



Your Ref. : -

Our Ref. : YLEPP/(DC/2019/10)/M45/840/(0070)

20 May 2025

By Post

Environmental Assessment Division
Environmental Protection Department
27/F., Southorn Centre
130 Hennessy Road
Wan Chai, Hong Kong

Attn.: Mr. WONG Hang Wui, William

Dear Sir,

Contract No. DC/2019/10

Yuen Long Effluent Polishing Plant – Main Works for Stage 1

Environmental Permit No. EP-565/2019/A

Submission of Contamination Assessment Report for Screening Press House

I, on behalf of the Permit Holder, Drainage Services Department, submit herewith three hard copies of the Contamination Assessment Report (CAR) for Screening Press House with the response to your comments provided to us via the email on 9 January 2025, with a CD containing an electronic copy thereof, to the Director of Environmental Protection.

The submission is for compliance with the requirements as stipulated in Condition 2.14 of the aforementioned Permit. This CAR has documented the findings of Site Investigation (SI) for the "Screening Press House", covering 2 boreholes, namely ENV-BH38 and ENV-BH39, in accordance with the approved Supplementary Contamination Assessment Plan (SCAP) under the same Permit, and has been certified by the ET Leader and verified by the IEC of the Project accordingly. The findings of the remaining SI works will be documented in separate CAR(s) which will be submitted in due course.

Should you have any queries, please feel free to contact our Senior Resident Engineer, Mr. Patrick Leung at 6124 8838 or the undersigned at 9075 7172.

Yours faithfully,

Simon H. M. Yeung
Project Manager's Delegate
AECOM Asia Co. Ltd.

Encl.

c.c.	The Client (CE/SP, DSD, HKSAR)	- Attn.: Ms. PUN Siu-kit, Suki
	The Project Manager for this contract, AECOM	- Attn.: Mr. Robert CHAN
	Paul Y. – CREC Joint Venture	- Attn.: Mr. Dan Tang (w/o)
	Aurecon (ET)	By email (w/o)
	Mott MacDonald (IEC)	By email (w/o)

SY/PL/JKHL/SA/ACTW/il

Contract No. DC/2021/02

Yuen Long Effluent Polishing Plant – Main Works for Stage 1

Contamination Assessment Report for Screening Press House (SPH) (Version 1.0)

Response to Comments from EPD on CAR v1.0

Comments from EPD via AECOM dated 17 January 2025	Our responses
1. For the soil samples (HK243376606 & HK2433766007) presented in the lab report p.47-49, please check the LOR and ensure the unit is expressed in mg/Kg rather than ug/L.	Unlike the soil sample, the equipment blank (HK243376606) and field blank (HK2433766007) are in liquid form and treated as water samples. According to the requirement and standard by HOKLAS and with reference to the sample schedule attached to the Chain-of-Custody form (e.g. P.75 of the CAR) from ALS, the LOR and the unit ug/L for blanks samples in soil sampling were adopted accordingly in the lab reports.
2. The sampling dates on the Chain-of-Custody form (p.64 and p.89) appear to be swapped. Please verify and clarify these entries.	The Chain-of-Custody form (HK2433766) on page 64 shows the soil sampling, including the corresponding QA/QC samples collected on August 19, 2024. Meanwhile, the Chain-of-Custody form (HK2433777) on page 89 indicates the QA/QC samples collected on August 20, 2024, for groundwater sampling. Both Chain-of-Custody forms align with the sample information in the respective lab reports (HK2433766 & HK2433777) to which they are attached. Therefore, no swapping is needed.
3. If change is required, please also revise Appendix E (p.37) for consistency regarding sample numbers, dates and types of samples (groundwater or soil).	Please note that no change is required.

AECOM Asia Co. Ltd.
12/F, Grand Central Plaza, Tower 2
138 Shatin Rural Committee Road
Shatin, Hong Kong

Attn: Mr. Simon H.M. YEUNG – CRE(C)

Your Reference

Contract No. SPW 04/2024

Our Reference
EC/TC/BW/T601100483/
02/02/L068

**Independent Environmental Checker for Construction of Yuen Long Effluent
Polishing Plant Stage 1 (2024-2025)**

Environmental Permit No. EP-565/2019

Mott MacDonald
3/F Manulife Place
348 Kwun Tong Road
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Hong Kong

**EP Condition 2.14 – Contamination Assessment Report for Screening Press
House (Version 1.0)**

14 October 2024

By Hand and By Email

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mottmac.hk

Dear Sir,

I refer to the captioned "Contamination Assessment Report for Screening Press House" (Version 1.0) by Cinotech Consultants Limited dated October 2024 (hereafter referred to as the "CAR"), which was received via e-mail on 8 October 2024 and certified by the Environmental Team Leader on 14 October 2024 (ref. no.: PL-202410016).

I have no comment on the captioned submission and hereby verify that the CAR has complied with the relevant requirements set out in Condition 2.14 of Environmental Permit No. EP-565/2019.

Should you have any queries regarding the captioned or require any further information, please contact the undersigned at 2828 5875.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Brandon WONG
Independent Environmental Checker
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c.c. DSD	Mr. Wallace CHENG – E/SP 16	By Email
Aurecon Hong Kong Limited	Mr. Vincent LU – ET Leader	By Email
Paul Y – CREC Joint Venture	Mr. Dan TANG – Project Manager	By Email

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Ref: PL-202410016

By Email

14 October 2024

**Paul Y.-CREC Joint Venture,
11/F Paul Y Centre,
58 Hung To Road,
Kwun Tong, Kowloon,
Hong Kong**

Attn: Mr. Dan Tang

Dear Sir,

Contract No. SPW 02/2023

Environmental Team for Construction of Yuen Long Effluent Polishing Plant Stage 1

Environmental Permit No. EP-565/2019

Contract No.DC/2019/10 – Certification of Contamination Assessment Report for Screening Press House (Version 1.0)

We refer to your Contamination Assessment Report (CAR) for Screening Press House (Version 1.0) submitted on 8 October 2024 for the captioned project. We are pleased to certify the captioned submission pursuant to Environmental Permit No. EP-565/2019 Condition 2.14.

Should you have any queries regarding the captioned or require any further information, please contact the undersigned at 2531 0243.

Yours faithfully,
For and on behalf of
Aurecon Hong Kong Limited

A handwritten signature in black ink, appearing to be "Vincent M. J. Lu".

Vincent M. J. Lu
Environmental Team Leader

Encl.

cc. DSD – Mr. Wallace Cheng (vlcheng02@dsd.gov.hk)
AECOM – Mr. Patrick Leung (patrick.leung@ylepp-aecom.com)
Mott MacDonald HK Limited – Mr. Brandon Wong (Brandon.Wong@mottmac.com)

Drainage Services Department

Contract No. DC/2019/10 Yuen Long Effluent Polishing Plant – Main Works for Stage 1

Contamination Assessment Report for Screening Press House

(Version 1.0)

October 2024

Checked By



(Land Contamination Specialist)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties.

CINOTECH CONSULTANTS LIMITED

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1 INTRODUCTION

Background

- 1.1 The existing Yuen Long Sewage Treatment Works (YLSTW/ the Site), was commissioned in 1984 with a design capacity of 70,000 m³/d at average dry weather flow (ADWF), provides secondary level treatment to sewage collected from Yuen Long area such as Wang Chau, Yuen Long Industrial Estate, the Yuen Long Town and Kam Tin. Drainage Services Department (DSD) has proposed to upgrade the YLSTW (the Project) into the Yuen Long Effluent Polishing Plant (YLEPP), in order to cope with the forecast increase in sewage flow upon completion of sewerage under interfacing projects, extension of village sewerage in area as planned by Environmental Protection Department (EPD), as well as the proposed housing developments in the region. The Site location is attached in **Appendix A**.
- 1.2 A Project Profile (No. PP-458/2012) was submitted to the Environmental Protection Department (EPD) on 27 February 2012 for application for an Environmental Impact Assessment (EIA) Study Brief under section 5(1)(a) of the EIAO and the EIA Study Brief No. ESB-241/2012 for the Project was issued on 5 April 2012 under the EIAO. A revised Project Profile, entitled “Yuen Long Effluent Polishing Plant”, was submitted on 9 Oct 2018 (No. PP-570/2018) and a revised EIA Study Brief No. ESB-309/2018 was issued on 14 November 2018 under the EIAO. An Environmental Impact Assessment (EIA) Report was approved under EIAO in April 2019 (No.: AEIAR-220-2019) in accordance with the EIA Study Brief (No. ESB-309/2018) and the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM).
- 1.3 According to the Contamination Assessment Plan in the EIA Report (EIA-CAP), prior to commencement of the SI works, a review of the EIA-CAP should be conducted to confirm whether the proposed SI works are still valid, and Supplementary Contamination Assessment Plan (s) (SCAPs), presenting findings of the review, the latest site conditions and any updated sampling strategy and testing protocol, should be submitted to EPD for endorsement. As stipulated in EP condition 2.14, the SCAPs shall be submitted to EPD no later than three months before the commencement of site investigation (SI) at the concerned facilities/ areas; subsequently, the SI works should be carried out according to EPD’s agreed SCAPs, with Remediation Action Plan (RAPs) if contamination is confirmed and remediation is deemed necessary, for remediation in accordance with the approved RAPs and submit Remediation Report(s) (RRs) to document the remediation programme for approval by the Director. No construction works at the concerned facilities/ area shall be commenced before the approval of respective SCAPs by the Director and the satisfactory completion of necessary decontamination works.
- 1.4 The Contract No. DC/2019/10 – Yuen Long Effluent Polishing Plant – Main Works for Stage 1 (the Contract) was commissioned by DSD on November 2020 to carry out the works for phase I of the Project for the provision of facilities, such as Inlet works building, Lamella Primary Sedimentation Tank, Bio-reactor systems, Tertiary Digesters, Biogas Holders, Administration Building, Transformer Rooms and Switch Rooms, Storage Building, etc.
- 1.5 The final version of the Supplementary Contamination Assessment Plan (SCAP) has been submitted and approved by Environment Protection Department (EPD) in April 2021. According to the agreed SCAP, SI works are required for some of the facilities in the plant, namely the Waste Storage Area, Surplus Activated Sludge (SAS) Thickener House , Wash Water Pumping Station, Transformer House ‘A’, Mechanical Workshop, Main Storeroom and Workshops, Screening Press

House under this contract. However, in order to ensure that the existing sewage treatment works can operate normally, SI works for different facilities/ areas have to be conducted in separate stages and hence this Contamination Assessment Report (CAR - Part 5) shall only entail the SI results for part of the “Screening Press House” (Screening Press House), covering 2 Boreholes, namely ENV-BH38 and ENV-BH39. SI works for other facilities/ areas shall be carried out under separate submissions. The locations of the facilities and the proposed sampling for the SI, as per the agreed SCAP, in the plant are illustrated in **Appendix A**.

Objective & Scope

- 1.6 Cinotech Consultants Limited (Cinotech) was commissioned by Paul.Y – CREC Joint Venture on behalf of the DSD to conduct Land Contamination Assessment focusing on the Contract for the partial fulfilment of the Submission Requirement as per EP condition 2.14 and Section 6 of EM&A Manual (No.: AEIAR-220-2019). CAR-Part 5 provides the findings of the SI works and present the laboratory results and their interpretation of the collected samples for “Screening Press House”.
- 1.7 CAR-Part 5 is prepared to present the findings of the land contamination assessments with reference of the following legislation, guidelines and standards:
 - Practice Guide for Investigation and Remediation of Contaminated Land (PG);
 - Guidance Note for Contaminated Land Assessment and Remediation;
 - Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management;
 - Waste Disposal (Chemical Waste) (General) Regulation (Cap 354C);
 - Dangerous Goods Ordinance (Cap 295).
- 1.8 The CAR-Part 5 provides a summary of the SCAP as agreed in April 2021, describing the SI and sampling works conducted in this assessment, and presents the laboratory results and their interpretations for the collected samples for the “Screening Press House”. CAR(s) for other facility/ area that required SI under this contract shall be prepared under separate submissions once the corresponding SI works, laboratory results and their interpretation for the collected samples are completed.

2 SITE INVESTIGATION

Sampling Strategy

- 2.1 According to the agreed SCAP, 2 sampling locations, namely ENV-BH38 and ENV-BH39 were proposed for the SI at “Screening Press House”. The sampling locations and Chemicals of Concern (CoCs) as proposed in the agreed SCAP are summarised in **Table 2-1** below.

Table 2-1 Summary of Proposed Sampling Points & CoCs at “Screening Press House”

Potentially Contaminated Area	Sampling Location ID in this report	Sampling Location ID in SCAP	Sampling Matrix/ Depths ^{(1) (3)}		Proposed Testing Parameters ⁽²⁾
Screening Press House	ENV-BH38, ENV-BH39	ENV-BH38, ENV-BH39	Soil	(i) 0.5m bgl (ii) 1.5m bgl (iii) 3.0m bgl (iv) above GW level if present or if no GW encountered, 6m bgl	Metals: Full List VOCs: Full List SVOCs: Full List PCRs: Full List
			GW	If present	Metals: Mercury VOCs: Full List SVOCs: Full List PCRs: Full List

Notes:

- (1) m bgl = meter below ground level; GW – groundwater
- (2) - Full list refers to the parameters as shown in Table 2.1 – RBRGs for Soil and Soil Saturation Limit and Table 2.2 – RBRGs for Groundwater and Solubility Limit under VOCs, SVOCs, metals and PCRs in the Guidance Manual.
 - BTEX includes benzene, toluene, ethylbenzene and total xylenes
 - PAHs include acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, Fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene and pyrene.
 - Since RBRG value of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, bis-(2-Ethylhexyl)phthalate, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene and Phenol were not available for groundwater, the said parameters would not be tested in groundwater sample.
- (3) Groundwater samples will only be collected if groundwater is encountered during SI works

Sampling Methodology

- 2.2 All drilling machine and equipment were decontaminated using a non-phosphate detergent and distilled water prior to the SI.
- 2.3 According to sampling plan, summarised in **Table 2-1**, the final sample proposed for each sampling location should be “above groundwater level if present or if no groundwater encountered, 6m bgl”. Nevertheless, despite the high groundwater level at the sampling locations, at least 3 undisturbed samples were collected, as far as possible, at every borehole with U76 tube sampler (nominal 76mm diameter) at nominal depths of 0.5m, 1.5m and 3.0m below the bottom level of concrete slab at the basement for the sampling locations using dry borehole drilling and hammer dropping method. Adjustment of sampling depths or omission for some soil samples were adopted, when not enough soil was presented at the sampling depths.

- 2.4 When groundwater was encountered within the sampling depth, the borehole(s) was drilled to a minimum depth of 2m below the water table to allow for the installation of a groundwater monitoring well, from which a groundwater sample was collected.
- 2.5 The sampling exercise was supervised by land contamination specialist to determine the sampling depths for each sampling locations, and inspect for the presence of non-aqueous phase liquid (NAPL) or other signs of potential land contamination.
- 2.6 All collected Soil and Groundwater samples were stored and transported at a temperature of 4°C. The samples were delivered to ALS Technichem (HK) Pty Ltd, a Hong Kong Laboratory Accreditation Scheme (HOKLAS) analytical laboratory, for testing and analysis on the proposed the Chemicals of Concern (CoCs).

Quality Control and Quality Assurance (QA/QC)

- 2.7 A chain of custody system shall be operated as part of the QA/QC procedure. The laboratory accredited QA/QC procedures shall be followed as below:

Table 2-2 QA/QC Requirements

Samples taken under QA/QC procedures	Sampling Frequency	Testing Parameters
Duplicate samples	- 1 for every 20 Soil samples - 1 for every 20 GW samples	All parameters that are tested for the proposed soil and groundwater samples at the proposed sampling points ¹
Equipment blank	- 1 for every 20 Soil samples - 1 for every 20 GW samples	All parameters that are tested for the proposed soil and groundwater samples at the proposed sampling points ¹
Field Blank	- 1 for every 20 Soil samples - 1 for every 20 GW samples	All parameters that are tested for the proposed soil and groundwater samples at the proposed sampling points ¹
Trip Blank	1 for every trip with samples that require the analysis of VOCs	All VOCs parameters that are tested for the proposed soil and groundwater samples at the proposed sampling points ¹

Remarks:

- 1) Refer to **Table 2-1** for the proposed testing parameters at the proposed sampling points, and **Table 3-2** & **Table 3-3** for the laboratory analysis schedule.

3 CONTAMINATION ASSESSMENT RESULTS

Summary of Samples Collected

- 3.1 The sampling for ENV-BH38 and ENV-BH39 within the concerned areas in “Screening Press House” had been conducted in from 19th – 20th Aug 2024, and supervised by land contamination specialist from Cinotech. A total of 6 soil samples and 2 groundwater samples were taken and their findings are summarized in this CAR. The as-built sampling locations and drillhole records are illustrated in **Figure 1** and attached in **Appendix C** respectively.
- 3.2 The list of samples taken are summarized in **Table 3-1**. The details of the samples taken at each borehole, including sampling date, depth of each soil and groundwater sample, and the field measurements taken before groundwater sampling are enclosed in **Appendix D**.

Table 3-1 Samples Inventory

Sampling Location	Sampling Depth[mbgl] of Soil Sample no. [N] ¹				No. of GW Samples Collected
	N=1	N=2	N=3	N=4 ²	
ENV-BH38	0.5	1.5	3.0	N/A	1
ENV-BH39	0.5	1.5	3.0	N/A	1

1. N is the ordinal number for the sample collected at each sampling location.
 2. N/A = No soil sample was collected.
 As the GW levels of boreholes ENV-BH38 and ENV-BH39 were 1.35 & 1.14m bgl, respectively, the sampling depths could be terminated at 3.5m bgl according to the requirements listed in **Table 2-1**. Therefore, only 3 soil samples were collected at those boreholes. The detailed sampling depths of the boreholes are shown in **Appendix B**.

- 3.3 According to sampling frequency shown in **Table 2-2**, 1 duplicate sample, 1 equipment blank and 1 field blank sample are collected for each of soil and groundwater samplings respectively; while a total of 1 trip blank samples are collected for the SI.
- 3.4 The soil and groundwater samples were sent to the ALS Technichem (HK) Pty Limited, a HOKLAS accredited laboratory for analysing the CoCs listed in **Table 2-1**. All laboratory test methods have been accredited by the Hong Kong Laboratory Accreditation Scheme (HOKLAS). The reporting limit for laboratory analysis provided by the ALS Technichem (HK) Pty Limited is also listed in **Table 3-2** and **Table 3-3**.

On site Observation

- 3.5 Before drilling and during the SI for all boreholes, no abnormal smell and/ or other trace of pollutant on the ground surfaces was observed. The photo records and the drillhole records for the SI works at the “Screening Press House” can be found in **Appendix B** and **Appendix C** respectively.
- 3.6 Adjustment of sampling depths or omission for some soil samples were adopted, when not enough soil was presented at the sampling depths. No exceedance was recorded in the sampling results and no traces of contamination were detected during the borehole drilling within the “Screening Press House”. Therefore, no additional sampling at further depths is required.
- 3.7 During the groundwater purging/ sampling processes, no abnormal smell, colour, or NAPL has been observed. Prior to sampling, the wells were purged with at least approximately five times the well volume at each sampling event to remove silt and drilling fluid residue from the wells, with

reference to the SCAP. Samples were taken by using a bailer within 24 hours of the wells being purged.

Laboratory Results & Interpretation

- 3.8 All of the soil and groundwater samples (including duplicate samples, trip blank, equipment blank and field blanks) were delivered to ALS Technichem (HK) Pty Limited for laboratory analysis. The laboratory reports and chain of custody forms are enclosed in **Appendix F**.
- 3.9 According to the agreed SCAP, the RBRGs for the land use of industrial, as listed in Table 2.1 of EPD's *Guidance Manual for Use of Risk-Based Remediation Goals for Contaminated Land Management*, are adopted for the interpretation of SI results at the "Screening Press House". The laboratory results are compared against the adopted RBRGs and soil saturation limit (C_{sat}) for soil samples and the adopted RBRGs and the solubility limits for groundwater samples. No exceedance of RBRG is recorded for both soil samples and groundwater samples. Furthermore, no exceedance of the soil saturation limit is recorded for soil samples. As no NAPL was observed during sampling, as recorded in the **Appendix B**, no further sampling and remediation are required. The detailed laboratory testing results and the point-by-point comparison for each sample are listed in **Appendix E**.

Table 3-2 Soil Sample Concentrations and Exceedances of RBRGs and Csat

Chemical	Frequency of Detection (x/y)	Range of Detected Concentration	Range of Method Reporting Limit (mg/kg)	Analytical Method	Industrial RBRG* (mg/kg)	Csat (mg/kg)	Maximum Detected Concentration Exceeds (check if applicable)	
							RBRG	Csat
Metal								
Antimony	0/6	BRL	1.00E+00	USEPA Method 6020	2.61E+02	-	FALSE	----
Arsenic	6/6	6.00E+0 - 9.00E+0	1.00E+00		1.96E+02	-	FALSE	----
Barium	6/6	7.58E+1 - 2.11E+2	1.00E+00		1.00E+04	-	FALSE	----
Cadmium	0/6	BRL	2.00E-01		6.53E+02	-	FALSE	----
Chromium (III)	6/6	3.95E+1 - 4.58E+1	1.00E+00	By Calculation#	1.00E+04	-	FALSE	----
Chromium (VI)	0/6	BRL	1.00E+00	USEPA Method 3060 APHA Method 3500 Cr:D	1.96E+03	-	FALSE	----
Cobalt	6/6	1.59E+1 - 8.64E+1	1.00E+00	USEPA Method 6020	1.00E+04	-	FALSE	----
Copper	6/6	3.10E+1 - 5.30E+1	1.00E+00		1.00E+04	-	FALSE	----
Lead	6/6	2.60E+1 - 7.00E+1	1.00E+00		2.29E+03	-	FALSE	----
Manganese	6/6	1.00E+3 - 3.29E+3	1.00E+00		1.00E+04	-	FALSE	----
Mercury	0/6	BRL	5.00E-02	USEPA Method 3112B	3.84E+01	-	FALSE	----
Molybdenum	3/6	BRL - 3.00E+0	1.00E+00	USEPA Method 6020	3.26E+03	-	FALSE	----
Nickel	6/6	1.80E+1 - 3.80E+1	1.00E+00		1.00E+04	-	FALSE	----
Tin	6/6	1.45E+1 - 3.00E+1	1.00E+00		1.00E+04	-	FALSE	----
Zinc	6/6	6.50E+1 - 9.80E+1	1.00E+00		1.00E+04	-	FALSE	----
VOCs								
2-Propanone (Acetone)	0/6	BRL	5.00E+01	USEPA Method 8260	1.00E+04	***	FALSE	----
Benzene	0/6	BRL	2.00E-01		9.21E+00	3.36E+02	FALSE	FALSE
Bromodichloro methane	0/6	BRL	1.00E-01		2.85E+00	1.03E+03	FALSE	FALSE
2-Butanone (MEK)	0/6	BRL	5.00E+00		1.00E+04	***	FALSE	----
Chloroform	0/6	BRL	4.00E-02		1.54E+00	1.10E+03	FALSE	FALSE
Ethylbenzene	0/6	BRL	5.00E-01		8.24E+03	1.38E+02	FALSE	FALSE
Methyl tert-Butyl Ether	0/6	BRL	5.00E-01		7.01E+01	2.38E+03	FALSE	FALSE
Methylene Chloride	0/6	BRL	5.00E-01		1.39E+01	9.21E+02	FALSE	FALSE
Styrene	0/6	BRL	5.00E-01		1.00E+04	4.97E+02	FALSE	FALSE
Tetrachloroethene	0/6	BRL	4.00E-02		7.77E-01	9.71E+01	FALSE	FALSE
Toluene	0/6	BRL	5.00E-01		1.00E+04	2.35E+02	FALSE	FALSE
Trichloroethene	0/6	BRL	1.00E-01		5.68E+00	4.88E+02	FALSE	FALSE
Xylenes (Total)	0/6	BRL	2.00E+00		1.23E+03	1.50E+02	FALSE	FALSE

