

**Term Contract for Provision of Sampling and Analyzing of  
Samples for Various Sewage Treatment Facilities in Urban  
Area, Lantau and Outlying Islands to the Drainage Services  
Department (2023-2026)**

**Provision of Effluent Quality Monitoring (EQM) Services  
Report for the Month of Jul 2024**

Contract No. : DE/2022/15

Applicant : SEWAGE TREATMENT DIVISION 2  
ELECTRICAL AND MECHANICAL BRANCH  
DRAINAGE SERVICES DEPARTMENT

Address : STONECUTTERS ISLAND SEWAGE TREATMENT WORKS,  
NGONG SHUNG ROAD, NGONG SHUEN CHAU,  
KOWLOON, HONG KONG

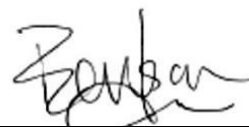
Application Number : L1012985(4)

Report Number : A10023700(2)

Report Issued Date : 15 Aug 2024

*For and on behalf of*  
CMA Industrial Development Foundation Limited

Authorized Signature : \_\_\_\_\_



Lee Hoi Yung, Benson  
Deputy Manager  
Environmental Division

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Term Contract for Provision of Sampling and Analyzing of Samples for Various Sewage Treatment Facilities in Urban Area, Lantau and Outlying Islands to the Drainage Services Department (2023-2026)

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## EXECUTIVE SUMMARY

1. This is the water quality monitoring report prepared by CMA Testing and Certification Laboratory (CMA Testing) for Contract No. DE/2022/15 “Term Contract for Provision of Sampling and Analyzing of Samples for Various Sewage Treatment Facilities in Urban Area, Lantau and Outlying Islands to the Drainage Services Department (2023-2026)”. This report documented the results and findings of Operation Phase Environmental Monitoring works conducted for Effluent Quality Monitoring (EQM) of Project in Jul 2024.
2. In accordance with the Final EM&A Manual, environmental monitoring has been conducted in the reporting month with a Quarterly Basis for various parameters as summarized in **Table 1**.

**Table 1. Summary Table for Environmental Monitoring Works Conducted in the Reporting Month**

Monitoring Parameters	Monitoring Period	Laboratory Testing Parameters
Effluent Quality	18 Jul 2024 (10 a.m.) To 19 Jul 2024 (10 a.m.)	Chlorination by-products (CBPs) and Contaminants of Concern (COCs)



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## 1 INTRODUCTION

- 1.1 CMA Testing was commissioned by Drainage Services Department (DSD) to undertake the operation phase environmental monitoring for Advance Disinfection Facilities (ADF) at Stonecutters Island Sewage Treatment Works (SCISTW) (thereafter called the “the Services”).
- 1.2 The operation phase monitoring, which include effluent quality monitoring, marine water quality monitoring and emergency discharge monitoring, is to monitor the effluent and marine water quality impact of ADF during its operation phase.
- 1.3 This is the water quality monitoring report prepared by CMA Testing that documented the results and findings of Operation Phase Water Quality Monitoring works conducted for Effluent Quality Monitoring (EQM) of Project on monitoring period.

## 2 EFFLUENT QUALITY MONITORING

### 2.1 Monitoring Requirements

2.1.1 Effluent samples were collected at Disinfection Facilities in a full 24-hour period. 24-hour flow weighted composite effluent samples for subsequent chemical analysis and testing were prepared by CMA Testing according to the following procedures:

- Collect effluent sub-sample by direct grab sampling method at bi-hourly interval over a 24-hour sampling period;
- Obtain flow record of Stonecutters Island Sewage Treatment Works (SCISTW) for the 24-hour sampling period;
- Calculate the volume of each sub-sample for preparing the bi-hourly of 24-hour flow-weighted composite samples; and
- Transfer the appropriate volume of sub-samples to a clean container and mix thoroughly.

2.1.2 Bi-hourly of 24-hour composite sample for Chlorination By-Products (CBPs) and Contaminants of Concern (COCs) tests shall be performed quarterly throughout the contract period.

### 2.2 Monitoring Location

The sampling locations for effluent from SCISTW were collected at the Disinfection Facilities.

### 2.3 Monitoring Schedule

The effluent quality monitoring was conducted in the monitoring period shown in **Table 1**. Collection of marine water samples were within the time period of effluent quality monitoring was to be collected.



