



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 Jan 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 : L0032373(7)

Report Number : A00056777(0)

Report Issued Date : 22 Feb 2024

For and on behalf of
CMA Industrial Development Foundation Limited

Authorized Signature: _____


Lau Yan Kin
Senior Manager
Environmental Division

The conformity statement stated in Conclusion above is based on the decision rule agreed with applicant and listed in www.cmatesting.org/qac/statement-of-conformity.pdf. This document is issued subject to the latest CMA Testing General Terms and Conditions of Testing and Inspection Services, available on request or accessible at website www.cmatesting.org. This document shall not be reproduced except in full without written approval by CMA Testing. The results apply to the sample as received unless otherwise specified. The observations and test results in this report are relevant only to the sample tested. Information on Applicant, Buyer, Importer, Supplier, Manufacturer, Client, Factory, Consignee, Vendor, Distributor, and Sample Description except sampling and delivery information, if applicable, are provided by client unless otherwise specified.

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@cmatesting.org Web Site: <http://www.cmatesting.org>



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)

TABLE OF CONTENT

1	INTRODUCTION	2
2	EFFLUENT QUALITY MONITORING	3
2.1	Monitoring Requirements	3
2.2	Monitoring Location	3
2.3	Monitoring Schedule	3
2.4	Laboratory Measurement / Analysis	4
3	RESULTS AND OBSERVATIONS	6
3.1	Effluent Quality	6



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)

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 Jan 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	26 Jan 2024 (10 a.m.) To 27 Jan 2024 (10 a.m.)	Chlorination by-products (CBPs) and Contaminants of Concern (COCs)



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)

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) (hereafter 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.



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)

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.



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)

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

Parameters	Analytical Method	Limit of Reporting (µg/L)
Potential CBPs		
Bromoform	Tri-halomethanes (THMs)	0.1
Bromodichloromethane		0.1
Chloroform		0.1
Dibromochloromethane		5
Bromoacetic acid	Haloacetic Acids (HAAs)	2
Chloroacetic acid		2
Dibromoacetic acid		2
Dichloroacetic acid		2
Trichloroacetic acid		2
Contaminants of Concern (COCs)		
Methylene chloride	Halogenated Aliphatics	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



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)

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



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)

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)

Appendix I
Report for Laboratory Test(s)



TESTING

TEST REPORT

Report No. : A00056778(0) Date: 20 Feb 2024

Application No. : L0032373(7)

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 : 26 Jan 2024 to 27 Jan 2024.

Date Received : 27 Jan 2024.

Test Period : 29 Jan 2024 to 06 Feb 2024.

For and on behalf of
CMA Industrial Development Foundation Limited

Authorized Signature : _____

Lau Yan Kin
Senior Manager
Environmental Division

Page 1 of 6

The conformity statement stated in Conclusion above is based on the decision rule agreed with applicant and listed in www.cmatesting.org/qac/statement-of-conformity.pdf.
This document is issued subject to the latest CMA Testing General Terms and Conditions of Testing and Inspection Services, available on request or accessible at website www.cmatesting.org.
This document shall not be reproduced except in full without written approval by CMA Testing. The results apply to the sample as received unless otherwise specified. The observations and test results in this report are relevant only to the sample tested. Information on Applicant, Buyer, Importer, Supplier, Manufacturer, Client, Factory, Consignee, Vendor, Distributor, and Sample Description except sampling and delivery information, if applicable, are provided by client unless otherwise specified.

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@cmatesting.org Web Site: <http://www.cmatesting.org>



TEST REPORT

Report No. : A00056778(0)

Date: 20 Feb 2024

Application No. : L0032373(7)

Test Requested : 1. Bromoform
2. Bromodichloromethane
3. Chloroform
4. Dibromochloromethane
5. Bromoacetic acid
6. Chlороacetic 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.



TESTING

TEST REPORT

Report No. : A00056778(0)

Date: 20 Feb 2024

Application No. : L0032373(7)

Effluent Water Quality

Application No.:	L0032373	
Sampling Date	26-Jan-24 to 27-Jan-24	
Monitoring Location	Chamber 15A	

Parameter	Results (µg/L)	Discharge limit (measured in HATs effluent) (µg/L)
Bromoform	0.2	16,000
Bromodichloromethane	<0.1	1,000
Chloroform	1.5	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 26 Jan 2024.