Chemical	Frequency of Detection (x/y)	Range of Detected Concentration	Range of Method Reporting Limit (mg/kg)	Analytical Method	Industrial RBRG* (mg/kg)	Csat (mg/kg)	Maximum Detected Concentration Exceeds (check if applicable)	
							RBRG	Csat
SVOCs								
Acenaphthene	0/6	BRL	5.00E-01	USEPA Method 8270	1.00E+04	6.02E+01	FALSE	FALSE
Acenaphthylene	0/6	BRL	5.00E-01		1.00E+04	1.98E+01	FALSE	FALSE
Anthracene	0/6	BRL	5.00E-01		1.00E+04	2.56E+00	FALSE	FALSE
Benzo(a)anthracene	0/6	BRL	5.00E-01		9.18E+01	-	FALSE	----
Benzo(a)pyrene	0/6	BRL	5.00E-01		9.18E+00	-	FALSE	----
Benzo(b)fluoranthene	0/6	BRL	5.00E-01		1.78E+01	-	FALSE	----
Benzo(g,h,i)perylene	0/6	BRL	5.00E-01		1.00E+04	-	FALSE	----
Benzo(k)fluoranthene	0/6	BRL	5.00E-01		9.18E+02	-	FALSE	----
bis(2-ethylhexyl)phthalate	0/6	BRL	5.00E+00		9.18E+01	-	FALSE	----
Chrysene	0/6	BRL	5.00E-01		1.14E+03	-	FALSE	----
Dibenzo(a,h)anthracene	0/6	BRL	5.00E-01		9.18E+00	-	FALSE	----
Fluoranthene	0/6	BRL	5.00E-01		1.00E+04	-	FALSE	----
Fluorene	0/6	BRL	5.00E-01		1.00E+04	5.47E+01	FALSE	FALSE
Hexachlorobenzene	0/6	BRL	2.00E-01		5.82E-01	-	FALSE	----
Indeno(1,2,3-cd)pyrene	0/6	BRL	1.00E-01		9.18E+01	-	FALSE	----
Naphthalene	0/6	BRL	5.00E-01		4.53E+02	1.25E+02	FALSE	FALSE
Phenanthrene	0/6	BRL	5.00E-01		1.00E+04	2.80E+01	FALSE	FALSE
Phenol	0/6	BRL	5.00E-01		1.00E+04	7.26E+03	FALSE	FALSE
Pyrene	0/6	BRL	5.00E-01		1.00E+04	-	FALSE	----
PCRs								
C6 - C8 Fraction	0/6	BRL	5.00E+00	USEPA Method 8260/8015	1.00E+04	1.00E+03	FALSE	FALSE
C9 - C16 Fraction	0/6	BRL	2.00E+02		1.00E+04	3.00E+03	FALSE	FALSE
C17 - C35 Fraction	0/6	BRL	5.00E+02		1.00E+04	5.00E+03	FALSE	FALSE

Notes: All results are presented in mg/kg

BRL denotes below reporting limit.

x = number of samples in which chemical was found above the method reporting limit

y = number of samples analyzed for chemical

* 1.00E+04 indicates a 'ceiling limit' concentration

*** indicates that the soil saturation limit exceeds the 'ceiling limit' therefore the RBRG applies.

Table 3-3 Groundwater Sample Concentrations and Exceedances of RBRGs and Solubility Limits

Chemical	Frequency of Detection (x/y)	Range of Detected Concentration	Range of Method Reporting Limit	Analytical Method	Industrial RBRG* (mg/L)	Solubility Limit (mg/L)	Maximum Detected Concentration Exceeds (check if applicable)	
							RBRG	Solubility
Metal								
Mercury	0/2	BRL	5.00E-04	USEPA Method 6020	6.79E+00	-	FALSE	----
VOCs								
2-Propanone (Acetone)	0/2	BRL	5.00E-01	USEPA Method 8260	1.00E+04	***	FALSE	----
Benzene	0/2	BRL	5.00E-03		5.40E+01	1.75E+03	FALSE	FALSE
Bromodichloromethane	0/2	BRL	5.00E-03		2.62E+01	6.74E+03	FALSE	FALSE
2-Butanone (MEK)	0/2	BRL	5.00E-02		1.00E+04	***	FALSE	----
Chloroform	0/2	BRL	5.00E-03		1.13E+01	7.92E+03	FALSE	FALSE
Ethylbenzene	0/2	BRL	5.00E-03		1.00E+04	1.69E+02	FALSE	FALSE
Methyl tert-Butyl Ether	0/2	BRL	5.00E-03		1.81E+03	***	FALSE	----
Methylene Chloride	0/2	BRL	5.00E-02		2.24E+02	***	FALSE	----
Styrene	0/2	BRL	5.00E-03		1.00E+04	3.10E+02	FALSE	FALSE
Tetrachloroethene	0/2	BRL	5.00E-03		2.95E+00	2.00E+02	FALSE	FALSE
Toluene	0/2	BRL	5.00E-03		1.00E+04	5.26E+02	FALSE	FALSE
Trichloroethene	0/2	BRL	5.00E-03		1.42E+01	1.10E+03	FALSE	FALSE
Xylenes (Total)	0/2	BRL	2.00E-02		1.57E+03	1.75E+02	FALSE	FALSE
SVOCs								
Acenaphthene	0/2	BRL	2.00E-03	USEPA Method 8270	1.00E+04	4.24E+00	FALSE	FALSE
Acenaphthylene	0/2	BRL	2.00E-03		1.00E+04	3.93E+00	FALSE	FALSE
Anthracene	0/2	BRL	2.00E-03		1.00E+04	4.34E-02	FALSE	FALSE
Benzo(b)fluoranthene	0/2	BRL	1.00E-03		7.53E+00	1.50E-03	FALSE	FALSE
Chrysene	0/2	BRL	1.00E-03		8.12E+02	1.60E-03	FALSE	FALSE
Fluoranthene	0/2	BRL	2.00E-03		1.00E+04	2.06E-01	FALSE	FALSE
Fluorene	0/2	BRL	2.00E-03		1.00E+04	1.98E+00	FALSE	FALSE
Hexachlorobenzene	0/2	BRL	4.00E-03		6.95E-01	6.20E+00	FALSE	FALSE
Naphthalene	0/2	BRL	2.00E-03		8.62E+02	3.10E+01	FALSE	FALSE
Phenanthrene	0/2	BRL	2.00E-03		1.00E+04	1.00E+00	FALSE	FALSE
Pyrene	0/2	BRL	2.00E-03		1.00E+04	1.35E-01	FALSE	FALSE
PCRs								
C6 - C8 Fraction	0/2	BRL	2.00E-02	USEPA Method 8260/8015	1.15E+03	5.23E+00	FALSE	FALSE
C9 - C16 Fraction	0/2	BRL	5.00E-01		9.98E+03	2.80E+00	FALSE	FALSE
C17 - C35 Fraction	2/2	6.00E-1 - 2.40E+0	5.00E-01		1.78E+02	2.80E+00	FALSE	FALSE

Notes: All results are presented in mg/L

BRL denotes below reporting limit.

x = number of samples in which chemical was found above the method reporting limit

y = number of samples analyzed for chemical

*1.00E+04 indicates a 'ceiling limit' concentration

*** indicates that the solubility limit exceeds the 'ceiling limit' therefore the RBRG applies.

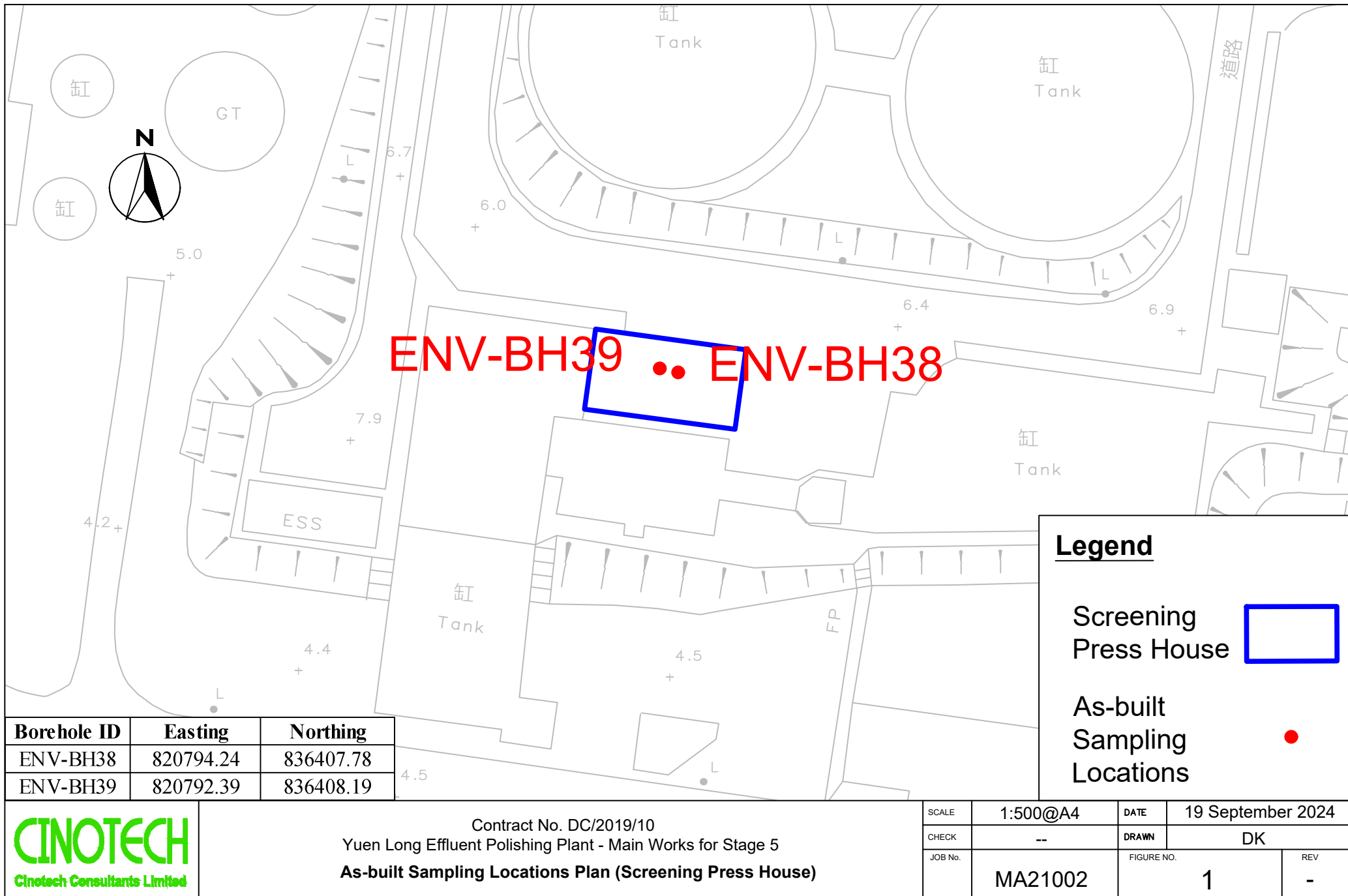
Interpretation of Laboratory Results of QA/QC Samples

- 3.10 The field QA/QC samples include 1 duplicate soil sample, 1 duplicate groundwater sample, 1 equipment blank for each type of sample, 1 field blank for each type, and 1 trip blank sample for the overall sampling exercise.
- 3.11 All results of the tested parameters for the field, equipment and trip blanks are below the corresponding reporting limits. The relative percentage difference (RPD) was used to measure the representativeness and/or precision of the duplicate samples. In accordance with the USEPA guideline, the acceptable limits for the RPDs are less than or equal to 50% and 30% for soil and groundwater samples respectively. The results show that there are some RPD exceedances against the stated limits for soil samples, ranging from 0% to 67%. Only metal parameters are recorded in RPD exceedances, including cobalt and Molybdenum; and the corresponding concentrations can be found in **Appendix E**. Although the RPDs for some of the metals parameters are higher than 50%, considering that the recorded concentrations in both the original and duplicate samples are relatively low, a higher RPD can be allowed for the comparisons. Furthermore, the detected concentration for those were well below the respective RBRGs, of which such deviation may be due to the non-homogeneous characteristics of the collected soil samples.
- 3.12 Hence, the sampling method is consistent throughout the SI; all soil/ groundwater samples were not contaminated from the sampling handling, and that the decontamination procedures had been followed. All field QA/AC results are included in the laboratory chemical testing reports attached in **Appendix F**.

4 CONCLUSION

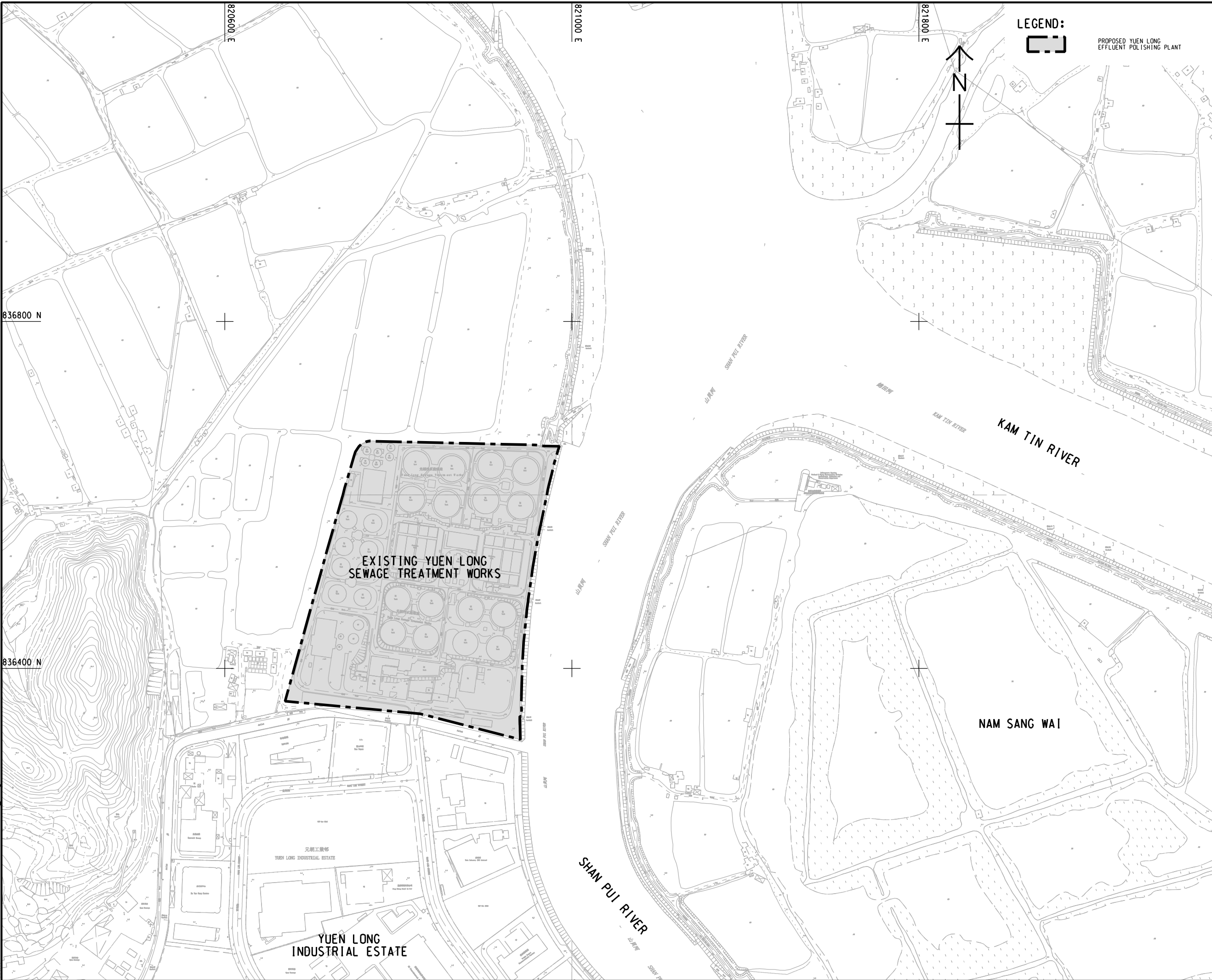
- 4.1 In accordance to the approved SCAP, the sampling works for boreholes ENV-BH38 and ENV-BH39 were collected and supervised by Cinotech. The soil and groundwater samples were delivered to ALS Technichem (HK) Pty Ltd for testing and analysis of the CoCs according to the SCAP.
- 4.2 RBRGs for Industrial have been adopted for the “Screening Press House” and the laboratory results for the sampling works show that there are no exceedances of the adopted RBRGs, saturation limits or the solubility limits or NAPL observed during sampling for the “Screening Press House”. As no contaminated soil and groundwater was found within the “Screening Press House”, no further sampling and remediation actions are required for contaminated soil and groundwater for the scheduled land use of the “Screening Press House”.

FIGURES



APPENDIX A
SITE LOCATIONS & LAYOUT PLANS

ISO A1 594mm x 841mm
Approved:
Checked:
Designer:
Project Management Initials:
Pld File by: ZENGFX 2017/6/13
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LEGEND:



PROPOSED YUEN LONG
EFFLUENT POLISHING PLANT

AECOM

PROJECT
項目

**YUEN LONG EFFLUENT
POLISHING PLANT -
INVESTIGATION, DESIGN
AND CONSTRUCTION**

CLIENT
業主

D 渠務署
Drainage Services Department

CONSULTANT
工程顧問公司

AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS
分判工程顧問公司

ISSUE/REVISION
發行

I/R 發行	DATE 日期	DESCRIPTION 內容摘要	CHK. 校核
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STATUS
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SCALE
比例

A1 1: 2000

DIMENSION UNIT
尺寸單位

METRES

KEY PLAN
索引圖

PROJECT NO.
項目編號

60505476

CONTRACT NO.
合約編號

CE 3/2015 (DS)

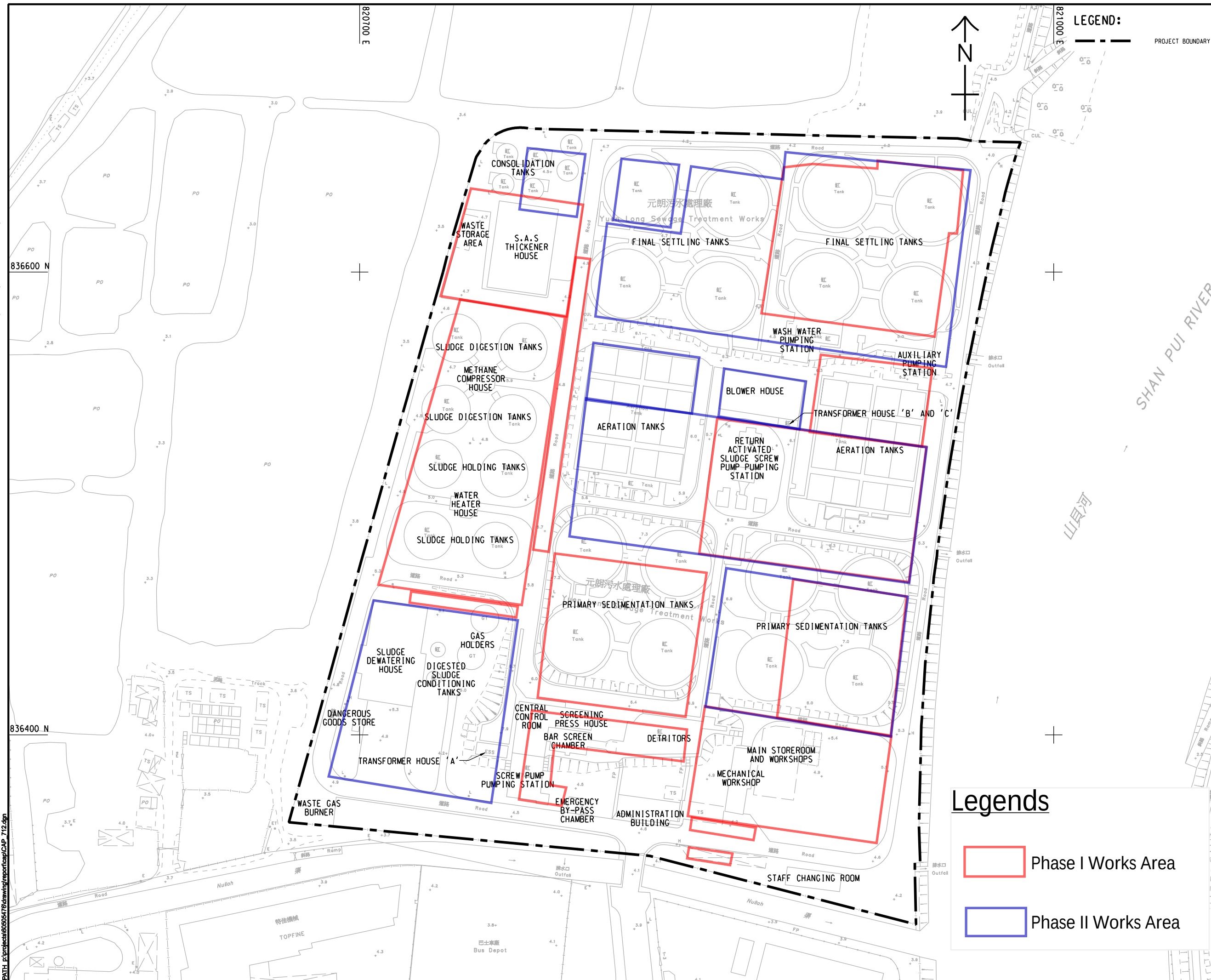
SHEET TITLE
圖紙名稱

LOCATION OF PROPOSED
YUEN LONG EFFLUENT
POLISHING PLANT

SHEET NUMBER
圖紙編號

60505476/CAP/711

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AECOM

PROJECT
項目

YUEN LONG EFFLUENT POLISHING PLANT - INVESTIGATION, DESIGN AND CONSTRUCTION

CLIENT



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ISSUE/REVISION
発行

IR	DATE	DESCRIPTION	CH

STATUS

SCALE 比例	DIMENSION UN 尺寸單位
A3 1 : 1500	METRES

KEY PLAN

PROJECT NO.
項目編號

60505476

CONTRACT NO.
合約編號

CE 3/2015 (DS)

