

ภาคผนวก ค

ใบรายงานผลการตรวจวิเคราะห์การติดตาม  
ผลกระทบสิ่งแวดล้อม (Analysis Report)

---

คุณภาพอากาศในบรรยากาศโดยทั่วไป

---

## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : ศูนย์พัฒนาฝีมือแรงงาน จังหวัดระยอง  
**SAMPLE TYPE** : AMBIENT  
**SAMPLING DATE** : \*, \*\*, \*\*\*  
**SAMPLING TIME** : \*, \*\*, \*\*\*  
**SAMPLING BY** : MR WORAPHOT WONGKHAM  
**ANALYZED BY** : MISS JETJARIN TUMSA-AT  
**RECEIVED DATE** : JUNE 4, 2025  
**ANALYTICAL DATE** : JUNE 4-9, 2025  
**ISSUE DATE** : JUNE 19, 2025  
**REPORT NO.** : 2025-U055214  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AL818-0015 - T25AL818-0017

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT		
			ศูนย์พัฒนาฝีมือแรงงาน จังหวัดระยอง		
			* T25AL818-0015	** T25AL818-0016	*** T25AL818-0017
TOTAL SUSPENDED PARTICULATE MATTER <sup>a</sup>	mg/m <sup>3</sup>	US EPA, CODE OF FEDERAL REGULATIONS, 40 CFR CHAPTER I-PART 50 APPENDIX B, REFERENCE METHOD FOR THE DETERMINATION OF SUSPENDED PARTICULATE MATTER IN THE ATMOSPHERE (HIGH-VOLUME METHOD) REVISED AS OF JULY 1, 2021.	0.020	0.021	0.024
PARTICULATE MATTER as PM10 (≤ 10 µm) <sup>a</sup>	mg/m <sup>3</sup>	US EPA, CODE OF FEDERAL REGULATIONS, 40 CFR CHAPTER I-PART 50 APPENDIX J, REFERENCE METHOD FOR THE DETERMINATION OF PARTICULATE MATTER AS PM10 IN THE ATMOSPHERE (HIGH-VOLUME METHOD) REVISED AS OF JULY 1, 2021.	0.010	0.010	0.014
FINE PARTICULATE MATTER as PM2.5 (≤ 2.5 µm) <sup>a</sup>	µg/m <sup>3</sup>	US EPA, CODE OF FEDERAL REGULATION, 40 CFR CHAPTER I-PART 50, APPENDIX L, REFERENCE METHOD FOR THE DETERMINATION OF FINE PARTICULATE MATTER AS PM2.5 IN THE ATMOSPHERE REVISED AS OF OCTOBER 15, 2021	3.30	4.10	3.70
SAMPLE CONDITION			COMPLETE	COMPLETE	COMPLETE

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

### REMARK

TSP, PM10 : REFERENCE CONDITION IS 25 DEGREE CELSIUS AT 1 ATMOSPHERE.  
 PM2.5 : REPORTED AS PER ACTUAL FIELD CONDITIONS DURING SAMPLING.  
 \* : SAMPLING FROM 10:30 HOUR ON MAY 24, 2025 TO 10:30 HOUR ON MAY 25, 2025.  
 PM2.5 AMBIENT AIR TEMPERATURE IS 33.0 °C, BAROMETRIC PRESSURE IS 757.0 mmHg  
 \*\* : SAMPLING FROM 10:30 HOUR ON MAY 25, 2025 TO 10:30 HOUR ON MAY 26, 2025.  
 PM2.5 AMBIENT AIR TEMPERATURE IS 31.0 °C, BAROMETRIC PRESSURE IS 757.0 mmHg  
 \*\*\* : SAMPLING FROM 10:30 HOUR ON MAY 26, 2025 TO 10:30 HOUR ON MAY 27, 2025.  
 PM2.5 AMBIENT AIR TEMPERATURE IS 30.5 °C, BAROMETRIC PRESSURE IS 757.0 mmHg

*Budsakorn ✓*

(MISS BUDSAKORN LERDPANUMAS)  
LABORATORY SUPERVISOR

## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaayasit.t@sekisui.com  
**SAMPLING SOURCE** : ศูนย์พัฒนาฝีมือแรงงาน จังหวัดระยอง  
**SAMPLE TYPE** : AMBIENT  
**SAMPLING DATE** : \*, \*\*, \*\*\*, \*\*\*\*  
**SAMPLING TIME** : \*, \*\*, \*\*\*, \*\*\*\*  
**SAMPLING BY** : MR WORAPHOT WONGKHAM  
**ANALYZED BY** : MISS JETJARIN TUMSA-AT  
**RECEIVED DATE** : JUNE 4, 2025  
**ANALYTICAL DATE** : JUNE 4-9, 2025  
**ISSUE DATE** : JUNE 19, 2025  
**REPORT NO.** : 2025-U055215  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AL818-0018 - T25AL818-0021

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT			
			ศูนย์พัฒนาฝีมือแรงงาน จังหวัดระยอง			
			*	**	***	****
			T25AL818-0018	T25AL818-0019	T25AL818-0020	T25AL818-0021
TOTAL SUSPENDED PARTICULATE MATTER <sup>a</sup>	mg/m <sup>3</sup>	US EPA, CODE OF FEDERAL REGULATIONS, 40 CFR CHAPTER I-PART 50 APPENDIX B, REFERENCE METHOD FOR THE DETERMINATION OF SUSPENDED PARTICULATE MATTER IN THE ATMOSPHERE (HIGH-VOLUME METHOD) REVISED AS OF JULY 1, 2021.	0.023	0.022	0.027	0.025
PARTICULATE MATTER as PM10 (≤ 10 μm) <sup>a</sup>	mg/m <sup>3</sup>	US EPA, CODE OF FEDERAL REGULATIONS, 40 CFR CHAPTER I-PART 50 APPENDIX J, REFERENCE METHOD FOR THE DETERMINATION OF PARTICULATE MATTER AS PM10 IN THE ATMOSPHERE (HIGH-VOLUME METHOD) REVISED AS OF JULY 1, 2021.	0.012	0.012	0.012	0.014



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT			
			ศูนย์พัฒนาฝีมือแรงงาน จังหวัดระยอง			
			*	**	***	****
			T25AL818-0018	T25AL818-0019	T25AL818-0020	T25AL818-0021
FINE PARTICULATE MATTER as PM2.5 ( $\leq 2.5 \mu\text{m}$ ) <sup>a</sup>	$\mu\text{g}/\text{m}^3$	US EPA, CODE OF FEDERAL REGULATION, 40 CFR CHAPTER I-PART 50, APPENDIX L, REFERENCE METHOD FOR THE DETERMINATION OF FINE PARTICULATE MATTER AS PM2.5 IN THE ATMOSPHERE REVISED AS OF OCTOBER 15, 2021	6.50	2.50	5.40	6.00
SAMPLE CONDITION			COMPLETE	COMPLETE	COMPLETE	COMPLETE

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

**REMARK**

TSP, PM10 : REFERENCE CONDITION IS 25 DEGREE CELSIUS AT 1 ATMOSPHERE.

PM2.5 : REPORTED AS PER ACTUAL FIELD CONDITIONS DURING SAMPLING.

\* : SAMPLING FROM 10:30 HOUR ON MAY 27, 2025 TO 10:30 HOUR ON MAY 28, 2025.

PM2.5 AMBIENT AIR TEMPERATURE IS 30.0 °C, BAROMETRIC PRESSURE IS 757.5 mmHg

\*\* : SAMPLING FROM 10:30 HOUR ON MAY 28, 2025 TO 10:30 HOUR ON MAY 29, 2025.

PM2.5 AMBIENT AIR TEMPERATURE IS 31.0 °C, BAROMETRIC PRESSURE IS 757.0 mmHg

\*\*\* : SAMPLING FROM 10:30 HOUR ON MAY 29, 2025 TO 10:30 HOUR ON MAY 30, 2025.

PM2.5 AMBIENT AIR TEMPERATURE IS 30.0 °C, BAROMETRIC PRESSURE IS 759.5 mmHg

\*\*\*\* : SAMPLING FROM 10:30 HOUR ON MAY 30, 2025 TO 10:30 HOUR ON MAY 31, 2025.

PM2.5 AMBIENT AIR TEMPERATURE IS 30.0 °C, BAROMETRIC PRESSURE IS 759.5 mmHg

*Budsakorn ✓*

(MISS BUDSAKORN LERDPANUMAS)  
LABORATORY SUPERVISOR

## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaayasit.t@sekisui.com  
**SAMPLING SOURCE** : ศูนย์พัฒนาฝีมือแรงงาน จังหวัดระยอง  
**SAMPLE TYPE** : AMBIENT **RECEIVED DATE** : JUNE 4, 2025  
**SAMPLING DATE** : \*, \*\*, \*\*\* **ANALYTICAL DATE** : JUNE 4-10, 2025  
**SAMPLING TIME** : \*, \*\*, \*\*\* **ISSUE DATE** : JUNE 19, 2025  
**SAMPLING BY** : MR WORAPHOT WONGKHAM **REPORT NO.** : 2025-U055218  
**ANALYZED BY** : MISS SUWAN KONGTHONG **WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AL818-0015 - T25AL818-0017

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT		
			ศูนย์พัฒนาฝีมือแรงงาน จังหวัดระยอง		
			* T25AL818-0015	** T25AL818-0016	*** T25AL818-0017
CHLORINE	mg/m <sup>3</sup>	ION CHROMATOGRAPHIC METHOD	< 0.001	< 0.001	< 0.001
<b>SAMPLE CONDITION</b>			COMPLETE	COMPLETE	COMPLETE

### REMARK

**RESULT** : REFERENCE CONDITION IS 25 DEGREE CELSIUS AT 1 ATMOSPHERE.  
 \* : SAMPLING FROM 10:30 HOUR ON MAY 24, 2025 TO 10:30 HOUR ON MAY 25, 2025.  
 \*\* : SAMPLING FROM 10:30 HOUR ON MAY 25, 2025 TO 10:30 HOUR ON MAY 26, 2025.  
 \*\*\* : SAMPLING FROM 10:30 HOUR ON MAY 26, 2025 TO 10:30 HOUR ON MAY 27, 2025.

*Budsakorn ✓*

(MISS BUDSAKORN LERDPANUMAS)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : ศูนย์พัฒนาฝีมือแรงงาน จังหวัดระยอง  
**SAMPLE TYPE** : AMBIENT **RECEIVED DATE** : JUNE 4, 2025  
**SAMPLING DATE** : \*, \*\*, \*\*\*, \*\*\*\* **ANALYTICAL DATE** : JUNE 4-10, 2025  
**SAMPLING TIME** : \*, \*\*, \*\*\*, \*\*\*\* **ISSUE DATE** : JUNE 19, 2025  
**SAMPLING BY** : MR WORAPHOT WONGKHAM **REPORT NO.** : 2025-U055219  
**ANALYZED BY** : MISS SUWAN KONGTHONG **WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AL818-0018 - T25AL818-0021

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT			
			ศูนย์พัฒนาฝีมือแรงงาน จังหวัดระยอง			
			*	**	***	****
			T25AL818-0018	T25AL818-0019	T25AL818-0020	T25AL818-0021
CHLORINE	mg/m <sup>3</sup>	ION CHROMATOGRAPHIC METHOD	< 0.001	< 0.001	< 0.001	< 0.001
SAMPLE CONDITION			COMPLETE	COMPLETE	COMPLETE	COMPLETE

### REMARK

**RESULT** : REFERENCE CONDITION IS 25 DEGREE CELSIUS AT 1 ATMOSPHERE.  
 \* : SAMPLING FROM 10:30 HOUR ON MAY 27, 2025 TO 10:30 HOUR ON MAY 28, 2025.  
 \*\* : SAMPLING FROM 10:30 HOUR ON MAY 28, 2025 TO 10:30 HOUR ON MAY 29, 2025.  
 \*\*\* : SAMPLING FROM 10:30 HOUR ON MAY 29, 2025 TO 10:30 HOUR ON MAY 30, 2025.  
 \*\*\*\* : SAMPLING FROM 10:30 HOUR ON MAY 30, 2025 TO 10:30 HOUR ON MAY 31, 2025.

*Budsakorn ✓*

(MISS BUDSAKORN LERDPANUMAS)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

<b>PROJECT NAME</b>	: โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)	<b>RECEIVED DATE</b>	: MAY 24-31, 2025
<b>CUSTOMER NAME</b>	: S AND L SPECIALTY POLYMERS CO., LTD.	<b>ANALYTICAL DATE</b>	: MAY 24-31, 2025
<b>ADDRESS</b>	: 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150	<b>ISSUE DATE</b>	: JUNE 12, 2025
<b>CONTACT INFORMATION</b>	: TEL : 092-457-0952 e-mail : Chalyasit.t@sekisui.com	<b>REPORT NO.</b>	: 2025-U051930
<b>MEASURING PLACE</b>	: ศูนย์พัฒนาฝีมือแรงงาน จังหวัดระยอง	<b>WORK NO.</b>	: 2024-010526
<b>MEASURING TYPE</b>	: AMBIENT (AIR)	<b>ANALYSIS NO.</b>	: T25AL818-0015 - T25AL818-0021
<b>MEASURING DATE</b>	: MAY 24-31, 2025		
<b>MEASURING TIME</b>	: *		
<b>MEASURING METHOD</b>	: WIND SPEED & WIND DIRECTION EQUIPMENT		
<b>MEASURED BY</b>	: MR WORAPHOT WONGKHAM		

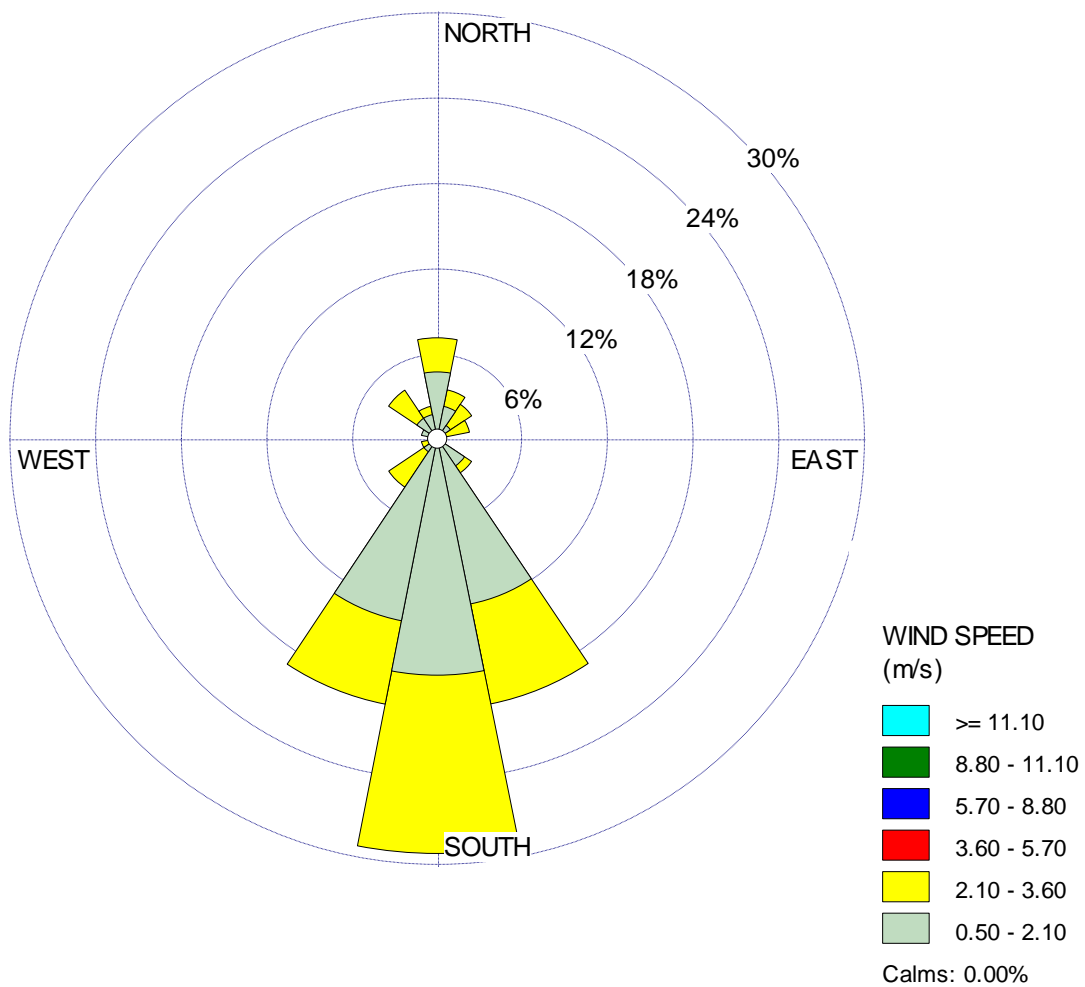
TIME *	RESULT (m/s)					
	ศูนย์พัฒนาฝีมือแรงงาน จังหวัดระยอง					
	MAY 24 - 25, 2025		MAY 25 - 26, 2025		MAY 26 - 27, 2025	
	T25AL818-0015		T25AL818-0016		T25AL818-0017	
	WIND SPEED	WIND DIRECTION	WIND SPEED	WIND DIRECTION	WIND SPEED	WIND DIRECTION
07:00-08:00 HOUR	2.6	NW	1.3	SSW	2.7	SSW
08:00-09:00 HOUR	1.0	SSE	1.0	N	2.3	SSW
09:00-10:00 HOUR	2.6	N	0.6	SSE	1.0	S
10:00-11:00 HOUR	1.8	N	2.1	SSW	2.8	SSE
11:00-12:00 HOUR	2.3	SSW	2.1	S	0.5	S
12:00-13:00 HOUR	2.1	SW	1.8	SSW	2.7	N
13:00-14:00 HOUR	2.4	S	2.8	SSE	2.4	S
14:00-15:00 HOUR	0.6	NW	2.9	S	1.0	WNW
15:00-16:00 HOUR	2.1	SSE	2.4	NNW	0.5	SSE
16:00-17:00 HOUR	2.7	SSW	0.5	SE	0.5	SSE
17:00-18:00 HOUR	2.2	WSW	2.1	S	2.6	S
18:00-19:00 HOUR	1.1	SW	1.5	N	2.4	SE
19:00-20:00 HOUR	1.8	SSW	1.0	S	2.3	NNE
20:00-21:00 HOUR	2.9	S	2.0	W	0.5	SSE
21:00-22:00 HOUR	2.2	NW	1.9	SSW	1.8	NNE
22:00-23:00 HOUR	0.8	SSW	2.6	SSE	1.1	SSE
23:00-00:00 HOUR	1.7	NNW	0.6	S	0.8	S
00:00-01:00 HOUR	2.6	SW	1.1	SSE	2.7	S
01:00-02:00 HOUR	2.6	SSE	0.9	S	1.3	SE
02:00-03:00 HOUR	2.1	SW	1.1	ENE	0.9	S
03:00-04:00 HOUR	0.5	NNW	1.9	SSW	0.6	S
04:00-05:00 HOUR	2.2	S	2.4	S	2.5	N
05:00-06:00 HOUR	1.1	NNE	2.6	S	1.4	SSW
06:00-07:00 HOUR	2.6	ENE	1.0	SSW	1.9	S



TIME *	RESULT (m/s)							
	ศูนย์พัฒนาฝีมือแรงงาน จังหวัดระยอง							
	MAY 27 - 28, 2025		MAY 28 - 29, 2025		MAY 29 - 30, 2025		MAY 30 - 31, 2025	
	T25AL818-0018		T25AL818-0019		T25AL818-0020		T25AL818-0021	
	WIND SPEED	WIND DIRECTION	WIND SPEED	WIND DIRECTION	WIND SPEED	WIND DIRECTION	WIND SPEED	WIND DIRECTION
07:00-08:00 HOUR	2.1	SSW	1.3	N	1.1	S	2.3	S
08:00-09:00 HOUR	0.7	S	0.9	N	0.6	N	1.6	N
09:00-10:00 HOUR	2.6	SSE	2.9	SSE	2.2	SSE	1.4	WNW
10:00-11:00 HOUR	0.5	SSW	1.1	SSE	2.6	N	0.9	N
11:00-12:00 HOUR	2.4	NE	1.3	SSW	2.9	S	1.8	S
12:00-13:00 HOUR	1.7	SSE	1.8	SSE	0.6	SSW	0.9	NE
13:00-14:00 HOUR	1.7	SSE	2.7	SW	1.1	S	2.6	S
14:00-15:00 HOUR	0.5	NE	2.9	SSE	1.0	S	0.5	SSE
15:00-16:00 HOUR	2.3	NE	1.3	SSE	2.6	S	2.9	ENE
16:00-17:00 HOUR	1.8	S	1.7	SSW	0.5	S	2.7	NE
17:00-18:00 HOUR	1.4	S	2.6	SSE	1.2	SSE	0.9	SSW
18:00-19:00 HOUR	1.0	S	1.8	WSW	2.4	SSE	0.9	SSW
19:00-20:00 HOUR	0.5	S	1.1	S	1.5	SE	1.6	NNE
20:00-21:00 HOUR	1.6	S	2.6	S	1.9	SSE	0.6	S
21:00-22:00 HOUR	1.2	NW	2.7	NW	0.5	SSW	0.9	S
22:00-23:00 HOUR	1.9	SSE	0.9	NNE	2.9	NNE	1.1	SSW
23:00-00:00 HOUR	2.1	S	1.9	S	1.5	S	1.9	S
00:00-01:00 HOUR	2.4	S	2.5	S	1.3	SSE	1.8	SSW
01:00-02:00 HOUR	2.4	SW	1.4	SSE	1.1	SSW	1.7	SSE
02:00-03:00 HOUR	0.9	SW	0.7	S	2.5	SSE	1.2	NW
03:00-04:00 HOUR	2.7	SSW	0.8	SSW	2.5	SSW	2.2	S
04:00-05:00 HOUR	2.3	NW	0.5	SSW	1.0	SSW	2.8	SSW
05:00-06:00 HOUR	1.6	NNW	2.2	SSW	1.4	SE	0.8	SSW
06:00-07:00 HOUR	0.5	SSE	2.1	S	1.7	S	2.1	ENE

*Sila J*

(MR SILA BANJONGJAIKUK)  
LABORATORY SUPERVISOR



รูปที่ 2 แสดงความเร็วและทิศทางลม บริเวณศูนย์พัฒนาฝีมือแรงงาน จ.ระยอง (A3)

ระหว่างวันที่ 24-31 พฤษภาคม พ.ศ. 2568

## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : วัดมามขลุ่ย  
**SAMPLE TYPE** : AMBIENT **RECEIVED DATE** : JUNE 4, 2025  
**SAMPLING DATE** : \*, \*\*, \*\*\* **ANALYTICAL DATE** : JUNE 4-10, 2025  
**SAMPLING TIME** : \*, \*\*, \*\*\* **ISSUE DATE** : JUNE 19, 2025  
**SAMPLING BY** : MR WORAPHOT WONGKHAM **REPORT NO.** : 2025-U055210  
**ANALYZED BY** : MISS SUWAN KONGTHONG **WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AL818-0001 - T25AL818-0003

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT		
			วัดมามขลุ่ย		
			* T25AL818-0001	** T25AL818-0002	*** T25AL818-0003
CHLORINE	mg/m <sup>3</sup>	ION CHROMATOGRAPHIC METHOD	< 0.001	< 0.001	< 0.001
SAMPLE CONDITION			COMPLETE	COMPLETE	COMPLETE

**REMARK**  
**RESULT** : REFERENCE CONDITION IS 25 DEGREE CELSIUS AT 1 ATMOSPHERE.  
\* : SAMPLING FROM 10:00 HOUR ON MAY 24, 2025 TO 10:00 HOUR ON MAY 25, 2025.  
\*\* : SAMPLING FROM 10:00 HOUR ON MAY 25, 2025 TO 10:00 HOUR ON MAY 26, 2025.  
\*\*\* : SAMPLING FROM 10:00 HOUR ON MAY 26, 2025 TO 10:00 HOUR ON MAY 27, 2025.

*Budsakorn ✓*  
(MISS BUDSAKORN LERDPANUMAS)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : วัดมาบชลด  
**SAMPLE TYPE** : AMBIENT  
**SAMPLING DATE** : \*, \*\*, \*\*\*, \*\*\*\*  
**SAMPLING TIME** : \*, \*\*, \*\*\*, \*\*\*\*  
**SAMPLING BY** : MR WORAPHOT WONGKHAM  
**ANALYZED BY** : MISS SUWAN KONGTHONG  
**RECEIVED DATE** : JUNE 4, 2025  
**ANALYTICAL DATE** : JUNE 4-10, 2025  
**ISSUE DATE** : JUNE 19, 2025  
**REPORT NO.** : 2025-U055211  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AL818-0004 - T25AL818-0007

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT			
			วัดมาบชลด			
			*	**	***	****
CHLORINE	mg/m <sup>3</sup>	ION CHROMATOGRAPHIC METHOD	T25AL818-0004 < 0.001	T25AL818-0005 < 0.001	T25AL818-0006 < 0.001	T25AL818-0007 < 0.001
SAMPLE CONDITION			COMPLETE	COMPLETE	COMPLETE	COMPLETE

**REMARK**  
**RESULT** : REFERENCE CONDITION IS 25 DEGREE CELSIUS AT 1 ATMOSPHERE.  
\* : SAMPLING FROM 10:00 HOUR ON MAY 27, 2025 TO 10:00 HOUR ON MAY 28, 2025.  
\*\* : SAMPLING FROM 10:00 HOUR ON MAY 28, 2025 TO 10:00 HOUR ON MAY 29, 2025.  
\*\*\* : SAMPLING FROM 10:00 HOUR ON MAY 29, 2025 TO 10:00 HOUR ON MAY 30, 2025.  
\*\*\*\* : SAMPLING FROM 10:00 HOUR ON MAY 30, 2025 TO 10:00 HOUR ON MAY 31, 2025.

*Budsakorn ✓*

(MISS BUDSAKORN LERDPANUMAS)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : วัดหนองแฟบ  
**SAMPLE TYPE** : AMBIENT  
**SAMPLING DATE** : \*, \*\*, \*\*\*  
**SAMPLING TIME** : \*, \*\*, \*\*\*  
**SAMPLING BY** : MR WORAPHOT WONGKHAM  
**ANALYZED BY** : MISS SUWAN KONGTHONG  
**RECEIVED DATE** : JUNE 4, 2025  
**ANALYTICAL DATE** : JUNE 4-10, 2025  
**ISSUE DATE** : JUNE 19, 2025  
**REPORT NO.** : 2025-U055212  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AL818-0008 - T25AL818-0010

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT		
			วัดหนองแฟบ		
			* T25AL818-0008	** T25AL818-0009	*** T25AL818-0010
CHLORINE	mg/m <sup>3</sup>	ION CHROMATOGRAPHIC METHOD	< 0.001	< 0.001	< 0.001
SAMPLE CONDITION			COMPLETE	COMPLETE	COMPLETE

### REMARK

**RESULT** : REFERENCE CONDITION IS 25 DEGREE CELSIUS AT 1 ATMOSPHERE.  
\* : SAMPLING FROM 11:00 HOUR ON MAY 24, 2025 TO 11:00 HOUR ON MAY 25, 2025.  
\*\* : SAMPLING FROM 11:00 HOUR ON MAY 25, 2025 TO 11:00 HOUR ON MAY 26, 2025.  
\*\*\* : SAMPLING FROM 11:00 HOUR ON MAY 26, 2025 TO 11:00 HOUR ON MAY 27, 2025.

*Budsakorn ✓*

(MISS BUDSAKORN LERDPANUMAS)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : วัดหนองแฟบ  
**SAMPLE TYPE** : AMBIENT  
**SAMPLING DATE** : \* \*\* \*\* \*  
**SAMPLING TIME** : \* \*\* \*\* \*  
**SAMPLING BY** : MR WORAPHOT WONGKHAM  
**ANALYZED BY** : MISS SUWAN KONGTHONG  
**RECEIVED DATE** : JUNE 4, 2025  
**ANALYTICAL DATE** : JUNE 4-10, 2025  
**ISSUE DATE** : JUNE 19, 2025  
**REPORT NO.** : 2025-U055213  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AL818-0011 - T25AL818-0014

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT			
			วัดหนองแฟบ			
			*	**	***	****
CHLORINE	mg/m <sup>3</sup>	ION CHROMATOGRAPHIC METHOD	T25AL818-0011 < 0.001	T25AL818-0012 < 0.001	T25AL818-0013 < 0.001	T25AL818-0014 < 0.001
SAMPLE CONDITION			COMPLETE	COMPLETE	COMPLETE	COMPLETE

### REMARK

**RESULT** : REFERENCE CONDITION IS 25 DEGREE CELSIUS AT 1 ATMOSPHERE.  
 \* : SAMPLING FROM 11:00 HOUR ON MAY 27, 2025 TO 11:00 HOUR ON MAY 28, 2025.  
 \*\* : SAMPLING FROM 11:00 HOUR ON MAY 28, 2025 TO 11:00 HOUR ON MAY 29, 2025.  
 \*\*\* : SAMPLING FROM 11:00 HOUR ON MAY 29, 2025 TO 11:00 HOUR ON MAY 30, 2025.  
 \*\*\*\* : SAMPLING FROM 11:00 HOUR ON MAY 30, 2025 TO 11:00 HOUR ON MAY 31, 2025.

*Budsakorn ✓*

(MISS BUDSAKORN LERDPANUMAS)  
LABORATORY SUPERVISOR



คุณภาพอากาศจากแหล่งกำเนิด

---

## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@seksui.com  
**SAMPLING SOURCE** : S AND L SPECIALTY POLYMERS CO., LTD.  
**SAMPLE TYPE** : STACK **RECEIVED DATE** : MAY 29, 2025  
**SAMPLING DATE** : MAY 28, 2025 **ANALYTICAL DATE** : MAY 29-JUNE 17, 2025  
**SAMPLING TIME** : 11:00-11:36 HOUR **ISSUE DATE** : JUNE 19, 2025  
**SAMPLING BY** : MR WATCHARIN SAN-NGAM ว-145-จ-0099 **REPORT NO.** : 2025-U055237  
**ANALYZED BY** : MISS SUWAN KONGTHONG ว-145-ค-0025 **WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AL531-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT
			WET SCRUBBER 1
			T25AL531-0001
TOTAL SUSPENDED PARTICULATE	mg/m <sup>3</sup>	ISOKINETIC, GRAVIMETRIC METHOD (US EPA METHOD 5)	ACTUAL OXYGEN 1.14
SAMPLE CONDITION			COMPLETE

### REMARK

RESULT : REFERENCE CONDITION IS 25 DEGREE CELSIUS AT 1 ATMOSPHERE AND DRY BASIS.