TESTING

TEST REPORT

Report No. : A00056778(0)

Date: 20 Feb 2024

Application No. : L0032373(7)

Application No.:	L0032373
Sampling Date	26-Jan-24 to 27-Jan-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



TESTING

TEST REPORT

Report No. : A00056778(0)

Date: 20 Feb 2024

Application No. : L0032373(7)

QC Report

Parameter	Method Blank	Acceptance Criteria	QC Recovery	Acceptance Criteria	Spike Recovery	Acceptance Criteria	Duplicate (RPD)	Acceptance Criteria
	($\mu\text{g/L}$)	($\mu\text{g/L}$)	(%)	(%)	(%)	(%)	(%)	(%)
Bromoform	<0.02	<0.02	86	80-120	89	70-130	10	≤ 20
Bromodichloromethane	<0.02	<0.02	89	80-120	96	70-130	8	≤ 20
Chloroform	<0.02	<0.02	102	80-120	110	70-130	13	≤ 20
Dibromochloromethane	<1	<1	97	80-120	101	70-130	11	≤ 20
Bromoacetic acid	<0.4	<0.4	90	80-120	115	70-130	16	≤ 20
Chloroacetic acid	<0.4	<0.4	93	80-120	103	70-130	10	≤ 20
Dibromoacetic acid	<0.4	<0.4	96	80-120	93	70-130	13	≤ 20
Dichloroacetic acid	<0.4	<0.4	105	80-120	90	70-130	10	≤ 20
Trichloroacetic acid	<0.4	<0.4	100	80-120	101	70-130	15	≤ 20

**TESTING****TEST REPORT**

Report No. : A00056778(0)

Date: 20 Feb 2024

Application No. : L0032373(7)

QC Report

Parameter	Method Blank	Acceptance Criteria	QC Recovery	Acceptance Criteria	Spike Recovery	Acceptance Criteria	Duplicate (RPD)	Acceptance Criteria
	($\mu\text{g/L}$)	($\mu\text{g/L}$)	(%)	(%)	(%)	(%)	(%)	(%)
Methylene chloride	<4	<4	88	80-120	106	70-130	14	≤ 20
Carbon tetrachloride	<0.1	<0.1	93	80-120	111	70-130	10	≤ 20
1,1-dichloroethane	<0.1	<0.1	90	80-120	99	70-130	11	≤ 20
1,2-dichloroethane	<0.1	<0.1	97	80-120	108	70-130	9	≤ 20
1,1-dichloroethylene	<0.1	<0.1	92	80-120	105	70-130	12	≤ 20
1,2-dichloropropane	<0.1	<0.1	95	80-120	113	70-130	9	≤ 20
Tetrachloroethylene	<0.1	<0.1	103	80-120	117	70-130	13	≤ 20
1,1,1-trichloroethane	<0.1	<0.1	106	80-120	98	70-130	10	≤ 20
1,1,2-trichloroethane	<0.1	<0.1	110	80-120	106	70-130	11	≤ 20
Trichloroethylene	<0.1	<0.1	98	80-120	107	70-130	15	≤ 20
2-chlorophenol	<0.1	<0.1	92	80-120	104	70-130	13	≤ 20
2,4-dichlorophenol	<0.1	<0.1	102	80-120	110	70-130	9	≤ 20
p-chloro-m-cresol	<0.1	<0.1	107	80-120	115	70-130	11	≤ 20
Pentachlorophenol	<0.1	<0.1	96	80-120	103	70-130	15	≤ 20
2,4,6-trichlorophenol	<0.1	<0.1	91	80-120	99	70-130	10	≤ 20
Bis(2-chloroethoxy) methane	<0.1	<0.1	97	80-120	105	70-130	12	≤ 20
Chlorobenzene	<0.1	<0.1	89	80-120	97	70-130	12	≤ 20
1,4-dichlorobenzene	<0.1	<0.1	94	80-120	106	70-130	14	≤ 20
Hexachlorobenzene	<0.005	<0.005	105	80-120	113	70-130	10	≤ 20
Hexachlorocyclopentadiene	<0.5	<0.5	110	80-120	101	70-130	8	≤ 20
Hexachloroethane	<0.1	<0.1	107	80-120	98	70-130	11	≤ 20
1,2,4-trichlorobenzene	<0.1	<0.1	101	80-120	96	70-130	14	≤ 20
Alpha-BHC	<0.005	<0.005	100	80-120	107	70-130	10	≤ 20
Beta-BHC	<0.005	<0.005	93	80-120	102	70-130	10	≤ 20
Gamma-BHC	<0.005	<0.005	97	80-120	108	70-130	14	≤ 20

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