## 2.4 Laboratory Measurement / Analysis

In the reporting month, the bi-hourly of 24-hour flow-weighted composite effluent sample was collected for subsequent laboratory analysis and testing on CBPs and COCs as shown in **Table 2.1**.

**Table 2.1 Analytical Methods for Laboratory Analysis for Effluent Samples**

Table 2.1 Analytical Methods for Laboratory Analysis for Effluent Samples			
Parameters		Analytical Method	Limit of Reporting (µg/L)
Potential CBPs			
Bromoform	Tri-halomethanes (THMs)	USEPA 8260D & In house method TG-ENV-WW-78 & 85 (by Headspace GC/MSD)	0.1
Bromodichloromethane			0.1
Chloroform			0.1
Dibromochloromethane			5
Bromoacetic acid	Haloacetic Acids (HAAs)	In house method TG-ENV-WW-79 (by GC-ECD)	2
Chloroacetic acid			2
Dibromoacetic acid			2
Dichloroacetic acid			2
Trichloroacetic acid			2
Contaminants of Concern (COCs)			
Methylene chloride	Halogenated Aliphatics	ISO 17943:2016 & In house method TG-ENV-WW-78 & 85 (by Headspace GC/MSD)	20
Carbon tetrachloride			0.5
1,1-dichloroethane			0.5
1,2-dichloroethane			0.5
1,1-dichloroethylene			0.5
1,2-dichloropropane			0.5
Tetrachloroethylene			0.5
1,1,1-trichloroethane			0.5
1,1,2-trichloroethane			0.5
Trichloroethylene			0.5

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Parameters		Analytical Method	Limit of Reporting (µg/L)
2-chlorophenol	Phenols & Haloethers	In house method TG-ENV-WW-80, 84 & 86 (by GC-MSD)	0.5
2,4-dichlorophenol			0.5
p-chloro-m-cresol			0.5
Pentachlorophenol			0.5
2,4,6-trichlorophenol			0.5
Bis(2-chloroethoxy) methane			0.5
Chlorobenzene	Chlorinated Hydrocarbons & Organochlorine Pesticides	In house method TG-ENV-WW-78 (by Headspace GC-MSD) & In house method TG-ENV-WW-86 (by GC-MSD)	0.5
1,4-dichlorobenzene			0.5
Hexachlorobenzene			0.01
Hexachlorocyclopentadiene			2.5
Hexachloroethane			0.5
1,2,4-trichlorobenzene			0.5
Alpha-BHC			0.01
Beta-BHC			0.01
Gamma-BHC			0.01

### 3 RESULTS AND OBSERVATIONS

#### 3.1 Effluent Quality

The results of effluent quality monitoring conducted during the monitoring period shown in **Table 1.**, whereas the laboratory testing and QC report are shown in **Appendix I.**





Term Contract for Provision of Sampling and Analyzing of Samples for Various Sewage Treatment Facilities in Urban Area, Lantau and Outlying Islands to the Drainage Services Department (2023-2026)

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## **Appendix I**

### **Report for Laboratory Test(s)**



## **TEST REPORT**

Report No. : A10023703(5) Date: 09 Aug 2024

Application No. : L1012985(4)

Applicant : SEWAGE TREATMENT DIVISION 2  
ELECTRICAL AND MECHANICAL BRANCH  
DRAINAGE SERVICES DEPARTMENT

Address : STONECUTTERS ISLAND SEWAGE TREATMENT WORKS,  
NGONG SHUNG ROAD, NGONG SHUEN CHAU,  
KOWLOON, HONG KONG

Contract No. : DE/2022/15

Project Name : Term Contract for Provision of Sampling and Analyzing of  
Samples for Various Sewage Treatment Facilities in Urban  
Area, Lantau and Outlying Islands to the Drainage Services  
Department

Sample Description : Bi-hourly of 24-hour flow-weighted composite effluent sample  
was collected by the staff of CMA Industrial Development  
Foundation Limited.  
Sample was refrigerated during delivery.

Sample ID : Refer to Sample ID on page 3 - 4.

Sampling Location : SCISTW- Disinfection Facilities


Sampling Date : 18 Jul 2024 to 19 Jul 2024.

Date Received : 19 Jul 2024.

Test Period : 22 Jul 2024 to 26 Jul 2024.