SHEET TITLE
圖紙名稱

GENERAL SITE LAYOUT PLAN OF EXISTING YLSTW

SHEET NUMBER
圖紙編號

60505476/CAP/712

APPENDIX B
PHOTO RECORD



lab-grade detergent



Cleaning with lab-grade detergent and distilled Water



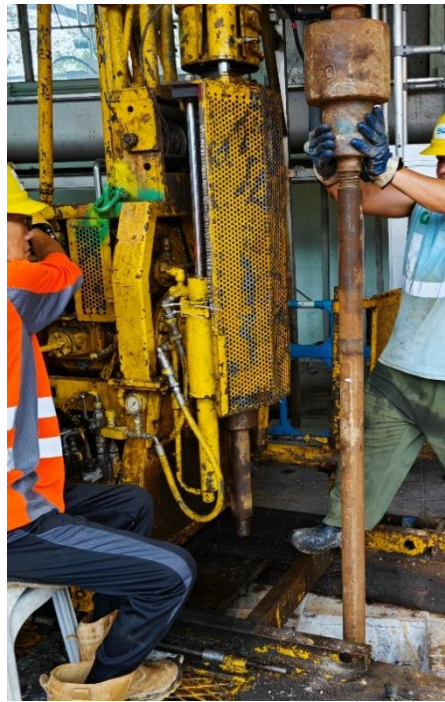
Equipment Blanks



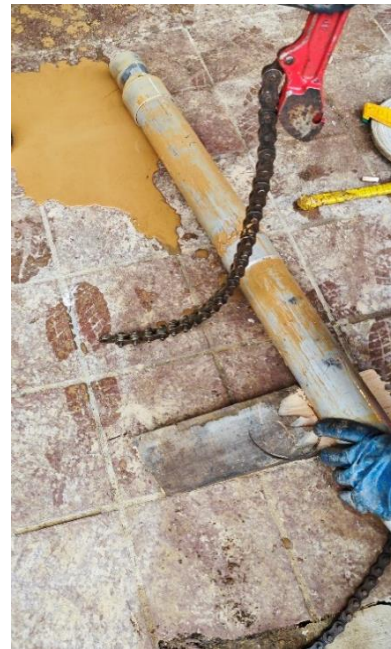
Collecting Blank Samples



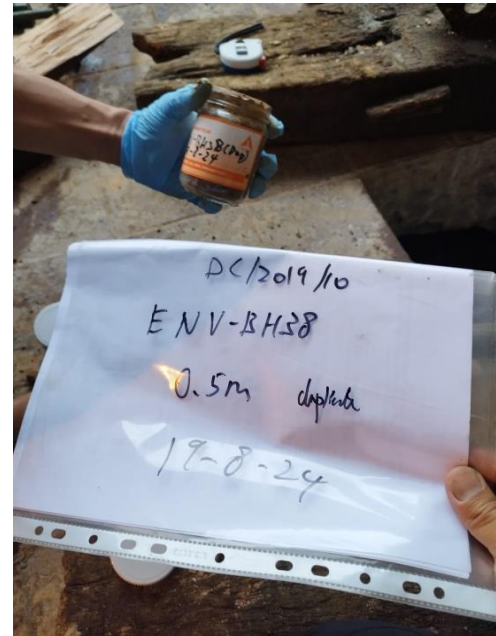
Field Blanks



Drilling Works



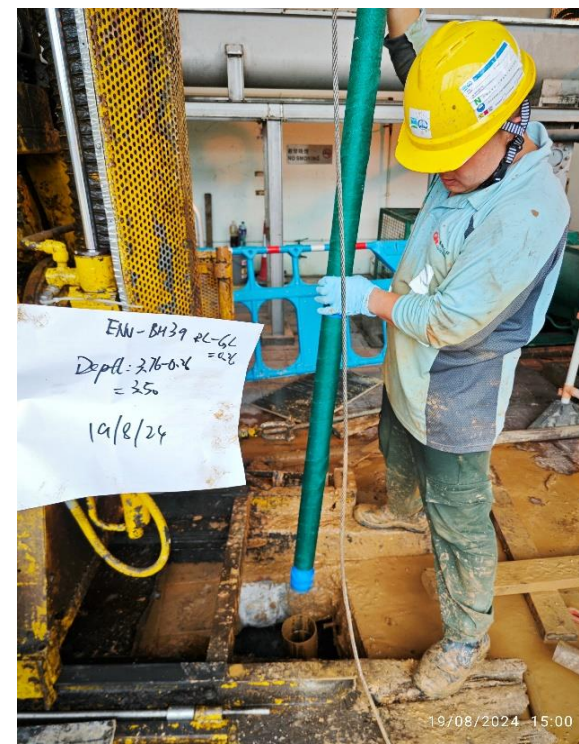
Preparing & Collecting Soil Samples



Soil Samples



Depth Measurements for Boreholes



Installation of GW Monitoring Well



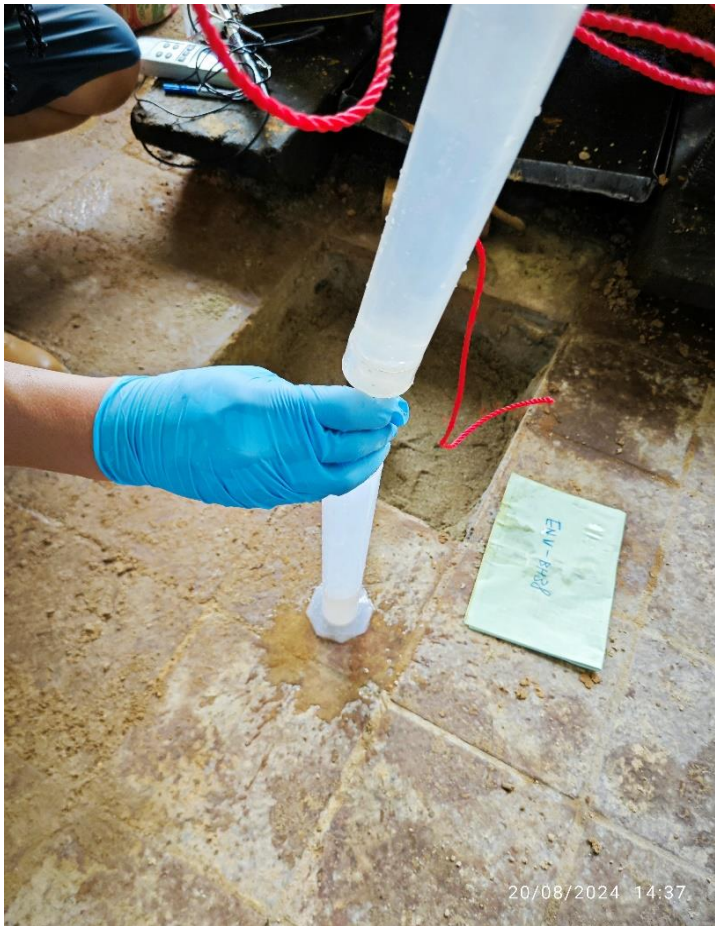
Purging



In-situ Measurements



Ground Water Samples



Observation on NAPL for ENV-BH-38



Observation on NAPL for ENV-BH-39

APPENDIX C
DRILLHOLE RECORD

	Drillhole Record		Drillhole No. <u>ENV-BH38</u>
	Contract No. <u>DC/2019/10</u>		Sheet <u>1</u> of <u>1</u>
PROJECT Yuen Long Effluent Polishing Plant-Main Works for Stage 1			
METHOD Rotary Drilling		CO-ORDINATES E 820794.24 N 836407.78	Works Order No. Date <u>19/08/24</u> to <u>19/08/24</u>
Machine & No. YBM		FLUSHING MEDIUM Dry	ORIENTATION VERTICAL GROUND LEVEL +6.43 mPD

Drilling Progress (dd/mm/yyyy)	Casing depth (m) / Size (mm)	Water level (m) / Time (hh:mm)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D. %	Fracture Index	F.I. / Test Depths (m)	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
19/08/2024															Strong, grey, intact CONCRETE.
1										1 INSPECTION PIT 0.40	+6.13	0.30			Brown occasionally reddish brown, silty clayey fine to coarse SAND with occasional subangular fine to coarse gravel sized rock fragments. (FILL)
2										2 0.90					
3										3 1.40	+4.93	1.50			Firm, brown striped blue, sandy clayey SILT with occasional subangular fine to medium gravel sized rock fragments. (FILL)
4										4 1.50					
5										5 1.95					
6										6 3.00	+3.43	3.00			Firm, brown occasionally reddish brown, sandy silty CLAY with some subangular fine to coarse gravel sized rock fragments. (FILL)
7										7 3.45	+2.93	3.50			Drillhole completed at 3.50m
19/08/2024															
4															
5															
6															
7															
8															
9															
10															

- Small Disturbed Sample - Large Disturbed Sample - SPT Liner Sample - U76 Undisturbed Sample - U100 Undisturbed Sample - Mazier Sample - Piston Sample - Water Sample	- Water Level - Standard Penetration Test - Permeability Test - Piezometer Tip - Standpipe Tip - Pressuremeter Test - Impression Packer Test - Vane Shear Test	LOGGED <u>S.W.Law</u> DATE <u>22/08/2024</u> CHECKED <u>W.Y.Lai</u> DATE <u>23/08/2024</u>	REMARKS 1. An inspection pit was excavated to a depth of 1.50m by the main contractor. 2. Groundwater monitoring well (a standpipe) was installed at depth of 3.50m.
---	---	---	---

 Gold Ram Engineering and Development Limited	Drillhole Record		Drillhole No. <u>ENV-BH39</u>	
	Contract No. <u>DC/2019/10</u>		Sheet <u>1</u> of <u>1</u>	
PROJECT Yuen Long Effluent Polishing Plant - Main Works for Stage 1				
METHOD Rotary Drilling		CO-ORDINATES E 820792.39 N 836408.19		Works Order No.
Machine & No. YBM				Date <u>19/08/24</u> to <u>19/08/24</u>
FLUSHING MEDIUM Dry		ORIENTATION VERTICAL		GROUND LEVEL +6.44 mPD

Drilling Progress (dd/mm/yyyy)	Casing depth (m) /Size (mm)	Water level (m) /Time (hh:mm)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D. %	Fracture Index	F.I. / Test Depths (m)	Tests	Samples		Reduced Level	Depth (m)	Legend	Grade	Description
										No.	Type Depth					
19/08/2024										1	INSPECTION PIT	+6.14	0.30	△		Strong, grey, intact CONCRETE.
1	3.00 140mm			100					B=18	2						Brown and yellowish brown, silty clayey fine to coarse SAND with some angular to subangular fine to coarse gravel sized rock fragments. (FILL)
										3						
										4						
2									B=37	5		+4.94	1.50			Firm, brown occasionally greyish brown, sandy clayey SILT with some angular to subangular fine to coarse gravel sized rock fragments. (FILL)
										6						
3				100						7		+3.44	3.00			Firm, brown occasionally orangish brown, sandy silty CLAY with some angular to subangular fine to coarse gravel sized rock fragments. (FILL)
19/08/2024												+2.94	3.50			Drillhole completed at 3.50m
4																
5																
6																
7																
8																
9																
10																

● Small Disturbed Sample

Large Disturbed Sample

SPT Liner Sample

U76 Undisturbed Sample

U100 Undisturbed Sample

Mazier Sample

Piston Sample

Water Sample

▼ Water Level

Standard Penetration Test

Permeability Test

■ Piezometer Tip

▲ Standpipe Tip

● Pressuremeter Test

Impression Packer Test

∨ Vane Shear Test

LOGGED S.W.Law

DATE 22/08/2024

CHECKED W.Y.Lai

DATE 23/08/2024

REMARKS
1. An inspection pit was excavated to a depth of 1.50m by the main contractor.
2. Groundwater monitoring well (a standpipe) was installed at depth of 3.50m.

APPENDIX D
LIST OF SOIL AND GROUNDWATER
SAMPLE

List of Samples for Screening Press House

Borehole		ENV-BH-38	ENV-BH-39
As-built Coordinate			
Easting (m)		820794.24	820792.39
Northing (m)		836407.78	836408.19
ID, Depth, and Date of the Samples			
Soil Sample 1	Sample ID	ENV-BH38 0.5m	ENV-BH39 0.5m
	Depth (bgl)	0.5m	0.5m
	Date	19/08/2024	19/08/2024
Soil Sample 2	Sample ID	ENV-BH38 1.50-1.95m	ENV-BH39 1.50-1.95m
	Depth (bgl)	1.50-1.95m	1.50-1.95m
	Date	19/08/2024	19/08/2024
Soil Sample 3	Sample ID	ENV-BH38 3.00-3.45m	ENV-BH39 3.00-3.45m
	Depth (bgl)	3.00-3.45m	3.00-3.45m
	Date	19/08/2024	19/08/2024
Soil Sample 4	Sample ID	N/A	N/A
	Depth (bgl)	N/A	N/A
	Date	N/A	N/A
Groundwater Sample	Sample ID	ENV-BH38 GW	ENV-BH39 GW
	Date	20/08/2024	20/08/2024
	G.W. Level (m bgl)	1.35	1.14
	pH Value	7.3	7.3
	Temperature (°C)	29.0	28.9

Note:

^ Duplicate soil sample was collected for BH-38 0.5m

^ Duplicate GW sample was collected for BH-39

APPENDIX E
SUMMARY OF LABORATORY RESULT

DC/2019/10_Detailed Soil Sampling Analytical Results (SPH)

Parameters	Any Soil Samples > RBRG ?	Industrial RBRG (mg/kg)*	Soil Saturation Limit (Csat) (mg/kg)	Reporting Limit (mg/kg)	Maximum Value (mg/kg)	BH38			BH39		
						ENV-BH38 0.5m	ENV-BH38 1.50-1.95m	ENV-BH38 3.00-3.45m	ENV-BH39 0.5m	ENV-BH39 1.50-1.95m	ENV-BH39 3.00-3.45m
Metal						HK2433766001	HK2433766004	HK2433766005	HK2433766003	HK2433766008	HK2433766009
Antimony	No	2.61E+02	-	1.00E+00	BRL	19-Aug-24	19-Aug-24	19-Aug-24	19-Aug-24	19-Aug-24	19-Aug-24
Arsenic	No	1.96E+02	-	1.00E+00	9.00E+00	BRL	BRL	BRL	BRL	BRL	BRL
Barium	No	1.00E+04	-	1.00E+00	2.11E+02	6.00E+00	6.00E+00	6.00E+00	6.00E+00	6.00E+00	9.00E+00
Cadmium	No	6.53E+02	-	2.00E-01	BRL	1.03E+02	1.10E+02	1.25E+02	9.66E+01	7.58E+01	2.11E+02
Chromium (III)	No	1.00E+04	-	1.00E+00	4.58E+01	BRL	BRL	BRL	BRL	BRL	BRL
Chromium (VI)	No	1.96E+03	-	1.00E+00	BRL	4.02E+01	4.58E+01	4.28E+01	3.95E+01	4.58E+01	4.48E+01
Cobalt	No	1.00E+04	-	1.00E+00	8.64E+01	BRL	BRL	BRL	BRL	BRL	BRL
Copper	No	1.00E+04	-	1.00E+00	5.30E+01	1.59E+01	1.75E+01	2.20E+01	1.81E+01	2.31E+01	8.64E+01
Lead	No	2.29E+03	-	1.00E+00	7.00E+01	3.20E+01	3.50E+01	3.70E+01	3.10E+01	3.40E+01	5.30E+01
Manganese	No	1.00E+04	-	1.00E+00	3.29E+03	2.90E+01	2.60E+01	3.50E+01	2.70E+01	3.00E+01	7.00E+01
Mercury	No	3.84E+01	-	5.00E-02	BRL	1.00E+03	1.58E+03	1.61E+03	1.17E+03	1.36E+03	3.29E+03
Molybdenum	No	3.26E+03	-	1.00E+00	3.00E+00	BRL	BRL	BRL	BRL	BRL	BRL
Nickel	No	1.00E+04	-	1.00E+00	3.80E+01	1.00E+00	BRL	1.00E+00	BRL	BRL	3.00E+00
Tin	No	1.00E+04	-	1.00E+00	3.00E+01	1.80E+01	2.30E+01	2.20E+01	1.80E+01	2.20E+01	3.80E+01
Zinc	No	1.00E+04	-	1.00E+00	9.80E+01	1.67E+01	2.12E+01	2.32E+01	3.00E+01	1.53E+01	1.45E+01
VOCs						9.00E+01	9.20E+01	7.30E+01	9.80E+01	6.50E+01	8.60E+01
2-Propanone (Acetone)	No	1.00E+04	***	5.00E+01	BRL						
Benzene	No	9.21E+00	3.36E+02	2.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Bromodichloromethane	No	2.85E+00	1.03E+03	1.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
2-Butanone (MEK)	No	1.00E+04	***	5.00E+00	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Chloroform	No	1.54E+00	1.10E+03	4.00E-02	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Ethylbenzene	No	8.24E+03	1.38E+02	5.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Methyl tert-Butyl Ether	No	7.01E+01	2.38E+03	5.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Methylene Chloride	No	1.39E+01	9.21E+02	5.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Styrene	No	1.00E+04	4.97E+02	5.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Tetrachloroethene	No	7.77E-01	9.71E+01	4.00E-02	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Toluene	No	1.00E+04	2.35E+02	5.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Trichloroethene	No	5.68E+00	4.88E+02	1.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Xylenes (Total)	No	1.23E+03	1.50E+02	2.00E+00	BRL	BRL	BRL	BRL	BRL	BRL	BRL
SVOCs											
Acenaphthene	No	1.00E+04	6.02E+01	5.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Acenaphthylene	No	1.00E+04	1.98E+01	5.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Anthracene	No	1.00E+04	2.56E+00	5.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Benzo(a)anthracene	No	9.18E+01	-	5.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Benzo(a)pyrene	No	9.18E+00	-	5.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Benzo(b)fluoranthene	No	1.78E+01	-	5.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Benzo(g,h,i)perylene	No	1.00E+04	-	5.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Benzo(k)fluoranthene	No	9.18E+02	-	5.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Bis(2-ethylhexyl)phthalate	No	9.18E+01	-	5.00E+00	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Chrysene	No	1.14E+03	-	5.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Dibenzo(a,h)anthracene	No	9.18E+00	-	5.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Fluoranthene	No	1.00E+04	-	5.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Fluorene	No	1.00E+04	5.47E+01	5.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Hexachlorobenzene	No	5.82E-01	-	2.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Indeno(1,2,3-cd)pyrene	No	9.18E+01	-	5.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Naphthalene	No	4.53E+02	1.25E+02	5.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Phenanthrene	No	1.00E+04	2.80E+01	5.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Phenol	No	1.00E+04	7.26E+03	5.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Pyrene	No	1.00E+04	-	5.00E-01	BRL	BRL	BRL	BRL	BRL	BRL	BRL
PCRs											
C6 - C8 Fraction	No	1.00E+04	1.00E+03	5.00E+00	BRL	BRL	BRL	BRL	BRL	BRL	BRL
C9 - C16 Fraction	No	1.00E+04	3.00E+03	2.00E+02	BRL	BRL	BRL	BRL	BRL	BRL	BRL
C17 - C35 Fraction	No	1.00E+04	5.00E+03	5.00E+02	BRL	BRL	BRL	BRL	BRL	BRL	BRL

Notes:
BRL denotes below reporting limit.
The highlighted value(s) in bold indicates exceedance of the adopted RBRG, while the underlined value(s) indicate exceedance of the soil saturation limit.
* 1.00E+04 indicates a 'ceiling limit' concentration.
*** indicates that the soil saturation limit exceeds the 'ceiling limit' therefore the RBRG applies.

DC/2019/10_Detailed Soil Sampling (Duplicate) Analytical Results (SPH)

Parameters	Any Soil Samples > RBRG ?	Industrial RBRG (mg/kg)*	Soil Saturation Limit (Csat) (mg/kg)	Reporting Limit (mg/kg)	Maximum Value (mg/kg)	BH38	
						ENV-BH38 0.5m	ENV-BH38 (Dup) 0.5m
						HK2433766001	HK2433766002
Metal						19-Aug-24	19-Aug-24
Antimony	No	2.61E+02	-	1.00E+00	BRL	BRL	BRL
Arsenic	No	1.96E+02	-	1.00E+00	6.00E+00	6.00E+00	6.00E+00
Barium	No	1.00E+04	-	1.00E+00	1.36E+02	1.03E+02	1.36E+02
Cadmium	No	6.53E+02	-	2.00E-01	BRL	BRL	BRL
Chromium (III)	No	1.00E+04	-	1.00E+00	4.64E+01	4.02E+01	4.64E+01
Chromium (VI)	No	1.96E+03	-	1.00E+00	BRL	BRL	BRL
Cobalt	No	1.00E+04	-	1.00E+00	2.76E+01	1.59E+01	2.76E+01
Copper	No	1.00E+04	-	1.00E+00	3.70E+01	3.20E+01	3.70E+01
Lead	No	2.29E+03	-	1.00E+00	3.50E+01	2.90E+01	3.50E+01
Manganese	No	1.00E+04	-	1.00E+00	1.42E+03	1.00E+03	1.42E+03
Mercury	No	3.84E+01	-	5.00E-02	BRL	BRL	BRL
Molybdenum	No	3.26E+03	-	1.00E+00	2.00E+00	1.00E+00	2.00E+00
Nickel	No	1.00E+04	-	1.00E+00	3.00E+01	1.80E+01	3.00E+01
Tin	No	1.00E+04	-	1.00E+00	2.50E+01	1.67E+01	2.50E+01
Zinc	No	1.00E+04	-	1.00E+00	1.07E+02	9.00E+01	1.07E+02
VOCs							
2-Propanone (Acetone)	No	1.00E+04	***	5.00E+01	BRL	BRL	BRL
Benzene	No	9.21E+00	3.36E+02	2.00E-01	BRL	BRL	BRL
Bromodichloromethane	No	2.85E+00	1.03E+03	1.00E-01	BRL	BRL	BRL
2-Butanone (MEK)	No	1.00E+04	***	5.00E+00	BRL	BRL	BRL
Chloroform	No	1.54E+00	1.10E+03	4.00E-02	BRL	BRL	BRL
Ethylbenzene	No	8.24E+03	1.38E+02	5.00E-01	BRL	BRL	BRL
Methyl tert-Butyl Ether	No	7.01E+01	2.38E+03	5.00E-01	BRL	BRL	BRL
Methylene Chloride	No	1.39E+01	9.21E+02	5.00E-01	BRL	BRL	BRL
Styrene	No	1.00E+04	4.97E+02	5.00E-01	BRL	BRL	BRL
Tetrachloroethene	No	7.77E-01	9.71E+01	4.00E-02	BRL	BRL	BRL
Toluene	No	1.00E+04	2.35E+02	5.00E-01	BRL	BRL	BRL
Trichloroethene	No	5.68E+00	4.88E+02	1.00E-01	BRL	BRL	BRL
Xylenes (Total)	No	1.23E+03	1.50E+02	2.00E+00	BRL	BRL	BRL
SVOCs							
Acenaphthene	No	1.00E+04	6.02E+01	5.00E-01	BRL	BRL	BRL
Acenaphthylene	No	1.00E+04	1.98E+01	5.00E-01	BRL	BRL	BRL
Anthracene	No	1.00E+04	2.56E+00	5.00E-01	BRL	BRL	BRL
Benzo(a)anthracene	No	9.18E+01	-	5.00E-01	BRL	BRL	BRL
Benzo(a)pyrene	No	9.18E+00	-	5.00E-01	BRL	BRL	BRL
Benzo(b)fluoranthene	No	1.78E+01	-	5.00E-01	BRL	BRL	BRL
Benzo(g,h,i)perylene	No	1.00E+04	-	5.00E-01	BRL	BRL	BRL
Benzo(k)fluoranthene	No	9.18E+02	-	5.00E-01	BRL	BRL	BRL
Bis(2-ethylhexyl)phthalate	No	9.18E+01	-	5.00E+00	BRL	BRL	BRL
Chrysene	No	1.14E+03	-	5.00E-01	BRL	BRL	BRL
Dibenzo(a,h)anthracene	No	9.18E+00	-	5.00E-01	BRL	BRL	BRL
Fluoranthene	No	1.00E+04	-	5.00E-01	BRL	BRL	BRL
Fluorene	No	1.00E+04	5.47E+01	5.00E-01	BRL	BRL	BRL
Hexachlorobenzene	No	5.82E-01	-	2.00E-01	BRL	BRL	BRL
Indeno(1,2,3-cd)pyrene	No	9.18E+01	-	5.00E-01	BRL	BRL	BRL
Naphthalene	No	4.53E+02	1.25E+02	5.00E-01	BRL	BRL	BRL
Phenanthrene	No	1.00E+04	2.80E+01	5.00E-01	BRL	BRL	BRL
Phenol	No	1.00E+04	7.26E+03	5.00E-01	BRL	BRL	BRL
Pyrene	No	1.00E+04	-	5.00E-01	BRL	BRL	BRL
PCRs							
C6 - C8 Fraction	No	1.00E+04	1.00E+03	5.00E+00	BRL	BRL	BRL
C9 - C16 Fraction	No	1.00E+04	3.00E+03	2.00E+02	BRL	BRL	BRL
C17 - C35 Fraction	No	1.00E+04	5.00E+03	5.00E+02	BRL	BRL	BRL

Notes:
BRL denotes below reporting limit.
The highlighted value(s) in bold indicates exceedance of the adopted RBRG, while the underlined value(s) indicate exceedance of the soil saturation limit.
* 1.00E+04 indicates a 'ceiling limit' concentration.
*** indicates that the soil saturation limit exceeds the 'ceiling limit' therefore the RBRG applies.

DC/2019/10_Detailed Groundwater Sampling Analytical Results (SPH)

Parameters	> Criteria	Industrial RBRG (mg/L)*	Solubility Limit (mg/L)	Reporting Limit (mg/L)	Maximum Value (mg/L)		ENV-BH38 GW	ENV-BH39 GW
							HK2433773003	HK2433773001
Metal							20-Aug-24	20-Aug-24
Mercury	No	6.79E+00	-	5.00E-04	BRL		BRL	BRL
VOCs								
2-Propanone (Acetone)	No	1.00E+04	***	5.00E-01	BRL		BRL	BRL
Benzene	No	5.40E+01	1.75E+03	5.00E-03	BRL		BRL	BRL
Bromodichloromethane	No	2.62E+01	6.74E+03	5.00E-03	BRL		BRL	BRL
2-Butanone (MEK)	No	1.00E+04	***	5.00E-02	BRL		BRL	BRL
Chloroform	No	1.13E+01	7.92E+03	5.00E-03	BRL		BRL	BRL
Ethylbenzene	No	1.00E+04	1.69E+02	5.00E-03	BRL		BRL	BRL
Methyl tert-Butyl Ether	No	1.81E+03	***	5.00E-03	BRL		BRL	BRL
Methylene Chloride	No	2.24E+02	***	5.00E-02	BRL		BRL	BRL
Styrene	No	1.00E+04	3.10E+02	5.00E-03	BRL		BRL	BRL
Tetrachloroethene	No	2.95E+00	2.00E+02	5.00E-03	BRL		BRL	BRL
Toluene	No	1.00E+04	5.26E+02	5.00E-03	BRL		BRL	BRL
Trichloroethene	No	1.42E+01	1.10E+03	5.00E-03	BRL		BRL	BRL
Xylenes (Total)	No	1.57E+03	1.75E+02	2.00E-02	BRL		BRL	BRL
SVOCs								
Acenaphthene	No	1.00E+04	4.24E+00	2.00E-03	BRL		BRL	BRL
Acenaphthylene	No	1.00E+04	3.93E+00	2.00E-03	BRL		BRL	BRL
Anthracene	No	1.00E+04	4.34E-02	2.00E-03	BRL		BRL	BRL
Benzo(b)fluoranthene	No	7.53E+00	1.50E-03	1.00E-03	BRL		BRL	BRL
Chrysene	No	8.12E+02	1.60E-03	1.00E-03	BRL		BRL	BRL
Fluoranthene	No	1.00E+04	2.06E-01	2.00E-03	BRL		BRL	BRL
Fluorene	No	1.00E+04	1.98E+00	2.00E-03	BRL		BRL	BRL
Hexachlorobenzene	No	6.95E-01	6.20E+00	4.00E-03	BRL		BRL	BRL
Naphthalene	No	8.62E+02	3.10E+01	2.00E-03	BRL		BRL	BRL
Phenanthrene	No	1.00E+04	1.00E+00	2.00E-03	BRL		BRL	BRL
Pyrene	No	1.00E+04	1.35E-01	2.00E-03	BRL		BRL	BRL
PCRs								
C6 - C8 Fraction	No	1.15E+03	5.23E+00	2.00E-02	BRL		BRL	BRL
C9 - C16 Fraction	No	9.98E+03	2.80E+00	5.00E-01	BRL		BRL	BRL
C17 - C35 Fraction	No	1.78E+02	2.80E+00	5.00E-01	2.40E+00		2.40E+00	6.00E-01

Notes:
BRL denotes below reporting limit.
The highlighted value(s) in bold indicates exceedance of the adopted RBRG, while the underlined value(s) indicate exceedance of the solubility limit.
* 1.00E+04 indicates a 'ceiling limit' concentration.
*** indicates that the solubility limit exceeds the 'ceiling limit' therefore the RBRG applies.