*Budsakorn ✓*

(MISS BUDSAKORN LERDPANUMAS)  
LABORATORY SUPERVISOR  
ว-145-ค-0011



- PROHIBITED TO PARTIALLY COPY ANALYSIS REPORT PRIOR TO WRITTEN PERMISSION BY THE LABORATORY.
- THIS ANALYSIS REPORT APPROVES ONLY FOR THE SAMPLES AS RECEIVED.



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : S AND L SPECIALTY POLYMERS CO., LTD.  
**SAMPLE TYPE** : STACK  
**SAMPLING DATE** : MAY 28, 2025  
**SAMPLING TIME** : 10:00-10:36 HOUR  
**SAMPLING BY** : MR WATCHARIN SAN-NGAM ๖-145-๑-0099  
**ANALYZED BY** : MISS SUWAN KONGTHONG ๖-145-๑-0025

**RECEIVED DATE** : MAY 29, 2025  
**ANALYTICAL DATE** : MAY 29-JUNE 17, 2025  
**ISSUE DATE** : JUNE 19, 2025  
**REPORT NO.** : 2025-U055238  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AL531-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT
			WET SCRUBBER 2
			T25AL531-0002
TOTAL SUSPENDED PARTICULATE	mg/m <sup>3</sup>	ISOKINETIC, GRAVIMETRIC METHOD (US EPA METHOD 5)	1.54
SAMPLE CONDITION			COMPLETE

**REMARK**

**RESULT** : REFERENCE CONDITION IS 25 DEGREE CELSIUS AT 1 ATMOSPHERE AND DRY BASIS.

*Budsakorn ✓*

(MISS BUDSAKORN LERDPANUMAS)  
LABORATORY SUPERVISOR  
๖-145-๑-0011



- PROHIBITED TO PARTIALLY COPY ANALYSIS REPORT PRIOR TO WRITTEN PERMISSION BY THE LABORATORY.
- THIS ANALYSIS REPORT APPROVES ONLY FOR THE SAMPLES AS RECEIVED.



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chalyasit.t@sekisui.com  
**SAMPLING SOURCE** : S AND L SPECIALTY POLYMERS CO., LTD.  
**SAMPLE TYPE** : STACK  
**SAMPLING DATE** : MAY 27, 2025  
**SAMPLING TIME** : 14:30-15:18 HOUR  
**SAMPLING BY** : MR WATCHARIN SAN-NGAM ว-145-จ-0099  
**ANALYZED BY** : MISS SUWAN KONGTHONG ว-145-ค-0025

**RECEIVED DATE** : MAY 29, 2025  
**ANALYTICAL DATE** : MAY 29-JUNE 17, 2025  
**ISSUE DATE** : JUNE 19, 2025  
**REPORT NO.** : 2025-U055240  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AL531-0004

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT
			CHLORINE ELIMINATOR T25AL531-0004
			ACTUAL OXYGEN
CHLORINE	mg/m <sup>3</sup>	ABSORPTION, ION CHROMATOGRAPHIC METHOD (US EPA METHOD 26A)	0.024
SAMPLE CONDITION			COMPLETE

### REMARK

RESULT : REFERENCE CONDITON IS 25 DEGREE CELSIUS AT 1 ATMOSPHERE AND DRY BASIS.

*Budsakorn ✓*

(MISS BUDSAKORN LERDPANUMAS)  
LABORATORY SUPERVISOR  
ว-145-ค-0011



- PROHIBITED TO PARTIALLY COPY ANALYSIS REPORT PRIOR TO WRITTEN PERMISSION BY THE LABORATORY.
- THIS ANALYSIS REPORT APPROVES ONLY FOR THE SAMPLES AS RECEIVED.



คุณภาพน้ำ



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : JANUARY 13, 2025  
**SAMPLING TIME** : 09:30 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR SETTHAWUT EMKLINBUA  
**ANALYZED BY** : MISS NAPAPORN KHUNNOKKHUM

**RECEIVED DATE** : JANUARY 14, 2025  
**ANALYTICAL DATE** : JANUARY 14-20, 2025  
**ISSUE DATE** : APRIL 8, 2025  
**REPORT NO.** : 2025-U029153  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AA705-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			WASTE WATER INSPECTION (V89-N) T25AA705-0001			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B AND 1060 B	8.4 (29.8°C)	5.5-9.0	-	-
TEMPERATURE <sup>c</sup>	°C	LABORATORY AND FIELD METHODS (SM: PART 2550 B)	29.8	≤ 40	-	-
ELECTRICAL CONDUCTIVITY <sup>b</sup>	µS/cm	ELECTRICAL CONDUCTIVITY METHOD (AT SITE) SM: PART 2510 B AND 1060 B	34,996 (31.5°C)	-	0.1	-
FREE CHLORINE <sup>c</sup>	mg/L Cl <sub>2</sub>	MODIFIED DPD COLOURIMETRIC METHOD (AT SITE)	ND	≤ 1	0.1	-
BIOCHEMICAL OXYGEN DEMAND <sup>b</sup>	mg/L	5-DAY BOD TEST, MEMBRANE ELECTRODE METHOD (SM: PART 5210 B AND PART 4500-O G)	< 2.0	≤ 20	-	2.0
CHEMICAL OXYGEN DEMAND <sup>c</sup>	mg/L	CLOSED REFLUX, TITRIMETRIC METHOD (SM: PART 5220 C)	43.0	≤ 120	-	40.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	DRIED FROM 103 TO 105 °C (SM: PART 2540 D)	10.2	≤ 50	-	5.0
TOTAL DISSOLVED SOLIDS <sup>a,c</sup>	mg/L	DRIED AT 180 °C (SM: PART 2540 C)	20,260	≤ 3,000	-	25



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT **RECEIVED DATE** : JANUARY 14, 2025  
**SAMPLING DATE** : JANUARY 13, 2025 **ANALYTICAL DATE** : JANUARY 14 - FEBRUARY 14, 2025  
**SAMPLING TIME** : 09:30 HOUR **ISSUE DATE** : FEBRUARY 17, 2025  
**SAMPLING METHOD** : GRAB **REPORT NO.** : 2025-U012467  
**SAMPLING BY** : MR SETTHAWUT EMKLINBUA **WORK NO.** : 2024-010526  
**ANALYZED BY** : SC **ANALYSIS NO.** : T25AA705-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			WASTEWATER INSPECTION (V89-N) T25AA705-0001		
ADSORBABLE ORGANIC HALIDES (SC)	mg/L	ISO 9562	7.55	-	0.0250
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/CLEAR YELLOW		

REGULATORY STANDARD : INDUSTRIAL EFFLUENT STANDARDS, NOTIFICATION OF THE MINISTRY OF INDUSTRY, B.E. 2560,  
PUBLISHED IN THE ROYAL GOVERNMENT GAZETTE, VOL 134, PART 153 D, DATED JUNE 7, 2017.

*Benjawan V.*

(MISS BENJAWAN VIRIYOTHAI)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : JANUARY 13, 2025  
**SAMPLING TIME** : 09:15 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR SETTHAWUT EMKLINBUA  
**ANALYZED BY** : MISS AKSARIN BUNKONG

**RECEIVED DATE** : JANUARY 14, 2025  
**ANALYTICAL DATE** : JANUARY 14-22, 2025  
**ISSUE DATE** : FEBRUARY 10, 2025  
**REPORT NO.** : 2025-U010912  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AA705-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			INSPECTION PIT (V100-1-U) T25AA705-0002			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B AND 1060 B	7.5 (25.5°C)	5.5-9.0	-	-
TEMPERATURE <sup>c</sup>	°C	LABORATORY AND FIELD METHODS (SM: PART 2550 B)	25.5	≤ 45	-	-
ELECTRICAL CONDUCTIVITY <sup>b</sup>	µS/cm	ELECTRICAL CONDUCTIVITY METHOD (AT SITE) SM: PART 2510 B AND 1060 B	1,110 (26.1°C)	-	0.1	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	5-DAY BOD TEST, MEMBRANE ELECTRODE METHOD (SM: PART 5210 B AND PART 4500-O G)	137	≤ 500	-	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLUX, COLOURIMETRIC METHOD (SM: PART 5220 D)	268	≤ 750	-	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	DRIED FROM 103 TO 105 °C (SM: PART 2540 D)	46.0	≤ 200	-	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	DRIED AT 180 °C (SM: PART 2540 C)	481	≤ 3,000	-	25
FAT, OIL AND GREASE <sup>a</sup>	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM: PART 5520 B)	8	≤ 10	-	3
<b>SAMPLE CONDITION</b>						
WATER'S COLOUR/TURBID			YELLOW/TURBID			
SEDIMENT			BROWN			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

REGULATORY STANDARD : ANNOUNCEMENT OF THE INDUSTRIAL ESTATE AUTHORITY OF THAILAND NO.029/2567 : STANDARD FOR WASTEWATER DRAINAGE INTO THE CENTRAL WASTEWATER TREATMENT PLANT IN THE INDUSTRIAL ESTATE.

<sup>a</sup> : CUSTOMER INFORMATION.

*Wilailak Srisuk*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : JANUARY 13, 2025  
**SAMPLING TIME** : 09:35 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR SETTHAWUT EMKLINBUA  
**ANALYZED BY** : MISS AKSARIN BUNKONG

**RECEIVED DATE** : JANUARY 14, 2025  
**ANALYTICAL DATE** : JANUARY 14-20, 2025  
**ISSUE DATE** : FEBRUARY 10, 2025  
**REPORT NO.** : 2025-U010914  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AA705-0003

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			INSPECTION PIT (V100-2-U) T25AA705-0003			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B AND 1060 B	8.0 (27.4°C)	5.5-9.0	-	-
TEMPERATURE <sup>c</sup>	°C	LABORATORY AND FIELD METHODS (SM: PART 2550 B)	27.4	≤ 45	-	-
ELECTRICAL CONDUCTIVITY <sup>b</sup>	µS/cm	ELECTRICAL CONDUCTIVITY METHOD (AT SITE) SM: PART 2510 B AND 1060 B	770 (28.1°C)	-	0.1	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	5-DAY BOD TEST, MEMBRANE ELECTRODE METHOD (SM: PART 5210 B AND PART 4500-O G)	2.8	≤ 500	-	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLUX, COLOURIMETRIC METHOD (SM: PART 5220 D)	29.8	≤ 750	-	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	DRIED FROM 103 TO 105 °C (SM: PART 2540 D)	< 5.0	≤ 200	-	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	DRIED AT 180 °C (SM: PART 2540 C)	186	≤ 3,000	-	25
FAT, OIL AND GREASE <sup>a</sup>	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM: PART 5520 B)	< 3	≤ 10	-	3
<b>SAMPLE CONDITION</b>						
WATER'S COLOUR/TURBID			YELLOW/CLEAR			
SEDIMENT			BROWN			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

REGULATORY STANDARD : ANNOUNCEMENT OF THE INDUSTRIAL ESTATE AUTHORITY OF THAILAND NO.029/2567 : STANDARD FOR WASTEWATER DRAINAGE INTO THE CENTRAL WASTEWATER TREATMENT PLANT IN THE INDUSTRIAL ESTATE.

<sup>A</sup> : CUSTOMER INFORMATION.

*Wilailak Srisuk*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : JANUARY 13, 2025  
**SAMPLING TIME** : 09:25 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR SETTHAWUT EMKLINBUA  
**ANALYZED BY** : MISS AKSARIN BUNKONG

**RECEIVED DATE** : JANUARY 14, 2025  
**ANALYTICAL DATE** : JANUARY 14-20, 2025  
**ISSUE DATE** : FEBRUARY 10, 2025  
**REPORT NO.** : 2025-U010916  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AA705-0004

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			INSPECTION PIT (V100-4-U) T25AA705-0004			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B AND 1060 B	8.3 (25.9°C)	5.5-9.0	-	-
TEMPERATURE <sup>c</sup>	°C	LABORATORY AND FIELD METHODS (SM: PART 2550 B)	25.9	≤ 45	-	-
ELECTRICAL CONDUCTIVITY <sup>b</sup>	µS/cm	ELECTRICAL CONDUCTIVITY METHOD (AT SITE) SM: PART 2510 B AND 1060 B	744 (27.3°C)	-	0.1	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	5-DAY BOD TEST, MEMBRANE ELECTRODE METHOD (SM: PART 5210 B AND PART 4500-O G)	2.6	≤ 500	-	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLUX, COLOURIMETRIC METHOD (SM: PART 5220 D)	35.3	≤ 750	-	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	DRIED FROM 103 TO 105 °C (SM: PART 2540 D)	< 5.0	≤ 200	-	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	DRIED AT 180 °C (SM: PART 2540 C)	606	≤ 3,000	-	25
FAT, OIL AND GREASE <sup>a,b</sup>	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM: PART 5520 B)	< 3	≤ 10	-	3
<b>SAMPLE CONDITION</b>						
WATER'S COLOUR/TURBID			YELLOW/CLEAR			
SEDIMENT			BROWN			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

REGULATORY STANDARD : ANNOUNCEMENT OF THE INDUSTRIAL ESTATE AUTHORITY OF THAILAND NO.029/2567 : STANDARD FOR WASTEWATER DRAINAGE INTO THE CENTRAL WASTEWATER TREATMENT PLANT IN THE INDUSTRIAL ESTATE.

<sup>A</sup> : CUSTOMER INFORMATION.

*Wilailak Srisuk*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : FEBRUARY 10, 2025  
**SAMPLING TIME** : 09:40 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR SETTHAWUT EMKLINBUA  
**ANALYZED BY** : MISS NAPAPORN KHUNNOKKHUM

**RECEIVED DATE** : FEBRUARY 11, 2025  
**ANALYTICAL DATE** : FEBRUARY 11-18, 2025  
**ISSUE DATE** : APRIL 8, 2025  
**REPORT NO.** : 2025-U029154  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AC798-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			WASTEWATER INSPECTION (V89-N) T25AC798-0001			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B AND 1060 B	5.7 (34.2°C)	5.5-9.0	-	-
TEMPERATURE <sup>c</sup>	°C	THERMOMETER (AT SITE) SM: PART 2550 B	34.2	≤ 40	-	-
ELECTRICAL CONDUCTIVITY <sup>b</sup>	µS/cm	ELECTRICAL CONDUCTIVITY METHOD (AT SITE) SM: PART 2510 B AND 1060 B	42,100 (34.2°C)	-	0.1	-
FREE CHLORINE <sup>c</sup>	mg/L Cl <sub>2</sub>	MODIFIED DPD COLOURIMETRIC METHOD (AT SITE)	ND	≤ 1	0.1	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM: PART 5210 B AND PART 4500-O <sub>2</sub> G)	7.3	≤ 20	-	2.0
CHEMICAL OXYGEN DEMAND <sup>c</sup>	mg/L	CLOSED REFLUX, TITRIMETRIC METHOD (SM: PART 5220 C)	< 40.0	≤ 120	-	40.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM: PART 2540 D)	17.9	≤ 50	-	5.0
TOTAL DISSOLVED SOLIDS <sup>c</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM: PART 2540 C)	22,640	≤ 3,000	-	25



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			WASTEWATER INSPECTION (V89-N) T25AC798-0001			
OIL AND GREASE <sup>a</sup>	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM: PART 5520 B)	< 3	≤ 5	-	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/CLEAR YELLOW			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

REGULATORY STANDARD : INDUSTRIAL EFFLUENT STANDARDS, NOTIFICATION OF THE MINISTRY OF INDUSTRY, B.E. 2560,  
PUBLISHED IN THE ROYAL GOVERNMENT GAZETTE, VOL 134, PART 153 D, DATED JUNE 7, 2017.

ND : NOT DETECTED.

THE REASON FOR ISSUING THE NEW REPORT IS TO SUBSTITUTE RESULT OF CHEMICAL OXYGEN DEMAND.

SUBSTITUTED REPORT FOR REPORT NO. 2024-U120451, ISSUE DATE MARCH 6, 2025.

*Wilailak Srisuk*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR

## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaayasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT **RECEIVED DATE** : FEBRUARY 11, 2025  
**SAMPLING DATE** : FEBRUARY 10, 2025 **ANALYTICAL DATE** : FEBRUARY 11 - MARCH 12, 2025  
**SAMPLING TIME** : 09:40 HOUR **ISSUE DATE** : MARCH 13, 2025  
**SAMPLING METHOD** : GRAB **REPORT NO.** : 2025-U021514  
**SAMPLING BY** : MR SETTHAWUT EMKLINBUA **WORK NO.** : 2024-010526  
**ANALYZED BY** : SC **ANALYSIS NO.** : T25AC798-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			WASTEWATER INSPECTION (V89-N) T25AC798-0001		
ADSORBABLE ORGANIC HALIDES (SC)	mg/L	ISO 9562	8.27	-	0.0250
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/CLEAR YELLOW		

REGULATORY STANDARD : INDUSTRIAL EFFLUENT STANDARDS, NOTIFICATION OF THE MINISTRY OF INDUSTRY, B.E. 2560,  
PUBLISHED IN THE ROYAL GOVERNMENT GAZETTE, VOL 134, PART 153 D, DATED JUNE 7, 2017.

SC : THE TEST WAS SUBCONTRACTED TO THE ANOTHER LABORATORY.

*Benjawan V.*

(MISS BENJAWAN VIRIYOTHAI)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaityasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : FEBRUARY 10, 2025  
**SAMPLING TIME** : 10:00 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR SETTHAWUT EMKLINBUA  
**ANALYZED BY** : MISS AKSARIN BUNKONG

**RECEIVED DATE** : FEBRUARY 11, 2025  
**ANALYTICAL DATE** : FEBRUARY 11-18, 2025  
**ISSUE DATE** : MARCH 6, 2025  
**REPORT NO.** : 2025-U018555  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AC798-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			INSPECTION PIT (V100-1-U) T25AC798-0002			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B AND 1060 B	7.0 (28.3°C)	5.5-9.0	-	-
TEMPERATURE <sup>c</sup>	°C	THERMOMETER (AT SITE) SM: PART 2550 B	28.3	≤ 45	-	-
ELECTRICAL CONDUCTIVITY <sup>b</sup>	µS/cm	ELECTRICAL CONDUCTIVITY METHOD (AT SITE) SM: PART 2510 B AND 1060 B	1,338 (28.3°C)	-	0.1	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM: PART 5210 B AND PART 4500-O G)	153	≤ 500	-	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLUX, COLOURIMETRIC METHOD (SM: PART 5220 D)	439	≤ 750	-	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM: PART 2540 D)	59.2	≤ 200	-	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM: PART 2540 C)	485	≤ 3,000	-	25
FAT, OIL AND GREASE <sup>a</sup>	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM: PART 5520 B)	9	≤ 10	-	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID BROWN			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

REGULATORY STANDARD : ANNOUNCEMENT OF THE INDUSTRIAL ESTATE AUTHORITY OF THAILAND NO.029/2567 : STANDARD FOR WASTEWATER DRAINAGE INTO THE CENTRAL WASTEWATER TREATMENT PLANT IN THE INDUSTRIAL ESTATE.

<sup>A</sup> : CUSTOMER INFORMATION.

: SAMPLING AT 08:30 HOUR ON FEBRUARY 21, 2025, ANALYSIS NO. T25AD809-0001 (ANALYTICAL DATE : FEBRUARY 22-28, 2025).

*Wilailak Srisuk*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaityasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : FEBRUARY 10, 2025  
**SAMPLING TIME** : 09:50 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR SETTHAWUT EMKLINBUA  
**ANALYZED BY** : MISS AKSARIN BUNKONG

**RECEIVED DATE** : FEBRUARY 11, 2025  
**ANALYTICAL DATE** : FEBRUARY 11-18, 2025  
**ISSUE DATE** : MARCH 6, 2025  
**REPORT NO.** : 2025-U018556  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AC798-0003

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			INSPECTION PIT (V100-2-U) T25AC798-0003			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B AND 1060 B	7.8 (29.3°C)	5.5-9.0	-	-
TEMPERATURE <sup>c</sup>	°C	THERMOMETER (AT SITE) SM: PART 2550 B	29.3	≤ 45	-	-
ELECTRICAL CONDUCTIVITY <sup>b</sup>	µS/cm	ELECTRICAL CONDUCTIVITY METHOD (AT SITE) SM: PART 2510 B AND 1060 B	1,180 (29.3°C)	-	0.1	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM: PART 5210 B AND PART 4500-O G)	< 2.0	≤ 500	-	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLUX, COLOURIMETRIC METHOD (SM: PART 5220 D)	< 25.0	≤ 750	-	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM: PART 2540 D)	< 5.0	≤ 200	-	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM: PART 2540 C)	178	≤ 3,000	-	25
FAT, OIL AND GREASE <sup>a</sup>	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM: PART 5520 B)	< 3	≤ 10	-	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/CLEAR YELLOW			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

REGULATORY STANDARD : ANNOUNCEMENT OF THE INDUSTRIAL ESTATE AUTHORITY OF THAILAND NO.029/2567 : STANDARD FOR WASTEWATER DRAINAGE INTO THE CENTRAL WASTEWATER TREATMENT PLANT IN THE INDUSTRIAL ESTATE.

<sup>A</sup> : CUSTOMER INFORMATION.

*Wilailak Srisuk*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaayasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : FEBRUARY 10, 2025  
**SAMPLING TIME** : 10:05 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR SETTHAWUT EMKLINBUA  
**ANALYZED BY** : MISS AKSARIN BUNKONG

**RECEIVED DATE** : FEBRUARY 11, 2025  
**ANALYTICAL DATE** : FEBRUARY 11-18, 2025  
**ISSUE DATE** : MARCH 6, 2025  
**REPORT NO.** : 2025-U018557  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AC798-0004

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			INSPECTION PIT (V100-4-U) T25AC798-0004			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B AND 1060 B	7.8 (29.7°C)	5.5-9.0	-	-
TEMPERATURE <sup>c</sup>	°C	THERMOMETER (AT SITE) SM: PART 2550 B	29.7	≤ 45	-	-
ELECTRICAL CONDUCTIVITY <sup>b</sup>	µS/cm	ELECTRICAL CONDUCTIVITY METHOD (AT SITE) SM: PART 2510 B AND 1060 B	704 (29.7°C)	-	0.1	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM: PART 5210 B AND PART 4500-O G)	8.3	≤ 500	-	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLUX, COLOURIMETRIC METHOD (SM: PART 5220 D)	32.3	≤ 750	-	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM: PART 2540 D)	12.4	≤ 200	-	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM: PART 2540 C)	414	≤ 3,000	-	25
FAT, OIL AND GREASE <sup>a,b</sup>	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM: PART 5520 B)	< 3	≤ 10	-	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID BROWN			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

REGULATORY STANDARD : ANNOUNCEMENT OF THE INDUSTRIAL ESTATE AUTHORITY OF THAILAND NO.029/2567 : STANDARD FOR WASTEWATER DRAINAGE INTO THE CENTRAL WASTEWATER TREATMENT PLANT IN THE INDUSTRIAL ESTATE.

<sup>A</sup> : CUSTOMER INFORMATION.

*Wilailak Srisuk*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : MARCH 10, 2025  
**SAMPLING TIME** : 10:49 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR THANADET WANSANOR  
**ANALYZED BY** : MISS NAPAPORN KHUNNOKKHUM

**RECEIVED DATE** : MARCH 11, 2025  
**ANALYTICAL DATE** : MARCH 11-18, 2025  
**ISSUE DATE** : APRIL 1, 2025  
**REPORT NO.** : 2025-U027696  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AF171-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			WASTE WATER INSPECTION (V89-N) T25AF171-0001			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B AND 1060 B	5.7 (36.3°C)	5.5-9.0	-	-
TEMPERATURE <sup>c</sup>	°C	THERMOMETER (AT SITE) SM: PART 2550 B	36.3	≤ 40	-	-
ELECTRICAL CONDUCTIVITY <sup>b</sup>	µS/cm	ELECTRICAL CONDUCTIVITY METHOD (AT SITE) SM: PART 2510 B AND 1060 B	42,373 (36.3°C)	-	0.1	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM: PART 5210 B AND PART 4500-O G)	2.2	≤ 20	-	2.0
CHEMICAL OXYGEN DEMAND <sup>c</sup>	mg/L	CLOSED REFLUX, TITRIMETRIC METHOD (SM: PART 5220 C)	49.3	≤ 120	-	40.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM: PART 2540 D)	215	≤ 50	-	5.0
TOTAL DISSOLVED SOLIDS <sup>c</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM: PART 2540 C)	22,780	≤ 3,000	-	25
FREE CHLORINE <sup>c</sup>	mg/L Cl <sub>2</sub>	MODIFIED DPD COLOURIMETRIC METHOD (AT SITE)	ND	≤ 1	0.1	-



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			WASTE WATER INSPECTION (V89-N) T25AF171-0001			
OIL AND GREASE <sup>a</sup>	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM: PART 5520 B)	< 3	≤ 5	-	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			COLOURLESS/CLEAR YELLOW			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

REGULATORY STANDARD : INDUSTRIAL EFFLUENT STANDARDS, NOTIFICATION OF THE MINISTRY OF INDUSTRY, B.E. 2560,  
PUBLISHED IN THE ROYAL GOVERNMENT GAZETTE, VOL 134, PART 153 D, DATED JUNE 7, 2017.

ND : NOT DETECTED.

THE REASON FOR ISSUING THE NEW REPORT IS TO SUBSTITUTE RESULT OF CHEMICAL OXYGEN DEMAND.

SUBSTITUTED REPORT FOR REPORT NO. 2025-U024745, ISSUE DATE MARCH 24, 2025.

*Wilailak Sriruk*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR

## ANALYSIS REPORT

**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : MARCH 10, 2025  
**SAMPLING TIME** : 10:49 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR THANADET WANSANOR  
**ANALYZED BY** : SC

**RECEIVED DATE** : MARCH 11, 2025  
**ANALYTICAL DATE** : MARCH 11 - APRIL 4, 2025  
**ISSUE DATE** : APRIL 10, 2025  
**REPORT NO.** : 2025-U030673  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AF171-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			WASTEWATER INSPECTION (V89-N) T25AF171-0001		
ADSORBABLE ORGANIC HALIDES (SC)	mg/L	ISO 9562	13.9	-	0.0250
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			COLOURLESS/CLEAR YELLOW		

REGULATORY STANDARD : INDUSTRIAL EFFLUENT STANDARDS, NOTIFICATION OF THE MINISTRY OF INDUSTRY, B.E. 2560,  
PUBLISHED IN THE ROYAL GOVERNMENT GAZETTE, VOL 134, PART 153 D, DATED JUNE 7, 2017.

SC : THE TEST WAS SUBCONTRACTED TO THE ANOTHER LABORATORY.

*Benjawan V.*

(MISS BENJAWAN VIRIYOTHAI)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : MARCH 10, 2025  
**SAMPLING TIME** : 11:10 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR THANADET WANSANOR  
**ANALYZED BY** : MISS NAPAPORN KHUNNOKKHUM

**RECEIVED DATE** : MARCH 11, 2025  
**ANALYTICAL DATE** : MARCH 11-18, 2025  
**ISSUE DATE** : MARCH 24, 2025  
**REPORT NO.** : 2025-U024753  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AF171-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			INSPECTION PIT (V100-1-U) T25AF171-0002			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B AND 1060 B	6.7 (31.2°C)	5.5-9.0	-	-
TEMPERATURE <sup>c</sup>	°C	THERMOMETER (AT SITE) SM: PART 2550 B	31.2	≤ 45	-	-
ELECTRICAL CONDUCTIVITY <sup>b</sup>	µS/cm	ELECTRICAL CONDUCTIVITY METHOD (AT SITE) SM: PART 2510 B AND 1060 B	701 (31.2°C)	-	0.1	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM: PART 5210 B AND PART 4500-O G)	67.4	≤ 500	-	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLUX, COLOURIMETRIC METHOD (SM: PART 5220 D)	213	≤ 750	-	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM: PART 2540 D)	53.9	≤ 200	-	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM: PART 2540 C)	218	≤ 3,000	-	25
FAT, OIL AND GREASE <sup>a</sup>	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM: PART 5520 B)	8	≤ 10	-	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID BROWN			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

REGULATORY STANDARD : ANNOUNCEMENT OF THE INDUSTRIAL ESTATE AUTHORITY OF THAILAND NO.029/2567 : STANDARD FOR WASTEWATER DRAINAGE INTO THE CENTRAL WASTEWATER TREATMENT PLANT IN THE INDUSTRIAL ESTATE.

<sup>A</sup> : CUSTOMER INFORMATION.

*Wilailak Sriruk*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : MARCH 10, 2025  
**SAMPLING TIME** : 10:58 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR THANADET WANSANOR  
**ANALYZED BY** : MISS NAPAPORN KHUNNOKKHUM

**RECEIVED DATE** : MARCH 11, 2025  
**ANALYTICAL DATE** : MARCH 11-18, 2025  
**ISSUE DATE** : MARCH 24, 2025  
**REPORT NO.** : 2025-U024754  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AF171-0003

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			INSPECTION PIT (V100-2-U) T25AF171-0003			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B AND 1060 B	6.7 (31.1°C)	5.5-9.0	-	-
TEMPERATURE <sup>c</sup>	°C	THERMOMETER (AT SITE) SM: PART 2550 B	31.1	≤ 45	-	-
ELECTRICAL CONDUCTIVITY <sup>b</sup>	µS/cm	ELECTRICAL CONDUCTIVITY METHOD (AT SITE) SM: PART 2510 B AND 1060 B	392 (31.1°C)	-	0.1	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM: PART 5210 B AND PART 4500-O G)	< 2.0	≤ 500	-	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLUX, COLOURIMETRIC METHOD (SM: PART 5220 D)	< 25.0	≤ 750	-	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM: PART 2540 D)	< 5.0	≤ 200	-	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM: PART 2540 C)	158	≤ 3,000	-	25
FAT, OIL AND GREASE <sup>a</sup>	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM: PART 5520 B)	< 3	≤ 10	-	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			CLEAR/YELLOW YELLOW			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

REGULATORY STANDARD : ANNOUNCEMENT OF THE INDUSTRIAL ESTATE AUTHORITY OF THAILAND NO.029/2567 : STANDARD FOR WASTEWATER DRAINAGE INTO THE CENTRAL WASTEWATER TREATMENT PLANT IN THE INDUSTRIAL ESTATE.