*For and on behalf of*  
CMA Industrial Development Foundation Limited

Authorized Signature : \_\_\_\_\_

  
Lee Hoi Yung, Benson  
Deputy Manager  
Environmental Division

The conformity statement stated in Conclusion above is based on the decision rule agreed with applicant and listed in [www.cmateesting.org/qac/statement-of-conformity.pdf](http://www.cmateesting.org/qac/statement-of-conformity.pdf).  
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**CMA Industrial Development Foundation Limited**

Room 1302, Yan Hing Centre, 9-13 Wong Chuk Yeung St., Fo Tan, Shatin, N.T., Hong Kong.

Tel: (852) 2698 8198 Fax: (852) 2695 4177 E-mail: [info@cmateesting.org](mailto:info@cmateesting.org) Web Site: <http://www.cmateesting.org>

## TEST REPORT

Report No. : A10023703(5)

Date: 09 Aug 2024

Application No. : L1012985(4)

Test Requested : 1. Bromoform  
2. Bromodichloromethane  
3. Chloroform  
4. Dibromochloromethane  
5. Bromoacetic acid  
6. Chloroacetic acid  
7. Dibromoacetic acid  
8. Dichloroacetic acid  
9. Trichloroacetic acid  
10. Methylene chloride  
11. Carbon tetrachloride  
12. 1,1-dichloroethane  
13. 1,2-dichloroethane  
14. 1,1-dichloroethylene  
15. 1,2-dichloropropane  
16. Tetrachloroethylene  
17. 1,1,1-trichloroethane  
18. 1,1,2-trichloroethane  
19. Trichloroethylene  
20. 2-chlorophenol  
21. 2,4-dichlorophenol  
22. p-chloro-m-cresol  
23. Pentachlorophenol  
24. 2,4,6-trichlorophenol  
25. Bis(2-chloroethoxy) methane  
26. Chlorobenzene  
27. 1,4-dichlorobenzene  
28. Hexachlorobenzene  
29. Hexachlorocyclopentadiene  
30. Hexachloroethane  
31. 1,2,4-trichlorobenzene  
32. Alpha-BHC  
33. Beta-BHC  
34. Gamma-BHC

Test Method : 1-4. USEPA 8260D & In house method TG-ENV-WW-78 & 85  
(by Headspace GC/MSD)  
5-9. TG-ENV-WW-79 (by GC-ECD)  
10-19. ISO 17943:2016 & In house method TG-ENV-WW-78 & 85  
(by Headspace GC/MSD)  
20-25. In house method TG-ENV-WW-80, 84 & 86 (by GC-MSD)  
26-34. In house method TG-ENV-WW-78 (by Headspace GC-MSD)  
& In house method TG-ENV-WW-86 (by GC-MSD)

Test Result : Refer to results on page 3 - 4.

## TEST REPORT

Report No. : A10023703(5)

Date: 09 Aug 2024

Application No. : L1012985(4)

### Effluent Water Quality

Application No.:	L1012985	
Sampling Date	18-Jul-24 to 19-Jul-24	
Monitoring Location	Chamber 15A	
Parameter	Results (µg/L)	Discharge limit (measured in HATs effluent) (µg/L)
Bromoform	0.3	16,000
Bromodichloromethane	<0.1	1,000
Chloroform	2.0	560
Dibromochloromethane	<5	1,500
Bromoacetic acid	<2	75,000
Chloroacetic acid	<2	1,500,000
Dibromoacetic acid	<2	32,000
Dichloroacetic acid	<2	10,000
Trichloroacetic acid	<2	4,300,000

\*TRC is 0.1mg/L by reference to Chamber 15A Sampling Tanks Daily Monitoring result on 18 Jul 2024.

## TEST REPORT

Report No. : A10023703(5)

Date: 09 Aug 2024

Application No. : L1012985(4)

Application No.:	L1012985
Sampling Date	18-Jul-24 to 19-Jul-24
Monitoring Location	Chamber 15A
Parameter	Results (µg/L)
Methylene chloride	<20
Carbon tetrachloride	<0.5
1,1-dichloroethane	<0.5
1,2-dichloroethane	<0.5
1,1- dichloroethylene	<0.5
1,2-dichloropropane	<0.5
Tetrachloroethylene	<0.5
1,1,1-trichloroethane	<0.5
1,1,2-trichloroethane	<0.5
Trichloroethylene	<0.5
2-chlorophenol	<0.5
2,4-dichlorophenol	<0.5
p-chloro-m-cresol	<0.5
Pentachlorophenol	<0.5
2,4,6-trichlorophenol	<0.5
Bis(2-chloroethoxy) methane	<0.5
Chlorobenzene	<0.5
1,4-dichlorobenzene	<0.5
Hexachlorobenzene	<0.01
Hexachlorocyclopentadiene	<2.5
Hexachloroethane	<0.5
1,2,4-trichlorobenzene	<0.5
Alpha-BHC	<0.01
Beta-BHC	<0.01
Gamma-BHC	<0.01