DC/2019/10_Detailed Groundwater Sampling (Duplicate)Analytical Results (SPH)

Parameters	> Criteria	Industrial RBRG (mg/L)*	Solubility Limit (mg/L)	Reporting Limit (mg/L)	Maximum Value (mg/L)		ENV-BH39 GW	ENV-BH39 GW (Dup)
							HK2433773001	HK2433773002
Metal							20-Aug-24	20-Aug-24
Mercury	No	6.79E+00	-	5.00E-04	BRL		BRL	BRL
VOCs								
2-Propanone (Acetone)	No	1.00E+04	***	5.00E-01	BRL		BRL	BRL
Benzene	No	5.40E+01	1.75E+03	5.00E-03	BRL		BRL	BRL
Bromodichloromethane	No	2.62E+01	6.74E+03	5.00E-03	BRL		BRL	BRL
2-Butanone (MEK)	No	1.00E+04	***	5.00E-02	BRL		BRL	BRL
Chloroform	No	1.13E+01	7.92E+03	5.00E-03	BRL		BRL	BRL
Ethylbenzene	No	1.00E+04	1.69E+02	5.00E-03	BRL		BRL	BRL
Methyl tert-Butyl Ether	No	1.81E+03	***	5.00E-03	BRL		BRL	BRL
Methylene Chloride	No	2.24E+02	***	5.00E-02	BRL		BRL	BRL
Styrene	No	1.00E+04	3.10E+02	5.00E-03	BRL		BRL	BRL
Tetrachloroethene	No	2.95E+00	2.00E+02	5.00E-03	BRL		BRL	BRL
Toluene	No	1.00E+04	5.26E+02	5.00E-03	BRL		BRL	BRL
Trichloroethene	No	1.42E+01	1.10E+03	5.00E-03	BRL		BRL	BRL
Xylenes (Total)	No	1.57E+03	1.75E+02	2.00E-02	BRL		BRL	BRL
SVOCs								
Acenaphthene	No	1.00E+04	4.24E+00	2.00E-03	BRL		BRL	BRL
Acenaphthylene	No	1.00E+04	3.93E+00	2.00E-03	BRL		BRL	BRL
Anthracene	No	1.00E+04	4.34E-02	2.00E-03	BRL		BRL	BRL
Benzo(b)fluoranthene	No	7.53E+00	1.50E-03	1.00E-03	BRL		BRL	BRL
Chrysene	No	8.12E+02	1.60E-03	1.00E-03	BRL		BRL	BRL
Fluoranthene	No	1.00E+04	2.06E-01	2.00E-03	BRL		BRL	BRL
Fluorene	No	1.00E+04	1.98E+00	2.00E-03	BRL		BRL	BRL
Hexachlorobenzene	No	6.95E-01	6.20E+00	4.00E-03	BRL		BRL	BRL
Naphthalene	No	8.62E+02	3.10E+01	2.00E-03	BRL		BRL	BRL
Phenanthrene	No	1.00E+04	1.00E+00	2.00E-03	BRL		BRL	BRL
Pyrene	No	1.00E+04	1.35E-01	2.00E-03	BRL		BRL	BRL
PCRs								
C6 - C8 Fraction	No	1.15E+03	5.23E+00	2.00E-02	BRL		BRL	BRL
C9 - C16 Fraction	No	9.98E+03	2.80E+00	5.00E-01	BRL		BRL	BRL
C17 - C35 Fraction	No	1.78E+02	2.80E+00	5.00E-01	6.00E-01		6.00E-01	6.00E-01

Notes:
BRL denotes below reporting limit.
The highlighted value(s) in bold indicates exceedance of the adopted RBRG, while the underlined value(s) indicate exceedance of the solubility limit.
* 1.00E+04 indicates a 'ceiling limit' concentration.
*** indicates that the solubility limit exceeds the 'ceiling limit' therefore the RBRG applies.

Detailed QA/QC Sampling Analytical Results

Parameters	Solubility Limit (mg/L)	Reporting Limit (mg/L)	Maximum Value (mg/L)	Equipment Blank	Field Blank	Trip Blank	Equipment Blank	Field Blank
Metal				HK2433766006	HK2433766007	HK2433777003	HK2433777001	HK2433777002
Antimony	-	-	BRL	19-Aug-24	19-Aug-24	20-Aug-24	20-Aug-24	20-Aug-24
Arsenic	-	-	BRL	BRL	BRL	----	----	----
Barium	-	-	BRL	BRL	BRL	----	----	----
Cadmium	-	-	BRL	BRL	BRL	----	----	----
Chromium (III)	-	-	BRL	BRL	BRL	----	----	----
Chromium (VI)	-	-	BRL	BRL	BRL	----	----	----
Cobalt	-	-	BRL	BRL	BRL	----	----	----
Copper	-	-	BRL	BRL	BRL	----	----	----
Lead	-	-	BRL	BRL	BRL	----	----	----
Manganese	-	-	BRL	BRL	BRL	----	----	----
Mercury	-	5.00E-04	BRL	BRL	BRL	----	BRL	BRL
Molybdenum	-	-	BRL	BRL	BRL	----	----	----
Nickel	-	-	BRL	BRL	BRL	----	----	----
Tin	-	-	BRL	BRL	BRL	----	----	----
Zinc	-	-	BRL	BRL	BRL	----	----	----
VOCs								
2-Propanone (Acetone)	***	5.00E-01	BRL	BRL	BRL	BRL	BRL	BRL
Benzene	1.75E+03	5.00E-03	BRL	BRL	BRL	BRL	BRL	BRL
Bromodichloromethane	6.74E+03	5.00E-03	BRL	BRL	BRL	BRL	BRL	BRL
2-Butanone (MEK)	***	5.00E-02	BRL	BRL	BRL	BRL	BRL	BRL
Chloroform	7.92E+03	5.00E-03	BRL	BRL	BRL	BRL	BRL	BRL
Ethylbenzene	1.69E+02	5.00E-03	BRL	BRL	BRL	BRL	BRL	BRL
Methyl tert-Butyl Ether	***	5.00E-03	BRL	BRL	BRL	BRL	BRL	BRL
Methylene Chloride	***	5.00E-02	BRL	BRL	BRL	BRL	BRL	BRL
Styrene	3.10E+02	5.00E-03	BRL	BRL	BRL	BRL	BRL	BRL
Tetrachloroethene	2.00E+02	5.00E-03	BRL	BRL	BRL	BRL	BRL	BRL
Toluene	5.26E+02	5.00E-03	BRL	BRL	BRL	BRL	BRL	BRL
Trichloroethene	1.10E+03	5.00E-03	BRL	BRL	BRL	BRL	BRL	BRL
Xylenes (Total)	1.75E+02	2.00E-02	BRL	BRL	BRL	BRL	BRL	BRL
SVOCs								
Acenaphthene	4.24E+00	2.00E-03	BRL	BRL	BRL	----	BRL	BRL
Acenaphthylene	3.93E+00	2.00E-03	BRL	BRL	BRL	----	BRL	BRL
Anthracene	4.34E-02	2.00E-03	BRL	BRL	BRL	----	BRL	BRL
Benzo(a)anthracene	-	-	BRL	BRL	BRL	----	----	----
Benzo(a)pyrene	-	-	BRL	BRL	BRL	----	----	----
Benzo(b)fluoranthene	1.50E-03	1.00E-03	BRL	BRL	BRL	----	BRL	BRL
Benzo(g,h,i)perylene	-	-	BRL	BRL	BRL	----	----	----
Benzo(k)fluoranthene	-	-	BRL	BRL	BRL	----	----	----
bis(2-ethylhexyl)phthalate	-	-	BRL	BRL	BRL	----	----	----
Chrysene	1.60E-03	1.00E-03	BRL	BRL	BRL	----	BRL	BRL
Dibenzo(a,h)anthracene	-	-	BRL	BRL	BRL	----	----	----
Fluoranthene	2.06E-01	2.00E-03	BRL	BRL	BRL	----	BRL	BRL
Fluorene	1.98E+00	2.00E-03	BRL	BRL	BRL	----	BRL	BRL
Hexachlorobenzene	6.20E+00	4.00E-03	BRL	BRL	BRL	----	BRL	BRL
Indeno(1,2,3-cd)pyrene	-	-	BRL	BRL	BRL	----	----	----
Naphthalene	3.10E+01	2.00E-03	BRL	BRL	BRL	----	BRL	BRL
Phenanthrene	1.00E+00	2.00E-03	BRL	BRL	BRL	----	BRL	BRL
Phenol	-	-	BRL	BRL	BRL	----	----	----
Pyrene	1.35E-01	2.00E-03	BRL	BRL	BRL	----	BRL	BRL
PCRs								
C6 - C8 Fraction	5.23E+00	2.00E-02	BRL	BRL	BRL	----	BRL	BRL
C9 - C16 Fraction	2.80E+00	5.00E-01	BRL	BRL	BRL	----	BRL	BRL
C17 - C35 Fraction	2.80E+00	5.00E-01	BRL	BRL	BRL	----	BRL	BRL

Notes:
BRL denotes below reporting limit.
“-----”: Not tested according to the QA/QC Requirements in **Table 2-2**.
*** indicates that the solubility limit exceeds the 'ceiling limit' therefore the RBRG applies.

APPENDIX F
LABORATORY TESTING REPORTS

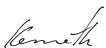


CERTIFICATE OF ANALYSIS

Client	: PAUL Y - CREC JOINT VENTURE	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 23
Contact	: JUSTIN YU	Contact	: Richard Fung	Work Order	: HK2433766
Address	: 11/F, TWO SKY PARC 51 HUNG TO ROAD, KWUN TONG, KOWLOON	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Justin.Yu@dc201910.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: DC/2019/10 YUEN LONG EFFLUENT POLISHING PLANT - MAIN WORKS FOR STAGE 1			Date Samples Received	: 20-Aug-2024
Order number	: ---	Quote number	: HKE/1998/2024	Issue Date	: 29-Aug-2024
C-O-C number	: S101645			No. of samples received	: 9
Site	: YUEN LONG SEWAGE TREATMENT WORKS (YLSTW)			No. of samples analysed	: 9

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This document has been signed by those names that appear on this report and are the authorised signatories.

Signatories	Position	Authorised results for
 Chan Wai Hung, Mannix	Laboratory Manager	Organics_ENV
 Lin Wai Yu, Iris	Assistant Manager - Inorganics	Inorganics
 Wong Wing, Kenneth	Assistant Manager - Metals	Metals_ENV



General Comments

This report supersedes any previous report(s) with the same work order number. 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. Testing period is from 20-Aug-2024 to 29-Aug-2024.

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: HK2433766

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were picked up from client by ALS staff. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil sample(s) is/are reported on dry weight basis.

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

EP070HK_SR is the numeric code for internal use. Test method for C6-C9 Fraction of TPH is EP071HK_SR.

Sample(s) as received, digested by in-house method E-ASTM D3974-09 prior to determination of metals. The in-house method is developed based on ASTM D3974-09 method.

Test Method - EG3060 - Sample(s) as received, digested by in-house method E-3060 prior to the determination of Hexavalent Chromium (Cr6+). The in-house method is developed based on USEPA method 3060.



Analytical Results

Sub-Matrix: SOIL				Sample ID	ENV-BH38 0.5m	ENV-BH38 (Dup) 0.5m	ENV-BH39 0.5m	ENV-BH38 1.50-1.95m	ENV-BH38 3.00-3.45m
Sampling date / time					19-Aug-2024 09:10	19-Aug-2024 09:10	19-Aug-2024 09:20	19-Aug-2024 10:00	19-Aug-2024 11:00
Compound	CAS Number	LOR	Unit		HK2433766-001	HK2433766-002	HK2433766-003	HK2433766-004	HK2433766-005
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		22.3	22.4	22.6	18.6	30.7
EG: Metals and Major Cations									
EG020: Antimony	7440-36-0	1	mg/kg		<1	<1	<1	<1	<1
EG020: Arsenic	7440-38-2	1	mg/kg		6	6	6	6	6
EG020: Barium	7440-39-3	1.0	mg/kg		103	136	96.6	110	125
EG020: Cadmium	7440-43-9	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EG020: Cobalt	7440-48-4	1.0	mg/kg		15.9	27.6	18.1	17.5	22.0
EG020: Copper	7440-50-8	1	mg/kg		32	37	31	35	37
EG020: Lead	7439-92-1	1	mg/kg		29	35	27	26	35
EG020: Manganese	7439-96-5	1.0	mg/kg		1000	1420	1170	1580	1610
EG020: Mercury	7439-97-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EG020: Molybdenum	7439-98-7	1	mg/kg		1	2	<1	<1	1
EG020: Nickel	7440-02-0	1	mg/kg		18	30	18	23	22
EG020: Tin	7440-31-5	1.0	mg/kg		16.7	25.0	30.0	21.2	23.2
EG020: Zinc	7440-66-6	1	mg/kg		90	107	98	92	73
EG049: Trivalent Chromium	16065-83-1	1.0	mg/kg		40.2	46.4	39.5	45.8	42.8
EG3060: Hexavalent Chromium	18540-29-9	1.0	mg/kg		<1.0	<1.0	<1.0	<1.0	<1.0
EP-076HK: 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
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



Sub-Matrix: SOIL				Sample ID	ENV-BH38 0.5m	ENV-BH38 (Dup) 0.5m	ENV-BH39 0.5m	ENV-BH38 1.50-1.95m	ENV-BH38 3.00-3.45m
Sampling date / time				19-Aug-2024 09:10	19-Aug-2024 09:10	19-Aug-2024 09:20	19-Aug-2024 10:00	19-Aug-2024 11:00	
Compound	CAS Number	LOR	Unit	HK2433766-001	HK2433766-002	HK2433766-003	HK2433766-004	HK2433766-005	
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued									
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: 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-076HK: 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-071HK_SR: Total Petroleum Hydrocarbons (TPH)									
EP070HK_SR: C6 - C8 Fraction	----	5	mg/kg	<5	<5	<5	<5	<5	
EP071HK_SR: C9 - C16 Fraction	----	200	mg/kg	<200	<200	<200	<200	<200	
EP071HK_SR: C17 - C35 Fraction	----	500	mg/kg	<500	<500	<500	<500	<500	
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH)									
EP074_SR: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	
EP074_SR: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
EP074_SR: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
EP074_SR: meta- & para-Xylene	108-38-3 106-42-3	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	
EP074_SR: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
EP074_SR: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
EP074_SR: Xylenes (Total)	----	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	
EP-074_SR-B: Oxygenated Compounds									
EP074_SR: 2-Propanone (Acetone)	67-64-1	50	mg/kg	<50	<50	<50	<50	<50	
EP074_SR: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	<5	<5	<5	
EP-074_SR-E: Halogenated Aliphatics									
EP074_SR: Methylene chloride	75-09-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
EP074_SR: Trichloroethene	79-01-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	



Sub-Matrix: SOIL				Sample ID	ENV-BH38 0.5m	ENV-BH38 (Dup) 0.5m	ENV-BH39 0.5m	ENV-BH38 1.50-1.95m	ENV-BH38 3.00-3.45m
				Sampling date / time	19-Aug-2024 09:10	19-Aug-2024 09:10	19-Aug-2024 09:20	19-Aug-2024 10:00	19-Aug-2024 11:00
Compound	CAS Number	LOR	Unit		HK2433766-001	HK2433766-002	HK2433766-003	HK2433766-004	HK2433766-005
EP-074_SR-E: Halogenated Aliphatics - Continued									
EP074_SR: Tetrachloroethene	127-18-4	0.04	mg/kg		<0.04	<0.04	<0.04	<0.04	<0.04
EP-074_SR-G: Trihalomethanes (THM)									
EP074_SR: Chloroform	67-66-3	0.04	mg/kg		<0.04	<0.04	<0.04	<0.04	<0.04
EP074_SR: Bromodichloromethane	75-27-4	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP-074_SR-I: Methyl-tert-butyl Ether									
EP074_SR: Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		80.8	80.1	84.7	89.8	86.6
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		100	98.7	104	111	106
EP-080_SRS: TPH(Volatile)/BTEX Surrogate									
EP070HK_SR: Dibromofluoromethane	1868-53-7	0.1	%		87.5	88.8	91.2	87.6	92.4
EP070HK_SR: Toluene-D8	2037-26-5	0.1	%		97.2	96.6	97.4	97.3	97.5
EP070HK_SR: 4-Bromofluorobenzene	460-00-4	0.1	%		102	102	102	101	101
EP-074_SR-S: VOC Surrogates									
EP074_SR: Dibromofluoromethane	1868-53-7	0.1	%		87.5	88.8	91.2	87.6	92.4
EP074_SR: Toluene-D8	2037-26-5	0.1	%		97.2	96.6	97.4	97.3	97.5
EP074_SR: 4-Bromofluorobenzene	460-00-4	0.1	%		102	102	102	101	101



Sub-Matrix: SOIL				Sample ID	ENV-BH39 1.50-1.95m	ENV-BH39 3.00-3.45m	---	---	---
				Sampling date / time	19-Aug-2024 13:00	19-Aug-2024 14:00	---	---	---
Compound	CAS Number	LOR	Unit		HK2433766-008	HK2433766-009	-----	-----	-----
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		22.7	26.8	---	---	---
EG: Metals and Major Cations									
EG020: Antimony	7440-36-0	1	mg/kg		<1	<1	---	---	---
EG020: Arsenic	7440-38-2	1	mg/kg		6	9	---	---	---
EG020: Barium	7440-39-3	1.0	mg/kg		75.8	211	---	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg		<0.2	<0.2	---	---	---
EG020: Cobalt	7440-48-4	1.0	mg/kg		23.1	86.4	---	---	---
EG020: Copper	7440-50-8	1	mg/kg		34	53	---	---	---
EG020: Lead	7439-92-1	1	mg/kg		30	70	---	---	---
EG020: Manganese	7439-96-5	1.0	mg/kg		1360	3290	---	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg		<0.05	<0.05	---	---	---
EG020: Molybdenum	7439-98-7	1	mg/kg		<1	3	---	---	---
EG020: Nickel	7440-02-0	1	mg/kg		22	38	---	---	---
EG020: Tin	7440-31-5	1.0	mg/kg		15.3	14.5	---	---	---
EG020: Zinc	7440-66-6	1	mg/kg		65	86	---	---	---
EG049: Trivalent Chromium	16065-83-1	1.0	mg/kg		45.8	44.8	---	---	---
EG3060: Hexavalent Chromium	18540-29-9	1.0	mg/kg		<1.0	<1.0	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	0.500	mg/kg		<0.500	<0.500	---	---	---
EP076HK: Acenaphthylene	208-96-8	0.500	mg/kg		<0.500	<0.500	---	---	---
EP076HK: Acenaphthene	83-32-9	0.500	mg/kg		<0.500	<0.500	---	---	---
EP076HK: Fluorene	86-73-7	0.500	mg/kg		<0.500	<0.500	---	---	---
EP076HK: Phenanthrene	85-01-8	0.500	mg/kg		<0.500	<0.500	---	---	---
EP076HK: Anthracene	120-12-7	0.500	mg/kg		<0.500	<0.500	---	---	---
EP076HK: Fluoranthene	206-44-0	0.500	mg/kg		<0.500	<0.500	---	---	---
EP076HK: Pyrene	129-00-0	0.500	mg/kg		<0.500	<0.500	---	---	---
EP076HK: Benz(a)anthracene	56-55-3	0.500	mg/kg		<0.500	<0.500	---	---	---
EP076HK: Chrysene	218-01-9	0.500	mg/kg		<0.500	<0.500	---	---	---
EP076HK: Benzo(b)fluoranthene	205-99-2	0.500	mg/kg		<0.500	<0.500	---	---	---



Sub-Matrix: SOIL				Sample ID	ENV-BH39 1.50-1.95m	ENV-BH39 3.00-3.45m	----	---	---
Sampling date / time					19-Aug-2024 13:00	19-Aug-2024 14:00	----	----	----
Compound	CAS Number	LOR	Unit		HK2433766-008	HK2433766-009	-----	-----	-----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued									
EP076HK: Benzo(k)fluoranthene	207-08-9	0.500	mg/kg		<0.500	<0.500	---	---	---
EP076HK: Benzo(a)pyrene	50-32-8	0.500	mg/kg		<0.500	<0.500	---	---	---
EP076HK: Indeno(1,2,3-cd)pyrene	193-39-5	0.500	mg/kg		<0.500	<0.500	---	---	---
EP076HK: Dibenz(a,h)anthracene	53-70-3	0.500	mg/kg		<0.500	<0.500	---	---	---
EP076HK: Benzo(g,h,i)perylene	191-24-2	0.500	mg/kg		<0.500	<0.500	---	---	---
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate									
EP076HK: Phenol	108-95-2	0.50	mg/kg		<0.50	<0.50	---	---	---
EP076HK: Hexachlorobenzene (HCB)	118-74-1	0.200	mg/kg		<0.200	<0.200	---	---	---
EP076HK: Bis(2-ethylhexyl)phthalate	117-81-7	5.00	mg/kg		<5.00	<5.00	---	---	---
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH)									
EP070HK_SR: C6 - C8 Fraction	----	5	mg/kg		<5	<5	---	---	---
EP071HK_SR: C9 - C16 Fraction	----	200	mg/kg		<200	<200	---	---	---
EP071HK_SR: C17 - C35 Fraction	----	500	mg/kg		<500	<500	---	---	---
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH)									
EP074_SR: Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	---	---	---
EP074_SR: Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	---	---	---
EP074_SR: Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	---	---	---
EP074_SR: meta- & para-Xylene	108-38-3 106-42-3	1.0	mg/kg		<1.0	<1.0	---	---	---
EP074_SR: Styrene	100-42-5	0.5	mg/kg		<0.5	<0.5	---	---	---
EP074_SR: ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	---	---	---
EP074_SR: Xylenes (Total)	----	2.0	mg/kg		<2.0	<2.0	---	---	---
EP-074_SR-B: Oxygenated Compounds									
EP074_SR: 2-Propanone (Acetone)	67-64-1	50	mg/kg		<50	<50	---	---	---
EP074_SR: 2-Butanone (MEK)	78-93-3	5	mg/kg		<5	<5	---	---	---
EP-074_SR-E: Halogenated Aliphatics									
EP074_SR: Methylene chloride	75-09-2	0.5	mg/kg		<0.5	<0.5	---	---	---
EP074_SR: Trichloroethene	79-01-6	0.1	mg/kg		<0.1	<0.1	---	---	---
EP074_SR: Tetrachloroethene	127-18-4	0.04	mg/kg		<0.04	<0.04	---	---	---