<sup>a</sup> : CUSTOMER INFORMATION.

*Wilailak Sriruk*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaityasit.t@seksui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : MARCH 10, 2025  
**SAMPLING TIME** : 11:18 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR THANADET WANSANOR  
**ANALYZED BY** : MISS AKSARIN BUNKONG

**RECEIVED DATE** : MARCH 11, 2025  
**ANALYTICAL DATE** : MARCH 11-18, 2025  
**ISSUE DATE** : MARCH 24, 2025  
**REPORT NO.** : 2025-U024782  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AF171-0004

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			INSPECTION PIT (V100-4-U) T25AF171-0004			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B AND 1060 B	8.2 (35.0°C)	5.5-9.0	-	-
TEMPERATURE <sup>c</sup>	°C	THERMOMETER (AT SITE) SM: PART 2550 B	35.0	≤ 45	-	-
ELECTRICAL CONDUCTIVITY <sup>b</sup>	µS/cm	ELECTRICAL CONDUCTIVITY METHOD (AT SITE) SM: PART 2510 B AND 1060 B	1,091 (35.0°C)	-	0.1	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM: PART 5210 B AND PART 4500-O G)	< 2.0	≤ 500	-	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLUX, COLOURIMETRIC METHOD (SM: PART 5220 D)	33.9	≤ 750	-	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM: PART 2540 D)	< 5.0	≤ 200	-	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM: PART 2540 C)	516	≤ 3,000	-	25
FAT, OIL AND GREASE <sup>a,b</sup>	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM: PART 5520 B)	< 3	≤ 10	-	3
SAMPLE CONDITION						
WATER'S COLOUR/TURBID SEDIMENT			CLEAR/YELLOW YELLOW			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

REGULATORY STANDARD : ANNOUNCEMENT OF THE INDUSTRIAL ESTATE AUTHORITY OF THAILAND NO.029/2567 : STANDARD FOR WASTEWATER DRAINAGE INTO THE CENTRAL WASTEWATER TREATMENT PLANT IN THE INDUSTRIAL ESTATE.

<sup>a</sup> : CUSTOMER INFORMATION.

*Wilailak Srisuk*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@seksul.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : APRIL 3, 2025  
**SAMPLING TIME** : 09:08 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR THANADET WANSANOR  
**ANALYZED BY** : MISS NAPAPORN KHUNNOKKHUM

**RECEIVED DATE** : APRIL 4, 2025  
**ANALYTICAL DATE** : APRIL 4-11, 2025  
**ISSUE DATE** : APRIL 29, 2025  
**REPORT NO.** : 2025-U036716  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AH364-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			WASTEWATER INSPECTION (V89-N) T25AH364-0001			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B AND 1060 B	6.6 (35.8°C)	5.5-9.0	-	-
TEMPERATURE <sup>c</sup>	°C	THERMOMETER (AT SITE) SM: PART 2550 B	35.8	≤ 40	-	-
ELECTRICAL CONDUCTIVITY <sup>b</sup>	µS/cm	ELECTRICAL CONDUCTIVITY METHOD (AT SITE) SM: PART 2510 B AND 1060 B	48,148 (35.8°C)	-	0.1	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM: PART 5210 B AND PART 4500-O G)	< 2.0	≤ 20	-	2.0
CHEMICAL OXYGEN DEMAND <sup>c</sup>	mg/L	CLOSED REFLUX, TITRIMETRIC METHOD (SM: PART 5220 C)	77.3	≤ 120	-	40.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM: PART 2540 D)	20.3	≤ 50	-	5.0
TOTAL DISSOLVED SOLIDS <sup>a,c</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM: PART 2540 C)	24,940	≤ 3,000	-	25
OIL AND GREASE <sup>a</sup>	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM: PART 5520 B)	< 3	≤ 5	-	3
FREE CHLORINE <sup>c</sup>	mg/L Cl <sub>2</sub>	MODIFIED DPD COLOURIMETRIC METHOD (AT SITE)	ND	≤ 1	0.1	-
<b>SAMPLE CONDITION</b>						
WATER'S COLOUR/TURBID			YELLOW/CLEAR			
SEDIMENT			YELLOW			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

REGULATORY STANDARD : INDUSTRIAL EFFLUENT STANDARDS, NOTIFICATION OF THE MINISTRY OF INDUSTRY, B.E. 2560, PUBLISHED IN THE ROYAL GOVERNMENT GAZETTE, VOL 134, PART 153 D, DATED JUNE 7, 2017.

ND : NOT DETECTED.

<sup>^</sup> : SAMPLING AT 09:50 HOUR ON APRIL 22, 2025, ANALYSIS NO. T25AI560-0001 (ANALYTICAL DATE : APRIL 23-28, 2025).

*Wilailak Srisuk*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : APRIL 3, 2025  
**SAMPLING TIME** : 09:08 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR THANADET WANSANOR  
**ANALYZED BY** : SC

**RECEIVED DATE** : APRIL 4, 2025  
**ANALYTICAL DATE** : APRIL 4 - MAY 6, 2025  
**ISSUE DATE** : MAY 8, 2025  
**REPORT NO.** : 2025-U039699  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AH364-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			WASTEWATER INSPECTION (V89-N) T25AH364-0001		
ADSORBABLE ORGANIC HALIDES (SC)	mg/L	ISO 9562	8.23	-	0.0250
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/CLEAR YELLOW		

REGULATORY STANDARD : INDUSTRIAL EFFLUENT STANDARDS, NOTIFICATION OF THE MINISTRY OF INDUSTRY, B.E. 2560,  
PUBLISHED IN THE ROYAL GOVERNMENT GAZETTE, VOL 134, PART 153 D, DATED JUNE 7, 2017.

SC : THE TEST WAS SUBCONTRACTED TO THE ANOTHER LABORATORY.

*Benjawan V.*

(MISS BENJAWAN VIRIYOTHAI)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@seksui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : APRIL 3, 2025  
**SAMPLING TIME** : 09:20 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR THANADET WANSANOR  
**ANALYZED BY** : MISS NAPAPORN KHUNNOKKHUM  
**RECEIVED DATE** : APRIL 4, 2025  
**ANALYTICAL DATE** : APRIL 4-11, 2025  
**ISSUE DATE** : APRIL 29, 2025  
**REPORT NO.** : 2025-U036717  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AH364-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			INSPECTION PIT (V100-1-U) T25AH364-0002			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B AND 1060 B	7.3 (30.5°C)	5.5-9.0	-	-
TEMPERATURE <sup>c</sup>	°C	THERMOMETER (AT SITE) SM: PART 2550 B	30.5	≤ 45	-	-
ELECTRICAL CONDUCTIVITY <sup>b</sup>	µS/cm	ELECTRICAL CONDUCTIVITY METHOD (AT SITE) SM: PART 2510 B AND 1060 B	14.0 (30.5°C)	-	0.1	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM: PART 5210 B AND PART 4500-O G)	160	≤ 500	-	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLUX, COLOURIMETRIC METHOD (SM: PART 5220 D)	335	≤ 750	-	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM: PART 2540 D)	93.7	≤ 200	-	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM: PART 2540 C)	502	≤ 3,000	-	25
FAT, OIL AND GREASE <sup>a</sup>	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM: PART 5520 B)	6	≤ 10	-	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID BROWN			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

REGULATORY STANDARD : ANNOUNCEMENT OF THE INDUSTRIAL ESTATE AUTHORITY OF THAILAND NO.029/2567 : STANDARD FOR WASTEWATER DRAINAGE INTO THE CENTRAL WASTEWATER TREATMENT PLANT IN THE INDUSTRIAL ESTATE.

<sup>A</sup> : CUSTOMER INFORMATION.

*Wilailak Srisuk*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@seksui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : APRIL 3, 2025  
**SAMPLING TIME** : 09:14 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR THANADET WANSANOR  
**ANALYZED BY** : MISS NAPAPORN KHUNNOKKHUM  
**RECEIVED DATE** : APRIL 4, 2025  
**ANALYTICAL DATE** : APRIL 4-11, 2025  
**ISSUE DATE** : APRIL 29, 2025  
**REPORT NO.** : 2025-U036718  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AH364-0003

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			INSPECTION PIT (V100-2-U) T25AH364-0003			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B AND 1060 B	7.7 (31.3°C)	5.5-9.0	-	-
TEMPERATURE <sup>c</sup>	°C	THERMOMETER (AT SITE) SM: PART 2550 B	313	≤ 45	-	-
ELECTRICAL CONDUCTIVITY <sup>b</sup>	µS/cm	ELECTRICAL CONDUCTIVITY METHOD (AT SITE) SM: PART 2510 B AND 1060 B	30.7 (31.3°C)	-	0.1	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM: PART 5210 B AND PART 4500-O G)	< 2.0	≤ 500	-	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLUX, COLOURIMETRIC METHOD (SM: PART 5220 D)	< 25.0	≤ 750	-	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM: PART 2540 D)	< 5.0	≤ 200	-	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM: PART 2540 C)	170	≤ 3,000	-	25
FAT, OIL AND GREASE <sup>a,b</sup>	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM: PART 5520 B)	< 3	≤ 10	-	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/CLEAR YELLOW			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

REGULATORY STANDARD : ANNOUNCEMENT OF THE INDUSTRIAL ESTATE AUTHORITY OF THAILAND NO.029/2567 : STANDARD FOR WASTEWATER DRAINAGE INTO THE CENTRAL WASTEWATER TREATMENT PLANT IN THE INDUSTRIAL ESTATE.

A : CUSTOMER INFORMATION.

*Wilailak Srisuk*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chalyasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT **RECEIVED DATE** : APRIL 4, 2025  
**SAMPLING DATE** : APRIL 3, 2025 **ANALYTICAL DATE** : APRIL 4-11, 2025  
**SAMPLING TIME** : 09:26 HOUR **ISSUE DATE** : APRIL 29, 2025  
**SAMPLING METHOD** : GRAB **REPORT NO.** : 2025-U036719  
**SAMPLING BY** : MR THANADET WANSANOR **WORK NO.** : 2024-010526  
**ANALYZED BY** : MISS AKSARIN BUNKONG **ANALYSIS NO.** : T25AH364-0004

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			INSPECTION PIT (V100-4-U) T25AH364-0004			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H* B AND 1060 B	8.6 (33.4°C)	5.5-9.0	-	-
TEMPERATURE <sup>c</sup>	°C	THERMOMETER (AT SITE) SM: PART 2550 B	33.4	≤ 45	-	-
ELECTRICAL CONDUCTIVITY <sup>b</sup>	µS/cm	ELECTRICAL CONDUCTIVITY METHOD (AT SITE) SM: PART 2510 B AND 1060 B	1,151 (33.4°C)	-	0.1	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM: PART 5210 B AND PART 4500-O G)	< 2.0	≤ 500	-	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLUX, COLOURIMETRIC METHOD (SM: PART 5220 D)	28.4	≤ 750	-	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM: PART 2540 D)	< 5.0	≤ 200	-	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM: PART 2540 C)	540	≤ 3,000	-	25
FAT, OIL AND GREASE <sup>a</sup>	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM: PART 5520 B)	< 3	≤ 10	-	3
<b>SAMPLE CONDITION</b>						
WATER'S COLOUR/TURBID			YELLOW/CLEAR			
SEDIMENT			BROWN			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

REGULATORY STANDARD : ANNOUNCEMENT OF THE INDUSTRIAL ESTATE AUTHORITY OF THAILAND NO.029/2567 : STANDARD FOR WASTEWATER DRAINAGE INTO THE CENTRAL WASTEWATER TREATMENT PLANT IN THE INDUSTRIAL ESTATE.

<sup>A</sup> : CUSTOMER INFORMATION.

*Wilailak Srisuk*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiaisit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : MAY 8, 2025  
**SAMPLING TIME** : 09:25 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR CHAI BUASOD  
**ANALYZED BY** : MISS NAPAPORN KHUNNOKKHUM

**RECEIVED DATE** : MAY 9, 2025  
**ANALYTICAL DATE** : MAY 9-21, 2025  
**ISSUE DATE** : MAY 23, 2025  
**REPORT NO.** : 2025-U045091  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AJ961-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			WASTEWATER INSPECTION (V89-N) T25AJ961-0001			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B AND 1060 B	6.7 (37.9°C)	5.5-9.0	-	-
TEMPERATURE <sup>c</sup>	°C	THERMOMETER (AT SITE) SM: PART 2550 B	37.9	≤ 40	-	-
ELECTRICAL CONDUCTIVITY <sup>c</sup>	µS/cm	ELECTRICAL CONDUCTIVITY METHOD (AT SITE) SM: PART 2510 B AND 1060 B	42,000 (37.9°C)	-	0.1	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM: PART 5210 B AND PART 4500-O G)	2.2	≤ 20	-	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLUX, TITRIMETRIC METHOD (SM: PART 5220 C)	79.2	≤ 120	-	40.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM: PART 2540 D)	24.6	≤ 50	-	5.0
TOTAL DISSOLVED SOLIDS <sup>c</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM: PART 2540 C)	24,920	≤ 3,000	-	25
OIL AND GREASE <sup>a</sup>	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM: PART 5520 B)	< 3	≤ 5	-	3
FREE CHLORINE <sup>c</sup>	mg/L Cl <sub>2</sub>	MODIFIED DPD COLOURIMETRIC METHOD (AT SITE)	ND	≤ 1	0.1	-
<b>SAMPLE CONDITION</b>						
WATER'S COLOUR/TURBID			YELLOW/CLEAR			
SEDIMENT			YELLOW			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

REGULATORY STANDARD : INDUSTRIAL EFFLUENT STANDARDS, NOTIFICATION OF THE MINISTRY OF INDUSTRY, B.E 2560, PUBLISHED IN THE ROYAL GOVERNMENT GAZETTE, VOL 134, PART 153 D, DATED JUNE 7, 2017.

ND : NOT DETECTED.

*Wilailak Srisuk*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chalysit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : MAY 8, 2025  
**SAMPLING TIME** : 09:50 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR CHAI BUASOD  
**ANALYZED BY** : MISS NAPAPORN KHUNNOKKHUM

**RECEIVED DATE** : MAY 9, 2025  
**ANALYTICAL DATE** : MAY 9-21, 2025  
**ISSUE DATE** : MAY 23, 2025  
**REPORT NO.** : 2025-U045092  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AJ961-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			INSPECTION PIT (V100-1-U) T25AJ961-0002			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B AND 1060 B	6.9 (32.2°C)	5.5-9.0	-	-
TEMPERATURE <sup>c</sup>	°C	THERMOMETER (AT SITE) SM: PART 2550 B	32.2	≤ 45	-	-
ELECTRICAL CONDUCTIVITY <sup>b</sup>	µS/cm	ELECTRICAL CONDUCTIVITY METHOD (AT SITE) SM: PART 2510 B AND 1060 B	1492 (32.2°C)	-	0.1	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM: PART 5210 B AND PART 4500-O G)	221	≤ 500	-	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLUX, COLOURIMETRIC METHOD (SM: PART 5220 D)	358	≤ 750	-	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM: PART 2540 D)	49.1	≤ 200	-	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM: PART 2540 C)	618	≤ 3,000	-	25
FAT, OIL AND GREASE <sup>a</sup>	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM: PART 5520 B)	8	≤ 10	-	3
<b>SAMPLE CONDITION</b>						
WATER'S COLOUR/TURBID			YELLOW/TURBID			
SEDIMENT			BROWN			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

REGULATORY STANDARD : ANNOUNCEMENT OF THE INDUSTRIAL ESTATE AUTHORITY OF THAILAND NO.029/2567 : STANDARD FOR WASTEWATER DRAINAGE INTO THE CENTRAL WASTEWATER TREATMENT PLANT IN THE INDUSTRIAL ESTATE.

*Wilailak Srisuk.*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@seksui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : MAY 8, 2025  
**SAMPLING TIME** : 09:45 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR CHAI BUASOD  
**ANALYZED BY** : MISS NAPAPORN KHUNNOKKHUM

**RECEIVED DATE** : MAY 9, 2025  
**ANALYTICAL DATE** : MAY 9-21, 2025  
**ISSUE DATE** : MAY 23, 2025  
**REPORT NO.** : 2025-U045093  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25A961-0003

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			INSPECTION PIT (V100-2-U) T25A961-0003			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H* B AND 1060 B	6.6 (32.8°C)	5.5-9.0	-	-
TEMPERATURE <sup>c</sup>	°C	THERMOMETER (AT SITE) SM: PART 2550 B	32.8	≤ 45	-	-
ELECTRICAL CONDUCTIVITY <sup>b</sup>	µS/cm	ELECTRICAL CONDUCTIVITY METHOD (AT SITE) SM: PART 2510 B AND 1060 B	358 (32.8°C)	-	0.1	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM: PART 5210 B AND PART 4500-O G)	2.4	≤ 500	-	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLUX, COLOURIMETRIC METHOD (SM: PART 5220 D)	< 25.0	≤ 750	-	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM: PART 2540 D)	< 5.0	≤ 200	-	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM: PART 2540 C)	171	≤ 3,000	-	25
FAT, OIL AND GREASE <sup>a</sup>	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM: PART 5520 B)	< 3	≤ 10	-	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			COLOURLESS/CLEAR YELLOW			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

REGULATORY STANDARD : ANNOUNCEMENT OF THE INDUSTRIAL ESTATE AUTHORITY OF THAILAND NO.029/2567 : STANDARD FOR WASTEWATER DRAINAGE INTO THE CENTRAL WASTEWATER TREATMENT PLANT IN THE INDUSTRIAL ESTATE.

*Wilailak Srisuk*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR

## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chalyasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : MAY 8, 2025  
**SAMPLING TIME** : 09:55 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR CHAI BUASOD  
**ANALYZED BY** : MISS AKSARIN BUNKONG

**RECEIVED DATE** : MAY 9, 2025  
**ANALYTICAL DATE** : MAY 9-21, 2025  
**ISSUE DATE** : MAY 23, 2025  
**REPORT NO.** : 2025-U045094  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AJ961-0004

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			INSPECTION PIT (V100-4-U) T25AJ961-0004			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B AND 1060 B	7.9 (35.4°C)	5.5-9.0	-	-
TEMPERATURE <sup>c</sup>	°C	THERMOMETER (AT SITE) SM: PART 2550 B	35.4	≤ 45	-	-
ELECTRICAL CONDUCTIVITY <sup>b</sup>	µS/cm	ELECTRICAL CONDUCTIVITY METHOD (AT SITE) SM: PART 2510 B AND 1060 B	1,020 (35.4°C)	-	0.1	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM: PART 5210 B AND PART 4500-O G)	< 2.0	≤ 500	-	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLUX, COLOURIMETRIC METHOD (SM: PART 5220 D)	31.8	≤ 750	-	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM: PART 2540 D)	5.4	≤ 200	-	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM: PART 2540 C)	654	≤ 3,000	-	25
FAT, OIL AND GREASE <sup>a</sup>	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM: PART 5520 B)	< 3	≤ 10	-	3
<b>SAMPLE CONDITION</b>						
WATER'S COLOUR/TURBID			YELLOW/CLEAR			
SEDIMENT			YELLOW			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

REGULATORY STANDARD : ANNOUNCEMENT OF THE INDUSTRIAL ESTATE AUTHORITY OF THAILAND NO.029/2567 : STANDARD FOR WASTEWATER DRAINAGE INTO THE CENTRAL WASTEWATER TREATMENT PLANT IN THE INDUSTRIAL ESTATE.

*Wilailak Srjsuk*

(MISS WILAILAK SRJSUK)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : JUNE 9, 2025  
**SAMPLING TIME** : 09:17 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR CHAI BUASOD  
**ANALYZED BY** : MISS NAPAPORN KHUNNOKKHUM

**RECEIVED DATE** : JUNE 10, 2025  
**ANALYTICAL DATE** : JUNE 10-30, 2025  
**ISSUE DATE** : JULY 16, 2025  
**REPORT NO.** : 2025-U064807  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AM526-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			WASTEWATER INSPECTION (V89-N) T25AM526-0001			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B AND 1060 B	6.2 (37.6°C)	5.5-9.0	-	-
TEMPERATURE <sup>c</sup>	°C	THERMOMETER (AT SITE) SM: PART 2550 B	37.6	≤ 40	-	-
ELECTRICAL CONDUCTIVITY <sup>c</sup>	µS/cm	ELECTRICAL CONDUCTIVITY METHOD (AT SITE) SM: PART 2510 B AND 1060 B	43,300 (37.6°C)	-	0.1	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM: PART 5210 B AND PART 4500-O <sub>2</sub> G)	< 2.0	≤ 20	-	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLUX, TITRIMETRIC METHOD (SM: PART 5220 C)	58.6	≤ 120	-	40.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED FROM 103 TO 105 °C (SM: PART 2540 D)	14.5	≤ 50	-	5.0
TOTAL DISSOLVED SOLIDS <sup>a,c</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM: PART 2540 C)	24,600	≤ 3,000	-	25
OIL AND GREASE <sup>a</sup>	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM: PART 5520 B)	< 3	≤ 5	-	3
FREE CHLORINE <sup>c</sup>	mg/L Cl <sub>2</sub>	MODIFIED DPD COLOURIMETRIC METHOD (AT SITE)	ND	≤ 1	0.1	-



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			WASTEWATER INSPECTION (V89-N) T25AM526-0001			
ADSORBABLE ORGANIC HALIDES (SC) <sup>c</sup>	mg/L	ISO 9562	15.7	-	0.0250	-
<b>SAMPLE CONDITION</b>						
WATER'S COLOUR/TURBID			COLOURLESS/CLEAR			
SEDIMENT			BROWN			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

REGULATORY STANDARD : INDUSTRIAL EFFLUENT STANDARDS, NOTIFICATION OF THE MINISTRY OF INDUSTRY, B.E. 2560,  
PUBLISHED IN THE ROYAL GOVERNMENT GAZETTE, VOL 134, PART 153 D, DATED JUNE 7, 2017.

SC : THE TEST WAS SUBCONTRACTED TO THE ANOTHER LABORATORY.

ND : NOT DETECTED.

<sup>A</sup> : SAMPLING AT 15:30 HOUR ON JUNE 27, 2025, ANALYSIS NO. T25AO358-0001 (ANALYTICAL DATE : JUNE 28 - JULY 1, 2025).

THE REASON FOR ISSUING THE NEW REPORT IS TO SUBSTITUTE RESULT OF TOTAL DISSOLVED SOLIDS.

SUBSTITUTED REPORT FOR REPORT NO. 2025-U061375, ISSUE DATE JULY 8, 2025.

*Wilailak Srisuk.*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR

## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : JUNE 9, 2025  
**SAMPLING TIME** : 09:27 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR CHAI BUASOD  
**ANALYZED BY** : MISS NAPAPORN KHUNNOKKHUM  
**RECEIVED DATE** : JUNE 10, 2025  
**ANALYTICAL DATE** : JUNE 10-17, 2025  
**ISSUE DATE** : JULY 8, 2025  
**REPORT NO.** : 2025-U061376  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AM526-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			INSPECTION PIT (V100-1-U) T25AM526-0002			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B AND 1060 B	6.8 (31.8°C)	5.5-9.0	-	-
TEMPERATURE <sup>c</sup>	°C	THERMOMETER (AT SITE) SM: PART 2550 B	31.8	≤ 45	-	-
ELECTRICAL CONDUCTIVITY <sup>b</sup>	µS/cm	ELECTRICAL CONDUCTIVITY METHOD (AT SITE) SM: PART 2510 B AND 1060 B	1,517 (31.8°C)	-	0.1	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM: PART 5210 B AND PART 4500-O G)	97.5	≤ 500	-	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLUX, COLOURIMETRIC METHOD (SM: PART 5220 D)	239	≤ 750	-	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED FROM 103 TO 105 °C (SM: PART 2540 D)	27.6	≤ 200	-	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM: PART 2540 C)	440	≤ 3,000	-	25
FAT, OIL AND GREASE <sup>b</sup>	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM: PART 5520 B)	< 3	≤ 10	-	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID BROWN			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

REGULATORY STANDARD : ANNOUNCEMENT OF THE INDUSTRIAL ESTATE AUTHORITY OF THAILAND NO.029/2567 : STANDARD FOR WASTEWATER DRAINAGE INTO THE CENTRAL WASTEWATER TREATMENT PLANT IN THE INDUSTRIAL ESTATE.

*Wilailak Srisuk*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : JUNE 9, 2025  
**SAMPLING TIME** : 09:22 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR CHAI BUASOD  
**ANALYZED BY** : MISS NAPAPORN KHUNNOKKHUM

**RECEIVED DATE** : JUNE 10, 2025  
**ANALYTICAL DATE** : JUNE 10-17, 2025  
**ISSUE DATE** : JULY 8, 2025  
**REPORT NO.** : 2025-U061377  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AM526-0003

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			INSPECTION PIT (V100-2-U) T25AM526-0003			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B AND 1060 B	7.0 (32.7°C)	5.5-9.0	-	-
TEMPERATURE <sup>c</sup>	°C	THERMOMETER (AT SITE) SM: PART 2550 B	32.7	≤ 45	-	-
ELECTRICAL CONDUCTIVITY <sup>b</sup>	µS/cm	ELECTRICAL CONDUCTIVITY METHOD (AT SITE) SM: PART 2510 B AND 1060 B	611 (32.7°C)	-	0.1	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM: PART 5210 B AND PART 4500-O G)	< 2.0	≤ 500	-	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLUX, COLOURIMETRIC METHOD (SM: PART 5220 D)	< 25.0	≤ 750	-	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED FROM 103 TO 105 °C (SM: PART 2540 D)	< 5.0	≤ 200	-	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM: PART 2540 C)	173	≤ 3,000	-	25
FAT, OIL AND GREASE <sup>a</sup>	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM: PART 5520 B)	< 3	≤ 10	-	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			COLOURLESS/CLEAR YELLOW			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

REGULATORY STANDARD : ANNOUNCEMENT OF THE INDUSTRIAL ESTATE AUTHORITY OF THAILAND NO.029/2567 : STANDARD FOR WASTEWATER DRAINAGE INTO THE CENTRAL WASTEWATER TREATMENT PLANT IN THE INDUSTRIAL ESTATE.

*Wilailak Srisuk*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : EFFLUENT  
**SAMPLING DATE** : JUNE 9, 2025  
**SAMPLING TIME** : 09:32 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR CHAI BUASOD  
**ANALYZED BY** : MISS NAPAPORN KHUNNOKKHUM  
**RECEIVED DATE** : JUNE 10, 2025  
**ANALYTICAL DATE** : JUNE 10-17, 2025  
**ISSUE DATE** : JULY 8, 2025  
**REPORT NO.** : 2025-U061378  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AM526-0004

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			INSPECTION PIT (V100-4-U) T25AM526-0004			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B AND 1060 B	7.9 (34.6°C)	5.5-9.0	-	-
TEMPERATURE <sup>c</sup>	°C	THERMOMETER (AT SITE) SM: PART 2550 B	34.6	≤ 45	-	-
ELECTRICAL CONDUCTIVITY <sup>b</sup>	µS/cm	ELECTRICAL CONDUCTIVITY METHOD (AT SITE) SM: PART 2510 B AND 1060 B	897 (34.6°C)	-	0.1	-
BIOCHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM: PART 5210 B AND PART 4500-O G)	< 2.0	≤ 500	-	2.0
CHEMICAL OXYGEN DEMAND <sup>a</sup>	mg/L	CLOSED REFLUX, COLOURIMETRIC METHOD (SM: PART 5220 D)	34.2	≤ 750	-	25.0
TOTAL SUSPENDED SOLIDS <sup>a</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED FROM 103 TO 105 °C (SM: PART 2540 D)	37.6	≤ 200	-	5.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM: PART 2540 C)	517	≤ 3,000	-	25
FAT, OIL AND GREASE <sup>a</sup>	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM: PART 5520 B)	< 3	≤ 10	-	3
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID BROWN			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

REGULATORY STANDARD : ANNOUNCEMENT OF THE INDUSTRIAL ESTATE AUTHORITY OF THAILAND NO.029/2567 : STANDARD FOR WASTEWATER DRAINAGE INTO THE CENTRAL WASTEWATER TREATMENT PLANT IN THE INDUSTRIAL ESTATE.

*Wilailak Srisuk*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR



คุณภาพน้ำใต้ดิน

---

## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaayasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : GROUNDWATER **RECEIVED DATE** : MAY 21, 2025  
**SAMPLING DATE** : MAY 20, 2025 **ANALYTICAL DATE** : MAY 21-26, 2025  
**SAMPLING TIME** : 09:30 HOUR **ISSUE DATE** : MAY 29, 2025  
**SAMPLING METHOD** : PERISTALTIC PUMP\* **REPORT NO.** : 2025-U048094  
**SAMPLING BY** : MR CHAI BUASOD **WORK NO.** : 2024-010526  
**ANALYZED BY** : MISS KANNIKAR SUMLEETHA **ANALYSIS NO.** : T25AK885-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			GW1 T25AK885-0001			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B	6.3 (32.7°C)	-	-	-
FREE CHLORINE <sup>c</sup>	mg/L Cl <sub>2</sub>	DPD FERROUS TITRIMETRIC METHOD (SM: PART 4500-Cl F)	ND	-	0.1	0.4
WATER LEVEL <sup>c</sup>	m	WATER LEVEL METER	6.25	-	-	-
<b>SAMPLE CONDITION</b>						
WATER'S COLOUR/TURBID			YELLOW/CLEAR			
SEDIMENT			BROWN			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

\* ประกาศกรมโรงงานอุตสาหกรรม เรื่อง คู่มือการเก็บตัวอย่างดินและน้ำใต้ดิน ลงวันที่ 20 เมษายน 2560

REGULATORY STANDARD : NOTIFICATION OF MINISTRY OF INDUSTRY IN PRESCRIBING THE CRITERIA ON CONTAMINATION IN SOIL AND GROUNDWATER, THE EXAMINATION OF SOIL AND GROUNDWATER QUALITY, INFORMATION INCLUDING MAKING THE REPORT OF THE RESULT OF SOIL AND GROUNDWATER QUALITY EXAMINATION, AND THE REPORT WHICH SHALL BE PROPOSED THE MEASUREMENT TO CONTROL AND REDUCE THE CONTAMINATION IN SOIL AND GROUNDWATER B.E. 2559 (2016), PUBLISHED IN THE ROYAL GOVERNMENT GAZETTE, VOL.133, SPECIAL PART 275D DATED NOVEMBER 29, B.E.2559 (2016).