## TEST REPORT

Report No. : A10023703(5)

Date: 10 Aug 2024

Application No. : L1012985(4)

### QC Report

Parameter	Method Blank	Acceptance Criteria	QC Recovery	Acceptance Criteria	Spike Recovery	Acceptance Criteria	Duplicate (RPD)	Acceptance Criteria
	(µg/L)	(µg/L)	(%)	(%)	(%)	(%)	(%)	(%)
Bromoform	<0.02	<0.02	91	80-120	102	70-130	10	≤20
Bromodichloromethane	<0.02	<0.02	94	80-120	110	70-130	12	≤20
Chloroform	<0.02	<0.02	86	80-120	80	70-130	15	≤20
Dibromochloromethane	<1	<1	89	80-120	81	70-130	15	≤20
Bromoacetic acid	<0.4	<0.4	92	80-120	95	70-130	14	≤20
Chloroacetic acid	<0.4	<0.4	88	80-120	93	70-130	12	≤20
Dibromoacetic acid	<0.4	<0.4	93	80-120	101	70-130	12	≤20
Dichloroacetic acid	<0.4	<0.4	100	80-120	106	70-130	15	≤20
Trichloroacetic acid	<0.4	<0.4	102	80-120	105	70-130	10	≤20



## TEST REPORT

Report No. : A10023703(5)

Date: 10 Aug 2024

Application No. : L1012985(4)  
QC Report

Parameter	Method Blank	Acceptance Criteria	QC Recovery	Acceptance Criteria	Spike Recovery	Acceptance Criteria	Duplicate (RPD)	Acceptance Criteria
	(µg/L)	(µg/L)	(%)	(%)	(%)	(%)	(%)	(%)
Methylene chloride	<4	<4	92	80-120	88	70-130	10	≤20
Carbon tetrachloride	<0.1	<0.1	95	80-120	91	70-130	11	≤20
1,1-dichloroethane	<0.1	<0.1	84	80-120	86	70-130	10	≤20
1,2-dichloroethane	<0.1	<0.1	86	80-120	81	70-130	8	≤20
1,1-dichloroethylene	<0.1	<0.1	85	80-120	84	70-130	9	≤20
1,2-dichloropropane	<0.1	<0.1	87	80-120	90	70-130	11	≤20
Tetrachloroethylene	<0.1	<0.1	90	80-120	91	70-130	11	≤20
1,1,1-trichloroethane	<0.1	<0.1	92	80-120	95	70-130	13	≤20
1,1,2-trichloroethane	<0.1	<0.1	92	80-120	93	70-130	10	≤20
Trichloroethylene	<0.1	<0.1	95	80-120	99	70-130	14	≤20
2-chlorophenol	<0.1	<0.1	103	80-120	96	70-130	11	≤20
2,4-dichlorophenol	<0.1	<0.1	101	80-120	94	70-130	10	≤20
p-chloro-m-cresol	<0.1	<0.1	100	80-120	98	70-130	13	≤20
Pentachlorophenol	<0.1	<0.1	110	80-120	90	70-130	15	≤20
2,4,6-trichlorophenol	<0.1	<0.1	105	80-120	89	70-130	9	≤20
Bis(2-chloroethoxy) methane	<0.1	<0.1	98	80-120	105	70-130	6	≤20
Chlorobenzene	<0.1	<0.1	93	80-120	111	70-130	12	≤20
1,4-dichlorobenzene	<0.1	<0.1	96	80-120	107	70-130	10	≤20
Hexachlorobenzene	<0.005	<0.005	102	80-120	109	70-130	14	≤20
Hexachlorocyclopentadiene	<0.5	<0.5	87	80-120	96	70-130	11	≤20
Hexachloroethane	<0.1	<0.1	91	80-120	99	70-130	10	≤20
1,2,4-trichlorobenzene	<0.1	<0.1	97	80-120	105	70-130	12	≤20
Alpha-BHC	<0.005	<0.005	103	80-120	110	70-130	8	≤20
Beta-BHC	<0.005	<0.005	109	80-120	115	70-130	13	≤20
Gamma-BHC	<0.005	<0.005	104	80-120	113	70-130	14	≤20

\*\*\*\*\* End of Report \*\*\*\*\*