Sub-Matrix: SOIL				Sample ID	ENV-BH39 1.50-1.95m	ENV-BH39 3.00-3.45m	---	---	---
				Sampling date / time	19-Aug-2024 13:00	19-Aug-2024 14:00	---	---	---
Compound	CAS Number	LOR	Unit		HK2433766-008	HK2433766-009	-----	-----	-----
EP-074_SR-G: Trihalomethanes (THM)									
EP074_SR: Chloroform	67-66-3	0.04	mg/kg		<0.04	<0.04	---	---	---
EP074_SR: Bromodichloromethane	75-27-4	0.1	mg/kg		<0.1	<0.1	---	---	---
EP-074_SR-I: Methyl-tert-butyl Ether									
EP074_SR: Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	mg/kg		<0.5	<0.5	---	---	---
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		89.2	85.5	---	---	---
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		113	107	---	---	---
EP-080_SRS: TPH(Volatile)/BTEX Surrogate									
EP070HK_SR: Dibromofluoromethane	1868-53-7	0.1	%		91.9	83.0	---	---	---
EP070HK_SR: Toluene-D8	2037-26-5	0.1	%		97.8	97.9	---	---	---
EP070HK_SR: 4-Bromofluorobenzene	460-00-4	0.1	%		99.6	98.1	---	---	---
EP-074_SR-S: VOC Surrogates									
EP074_SR: Dibromofluoromethane	1868-53-7	0.1	%		91.9	83.0	---	---	---
EP074_SR: Toluene-D8	2037-26-5	0.1	%		97.8	97.9	---	---	---
EP074_SR: 4-Bromofluorobenzene	460-00-4	0.1	%		99.6	98.1	---	---	---



Sub-Matrix: WATER				Sample ID	Equipment Blank	Field Blank	---	---	---
				Sampling date / time	19-Aug-2024 11:05	19-Aug-2024 11:10	----	----	----
Compound	CAS Number	LOR	Unit		HK2433766-006	HK2433766-007	-----	-----	-----
EG: Metals and Major Cations - Filtered									
EG020: Antimony	7440-36-0	1	µg/L		<1	<1	---	---	---
EG020: Arsenic	7440-38-2	10	µg/L		<10	<10	---	---	---
EG020: Barium	7440-39-3	1	µg/L		<1	<1	---	---	---
EG020: Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	---	---	---
EG020: Cobalt	7440-48-4	1	µg/L		<1	<1	---	---	---
EG020: Copper	7440-50-8	1	µg/L		<1	<1	---	---	---
EG020: Lead	7439-92-1	1	µg/L		<1	<1	---	---	---
EG020: Manganese	7439-96-5	1	µg/L		<1	<1	---	---	---
EG020: Mercury	7439-97-6	0.5	µg/L		<0.5	<0.5	---	---	---
EG020: Molybdenum	7439-98-7	1	µg/L		<1	<1	---	---	---
EG020: Nickel	7440-02-0	1	µg/L		<1	<1	---	---	---
EG020: Tin	7440-31-5	1	µg/L		<1	<1	---	---	---
EG020: Zinc	7440-66-6	10	µg/L		<10	<10	---	---	---
EG049: Trivalent Chromium	16065-83-1	20	µg/L		<20	<20	---	---	---
EG050: Hexavalent Chromium	18540-29-9	20	µg/L		<20	<20	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	2.0	µg/L		<2.0	<2.0	---	---	---
EP076HK: Acenaphthylene	208-96-8	2.0	µg/L		<2.0	<2.0	---	---	---
EP076HK: Acenaphthene	83-32-9	2.0	µg/L		<2.0	<2.0	---	---	---
EP076HK: Fluorene	86-73-7	2.0	µg/L		<2.0	<2.0	---	---	---
EP076HK: Phenanthrene	85-01-8	2.0	µg/L		<2.0	<2.0	---	---	---
EP076HK: Anthracene	120-12-7	2.0	µg/L		<2.0	<2.0	---	---	---
EP076HK: Fluoranthene	206-44-0	2.0	µg/L		<2.0	<2.0	---	---	---
EP076HK: Pyrene	129-00-0	2.0	µg/L		<2.0	<2.0	---	---	---
EP076HK: Benz(a)anthracene	56-55-3	2.0	µg/L		<2.0	<2.0	---	---	---
EP076HK: Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	---	---	---
EP076HK: Benzo(b)fluoranthene	205-99-2	1.0	µg/L		<1.0	<1.0	---	---	---
EP076HK: Benzo(k)fluoranthene	207-08-9	2.0	µg/L		<2.0	<2.0	---	---	---
EP076HK: Benzo(a)pyrene	50-32-8	2.0	µg/L		<2.0	<2.0	---	---	---
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	2.0	µg/L		<2.0	<2.0	---	---	---

Sub-Matrix: WATER				Sample ID	Equipment Blank	Field Blank	----	----	----
				Sampling date / time	19-Aug-2024 11:05	19-Aug-2024 11:10	----	----	----
Compound	CAS Number	LOR	Unit	HK2433766-006	HK2433766-007	-----	-----	-----	
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued									
EP076HK: Dibenz(a,h)anthracene	53-70-3	2.0	µg/L	<2.0	<2.0	----	----	----	
EP076HK: Benzo(g,h,i)perylene	191-24-2	2.0	µg/L	<2.0	<2.0	----	----	----	
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate									
EP076HK: Phenol	108-95-2	2.0	µg/L	<2.0	<2.0	----	----	----	
EP076HK: Hexachlorobenzene (HCB)	118-74-1	4.0	µg/L	<4.0	<4.0	----	----	----	
EP076HK: Bis(2-ethylhexyl)phthalate	117-81-7	20.0	µg/L	<20.0	<20.0	----	----	----	
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH)									
EP070HK_SR: C6 - C8 Fraction	----	20	µg/L	<20	<20	----	----	----	
EP071HK_SR: C9 - C16 Fraction	----	500	µg/L	<500	<500	----	----	----	
EP071HK_SR: C17 - C35 Fraction	----	500	µg/L	<500	<500	----	----	----	
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH)									
EP074_SR: Benzene	71-43-2	5.0	µg/L	<5.0	<5.0	----	----	----	
EP074_SR: Toluene	108-88-3	5.0	µg/L	<5.0	<5.0	----	----	----	
EP074_SR: Ethylbenzene	100-41-4	5.0	µg/L	<5.0	<5.0	----	----	----	
EP074_SR: meta- & para-Xylene	108-38-3	10	µg/L	<10	<10	----	----	----	
	106-42-3								
EP074_SR: Styrene	100-42-5	5.0	µg/L	<5.0	<5.0	----	----	----	
EP074_SR: ortho-Xylene	95-47-6	5.0	µg/L	<5.0	<5.0	----	----	----	
EP074_SR: Xylenes (Total)	----	20	µg/L	<20	<20	----	----	----	
EP-074_SR-B: Oxygenated Compounds									
EP074_SR: 2-Propanone (Acetone)	67-64-1	500	µg/L	<500	<500	----	----	----	
EP074_SR: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	----	----	----	
EP-074_SR-E: Halogenated Aliphatics									
EP074_SR: Methylene chloride	75-09-2	50	µg/L	<50	<50	----	----	----	
EP074_SR: Trichloroethene	79-01-6	5.0	µg/L	<5.0	<5.0	----	----	----	
EP074_SR: Tetrachloroethene	127-18-4	5.0	µg/L	<5.0	<5.0	----	----	----	
EP-074_SR-G: Trihalomethanes (THM)									
EP074_SR: Chloroform	67-66-3	5.0	µg/L	<5.0	<5.0	----	----	----	
EP074_SR: Bromodichloromethane	75-27-4	5.0	µg/L	<5.0	<5.0	----	----	----	
EP-074_SR-I: Methyl-tert-butyl Ether									



Sub-Matrix: WATER				Sample ID	Equipment Blank	Field Blank	----	---	---
				Sampling date / time	19-Aug-2024 11:05	19-Aug-2024 11:10	----	----	----
Compound	CAS Number	LOR	Unit		HK2433766-006	HK2433766-007	-----	-----	-----
EP-074_SR-I: Methyl-tert-butyl Ether - Continued									
EP074_SR: Methyl tert-Butyl Ether (MTBE)	1634-04-4	5.0	µg/L		<5.0	<5.0	---	---	---
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		95.6	61.7	---	---	---
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		130	114	---	---	---
EP-080_SRS: TPH(Volatile)/BTEX Surrogate									
EP070HK_SR: Dibromofluoromethane	1868-53-7	0.1	%		100	102	---	---	---
EP070HK_SR: Toluene-D8	2037-26-5	0.1	%		94.8	98.5	---	---	---
EP070HK_SR: 4-Bromofluorobenzene	460-00-4	0.1	%		98.6	102	---	---	---
EP-074_SR-S: VOC Surrogates									
EP074_SR: Dibromofluoromethane	1868-53-7	0.1	%		100	102	---	---	---
EP074_SR: Toluene-D8	2037-26-5	0.1	%		94.8	98.5	---	---	---
EP074_SR: 4-Bromofluorobenzene	460-00-4	0.1	%		98.6	102	---	---	---

----- END OF REPORT -----



Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: SOIL

Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 6012221)								
HK2433317-008	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	22.1	22.4	1.7
HK2433477-004	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	24.6	24.3	0.9
EG: Metals and Major Cations (QC Lot: 6003974)								
HK2433111-018	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Barium	7440-39-3	0.5	mg/kg	5.3	4.9	7.3
		EG020: Cobalt	7440-48-4	0.5	mg/kg	<1.0	<1.0	0.0
		EG020: Manganese	7439-96-5	0.5	mg/kg	21.2	23.1	8.4
		EG020: Tin	7440-31-5	0.5	mg/kg	6.7	6.3	5.0
		EG020: Antimony	7440-36-0	1	mg/kg	<1	<1	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	4	3	0.0
		EG020: Copper	7440-50-8	1	mg/kg	4	4	0.0
		EG020: Lead	7439-92-1	1	mg/kg	7	6	0.0
		EG020: Molybdenum	7439-98-7	1	mg/kg	10	10	0.0
		EG020: Nickel	7440-02-0	1	mg/kg	2	3	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	7	7	0.0
EG: Metals and Major Cations (QC Lot: 6003976)								
HK2433111-018	Anonymous	EG3060: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<1.0	<1.0	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 6002949)								
HK2433556-007	Anonymous	Naphthalene	91-20-3	50	µg/kg	<0.500 mg/kg	<500	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<0.500 mg/kg	<500	0.0
		Acenaphthene	83-32-9	50	µg/kg	<0.500 mg/kg	<500	0.0
		Fluorene	86-73-7	50	µg/kg	<0.500 mg/kg	<500	0.0
		Phenanthrene	85-01-8	50	µg/kg	<0.500 mg/kg	<500	0.0
		Anthracene	120-12-7	50	µg/kg	<0.500 mg/kg	<500	0.0
		Fluoranthene	206-44-0	50	µg/kg	<0.500 mg/kg	<500	0.0
		Pyrene	129-00-0	50	µg/kg	<0.500 mg/kg	<500	0.0



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 6002949) - Continued								
HK2433556-007	Anonymous	Benz(a)anthracene	56-55-3	50	µg/kg	<0.500 mg/kg	<500	0.0
		Chrysene	218-01-9	50	µg/kg	<0.500 mg/kg	<500	0.0
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<0.500 mg/kg	<500	0.0
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<0.500 mg/kg	<500	0.0
		Benzo(a)pyrene	50-32-8	50	µg/kg	<0.500 mg/kg	<500	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<0.500 mg/kg	<500	0.0
		Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<0.500 mg/kg	<500	0.0
		Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<0.500 mg/kg	<500	0.0
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 6002949)								
HK2433556-007	Anonymous	Bis(2-ethylhexyl)phthalate	117-81-7	1000	µg/kg	<5.00 mg/kg	<5000	0.0
		Hexachlorobenzene (HCB)	118-74-1	50	µg/kg	<0.200 mg/kg	<200	0.0
		Phenol	108-95-2	500	µg/kg	<0.50 mg/kg	<500	0.0
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 6002909)								
HK2433556-007	Anonymous	C6 - C8 Fraction	----	5	mg/kg	<5	<5	0.0
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 6002948)								
HK2433556-007	Anonymous	C9 - C16 Fraction	----	200	mg/kg	<200	<200	0.0
		C17 - C35 Fraction	----	500	mg/kg	<500	<500	0.0
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 6002910)								
HK2433556-007	Anonymous	Benzene	71-43-2	0.1	mg/kg	<0.2	<0.2	0.0
		Toluene	108-88-3	0.2	mg/kg	<0.5	<0.5	0.0
		Ethylbenzene	100-41-4	0.2	mg/kg	<0.5	<0.5	0.0
		Styrene	100-42-5	0.2	mg/kg	<0.5	<0.5	0.0
		ortho-Xylene	95-47-6	0.2	mg/kg	<0.5	<0.5	0.0
		meta- & para-Xylene	108-38-3	0.4	mg/kg	<1.0	<1.0	0.0
			106-42-3					
Xylenes (Total)	----	1	mg/kg	<2.0	<2.0	0.0		
EP-074_SR-B: Oxygenated Compounds (QC Lot: 6002910)								
HK2433556-007	Anonymous	2-Propanone (Acetone)	67-64-1	2	mg/kg	<50	<50	0.0
		2-Butanone (MEK)	78-93-3	2	mg/kg	<5	<5	0.0
EP-074_SR-E: Halogenated Aliphatics (QC Lot: 6002910)								
HK2433556-007	Anonymous	Tetrachloroethene	127-18-4	0.04	mg/kg	<0.04	<0.04	0.0



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-074_SR-E: Halogenated Aliphatics (QC Lot: 6002910) - Continued								
HK2433556-007	Anonymous	Trichloroethene	79-01-6	0.1	mg/kg	<0.1	<0.1	0.0
		Methylene chloride	75-09-2	0.5	mg/kg	<0.5	<0.5	0.0
EP-074_SR-G: Trihalomethanes (THM) (QC Lot: 6002910)								
HK2433556-007	Anonymous	Chloroform	67-66-3	0.04	mg/kg	<0.04	<0.04	0.0
		Bromodichloromethane	75-27-4	0.1	mg/kg	<0.1	<0.1	0.0
EP-074_SR-I: Methyl-tert-butyl Ether (QC Lot: 6002910)								
HK2433556-007	Anonymous	Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.2	mg/kg	<0.5	<0.5	0.0
Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EG: Metals and Major Cations - Filtered (QC Lot: 6002884)								
HK2433762-003	Anonymous	EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
		EG020: Antimony	7440-36-0	1	µg/L	1	1	0.0
		EG020: Arsenic	7440-38-2	1	µg/L	1	1	0.0
		EG020: Barium	7440-39-3	1	µg/L	10	10	0.0
		EG020: Cobalt	7440-48-4	1	µg/L	<1	<1	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Manganese	7439-96-5	1	µg/L	2	2	0.0
		EG020: Molybdenum	7439-98-7	1	µg/L	17	17	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	0.0
		EG020: Tin	7440-31-5	1	µg/L	<1	<1	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0
EG: Metals and Major Cations - Filtered (QC Lot: 6002892)								
HK2433766-007	Field Blank	EG050: Hexavalent Chromium	18540-29-9	20	µg/L	<20	<20	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
EG: Metals and Major Cations (QC Lot: 6003974)											
EG020: Antimony	7440-36-0	1	mg/kg	<1	10 mg/kg	90.2	----	85.0	108	----	----
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	103	----	87.2	110	----	----
EG020: Barium	7440-39-3	0.5	mg/kg	<0.5	10 mg/kg	94.6	----	85.0	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	94.4	----	85.0	113	----	----
EG020: Cobalt	7440-48-4	0.5	mg/kg	<0.5	10 mg/kg	102	----	89.8	110	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	113	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	95.7	----	86.7	115	----	----
EG020: Manganese	7439-96-5	0.5	mg/kg	<0.5	10 mg/kg	99.2	----	85.8	108	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	104	----	86.6	115	----	----
EG020: Molybdenum	7439-98-7	1	mg/kg	<1	10 mg/kg	94.8	----	85.2	113	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	105	----	90.6	111	----	----
EG020: Tin	7440-31-5	0.5	mg/kg	<0.5	10 mg/kg	91.7	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	104	----	90.9	115	----	----
EG: Metals and Major Cations (QC Lot: 6003976)											
EG3060: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	40 mg/kg	92.9	----	75.0	125	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 6002949)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	80.1	----	69.0	133	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	84.7	----	70.0	130	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	77.2	----	69.0	139	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	81.6	----	67.0	133	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	78.5	----	63.0	136	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	81.8	----	71.0	136	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	82.8	----	68.0	134	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	81.7	----	70.0	131	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	87.5	----	69.0	136	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	77.4	----	76.0	146	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	93.0	----	62.0	143	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	84.4	----	75.0	142	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	84.7	----	75.0	136	----	----

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
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 6002949) - Continued											
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	92.2	----	52.0	155	----	----
Dibenz(a.h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	83.8	----	56.0	145	----	----
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	95.1	----	57.0	156	----	----
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 6002949)											
Phenol	108-95-2	500	µg/kg	<500	250 µg/kg	88.2	----	68.0	141	----	----
Hexachlorobenzene (HCB)	118-74-1	50	µg/kg	<50	250 µg/kg	83.8	----	49.0	121	----	----
Bis(2-ethylhexyl)phthalate	117-81-7	1000	µg/kg	<1000	250 µg/kg	129	----	38.0	163	----	----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 6002909)											
C6 - C8 Fraction	----	5	mg/kg	<5	4.5 mg/kg	116	----	72.0	126	----	----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 6002948)											
C9 - C16 Fraction	----	200	mg/kg	<200	31.5 mg/kg	88.3	----	69.0	101	----	----
C17 - C35 Fraction	----	500	mg/kg	<500	67.5 mg/kg	100	----	73.0	100	----	----
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 6002910)											
Benzene	71-43-2	0.1	mg/kg	<0.1	0.25 mg/kg	102	----	53.0	120	----	----
Toluene	108-88-3	0.2	mg/kg	<0.2	0.25 mg/kg	105	----	63.0	116	----	----
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	0.25 mg/kg	105	----	60.0	118	----	----
meta- & para-Xylene	108-38-3	0.4	mg/kg	<0.4	0.5 mg/kg	98.8	----	67.0	120	----	----
	106-42-3										
Styrene	100-42-5	0.2	mg/kg	<0.2	0.25 mg/kg	91.6	----	51.0	143	----	----
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	0.25 mg/kg	110	----	66.0	114	----	----
Xylenes (Total)	----	1	mg/kg	<1.0	0.75 mg/kg	102	----	67.0	117	----	----
EP-074_SR-B: Oxygenated Compounds (QC Lot: 6002910)											
2-Propanone (Acetone)	67-64-1	2	mg/kg	<2	2.5 mg/kg	83.4	----	30.0	168	----	----
2-Butanone (MEK)	78-93-3	2	mg/kg	<2	2.5 mg/kg	104	----	51.0	125	----	----
EP-074_SR-E: Halogenated Aliphatics (QC Lot: 6002910)											
Methylene chloride	75-09-2	0.5	mg/kg	<0.5	0.25 mg/kg	138	----	30.0	178	----	----
Trichloroethene	79-01-6	0.1	mg/kg	<0.1	0.25 mg/kg	103	----	68.0	119	----	----
Tetrachloroethene	127-18-4	0.04	mg/kg	<0.04	0.25 mg/kg	102	----	64.0	128	----	----
EP-074_SR-G: Trihalomethanes (THM) (QC Lot: 6002910)											



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-074_SR-G: Trihalomethanes (THM) (QC Lot: 6002910) - Continued											
Chloroform	67-66-3	0.04	mg/kg	<0.04	0.25 mg/kg	102	----	64.0	107	----	----
Bromodichloromethane	75-27-4	0.1	mg/kg	<0.1	0.25 mg/kg	90.7	----	44.0	140	----	----
EP-074_SR-I: Methyl-tert-butyl Ether (QC Lot: 6002910)											
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.2	mg/kg	<0.2	0.25 mg/kg	95.5	----	48.0	118	----	----
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 - Filtered (QC Lot: 6002884)											
EG020: Antimony	7440-36-0	1	µg/L	<1	50 µg/L	103	----	85.0	115	----	----
EG020: Arsenic	7440-38-2	1	µg/L	<1	50 µg/L	94.8	----	88.1	110	----	----
EG020: Barium	7440-39-3	1	µg/L	<1	50 µg/L	101	----	85.0	115	----	----
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	5 µg/L	93.8	----	85.0	113	----	----
EG020: Cobalt	7440-48-4	1	µg/L	<1	50 µg/L	95.8	----	86.1	110	----	----
EG020: Copper	7440-50-8	1	µg/L	<1	50 µg/L	98.7	----	89.2	111	----	----
EG020: Lead	7439-92-1	1	µg/L	<1	50 µg/L	100	----	86.9	110	----	----
EG020: Manganese	7439-96-5	1	µg/L	<1	50 µg/L	100	----	86.9	110	----	----
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	103	----	85.0	115	----	----
EG020: Molybdenum	7439-98-7	1	µg/L	<1	50 µg/L	99.4	----	85.8	115	----	----
EG020: Nickel	7440-02-0	1	µg/L	<1	50 µg/L	97.1	----	88.4	109	----	----
EG020: Tin	7440-31-5	1	µg/L	<1	50 µg/L	101	----	85.0	115	----	----
EG020: Zinc	7440-66-6	10	µg/L	<10	50 µg/L	97.6	----	89.1	113	----	----
EG: Metals and Major Cations - Filtered (QC Lot: 6002892)											
EG050: Hexavalent Chromium	18540-29-9	20	µg/L	<20	100 µg/L	99.0	----	80.0	106	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 6002906)											
Naphthalene	91-20-3	0.1	µg/L	<0.1	0.5 µg/L	88.2	----	52.0	148	----	----
Acenaphthylene	208-96-8	0.1	µg/L	<0.1	0.5 µg/L	84.9	----	41.0	150	----	----
Acenaphthene	83-32-9	0.1	µg/L	<0.1	0.5 µg/L	87.1	----	52.0	155	----	----



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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 6002906) - Continued											
Fluorene	86-73-7	0.1	µg/L	<0.1	0.5 µg/L	90.8	----	49.0	150	----	----
Phenanthrene	85-01-8	0.1	µg/L	<0.1	0.5 µg/L	92.6	----	56.0	153	----	----
Anthracene	120-12-7	0.1	µg/L	<0.1	0.5 µg/L	85.0	----	44.0	138	----	----
Fluoranthene	206-44-0	0.1	µg/L	<0.1	0.5 µg/L	96.7	----	78.0	137	----	----
Pyrene	129-00-0	0.1	µg/L	<0.1	0.5 µg/L	94.6	----	79.0	136	----	----
Benz(a)anthracene	56-55-3	0.1	µg/L	<0.1	0.5 µg/L	97.0	----	70.0	146	----	----
Chrysene	218-01-9	0.1	µg/L	<0.1	0.5 µg/L	96.1	----	89.0	147	----	----
Benzo(b)fluoranthene	205-99-2	0.1	µg/L	<0.1	0.5 µg/L	98.6	----	75.0	157	----	----
Benzo(k)fluoranthene	207-08-9	0.1	µg/L	<0.1	0.5 µg/L	99.8	----	87.0	146	----	----
Benzo(a)pyrene	50-32-8	0.1	µg/L	<0.1	0.5 µg/L	91.4	----	40.0	167	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.1	µg/L	<0.1	0.5 µg/L	105	----	64.0	159	----	----
Dibenz(a,h)anthracene	53-70-3	0.1	µg/L	<0.1	0.5 µg/L	110	----	76.0	148	----	----
Benzo(g,h,i)perylene	191-24-2	0.1	µg/L	<0.1	0.5 µg/L	112	----	72.0	158	----	----
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 6002906)											
Phenol	108-95-2	5	µg/L	<5.0	0.5 µg/L	55.3	----	30.0	153	----	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4.0	0.5 µg/L	87.8	----	25.0	120	----	----
Bis(2-ethylhexyl)phthalate	117-81-7	10	µg/L	<10.0	0.5 µg/L	137	----	28.0	213	----	----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 6002907)											
C9 - C16 Fraction	----	0.5	mg/L	<0.5	0.21 mg/L	87.6	----	59.0	154	----	----
C17 - C35 Fraction	----	0.5	mg/L	<0.5	0.45 mg/L	129	----	62.0	156	----	----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 6006190)											
C6 - C8 Fraction	----	0.02	mg/L	<0.02	0.03 mg/L	109	----	48.0	126	----	----
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 6006189)											
Benzene	71-43-2	0.5	µg/L	<0.5	2 µg/L	116	----	62.0	117	----	----
Toluene	108-88-3	0.5	µg/L	<0.5	2 µg/L	106	----	73.0	106	----	----
Ethylbenzene	100-41-4	0.5	µg/L	<0.5	2 µg/L	113	----	68.0	117	----	----
meta- & para-Xylene	108-38-3	1	µg/L	<1	4 µg/L	113	----	76.0	116	----	----
	106-42-3										
Styrene	100-42-5	0.5	µg/L	<0.5	2 µg/L	111	----	64.0	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
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 6006189) - Continued											
ortho-Xylene	95-47-6	0.5	µg/L	<0.5	2 µg/L	112	----	66.0	121	----	----
Xylenes (Total)	----	2	µg/L	<2	6 µg/L	113	----	74.0	116	----	----
EP-074_SR-B: Oxygenated Compounds (QC Lot: 6006189)											
2-Propanone (Acetone)	67-64-1	5	µg/L	<5	20 µg/L	85.8	----	30.0	175	----	----
2-Butanone (MEK)	78-93-3	5	µg/L	<5	20 µg/L	86.3	----	58.0	125	----	----
EP-074_SR-E: Halogenated Aliphatics (QC Lot: 6006189)											
Methylene chloride	75-09-2	5	µg/L	<5	2 µg/L	51.2	----	30.0	168	----	----
Trichloroethene	79-01-6	0.5	µg/L	<0.5	2 µg/L	112	----	68.0	119	----	----
Tetrachloroethene	127-18-4	0.5	µg/L	<0.5	2 µg/L	112	----	75.0	112	----	----
EP-074_SR-G: Trihalomethanes (THM) (QC Lot: 6006189)											
Chloroform	67-66-3	0.5	µg/L	<0.5	2 µg/L	119	----	57.0	119	----	----
Bromodichloromethane	75-27-4	0.5	µg/L	<0.5	2 µg/L	114	----	44.0	121	----	----
EP-074_SR-I: Methyl-tert-butyl Ether (QC Lot: 6006189)											
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	µg/L	<0.5	2 µg/L	108	----	45.0	125	----	----