ND : NOT DETECTED.

*Siriphorn*

(MISS SIRIPHORN MUANRAE)  
LABORATORY SUPERVISOR

## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : GROUNDWATER **RECEIVED DATE** : MAY 21, 2025  
**SAMPLING DATE** : MAY 20, 2025 **ANALYTICAL DATE** : MAY 21-26, 2025  
**SAMPLING TIME** : 10:15 HOUR **ISSUE DATE** : MAY 29, 2025  
**SAMPLING METHOD** : PERISTALTIC PUMP\* **REPORT NO.** : 2025-U048095  
**SAMPLING BY** : MR CHAI BUASOD **WORK NO.** : 2024-010526  
**ANALYZED BY** : MISS KANNIKAR SUMLEETHA **ANALYSIS NO.** : T25AK885-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			GW2 T25AK885-0002			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B	5.0 (30.5°C)	-	-	-
FREE CHLORINE <sup>c</sup>	mg/L Cl <sub>2</sub>	DPD FERROUS TITRIMETRIC METHOD (SM: PART 4500-Cl F)	ND	-	0.1	0.4
WATER LEVEL <sup>c</sup>	m	WATER LEVEL METER	5.30	-	-	-
<b>SAMPLE CONDITION</b>						
WATER'S COLOUR/TURBID			YELLOW/CLEAR			
SEDIMENT			BROWN			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

\* ประกาศกรมโรงงานอุตสาหกรรม เรื่อง คู่มือการเก็บตัวอย่างดินและน้ำใต้ดิน ลงวันที่ 20 เมษายน 2560

REGULATORY STANDARD : NOTIFICATION OF MINISTRY OF INDUSTRY IN PRESCRIBING THE CRITERIA ON CONTAMINATION IN SOIL AND GROUNDWATER, THE EXAMINATION OF SOIL AND GROUNDWATER QUALITY, INFORMATION INCLUDING MAKING THE REPORT OF THE RESULT OF SOIL AND GROUNDWATER QUALITY EXAMINATION, AND THE REPORT WHICH SHALL BE PROPOSED THE MEASUREMENT TO CONTROL AND REDUCE THE CONTAMINATION IN SOIL AND GROUNDWATER B.E. 2559 (2016), PUBLISHED IN THE ROYAL GOVERNMENT GAZETTE, VOL.133, SPECIAL PART 275D DATED NOVEMBER 29, B.E.2559 (2016).

ND : NOT DETECTED.

*Siriphorn.*

(MISS SIRIPHORN MUANRAE)  
LABORATORY SUPERVISOR

## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiaisit.t@seksui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : GROUNDWATER  
**SAMPLING DATE** : MAY 20, 2025  
**SAMPLING TIME** : 10:45 HOUR  
**SAMPLING METHOD** : PERISTALTIC PUMP\*  
**SAMPLING BY** : MR CHAI BUASOD  
**ANALYZED BY** : MISS KANNIKAR SUMLEETHA  
**RECEIVED DATE** : MAY 21, 2025  
**ANALYTICAL DATE** : MAY 21-26, 2025  
**ISSUE DATE** : MAY 29, 2025  
**REPORT NO.** : 2025-U048096  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AK885-0003

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			GW3 T25AK885-0003			
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B	4.6 (31.8°C)	-	-	-
FREE CHLORINE <sup>c</sup>	mg/L Cl <sub>2</sub>	DPD FERROUS TITRIMETRIC METHOD (SM: PART 4500-CL F)	ND	-	0.1	0.4
WATER LEVEL <sup>c</sup>	m	WATER LEVEL METER	6.10	-	-	-
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/CLEAR BROWN			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 24<sup>th</sup> EDITION, 2023.

\* ประกาศกรมโรงงานอุตสาหกรรม เรื่อง คู่มือการเก็บตัวอย่างดินและน้ำใต้ดิน ลงวันที่ 20 เมษายน 2560

REGULATORY STANDARD : NOTIFICATION OF MINISTRY OF INDUSTRY IN PRESCRIBING THE CRITERIA ON CONTAMINATION IN SOIL AND GROUNDWATER, THE EXAMINATION OF SOIL AND GROUNDWATER QUALITY, INFORMATION INCLUDING MAKING THE REPORT OF THE RESULT OF SOIL AND GROUNDWATER QUALITY EXAMINATION, AND THE REPORT WHICH SHALL BE PROPOSED THE MEASUREMENT TO CONTROL AND REDUCE THE CONTAMINATION IN SOIL AND GROUNDWATER B.E. 2559 (2016), PUBLISHED IN THE ROYAL GOVERNMENT GAZETTE, VOL.133, SPECIAL PART 275D DATED NOVEMBER 29, B.E.2559 (2016).

ND : NOT DETECTED.

*Siriphorn*

(MISS SIRIPHORN MUANRAE)  
LABORATORY SUPERVISOR

คุณภาพดิน



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : SOIL **RECEIVED DATE** : MAY 21, 2025  
**SAMPLING DATE** : MAY 20, 2025 **ANALYTICAL DATE** : MAY 21-26, 2025  
**SAMPLING TIME** : 09:10 HOUR **ISSUE DATE** : MAY 29, 2025  
**SAMPLING METHOD °** : UNDISTURBED **REPORT NO.** : 2025-U047982  
**SAMPLING BY °** : MR CHAI BUASOD **WORK NO.** : 2024-010526  
**ANALYZED BY** : MISS JINTASUPA PLIANSRI **ANALYSIS NO.** : T25AK886-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD
			1.S1 T25AK886-0001	
pH (1:1) <sup>b</sup>	-	ELECTROMETRIC METHOD (US EPA 2004: 9045D)	8.3 (25°C)	-
SAMPLE CONDITION			BROWN SOIL	

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

REGULATORY STANDARD : NOTIFICATION OF MINISTRY OF INDUSTRY IN PRESCRIBING THE CRITERIA ON CONTAMINATION IN SOIL AND GROUNDWATER, THE EXAMINATION OF SOIL AND GROUNDWATER QUALITY, INFORMATION INCLUDING MAKING THE REPORT OF THE RESULT OF SOIL AND GROUNDWATER QUALITY EXAMINATION, AND THE REPORT WHICH SHALL BE PROPOSED THE MEASUREMENT TO CONTROL AND REDUCE THE CONTAMINATION IN SOIL AND GROUNDWATER B.E. 2559 (2016), PUBLISHED IN THE ROYAL GOVERNMENT GAZETTE, VOL.133, SPECIAL PART 275D DATED NOVEMBER 29, B.E.2559 (2016).

*Wilailak Srisuk*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR

## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : SOIL  
**SAMPLING DATE** : MAY 20, 2025  
**SAMPLING TIME** : 10:00 HOUR  
**SAMPLING METHOD °** : UNDISTURBED  
**SAMPLING BY °** : MR CHAI BUASOD  
**ANALYZED BY** : MISS JINTASUPA PLIANSRI

**RECEIVED DATE** : MAY 21, 2025  
**ANALYTICAL DATE** : MAY 21-26, 2025  
**ISSUE DATE** : MAY 29, 2025  
**REPORT NO.** : 2025-U047985  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AK886-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD
			2.S2 T25AK886-0002	
pH (1:1) <sup>b</sup>	-	ELECTROMETRIC METHOD (US EPA 2004: 9045D)	7.6 (25°C)	-
SAMPLE CONDITION			BROWN SOIL	

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

REGULATORY STANDARD : NOTIFICATION OF MINISTRY OF INDUSTRY IN PRESCRIBING THE CRITERIA ON CONTAMINATION IN SOIL AND GROUNDWATER, THE EXAMINATION OF SOIL AND GROUNDWATER QUALITY, INFORMATION INCLUDING MAKING THE REPORT OF THE RESULT OF SOIL AND GROUNDWATER QUALITY EXAMINATION, AND THE REPORT WHICH SHALL BE PROPOSED THE MEASUREMENT TO CONTROL AND REDUCE THE CONTAMINATION IN SOIL AND GROUNDWATER B.E. 2559 (2016), PUBLISHED IN THE ROYAL GOVERNMENT GAZETTE, VOL.133, SPECIAL PART 275D DATED NOVEMBER 29, B.E.2559 (2016).

*Wilailak Sriruk*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR

## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : SOIL **RECEIVED DATE** : MAY 21, 2025  
**SAMPLING DATE** : MAY 20, 2025 **ANALYTICAL DATE** : MAY 21-26, 2025  
**SAMPLING TIME** : 10:30 HOUR **ISSUE DATE** : MAY 29, 2025  
**SAMPLING METHOD °** : UNDISTURBED **REPORT NO.** : 2025-U047986  
**SAMPLING BY °** : MR CHAI BUASOD **WORK NO.** : 2024-010526  
**ANALYZED BY** : MISS JINTASUPA PLIANSRI **ANALYSIS NO.** : T25AK886-0003

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD
			3.53 T25AK886-0003	
pH (1:1) <sup>b</sup>	-	ELECTROMETRIC METHOD (US EPA 2004: 9045D)	8.4 (25°C)	-
SAMPLE CONDITION			BROWN SOIL	

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

REGULATORY STANDARD : NOTIFICATION OF MINISTRY OF INDUSTRY IN PRESCRIBING THE CRITERIA ON CONTAMINATION IN SOIL AND GROUNDWATER, THE EXAMINATION OF SOIL AND GROUNDWATER QUALITY, INFORMATION INCLUDING MAKING THE REPORT OF THE RESULT OF SOIL AND GROUNDWATER QUALITY EXAMINATION, AND THE REPORT WHICH SHALL BE PROPOSED THE MEASUREMENT TO CONTROL AND REDUCE THE CONTAMINATION IN SOIL AND GROUNDWATER B.E. 2559 (2016), PUBLISHED IN THE ROYAL GOVERNMENT GAZETTE, VOL.133, SPECIAL PART 275D DATED NOVEMBER 29, B.E.2559 (2016).

*Wilailak Srisuk*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : SOIL  
**SAMPLING DATE** : MAY 20, 2025  
**SAMPLING TIME** : 09:40 HOUR  
**SAMPLING METHOD °** : UNDISTURBED  
**SAMPLING BY °** : MR CHAI BUASOD  
**ANALYZED BY** : MISS JINTASUPA PLIANSRI  
**RECEIVED DATE** : MAY 21, 2025  
**ANALYTICAL DATE** : MAY 21-26, 2025  
**ISSUE DATE** : MAY 29, 2025  
**REPORT NO.** : 2025-U047987  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AK886-0004

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	LIMIT OF QUANTITATION (LOQ)
			4.54 T25AK886-0004	
pH (1:1) <sup>b</sup>	-	ELECTROMETRIC METHOD (US EPA 2004: 9045D)	5.4 (25°C)	-
SAMPLE CONDITION			BROWN SOIL	

<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

REGULATORY STANDARD : NOTIFICATION OF MINISTRY OF INDUSTRY IN PRESCRIBING THE CRITERIA ON CONTAMINATION IN SOIL AND GROUNDWATER, THE EXAMINATION OF SOIL AND GROUNDWATER QUALITY, INFORMATION INCLUDING MAKING THE REPORT OF THE RESULT OF SOIL AND GROUNDWATER QUALITY EXAMINATION, AND THE REPORT WHICH SHALL BE PROPOSED THE MEASUREMENT TO CONTROL AND REDUCE THE CONTAMINATION IN SOIL AND GROUNDWATER B.E. 2559 (2016), PUBLISHED IN THE ROYAL GOVERNMENT GAZETTE, VOL.133, SPECIAL PART 275D DATED NOVEMBER 29, B.E.2559 (2016).

*Wilailak Sriruk*

(MISS WILAILAK SRISUK)  
LABORATORY SUPERVISOR



ระดับเสียงโดยทั่วไป

---

## ANALYSIS REPORT

<b>PROJECT NAME</b>	: โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)	<b>RECEIVED DATE</b>	: MAY 24-31, 2025
<b>CUSTOMER NAME</b>	: S AND L SPECIALTY POLYMERS CO., LTD.	<b>ANALYTICAL DATE</b>	: MAY 24-31, 2025
<b>ADDRESS</b>	: 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150	<b>ISSUE DATE</b>	: JUNE 12, 2025
<b>CONTACT INFORMATION</b>	: TEL : 092-457-0952 e-mail : Chaityasit.t@sekisui.com	<b>REPORT NO.</b>	: 2025-U051925
<b>MEASURING SOURCE</b>	: ริมรั้วด้านทิศเหนือ (N1)	<b>WORK NO.</b>	: 2024-010526
<b>MEASURING TYPE</b>	: AMBIENT (NOISE)	<b>ANALYSIS NO.</b>	: T25AL816-0001 - T25AL816-0007
<b>MEASURING DATE</b>	: MAY 24-31, 2025		
<b>MEASURING TIME</b>	: *		
<b>MEASURING METHOD</b>	: INTEGRATED SOUND LEVEL METER**		
<b>MEASURED BY</b>	: MR WORAPHOT WONGKHAM		

TIME*	RESULT dB(A)		
	ริมรั้วด้านทิศเหนือ (N1)		
	MAY 24 - 25, 2025		
	T25AL816-0001		
	L <sub>Aeq</sub> 1 hour	L <sub>Amax</sub> 1 hour	L <sub>A90</sub> 1 hour
07:00-08:00 HOUR	59.5	77.3	53.1
08:00-09:00 HOUR	62.1	76.5	55.9
09:00-10:00 HOUR	60.9	81.2	54.0
10:00-11:00 HOUR	59.9	81.3	52.8
11:00-12:00 HOUR	59.5	89.1	51.7
12:00-13:00 HOUR	57.9	71.2	51.2
13:00-14:00 HOUR	58.0	73.3	52.2
14:00-15:00 HOUR	59.6	76.1	52.6
15:00-16:00 HOUR	57.2	71.6	51.6
16:00-17:00 HOUR	60.8	78.5	54.2
17:00-18:00 HOUR	60.2	76.5	54.9
18:00-19:00 HOUR	58.8	75.8	53.2
19:00-20:00 HOUR	58.9	77.1	52.6
20:00-21:00 HOUR	58.2	76.5	50.5
21:00-22:00 HOUR	56.2	72.2	46.9
22:00-23:00 HOUR	55.6	75.2	46.3
23:00-00:00 HOUR	53.5	71.5	46.3
00:00-01:00 HOUR	54.8	75.0	45.8
01:00-02:00 HOUR	50.4	69.1	42.8
02:00-03:00 HOUR	57.3	86.1	43.7
03:00-04:00 HOUR	52.4	73.1	43.9
04:00-05:00 HOUR	53.2	76.2	43.7
05:00-06:00 HOUR	53.8	70.5	44.3
06:00-07:00 HOUR	57.9	71.4	51.8
<b>L<sub>Aeq</sub> 24 hours</b>		<b>58.2</b>	



TIME*	RESULT dB(A)		
	บริเวณด้านทิศเหนือ (N1)		
	MAY 25 - 26, 2025		
	T25AL816-0002		
	L <sub>Aeq</sub> 1 hour	L <sub>Amax</sub> 1 hour	L <sub>A90</sub> 1 hour
07:00-08:00 HOUR	59.0	79.8	52.2
08:00-09:00 HOUR	59.6	75.1	53.9
09:00-10:00 HOUR	60.5	79.2	53.6
10:00-11:00 HOUR	58.8	73.2	53.3
11:00-12:00 HOUR	58.9	80.4	52.3
12:00-13:00 HOUR	60.4	75.6	54.5
13:00-14:00 HOUR	61.5	82.9	54.2
14:00-15:00 HOUR	60.0	77.9	52.3
15:00-16:00 HOUR	59.0	73.5	54.0
16:00-17:00 HOUR	57.8	71.3	52.7
17:00-18:00 HOUR	59.9	78.5	52.9
18:00-19:00 HOUR	58.1	71.8	52.4
19:00-20:00 HOUR	58.5	75.0	51.9
20:00-21:00 HOUR	58.3	69.3	53.2
21:00-22:00 HOUR	56.6	74.8	50.2
22:00-23:00 HOUR	56.8	84.0	47.6
23:00-00:00 HOUR	51.6	71.3	44.9
00:00-01:00 HOUR	52.5	70.5	44.9
01:00-02:00 HOUR	49.5	65.8	44.0
02:00-03:00 HOUR	49.9	63.0	44.7
03:00-04:00 HOUR	50.9	66.3	44.4
04:00-05:00 HOUR	52.5	75.7	43.4
05:00-06:00 HOUR	54.4	73.7	45.3
06:00-07:00 HOUR	59.8	76.3	52.9
L <sub>Aeq</sub> 24 hours		58.0	

TIME*	RESULT dB(A)		
	บริเวณด้านทิศเหนือ (N1)		
	MAY 26 - 27, 2025		
	T25AL816-0003		
	L <sub>Aeq</sub> 1 hour	L <sub>Amax</sub> 1 hour	L <sub>A90</sub> 1 hour
07:00-08:00 HOUR	61.5	77.5	56.5
08:00-09:00 HOUR	60.1	73.0	54.6
09:00-10:00 HOUR	60.4	75.1	53.8
10:00-11:00 HOUR	58.5	75.9	53.0
11:00-12:00 HOUR	56.8	72.6	50.3
12:00-13:00 HOUR	60.3	85.6	52.4
13:00-14:00 HOUR	57.5	76.1	50.8
14:00-15:00 HOUR	58.8	75.9	52.5
15:00-16:00 HOUR	59.4	71.4	52.9
16:00-17:00 HOUR	61.3	78.1	55.4
17:00-18:00 HOUR	59.7	70.7	54.1
18:00-19:00 HOUR	57.4	73.6	51.5
19:00-20:00 HOUR	56.6	69.1	51.5
20:00-21:00 HOUR	56.7	69.2	51.2
21:00-22:00 HOUR	55.0	71.6	48.9
22:00-23:00 HOUR	55.5	76.9	48.1
23:00-00:00 HOUR	51.6	66.0	46.2
00:00-01:00 HOUR	52.9	75.8	46.8
01:00-02:00 HOUR	51.8	69.2	46.0
02:00-03:00 HOUR	50.4	66.8	44.7
03:00-04:00 HOUR	52.5	68.0	45.5
04:00-05:00 HOUR	52.1	70.0	44.7
05:00-06:00 HOUR	53.3	67.5	47.1
06:00-07:00 HOUR	58.8	77.0	52.6
L <sub>Aeq</sub> 24 hours		57.8	

TIME*	RESULT dB(A)		
	จุ่มวัดด้านทิศเหนือ (N1)		
	MAY 27 - 28, 2025		
	T25AL816-0004		
	L <sub>Aeq</sub> 1 hour	L <sub>Amax</sub> 1 hour	L <sub>A90</sub> 1 hour
07:00-08:00 HOUR	58.6	74.7	52.1
08:00-09:00 HOUR	60.8	75.8	56.0
09:00-10:00 HOUR	60.8	77.9	54.0
10:00-11:00 HOUR	59.9	75.9	53.8
11:00-12:00 HOUR	59.6	75.7	53.1
12:00-13:00 HOUR	57.5	69.7	50.7
13:00-14:00 HOUR	56.3	71.5	50.2
14:00-15:00 HOUR	56.0	69.9	49.4
15:00-16:00 HOUR	58.7	74.3	54.1
16:00-17:00 HOUR	61.1	77.2	53.9
17:00-18:00 HOUR	60.6	78.2	56.1
18:00-19:00 HOUR	59.8	75.1	53.7
19:00-20:00 HOUR	58.9	74.2	53.3
20:00-21:00 HOUR	59.5	77.4	52.4
21:00-22:00 HOUR	56.8	70.4	52.1
22:00-23:00 HOUR	56.2	75.4	51.6
23:00-00:00 HOUR	54.4	68.9	49.7
00:00-01:00 HOUR	60.5	87.5	50.8
01:00-02:00 HOUR	50.7	62.9	47.1
02:00-03:00 HOUR	52.1	63.8	47.1
03:00-04:00 HOUR	51.6	67.5	46.9
04:00-05:00 HOUR	53.6	71.4	48.4
05:00-06:00 HOUR	56.2	72.1	48.5
06:00-07:00 HOUR	60.0	75.8	53.3
L <sub>Aeq</sub> 24 hours		58.4	

TIME*	RESULT dB(A)		
	ริมรั้วด้านทิศเหนือ (N1)		
	MAY 28 - 29, 2025		
	T25AL816-0005		
	L <sub>Aeq</sub> 1 hour	L <sub>Amax</sub> 1 hour	L <sub>A90</sub> 1 hour
07:00-08:00 HOUR	61.0	84.9	56.5
08:00-09:00 HOUR	60.4	77.9	54.7
09:00-10:00 HOUR	59.2	73.0	53.7
10:00-11:00 HOUR	58.6	70.7	51.9
11:00-12:00 HOUR	57.9	73.1	51.2
12:00-13:00 HOUR	56.7	74.5	49.3
13:00-14:00 HOUR	57.0	72.7	49.6
14:00-15:00 HOUR	58.9	75.6	52.9
15:00-16:00 HOUR	58.1	73.5	51.4
16:00-17:00 HOUR	59.1	76.1	53.0
17:00-18:00 HOUR	60.3	75.7	55.3
18:00-19:00 HOUR	60.7	79.1	55.4
19:00-20:00 HOUR	59.7	76.9	53.9
20:00-21:00 HOUR	53.8	68.1	48.7
21:00-22:00 HOUR	57.2	75.7	50.5
22:00-23:00 HOUR	57.0	70.3	52.3
23:00-00:00 HOUR	54.9	72.9	50.6
00:00-01:00 HOUR	53.6	66.9	48.6
01:00-02:00 HOUR	52.3	70.5	46.1
02:00-03:00 HOUR	50.5	65.9	45.1
03:00-04:00 HOUR	51.4	69.4	45.8
04:00-05:00 HOUR	51.4	67.8	45.2
05:00-06:00 HOUR	51.5	71.3	44.1
06:00-07:00 HOUR	53.5	70.8	45.4
L <sub>Aeq</sub> 24 hours		57.5	

TIME*	RESULT dB(A)		
	ริมรั้วด้านทิศเหนือ (N1)		
	MAY 29 - 30, 2025		
	T25AL816-0006		
	L <sub>Aeq</sub> 1 hour	L <sub>Amax</sub> 1 hour	L <sub>A90</sub> 1 hour
07:00-08:00 HOUR	55.7	70.8	50.1
08:00-09:00 HOUR	55.8	73.3	49.4
09:00-10:00 HOUR	54.4	68.7	48.7
10:00-11:00 HOUR	59.2	78.6	52.9
11:00-12:00 HOUR	58.2	80.9	51.0
12:00-13:00 HOUR	59.1	78.4	51.8
13:00-14:00 HOUR	57.8	74.7	51.5
14:00-15:00 HOUR	59.2	76.0	52.6
15:00-16:00 HOUR	58.3	71.5	52.3
16:00-17:00 HOUR	61.1	78.3	54.8
17:00-18:00 HOUR	60.0	73.6	54.5
18:00-19:00 HOUR	58.1	74.7	52.4
19:00-20:00 HOUR	57.8	73.1	52.1
20:00-21:00 HOUR	57.5	72.9	50.9
21:00-22:00 HOUR	55.6	71.9	47.9
22:00-23:00 HOUR	55.6	76.1	47.2
23:00-00:00 HOUR	52.6	68.8	46.3
00:00-01:00 HOUR	53.9	75.4	46.3
01:00-02:00 HOUR	51.1	69.2	44.4
02:00-03:00 HOUR	53.9	76.5	44.2
03:00-04:00 HOUR	52.5	70.6	44.7
04:00-05:00 HOUR	52.7	73.1	44.2
05:00-06:00 HOUR	53.6	69.0	45.7
06:00-07:00 HOUR	58.4	74.2	52.2
<b>L<sub>Aeq</sub> 24 hours</b>		<b>57.1</b>	

TIME*	RESULT dB(A)		
	ริมรั้วด้านทิศเหนือ (N1)		
	MAY 30 - 31, 2025		
	T25AL816-0007		
	L <sub>Aeq</sub> 1 hour	L <sub>Amax</sub> 1 hour	L <sub>A90</sub> 1 hour
07:00-08:00 HOUR	58.8	77.3	52.2
08:00-09:00 HOUR	60.2	75.5	55.0
09:00-10:00 HOUR	60.7	78.6	53.8
10:00-11:00 HOUR	59.4	74.6	53.6
11:00-12:00 HOUR	59.3	78.1	52.7
12:00-13:00 HOUR	59.0	72.7	52.6
13:00-14:00 HOUR	58.9	77.2	52.2
14:00-15:00 HOUR	58.0	73.9	50.9
15:00-16:00 HOUR	58.9	73.9	54.1
16:00-17:00 HOUR	59.5	74.3	53.3
17:00-18:00 HOUR	60.3	78.4	54.5
18:00-19:00 HOUR	59.0	73.5	53.1
19:00-20:00 HOUR	58.7	74.6	52.6
20:00-21:00 HOUR	58.9	73.4	52.8
21:00-22:00 HOUR	56.7	72.6	51.2
22:00-23:00 HOUR	56.5	79.7	49.6
23:00-00:00 HOUR	53.0	70.1	47.3
00:00-01:00 HOUR	56.5	79.0	47.9
01:00-02:00 HOUR	50.1	64.4	45.6
02:00-03:00 HOUR	51.0	63.4	45.9
03:00-04:00 HOUR	51.3	66.9	45.7
04:00-05:00 HOUR	53.1	73.6	45.9
05:00-06:00 HOUR	55.3	72.9	46.9
06:00-07:00 HOUR	59.9	76.1	53.1
L <sub>Aeq</sub> 24 hours		58.1	

REMARK : \*\* ISO 1996-1:2016

\*\* NOTIFICATION OF NATION ENVIRONMENT BOARD NO. 15 B.E. 2540 (1997) (MARCH 12, 1977)

\*\* NOTIFICATION OF THE POLLUTION CONTROL DEPARTMENT (B.E. 2540) REGARDING THE CALCULATION METHOD FOR SOUND LEVELS, DATED AUGUST 11, B.E. 2540

\*\* NOTIFICATION OF THE MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT ON THE ESTABLISHMENT OF STANDARDS FOR CONTROLLING NOISE AND VIBRATION, DATED NOVEMBER 7, B.E. 2548

\*\* NOTIFICATION OF THE DEPARTMENT OF INDUSTRIAL WORKS ON THE MEASUREMENT METHOD FOR NOISE POLLUTION, 24-HOUR AVERAGE NOISE LEVEL, AND MAXIMUM NOISE LEVEL FROM INDUSTRIAL OPERATIONS, B.E. 2553, DATED DECEMBER 20, B.E. 2553



(MR SILA BANJONGJAIKUK)  
LABORATORY SUPERVISOR

## ANALYSIS REPORT

<b>PROJECT NAME</b>	: โครงการโรงงานผลิตซีพีวี (CHLORINATED POLYVINYL CHLORIDE RESIN)	<b>RECEIVED DATE</b>	: MAY 24-31, 2025
<b>CUSTOMER NAME</b>	: S AND L SPECIALTY POLYMERS CO., LTD.	<b>ANALYTICAL DATE</b>	: MAY 24-31, 2025
<b>ADDRESS</b>	: 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150	<b>ISSUE DATE</b>	: JUNE 12, 2025
<b>CONTACT INFORMATION</b>	: TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com	<b>REPORT NO.</b>	: 2025-U051926
<b>MEASURING SOURCE</b>	: บริเวณชุมชนบางขลุ่ย-ซากกลาง (N4)	<b>WORK NO.</b>	: 2024-010526
<b>MEASURING TYPE</b>	: AMBIENT (NOISE)	<b>ANALYSIS NO.</b>	: T25AL816-0008 - T25AL816-0014
<b>MEASURING DATE</b>	: MAY 24-31, 2025		
<b>MEASURING TIME</b>	: *		
<b>MEASURING METHOD</b>	: INTEGRATED SOUND LEVEL METER**		
<b>MEASURED BY</b>	: MR WORAPHOT WONGKHAM		

TIME*	RESULT dB(A)		
	บริเวณชุมชนบางขลุ่ย-ซากกลาง (N4)		
	MAY 24 - 25, 2025		
	T25AL816-0008		
	L <sub>Aeq</sub> 1 hour	L <sub>Amax</sub> 1 hour	L <sub>A90</sub> 1 hour
07:00-08:00 HOUR	48.6	56.2	45.9
08:00-09:00 HOUR	50.0	56.4	47.5
09:00-10:00 HOUR	49.8	56.0	46.2
10:00-11:00 HOUR	49.3	56.1	46.8
11:00-12:00 HOUR	50.5	57.4	48.8
12:00-13:00 HOUR	50.5	57.5	48.1
13:00-14:00 HOUR	49.0	55.8	46.9
14:00-15:00 HOUR	50.5	57.9	49.3
15:00-16:00 HOUR	52.3	67.8	48.0
16:00-17:00 HOUR	50.8	59.3	48.4
17:00-18:00 HOUR	51.8	62.9	48.3
18:00-19:00 HOUR	50.8	64.6	48.5
19:00-20:00 HOUR	49.9	58.4	46.3
20:00-21:00 HOUR	49.7	61.1	45.4
21:00-22:00 HOUR	49.9	59.9	46.7
22:00-23:00 HOUR	49.5	60.6	46.5
23:00-00:00 HOUR	49.1	57.5	46.5
00:00-01:00 HOUR	48.7	55.6	45.8
01:00-02:00 HOUR	48.7	55.4	46.3
02:00-03:00 HOUR	49.6	56.1	46.2
03:00-04:00 HOUR	49.4	56.7	47.0
04:00-05:00 HOUR	48.3	55.2	45.8
05:00-06:00 HOUR	48.5	54.7	46.5
06:00-07:00 HOUR	51.6	60.1	49.0
<b>L<sub>Aeq</sub> 24 hours</b>		50.0	



