L	<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	4	µg/L	<4				
	207-08-9							
EP-075G: Chlorinated Hydrocarbons								
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4				



Sub-Matrix: WATER				Client sample ID	L-02 (DUP)				
				Client sampling date / time	[13-DEC-2010]				
Compound	CAS Number	LOR	Unit		HK1029581-006				
EP-080S: TPH(Volatile)/BTEX Surrogate				Surrogate control limits listed at end of this report.					
Dibromofluoromethane	1868-53-7	0.1	%		107				
Toluene-D8	2037-26-5	0.1	%		97.9				
4-Bromofluorobenzene	460-00-4	0.1	%		114				
EP-074S: VOC Surrogates				Surrogate control limits listed at end of this report.					
Dibromofluoromethane	1868-53-7	0.1	%		107				
Toluene-D8	2037-26-5	0.1	%		97.9				
4-Bromofluorobenzene	460-00-4	0.1	%		114				
EP-075S: Acid Extractable Surrogates				Surrogate control limits listed at end of this report.					
2-Fluorophenol	367-12-4	0.1	%		39.8				
Phenol-d6	13127-88-3	0.1	%		32.6				
2,4,6-Tribromophenol	118-79-6	0.1	%		84.0				
EP-075T: Base/Neutral Extractable Surrogates				Surrogate control limits listed at end of this report.					
Nitrobenzene -d5	4165-60-0	0.1	%		61.2				
2-Fluorobiphenyl	321-60-8	0.1	%		60.4				
4-Terphenyl-d14	1718-51-0	0.1	%		90.1				



Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1598724)								
HK1028980-010	Anonymous	C6 - C8 Fraction	----	0.02	mg/L	<0.02	<0.02	0.0
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 1594506)								
HK1028964-009	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: 1594506)								
HK1028964-009	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: 1594506)								
HK1028964-009	Anonymous	Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0
		Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0
		Methylene chloride	75-09-2	50	µg/L	<50	<50	0.0
EP-074G: Trihalomethanes (THM) (QC Lot: 1594506)								
HK1028964-009	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: 1594506)								
HK1028964-009	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	Control Limit
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1597144)											
C9 - C16 Fraction	----	0.5	mg/L	<0.5	0.25 mg/L	106	----	17	170	----	----
C17 - C35 Fraction	----	0.5	mg/L	<0.5	0.5 mg/L	101	----	32	143	----	----
EP-071HK: Total Petroleum Hydrocarbons (TPH) (QC Lot: 1598724)											
C6 - C8 Fraction	----	0.02	mg/L	<0.02	0.15 mg/L	82.9	----	68	127	----	----
EP-074A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 1594506)											
Benzene	71-43-2	5	µg/L	<5	10 µg/L	83.4	----	54	132	----	----
Toluene	108-88-3	5	µg/L	<5	10 µg/L	99.6	----	59	128	----	----
Ethylbenzene	100-41-4	5	µg/L	<5	10 µg/L	76.6	----	68	125	----	----
meta- & para-Xylene	108-38-3	10	µg/L	<10	20 µg/L	77.5	----	75	122	----	----
	106-42-3										
Styrene	100-42-5	5	µg/L	<5	10 µg/L	79.4	----	73	119	----	----



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-074A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 1594506) - Continued											
ortho-Xylene	95-47-6	5	µg/L	<5	10 µg/L	90.4	----	72	125	----	----
EP-074B: Oxygenated Compounds (QC Lot: 1594506)											
2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	87.8	----	63	126	----	----
EP-074E: Halogenated Aliphatics (QC Lot: 1594506)											
Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	94.5	----	67	125	----	----
Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	101	----	59	126	----	----
EP-074G: Trihalomethanes (THM) (QC Lot: 1594506)											
Chloroform	67-66-3	5	µg/L	<5	10 µg/L	99.2	----	68	123	----	----
Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	102	----	77	120	----	----
EP-075B: Polyaromatic Hydrocarbons (PAHs) (QC Lot: 1594467)											
Naphthalene	91-20-3	2	µg/L	<2	5 µg/L	74.6	----	48	102	----	----
Acenaphthylene	208-96-8	2	µg/L	<2	5 µg/L	71.4	----	43	110	----	----
Acenaphthene	83-32-9	2	µg/L	<2	5 µg/L	73.1	----	45	107	----	----
Fluorene	86-73-7	2	µg/L	<2	5 µg/L	75.9	----	51	104	----	----
Phenanthrene	85-01-8	2	µg/L	<2	5 µg/L	78.0	----	60	107	----	----
Anthracene	120-12-7	2	µg/L	<2	5 µg/L	83.4	----	58	105	----	----
Fluoranthene	206-44-0	2	µg/L	<2	5 µg/L	89.9	----	67	105	----	----
Pyrene	129-00-0	2	µg/L	<2	5 µg/L	92.9	----	65	105	----	----
Chrysene	218-01-9	2	µg/L	<2	5 µg/L	92.8	----	68	114	----	----
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	10 µg/L	95.2	----	53	104	----	----
EP-075G: Chlorinated Hydrocarbons (QC Lot: 1594467)											
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	5 µg/L	81.8	----	52	110	----	----

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

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.

Surrogate Control Limits

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
EP-074S: VOC Surrogates			
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-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