

ภาคผนวกที่ 5-3

เอกสารสอบเทียบเครื่องมือตรวจวิเคราะห์คุณภาพน้ำทิ้ง



Ref No. : 0303/16653

CERTIFICATE OF TESTING LABORATORY ACCREDITATION

This is to certify that

Analytical Laboratory Service Co., Ltd.
611/277-279 Soi Watchan Nai, Charoenkrung Road, Bangklo,
Bangkholaem, Bangkok 10120

has successfully undergone assessment according to ISO/IEC 17025 : 2017
and under the Bureau of Laboratory Accreditation, Department of Science Service
for the requirements, regulations and criteria for the competence of testing laboratories

Accreditation Number TESTING - 0243

The scope of accreditation is as annexed hereto

Issue date

Expired date

Signature

Director of Bureau of Laboratory Accreditation

Bureau of Laboratory Accreditation, Department of Science Service,
Ministry of Higher Education, Science, Research and Innovation

Scope of Testing Laboratory Accreditation

Laboratory Name : Analytical Laboratory Service Co., Ltd.

Address : 611/277-279 Soi Watchan Nai, Charoenkrung Road, Bangkok,
Bangkholaem, Bangkok 10120

Accreditation Number : Testing - 0243

Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test Item / Range of Testing	Test Method / Technique Used
1	Water	<p>- pH 4.0 to 10.0</p> <p>- Cadmium 0.002 mg/L to 1.00 mg/L</p> <p>- Lead 0.01 mg/L to 4.00 mg/L</p> <p>- Nickel 0.004 mg/L to 2.00 mg/L</p>	<p>In - house method : ALS.TE.1121 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H⁺ B</p> <p>In - house method : ALS.TH.1101.2 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3111 B, 3030 E</p>

Initial Issue Date 26th October 2020

Issue Number 2

Bureau of Laboratory Accreditation, Department of Science Service, Ministry of Higher Education, Science, Research and Innovation

Scope of Testing Laboratory Accreditation

Laboratory Name : Analytical Laboratory Service Co., Ltd.

Address : 611/277-279 Soi Watchan Nai, Charoenkrung Road, Bangkok,
Bangkholaem, Bangkok 10120

Accreditation Number : Testing - 0243

Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test Item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	- Copper 0.02 mg/L to 20.00 mg/L - Manganese 0.02 mg/L to 20.00 mg/L - Iron 0.10 mg/L to 40.00 mg/L - Zinc 0.02 mg/L to 10.00 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 3111 B, 3030 E
		- Total solid at 103 °C to 105 °C 10 mg/L to 2 000 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 2540 B

Initial Issue Date 26th October 2020

Issue Number 2

Bureau of Laboratory Accreditation, Department of Science Service, Ministry of Higher Education, Science, Research and Innovation

Scope of Testing Laboratory Accreditation

Laboratory Name : Analytical Laboratory Service Co., Ltd.

Address : 611/277-279 Soi Watchan Nai, Charoenkrung Road, Bangkok,
Bangkholaem, Bangkok 10120

Accreditation Number : Testing - 0243

Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test Item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	- Total dissolved solids at 180 °C 10 mg/L to 4 000 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 2540 C
		- Total suspended solids at 103 °C to 105 °C 10 mg/L to 2 000 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 2540 D
		- Total hardness (Calculated as CaCO ₃) 5 mg/L to 500 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 2340 C

Initial Issue Date 26th October 2020

Issue Number 2

Bureau of Laboratory Accreditation, Department of Science Service, Ministry of Higher Education, Science, Research and Innovation

Scope of Testing Laboratory Accreditation

Laboratory Name : Analytical Laboratory Service Co., Ltd.