TIME*	RESULT dB(A)		
	บริเวณชุมชนรอบสถานีกลาง (N4)		
	MAY 25 - 26, 2025		
	T25AL816-0009		
	L <sub>Aeq</sub> 1 hour	L <sub>Amax</sub> 1 hour	L <sub>A90</sub> 1 hour
07:00-08:00 HOUR	50.5	56.6	47.9
08:00-09:00 HOUR	50.3	57.8	48.4
09:00-10:00 HOUR	50.5	59.4	47.2
10:00-11:00 HOUR	50.7	57.5	49.8
11:00-12:00 HOUR	48.3	54.8	46.4
12:00-13:00 HOUR	49.8	55.8	47.8
13:00-14:00 HOUR	49.5	57.3	48.9
14:00-15:00 HOUR	50.4	56.9	49.2
15:00-16:00 HOUR	49.7	56.6	47.9
16:00-17:00 HOUR	49.8	58.7	45.7
17:00-18:00 HOUR	48.7	55.1	47.4
18:00-19:00 HOUR	50.6	65.0	47.5
19:00-20:00 HOUR	50.6	58.5	47.1
20:00-21:00 HOUR	49.7	63.3	46.7
21:00-22:00 HOUR	50.5	57.6	48.0
22:00-23:00 HOUR	48.8	58.9	44.5
23:00-00:00 HOUR	47.2	54.0	44.0
00:00-01:00 HOUR	49.3	55.5	46.8
01:00-02:00 HOUR	50.0	57.3	47.3
02:00-03:00 HOUR	50.1	57.4	47.1
03:00-04:00 HOUR	48.8	56.2	46.7
04:00-05:00 HOUR	49.3	55.9	45.4
05:00-06:00 HOUR	48.4	55.5	45.4
06:00-07:00 HOUR	51.9	61.8	49.7
L <sub>Aeq</sub> 24 hours		49.8	

TIME*	RESULT dB(A)		
	บริเวณชุมชนย่านตลาด-ซากกลาง (N4)		
	MAY 26 - 27, 2025		
	T25AL816-0010		
	L <sub>Aeq</sub> 1 hour	L <sub>Amax</sub> 1 hour	L <sub>A90</sub> 1 hour
07:00-08:00 HOUR	49.2	55.7	47.2
08:00-09:00 HOUR	50.6	57.8	48.6
09:00-10:00 HOUR	51.3	57.4	48.9
10:00-11:00 HOUR	49.4	57.1	48.2
11:00-12:00 HOUR	51.0	57.5	50.5
12:00-13:00 HOUR	49.7	57.3	47.0
13:00-14:00 HOUR	49.3	56.6	48.3
14:00-15:00 HOUR	50.1	56.7	48.8
15:00-16:00 HOUR	49.9	57.0	48.8
16:00-17:00 HOUR	50.0	57.1	47.3
17:00-18:00 HOUR	49.8	60.9	47.0
18:00-19:00 HOUR	50.4	62.5	48.2
19:00-20:00 HOUR	52.0	61.1	48.4
20:00-21:00 HOUR	51.5	63.7	47.5
21:00-22:00 HOUR	50.7	60.8	46.8
22:00-23:00 HOUR	48.9	57.2	44.6
23:00-00:00 HOUR	49.1	56.6	46.4
00:00-01:00 HOUR	49.1	56.0	46.3
01:00-02:00 HOUR	48.9	54.6	45.7
02:00-03:00 HOUR	49.0	55.0	45.7
03:00-04:00 HOUR	49.2	56.4	46.1
04:00-05:00 HOUR	49.4	55.4	46.8
05:00-06:00 HOUR	49.6	55.4	47.1
06:00-07:00 HOUR	51.2	58.1	48.4
L <sub>Aeq</sub> 24 hours	50.1		

TIME*	RESULT dB(A)		
	บริเวณชุมชนบางนาเขต-ชากกลาง (N4)		
	MAY 27 - 28, 2025		
	T25AL816-0011		
	L <sub>Aeq</sub> 1 hour	L <sub>Amax</sub> 1 hour	L <sub>A90</sub> 1 hour
07:00-08:00 HOUR	51.3	57.7	49.3
08:00-09:00 HOUR	49.4	59.1	47.3
09:00-10:00 HOUR	51.5	57.6	49.1
10:00-11:00 HOUR	49.4	56.2	47.8
11:00-12:00 HOUR	51.2	57.4	49.5
12:00-13:00 HOUR	50.0	56.9	48.1
13:00-14:00 HOUR	50.2	56.6	50.5
14:00-15:00 HOUR	50.2	56.2	49.8
15:00-16:00 HOUR	50.1	57.7	47.7
16:00-17:00 HOUR	50.9	57.3	48.4
17:00-18:00 HOUR	51.8	61.2	49.7
18:00-19:00 HOUR	52.2	68.4	50.3
19:00-20:00 HOUR	51.3	60.6	47.2
20:00-21:00 HOUR	52.2	67.2	49.3
21:00-22:00 HOUR	50.0	57.5	47.0
22:00-23:00 HOUR	48.1	56.2	44.8
23:00-00:00 HOUR	49.5	56.9	46.8
00:00-01:00 HOUR	49.0	55.0	46.9
01:00-02:00 HOUR	48.0	55.2	45.1
02:00-03:00 HOUR	48.8	54.3	45.9
03:00-04:00 HOUR	49.6	56.2	47.6
04:00-05:00 HOUR	50.3	55.7	48.8
05:00-06:00 HOUR	48.9	54.3	47.6
06:00-07:00 HOUR	51.2	59.8	47.8
L <sub>Aeq</sub> 24 hours	50.4		

TIME*	RESULT dB(A)		
	บริเวณชุมชนตามขลุ่ย-ช้างกลาง (N4)		
	MAY 28 - 29, 2025		
	T25AL816-0012		
	L <sub>Aeq</sub> 1 hour	L <sub>Amax</sub> 1 hour	L <sub>A90</sub> 1 hour
07:00-08:00 HOUR	51.2	56.8	49.7
08:00-09:00 HOUR	51.2	59.5	49.7
09:00-10:00 HOUR	50.5	58.3	48.4
10:00-11:00 HOUR	50.3	57.6	48.7
11:00-12:00 HOUR	49.9	56.7	47.4
12:00-13:00 HOUR	50.7	57.3	49.5
13:00-14:00 HOUR	49.9	56.6	49.9
14:00-15:00 HOUR	49.2	55.9	48.0
15:00-16:00 HOUR	50.4	56.7	48.4
16:00-17:00 HOUR	50.3	57.1	47.2
17:00-18:00 HOUR	50.0	59.5	47.8
18:00-19:00 HOUR	51.4	65.7	48.0
19:00-20:00 HOUR	51.3	60.1	48.0
20:00-21:00 HOUR	51.3	65.7	47.8
21:00-22:00 HOUR	49.7	58.8	45.6
22:00-23:00 HOUR	48.5	56.7	44.9
23:00-00:00 HOUR	47.9	54.8	45.4
00:00-01:00 HOUR	49.5	55.7	46.8
01:00-02:00 HOUR	48.2	54.5	44.8
02:00-03:00 HOUR	49.3	56.7	46.5
03:00-04:00 HOUR	48.5	55.1	45.5
04:00-05:00 HOUR	49.3	55.7	46.5
05:00-06:00 HOUR	49.1	56.5	47.4
06:00-07:00 HOUR	50.9	59.8	48.6
L <sub>Aeq</sub> 24 hours		50.1	

TIME*	RESULT dB(A)		
	บริเวณชุมชนรอบตลาด-ปากกลาง (N4)		
	MAY 29 - 30, 2025		
	T25AL816-0013		
	L <sub>Aeq</sub> 1 hour	L <sub>Amax</sub> 1 hour	L <sub>A90</sub> 1 hour
07:00-08:00 HOUR	50.8	56.1	48.1
08:00-09:00 HOUR	49.2	59.9	46.7
09:00-10:00 HOUR	51.1	58.6	50.0
10:00-11:00 HOUR	50.1	58.0	49.3
11:00-12:00 HOUR	49.8	57.3	46.1
12:00-13:00 HOUR	50.7	58.6	49.1
13:00-14:00 HOUR	50.5	57.3	49.3
14:00-15:00 HOUR	48.0	54.7	46.7
15:00-16:00 HOUR	49.8	56.7	48.8
16:00-17:00 HOUR	48.7	56.1	46.1
17:00-18:00 HOUR	50.0	58.6	47.7
18:00-19:00 HOUR	50.4	64.3	47.5
19:00-20:00 HOUR	50.7	60.4	48.3
20:00-21:00 HOUR	50.2	60.8	46.9
21:00-22:00 HOUR	49.8	58.3	47.8
22:00-23:00 HOUR	48.8	57.5	46.9
23:00-00:00 HOUR	49.1	56.9	47.3
00:00-01:00 HOUR	48.9	54.9	47.2
01:00-02:00 HOUR	49.4	57.8	48.0
02:00-03:00 HOUR	48.3	55.4	45.9
03:00-04:00 HOUR	50.1	57.1	48.5
04:00-05:00 HOUR	47.9	56.2	44.6
05:00-06:00 HOUR	48.3	55.3	45.8
06:00-07:00 HOUR	49.6	57.8	47.4
L <sub>Aeq</sub> 24 hours		49.7	

TIME*	RESULT dB(A)		
	บริเวณชุมชนรอบเขต-ซากกลาง (N4)		
	MAY 30 - 31, 2025		
	T25AL816-0014		
	L <sub>Aeq</sub> 1 hour	L <sub>Amax</sub> 1 hour	L <sub>A90</sub> 1 hour
07:00-08:00 HOUR	49.8	57.1	47.2
08:00-09:00 HOUR	49.7	59.1	47.0
09:00-10:00 HOUR	50.7	58.6	47.6
10:00-11:00 HOUR	50.6	57.6	47.2
11:00-12:00 HOUR	49.7	57.0	47.5
12:00-13:00 HOUR	50.2	57.0	47.6
13:00-14:00 HOUR	49.7	55.9	48.6
14:00-15:00 HOUR	49.4	56.5	46.9
15:00-16:00 HOUR	49.5	56.4	47.6
16:00-17:00 HOUR	50.7	57.8	48.3
17:00-18:00 HOUR	51.4	59.7	49.1
18:00-19:00 HOUR	51.5	68.6	49.1
19:00-20:00 HOUR	51.8	60.4	49.4
20:00-21:00 HOUR	51.7	65.0	49.0
21:00-22:00 HOUR	50.2	59.1	47.2
22:00-23:00 HOUR	48.7	58.4	46.6
23:00-00:00 HOUR	49.6	58.2	47.5
00:00-01:00 HOUR	48.5	55.3	46.0
01:00-02:00 HOUR	49.4	54.9	48.6
02:00-03:00 HOUR	48.6	56.5	45.5
03:00-04:00 HOUR	49.6	56.6	47.8
04:00-05:00 HOUR	49.6	56.1	46.6
05:00-06:00 HOUR	48.2	54.2	45.6
06:00-07:00 HOUR	51.4	62.1	49.9
L <sub>Aeq</sub> 24 hours		50.1	

REMARK : \*\* ISO 1996-1:2016

\*\* NOTIFICATION OF NATION ENVIRONMENT BOARD NO. 15 B.E. 2540 (1997) (MARCH 12, 1977)

\*\* NOTIFICATION OF THE POLLUTION CONTROL DEPARTMENT (B.E. 2540) REGARDING THE CALCULATION METHOD FOR SOUND LEVELS, DATED AUGUST 11, B.E. 2540

\*\* NOTIFICATION OF THE MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT ON THE ESTABLISHMENT OF STANDARDS FOR CONTROLLING NOISE AND VIBRATION, DATED NOVEMBER 7, B.E. 2548

\*\* NOTIFICATION OF THE DEPARTMENT OF INDUSTRIAL WORKS ON THE MEASUREMENT METHOD FOR NOISE POLLUTION, 24-HOUR AVERAGE NOISE LEVEL, AND MAXIMUM NOISE LEVEL FROM INDUSTRIAL OPERATIONS, B.E. 2553, DATED DECEMBER 20, B.E. 2553

*Sila Banjongjairuk*

(MR SILA BANJONGJAIKUK)  
LABORATORY SUPERVISOR

## ANALYSIS REPORT

<b>PROJECT NAME</b>	: โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)	<b>RECEIVED DATE</b>	: MAY 24-31, 2025
<b>CUSTOMER NAME</b>	: S AND L SPECIALTY POLYMERS CO., LTD.	<b>ANALYTICAL DATE</b>	: MAY 24-31, 2025
<b>ADDRESS</b>	: 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150	<b>ISSUE DATE</b>	: JUNE 12, 2025
<b>CONTACT INFORMATION</b>	: TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com	<b>REPORT NO.</b>	: 2025-U051927
<b>MEASURING SOURCE</b>	: บริเวณเขื่อนขามบางลวด-ซากกลาง (N4)	<b>WORK NO.</b>	: 2024-010526
<b>MEASURING TYPE</b>	: AMBIENT (NOISE)	<b>ANALYSIS NO.</b>	: T25AL816-0008 - T25AL816-0014
<b>MEASURING DATE</b>	: MAY 24-31, 2025		
<b>MEASURING TIME</b>	: *		
<b>MEASURING METHOD</b>	: INTEGRATED SOUND LEVEL METER**		
<b>MEASURED BY</b>	: MR WORAPHOT WONGKHAM		

TIME*	RESULT dB(A)	
	บริเวณเขื่อนขามบางลวด-ซากกลาง (N4)	
	MAY 24 - 25, 2025	
	T25AL816-0008	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
07:00-07:05 HOUR	49.5	47.3
07:05-07:10 HOUR	45.5	43.3
07:10-07:15 HOUR	48.8	46.3
07:15-07:20 HOUR	48.3	45.9
07:20-07:25 HOUR	47.7	45.3
07:25-07:30 HOUR	45.3	43.5
07:30-07:35 HOUR	50.8	48.2
07:35-07:40 HOUR	48.0	45.9
07:40-07:45 HOUR	47.8	46.6
07:45-07:50 HOUR	47.7	44.5
07:50-07:55 HOUR	46.7	44.8
07:55-08:00 HOUR	52.2	50.4
08:00-08:05 HOUR	52.0	48.5
08:05-08:10 HOUR	50.7	48.8
08:10-08:15 HOUR	49.2	46.8
08:15-08:20 HOUR	49.2	47.4
08:20-08:25 HOUR	49.7	47.5
08:25-08:30 HOUR	47.8	46.5
08:30-08:35 HOUR	47.1	45.5
08:35-08:40 HOUR	47.7	46.3
08:40-08:45 HOUR	52.3	49.2
08:45-08:50 HOUR	50.4	48.5
08:50-08:55 HOUR	49.3	46.7
08:55-09:00 HOUR	50.8	48.6
09:00-09:05 HOUR	46.7	43.1
09:05-09:10 HOUR	48.1	45.7
09:10-09:15 HOUR	49.2	46.6
09:15-09:20 HOUR	48.0	45.3
09:20-09:25 HOUR	48.0	45.6
09:25-09:30 HOUR	51.6	49.4
09:30-09:35 HOUR	50.1	48.7
09:35-09:40 HOUR	51.9	49.1
09:40-09:45 HOUR	47.9	45.6
09:45-09:50 HOUR	50.8	48.3
09:50-09:55 HOUR	51.9	49.3
09:55-10:00 HOUR	49.4	45.8
10:00-10:05 HOUR	49.5	46.9

TIME*	RESULT dB(A)	
	บริเวณถนนบางนาเขตคลองเตย (N4)	
	MAY 24 - 25, 2025	
	T25AL816-0008	
	LAeq 5 min	LA90 5 min
10:05-10:10 HOUR	46.8	43.5
10:10-10:15 HOUR	48.2	46.5
10:15-10:20 HOUR	47.4	44.7
10:20-10:25 HOUR	48.7	47.2
10:25-10:30 HOUR	49.0	46.6
10:30-10:35 HOUR	51.8	49.7
10:35-10:40 HOUR	51.0	48.3
10:40-10:45 HOUR	49.4	47.6
10:45-10:50 HOUR	52.1	49.3
10:50-10:55 HOUR	46.9	44.3
10:55-11:00 HOUR	45.3	44.0
11:00-11:05 HOUR	50.8	48.4
11:05-11:10 HOUR	51.5	51.0
11:10-11:15 HOUR	49.9	49.1
11:15-11:20 HOUR	52.0	51.8
11:20-11:25 HOUR	45.8	45.7
11:25-11:30 HOUR	46.5	46.3
11:30-11:35 HOUR	52.7	51.8
11:35-11:40 HOUR	50.5	48.9
11:40-11:45 HOUR	53.3	51.3
11:45-11:50 HOUR	47.3	45.8
11:50-11:55 HOUR	48.6	46.6
11:55-12:00 HOUR	50.6	48.7
12:00-12:05 HOUR	52.0	50.2
12:05-12:10 HOUR	46.7	45.5
12:10-12:15 HOUR	49.4	47.6
12:15-12:20 HOUR	48.3	47.7
12:20-12:25 HOUR	52.6	51.6
12:25-12:30 HOUR	53.2	48.9
12:30-12:35 HOUR	47.4	44.6
12:35-12:40 HOUR	52.4	49.9
12:40-12:45 HOUR	47.7	45.2
12:45-12:50 HOUR	51.3	48.5
12:50-12:55 HOUR	51.5	49.7
12:55-13:00 HOUR	45.4	44.3
13:00-13:05 HOUR	46.4	45.0
13:05-13:10 HOUR	48.6	47.1
13:10-13:15 HOUR	49.4	48.2
13:15-13:20 HOUR	49.3	47.1
13:20-13:25 HOUR	51.5	49.9
13:25-13:30 HOUR	51.7	48.8
13:30-13:35 HOUR	46.8	45.0
13:35-13:40 HOUR	49.1	46.6
13:40-13:45 HOUR	48.5	46.6
13:45-13:50 HOUR	46.1	44.8
13:50-13:55 HOUR	47.0	46.1
13:55-14:00 HOUR	49.7	48.9
14:00-14:05 HOUR	53.2	50.9
14:05-14:10 HOUR	50.5	49.0
14:10-14:15 HOUR	53.7	50.8
14:15-14:20 HOUR	48.2	45.4

TIME*	RESULT dB(A)	
	บริเวณชุมชนตามขลุ่ย-ช้างกลาง (N4)	
	MAY 24 - 25, 2025	
	T25AL816-0008	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
14:20-14:25 HOUR	51.3	49.5
14:25-14:30 HOUR	45.2	43.6
14:30-14:35 HOUR	51.0	49.5
14:35-14:40 HOUR	50.4	50.0
14:40-14:45 HOUR	46.2	45.1
14:45-14:50 HOUR	49.6	48.3
14:50-14:55 HOUR	51.6	50.3
14:55-15:00 HOUR	45.8	44.2
15:00-15:05 HOUR	47.6	45.7
15:05-15:10 HOUR	55.6	49.9
15:10-15:15 HOUR	53.5	50.9
15:15-15:20 HOUR	49.9	47.0
15:20-15:25 HOUR	49.6	46.2
15:25-15:30 HOUR	49.5	45.9
15:30-15:35 HOUR	51.9	48.7
15:35-15:40 HOUR	50.8	49.7
15:40-15:45 HOUR	48.3	46.6
15:45-15:50 HOUR	53.2	50.3
15:50-15:55 HOUR	51.9	47.2
15:55-16:00 HOUR	56.2	52.4
16:00-16:05 HOUR	49.9	47.6
16:05-16:10 HOUR	50.6	48.5
16:10-16:15 HOUR	47.7	45.1
16:15-16:20 HOUR	52.2	49.4
16:20-16:25 HOUR	47.5	45.0
16:25-16:30 HOUR	49.5	45.5
16:30-16:35 HOUR	51.6	48.6
16:35-16:40 HOUR	47.3	45.4
16:40-16:45 HOUR	50.0	48.3
16:45-16:50 HOUR	53.9	51.5
16:50-16:55 HOUR	51.1	48.7
16:55-17:00 HOUR	52.4	49.3
17:00-17:05 HOUR	54.6	50.1
17:05-17:10 HOUR	50.9	47.4
17:10-17:15 HOUR	49.6	46.2
17:15-17:20 HOUR	52.1	48.0
17:20-17:25 HOUR	49.6	46.0
17:25-17:30 HOUR	52.9	50.2
17:30-17:35 HOUR	48.6	46.4
17:35-17:40 HOUR	55.2	52.7
17:40-17:45 HOUR	48.3	44.5
17:45-17:50 HOUR	51.1	49.1
17:50-17:55 HOUR	51.4	48.5
17:55-18:00 HOUR	51.3	49.0
18:00-18:05 HOUR	53.1	50.7
18:05-18:10 HOUR	51.8	49.1
18:10-18:15 HOUR	53.6	51.4
18:15-18:20 HOUR	49.6	48.5
18:20-18:25 HOUR	49.4	48.3
18:25-18:30 HOUR	48.2	46.2
18:30-18:35 HOUR	53.1	52.0

TIME*	RESULT dB(A)	
	บริเวณชุมชนรอบตลาด-ชากกลาง (N4)	
	MAY 24 - 25, 2025	
	T25AL816-0008	
	LAeq 5 min	LA90 5 min
18:35-18:40 HOUR	48.3	46.1
18:40-18:45 HOUR	50.0	47.8
18:45-18:50 HOUR	49.7	48.8
18:50-18:55 HOUR	49.9	48.5
18:55-19:00 HOUR	46.2	44.8
19:00-19:05 HOUR	52.4	50.6
19:05-19:10 HOUR	47.2	44.8
19:10-19:15 HOUR	48.6	46.4
19:15-19:20 HOUR	50.8	48.9
19:20-19:25 HOUR	47.7	45.5
19:25-19:30 HOUR	47.9	46.0
19:30-19:35 HOUR	51.8	49.8
19:35-19:40 HOUR	49.2	46.1
19:40-19:45 HOUR	49.3	46.2
19:45-19:50 HOUR	49.2	46.4
19:50-19:55 HOUR	50.8	47.7
19:55-20:00 HOUR	50.9	45.9
20:00-20:05 HOUR	52.4	49.7
20:05-20:10 HOUR	51.1	48.2
20:10-20:15 HOUR	47.6	44.1
20:15-20:20 HOUR	48.4	45.6
20:20-20:25 HOUR	47.2	43.9
20:25-20:30 HOUR	48.7	44.7
20:30-20:35 HOUR	46.8	44.1
20:35-20:40 HOUR	48.5	45.6
20:40-20:45 HOUR	51.3	49.3
20:45-20:50 HOUR	47.7	44.7
20:50-20:55 HOUR	53.2	48.9
20:55-21:00 HOUR	47.0	45.2
21:00-21:05 HOUR	49.0	46.7
21:05-21:10 HOUR	48.8	46.7
21:10-21:15 HOUR	50.4	48.6
21:15-21:20 HOUR	46.1	44.8
21:20-21:25 HOUR	48.3	46.5
21:25-21:30 HOUR	47.2	45.0
21:30-21:35 HOUR	51.7	49.1
21:35-21:40 HOUR	51.1	48.7
21:40-21:45 HOUR	49.1	46.3
21:45-21:50 HOUR	46.7	45.3
21:50-21:55 HOUR	53.0	48.7
21:55-22:00 HOUR	51.5	49.0
22:00-22:05 HOUR	50.3	47.3
22:05-22:10 HOUR	53.0	49.6
22:10-22:15 HOUR	52.2	49.4
22:15-22:20 HOUR	45.5	42.5
22:20-22:25 HOUR	49.3	46.7
22:25-22:30 HOUR	47.0	44.8
22:30-22:35 HOUR	49.9	47.3
22:35-22:40 HOUR	46.9	43.7
22:40-22:45 HOUR	48.8	46.3
22:45-22:50 HOUR	46.4	43.7

TIME*	RESULT dB(A)	
	บริเวณชุมชนบางพลี-ชากกลาง (M4)	
	MAY 24 - 25, 2025	
	T25AL816-0008	
	LAeq 5 min	LA90 5 min
22:50-22:55 HOUR	48.1	45.4
22:55-23:00 HOUR	49.8	47.5
23:00-23:05 HOUR	46.1	43.1
23:05-23:10 HOUR	48.3	45.3
23:10-23:15 HOUR	45.2	43.1
23:15-23:20 HOUR	48.9	46.3
23:20-23:25 HOUR	49.4	47.6
23:25-23:30 HOUR	49.5	47.7
23:30-23:35 HOUR	47.8	45.6
23:35-23:40 HOUR	47.4	45.4
23:40-23:45 HOUR	52.3	49.8
23:45-23:50 HOUR	48.4	46.7
23:50-23:55 HOUR	51.4	49.5
23:55-00:00 HOUR	49.4	47.8
00:00-00:05 HOUR	49.1	46.1
00:05-00:10 HOUR	51.8	48.3
00:10-00:15 HOUR	49.0	46.3
00:15-00:20 HOUR	49.1	45.9
00:20-00:25 HOUR	47.5	44.5
00:25-00:30 HOUR	45.9	42.6
00:30-00:35 HOUR	48.7	45.7
00:35-00:40 HOUR	50.7	47.6
00:40-00:45 HOUR	46.7	43.3
00:45-00:50 HOUR	47.7	44.5
00:50-00:55 HOUR	46.5	43.7
00:55-01:00 HOUR	48.4	45.9
01:00-01:05 HOUR	45.6	43.0
01:05-01:10 HOUR	49.5	47.0
01:10-01:15 HOUR	45.8	43.1
01:15-01:20 HOUR	50.6	48.0
01:20-01:25 HOUR	45.4	43.3
01:25-01:30 HOUR	46.9	44.4
01:30-01:35 HOUR	47.3	44.7
01:35-01:40 HOUR	47.8	45.6
01:40-01:45 HOUR	50.7	48.8
01:45-01:50 HOUR	49.7	47.6
01:50-01:55 HOUR	49.8	47.3
01:55-02:00 HOUR	50.6	48.6
02:00-02:05 HOUR	48.3	45.7
02:05-02:10 HOUR	49.5	46.7
02:10-02:15 HOUR	49.6	46.6
02:15-02:20 HOUR	52.6	49.5
02:20-02:25 HOUR	48.8	45.8
02:25-02:30 HOUR	47.0	43.7
02:30-02:35 HOUR	48.6	45.6
02:35-02:40 HOUR	46.6	43.8
02:40-02:45 HOUR	48.7	45.3
02:45-02:50 HOUR	49.4	46.6
02:50-02:55 HOUR	51.6	49.0
02:55-03:00 HOUR	50.5	47.4
03:00-03:05 HOUR	48.6	45.6

TIME*	RESULT dB(A)	
	บริเวณชุมชนสนามหลวง-ซากกลาง (N4)	
	MAY 24 - 25, 2025	
	T25AL816-0008	
	LAeq 5 min	LA90 5 min
03:05-03:10 HOUR	46.2	44.1
03:10-03:15 HOUR	48.2	45.9
03:15-03:20 HOUR	47.3	44.5
03:20-03:25 HOUR	48.7	46.8
03:25-03:30 HOUR	47.1	44.7
03:30-03:35 HOUR	50.1	47.9
03:35-03:40 HOUR	49.8	47.6
03:40-03:45 HOUR	52.0	50.1
03:45-03:50 HOUR	50.9	49.0
03:50-03:55 HOUR	48.7	47.2
03:55-04:00 HOUR	51.5	49.4
04:00-04:05 HOUR	47.3	45.4
04:05-04:10 HOUR	47.7	45.9
04:10-04:15 HOUR	46.7	45.0
04:15-04:20 HOUR	48.8	47.0
04:20-04:25 HOUR	45.8	44.1
04:25-04:30 HOUR	48.8	46.7
04:30-04:35 HOUR	50.6	48.7
04:35-04:40 HOUR	47.7	45.7
04:40-04:45 HOUR	47.2	44.8
04:45-04:50 HOUR	48.3	46.1
04:50-04:55 HOUR	51.2	47.9
04:55-05:00 HOUR	46.1	43.9
05:00-05:05 HOUR	49.3	46.6
05:05-05:10 HOUR	47.4	44.3
05:10-05:15 HOUR	46.6	43.3
05:15-05:20 HOUR	46.5	43.6
05:20-05:25 HOUR	50.9	48.7
05:25-05:30 HOUR	46.8	45.0
05:30-05:35 HOUR	47.5	46.3
05:35-05:40 HOUR	50.0	48.8
05:40-05:45 HOUR	49.2	47.7
05:45-05:50 HOUR	48.5	46.8
05:50-05:55 HOUR	49.3	47.7
05:55-06:00 HOUR	47.1	45.3
06:00-06:05 HOUR	53.3	51.5
06:05-06:10 HOUR	48.9	47.1
06:10-06:15 HOUR	53.8	52.2
06:15-06:20 HOUR	51.7	48.5
06:20-06:25 HOUR	53.2	51.9
06:25-06:30 HOUR	54.0	52.2
06:30-06:35 HOUR	51.6	49.7
06:35-06:40 HOUR	50.8	48.4
06:40-06:45 HOUR	51.9	49.4
06:45-06:50 HOUR	48.0	45.8
06:50-06:55 HOUR	47.5	45.3
06:55-07:00 HOUR	47.6	45.2