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

Matrix: SOIL

Matrix: SOIL				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	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: 6003974)										
HK2433111-017	Anonymous	EG020: Antimony	7440-36-0	10 mg/kg	93.9	----	75.0	125	----	----
		EG020: Arsenic	7440-38-2	10 mg/kg	100	----	75.0	125	----	----
		EG020: Barium	7440-39-3	10 mg/kg	117	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	98.1	----	75.0	125	----	----
		EG020: Cobalt	7440-48-4	10 mg/kg	107	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	101	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	117	----	75.0	125	----	----
		EG020: Manganese	7439-96-5	10 mg/kg	119	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	102	----	75.0	125	----	----
		EG020: Molybdenum	7439-98-7	10 mg/kg	99.6	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	116	----	75.0	125	----	----
		EG020: Tin	7440-31-5	10 mg/kg	108	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	122	----	75.0	125	----	----
EG: Metals and Major Cations (QC Lot: 6003976)										
HK2433111-017	Anonymous	EG3060: Hexavalent Chromium	18540-29-9	40 mg/kg	88.2	----	75.0	125	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 6002949)										
HK2433556-009	Anonymous	Naphthalene	91-20-3	250 µg/kg	78.0	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	79.9	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	75.1	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	79.5	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	75.4	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	80.1	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	78.4	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	79.0	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	83.5	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	71.7	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	88.0	----	50.0	130	----	----



Matrix: SOIL

Matrix: SOIL				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 6002949) - Continued										
HK2433556-009	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	79.9	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	81.1	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	84.0	----	50.0	130	----	----
		Dibenz(a,h)anthracene	53-70-3	250 µg/kg	77.0	----	50.0	130	----	----
		Benzo(g,h,i)perylene	191-24-2	250 µg/kg	85.9	----	50.0	130	----	----
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 6002949)										
HK2433556-009	Anonymous	Phenol	108-95-2	250 µg/kg	86.8	----	50.0	130	----	----
		Hexachlorobenzene (HCB)	118-74-1	250 µg/kg	77.8	----	50.0	130	----	----
		Bis(2-ethylhexyl)phthalate	117-81-7	250 µg/kg	110	----	50.0	130	----	----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 6002909)										
HK2433556-008	Anonymous	C6 - C8 Fraction	----	4.5 mg/kg	109	----	50.0	130	----	----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 6002948)										
HK2433556-008	Anonymous	C9 - C16 Fraction	----	31.5 mg/kg	57.8	----	50.0	130	----	----
		C17 - C35 Fraction	----	67.5 mg/kg	55.2	----	50.0	130	----	----
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 6002910)										
HK2433556-009	Anonymous	Benzene	71-43-2	0.25 mg/kg	101	----	50.0	130	----	----
		Toluene	108-88-3	0.25 mg/kg	108	----	50.0	130	----	----
		Ethylbenzene	100-41-4	0.25 mg/kg	109	----	50.0	130	----	----
		meta- & para-Xylene	108-38-3	0.5 mg/kg	102	----	50.0	130	----	----
			106-42-3							
		Styrene	100-42-5	0.25 mg/kg	97.8	----	50.0	130	----	----
		ortho-Xylene	95-47-6	0.25 mg/kg	114	----	50.0	130	----	----
Xylenes (Total)	----	0.75 mg/kg	107	----	50.0	130	----	----		
EP-074_SR-B: Oxygenated Compounds (QC Lot: 6002910)										
HK2433556-009	Anonymous	2-Propanone (Acetone)	67-64-1	2.5 mg/kg	66.2	----	50.0	130	----	----
		2-Butanone (MEK)	78-93-3	2.5 mg/kg	107	----	50.0	130	----	----
EP-074_SR-E: Halogenated Aliphatics (QC Lot: 6002910)										
HK2433556-009	Anonymous	Methylene chloride	75-09-2	0.25 mg/kg	88.7	----	50.0	130	----	----
		Trichloroethene	79-01-6	0.25 mg/kg	106	----	50.0	130	----	----



Matrix: SOIL				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-074_SR-E: Halogenated Aliphatics (QC Lot: 6002910) - Continued										
HK2433556-009	Anonymous	Tetrachloroethene	127-18-4	0.25 mg/kg	107	----	50.0	130	----	----
EP-074_SR-G: Trihalomethanes (THM) (QC Lot: 6002910)										
HK2433556-009	Anonymous	Chloroform	67-66-3	0.25 mg/kg	92.8	----	50.0	130	----	----
		Bromodichloromethane	75-27-4	0.25 mg/kg	84.7	----	50.0	130	----	----
EP-074_SR-I: Methyl-tert-butyl Ether (QC Lot: 6002910)										
HK2433556-009	Anonymous	Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.25 mg/kg	95.9	----	50.0	130	----	----

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 6002884)										
HK2433762-002	Anonymous	EG020: Antimony	7440-36-0	50 µg/L	106	----	75.0	125	----	----
		EG020: Arsenic	7440-38-2	50 µg/L	100	----	75.0	125	----	----
		EG020: Barium	7440-39-3	50 µg/L	104	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	5 µg/L	101	----	75.0	125	----	----
		EG020: Cobalt	7440-48-4	50 µg/L	95.8	----	75.0	125	----	----
		EG020: Copper	7440-50-8	50 µg/L	97.0	----	75.0	125	----	----
		EG020: Lead	7439-92-1	50 µg/L	101	----	75.0	125	----	----
		EG020: Manganese	7439-96-5	50 µg/L	99.9	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	2 µg/L	107	----	75.0	125	----	----
		EG020: Molybdenum	7439-98-7	50 µg/L	99.8	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	50 µg/L	96.1	----	75.0	125	----	----
		EG020: Tin	7440-31-5	50 µg/L	105	----	75.0	125	----	----
EG020: Zinc	7440-66-6	50 µg/L	95.0	----	75.0	125	----	----		
EG: Metals and Major Cations - Filtered (QC Lot: 6002892)										
HK2433766-006	Equipment Blank	EG050: Hexavalent Chromium	18540-29-9	100 µg/L	99.1	----	75.0	125	----	----

Surrogate Control Limits



Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-080_SRS: 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-074_SR-S: VOC Surrogates			
Dibromofluoromethane	1868-53-7	80	120
Toluene-D8	2037-26-5	81	117
4-Bromofluorobenzene	460-00-4	74	121

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-080_SRS: 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-074_SR-S: VOC Surrogates			
Dibromofluoromethane	1868-53-7	86	118
Toluene-D8	2037-26-5	88	110
4-Bromofluorobenzene	460-00-4	86	115

ALS Technichem (HK) Pty Ltd

11/F, Chung Shun Knitting Centre, 1-3 Wing Yip St, Kwai Chung, N.T., Hong Kong
Tel: (852) 2610 1044 Fax: (852) 2610 2021 Email: hongkong@alsglobal.com



SAMPLE SUBMISSION FORM (Environmental Test)

Note: This form should be submitted with or before sample delivery. Items with ** are compulsory, need to be filled correctly. Incomplete information may delay handling.

1. Client information (Show on cover page of Certificate of Analyses (Test Report))

** Company Name: Paul Y.-CREC Joint Venture

** Client Name (1): Justin Yu Email or Fax (1): Justin.yu@dc201910.com ✓
Contact Tel: 9522-6451 Mobile Phone: 9522-6451

** Address: 11/F, Two Sky Parc, 51 Hung To Road, Kwun Tong, KL

**ALS Quotation no.: HKE/1998/2024 Client PO no.:

Project Name: DC/2019/10 - Yuen Long Effluent Polishing Plant - Main Works for Stage 1

Site Name: Yuen Long Sewage Treatment Works (YLSTW)

** Report delivery: ☐ Soft copy by email / Fax ☐ Hard copy by post ☒ Hard copy and soft copy ☐ Collect at ALS

Postal information (Please fill in if different from above)

Company Name: Paul Y.-CREC Joint Venture Recipient Name: Yu Wai Chuen, Justin (95226451)

Postal Address: 11/F, Two Sky Parc, 51 Hung To Road, Kwun Tong, KL

2. Additional email recipients to receive soft copy report

Name	Email
(2) Justin Yu	Justin.yu@dc201910.com ✓
(3) Patrick Leung (SRE-AECOM)	Patrick.leung@ylepp-aecom.com ✓
(4) Karina Chan (Cinotech)	Karina.chan@cinotech.com.hk ✓
(5)	
(6)	

Environmental Division
Hong Kong
Work Order Reference

HK2433766



Telephone : + 852 2610 1044

3. Billing information (Please fill in if different from above)

** Invoice delivery: ☐ Soft copy by email / Fax ☐ Hard copy by post ☐ Hard copy and soft copy ☐ Collect at ALS

Company Name: Tel:

Recipient Name: Email / Fax:

Invoice & Postal Address:

4. ** Required Turn-around-time (TAT) - Please refer to ALS quotation

☒ Regular Service ☐ Express Service () Working Days

5. ** Sampling by: ☒ Client ☐ ALS Others:

** Sample delivery: ☐ Client ☒ ALS Shing Others:

6. Other requests:

** Sample Analytical Requirements

Lab ID (Lab use only)	** Sample Description/ID	** Sample Type (Water / Soil / Air / Other)	** Sampling Date / Time	** Test(s) Required
1	ENV-BH38 (0.5,1.5,3,6m bgl)	Soil	16-Aug-24 16:00	PCRs, VOCs, SVOCs, Metals
2	ENV-BH38	Water	19-Aug-24 16:00	PCRs, VOCs, SVOCs, Metals (Mercury Only)
3	ENV-BH39 (0.5,1.5,3,6m bgl)	Soil	16-Aug-24 16:00	PCRs, VOCs, SVOCs, Metals
4	ENV-BH39	Water	19-Aug-24 16:00	PCRs, VOCs, SVOCs, Metals (Mercury Only)
5				

Note: This form should be submitted with or before sample delivery. Items with ** are compulsory, need to be filled correctly. Incomplete information may delay handling.

FBD002A-11 (06/12/2023)

Page 1 of 2

ALS Technichem (HK) Pty Ltd

11/F, Chung Shun Knitting Centre, 1-3 Wing Yip St, Kwai Chung, N.T., Hong Kong
Tel: (852) 2610 1044 Fax: (852) 2610 2021 Email: hongkong@alsglobal.com



SAMPLE SUBMISSION FORM (Environmental Test)

Note: This form should be submitted with or before sample delivery. Items with ** are compulsory, need to be filled correctly. Incomplete information may delay handling.

Lab ID (Lab use only)	** Sample Description/ID	** Sample Type (Water / Soil / Air / Other)	** Sampling Date / Time	** Test(s) Required
6				
7				
8				
9				
10				

SAMPLE RECEIPT INFORMATION: (Laboratory Use Only)

Received date & time	Sample:	20 AUG 2024 16:00		Submission form:	20 AUG 2024 16:00							
Condition	☐ Ambient		☒ Chilled () °C		Ice Brick / Ice ☒ Yes ☐ No							
Packaging	☒ Esky (Qty) ()		☐ Carton Box (Qty)		☐ Foam Box (Qty)							
	☐ Plastic Bag (Qty)		☐ Paper Bag (Qty)		Others:							
Sample Container	Label	Green			R/G	Purple	Red	Blue	Fluor. Yellow	Fluor. Orange	Amber Glass	
	Vol.	1L	500mL	250mL	180mL	mL	mL	180mL	mL	mL	1L	500mL
	Qty.				2			2				2
	Type	40mL Vial						BOD Glass		Others:		
	Vol.	Purple	Blue	Green	Maroon	Orange	300mL					
	Qty.				4							
	Type	Vibrocore			Glass Soil Jar		Plastic Bag	Original Packing	Customr Packing	Others:		
	Vol.	U100	U76		250mL	150mL						
	Qty.		4		3							
	Label	☐ Grey / ☐ Black			Swab	Agar Plate	Agar Strip	Sampling Log sheet	Others:			
Vol.	500mL	250mL	125mL									
Qty.												
Type	Sorbent Tube	Canister	Tedlar Bag	TSP/RSP Filter	Filter Cassette	Others:						
Qty.												
Tray no.	SJ200, R226, B44, D3, V1				Sorting date, time & login staff name		20 AUG 2024 19:00		Ketsu Lau			
Login Remark:												

Note: This form should be submitted with or before sample delivery. Items with ** are compulsory, need to be filled correctly. Incomplete information may delay handling.

FBD002A-11 (06/12/2023)

Page 2 of 2

CHAIN OF CUSTODY DOCUMENTATION (Failure to complete all sections of this form may delay analysis.)

Part 1: Reporting Information Company Name: Client Contact Name: <i>PC / 2019/10</i> E-mail: Phone: Report Address:						Part 2: Billing Information for Invoice (If different from Reporting Information) Company Name: Client Contact Name: E-mail: Phone: Invoice Address:						S 101645  ALS Technichem (HK) Pty Ltd		
Part 3: Project & Sample Information P.O. / Client Order No: ALS Quotation No: Project Name / ID: Site Name / ID: Service Request (Working Day): Regular ☐ / Express (5) ☐ / Double Express (3) ☐ Others ☐ (Pls specify date required _____) Cooler Security Seal: Sealed ☒ / Broken ☐ / Not Available ☐ Package: Cooler box ☒ / Carton box ☐ / Plastic bag ☐ / Others: (_____) ☐ Temperature Condition: Chilled ☒ / Ambient ☐ / Frozen ☐ _____ °C						Part 4: Test Required Metals VDCs SVDCs PCRs						For ALS HK Workorder label use		
ALS ID	Sample ID / Sample Name (This description will be appeared on report)	Matrix	Sampling Date	Sampling Time	Total nos of Containers	(✓) Tick the requested test						Remarks		
1	ENV-BH38 0.5m	S	19 Aug 24	9:10	1	/	/	/	/					
2	ENV-BH38 (Dup) 0.5m	S		9:10	1	/	/	/	/					
3	ENV-BH39 0.5m	S		9:20	1	/	/	/	/					
4	ENV-BH38 1.50-1.95m	S		10:00	1	/	/	/	/					
5	ENV-BH38 3.00-3.45m	S		11:00	1	/	/	/	/					
6	Equipment Blank	W		11:05	5	/	/	/	/					
7	Field Blank	W		11:10	5	/	/	/	/					
8	ENV-BH39 1.50-1.95m	S		13:00	1	/	/	/	/					
9	ENV-BH39 3.00-3.45m	S		14:00	1	/	/	/	/					

Part 5: Handling Information

Sampling Conducted by:		Sampling Supervised by:		Samples Picked up & Delivered By:		Samples Received by:	
Company Name:	<i>Paul Y - CPTC JV</i>	Company Name:	<i>Cinotech</i>	Company Name:	<i>ALS</i>	Company Name:	<i>ALS HK</i>
Responsible Person:	<i>Joseph Y</i>	Responsible Person:	<i>Karim Chan</i>	Responsible Person:		Responsible Person:	<i>Ketsu Lau</i>
Date & Time:	<i>19 Aug 24</i>	Date & Time:	<i>19 Aug 24</i>	Date & Time:	<i>20/8/24 15:05</i>	Date & Time:	<i>20 AUG 2024 16:00</i>
Signature:	<i>[Signature]</i>	Signature:	<i>[Signature]</i>	Signature:	<i>[Signature]</i>	Signature:	<i>[Signature]</i>



QUOTATION OF ANALYSIS- ENVIRONMENTAL		Quotation No.: HKE/1998/2024	
ANGLE Code (Office use Only):		HK2024PAUCRE0002	
Company Name:	PAUL Y - CREC JOINT VENTURE		
Contact:	Mr Jason TAM	Date:	13-August-2024
Email Address:	jason.tam@dc201910.com	Mobile Phone Number:	5115 4947
Phone Number:	2191 3800	Quote Validity:	31-December-2024
Client Code (Office Use Only):	PAUCRE	From:	Kathy Wong
Client Reference / Project Name:	DC/2019/10 - Yuen Long Effluent Polishing Plant - Main Works for Stage 1 - Chemical Analysis for Soil and Groundwater Samples		

Dear Client,

Thank you for your enquiry and providing ALSHK the opportunity to prepare our quotation for your upcoming projects and works. It is our commitment to provide reliable, timely and quality testing service to you and your team!

This quotation has been developed based on information provided. Please refer to all sections within this quotation to ensure that we have scoped your project correctly and do not hesitate to contact ALSHK for any clarification or inquiry.

Acceptance of this quotation is required within 60 days from date of issue.

Yours Sincerely,
for ALS Technichem (HK) Pty Ltd.

KW

Kathy Wong
Customer Services Team Leader
Environmental

Agreed and Accepted by:

Name of Signatory:
Company Chop and Authority Signature
Date:

Turnaround Times

Our standard laboratory turnaround time (TAT) will be **7 working days** for testing performed in ALSHK.

Electronic reports in PDF & Excel format will be emailed/faxed to client attention within the TAT shortly after results are checked and approved by the laboratory's HOKLAS approval signatories of the relevant testing. Hardcopy reports & invoices will be mailed to clients shortly after. Work orders received at the laboratory after 12pm are deemed received the following day for the calculation of turnaround times.

Note: Saturdays, Sundays and Public Holidays will not be considered as the working days.

Service Inclusions

The service offered by ALS will include the following additional items at no extra charge.

- Sample containers appropriately prepared, labelled and pre-dosed with preservatives.
- Cooler boxes to facilitate the "refrigeration" of samples en route to the laboratory. (We recommend the use of ice for chilling samples and ice bricks only for maintaining the temperature of samples that have already been chilled).
- On call access to ALS technical expertise.

Express Services

And we can offer express turnaround time services upon request, the additional charges as follows:

Express TAT Services	Price Schedule
5 Working days TAT express services	original prices +50%

** The express TAT services must be specially arranged and agreed by ALS in advance.



Analytical Services & Charges:

Item 1) RBRG: Land Contamination

Soil and Groundwater Samples (TAT: 7 working days)

Analyte Description	ALS Method Code	Method Reference	Limit of Reporting (LOR)			Price per Sample (HK\$)
			Soil		Ground Water	
			Sample (mg/kg)	Blanks (µg/L)	Sample & Blanks (µg/L)	
Metals						
Lead	EG020	USEPA 6020	1 ✓	1 ✓	NR®	(Full List)
Antimony			1 ✓	1 ✓	NR®	
Arsenic			1 ✓	10	NR®	
Barium			1 ✓	1	NR®	
Cadmium			0.2 ✓	0.2	NR®	
Cobalt			1 ✓	1	NR®	
Copper			1 ✓	1	NR®	
Manganese			1 ✓	1	NR®	
Molybdenum			1 ✓	1	NR®	
Nickel			1 ✓	1	NR®	
Tin			1 ✓	1	NR®	
Zinc			1 ✓	10	NR®	
Mercury			0.05 ✓	0.5 ✓	0.5	(Mercury only)
Chromium III*	EG049	In-house by calculation	1 ✓	20 ✓	NR®	
Chromium VI	EG3060 in soil EG050 in water	USEPA 3060 APHA 3500 Cr: D	1 ✓	20 ✓	NR®	
Volatile Organic Compounds (VOCs)						
Acetone	EP074_SR	USEPA 8260	50 ✓	500 ✓	500	
Benzene			0.2 ✓	5 ✓	5	
Bromodichloromethane			0.1 ✓	5 ✓	5	
2-Butanone			5 ✓	50 ✓	50	
Chloroform			0.04 ✓	5 ✓	5	
Ethylbenzene			0.5 ✓	5 ✓	5	
Methyl tert-Butyl Ether			0.5 ✓	5	5	
Methylene Chloride			0.5 ✓	50 ✓	50	
Styrene			0.5 ✓	5 ✓	5	
Tetrachloroethene			0.04 ✓	5 ✓	5	
Toluene			0.5 ✓	5 ✓	5	
Trichloroethene			0.1 ✓	5 ✓	5	
Xylenes (sum of meta & para, ortho)			2 ✓	20 ✓	20	
Petroleum Carbon Ranges (PCRs)						
C6 - C8	EP071HK_SR	USEPA 8015/8260	5 ✓	20 ✓	20	
C9 - C16			200 ✓	500 ✓	500	
C17 - C35			500 ✓	500 ✓	500	

ALS Laboratory is HOKLAS accredited for ALL the methods as quoted.

[^] Chromium III = Total Chromium - Chromium VI

[®]NR = Not required

Quote: HKE/1998/2024 13-August-2024

Client Ref/Project: DC/2019/10 - Yuen Long Effluent Polishing Plant - Main Works for Stage 1 - Chemical Analysis for Soil and Groundwater Samples



Analytical Services & Charges:

RBRG: Land Contamination (Cont')

Analyte Description	ALS Method Code	Method Reference	Limit of Reporting (LOR)			Price per Sample (HK\$)
			Soil		Ground Water	
			Sample (mg/kg)	Blanks (µg/L)	Sample & Blanks (µg/L)	
Semivolatile Organic Compounds (SVOCs)						
Acenaphthene	EP076HK	USEPA 8270	0.5 ✓	2 ✓	2	
Acenaphthylene			0.5 ✓	2 ✓	2	
Anthracene			0.5 ✓	2 ✓	2	
Benzo(a)anthracene			0.5 ✓	2 ✓	NR [®]	
Benzo(a)pyrene			0.5 ✓	2 ✓	NR [®]	
Benzo(b)fluoranthene			0.5 ✓	1 ✓	1	
Benzo(k)fluoranthene			0.5 ✓	2 ✓	NR [®]	
Benzo(g,h,i)perylene			0.5 ✓	2 ✓	NR [®]	
Bis(2-Ethylhexyl)phthalate			5 ✓	20 ✓	NR [®]	
Chrysene			0.5 ✓	1 ✓	1	
Dibenzo(a,h)anthracene			0.5 ✓	2 ✓	NR [®]	
Fluoranthene			0.5 ✓	2 ✓	2	
Fluorene			0.5 ✓	2 ✓	2	
Hexachlorobenzene			0.2 ✓	4 ✓	4	
Indeno(1,2,3-cd)pyrene			0.5 ✓	2 ✓	NR [®]	
Naphthalene			0.5 ✓	2 ✓	2	
Phenanthrene			0.5 ✓	2 ✓	2	
Phenol	0.5 ✓	2 ✓	NR [®]			
Pyrene	0.5 ✓	2 ✓	2			
Total PCBs	EP066	USEPA 8270	0.1	1	1	

ALS Laboratory is HOKLAS accredited for ALL the methods as quoted.

[®]NR = Not required

ALS method codes with hyphenation "-" or brackets "()", suffix after these symbols are internal codes only, will not be shown on test reports.

Remark: QA/QC samples (Equipment Blank, Field Blank, Trip Blank and Duplicate) are excluded in the quoted price and will be charged as samples.