Address : 611/277-279 Soi Watchan Nai, Charoenkrung Road, Bangkok,
Bangkholaem, Bangkok 10120

Accreditation Number : Testing - 0243

Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test Item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	- Chloride 5 mg/L to 500 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 4500- Cl ⁻ B
		- Standard plate count cfu/mL	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 9215 B
		- Coliforms MPN/100 mL	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 9221 B

Initial Issue Date 26th October 2020

Issue Number 2

Bureau of Laboratory Accreditation, Department of Science Service, Ministry of Higher Education, Science, Research and Innovation

Scope of Testing Laboratory Accreditation

Laboratory Name : Analytical Laboratory Service Co., Ltd.

Address : 611/277-279 Soi Watchan Nai, Charoenkrung Road, Bangkok,
Bangkholaem, Bangkok 10120

Accreditation Number : Testing - 0243

Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test Item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	- Thermotolerant (Fecal) coliform MPN/100 mL	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 9221 B, E
		- <i>E. coli</i> MPN/100 mL	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 9221 B, F
		- <i>Staphylococcus aureus</i> Detected or not detected	In - house method : ALS.TM.1103 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 9213 B

Initial Issue Date 26th October 2020

Issue Number 2

Bureau of Laboratory Accreditation, Department of Science Service, Ministry of Higher Education, Science, Research and Innovation

Scope of Testing Laboratory Accreditation

Laboratory Name : Analytical Laboratory Service Co., Ltd.

Address : 611/277-279 Soi Watchan Nai, Charoenkrung Road, Bangkok,
Bangkholaem, Bangkok 10120

Accreditation Number : Testing - 0243

Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test Item / Range of Testing	Test Method / Technique Used
1 (cont.)	Water	- <i>Salmonella</i> spp. Detected or not detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 9260 B
2	Bottled drinking water	- Standard plate count cfu/mL	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 9215 B
		- Coliforms MPN/100 mL	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 9221 B

Initial Issue Date 26th October 2020

Issue Number 2

Bureau of Laboratory Accreditation, Department of Science Service, Ministry of Higher Education, Science, Research and Innovation

Scope of Testing Laboratory Accreditation

Laboratory Name : Analytical Laboratory Service Co., Ltd.

Address : 611/277-279 Soi Watchan Nai, Charoenkrung Road, Bangkok,
Bangkholaem, Bangkok 10120

Accreditation Number : Testing - 0243

Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test Item / Range of Testing	Test Method / Technique Used
2 (cont.)	Bottled drinking water	- Thermotolerant (Fecal) coliform MPN/100 mL - <i>E. coli</i> MPN/100 mL	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 9221 B, E Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 9221 B, F
		- <i>Staphylococcus aureus</i> Detected or not detected	In - house method : ALS.TM.1103 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 9213 B

Initial Issue Date 26th October 2020

Issue Number 2

Bureau of Laboratory Accreditation, Department of Science Service, Ministry of Higher Education, Science, Research and Innovation

Scope of Testing Laboratory Accreditation

Laboratory Name : Analytical Laboratory Service Co., Ltd.

Address : 611/277-279 Soi Watchān Nāi, Charoenkrung Road, Bangkok,
Bangkholaem, Bangkok 10120

Accreditation Number : Testing - 0243

Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test Item / Range of Testing	Test Method / Technique Used
2 (cont.)	Bottled drinking water	- <i>Salmonella</i> spp. Detected or not detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 9260 B
3	Ice	- Standard plate count cfu/ml	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 9215 B
		- Coliforms MPN/100 mL	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 9221 B

Initial Issue Date 26th October 2020

Issue Number 2

Bureau of Laboratory Accreditation, Department of Science Service, Ministry of Higher Education, Science, Research and Innovation

Scope of Testing Laboratory Accreditation

Laboratory Name : Analytical Laboratory Service Co., Ltd.