TIME*	RESULT dB(A)	
	บริเวณชุมชนบางพลู-ชากกลาง (N4)	
	MAY 25 - 26, 2025	
	T25AL816-0009	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
07:00-07:05 HOUR	49.6	47.4
07:05-07:10 HOUR	47.4	45.3
07:10-07:15 HOUR	49.8	47.6
07:15-07:20 HOUR	50.3	48.3
07:20-07:25 HOUR	52.1	50.1
07:25-07:30 HOUR	52.4	49.9
07:30-07:35 HOUR	49.3	47.0
07:35-07:40 HOUR	50.2	48.1
07:40-07:45 HOUR	51.0	48.8
07:45-07:50 HOUR	52.9	51.1
07:50-07:55 HOUR	48.5	46.3
07:55-08:00 HOUR	49.5	47.1
08:00-08:05 HOUR	50.6	48.6
08:05-08:10 HOUR	53.0	51.4
08:10-08:15 HOUR	50.9	49.1
08:15-08:20 HOUR	52.0	50.0
08:20-08:25 HOUR	46.6	45.0
08:25-08:30 HOUR	49.1	47.9
08:30-08:35 HOUR	52.1	50.3
08:35-08:40 HOUR	48.6	47.5
08:40-08:45 HOUR	50.2	48.5
08:45-08:50 HOUR	46.6	45.2
08:50-08:55 HOUR	50.2	48.3
08:55-09:00 HOUR	47.7	45.3
09:00-09:05 HOUR	48.3	46.3
09:05-09:10 HOUR	53.5	51.6
09:10-09:15 HOUR	50.9	48.6
09:15-09:20 HOUR	54.5	52.4
09:20-09:25 HOUR	50.6	47.8
09:25-09:30 HOUR	51.9	49.4
09:30-09:35 HOUR	47.5	45.9
09:35-09:40 HOUR	45.8	43.5
09:40-09:45 HOUR	48.3	45.7
09:45-09:50 HOUR	48.5	46.6
09:50-09:55 HOUR	48.5	47.1
09:55-10:00 HOUR	48.3	47.2
10:00-10:05 HOUR	51.8	51.4
10:05-10:10 HOUR	46.7	46.6
10:10-10:15 HOUR	52.0	51.2
10:15-10:20 HOUR	50.1	47.8
10:20-10:25 HOUR	49.5	49.1
10:25-10:30 HOUR	50.0	49.0
10:30-10:35 HOUR	53.4	52.7
10:35-10:40 HOUR	50.9	50.7
10:40-10:45 HOUR	50.8	50.5
10:45-10:50 HOUR	48.6	48.4
10:50-10:55 HOUR	52.1	51.6
10:55-11:00 HOUR	48.0	48.5
11:00-11:05 HOUR	49.5	49.0
11:05-11:10 HOUR	47.7	47.1
11:10-11:15 HOUR	46.8	46.1

TIME*	RESULT dB(A)	
	บริเวณชุมชนรอบจุด-ซากการาง (N4)	
	MAY 25 - 26, 2025	
	T25AL816-0009	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
11:15-11:20 HOUR	47.7	46.6
11:20-11:25 HOUR	50.7	49.8
11:25-11:30 HOUR	47.0	45.8
11:30-11:35 HOUR	46.3	44.7
11:35-11:40 HOUR	46.0	44.6
11:40-11:45 HOUR	50.4	48.4
11:45-11:50 HOUR	47.2	45.5
11:50-11:55 HOUR	46.2	44.4
11:55-12:00 HOUR	49.9	48.4
12:00-12:05 HOUR	49.8	48.4
12:05-12:10 HOUR	50.7	49.1
12:10-12:15 HOUR	51.0	49.1
12:15-12:20 HOUR	49.2	47.3
12:20-12:25 HOUR	51.3	49.0
12:25-12:30 HOUR	46.7	44.1
12:30-12:35 HOUR	49.9	47.1
12:35-12:40 HOUR	50.8	48.2
12:40-12:45 HOUR	45.7	43.7
12:45-12:50 HOUR	51.7	49.5
12:50-12:55 HOUR	48.2	46.4
12:55-13:00 HOUR	49.1	47.2
13:00-13:05 HOUR	45.7	44.0
13:05-13:10 HOUR	48.2	46.1
13:10-13:15 HOUR	45.2	45.0
13:15-13:20 HOUR	46.5	45.3
13:20-13:25 HOUR	46.2	45.6
13:25-13:30 HOUR	51.4	50.8
13:30-13:35 HOUR	50.6	49.6
13:35-13:40 HOUR	53.1	52.1
13:40-13:45 HOUR	49.3	49.3
13:45-13:50 HOUR	51.3	51.6
13:50-13:55 HOUR	50.4	50.4
13:55-14:00 HOUR	48.3	48.4
14:00-14:05 HOUR	49.3	48.8
14:05-14:10 HOUR	48.4	48.2
14:10-14:15 HOUR	52.8	51.6
14:15-14:20 HOUR	51.8	50.3
14:20-14:25 HOUR	50.6	48.9
14:25-14:30 HOUR	49.7	49.4
14:30-14:35 HOUR	52.7	51.8
14:35-14:40 HOUR	46.3	45.8
14:40-14:45 HOUR	48.5	47.8
14:45-14:50 HOUR	50.9	50.1
14:50-14:55 HOUR	50.6	50.1
14:55-15:00 HOUR	48.5	46.7
15:00-15:05 HOUR	49.6	47.7
15:05-15:10 HOUR	52.5	50.2
15:10-15:15 HOUR	46.0	44.4
15:15-15:20 HOUR	48.0	46.3
15:20-15:25 HOUR	51.0	50.0
15:25-15:30 HOUR	48.7	48.1

TIME*	RESULT dB(A)	
	บริเวณถนนพหลโยธิน-บางนา (N4)	
	MAY 25 - 26, 2025	
	T25AL816-0009	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
15:30-15:35 HOUR	47.8	47.3
15:35-15:40 HOUR	48.6	48.3
15:40-15:45 HOUR	51.2	49.5
15:45-15:50 HOUR	50.1	48.2
15:50-15:55 HOUR	49.2	47.1
15:55-16:00 HOUR	49.7	46.6
16:00-16:05 HOUR	47.5	45.9
16:05-16:10 HOUR	45.5	43.6
16:10-16:15 HOUR	47.2	45.5
16:15-16:20 HOUR	45.9	44.4
16:20-16:25 HOUR	44.8	44.2
16:25-16:30 HOUR	49.4	47.9
16:30-16:35 HOUR	47.7	46.1
16:35-16:40 HOUR	51.9	51.2
16:40-16:45 HOUR	54.5	51.7
16:45-16:50 HOUR	54.4	51.4
16:50-16:55 HOUR	46.3	44.4
16:55-17:00 HOUR	45.5	44.2
17:00-17:05 HOUR	50.1	49.4
17:05-17:10 HOUR	49.1	48.6
17:10-17:15 HOUR	48.8	47.9
17:15-17:20 HOUR	48.8	48.4
17:20-17:25 HOUR	50.9	50.4
17:25-17:30 HOUR	46.8	46.4
17:30-17:35 HOUR	45.2	43.9
17:35-17:40 HOUR	48.3	46.8
17:40-17:45 HOUR	47.9	44.3
17:45-17:50 HOUR	47.8	45.9
17:50-17:55 HOUR	48.3	45.7
17:55-18:00 HOUR	49.9	47.9
18:00-18:05 HOUR	51.5	48.6
18:05-18:10 HOUR	52.1	49.3
18:10-18:15 HOUR	53.6	50.0
18:15-18:20 HOUR	52.1	50.4
18:20-18:25 HOUR	49.1	47.5
18:25-18:30 HOUR	47.8	44.8
18:30-18:35 HOUR	52.1	49.2
18:35-18:40 HOUR	50.2	47.5
18:40-18:45 HOUR	50.2	47.3
18:45-18:50 HOUR	46.4	44.2
18:50-18:55 HOUR	47.4	46.6
18:55-19:00 HOUR	47.5	44.9
19:00-19:05 HOUR	49.2	45.6
19:05-19:10 HOUR	50.1	46.0
19:10-19:15 HOUR	48.3	45.1
19:15-19:20 HOUR	53.0	50.0
19:20-19:25 HOUR	50.4	46.8
19:25-19:30 HOUR	52.2	49.6
19:30-19:35 HOUR	52.4	49.6
19:35-19:40 HOUR	50.5	48.0
19:40-19:45 HOUR	49.2	47.4

TIME*	RESULT dB(A)	
	บริเวณชุมชนมารมารถ-เขตกาก (N4)	
	MAY 25 - 26, 2025	
	T25AL816-0009	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
19:45-19:50 HOUR	45.5	43.1
19:50-19:55 HOUR	50.5	47.9
19:55-20:00 HOUR	50.7	46.0
20:00-20:05 HOUR	48.5	45.4
20:05-20:10 HOUR	48.9	46.4
20:10-20:15 HOUR	49.9	47.0
20:15-20:20 HOUR	47.6	45.8
20:20-20:25 HOUR	49.1	47.3
20:25-20:30 HOUR	52.1	48.9
20:30-20:35 HOUR	47.6	45.2
20:35-20:40 HOUR	48.3	44.3
20:40-20:45 HOUR	46.9	44.1
20:45-20:50 HOUR	51.0	47.8
20:50-20:55 HOUR	51.5	47.0
20:55-21:00 HOUR	51.1	48.7
21:00-21:05 HOUR	52.2	48.9
21:05-21:10 HOUR	51.9	49.0
21:10-21:15 HOUR	51.6	49.4
21:15-21:20 HOUR	51.1	47.9
21:20-21:25 HOUR	51.0	48.0
21:25-21:30 HOUR	49.3	46.9
21:30-21:35 HOUR	51.7	48.4
21:35-21:40 HOUR	47.0	44.3
21:40-21:45 HOUR	51.6	48.5
21:45-21:50 HOUR	48.7	45.4
21:50-21:55 HOUR	48.6	43.1
21:55-22:00 HOUR	47.9	44.5
22:00-22:05 HOUR	47.3	44.4
22:05-22:10 HOUR	51.3	47.5
22:10-22:15 HOUR	47.7	44.4
22:15-22:20 HOUR	49.7	46.8
22:20-22:25 HOUR	47.4	44.6
22:25-22:30 HOUR	49.8	46.6
22:30-22:35 HOUR	47.7	44.1
22:35-22:40 HOUR	47.8	43.9
22:40-22:45 HOUR	49.9	46.0
22:45-22:50 HOUR	46.0	42.3
22:50-22:55 HOUR	47.1	44.2
22:55-23:00 HOUR	50.3	46.8
23:00-23:05 HOUR	48.2	45.0
23:05-23:10 HOUR	47.1	44.7
23:10-23:15 HOUR	48.2	45.0
23:15-23:20 HOUR	48.7	45.3
23:20-23:25 HOUR	45.3	42.1
23:25-23:30 HOUR	45.3	42.5
23:30-23:35 HOUR	44.6	42.1
23:35-23:40 HOUR	49.1	45.5
23:40-23:45 HOUR	44.5	42.3
23:45-23:50 HOUR	44.8	42.3
23:50-23:55 HOUR	45.8	43.3
23:55-00:00 HOUR	50.2	48.8

TIME*	RESULT dB(A)	
	บริเวณชุมชนรอบวัด-ซากกลาง (N4)	
	MAY 25 - 26, 2025	
	T25AL816-0009	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
00:00-00:05 HOUR	45.9	43.6
00:05-00:10 HOUR	46.8	43.8
00:10-00:15 HOUR	51.2	48.4
00:15-00:20 HOUR	46.5	44.3
00:20-00:25 HOUR	49.4	46.5
00:25-00:30 HOUR	46.5	43.6
00:30-00:35 HOUR	49.9	47.4
00:35-00:40 HOUR	50.9	48.3
00:40-00:45 HOUR	51.0	47.8
00:45-00:50 HOUR	48.7	46.3
00:50-00:55 HOUR	49.5	47.0
00:55-01:00 HOUR	51.0	48.3
01:00-01:05 HOUR	52.6	48.8
01:05-01:10 HOUR	51.2	48.5
01:10-01:15 HOUR	47.5	44.7
01:15-01:20 HOUR	52.5	49.2
01:20-01:25 HOUR	50.1	47.0
01:25-01:30 HOUR	50.2	47.5
01:30-01:35 HOUR	48.5	45.9
01:35-01:40 HOUR	47.1	44.5
01:40-01:45 HOUR	50.2	47.8
01:45-01:50 HOUR	47.3	44.3
01:50-01:55 HOUR	48.6	46.4
01:55-02:00 HOUR	50.1	47.6
02:00-02:05 HOUR	51.4	48.9
02:05-02:10 HOUR	51.7	48.7
02:10-02:15 HOUR	52.0	48.7
02:15-02:20 HOUR	48.6	45.9
02:20-02:25 HOUR	52.1	49.1
02:25-02:30 HOUR	47.3	44.1
02:30-02:35 HOUR	48.7	46.1
02:35-02:40 HOUR	52.3	49.2
02:40-02:45 HOUR	46.9	44.0
02:45-02:50 HOUR	50.0	48.0
02:50-02:55 HOUR	47.5	45.3
02:55-03:00 HOUR	47.4	44.5
03:00-03:05 HOUR	49.6	46.7
03:05-03:10 HOUR	49.8	46.8
03:10-03:15 HOUR	50.3	47.9
03:15-03:20 HOUR	44.9	42.4
03:20-03:25 HOUR	46.7	44.7
03:25-03:30 HOUR	49.6	48.0
03:30-03:35 HOUR	45.9	43.9
03:35-03:40 HOUR	48.9	46.6
03:40-03:45 HOUR	51.6	48.8
03:45-03:50 HOUR	49.9	47.6
03:50-03:55 HOUR	47.5	45.7
03:55-04:00 HOUR	44.2	42.2
04:00-04:05 HOUR	43.7	42.2
04:05-04:10 HOUR	44.9	42.4
04:10-04:15 HOUR	46.9	44.5

TIME*	RESULT dB(A)	
	บริเวณชุมชนรอบวัด-ซากหูกง (N4)	
	MAY 25 - 26, 2025	
	T25AL816-0009	
	LAeq 5 min	LA90 5 min
04:15-04:20 HOUR	50.4	47.7
04:20-04:25 HOUR	47.9	45.9
04:25-04:30 HOUR	52.0	50.2
04:30-04:35 HOUR	50.1	48.1
04:35-04:40 HOUR	47.2	44.7
04:40-04:45 HOUR	52.4	49.9
04:45-04:50 HOUR	45.6	42.9
04:50-04:55 HOUR	52.1	48.8
04:55-05:00 HOUR	47.6	44.9
05:00-05:05 HOUR	50.2	47.7
05:05-05:10 HOUR	52.0	48.6
05:10-05:15 HOUR	45.5	42.3
05:15-05:20 HOUR	46.0	43.9
05:20-05:25 HOUR	49.1	47.0
05:25-05:30 HOUR	46.5	43.9
05:30-05:35 HOUR	46.6	44.1
05:35-05:40 HOUR	46.0	44.1
05:40-05:45 HOUR	49.5	46.7
05:45-05:50 HOUR	48.6	46.1
05:50-05:55 HOUR	46.5	44.6
05:55-06:00 HOUR	48.7	46.8
06:00-06:05 HOUR	53.9	51.8
06:05-06:10 HOUR	50.9	49.4
06:10-06:15 HOUR	48.8	46.2
06:15-06:20 HOUR	55.0	51.7
06:20-06:25 HOUR	54.0	52.2
06:25-06:30 HOUR	50.2	48.6
06:30-06:35 HOUR	50.1	48.3
06:35-06:40 HOUR	48.1	46.0
06:40-06:45 HOUR	51.7	50.4
06:45-06:50 HOUR	53.2	51.7
06:50-06:55 HOUR	51.4	50.0
06:55-07:00 HOUR	47.8	46.2

TIME*	RESULT dB(A)	
	บริเวณชุมชนตามขลุ่ย-ขากกลาง (M4)	
	MAY 26 - 27, 2025	
	T25AL816-0010	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
07:00-07:05 HOUR	48.2	46.3
07:05-07:10 HOUR	47.8	46.2
07:10-07:15 HOUR	47.9	46.4
07:15-07:20 HOUR	48.2	46.8
07:20-07:25 HOUR	52.7	51.3
07:25-07:30 HOUR	50.1	48.3
07:30-07:35 HOUR	50.0	48.8
07:35-07:40 HOUR	48.2	46.5
07:40-07:45 HOUR	49.1	47.5
07:45-07:50 HOUR	49.2	47.8
07:50-07:55 HOUR	49.1	48.0
07:55-08:00 HOUR	47.1	45.7
08:00-08:05 HOUR	47.6	45.7
08:05-08:10 HOUR	52.9	51.4
08:10-08:15 HOUR	49.3	46.8
08:15-08:20 HOUR	51.6	50.1
08:20-08:25 HOUR	52.2	51.0
08:25-08:30 HOUR	50.6	49.0
08:30-08:35 HOUR	47.2	45.4
08:35-08:40 HOUR	52.0	50.2
08:40-08:45 HOUR	50.6	48.5
08:45-08:50 HOUR	50.5	48.7
08:50-08:55 HOUR	50.0	48.3
08:55-09:00 HOUR	48.0	45.6
09:00-09:05 HOUR	50.0	48.3
09:05-09:10 HOUR	51.6	49.8
09:10-09:15 HOUR	52.5	50.5
09:15-09:20 HOUR	50.5	48.4
09:20-09:25 HOUR	53.3	50.9
09:25-09:30 HOUR	50.2	48.4
09:30-09:35 HOUR	50.2	48.2
09:35-09:40 HOUR	46.6	44.2
09:40-09:45 HOUR	51.3	48.4
09:45-09:50 HOUR	52.2	49.3
09:50-09:55 HOUR	50.8	49.5
09:55-10:00 HOUR	52.7	51.7
10:00-10:05 HOUR	50.7	50.0
10:05-10:10 HOUR	48.5	47.5
10:10-10:15 HOUR	50.2	48.6
10:15-10:20 HOUR	53.0	51.4
10:20-10:25 HOUR	46.8	46.6
10:25-10:30 HOUR	47.8	46.4
10:30-10:35 HOUR	49.5	48.6
10:35-10:40 HOUR	47.6	48.2
10:40-10:45 HOUR	51.1	52.3
10:45-10:50 HOUR	46.2	46.8
10:50-10:55 HOUR	47.1	46.9
10:55-11:00 HOUR	48.4	48.2
11:00-11:05 HOUR	53.3	53.0
11:05-11:10 HOUR	50.6	50.8
11:10-11:15 HOUR	48.0	48.0

TIME*	RESULT dB(A)	
	บริเวณชุมชนบางพลู-ชากกลาง (N4)	
	MAY 26 - 27, 2025	
	T25AL816-0010	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
11:15-11:20 HOUR	51.5	51.8
11:20-11:25 HOUR	52.7	52.7
11:25-11:30 HOUR	49.2	48.5
11:30-11:35 HOUR	51.0	50.2
11:35-11:40 HOUR	46.2	44.9
11:40-11:45 HOUR	52.3	51.0
11:45-11:50 HOUR	52.6	51.3
11:50-11:55 HOUR	46.6	44.8
11:55-12:00 HOUR	51.2	50.0
12:00-12:05 HOUR	48.5	46.7
12:05-12:10 HOUR	48.9	47.5
12:10-12:15 HOUR	45.9	44.5
12:15-12:20 HOUR	48.3	46.8
12:20-12:25 HOUR	47.3	45.4
12:25-12:30 HOUR	49.7	47.3
12:30-12:35 HOUR	45.5	43.1
12:35-12:40 HOUR	48.3	46.0
12:40-12:45 HOUR	48.5	47.1
12:45-12:50 HOUR	52.8	52.0
12:50-12:55 HOUR	53.1	51.4
12:55-13:00 HOUR	52.0	50.9
13:00-13:05 HOUR	52.5	51.7
13:05-13:10 HOUR	47.7	47.1
13:10-13:15 HOUR	47.0	47.7
13:15-13:20 HOUR	46.8	47.4
13:20-13:25 HOUR	46.9	47.9
13:25-13:30 HOUR	51.1	51.7
13:30-13:35 HOUR	46.0	46.7
13:35-13:40 HOUR	48.6	48.7
13:40-13:45 HOUR	45.1	45.8
13:45-13:50 HOUR	51.7	51.9
13:50-13:55 HOUR	51.7	51.6
13:55-14:00 HOUR	48.8	48.9
14:00-14:05 HOUR	49.9	49.3
14:05-14:10 HOUR	47.3	47.0
14:10-14:15 HOUR	50.3	49.0
14:15-14:20 HOUR	47.7	47.1
14:20-14:25 HOUR	51.8	50.8
14:25-14:30 HOUR	47.0	47.1
14:30-14:35 HOUR	48.8	48.5
14:35-14:40 HOUR	50.2	49.5
14:40-14:45 HOUR	49.1	48.4
14:45-14:50 HOUR	52.6	51.5
14:50-14:55 HOUR	52.6	51.5
14:55-15:00 HOUR	48.5	47.3
15:00-15:05 HOUR	50.7	50.4
15:05-15:10 HOUR	51.7	50.7
15:10-15:15 HOUR	48.2	46.7
15:15-15:20 HOUR	47.0	46.4
15:20-15:25 HOUR	50.9	50.3
15:25-15:30 HOUR	51.3	51.4

TIME*	RESULT dB(A)	
	บริเวณถนนพหลโยธิน-วัดจตุรพักตรพิมาน (N4)	
	MAY 26 - 27, 2025	
	T25AL816-0010	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
15:30-15:35 HOUR	48.0	48.9
15:35-15:40 HOUR	45.4	45.6
15:40-15:45 HOUR	49.8	48.6
15:45-15:50 HOUR	49.4	48.5
15:50-15:55 HOUR	52.9	51.3
15:55-16:00 HOUR	48.4	47.6
16:00-16:05 HOUR	49.9	49.3
16:05-16:10 HOUR	48.3	47.3
16:10-16:15 HOUR	48.6	47.3
16:15-16:20 HOUR	50.4	48.9
16:20-16:25 HOUR	46.7	44.9
16:25-16:30 HOUR	49.2	46.7
16:30-16:35 HOUR	46.6	44.9
16:35-16:40 HOUR	50.9	49.8
16:40-16:45 HOUR	49.2	46.7
16:45-16:50 HOUR	52.4	49.1
16:50-16:55 HOUR	49.5	46.3
16:55-17:00 HOUR	52.9	50.1
17:00-17:05 HOUR	47.7	46.4
17:05-17:10 HOUR	46.1	44.5
17:10-17:15 HOUR	46.7	44.5
17:15-17:20 HOUR	49.2	47.4
17:20-17:25 HOUR	47.3	45.8
17:25-17:30 HOUR	46.2	45.2
17:30-17:35 HOUR	51.0	50.1
17:35-17:40 HOUR	53.9	51.6
17:40-17:45 HOUR	50.8	47.3
17:45-17:50 HOUR	51.1	48.9
17:50-17:55 HOUR	50.8	48.7
17:55-18:00 HOUR	49.4	46.7
18:00-18:05 HOUR	51.9	49.8
18:05-18:10 HOUR	49.6	47.2
18:10-18:15 HOUR	50.8	48.6
18:15-18:20 HOUR	49.0	47.8
18:20-18:25 HOUR	46.6	45.5
18:25-18:30 HOUR	50.1	47.6
18:30-18:35 HOUR	49.0	47.6
18:35-18:40 HOUR	51.6	48.9
18:40-18:45 HOUR	48.0	46.2
18:45-18:50 HOUR	52.0	50.6
18:50-18:55 HOUR	51.1	49.0
18:55-19:00 HOUR	51.9	50.5
19:00-19:05 HOUR	53.4	50.9
19:05-19:10 HOUR	51.6	48.4
19:10-19:15 HOUR	48.6	45.8
19:15-19:20 HOUR	54.2	51.4
19:20-19:25 HOUR	54.2	51.1
19:25-19:30 HOUR	49.3	46.7
19:30-19:35 HOUR	49.3	46.6
19:35-19:40 HOUR	53.4	50.2
19:40-19:45 HOUR	51.1	47.8

TIME*	RESULT dB(A)	
	บริเวณชุมชนรอบตลาด-ซากกลาง (N4)	
	MAY 26 - 27, 2025	
	T25AL816-0010	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
19:45-19:50 HOUR	51.0	48.3
19:50-19:55 HOUR	45.5	43.8
19:55-20:00 HOUR	54.2	50.8
20:00-20:05 HOUR	49.4	46.9
20:05-20:10 HOUR	50.1	47.1
20:10-20:15 HOUR	50.2	47.2
20:15-20:20 HOUR	49.1	46.6
20:20-20:25 HOUR	48.7	46.4
20:25-20:30 HOUR	54.4	50.9
20:30-20:35 HOUR	53.9	51.4
20:35-20:40 HOUR	50.3	47.7
20:40-20:45 HOUR	52.8	50.4
20:45-20:50 HOUR	52.8	50.2
20:50-20:55 HOUR	52.2	48.5
20:55-21:00 HOUR	48.8	47.0
21:00-21:05 HOUR	52.8	50.3
21:05-21:10 HOUR	48.6	46.6
21:10-21:15 HOUR	49.2	46.1
21:15-21:20 HOUR	53.2	50.0
21:20-21:25 HOUR	46.3	43.4
21:25-21:30 HOUR	49.1	47.2
21:30-21:35 HOUR	49.9	46.9
21:35-21:40 HOUR	48.4	45.6
21:40-21:45 HOUR	53.1	50.0
21:45-21:50 HOUR	46.8	43.9
21:50-21:55 HOUR	53.8	48.8
21:55-22:00 HOUR	48.9	45.3
22:00-22:05 HOUR	45.5	42.5
22:05-22:10 HOUR	46.6	42.4
22:10-22:15 HOUR	48.1	44.4
22:15-22:20 HOUR	47.2	44.0
22:20-22:25 HOUR	48.4	44.7
22:25-22:30 HOUR	45.1	41.9
22:30-22:35 HOUR	51.6	48.7
22:35-22:40 HOUR	50.5	47.2
22:40-22:45 HOUR	52.0	48.7
22:45-22:50 HOUR	49.7	46.5
22:50-22:55 HOUR	49.5	46.8
22:55-23:00 HOUR	45.2	42.7
23:00-23:05 HOUR	49.6	46.4
23:05-23:10 HOUR	49.3	46.6
23:10-23:15 HOUR	44.9	42.4
23:15-23:20 HOUR	51.8	48.2
23:20-23:25 HOUR	50.1	47.4
23:25-23:30 HOUR	50.2	47.7
23:30-23:35 HOUR	46.8	43.2
23:35-23:40 HOUR	47.8	44.2
23:40-23:45 HOUR	49.7	46.6
23:45-23:50 HOUR	49.5	46.3
23:50-23:55 HOUR	44.8	42.0
23:55-00:00 HOUR	49.4	46.1

TIME*	RESULT dB(A)	
	บริเวณถนนพหลโยธิน-บางนา (N4)	
	MAY 26 - 27, 2025	
	T25AL816-0010	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
00:00-00:05 HOUR	47.5	44.2
00:05-00:10 HOUR	47.1	43.4
00:10-00:15 HOUR	49.2	46.4
00:15-00:20 HOUR	48.5	46.1
00:20-00:25 HOUR	47.3	44.6
00:25-00:30 HOUR	50.7	48.8
00:30-00:35 HOUR	45.7	42.7
00:35-00:40 HOUR	51.8	49.1
00:40-00:45 HOUR	51.1	47.7
00:45-00:50 HOUR	46.1	42.9
00:50-00:55 HOUR	48.9	46.4
00:55-01:00 HOUR	50.0	47.5
01:00-01:05 HOUR	48.6	45.9
01:05-01:10 HOUR	49.0	46.4
01:10-01:15 HOUR	47.0	44.5
01:15-01:20 HOUR	48.0	45.5
01:20-01:25 HOUR	51.3	49.1
01:25-01:30 HOUR	47.7	45.5
01:30-01:35 HOUR	50.5	48.4
01:35-01:40 HOUR	51.5	49.2
01:40-01:45 HOUR	47.1	45.3
01:45-01:50 HOUR	45.8	43.0
01:50-01:55 HOUR	47.2	45.0
01:55-02:00 HOUR	48.7	46.2
02:00-02:05 HOUR	48.2	45.4
02:05-02:10 HOUR	47.2	44.8
02:10-02:15 HOUR	48.4	45.6
02:15-02:20 HOUR	51.4	48.8
02:20-02:25 HOUR	50.4	47.6
02:25-02:30 HOUR	47.1	43.8
02:30-02:35 HOUR	46.9	43.8
02:35-02:40 HOUR	47.7	44.9
02:40-02:45 HOUR	49.7	46.5
02:45-02:50 HOUR	48.6	45.8
02:50-02:55 HOUR	49.8	46.6
02:55-03:00 HOUR	49.4	46.2
03:00-03:05 HOUR	48.8	46.3
03:05-03:10 HOUR	51.6	48.9
03:10-03:15 HOUR	49.4	46.5
03:15-03:20 HOUR	45.9	43.7
03:20-03:25 HOUR	49.6	46.5
03:25-03:30 HOUR	46.5	43.8
03:30-03:35 HOUR	46.1	43.6
03:35-03:40 HOUR	51.0	48.7
03:40-03:45 HOUR	48.1	45.7
03:45-03:50 HOUR	48.5	45.9
03:50-03:55 HOUR	46.3	44.4
03:55-04:00 HOUR	52.3	49.4
04:00-04:05 HOUR	50.5	46.8
04:05-04:10 HOUR	51.5	48.4
04:10-04:15 HOUR	49.6	46.8