Item 2) Other Laboratory Testing Services (TAT: 7 working days)

Service Description	Unit Cost (HK\$)
Testing of Trip Blank (VOCs)	
Identification of LNAPL per sample	

Quote: HKE/1998/2024 13-August-2024

Client Ref/Project: DC/2019/10 - Yuen Long Effluent Polishing Plant - Main Works for Stage 1 - Chemical Analysis for Soil and Groundwater Samples

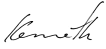


CERTIFICATE OF ANALYSIS

Client	: PAUL Y - CREC JOINT VENTURE	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 7
Contact	: JUSTIN YU	Contact	: Richard Fung	Work Order	: HK2433773
Address	: 11/F, TWO SKY PARC 51 HUNG TO ROAD, KWUN TONG, KOWLOON	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Justin.Yu@dc201910.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: DC/2019/10 YUEN LONG EFFLUENT POLISHING PLANT - MAIN WORKS FOR STAGE 1			Date Samples Received	: 20-Aug-2024
Order number	: ---	Quote number	: HKE/1998/2024	Issue Date	: 29-Aug-2024
C-O-C number	: S101646			No. of samples received	: 3
Site	: YUEN LONG SEWAGE TREATMENT WORKS (YLSTW)			No. of samples analysed	: 3

This report may not be reproduced except with prior written approval from the testing laboratory. Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

Signatories	Position	Authorised results for
 Chan Wai Hung, Mannix	Laboratory Manager	Organics_ENV
 Wong Wing, Kenneth	Assistant Manager - Metals	Metals_ENV



General Comments

This report supersedes any previous report(s) with the same work order number. 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. Testing period is from 20-Aug-2024 to 28-Aug-2024.

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: HK2433773

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were sampled by ALS staff. Sample(s) arrived laboratory in chilled condition.

ALS Technichem (HK) Pty Ltd is HOKLAS accredited for the testing provided in this report, unless otherwise specified. The sampling activity involved is not covered under HOKLAS accreditation.

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

EP070HK_SR is the numeric code for internal use. Test method for C6-C9 Fraction of TPH is EP071HK_SR.

Sub-Matrix: **WATER**

Sample ID

Sampling date / time

Sub-Matrix: WATER				Sample ID	ENV-BH39 GW	ENV-BH39 GW (Dup)	ENV-BH38 GW	---	---
Sampling date / time				20-Aug-2024 14:14	20-Aug-2024 14:14	20-Aug-2024 14:45	----	----	
Compound	CAS Number	LOR	Unit	HK2433773-001	HK2433773-002	HK2433773-003	-----	-----	
EG: Metals and Major Cations - Filtered									
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	---	---	
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	2.0	µg/L	<2.0	<2.0	<2.0	---	---	
EP076HK: Acenaphthylene	208-96-8	2.0	µg/L	<2.0	<2.0	<2.0	---	---	
EP076HK: Acenaphthene	83-32-9	2.0	µg/L	<2.0	<2.0	<2.0	---	---	
EP076HK: Fluorene	86-73-7	2.0	µg/L	<2.0	<2.0	<2.0	---	---	
EP076HK: Phenanthrene	85-01-8	2.0	µg/L	<2.0	<2.0	<2.0	---	---	
EP076HK: Anthracene	120-12-7	2.0	µg/L	<2.0	<2.0	<2.0	---	---	
EP076HK: Fluoranthene	206-44-0	2.0	µg/L	<2.0	<2.0	<2.0	---	---	
EP076HK: Pyrene	129-00-0	2.0	µg/L	<2.0	<2.0	<2.0	---	---	
EP076HK: Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	---	---	
EP076HK: Benzo(b)fluoranthene	205-99-2	1.0	µg/L	<1.0	<1.0	<1.0	---	---	
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate									
EP076HK: Hexachlorobenzene (HCB)	118-74-1	4.0	µg/L	<4.0	<4.0	<4.0	---	---	
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH)									
EP070HK_SR: C6 - C8 Fraction	----	20	µg/L	<20	<20	<20	---	---	
EP071HK_SR: C9 - C16 Fraction	----	500	µg/L	<500	<500	<500	---	---	
EP071HK_SR: C17 - C35 Fraction	----	500	µg/L	600	600	2400	---	---	
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH)									
EP074_SR: Benzene	71-43-2	5.0	µg/L	<5.0	<5.0	<5.0	---	---	
EP074_SR: Toluene	108-88-3	5.0	µg/L	<5.0	<5.0	<5.0	---	---	
EP074_SR: Ethylbenzene	100-41-4	5.0	µg/L	<5.0	<5.0	<5.0	---	---	
EP074_SR: meta- & para-Xylene	108-38-3 106-42-3	10	µg/L	<10	<10	<10	---	---	
EP074_SR: Styrene	100-42-5	5.0	µg/L	<5.0	<5.0	<5.0	---	---	
EP074_SR: ortho-Xylene	95-47-6	5.0	µg/L	<5.0	<5.0	<5.0	---	---	
EP074_SR: Xylenes (Total)	----	20	µg/L	<20	<20	<20	---	---	
EP-074_SR-B: Oxygenated Compounds									



Sub-Matrix: WATER				Sample ID	ENV-BH39 GW	ENV-BH39 GW (Dup)	ENV-BH38 GW	---	---
				Sampling date / time	20-Aug-2024 14:14	20-Aug-2024 14:14	20-Aug-2024 14:45	----	----
Compound	CAS Number	LOR	Unit		HK2433773-001	HK2433773-002	HK2433773-003	-----	-----
EP-074_SR-B: Oxvaenated Compounds - Continued									
EP074_SR: 2-Propanone (Acetone)	67-64-1	500	µg/L		<500	<500	<500	---	---
EP074_SR: 2-Butanone (MEK)	78-93-3	50	µg/L		<50	<50	<50	---	---
EP-074_SR-E: Halogenated Aliphatics									
EP074_SR: Methylene chloride	75-09-2	50	µg/L		<50	<50	<50	---	---
EP074_SR: Trichloroethene	79-01-6	5.0	µg/L		<5.0	<5.0	<5.0	---	---
EP074_SR: Tetrachloroethene	127-18-4	5.0	µg/L		<5.0	<5.0	<5.0	---	---
EP-074_SR-G: Trihalomethanes (THM)									
EP074_SR: Chloroform	67-66-3	5.0	µg/L		<5.0	<5.0	<5.0	---	---
EP074_SR: Bromodichloromethane	75-27-4	5.0	µg/L		<5.0	<5.0	<5.0	---	---
EP-074_SR-I: Methyl-tert-butyl Ether									
EP074_SR: Methyl tert-Butyl Ether (MTBE)	1634-04-4	5.0	µg/L		<5.0	<5.0	<5.0	---	---
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		70.4	58.9	78.9	---	---
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		77.5	89.1	101	---	---
EP-080_SRS: TPH(Volatile)/BTEX Surrogate									
EP070HK_SR: Dibromofluoromethane	1868-53-7	0.1	%		101	100	98.3	---	---
EP070HK_SR: Toluene-D8	2037-26-5	0.1	%		96.4	98.1	89.6	---	---
EP070HK_SR: 4-Bromofluorobenzene	460-00-4	0.1	%		99.1	98.6	104	---	---
EP-074_SR-S: VOC Surrogates									
EP074_SR: Dibromofluoromethane	1868-53-7	0.1	%		101	100	98.3	---	---
EP074_SR: Toluene-D8	2037-26-5	0.1	%		96.4	98.1	89.6	---	---
EP074_SR: 4-Bromofluorobenzene	460-00-4	0.1	%		99.1	98.6	104	---	---

----- END OF REPORT -----

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EG: Metals and Major Cations - Filtered (QC Lot: 6002884)								
HK2433762-003	Anonymous	EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0

Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits(%)		RPD (%)	
Method: Compound	CAS Number	LOR	Unit	Result			LCS	DCS	Low	High	Value
EG: Metals and Major Cations - Filtered (QC Lot: 6002884)											
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	103	----	85.0	115	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 6002906)											
Naphthalene	91-20-3	0.1	µg/L	<0.1	0.5 µg/L	88.2	----	52.0	148	----	----
Acenaphthylene	208-96-8	0.1	µg/L	<0.1	0.5 µg/L	84.9	----	41.0	150	----	----
Acenaphthene	83-32-9	0.1	µg/L	<0.1	0.5 µg/L	87.1	----	52.0	155	----	----
Fluorene	86-73-7	0.1	µg/L	<0.1	0.5 µg/L	90.8	----	49.0	150	----	----
Phenanthrene	85-01-8	0.1	µg/L	<0.1	0.5 µg/L	92.6	----	56.0	153	----	----
Anthracene	120-12-7	0.1	µg/L	<0.1	0.5 µg/L	85.0	----	44.0	138	----	----
Fluoranthene	206-44-0	0.1	µg/L	<0.1	0.5 µg/L	96.7	----	78.0	137	----	----
Pyrene	129-00-0	0.1	µg/L	<0.1	0.5 µg/L	94.6	----	79.0	136	----	----
Chrysene	218-01-9	0.1	µg/L	<0.1	0.5 µg/L	96.1	----	89.0	147	----	----
Benzo(b)fluoranthene	205-99-2	0.1	µg/L	<0.1	0.5 µg/L	98.6	----	75.0	157	----	----
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 6002906)											
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4.0	0.5 µg/L	87.8	----	25.0	120	----	----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 6002907)											
C9 - C16 Fraction	----	0.5	mg/L	<0.5	0.21 mg/L	87.6	----	59.0	154	----	----
C17 - C35 Fraction	----	0.5	mg/L	<0.5	0.45 mg/L	129	----	62.0	156	----	----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 6006190)											



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_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 6006190) - Continued											
C6 - C8 Fraction	----	0.02	mg/L	<0.02	0.03 mg/L	109	----	48.0	126	----	----
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 6006189)											
Benzene	71-43-2	0.5	µg/L	<0.5	2 µg/L	116	----	62.0	117	----	----
Toluene	108-88-3	0.5	µg/L	<0.5	2 µg/L	106	----	73.0	106	----	----
Ethylbenzene	100-41-4	0.5	µg/L	<0.5	2 µg/L	113	----	68.0	117	----	----
meta- & para-Xylene	108-38-3	1	µg/L	<1	4 µg/L	113	----	76.0	116	----	----
	106-42-3										
Styrene	100-42-5	0.5	µg/L	<0.5	2 µg/L	111	----	64.0	115	----	----
ortho-Xylene	95-47-6	0.5	µg/L	<0.5	2 µg/L	112	----	66.0	121	----	----
Xylenes (Total)	----	2	µg/L	<2	6 µg/L	113	----	74.0	116	----	----
EP-074_SR-B: Oxygenated Compounds (QC Lot: 6006189)											
2-Propanone (Acetone)	67-64-1	5	µg/L	<5	20 µg/L	85.8	----	30.0	175	----	----
2-Butanone (MEK)	78-93-3	5	µg/L	<5	20 µg/L	86.3	----	58.0	125	----	----
EP-074_SR-E: Halogenated Aliphatics (QC Lot: 6006189)											
Methylene chloride	75-09-2	5	µg/L	<5	2 µg/L	51.2	----	30.0	168	----	----
Trichloroethene	79-01-6	0.5	µg/L	<0.5	2 µg/L	112	----	68.0	119	----	----
Tetrachloroethene	127-18-4	0.5	µg/L	<0.5	2 µg/L	112	----	75.0	112	----	----
EP-074_SR-G: Trihalomethanes (THM) (QC Lot: 6006189)											
Chloroform	67-66-3	0.5	µg/L	<0.5	2 µg/L	119	----	57.0	119	----	----
Bromodichloromethane	75-27-4	0.5	µg/L	<0.5	2 µg/L	114	----	44.0	121	----	----
EP-074_SR-I: Methyl-tert-butyl Ether (QC Lot: 6006189)											
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	µg/L	<0.5	2 µg/L	108	----	45.0	125	----	----



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

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number		MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 6002884)										
HK2433762-002	Anonymous	EG020: Mercury	7439-97-6	2 µg/L	107	----	75.0	125	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-080_SRS: 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-074_SR-S: VOC Surrogates			
Dibromofluoromethane	1868-53-7	86	118
Toluene-D8	2037-26-5	88	110
4-Bromofluorobenzene	460-00-4	86	115

ALS Technichem (HK) Pty Ltd

11/F, Chung Shun Knitting Centre, 1-3 Wing Yip St, Kwai Chung, N.T., Hong Kong
Tel: (852) 2610 1044 Fax: (852) 2610 2021 Email: hongkong@alsglobal.com



SAMPLE SUBMISSION FORM (Environmental Test)

Note: This form should be submitted with or before sample delivery. Items with ** are compulsory, need to be filled correctly. Incomplete information may delay handling.

1. Client information (Show on cover page of Certificate of Analyses (Test Report))

** Company Name: Paul Y.-CREC Joint Venture

** Client Name (1): Justin Yu Email or Fax (1): Justin.yu@dc201910.com

Contact Tel: 9522-6451 Mobile Phone: 9522-6451

** Address: 11/F, Two Sky Parc, 51 Hung To Road, Kwun Tong, KL

**ALS Quotation no.: HKE/1998/2024 Client PO no.:

Project Name: DC/2019/10 - Yuen Long Effluent Polishing Plant - Main Works for Stage 1

Site Name: Yuen Long Sewage Treatment Works (YLSTW)

** Report delivery: ☐ Soft copy by email / Fax ☐ Hard copy by post ☒ Hard copy and soft copy ☐ Collect at ALS

Postal information (Please fill in if different from above)

Company Name: Paul Y.-CREC Joint Venture Recipient Name: Yu Wai Chuen, Justin (95226451)

Postal Address: 11/F, Two Sky Parc, 51 Hung To Road, Kwun Tong, KL

2. Additional email recipients to receive soft copy report

	Name	Email
(2)	Justin Yu	Justin.yu@dc201910.com
(3)	Patrick Leung (SRE-AECOM)	Patrick.leung@ylepp-aecom.com
(4)	Karina Chan (Cinotech)	Karina.chan@cinotech.com.hk
(5)		
(6)		

Environmental Division
Hong Kong
Work Order Reference

HK2433773



Telephone : + 852 2610 1044

3. Billing information (Please fill in if different from above)

** Invoice delivery: ☐ Soft copy by email / Fax ☐ Hard copy by post ☐ Hard copy and soft copy ☐ Collect at ALS

Company Name: Tel:

Recipient Name: Email / Fax:

Invoice & Postal Address:

4. ** Required Turn-around-time (TAT) - Please refer to ALS quotation

☒ Regular Service ☐ Express Service () Working Days

5. ** Sampling by: ☒ Client ☒ ALS Shing Others:

** Sample delivery: ☐ Client ☒ ALS Shing Others:

6. Other requests:

** Sample Analytical Requirements

Lab ID (Lab use only)	** Sample Description/ID	** Sample Type (Water / Soil / Air / Other)	** Sampling Date / Time	** Test(s) Required
1	ENV-BH38 (0.5,1.5,3,6m bgl)	Soil	16-Aug-24 16:00	PCRs, VOCs, SVOCs, Metals
2	ENV-BH38	Water	19-Aug-24 16:00	PCRs, VOCs, SVOCs, Metals (Mercury Only)
3	ENV-BH39 (0.5,1.5,3,6m bgl)	Soil	16-Aug-24 16:00	PCRs, VOCs, SVOCs, Metals
4	ENV-BH39	Water	19-Aug-24 16:00	PCRs, VOCs, SVOCs, Metals (Mercury Only)
5				

Note: This form should be submitted with or before sample delivery. Items with ** are compulsory, need to be filled correctly. Incomplete information may delay handling.

FBD002A-11 (06/12/2023)

Page 1 of 2

ALS Technichem (HK) Pty Ltd

11/F, Chung Shun Knitting Centre, 1-3 Wing Yip St, Kwai Chung, N.T., Hong Kong
Tel: (852) 2610 1044 Fax: (852) 2610 2021 Email: hongkong@alsglobal.com



SAMPLE SUBMISSION FORM (Environmental Test)

Note: This form should be submitted with or before sample delivery. Items with ** are compulsory, need to be filled correctly. Incomplete information may delay handling.

Lab ID (Lab use only)	** Sample Description/ID	** Sample Type (Water / Soil / Air / Other)	** Sampling Date / Time	** Test(s) Required
6				
7				
8				
9				
10				

SAMPLE RECEIPT INFORMATION: (Laboratory Use Only)

Received date & time	Sample: 20 AUG 2024 16:00	Submission form: 20 AUG 2024 16:00
Condition	☐ Ambient ☒ Chilled () °C	Ice Brick / Ice ☒ Yes ☐ No ☐ Frozen () °C
Packaging	☒ Esky (Qty) 1 ☐ Carton Box (Qty)	☐ Foam Box (Qty) ☐ Original Packing (Qty)
	☐ Plastic Bag (Qty) ☐ Paper Bag (Qty)	Others:

Sample Container	Label	Green				R/G	Purple	Red	Blue	Fluor. Yellow	Fluor. Orange	Amber Glass	
	Vol.	1L	500mL	250mL	180mL	180 mL	mL	mL	mL	mL	mL	1L	500mL
	Qty.					3							3
	Type	40mL Vial						BOD Glass		Others:			
	Vol.	Purple	Blue	Green	Maroon	Orange	300mL						
	Qty.				6								
	Type	Vibrocore		Glass Soil Jar		Plastic Bag	Original Packing	Customr Packing	Others:				
	Vol.	U100	U76	250mL	150mL								
	Qty.												
	Label	☐ Grey / ☐ Black		Swab	Agar Plate	Agar Strip	Sampling Log sheet	Others:					
Vol.	500mL	250mL	125mL										
Qty.													
Type	Sorbent Tube	Canister	Tedlar Bag	TSP/RSP Filter	Filter Cassette	Others:							
Qty.													

Tray no.	R226, 03, v1	Sorting date, time & login staff name	20 AUG 2024 19:15	Ketsu Lau
Login Remark:				

WATER SAMPLING AND ON-SITE MEASUREMENT LOG SHEET



Client:Paul Y - CREC Joint Venture

Sampling by:

☐ ALS Staff / ☐ Client

(In BLOCK Letter):Shing

Sampling Date:20/08/2024

Sampling Location:Yuen Long Sewage Treatment Works

Bottles Required:1 x 180mL Red/Green Plastic Bottle; 1 x 500mL Orange Amber Glass; 2 x 40mL Maroon Glass vial

Equipment Used:

ALS Coordinator:Ms Kathy Wong

Signatory:

Arrival Time to lab:16:00 20 AUG 2024

Weather:Sunny / Cloudy / Drizzle / Pouring

Lab ID (Lab use only)	Location ID	Sampling Time	pH Value	Free Chlorine	Total Residual Chlorine	Temp.	Conductivity	Dissolved Oxygen		Salinity	Turbidity	Remarks
		Unit (Resolution)	0.1 pH unit	0.01 mg/L	0.01 mg/L	0.1°C	1µS/cm	%	0.1mg/L	0.1g/L	0.1NTU	
3	ENV-BH38	14/15										
1-2	ENV-BH39	14/14										

Sample ID for reporting should be same as 報告上的樣辦名稱應該

☐ as above 如上

☐ as Sample Submission Form 如樣辦提交申請表

☐ as attachment 如附件

☐ or To be confirmed 再行確定

Client Name in BLOCK Letter 客戶姓名 :

FBD005-5 (01/09/2022)

Confirmed & Signed by client 客戶確認簽名:

[illegible]



QUOTATION OF ANALYSIS- ENVIRONMENTAL		Quotation No.: HKE/1998/2024	
ANGLE Code (Office use Only):		HK2024PAUCRE0002	
Company Name:	PAUL Y - CREC JOINT VENTURE		
Contact:	Mr Jason TAM	Date:	13-August-2024
Email Address:	jason.tam@dc201910.com	Mobile Phone Number:	5115 4947
Phone Number:	2191 3800	Quote Validity:	31-December-2024
Client Code (Office Use Only):	PAUCRE	From:	Kathy Wong
Client Reference / Project Name:	DC/2019/10 - Yuen Long Effluent Polishing Plant - Main Works for Stage 1 - Chemical Analysis for Soil and Groundwater Samples		

Dear Client,

Thank you for your enquiry and providing ALSHK the opportunity to prepare our quotation for your upcoming projects and works. It is our commitment to provide reliable, timely and quality testing service to you and your team!

This quotation has been developed based on information provided. Please refer to all sections within this quotation to ensure that we have scoped your project correctly and do not hesitate to contact ALSHK for any clarification or inquiry.

Acceptance of this quotation is required within 60 days from date of issue.

Yours Sincerely,
for ALS Technichem (HK) Pty Ltd.

KW

Kathy Wong
Customer Services Team Leader
Environmental

Agreed and Accepted by:

Name of Signatory:
Company Chop and Authority Signature
Date:

Turnaround Times

Our standard laboratory turnaround time (TAT) will be **7 working days** for testing performed in ALSHK.

Electronic reports in PDF & Excel format will be emailed/faxed to client attention within the TAT shortly after results are checked and approved by the laboratory's HOKLAS approval signatories of the relevant testing. Hardcopy reports & invoices will be mailed to clients shortly after. Work orders received at the laboratory after 12pm are deemed received the following day for the calculation of turnaround times.

Note: Saturdays, Sundays and Public Holidays will not be considered as the working days.

Service Inclusions

The service offered by ALS will include the following additional items at no extra charge.

- Sample containers appropriately prepared, labelled and pre-dosed with preservatives.
- Cooler boxes to facilitate the "refrigeration" of samples en route to the laboratory. (We recommend the use of ice for chilling samples and ice bricks only for maintaining the temperature of samples that have already been chilled).
- On call access to ALS technical expertise.

Express Services

And we can offer express turnaround time services upon request, the additional charges as follows:

Express TAT Services	Price Schedule
5 Working days TAT express services	original prices +50%

** The express TAT services must be specially arranged and agreed by ALS in advance.



Analytical Services & Charges:

Item 1) RBRG: Land Contamination

Soil and Groundwater Samples (TAT: 7 working days)

Analyte Description	ALS Method Code	Method Reference	Limit of Reporting (LOR)			Price per Sample (HK\$)
			Soil		Ground Water	
			Sample (mg/kg)	Blanks (µg/L)	Sample & Blanks (µg/L)	
Metals						
Lead	EG020	USEPA 6020	1	1	NR®	(Full List)
Antimony			1	1	NR®	
Arsenic			1	10	NR®	
Barium			1	1	NR®	
Cadmium			0.2	0.2	NR®	
Cobalt			1	1	NR®	
Copper			1	1	NR®	
Manganese			1	1	NR®	
Molybdenum			1	1	NR®	
Nickel			1	1	NR®	
Tin			1	1	NR®	
Zinc			1	10	NR®	
Mercury			0.05	0.5	0.5	(Mercury only)
Chromium III*	EG049	In-house by calculation	1	20	NR®	
Chromium VI	EG3060 in soil EG050 in water	USEPA 3060 APHA 3500 Cr: D	1	20	NR®	
Volatile Organic Compounds (VOCs)						
Acetone	EP074_SR	USEPA 8260	50	500	500	
Benzene			0.2	5	5	
Bromodichloromethane			0.1	5	5	
2-Butanone			5	50	50	
Chloroform			0.04	5	5	
Ethylbenzene			0.5	5	5	
Methyl tert-Butyl Ether			0.5	5	5	
Methylene Chloride			0.5	50	50	
Styrene			0.5	5	5	
Tetrachloroethene			0.04	5	5	
Toluene			0.5	5	5	
Trichloroethene			0.1	5	5	
Xylenes (sum of meta & para, ortho)			2	20	20	
Petroleum Carbon Ranges (PCRs)						
C6 - C8	EP071HK_SR	USEPA 8015/8260	5	20	20	
C9 - C16			200	500	500	
C17 - C35			500	500	500	

ALS Laboratory is HOKLAS accredited for ALL the methods as quoted.

* Chromium III = Total Chromium - Chromium VI

® NR = Not required

Quote: HKE/1998/2024 13-August-2024

Client Ref /Project: DC/2019/10 - Yuen Long Effluent Polishing Plant - Main Works for Stage 1 - Chemical Analysis for Soil and Groundwater Samples



Analytical Services & Charges:

RBRG: Land Contamination (Cont')

Analyte Description	ALS Method Code	Method Reference	Limit of Reporting (LOR)			Price per Sample (HK\$)
			Soil		Ground Water	
			Sample (mg/kg)	Blanks (µg/L)	Sample & Blanks (µg/L)	
Semivolatile Organic Compounds (SVOCs)						
Acenaphthene	EP076HK	USEPA 8270	0.5	2	2	✓
Acenaphthylene			0.5	2	2	✓
Anthracene			0.5	2	2	✓
Benzo(a)anthracene			0.5	2	NR [®]	✓
Benzo(a)pyrene			0.5	2	NR [®]	✓
Benzo(b)fluoranthene			0.5	1	1	✓
Benzo(k)fluoranthene			0.5	2	NR [®]	✓
Benzo(g,h,i)perylene			0.5	2	NR [®]	✓
Bis(2-Ethylhexyl)phthalate			5	20	NR [®]	✓
Chrysene			0.5	1	1	✓
Dibenzo(a,h)anthracene			0.5	2	NR [®]	✓
Fluoranthene			0.5	2	2	✓
Fluorene			0.5	2	2	✓
Hexachlorobenzene			0.2	4	4	✓
Indeno(1,2,3-cd)pyrene			0.5	2	NR [®]	✓
Naphthalene			0.5	2	2	✓
Phenanthrene			0.5	2	2	✓
Phenol			0.5	2	NR [®]	✓
Pyrene			0.5	2	2	✓
Total PCBs	EP066	USEPA 8270	0.1	1	1	✓

ALS Laboratory is HOKLAS accredited for ALL the methods as quoted.