Address : 611/277-279 Soi Watchan Nai, Charoenkrung Road, Bangkok,
Bangkholaem, Bangkok 10120

Accreditation Number : Testing - 0243

Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test Item / Range of Testing	Test Method / Technique Used
3 (cont.)	Ice	- Thermotolerant (Fecal) coliform MPN/100 mL	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 9221 B, E
		- <i>E. coli</i> MPN/100 mL	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 9221 B, F
		- <i>Staphylococcus aureus</i> Detected or not detected	In - house method : ALS.TM.1103 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 9213 B

Initial Issue Date 26th October 2020

Issue Number 2

Bureau of Laboratory Accreditation, Department of Science Service, Ministry of Higher Education, Science, Research and Innovation

Scope of Testing Laboratory Accreditation

Laboratory Name : Analytical Laboratory Service Co., Ltd.

Address : 611/277-279 Soi Watchan Nai, Charoenkrung Road, Bangklō,
Bangkholaem, Bangkok 10120

Accreditation Number : Testing - 0243

Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test Item / Range of Testing	Test Method / Technique Used
3 (cont.)	Ice	- <i>Salmonella</i> spp. Detected or not detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 9260 B
4	Wastewater	- pH 4.0 to 10.0	In - house method : ALS.TE.1121 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 4500 - H ⁺ B

Initial Issue Date 26th October 2020

Issue Number 2

Bureau of Laboratory Accreditation, Department of Science Service, Ministry of Higher Education, Science, Research and Innovation

Scope of Testing Laboratory Accreditation

Laboratory Name : Analytical Laboratory Service Co., Ltd.

Address : 611/277-279 Soi Watchan Nai, Charoenkrung Road, Bangkok,
Bangkholaem, Bangkok 10120

Accreditation Number : Testing - 0243

Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test Item / Range of Testing	Test Method / Technique Used
4 (cont.)	Wastewater	- Cadmium 0.02 mg/L to 10.00 mg/L - Lead 0.10 mg/L to 40.00 mg/L - Nickel 0.04 mg/L to 20.00 mg/L - Copper 0.02 mg/L to 20.00 mg/L - Manganese 0.02 mg/L to 20.00 mg/L - Iron 0.10 mg/L to 40.00 mg/L - Zinc 0.02 mg/L to 10.00 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 3111 B, 3030 E

Initial Issue Date 26th October 2020

Issue Number 2

Bureau of Laboratory Accreditation, Department of Science Service, Ministry of Higher Education, Science, Research and Innovation

Scope of Testing Laboratory Accreditation

Laboratory Name : Analytical Laboratory Service Co., Ltd.

Address : 611/277-279 Soi Watchan Nai, Charoenkrung Road, Bangklo,
Bangkholaem, Bangkok 10120

Accreditation Number : Testing - 0243

Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test Item / Range of Testing	Test Method / Technique Used
4 (cont.)	Wastewater	- Total solid at 103 °C to 105 °C 10 mg/L to 4 000 mg/L - Total dissolved solids at 180 °C 10 mg/L to 5 000 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 2540 B Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 2540 C
		- Total suspended solids at 103 °C to 105 °C 10 mg/L to 2 000 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 2540 D

Initial Issue Date 26th October 2020

Issue Number 2

Bureau of Laboratory Accreditation, Department of Science Service, Ministry of Higher Education, Science, Research and Innovation

Scope of Testing Laboratory Accreditation

Laboratory Name : Analytical Laboratory Service Co., Ltd.

Address : 611/277-279 Soi Watchan Nai, Charoenkrung Road, Bangklo,
Bangkholaem, Bangkok 10120

Application Number : Testing - 0243

Laboratory Status : ☒ Permanent ☐ Site ☐ Temporary ☐ Mobile

Item Number	Test Material / Product	Test Item / Range of Testing	Test Method / Technique Used
4 (cont.)	Wastewater	- COD 40 mg/L to 600 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23 rd ed., 2017, part 5220 D

Initial Issue Date 26th October 2020

Issue Number 2

Bureau of Laboratory Accreditation, Department of Science Service, Ministry of Higher Education, Science, Research and Innovation