TIME*	RESULT dB(A)	
	บริเวณชุมชนรอบขลุ่ย-ซากกลาง (N4)	
	MAY 26 - 27, 2025	
	T25AL816-0010	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
04:15-04:20 HOUR	48.3	45.8
04:20-04:25 HOUR	48.0	45.7
04:25-04:30 HOUR	50.1	47.9
04:30-04:35 HOUR	49.5	46.9
04:35-04:40 HOUR	48.1	45.7
04:40-04:45 HOUR	47.4	45.0
04:45-04:50 HOUR	47.3	45.1
04:50-04:55 HOUR	50.7	48.1
04:55-05:00 HOUR	49.8	47.1
05:00-05:05 HOUR	51.8	48.7
05:05-05:10 HOUR	46.7	43.7
05:10-05:15 HOUR	49.8	46.6
05:15-05:20 HOUR	46.2	43.1
05:20-05:25 HOUR	44.8	42.6
05:25-05:30 HOUR	46.8	44.1
05:30-05:35 HOUR	50.2	47.8
05:35-05:40 HOUR	48.0	45.7
05:40-05:45 HOUR	51.0	48.4
05:45-05:50 HOUR	52.2	50.0
05:50-05:55 HOUR	49.3	47.5
05:55-06:00 HOUR	51.4	49.3
06:00-06:05 HOUR	47.7	45.3
06:05-06:10 HOUR	53.3	51.9
06:10-06:15 HOUR	48.1	46.0
06:15-06:20 HOUR	50.4	47.8
06:20-06:25 HOUR	52.8	50.8
06:25-06:30 HOUR	52.0	50.3
06:30-06:35 HOUR	49.4	48.2
06:35-06:40 HOUR	49.6	48.2
06:40-06:45 HOUR	54.0	52.3
06:45-06:50 HOUR	50.3	48.5
06:50-06:55 HOUR	51.8	49.9
06:55-07:00 HOUR	49.2	47.1

TIME*	RESULT dB(A)	
	บริเวณชุมชนรอบโรงงานอุตสาหกรรม (N4)	
	MAY 27 - 28, 2025	
	T25AL816-0011	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
07:00-07:05 HOUR	53.4	52.0
07:05-07:10 HOUR	48.9	46.8
07:10-07:15 HOUR	51.0	49.2
07:15-07:20 HOUR	49.5	47.3
07:20-07:25 HOUR	47.0	44.9
07:25-07:30 HOUR	48.8	47.0
07:30-07:35 HOUR	50.2	48.4
07:35-07:40 HOUR	51.7	49.9
07:40-07:45 HOUR	50.6	49.3
07:45-07:50 HOUR	53.5	51.5
07:50-07:55 HOUR	54.1	51.7
07:55-08:00 HOUR	51.7	49.5
08:00-08:05 HOUR	48.7	47.1
08:05-08:10 HOUR	49.2	47.9
08:10-08:15 HOUR	53.2	51.8
08:15-08:20 HOUR	47.3	45.9
08:20-08:25 HOUR	48.4	47.4
08:25-08:30 HOUR	47.2	45.6
08:30-08:35 HOUR	47.2	45.8
08:35-08:40 HOUR	49.0	47.8
08:40-08:45 HOUR	49.6	48.0
08:45-08:50 HOUR	51.4	48.9
08:50-08:55 HOUR	47.5	45.5
08:55-09:00 HOUR	49.3	46.3
09:00-09:05 HOUR	52.9	51.6
09:05-09:10 HOUR	51.5	50.2
09:10-09:15 HOUR	48.4	47.1
09:15-09:20 HOUR	52.8	50.8
09:20-09:25 HOUR	51.9	49.2
09:25-09:30 HOUR	50.9	48.6
09:30-09:35 HOUR	50.6	48.6
09:35-09:40 HOUR	52.0	49.7
09:40-09:45 HOUR	53.0	50.5
09:45-09:50 HOUR	50.7	47.6
09:50-09:55 HOUR	50.9	49.0
09:55-10:00 HOUR	49.7	48.2
10:00-10:05 HOUR	50.0	48.3
10:05-10:10 HOUR	52.1	49.9
10:10-10:15 HOUR	47.0	44.9
10:15-10:20 HOUR	45.4	44.1
10:20-10:25 HOUR	49.2	47.9
10:25-10:30 HOUR	49.9	47.7
10:30-10:35 HOUR	49.4	47.6
10:35-10:40 HOUR	50.3	49.8
10:40-10:45 HOUR	47.1	46.9
10:45-10:50 HOUR	50.3	50.6
10:50-10:55 HOUR	47.7	47.7
10:55-11:00 HOUR	50.5	50.1
11:00-11:05 HOUR	50.4	50.0
11:05-11:10 HOUR	53.1	52.9
11:10-11:15 HOUR	53.2	52.2

TIME*	RESULT dB(A)	
	บริเวณถนนถนนลาด-ซากกลาง (N4)	
	MAY 27 - 28, 2025	
	T25AL816-0011	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
11:15-11:20 HOUR	51.1	51.0
11:20-11:25 HOUR	53.2	51.9
11:25-11:30 HOUR	49.6	48.4
11:30-11:35 HOUR	47.2	44.8
11:35-11:40 HOUR	52.0	49.8
11:40-11:45 HOUR	50.8	48.9
11:45-11:50 HOUR	50.9	48.9
11:50-11:55 HOUR	48.1	46.0
11:55-12:00 HOUR	50.5	49.1
12:00-12:05 HOUR	51.6	49.6
12:05-12:10 HOUR	51.5	49.5
12:10-12:15 HOUR	51.4	49.6
12:15-12:20 HOUR	49.7	47.7
12:20-12:25 HOUR	49.8	47.5
12:25-12:30 HOUR	46.7	44.6
12:30-12:35 HOUR	46.6	45.0
12:35-12:40 HOUR	46.7	45.1
12:40-12:45 HOUR	48.7	48.4
12:45-12:50 HOUR	52.8	52.8
12:50-12:55 HOUR	47.7	47.2
12:55-13:00 HOUR	51.4	50.9
13:00-13:05 HOUR	48.3	47.9
13:05-13:10 HOUR	52.5	52.9
13:10-13:15 HOUR	46.7	47.0
13:15-13:20 HOUR	49.6	50.2
13:20-13:25 HOUR	52.4	52.9
13:25-13:30 HOUR	52.0	52.8
13:30-13:35 HOUR	50.4	51.2
13:35-13:40 HOUR	47.8	49.3
13:40-13:45 HOUR	46.1	47.4
13:45-13:50 HOUR	48.1	49.5
13:50-13:55 HOUR	52.3	53.3
13:55-14:00 HOUR	50.2	50.8
14:00-14:05 HOUR	50.1	50.2
14:05-14:10 HOUR	52.2	52.0
14:10-14:15 HOUR	51.2	50.4
14:15-14:20 HOUR	49.3	49.5
14:20-14:25 HOUR	49.2	49.1
14:25-14:30 HOUR	50.3	50.0
14:30-14:35 HOUR	49.2	48.9
14:35-14:40 HOUR	51.5	50.5
14:40-14:45 HOUR	48.8	48.2
14:45-14:50 HOUR	52.1	51.1
14:50-14:55 HOUR	46.4	45.3
14:55-15:00 HOUR	48.3	47.4
15:00-15:05 HOUR	48.0	47.6
15:05-15:10 HOUR	48.2	47.4
15:10-15:15 HOUR	48.1	46.5
15:15-15:20 HOUR	50.2	49.6
15:20-15:25 HOUR	53.5	52.9
15:25-15:30 HOUR	47.8	47.0

TIME*	RESULT dB(A)	
	บริเวณชุมชนบางพลี-บางกลาง (N4)	
	MAY 27 - 28, 2025	
	T25AL816-0011	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
15:30-15:35 HOUR	48.0	47.7
15:35-15:40 HOUR	46.2	45.4
15:40-15:45 HOUR	52.1	50.3
15:45-15:50 HOUR	51.5	50.3
15:50-15:55 HOUR	48.8	47.4
15:55-16:00 HOUR	52.4	51.7
16:00-16:05 HOUR	51.6	50.1
16:05-16:10 HOUR	49.1	47.4
16:10-16:15 HOUR	50.7	49.2
16:15-16:20 HOUR	46.9	45.0
16:20-16:25 HOUR	50.9	48.1
16:25-16:30 HOUR	48.9	46.9
16:30-16:35 HOUR	50.7	48.0
16:35-16:40 HOUR	52.2	49.6
16:40-16:45 HOUR	53.1	51.0
16:45-16:50 HOUR	51.8	48.6
16:50-16:55 HOUR	51.7	48.6
16:55-17:00 HOUR	49.6	47.0
17:00-17:05 HOUR	47.6	46.1
17:05-17:10 HOUR	46.3	45.2
17:10-17:15 HOUR	51.4	50.1
17:15-17:20 HOUR	50.0	49.1
17:20-17:25 HOUR	49.8	48.3
17:25-17:30 HOUR	50.3	49.2
17:30-17:35 HOUR	50.8	50.3
17:35-17:40 HOUR	54.2	53.2
17:40-17:45 HOUR	51.7	48.2
17:45-17:50 HOUR	52.2	50.4
17:50-17:55 HOUR	55.3	52.9
17:55-18:00 HOUR	53.8	52.3
18:00-18:05 HOUR	48.6	47.3
18:05-18:10 HOUR	55.5	53.5
18:10-18:15 HOUR	52.7	50.7
18:15-18:20 HOUR	52.2	51.9
18:20-18:25 HOUR	51.2	49.8
18:25-18:30 HOUR	53.3	50.6
18:30-18:35 HOUR	54.7	52.5
18:35-18:40 HOUR	49.1	46.7
18:40-18:45 HOUR	52.2	49.9
18:45-18:50 HOUR	52.0	50.6
18:50-18:55 HOUR	48.9	47.3
18:55-19:00 HOUR	49.4	47.3
19:00-19:05 HOUR	52.2	48.9
19:05-19:10 HOUR	52.3	49.0
19:10-19:15 HOUR	47.8	45.3
19:15-19:20 HOUR	48.6	45.3
19:20-19:25 HOUR	54.4	51.3
19:25-19:30 HOUR	53.7	50.8
19:30-19:35 HOUR	48.6	45.5
19:35-19:40 HOUR	50.3	47.4
19:40-19:45 HOUR	49.1	46.2

TIME*	RESULT dB(A)	
	บริเวณชุมชนตามจุด-ซากกลาง (N4)	
	MAY 27 - 28, 2025	
	T25AL816-0011	
	LAeq 5 min	LA90 5 min
19:45-19:50 HOUR	46.9	44.8
19:50-19:55 HOUR	49.3	46.9
19:55-20:00 HOUR	53.7	49.7
20:00-20:05 HOUR	47.8	45.1
20:05-20:10 HOUR	51.4	48.8
20:10-20:15 HOUR	53.7	50.4
20:15-20:20 HOUR	51.1	49.2
20:20-20:25 HOUR	47.8	45.6
20:25-20:30 HOUR	54.9	51.2
20:30-20:35 HOUR	51.0	48.8
20:35-20:40 HOUR	47.3	45.1
20:40-20:45 HOUR	53.1	50.6
20:45-20:50 HOUR	52.1	49.3
20:50-20:55 HOUR	54.3	50.5
20:55-21:00 HOUR	53.7	51.0
21:00-21:05 HOUR	51.6	48.8
21:05-21:10 HOUR	51.5	48.7
21:10-21:15 HOUR	48.6	46.0
21:15-21:20 HOUR	47.3	44.8
21:20-21:25 HOUR	49.7	47.0
21:25-21:30 HOUR	50.1	47.6
21:30-21:35 HOUR	47.2	44.7
21:35-21:40 HOUR	50.9	48.2
21:40-21:45 HOUR	52.1	49.8
21:45-21:50 HOUR	49.0	47.0
21:50-21:55 HOUR	50.7	46.1
21:55-22:00 HOUR	48.3	45.1
22:00-22:05 HOUR	46.5	44.1
22:05-22:10 HOUR	45.5	42.1
22:10-22:15 HOUR	47.0	44.2
22:15-22:20 HOUR	49.0	46.5
22:20-22:25 HOUR	48.1	45.4
22:25-22:30 HOUR	47.9	45.6
22:30-22:35 HOUR	49.7	47.2
22:35-22:40 HOUR	45.6	42.6
22:40-22:45 HOUR	51.0	48.3
22:45-22:50 HOUR	46.0	43.3
22:50-22:55 HOUR	50.6	48.2
22:55-23:00 HOUR	45.1	42.1
23:00-23:05 HOUR	49.6	47.3
23:05-23:10 HOUR	47.9	45.3
23:10-23:15 HOUR	50.3	48.2
23:15-23:20 HOUR	49.1	46.3
23:20-23:25 HOUR	50.9	48.1
23:25-23:30 HOUR	48.0	45.2
23:30-23:35 HOUR	45.0	42.3
23:35-23:40 HOUR	51.7	48.1
23:40-23:45 HOUR	47.5	44.1
23:45-23:50 HOUR	47.9	45.3
23:50-23:55 HOUR	50.4	47.2
23:55-00:00 HOUR	50.9	48.3

TIME*	RESULT dB(A)	
	บริเวณชุมชนถนนลาด-ชากกลาง (N4)	
	MAY 27 - 28, 2025	
	T25AL816-0011	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
00:00-00:05 HOUR	49.2	46.5
00:05-00:10 HOUR	45.3	42.5
00:10-00:15 HOUR	49.1	46.3
00:15-00:20 HOUR	46.3	44.2
00:20-00:25 HOUR	50.0	47.6
00:25-00:30 HOUR	50.7	48.7
00:30-00:35 HOUR	50.4	47.9
00:35-00:40 HOUR	46.5	43.9
00:40-00:45 HOUR	50.4	47.8
00:45-00:50 HOUR	49.3	47.2
00:50-00:55 HOUR	48.3	46.2
00:55-01:00 HOUR	49.3	47.6
01:00-01:05 HOUR	48.2	46.4
01:05-01:10 HOUR	45.1	43.4
01:10-01:15 HOUR	46.3	44.6
01:15-01:20 HOUR	50.5	48.4
01:20-01:25 HOUR	49.9	48.1
01:25-01:30 HOUR	45.6	44.1
01:30-01:35 HOUR	46.1	44.7
01:35-01:40 HOUR	51.1	49.4
01:40-01:45 HOUR	46.4	44.4
01:45-01:50 HOUR	46.1	44.0
01:50-01:55 HOUR	48.4	47.3
01:55-02:00 HOUR	46.9	45.4
02:00-02:05 HOUR	46.3	44.4
02:05-02:10 HOUR	46.8	44.5
02:10-02:15 HOUR	49.1	47.6
02:15-02:20 HOUR	50.7	48.6
02:20-02:25 HOUR	47.4	44.8
02:25-02:30 HOUR	48.1	45.6
02:30-02:35 HOUR	47.2	45.4
02:35-02:40 HOUR	46.9	44.5
02:40-02:45 HOUR	48.9	46.2
02:45-02:50 HOUR	50.8	48.0
02:50-02:55 HOUR	50.9	48.4
02:55-03:00 HOUR	49.4	47.2
03:00-03:05 HOUR	47.5	45.3
03:05-03:10 HOUR	50.0	47.7
03:10-03:15 HOUR	49.6	47.4
03:15-03:20 HOUR	51.2	49.1
03:20-03:25 HOUR	45.4	43.3
03:25-03:30 HOUR	49.2	47.7
03:30-03:35 HOUR	51.6	49.3
03:35-03:40 HOUR	48.0	46.5
03:40-03:45 HOUR	51.6	50.0
03:45-03:50 HOUR	47.0	44.8
03:50-03:55 HOUR	49.1	47.1
03:55-04:00 HOUR	50.5	48.5
04:00-04:05 HOUR	51.5	49.4
04:05-04:10 HOUR	51.7	49.6
04:10-04:15 HOUR	50.9	48.8

TIME*	RESULT dB(A)	
	บริเวณชุมชนบางนาชลูด-เขตกาง (N4)	
	MAY 27 - 28, 2025	
	T25AL816-0011	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
04:15-04:20 HOUR	51.2	48.7
04:20-04:25 HOUR	49.5	47.5
04:25-04:30 HOUR	51.6	49.9
04:30-04:35 HOUR	51.7	49.8
04:35-04:40 HOUR	51.4	49.4
04:40-04:45 HOUR	46.4	44.5
04:45-04:50 HOUR	49.2	47.7
04:50-04:55 HOUR	48.2	46.9
04:55-05:00 HOUR	45.3	43.5
05:00-05:05 HOUR	50.6	48.3
05:05-05:10 HOUR	48.9	46.5
05:10-05:15 HOUR	46.5	44.6
05:15-05:20 HOUR	47.6	45.4
05:20-05:25 HOUR	49.4	47.7
05:25-05:30 HOUR	48.0	46.8
05:30-05:35 HOUR	50.2	49.0
05:35-05:40 HOUR	49.6	47.6
05:40-05:45 HOUR	50.0	48.5
05:45-05:50 HOUR	48.3	47.5
05:50-05:55 HOUR	49.0	47.8
05:55-06:00 HOUR	45.7	43.7
06:00-06:05 HOUR	48.4	46.6
06:05-06:10 HOUR	48.1	45.9
06:10-06:15 HOUR	54.3	51.7
06:15-06:20 HOUR	49.9	46.4
06:20-06:25 HOUR	50.1	47.7
06:25-06:30 HOUR	47.7	45.9
06:30-06:35 HOUR	51.5	49.3
06:35-06:40 HOUR	47.0	45.7
06:40-06:45 HOUR	53.3	51.7
06:45-06:50 HOUR	52.6	50.8
06:50-06:55 HOUR	49.5	47.8
06:55-07:00 HOUR	53.6	51.4

TIME*	RESULT dB(A)	
	บริเวณชุมชนรอบวัด-เขตกว้าง (N4)	
	MAY 28 - 29, 2025	
	T25AL816-0012	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
07:00-07:05 HOUR	53.4	51.6
07:05-07:10 HOUR	48.0	46.8
07:10-07:15 HOUR	53.2	52.4
07:15-07:20 HOUR	53.5	52.5
07:20-07:25 HOUR	51.2	50.4
07:25-07:30 HOUR	49.2	48.2
07:30-07:35 HOUR	52.7	51.6
07:35-07:40 HOUR	46.0	45.2
07:40-07:45 HOUR	49.8	49.1
07:45-07:50 HOUR	48.5	47.4
07:50-07:55 HOUR	50.0	48.8
07:55-08:00 HOUR	51.7	50.3
08:00-08:05 HOUR	50.5	48.8
08:05-08:10 HOUR	46.8	45.7
08:10-08:15 HOUR	53.6	52.3
08:15-08:20 HOUR	49.2	47.5
08:20-08:25 HOUR	51.5	50.7
08:25-08:30 HOUR	52.4	51.6
08:30-08:35 HOUR	50.4	49.9
08:35-08:40 HOUR	50.7	50.0
08:40-08:45 HOUR	54.6	53.1
08:45-08:50 HOUR	51.0	49.5
08:50-08:55 HOUR	49.5	48.7
08:55-09:00 HOUR	48.4	46.8
09:00-09:05 HOUR	47.1	46.3
09:05-09:10 HOUR	54.3	52.9
09:10-09:15 HOUR	51.8	50.4
09:15-09:20 HOUR	49.4	48.3
09:20-09:25 HOUR	51.5	50.0
09:25-09:30 HOUR	48.5	47.8
09:30-09:35 HOUR	47.5	46.9
09:35-09:40 HOUR	49.4	48.5
09:40-09:45 HOUR	50.2	48.2
09:45-09:50 HOUR	51.1	49.3
09:50-09:55 HOUR	46.7	45.8
09:55-10:00 HOUR	51.8	51.1
10:00-10:05 HOUR	51.0	50.2
10:05-10:10 HOUR	47.6	47.1
10:10-10:15 HOUR	47.4	46.5
10:15-10:20 HOUR	48.2	47.8
10:20-10:25 HOUR	51.5	50.4
10:25-10:30 HOUR	49.9	48.6
10:30-10:35 HOUR	53.5	52.0
10:35-10:40 HOUR	49.2	47.5
10:40-10:45 HOUR	48.0	45.6
10:45-10:50 HOUR	50.2	49.2
10:50-10:55 HOUR	52.0	51.0
10:55-11:00 HOUR	50.3	48.8
11:00-11:05 HOUR	51.8	50.2
11:05-11:10 HOUR	46.9	46.1
11:10-11:15 HOUR	51.1	48.7

TIME*	RESULT dB(A)	
	บริเวณชุมชนรอบขลุ่ย-ขากกลาง (N4)	
	MAY 28 - 29, 2025	
	T25AL816-0012	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
11:15-11:20 HOUR	51.2	49.4
11:20-11:25 HOUR	51.8	49.8
11:25-11:30 HOUR	46.6	45.6
11:30-11:35 HOUR	52.6	50.4
11:35-11:40 HOUR	46.4	44.5
11:40-11:45 HOUR	47.2	44.2
11:45-11:50 HOUR	51.2	49.5
11:50-11:55 HOUR	47.5	45.7
11:55-12:00 HOUR	47.6	45.7
12:00-12:05 HOUR	50.9	49.5
12:05-12:10 HOUR	49.6	48.7
12:10-12:15 HOUR	47.7	46.3
12:15-12:20 HOUR	51.6	50.7
12:20-12:25 HOUR	51.6	49.4
12:25-12:30 HOUR	52.3	50.9
12:30-12:35 HOUR	51.5	50.5
12:35-12:40 HOUR	53.2	52.6
12:40-12:45 HOUR	50.1	48.7
12:45-12:50 HOUR	47.5	46.6
12:50-12:55 HOUR	47.2	47.3
12:55-13:00 HOUR	51.2	51.9
13:00-13:05 HOUR	50.9	50.8
13:05-13:10 HOUR	49.1	48.5
13:10-13:15 HOUR	49.8	49.6
13:15-13:20 HOUR	51.4	52.1
13:20-13:25 HOUR	46.8	47.3
13:25-13:30 HOUR	49.9	50.1
13:30-13:35 HOUR	52.5	52.4
13:35-13:40 HOUR	50.9	51.1
13:40-13:45 HOUR	46.8	46.7
13:45-13:50 HOUR	50.1	50.0
13:50-13:55 HOUR	47.0	47.8
13:55-14:00 HOUR	49.3	49.7
14:00-14:05 HOUR	50.6	51.0
14:05-14:10 HOUR	46.0	45.7
14:10-14:15 HOUR	47.8	47.7
14:15-14:20 HOUR	50.4	50.4
14:20-14:25 HOUR	45.5	45.6
14:25-14:30 HOUR	48.4	48.2
14:30-14:35 HOUR	47.0	46.8
14:35-14:40 HOUR	50.6	50.1
14:40-14:45 HOUR	46.4	45.8
14:45-14:50 HOUR	47.1	46.8
14:50-14:55 HOUR	51.8	51.3
14:55-15:00 HOUR	51.8	51.2
15:00-15:05 HOUR	51.9	51.7
15:05-15:10 HOUR	52.4	51.4
15:10-15:15 HOUR	51.1	50.0
15:15-15:20 HOUR	49.6	48.2
15:20-15:25 HOUR	47.2	46.2
15:25-15:30 HOUR	51.7	49.6

TIME*	RESULT dB(A)	
	บริเวณชุมชนรอบขลุ่ยพาทกลาง (N4)	
	MAY 28 - 29, 2025	
	T25AL816-0012	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
15:30-15:35 HOUR	49.6	47.4
15:35-15:40 HOUR	46.2	44.1
15:40-15:45 HOUR	46.5	44.2
15:45-15:50 HOUR	50.2	48.5
15:50-15:55 HOUR	52.6	50.8
15:55-16:00 HOUR	49.5	47.4
16:00-16:05 HOUR	51.7	49.6
16:05-16:10 HOUR	48.6	46.2
16:10-16:15 HOUR	46.3	44.2
16:15-16:20 HOUR	52.9	50.2
16:20-16:25 HOUR	51.9	49.6
16:25-16:30 HOUR	47.6	45.5
16:30-16:35 HOUR	51.5	48.5
16:35-16:40 HOUR	48.4	46.6
16:40-16:45 HOUR	49.7	47.5
16:45-16:50 HOUR	52.3	49.5
16:50-16:55 HOUR	47.5	46.2
16:55-17:00 HOUR	49.0	46.9
17:00-17:05 HOUR	51.2	49.6
17:05-17:10 HOUR	50.7	48.8
17:10-17:15 HOUR	48.4	47.0
17:15-17:20 HOUR	46.0	45.1
17:20-17:25 HOUR	46.2	45.1
17:25-17:30 HOUR	48.7	47.8
17:30-17:35 HOUR	48.9	47.8
17:35-17:40 HOUR	52.5	50.2
17:40-17:45 HOUR	52.7	48.8
17:45-17:50 HOUR	47.8	45.8
17:50-17:55 HOUR	49.8	46.4
17:55-18:00 HOUR	51.2	48.3
18:00-18:05 HOUR	50.2	47.5
18:05-18:10 HOUR	52.7	48.8
18:10-18:15 HOUR	55.6	51.9
18:15-18:20 HOUR	52.5	51.1
18:20-18:25 HOUR	47.3	45.6
18:25-18:30 HOUR	50.8	47.6
18:30-18:35 HOUR	50.6	48.5
18:35-18:40 HOUR	53.7	51.7
18:40-18:45 HOUR	50.9	48.4
18:45-18:50 HOUR	49.6	47.0
18:50-18:55 HOUR	46.8	44.1
18:55-19:00 HOUR	47.4	45.0
19:00-19:05 HOUR	47.7	44.7
19:05-19:10 HOUR	52.5	49.0
19:10-19:15 HOUR	48.2	46.4
19:15-19:20 HOUR	48.8	46.2
19:20-19:25 HOUR	49.5	47.0
19:25-19:30 HOUR	53.2	51.3
19:30-19:35 HOUR	54.4	52.2
19:35-19:40 HOUR	50.7	48.1
19:40-19:45 HOUR	48.9	46.0

TIME*	RESULT dB(A)	
	บริเวณถนนสนามหลวง-ปากกลาง (N4)	
	MAY 28 - 29, 2025	
	T25AL816-0012	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
19:45-19:50 HOUR	50.2	48.4
19:50-19:55 HOUR	52.3	48.8
19:55-20:00 HOUR	53.2	47.9
20:00-20:05 HOUR	52.5	49.6
20:05-20:10 HOUR	46.7	44.5
20:10-20:15 HOUR	52.2	49.4
20:15-20:20 HOUR	50.3	47.8
20:20-20:25 HOUR	47.8	45.2
20:25-20:30 HOUR	50.4	46.9
20:30-20:35 HOUR	49.8	46.9
20:35-20:40 HOUR	47.4	44.4
20:40-20:45 HOUR	50.8	48.3
20:45-20:50 HOUR	50.7	48.0
20:50-20:55 HOUR	56.3	51.6
20:55-21:00 HOUR	51.1	47.8
21:00-21:05 HOUR	46.9	43.9
21:05-21:10 HOUR	50.7	47.3
21:10-21:15 HOUR	52.5	50.0
21:15-21:20 HOUR	50.7	48.4
21:20-21:25 HOUR	46.2	42.9
21:25-21:30 HOUR	46.3	43.3
21:30-21:35 HOUR	53.1	49.3
21:35-21:40 HOUR	46.3	43.0
21:40-21:45 HOUR	50.7	47.5
21:45-21:50 HOUR	49.0	46.5
21:50-21:55 HOUR	48.5	43.8
21:55-22:00 HOUR	47.9	44.6
22:00-22:05 HOUR	47.8	44.9
22:05-22:10 HOUR	46.9	42.3
22:10-22:15 HOUR	46.3	43.5
22:15-22:20 HOUR	47.9	44.9
22:20-22:25 HOUR	45.6	42.6
22:25-22:30 HOUR	49.5	46.9
22:30-22:35 HOUR	45.8	43.5
22:35-22:40 HOUR	45.2	43.0
22:40-22:45 HOUR	49.8	47.4
22:45-22:50 HOUR	49.9	47.5
22:50-22:55 HOUR	49.7	47.5
22:55-23:00 HOUR	51.6	49.5
23:00-23:05 HOUR	47.3	45.4
23:05-23:10 HOUR	49.6	47.5
23:10-23:15 HOUR	48.6	46.0
23:15-23:20 HOUR	49.6	46.9
23:20-23:25 HOUR	45.3	43.3
23:25-23:30 HOUR	47.9	45.4
23:30-23:35 HOUR	46.8	44.3
23:35-23:40 HOUR	48.8	46.8
23:40-23:45 HOUR	49.6	46.4
23:45-23:50 HOUR	47.3	45.1
23:50-23:55 HOUR	45.6	43.2
23:55-00:00 HOUR	44.1	42.3

TIME*	RESULT dB(A)	
	บริเวณถนนรามราชวิทยากร (N4)	
	MAY 28 - 29, 2025	
	T25AL816-0012	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
00:00-00:05 HOUR	49.7	47.2
00:05-00:10 HOUR	51.1	48.2
00:10-00:15 HOUR	48.5	46.2
00:15-00:20 HOUR	46.3	44.0
00:20-00:25 HOUR	46.7	44.3
00:25-00:30 HOUR	48.8	46.4
00:30-00:35 HOUR	50.4	47.9
00:35-00:40 HOUR	51.5	48.6
00:40-00:45 HOUR	47.8	44.5
00:45-00:50 HOUR	51.5	48.8
00:50-00:55 HOUR	51.3	48.7
00:55-01:00 HOUR	45.2	43.1
01:00-01:05 HOUR	46.5	44.2
01:05-01:10 HOUR	45.6	43.1
01:10-01:15 HOUR	50.0	47.5
01:15-01:20 HOUR	49.7	47.0
01:20-01:25 HOUR	50.5	48.0
01:25-01:30 HOUR	47.9	45.1
01:30-01:35 HOUR	46.9	44.4
01:35-01:40 HOUR	47.9	45.3
01:40-01:45 HOUR	47.3	44.3
01:45-01:50 HOUR	47.2	43.9
01:50-01:55 HOUR	48.9	46.1
01:55-02:00 HOUR	46.6	44.5
02:00-02:05 HOUR	49.6	47.4
02:05-02:10 HOUR	47.7	45.5
02:10-02:15 HOUR	51.4	48.3
02:15-02:20 HOUR	46.0	43.0
02:20-02:25 HOUR	51.9	49.8
02:25-02:30 HOUR	48.1	45.5
02:30-02:35 HOUR	49.9	47.6
02:35-02:40 HOUR	47.3	44.7
02:40-02:45 HOUR	46.1	43.7
02:45-02:50 HOUR	50.7	48.7
02:50-02:55 HOUR	47.1	44.9
02:55-03:00 HOUR	50.8	48.6
03:00-03:05 HOUR	45.6	44.1
03:05-03:10 HOUR	50.0	48.1
03:10-03:15 HOUR	45.9	43.8
03:15-03:20 HOUR	51.7	49.4
03:20-03:25 HOUR	48.6	46.6
03:25-03:30 HOUR	46.4	44.6
03:30-03:35 HOUR	46.5	44.8
03:35-03:40 HOUR	45.5	43.6
03:40-03:45 HOUR	50.2	47.8
03:45-03:50 HOUR	46.7	44.6
03:50-03:55 HOUR	50.6	47.9
03:55-04:00 HOUR	48.6	46.2
04:00-04:05 HOUR	46.3	44.2
04:05-04:10 HOUR	48.8	46.4
04:10-04:15 HOUR	47.0	44.8