® NR = Not required

ALS method codes with hyphenation "-" or brackets "()", suffix after these symbols are internal codes only, will not be shown on test reports.

Remark: QA/QC samples (Equipment Blank, Field Blank, Trip Blank and Duplicate) are excluded in the quoted price and will be charged as samples.

Item 2) Other Laboratory Testing Services (TAT: 7 working days)

Service Description	Unit Cost (HK\$)
Testing of Trip Blank (VOCs)	
Identification of LNAPL per sample	

Quote: HKE/1998/2024 13-August-2024

Client Ref /Project: DC/2019/10 - Yuen Long Effluent Polishing Plant - Main Works for Stage 1 - Chemical Analysis for Soil and Groundwater Samples

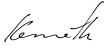


CERTIFICATE OF ANALYSIS

Client	: PAUL Y - CREC JOINT VENTURE	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 7
Contact	: JUSTIN YU	Contact	: Richard Fung	Work Order	: HK2433777
Address	: 11/F, TWO SKY PARC 51 HUNG TO ROAD, KWUN TONG, KOWLOON	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Justin.Yu@dc201910.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: DC/2019/10 YUEN LONG EFFLUENT POLISHING PLANT - MAIN WORKS FOR STAGE 1			Date Samples Received	: 20-Aug-2024
Order number	: ---	Quote number	: HKE/1998/2024	Issue Date	: 29-Aug-2024
C-O-C number	: S101646			No. of samples received	: 3
Site	: YUEN LONG SEWAGE TREATMENT WORKS (YLSTW)			No. of samples analysed	: 3

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This document has been signed by those names that appear on this report and are the authorised signatories.

Signatories	Position	Authorised results for
 Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
 Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV



General Comments

This report supersedes any previous report(s) with the same work order number. 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. Testing period is from 20-Aug-2024 to 28-Aug-2024.

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: HK2433777

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were picked up from client by ALS staff. Sample(s) arrived laboratory in chilled condition.

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

EP070HK_SR is the numeric code for internal use. Test method for C6-C9 Fraction of TPH is EP071HK_SR.



Analytical Results

Sub-Matrix: WATER

Sample ID

Sampling date / time

				Equipment Blank	Field Blank	Trip Blank	---	---
				20-Aug-2024 14:20	20-Aug-2024 14:40	20-Aug-2024 14:50	---	---
Compound	CAS Number	LOR	Unit	HK2433777-001	HK2433777-002	HK2433777-003	-----	-----
EG: Metals and Major Cations - Filtered								
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)								
EP076HK: Naphthalene	91-20-3	2.0	µg/L	<2.0	<2.0	---	---	---
EP076HK: Acenaphthylene	208-96-8	2.0	µg/L	<2.0	<2.0	---	---	---
EP076HK: Acenaphthene	83-32-9	2.0	µg/L	<2.0	<2.0	---	---	---
EP076HK: Fluorene	86-73-7	2.0	µg/L	<2.0	<2.0	---	---	---
EP076HK: Phenanthrene	85-01-8	2.0	µg/L	<2.0	<2.0	---	---	---
EP076HK: Anthracene	120-12-7	2.0	µg/L	<2.0	<2.0	---	---	---
EP076HK: Fluoranthene	206-44-0	2.0	µg/L	<2.0	<2.0	---	---	---
EP076HK: Pyrene	129-00-0	2.0	µg/L	<2.0	<2.0	---	---	---
EP076HK: Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	---	---	---
EP076HK: Benzo(b)fluoranthene	205-99-2	1.0	µg/L	<1.0	<1.0	---	---	---
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate								
EP076HK: Hexachlorobenzene (HCB)	118-74-1	4.0	µg/L	<4.0	<4.0	---	---	---
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH)								
EP070HK_SR: C6 - C8 Fraction	----	20	µg/L	<20	<20	---	---	---
EP071HK_SR: C9 - C16 Fraction	----	500	µg/L	<500	<500	---	---	---
EP071HK_SR: C17 - C35 Fraction	----	500	µg/L	<500	<500	---	---	---
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH)								
EP074_SR: Benzene	71-43-2	5.0	µg/L	<5.0	<5.0	<5.0	---	---
EP074_SR: Toluene	108-88-3	5.0	µg/L	<5.0	<5.0	<5.0	---	---
EP074_SR: Ethylbenzene	100-41-4	5.0	µg/L	<5.0	<5.0	<5.0	---	---
EP074_SR: meta- & para-Xylene	108-38-3 106-42-3	10	µg/L	<10	<10	<10	---	---
EP074_SR: Styrene	100-42-5	5.0	µg/L	<5.0	<5.0	<5.0	---	---
EP074_SR: ortho-Xylene	95-47-6	5.0	µg/L	<5.0	<5.0	<5.0	---	---
EP074_SR: Xylenes (Total)	----	20	µg/L	<20	<20	<20	---	---
EP-074_SR-B: Oxygenated Compounds								
EP074_SR: 2-Propanone (Acetone)	67-64-1	500	µg/L	<500	<500	<500	---	---



Sub-Matrix: WATER				Sample ID	Equipment Blank	Field Blank	Trip Blank	---	---
				Sampling date / time	20-Aug-2024 14:20	20-Aug-2024 14:40	20-Aug-2024 14:50	----	----
Compound	CAS Number	LOR	Unit		HK2433777-001	HK2433777-002	HK2433777-003	-----	-----
EP-074_SR-B: Oxidogenated Compounds - Continued									
EP074_SR: 2-Butanone (MEK)	78-93-3	50	µg/L		<50	<50	<50	---	---
EP-074_SR-E: Halogenated Aliphatics									
EP074_SR: Methylene chloride	75-09-2	50	µg/L		<50	<50	<50	---	---
EP074_SR: Trichloroethene	79-01-6	5.0	µg/L		<5.0	<5.0	<5.0	---	---
EP074_SR: Tetrachloroethene	127-18-4	5.0	µg/L		<5.0	<5.0	<5.0	---	---
EP-074_SR-G: Trihalomethanes (THM)									
EP074_SR: Chloroform	67-66-3	5.0	µg/L		<5.0	<5.0	<5.0	---	---
EP074_SR: Bromodichloromethane	75-27-4	5.0	µg/L		<5.0	<5.0	<5.0	---	---
EP-074_SR-I: Methyl-tert-butyl Ether									
EP074_SR: Methyl tert-Butyl Ether (MTBE)	1634-04-4	5.0	µg/L		<5.0	<5.0	<5.0	---	---
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		50.1	106	---	---	---
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		56.7	130	---	---	---
EP-080_SRS: TPH(Volatile)/BTEX Surrogate									
EP070HK_SR: Dibromofluoromethane	1868-53-7	0.1	%		97.4	95.0	---	---	---
EP070HK_SR: Toluene-D8	2037-26-5	0.1	%		96.7	97.6	---	---	---
EP070HK_SR: 4-Bromofluorobenzene	460-00-4	0.1	%		99.7	100	---	---	---
EP-074_SR-S: VOC Surrogates									
EP074_SR: Dibromofluoromethane	1868-53-7	0.1	%		97.4	95.0	100	---	---
EP074_SR: Toluene-D8	2037-26-5	0.1	%		96.7	97.6	102	---	---
EP074_SR: 4-Bromofluorobenzene	460-00-4	0.1	%		99.7	100	103	---	---

----- END OF REPORT -----

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EG: Metals and Major Cations - Filtered (QC Lot: 6002884)								
HK2433762-003	Anonymous	EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0

Matrix: **WATER**

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
EG: Metals and Major Cations - Filtered (QC Lot: 6002884)											
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	103	----	85.0	115	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 6002906)											
Naphthalene	91-20-3	0.1	µg/L	<0.1	0.5 µg/L	88.2	----	52.0	148	----	----
Acenaphthylene	208-96-8	0.1	µg/L	<0.1	0.5 µg/L	84.9	----	41.0	150	----	----
Acenaphthene	83-32-9	0.1	µg/L	<0.1	0.5 µg/L	87.1	----	52.0	155	----	----
Fluorene	86-73-7	0.1	µg/L	<0.1	0.5 µg/L	90.8	----	49.0	150	----	----
Phenanthrene	85-01-8	0.1	µg/L	<0.1	0.5 µg/L	92.6	----	56.0	153	----	----
Anthracene	120-12-7	0.1	µg/L	<0.1	0.5 µg/L	85.0	----	44.0	138	----	----
Fluoranthene	206-44-0	0.1	µg/L	<0.1	0.5 µg/L	96.7	----	78.0	137	----	----
Pyrene	129-00-0	0.1	µg/L	<0.1	0.5 µg/L	94.6	----	79.0	136	----	----
Chrysene	218-01-9	0.1	µg/L	<0.1	0.5 µg/L	96.1	----	89.0	147	----	----
Benzo(b)fluoranthene	205-99-2	0.1	µg/L	<0.1	0.5 µg/L	98.6	----	75.0	157	----	----
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 6002906)											
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4.0	0.5 µg/L	87.8	----	25.0	120	----	----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 6002907)											
C9 - C16 Fraction	----	0.5	mg/L	<0.5	0.21 mg/L	87.6	----	59.0	154	----	----
C17 - C35 Fraction	----	0.5	mg/L	<0.5	0.45 mg/L	129	----	62.0	156	----	----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 6006190)											



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_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 6006190) - Continued											
C6 - C8 Fraction	----	0.02	mg/L	<0.02	0.03 mg/L	109	----	48.0	126	----	----
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 6006189)											
Benzene	71-43-2	0.5	µg/L	<0.5	2 µg/L	116	----	62.0	117	----	----
Toluene	108-88-3	0.5	µg/L	<0.5	2 µg/L	106	----	73.0	106	----	----
Ethylbenzene	100-41-4	0.5	µg/L	<0.5	2 µg/L	113	----	68.0	117	----	----
meta- & para-Xylene	108-38-3	1	µg/L	<1	4 µg/L	113	----	76.0	116	----	----
	106-42-3										
Styrene	100-42-5	0.5	µg/L	<0.5	2 µg/L	111	----	64.0	115	----	----
ortho-Xylene	95-47-6	0.5	µg/L	<0.5	2 µg/L	112	----	66.0	121	----	----
Xylenes (Total)	----	2	µg/L	<2	6 µg/L	113	----	74.0	116	----	----
EP-074_SR-B: Oxygenated Compounds (QC Lot: 6006189)											
2-Propanone (Acetone)	67-64-1	5	µg/L	<5	20 µg/L	85.8	----	30.0	175	----	----
2-Butanone (MEK)	78-93-3	5	µg/L	<5	20 µg/L	86.3	----	58.0	125	----	----
EP-074_SR-E: Halogenated Aliphatics (QC Lot: 6006189)											
Methylene chloride	75-09-2	5	µg/L	<5	2 µg/L	51.2	----	30.0	168	----	----
Trichloroethene	79-01-6	0.5	µg/L	<0.5	2 µg/L	112	----	68.0	119	----	----
Tetrachloroethene	127-18-4	0.5	µg/L	<0.5	2 µg/L	112	----	75.0	112	----	----
EP-074_SR-G: Trihalomethanes (THM) (QC Lot: 6006189)											
Chloroform	67-66-3	0.5	µg/L	<0.5	2 µg/L	119	----	57.0	119	----	----
Bromodichloromethane	75-27-4	0.5	µg/L	<0.5	2 µg/L	114	----	44.0	121	----	----
EP-074_SR-I: Methyl-tert-butyl Ether (QC Lot: 6006189)											
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	µg/L	<0.5	2 µg/L	108	----	45.0	125	----	----



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

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number		MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 6002884)										
HK2433762-002	Anonymous	EG020: Mercury	7439-97-6	2 µg/L	107	----	75.0	125	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-080_SRS: 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-074_SR-S: VOC Surrogates			
Dibromofluoromethane	1868-53-7	86	118
Toluene-D8	2037-26-5	88	110
4-Bromofluorobenzene	460-00-4	86	115

ALS Technichem (HK) Pty Ltd

11/F, Chung Shun Knitting Centre, 1-3 Wing Yip St, Kwai Chung, N.T., Hong Kong
Tel: (852) 2610 1044 Fax: (852) 2610 2021 Email: hongkong@alsglobal.com



SAMPLE SUBMISSION FORM (Environmental Test)

Note: This form should be submitted with or before sample delivery. Items with ** are compulsory, need to be filled correctly. Incomplete information may delay handling.

1. Client information (Show on cover page of Certificate of Analyses (Test Report))

** Company Name: Paul Y.-CREC Joint Venture

** Client Name (1): Justin Yu Email or Fax (1): Justin.yu@dc201910.com

Contact Tel: 9522-6451 Mobile Phone: 9522-6451

** Address: 11/F, Two Sky Parc, 51 Hung To Road, Kwun Tong, KL

**ALS Quotation no.: HKE/1998/2024 Client PO no.:

Project Name: DC/2019/10 - Yuen Long Effluent Polishing Plant - Main Works for Stage 1

Site Name: Yuen Long Sewage Treatment Works (YLSTW)

** Report delivery: ☐ Soft copy by email / Fax ☐ Hard copy by post ☒ Hard copy and soft copy ☐ Collect at ALS

Postal information (Please fill in if different from above)

Company Name: Paul Y.-CREC Joint Venture Recipient Name: Yu Wai Chuen, Justin (95226451)

Postal Address: 11/F, Two Sky Parc, 51 Hung To Road, Kwun Tong, KL

2. Additional email recipients to receive soft copy report

Name	Email
(2) Justin Yu	Justin.yu@dc201910.com
(3) Patrick Leung (SRE-AECOM)	Patrick.leung@ylepp-aecom.com
(4) Karina Chan (Cinotech)	Karina.chan@cinotech.com.hk
(5)	
(6)	

Environmental Division
Hong Kong
Work Order Reference

HK2433777



Telephone : + 852 2610 1044

3. Billing information (Please fill in if different from above)

** Invoice delivery: ☐ Soft copy by email / Fax ☐ Hard copy by post ☐ Hard copy and soft copy ☐ Collect at ALS

Company Name: Tel:

Recipient Name: Email / Fax:

Invoice & Postal Address:

4. ** Required Turn-around-time (TAT) - Please refer to ALS quotation

☒ Regular Service ☐ Express Service () Working Days

5. ** Sampling by: ☒ Client ☐ ALS Others:

** Sample delivery: ☐ Client ☒ ALS Shing Others:

6. Other requests:

** Sample Analytical Requirements

Lab ID (Lab use only)	** Sample Description/ID	** Sample Type (Water / Soil / Air / Other)	** Sampling Date / Time	** Test(s) Required
1	ENV-BH38 (0.5,1.5,3,6m bgl)	Soil	16-Aug-24 16:00	PCRs, VOCs, SVOCs, Metals
2	ENV-BH38	Water	19-Aug-24 16:00	PCRs, VOCs, SVOCs, Metals (Mercury Only)
3	ENV-BH39 (0.5,1.5,3,6m bgl)	Soil	16-Aug-24 16:00	PCRs, VOCs, SVOCs, Metals
4	ENV-BH39	Water	19-Aug-24 16:00	PCRs, VOCs, SVOCs, Metals (Mercury Only)
5				

Note: This form should be submitted with or before sample delivery. Items with ** are compulsory, need to be filled correctly. Incomplete information may delay handling.

FBD002A-11 (06/12/2023)

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ALS Technichem (HK) Pty Ltd

11/F, Chung Shun Knitting Centre, 1-3 Wing Yip St, Kwai Chung, N.T., Hong Kong
Tel: (852) 2610 1044 Fax: (852) 2610 2021 Email: hongkong@alsglobal.com



SAMPLE SUBMISSION FORM (Environmental Test)

Note: This form should be submitted with or before sample delivery. Items with ** are compulsory, need to be filled correctly. Incomplete information may delay handling.

Lab ID (Lab use only)	** Sample Description/ID	** Sample Type (Water / Soil / Air / Other)	** Sampling Date / Time	** Test(s) Required
6				
7				
8				
9				
10				

SAMPLE RECEIPT INFORMATION: (Laboratory Use Only)

Received date & time	Sample:	20 AUG 2024 16:00		Submission form:	20 AUG 2024 16:00			
Condition	☐ Ambient		☒ Chilled () °C		Ice Brick / Ice ☒ Yes ☐ No		☐ Frozen () °C	
Packaging	☒ Esky (Qty) ()		☐ Carton Box (Qty)		☐ Foam Box (Qty)		☐ Original Packing (Qty)	
	☐ Plastic Bag (Qty)		☐ Paper Bag (Qty)		Others:			

Sample Container	Label	Green				R/G	Purple	Red	Blue	Fluor. Yellow	Fluor. Orange	Amber Glass	
	Vol.	1L	500mL	250mL	180mL	180 mL	mL	mL	180 mL	mL	mL	1L	500mL
	Qty.					2			1				2
	Type	40mL Vial						BOD Glass		Others:			
	Vol.	Purple	Blue	Green	Maroon	Orange	300mL						
	Qty.				4	2							
	Type	Vibrocore			Glass Soil Jar		Plastic Bag	Original Packing	Customr Packing	Others:			
	Vol.	U100	U76		250mL	150mL							
	Qty.												
	Label	☐ Grey / ☐ Black			Swab	Agar Plate	Agar Strip	Sampling Log sheet	Others:				
Vol.	500mL	250mL	125mL										
Qty.													
Type	Sorbent Tube	Canister	Tedlar Bag	TSP/RSP Filter		Filter Cassette		Others:					
Qty.													

Tray no.	R226, D3, V1, B44		Sorting date, time & login staff name	20 AUG 2024 20:00		Ketsu Lau
Login Remark:						

Note: This form should be submitted with or before sample delivery. Items with ** are compulsory, need to be filled correctly. Incomplete information may delay handling.

FBD002A-11 (06/12/2023)

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[illegible]



QUOTATION OF ANALYSIS- ENVIRONMENTAL		Quotation No.: HKE/1998/2024	
ANGLE Code (Office use Only):		HK2024PAUCRE0002	
Company Name:	PAUL Y - CREC JOINT VENTURE		
Contact:	Mr Jason TAM	Date:	13-August-2024
Email Address:	jason.tam@dc201910.com	Mobile Phone Number:	5115 4947
Phone Number:	2191 3800	Quote Validity:	31-December-2024
Client Code (Office Use Only):	PAUCRE	From:	Kathy Wong
Client Reference / Project Name:	DC/2019/10 - Yuen Long Effluent Polishing Plant - Main Works for Stage 1 - Chemical Analysis for Soil and Groundwater Samples		

Dear Client,

Thank you for your enquiry and providing ALSHK the opportunity to prepare our quotation for your upcoming projects and works. It is our commitment to provide reliable, timely and quality testing service to you and your team!

This quotation has been developed based on information provided. Please refer to all sections within this quotation to ensure that we have scoped your project correctly and do not hesitate to contact ALSHK for any clarification or inquiry.

Acceptance of this quotation is required within 60 days from date of issue.

Yours Sincerely,
for ALS Technichem (HK) Pty Ltd.

Kathy Wong
Customer Services Team Leader
Environmental

Agreed and Accepted by:

Name of Signatory:
Company Chop and Authority Signature
Date:

Turnaround Times

Our standard laboratory turnaround time (TAT) will be **7 working days** for testing performed in ALSHK.

Electronic reports in PDF & Excel format will be emailed/faxed to client attention within the TAT shortly after results are checked and approved by the laboratory's HOKLAS approval signatories of the relevant testing. Hardcopy reports & invoices will be mailed to clients shortly after. Work orders received at the laboratory after 12pm are deemed received the following day for the calculation of turnaround times.

Note: Saturdays, Sundays and Public Holidays will not be considered as the working days.

Service Inclusions

The service offered by ALS will include the following additional items at no extra charge.

- Sample containers appropriately prepared, labelled and pre-dosed with preservatives.
- Cooler boxes to facilitate the "refrigeration" of samples en route to the laboratory. (We recommend the use of ice for chilling samples and ice bricks only for maintaining the temperature of samples that have already been chilled).
- On call access to ALS technical expertise.

Express Services

And we can offer express turnaround time services upon request, the additional charges as follows:

Express TAT Services	Price Schedule
5 Working days TAT express services	original prices +50%

** The express TAT services must be specially arranged and agreed by ALS in advance.



Analytical Services & Charges:

Item 1) RBRG: Land Contamination

Soil and Groundwater Samples (TAT: 7 working days)

Analyte Description	ALS Method Code	Method Reference	Limit of Reporting (LOR)			Price per Sample (HK\$)
			Soil		Ground Water	
			Sample (mg/kg)	Blanks (µg/L)	Sample & Blanks (µg/L)	
Metals						(Full List)
Lead	EG020	USEPA 6020	1	1	NR [®]	
Antimony			1	1	NR [®]	
Arsenic			1	10	NR [®]	
Barium			1	1	NR [®]	
Cadmium			0.2	0.2	NR [®]	
Cobalt			1	1	NR [®]	
Copper			1	1	NR [®]	
Manganese			1	1	NR [®]	
Molybdenum			1	1	NR [®]	
Nickel			1	1	NR [®]	
Tin	1	1	NR [®]			
Zinc	1	10	NR [®]			
Mercury			0.05	0.5	0.5	(Mercury only)
Chromium III*	EG049	In-house by calculation	1	20	NR [®]	
Chromium VI	EG3060 in soil EG050 in water	USEPA 3060 APHA 3500 Cr: D	1	20	NR [®]	
Volatile Organic Compounds (VOCs)						
Acetone	EP074_SR	USEPA 8260	50	500	500	
Benzene			0.2	5	5	
Bromodichloromethane			0.1	5	5	
2-Butanone			5	50	50	
Chloroform			0.04	5	5	
Ethylbenzene			0.5	5	5	
Methyl tert-Butyl Ether			0.5	5	5	
Methylene Chloride			0.5	50	50	
Styrene			0.5	5	5	
Tetrachloroethene			0.04	5	5	
Toluene			0.5	5	5	
Trichloroethene			0.1	5	5	
Xylenes (sum of meta & para, ortho)			2	20	20	
Petroleum Carbon Ranges (PCRs)						
C6 - C8	EP071HK_SR	USEPA 8015/8260	5	20	20	
C9 - C16			200	500	500	
C17 - C35			500	500	500	

ALS Laboratory is HOKLAS accredited for ALL the methods as quoted.

^{*} Chromium III = Total Chromium - Chromium VI

[®] NR = Not required

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Analytical Services & Charges:

RBRG: Land Contamination (Cont')

Analyte Description	ALS Method Code	Method Reference	Limit of Reporting (LOR)			Price per Sample (HK\$)
			Soil		Ground Water	
			Sample (mg/kg)	Blanks (µg/L)	Sample & Blanks (µg/L)	
Semivolatile Organic Compounds (SVOCs)						
Acenaphthene	EP076HK	USEPA 8270	0.5	2	2	
Acenaphthylene			0.5	2	2	
Anthracene			0.5	2	2	
Benzo(a)anthracene			0.5	2	NR®	
Benzo(a)pyrene			0.5	2	NR®	
Benzo(b)fluoranthene			0.5	1	1	
Benzo(k)fluoranthene			0.5	2	NR®	
Benzo(g,h,i)perylene			0.5	2	NR®	
Bis(2-Ethylhexyl)phthalate			5	20	NR®	
Chrysene			0.5	1	1	
Dibenzo(a,h)anthracene			0.5	2	NR®	
Fluoranthene			0.5	2	2	
Fluorene			0.5	2	2	
Hexachlorobenzene			0.2	4	4	
Indeno(1,2,3-cd)pyrene			0.5	2	NR®	
Naphthalene			0.5	2	2	
Phenanthrene			0.5	2	2	
Phenol			0.5	2	NR®	
Pyrene			0.5	2	2	
Total PCBs	EP066	USEPA 8270	0.1	1	1	

ALS Laboratory is HOKLAS accredited for ALL the methods as quoted.

[®] NR = Not required

ALS method codes with hyphenation "-" or brackets "()", subfix after these symbols are internal codes only, will not be shown on test reports.

Remark: QA/QC samples (Equipment Blank, Field Blank, Trip Blank and Duplicate) are excluded in the quoted price and will be charged as samples.

Item 2) Other Laboratory Testing Services (TAT: 7 working days)

Service Description	Unit Cost (HK\$)
Testing of Trip Blank (VOCs)	
Identification of LNAPL per sample	

Quote: HKE/1998/2024 13-August-2024

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