TIME*	RESULT dB(A)	
	บริเวณชุมชนรอบตลาด-ชากกลาง (N4)	
	MAY 28 - 29, 2025	
	T25AL816-0012	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
04:15-04:20 HOUR	52.4	49.7
04:20-04:25 HOUR	49.2	46.6
04:25-04:30 HOUR	45.7	43.6
04:30-04:35 HOUR	47.8	45.7
04:35-04:40 HOUR	48.7	46.5
04:40-04:45 HOUR	51.0	48.8
04:45-04:50 HOUR	51.4	49.8
04:50-04:55 HOUR	50.9	49.0
04:55-05:00 HOUR	45.5	43.8
05:00-05:05 HOUR	45.8	43.9
05:05-05:10 HOUR	52.1	49.7
05:10-05:15 HOUR	48.0	45.8
05:15-05:20 HOUR	49.1	46.8
05:20-05:25 HOUR	50.4	48.7
05:25-05:30 HOUR	45.4	43.7
05:30-05:35 HOUR	49.5	48.2
05:35-05:40 HOUR	44.9	44.2
05:40-05:45 HOUR	46.5	45.8
05:45-05:50 HOUR	49.0	48.0
05:50-05:55 HOUR	51.3	50.2
05:55-06:00 HOUR	50.0	49.6
06:00-06:05 HOUR	49.6	48.4
06:05-06:10 HOUR	49.3	47.4
06:10-06:15 HOUR	48.2	45.4
06:15-06:20 HOUR	53.1	50.1
06:20-06:25 HOUR	49.0	47.1
06:25-06:30 HOUR	52.1	50.1
06:30-06:35 HOUR	51.6	49.8
06:35-06:40 HOUR	52.0	48.8
06:40-06:45 HOUR	47.8	45.4
06:45-06:50 HOUR	53.0	50.9
06:50-06:55 HOUR	52.1	50.2
06:55-07:00 HOUR	48.2	46.5

TIME*	RESULT dB(A)	
	บริเวณชุมชนรอบวัดพระยาตาก (N4)	
	MAY 29 - 30, 2025	
	T25AL816-0013	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
07:00-07:05 HOUR	49.0	47.2
07:05-07:10 HOUR	48.2	46.4
07:10-07:15 HOUR	50.5	48.8
07:15-07:20 HOUR	52.7	50.9
07:20-07:25 HOUR	53.0	50.9
07:25-07:30 HOUR	49.0	47.2
07:30-07:35 HOUR	52.0	50.0
07:35-07:40 HOUR	48.4	47.0
07:40-07:45 HOUR	49.1	47.3
07:45-07:50 HOUR	52.4	50.4
07:50-07:55 HOUR	48.9	46.3
07:55-08:00 HOUR	51.8	50.3
08:00-08:05 HOUR	47.2	45.6
08:05-08:10 HOUR	49.2	47.3
08:10-08:15 HOUR	49.4	48.1
08:15-08:20 HOUR	47.0	45.2
08:20-08:25 HOUR	47.6	46.0
08:25-08:30 HOUR	46.2	45.1
08:30-08:35 HOUR	50.0	48.2
08:35-08:40 HOUR	51.3	50.2
08:40-08:45 HOUR	47.3	45.5
08:45-08:50 HOUR	47.1	44.7
08:50-08:55 HOUR	52.4	50.2
08:55-09:00 HOUR	50.1	47.3
09:00-09:05 HOUR	52.0	50.1
09:05-09:10 HOUR	47.3	45.8
09:10-09:15 HOUR	52.9	51.8
09:15-09:20 HOUR	53.8	52.4
09:20-09:25 HOUR	50.3	47.9
09:25-09:30 HOUR	53.7	51.6
09:30-09:35 HOUR	48.0	47.5
09:35-09:40 HOUR	47.5	47.4
09:40-09:45 HOUR	51.2	50.3
09:45-09:50 HOUR	46.3	44.9
09:50-09:55 HOUR	50.3	49.8
09:55-10:00 HOUR	51.5	51.3
10:00-10:05 HOUR	47.0	46.4
10:05-10:10 HOUR	52.7	52.5
10:10-10:15 HOUR	51.2	51.2
10:15-10:20 HOUR	49.1	49.3
10:20-10:25 HOUR	49.3	49.3
10:25-10:30 HOUR	49.3	49.7
10:30-10:35 HOUR	47.7	48.2
10:35-10:40 HOUR	47.8	46.7
10:40-10:45 HOUR	51.3	49.4
10:45-10:50 HOUR	53.8	52.0
10:50-10:55 HOUR	47.0	45.9
10:55-11:00 HOUR	48.5	46.8
11:00-11:05 HOUR	51.6	49.7
11:05-11:10 HOUR	46.2	45.7
11:10-11:15 HOUR	48.1	45.2

TIME*	RESULT dB(A)	
	บริเวณเขตนครมาบชลด-ชากกลาง (N4)	
	MAY 29 - 30, 2025	
	T25AL816-0013	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
11:15-11:20 HOUR	46.2	43.9
11:20-11:25 HOUR	47.5	46.5
11:25-11:30 HOUR	46.5	45.4
11:30-11:35 HOUR	47.1	45.5
11:35-11:40 HOUR	47.2	45.7
11:40-11:45 HOUR	53.1	50.5
11:45-11:50 HOUR	48.7	47.8
11:50-11:55 HOUR	53.1	51.4
11:55-12:00 HOUR	51.9	50.0
12:00-12:05 HOUR	47.0	46.1
12:05-12:10 HOUR	48.3	47.7
12:10-12:15 HOUR	46.7	45.3
12:15-12:20 HOUR	50.8	49.2
12:20-12:25 HOUR	51.0	49.4
12:25-12:30 HOUR	53.2	51.6
12:30-12:35 HOUR	53.5	51.8
12:35-12:40 HOUR	49.1	47.9
12:40-12:45 HOUR	54.3	51.9
12:45-12:50 HOUR	49.0	47.8
12:50-12:55 HOUR	48.6	49.2
12:55-13:00 HOUR	49.0	48.9
13:00-13:05 HOUR	48.3	48.9
13:05-13:10 HOUR	52.1	51.8
13:10-13:15 HOUR	50.2	50.0
13:15-13:20 HOUR	51.0	51.2
13:20-13:25 HOUR	49.4	48.9
13:25-13:30 HOUR	50.1	49.6
13:30-13:35 HOUR	53.0	51.8
13:35-13:40 HOUR	47.9	47.7
13:40-13:45 HOUR	49.9	49.0
13:45-13:50 HOUR	53.1	51.3
13:50-13:55 HOUR	49.1	48.0
13:55-14:00 HOUR	47.8	47.0
14:00-14:05 HOUR	47.6	47.8
14:05-14:10 HOUR	45.4	45.6
14:10-14:15 HOUR	50.7	49.9
14:15-14:20 HOUR	45.9	45.8
14:20-14:25 HOUR	47.3	47.0
14:25-14:30 HOUR	47.2	46.4
14:30-14:35 HOUR	46.5	45.2
14:35-14:40 HOUR	47.1	45.8
14:40-14:45 HOUR	46.0	45.1
14:45-14:50 HOUR	48.9	49.3
14:50-14:55 HOUR	49.8	48.4
14:55-15:00 HOUR	49.4	48.5
15:00-15:05 HOUR	51.1	51.1
15:05-15:10 HOUR	49.8	50.4
15:10-15:15 HOUR	51.4	51.6
15:15-15:20 HOUR	47.2	46.4
15:20-15:25 HOUR	45.3	44.5
15:25-15:30 HOUR	52.6	50.4

TIME*	RESULT dB(A)	
	บริเวณชุมชนมารมขลุ่ย-ซากกลาง (N4)	
	MAY 29 - 30, 2025	
	T25AL816-0013	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
15:30-15:35 HOUR	48.1	46.5
15:35-15:40 HOUR	46.4	45.1
15:40-15:45 HOUR	49.3	47.0
15:45-15:50 HOUR	50.2	49.4
15:50-15:55 HOUR	49.9	48.7
15:55-16:00 HOUR	50.7	48.8
16:00-16:05 HOUR	49.7	47.9
16:05-16:10 HOUR	52.0	50.0
16:10-16:15 HOUR	46.4	45.6
16:15-16:20 HOUR	46.9	45.9
16:20-16:25 HOUR	45.3	44.2
16:25-16:30 HOUR	48.2	45.9
16:30-16:35 HOUR	46.4	44.0
16:35-16:40 HOUR	46.0	44.3
16:40-16:45 HOUR	49.2	47.0
16:45-16:50 HOUR	48.3	46.3
16:50-16:55 HOUR	51.1	49.8
16:55-17:00 HOUR	49.5	47.0
17:00-17:05 HOUR	50.1	48.2
17:05-17:10 HOUR	48.6	45.7
17:10-17:15 HOUR	48.9	47.2
17:15-17:20 HOUR	45.6	44.4
17:20-17:25 HOUR	51.7	50.4
17:25-17:30 HOUR	51.0	50.0
17:30-17:35 HOUR	45.5	44.1
17:35-17:40 HOUR	51.6	49.6
17:40-17:45 HOUR	49.9	46.0
17:45-17:50 HOUR	51.4	48.5
17:50-17:55 HOUR	49.3	46.4
17:55-18:00 HOUR	51.4	49.1
18:00-18:05 HOUR	53.8	52.0
18:05-18:10 HOUR	51.4	48.1
18:10-18:15 HOUR	49.3	46.2
18:15-18:20 HOUR	52.3	50.4
18:20-18:25 HOUR	46.8	44.8
18:25-18:30 HOUR	51.0	47.7
18:30-18:35 HOUR	48.9	47.2
18:35-18:40 HOUR	51.7	49.6
18:40-18:45 HOUR	49.5	47.7
18:45-18:50 HOUR	48.8	47.1
18:50-18:55 HOUR	48.3	45.6
18:55-19:00 HOUR	46.3	44.1
19:00-19:05 HOUR	52.9	50.0
19:05-19:10 HOUR	47.9	45.3
19:10-19:15 HOUR	48.8	47.1
19:15-19:20 HOUR	52.5	50.1
19:20-19:25 HOUR	48.9	46.6
19:25-19:30 HOUR	50.4	48.3
19:30-19:35 HOUR	49.7	48.3
19:35-19:40 HOUR	52.3	50.9
19:40-19:45 HOUR	50.3	48.8

TIME*	RESULT dB(A)	
	บริเวณชุมชนรอบสถานีรถไฟฟ้า (N4)	
	MAY 29 - 30, 2025	
	T25AL816-0013	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
19:45-19:50 HOUR	46.5	44.4
19:50-19:55 HOUR	49.2	46.6
19:55-20:00 HOUR	53.5	49.3
20:00-20:05 HOUR	52.5	49.9
20:05-20:10 HOUR	52.8	50.8
20:10-20:15 HOUR	47.4	45.5
20:15-20:20 HOUR	48.2	46.7
20:20-20:25 HOUR	48.6	46.5
20:25-20:30 HOUR	50.3	46.8
20:30-20:35 HOUR	48.7	46.9
20:35-20:40 HOUR	48.5	46.6
20:40-20:45 HOUR	51.9	50.9
20:45-20:50 HOUR	48.8	47.3
20:50-20:55 HOUR	51.5	48.6
20:55-21:00 HOUR	48.0	46.0
21:00-21:05 HOUR	47.7	45.2
21:05-21:10 HOUR	50.6	48.3
21:10-21:15 HOUR	50.0	48.4
21:15-21:20 HOUR	50.0	47.8
21:20-21:25 HOUR	51.0	49.1
21:25-21:30 HOUR	45.5	43.9
21:30-21:35 HOUR	51.7	49.0
21:35-21:40 HOUR	46.3	44.0
21:40-21:45 HOUR	49.2	46.9
21:45-21:50 HOUR	51.6	49.8
21:50-21:55 HOUR	48.5	44.0
21:55-22:00 HOUR	51.1	47.8
22:00-22:05 HOUR	46.4	44.3
22:05-22:10 HOUR	49.9	47.0
22:10-22:15 HOUR	46.3	44.1
22:15-22:20 HOUR	47.0	44.4
22:20-22:25 HOUR	49.5	48.0
22:25-22:30 HOUR	49.7	48.1
22:30-22:35 HOUR	51.5	49.7
22:35-22:40 HOUR	46.8	43.6
22:40-22:45 HOUR	51.0	48.3
22:45-22:50 HOUR	49.4	47.6
22:50-22:55 HOUR	45.8	43.3
22:55-23:00 HOUR	48.0	46.7
23:00-23:05 HOUR	47.3	45.8
23:05-23:10 HOUR	48.5	47.0
23:10-23:15 HOUR	51.6	49.4
23:15-23:20 HOUR	47.9	45.6
23:20-23:25 HOUR	49.9	48.6
23:25-23:30 HOUR	50.6	49.6
23:30-23:35 HOUR	48.7	47.6
23:35-23:40 HOUR	47.9	46.7
23:40-23:45 HOUR	50.8	49.4
23:45-23:50 HOUR	45.0	43.2
23:50-23:55 HOUR	50.2	48.5
23:55-00:00 HOUR	46.4	45.6

TIME*	RESULT dB(A)	
	บริเวณชุมชนรอบวัด-วัดกลาง (N4)	
	MAY 29 - 30, 2025	
	T25AL816-0013	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
00:00-00:05 HOUR	48.1	46.7
00:05-00:10 HOUR	51.1	49.4
00:10-00:15 HOUR	47.7	46.6
00:15-00:20 HOUR	44.6	43.0
00:20-00:25 HOUR	48.4	46.7
00:25-00:30 HOUR	51.7	50.4
00:30-00:35 HOUR	49.5	48.7
00:35-00:40 HOUR	45.0	44.5
00:40-00:45 HOUR	49.7	47.9
00:45-00:50 HOUR	48.7	47.0
00:50-00:55 HOUR	49.5	48.0
00:55-01:00 HOUR	48.1	47.4
01:00-01:05 HOUR	48.4	47.3
01:05-01:10 HOUR	49.7	48.5
01:10-01:15 HOUR	49.1	48.9
01:15-01:20 HOUR	52.9	51.8
01:20-01:25 HOUR	50.3	49.7
01:25-01:30 HOUR	50.4	49.7
01:30-01:35 HOUR	47.1	45.6
01:35-01:40 HOUR	48.0	46.6
01:40-01:45 HOUR	48.4	47.4
01:45-01:50 HOUR	46.4	45.1
01:50-01:55 HOUR	44.8	44.3
01:55-02:00 HOUR	50.8	50.3
02:00-02:05 HOUR	46.7	45.8
02:05-02:10 HOUR	47.3	45.8
02:10-02:15 HOUR	46.2	44.7
02:15-02:20 HOUR	50.2	49.3
02:20-02:25 HOUR	50.9	49.7
02:25-02:30 HOUR	47.0	46.0
02:30-02:35 HOUR	49.7	48.5
02:35-02:40 HOUR	51.0	50.1
02:40-02:45 HOUR	46.0	44.3
02:45-02:50 HOUR	45.8	44.7
02:50-02:55 HOUR	46.9	45.9
02:55-03:00 HOUR	46.4	45.5
03:00-03:05 HOUR	51.3	49.3
03:05-03:10 HOUR	52.6	50.7
03:10-03:15 HOUR	52.4	50.5
03:15-03:20 HOUR	47.5	45.2
03:20-03:25 HOUR	45.7	44.8
03:25-03:30 HOUR	45.7	44.9
03:30-03:35 HOUR	52.0	51.0
03:35-03:40 HOUR	49.2	47.6
03:40-03:45 HOUR	51.7	50.8
03:45-03:50 HOUR	45.8	44.4
03:50-03:55 HOUR	46.2	45.6
03:55-04:00 HOUR	51.6	50.3
04:00-04:05 HOUR	45.1	43.9
04:05-04:10 HOUR	45.9	44.4
04:10-04:15 HOUR	47.7	46.6

TIME*	RESULT dB(A)	
	บริเวณชุมชนยานยนต์-ขากทาง (N4)	
	MAY 29 - 30, 2025	
	T25AL816-0013	
	LAeq 5 min	LA90 5 min
04:15-04:20 HOUR	46.3	44.5
04:20-04:25 HOUR	49.8	48.6
04:25-04:30 HOUR	49.0	47.6
04:30-04:35 HOUR	45.6	44.2
04:35-04:40 HOUR	45.4	44.2
04:40-04:45 HOUR	45.4	44.6
04:45-04:50 HOUR	45.7	44.3
04:50-04:55 HOUR	52.3	50.9
04:55-05:00 HOUR	48.6	47.7
05:00-05:05 HOUR	46.7	45.1
05:05-05:10 HOUR	48.2	46.2
05:10-05:15 HOUR	49.2	46.9
05:15-05:20 HOUR	45.5	44.0
05:20-05:25 HOUR	45.8	44.2
05:25-05:30 HOUR	46.8	45.6
05:30-05:35 HOUR	46.3	44.6
05:35-05:40 HOUR	52.0	50.5
05:40-05:45 HOUR	51.5	50.1
05:45-05:50 HOUR	45.9	44.7
05:50-05:55 HOUR	48.0	46.8
05:55-06:00 HOUR	47.2	46.0
06:00-06:05 HOUR	48.0	45.9
06:05-06:10 HOUR	49.6	48.4
06:10-06:15 HOUR	49.1	47.3
06:15-06:20 HOUR	51.1	48.8
06:20-06:25 HOUR	47.3	46.2
06:25-06:30 HOUR	47.8	46.7
06:30-06:35 HOUR	49.9	47.9
06:35-06:40 HOUR	47.1	45.7
06:40-06:45 HOUR	47.8	46.5
06:45-06:50 HOUR	52.3	51.4
06:50-06:55 HOUR	52.2	51.1
06:55-07:00 HOUR	48.8	47.4

TIME*	RESULT dB(A)	
	บริเวณถนนสนามฟุตบอล-ซากกลาง (N4)	
	MAY 30 - 31, 2025	
	T25AL816-0014	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
07:00-07:05 HOUR	50.4	49.0
07:05-07:10 HOUR	53.9	52.2
07:10-07:15 HOUR	46.8	45.6
07:15-07:20 HOUR	46.9	45.7
07:20-07:25 HOUR	48.4	47.1
07:25-07:30 HOUR	48.7	47.3
07:30-07:35 HOUR	51.3	49.4
07:35-07:40 HOUR	51.2	49.3
07:40-07:45 HOUR	49.5	47.2
07:45-07:50 HOUR	48.7	46.6
07:50-07:55 HOUR	47.9	46.7
07:55-08:00 HOUR	47.1	45.5
08:00-08:05 HOUR	53.6	51.4
08:05-08:10 HOUR	46.9	45.3
08:10-08:15 HOUR	48.5	46.9
08:15-08:20 HOUR	47.4	45.6
08:20-08:25 HOUR	52.1	50.9
08:25-08:30 HOUR	48.6	47.1
08:30-08:35 HOUR	48.2	47.1
08:35-08:40 HOUR	50.8	49.2
08:40-08:45 HOUR	49.9	48.3
08:45-08:50 HOUR	47.2	44.5
08:50-08:55 HOUR	48.4	46.2
08:55-09:00 HOUR	49.3	46.4
09:00-09:05 HOUR	53.1	51.2
09:05-09:10 HOUR	49.0	47.3
09:10-09:15 HOUR	48.6	47.0
09:15-09:20 HOUR	53.8	51.8
09:20-09:25 HOUR	49.3	46.9
09:25-09:30 HOUR	52.1	50.2
09:30-09:35 HOUR	46.6	44.7
09:35-09:40 HOUR	50.3	49.1
09:40-09:45 HOUR	48.8	47.1
09:45-09:50 HOUR	51.5	49.1
09:50-09:55 HOUR	49.6	47.3
09:55-10:00 HOUR	49.7	47.9
10:00-10:05 HOUR	48.4	45.5
10:05-10:10 HOUR	53.4	51.2
10:10-10:15 HOUR	48.1	47.1
10:15-10:20 HOUR	49.1	47.2
10:20-10:25 HOUR	47.7	46.6
10:25-10:30 HOUR	49.2	48.2
10:30-10:35 HOUR	53.5	50.9
10:35-10:40 HOUR	52.2	49.9
10:40-10:45 HOUR	49.2	46.7
10:45-10:50 HOUR	53.2	50.6
10:50-10:55 HOUR	47.6	45.4
10:55-11:00 HOUR	47.8	45.9
11:00-11:05 HOUR	47.9	45.7
11:05-11:10 HOUR	48.7	47.5
11:10-11:15 HOUR	49.5	45.6

TIME*	RESULT dB(A)	
	บริเวณชุมชนรอบวัด-ซากกลาง (N4)	
	MAY 30 - 31, 2025	
	T25AL816-0014	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
11:15-11:20 HOUR	46.8	44.9
11:20-11:25 HOUR	49.7	48.1
11:25-11:30 HOUR	47.8	46.1
11:30-11:35 HOUR	50.0	47.7
11:35-11:40 HOUR	49.1	47.4
11:40-11:45 HOUR	51.4	49.3
11:45-11:50 HOUR	52.9	51.3
11:50-11:55 HOUR	48.1	46.1
11:55-12:00 HOUR	50.4	48.5
12:00-12:05 HOUR	50.9	49.7
12:05-12:10 HOUR	52.9	50.7
12:10-12:15 HOUR	47.2	45.0
12:15-12:20 HOUR	48.3	45.3
12:20-12:25 HOUR	52.7	51.0
12:25-12:30 HOUR	47.3	44.4
12:30-12:35 HOUR	51.9	50.3
12:35-12:40 HOUR	48.4	46.1
12:40-12:45 HOUR	47.9	45.9
12:45-12:50 HOUR	49.5	48.0
12:50-12:55 HOUR	50.8	50.4
12:55-13:00 HOUR	48.5	47.1
13:00-13:05 HOUR	49.7	49.2
13:05-13:10 HOUR	51.8	51.1
13:10-13:15 HOUR	49.0	48.2
13:15-13:20 HOUR	50.9	48.9
13:20-13:25 HOUR	48.1	46.0
13:25-13:30 HOUR	47.3	46.4
13:30-13:35 HOUR	50.7	49.1
13:35-13:40 HOUR	47.7	47.5
13:40-13:45 HOUR	50.1	49.3
13:45-13:50 HOUR	48.4	46.9
13:50-13:55 HOUR	47.1	45.2
13:55-14:00 HOUR	51.8	50.5
14:00-14:05 HOUR	47.1	46.3
14:05-14:10 HOUR	52.4	51.4
14:10-14:15 HOUR	47.5	45.7
14:15-14:20 HOUR	49.0	47.7
14:20-14:25 HOUR	50.4	48.9
14:25-14:30 HOUR	47.8	45.5
14:30-14:35 HOUR	48.9	46.4
14:35-14:40 HOUR	50.9	49.1
14:40-14:45 HOUR	48.4	46.0
14:45-14:50 HOUR	48.1	47.3
14:50-14:55 HOUR	50.6	47.8
14:55-15:00 HOUR	48.7	45.0
15:00-15:05 HOUR	52.3	50.5
15:05-15:10 HOUR	46.7	46.1
15:10-15:15 HOUR	49.7	49.0
15:15-15:20 HOUR	51.3	49.9
15:20-15:25 HOUR	48.2	46.6
15:25-15:30 HOUR	48.6	47.0

TIME*	RESULT dB(A)	
	บริเวณชุมชนรอบสถานีรถไฟฟ้า (N4)	
	MAY 30 - 31, 2025	
	T25AL816-0014	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
15:30-15:35 HOUR	50.1	48.9
15:35-15:40 HOUR	51.1	49.9
15:40-15:45 HOUR	48.6	47.2
15:45-15:50 HOUR	46.1	45.1
15:50-15:55 HOUR	49.2	48.0
15:55-16:00 HOUR	48.3	46.6
16:00-16:05 HOUR	48.4	46.6
16:05-16:10 HOUR	51.2	49.0
16:10-16:15 HOUR	48.6	47.4
16:15-16:20 HOUR	52.4	51.6
16:20-16:25 HOUR	50.7	49.9
16:25-16:30 HOUR	47.9	46.5
16:30-16:35 HOUR	50.3	47.5
16:35-16:40 HOUR	53.2	50.7
16:40-16:45 HOUR	53.6	50.4
16:45-16:50 HOUR	46.5	44.5
16:50-16:55 HOUR	47.0	44.5
16:55-17:00 HOUR	52.0	49.4
17:00-17:05 HOUR	47.0	44.5
17:05-17:10 HOUR	51.6	49.2
17:10-17:15 HOUR	51.7	49.5
17:15-17:20 HOUR	48.4	46.8
17:20-17:25 HOUR	50.8	48.9
17:25-17:30 HOUR	52.5	50.8
17:30-17:35 HOUR	48.3	46.6
17:35-17:40 HOUR	51.3	49.7
17:40-17:45 HOUR	51.4	47.1
17:45-17:50 HOUR	54.1	51.6
17:50-17:55 HOUR	54.2	51.6
17:55-18:00 HOUR	49.5	46.9
18:00-18:05 HOUR	50.5	49.3
18:05-18:10 HOUR	55.7	53.3
18:10-18:15 HOUR	50.5	47.7
18:15-18:20 HOUR	49.9	48.9
18:20-18:25 HOUR	50.1	48.5
18:25-18:30 HOUR	47.8	45.1
18:30-18:35 HOUR	52.6	50.2
18:35-18:40 HOUR	53.6	51.5
18:40-18:45 HOUR	47.1	45.2
18:45-18:50 HOUR	50.8	49.3
18:50-18:55 HOUR	47.6	45.8
18:55-19:00 HOUR	52.8	50.3
19:00-19:05 HOUR	51.3	49.0
19:05-19:10 HOUR	53.3	50.1
19:10-19:15 HOUR	47.1	45.7
19:15-19:20 HOUR	50.0	47.8
19:20-19:25 HOUR	55.1	51.8
19:25-19:30 HOUR	49.9	47.5
19:30-19:35 HOUR	51.3	49.6
19:35-19:40 HOUR	51.5	49.2
19:40-19:45 HOUR	47.1	44.9

TIME*	RESULT dB(A)	
	บริเวณชุมชนยานจุด-ซากกลาง (N4)	
	MAY 30 - 31, 2025	
	T25AL816-0014	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
19:45-19:50 HOUR	52.1	50.1
19:50-19:55 HOUR	52.4	51.0
19:55-20:00 HOUR	53.5	50.0
20:00-20:05 HOUR	48.6	46.4
20:05-20:10 HOUR	52.9	51.3
20:10-20:15 HOUR	51.5	49.2
20:15-20:20 HOUR	50.2	48.8
20:20-20:25 HOUR	48.2	46.3
20:25-20:30 HOUR	54.3	51.9
20:30-20:35 HOUR	51.1	48.7
20:35-20:40 HOUR	48.5	46.2
20:40-20:45 HOUR	53.0	51.4
20:45-20:50 HOUR	53.7	51.7
20:50-20:55 HOUR	53.1	49.8
20:55-21:00 HOUR	49.7	46.4
21:00-21:05 HOUR	48.7	46.4
21:05-21:10 HOUR	53.4	50.3
21:10-21:15 HOUR	47.8	45.0
21:15-21:20 HOUR	50.7	48.2
21:20-21:25 HOUR	50.9	48.6
21:25-21:30 HOUR	46.3	44.2
21:30-21:35 HOUR	48.1	44.8
21:35-21:40 HOUR	50.9	48.1
21:40-21:45 HOUR	50.3	47.9
21:45-21:50 HOUR	52.4	50.1
21:50-21:55 HOUR	50.5	45.7
21:55-22:00 HOUR	46.1	43.3
22:00-22:05 HOUR	49.0	46.8
22:05-22:10 HOUR	50.7	46.4
22:10-22:15 HOUR	51.7	48.5
22:15-22:20 HOUR	48.6	45.8
22:20-22:25 HOUR	46.2	43.9
22:25-22:30 HOUR	45.3	43.5
22:30-22:35 HOUR	49.4	46.9
22:35-22:40 HOUR	49.2	46.7
22:40-22:45 HOUR	48.9	47.0
22:45-22:50 HOUR	46.7	44.3
22:50-22:55 HOUR	45.4	44.0
22:55-23:00 HOUR	48.7	47.0
23:00-23:05 HOUR	46.3	44.7
23:05-23:10 HOUR	49.9	47.9
23:10-23:15 HOUR	46.3	44.9
23:15-23:20 HOUR	49.0	46.5
23:20-23:25 HOUR	48.7	46.7
23:25-23:30 HOUR	51.8	50.3
23:30-23:35 HOUR	50.6	49.2
23:35-23:40 HOUR	49.8	49.1
23:40-23:45 HOUR	52.7	49.7
23:45-23:50 HOUR	48.4	47.0
23:50-23:55 HOUR	47.6	45.9
23:55-00:00 HOUR	49.8	49.2

TIME*	RESULT dB(A)	
	บริเวณชุมชนยานยนต์-ท่าอากาศยาน (N4)	
	MAY 30 - 31, 2025	
	T25AL816-0014	
	L <sub>Aeq</sub> 5 min	L <sub>A90</sub> 5 min
00:00-00:05 HOUR	49.1	47.8
00:05-00:10 HOUR	47.9	46.1
00:10-00:15 HOUR	46.7	45.8
00:15-00:20 HOUR	45.8	44.6
00:20-00:25 HOUR	50.7	48.9
00:25-00:30 HOUR	46.8	45.2
00:30-00:35 HOUR	49.7	47.2
00:35-00:40 HOUR	51.1	49.5
00:40-00:45 HOUR	46.0	44.3
00:45-00:50 HOUR	46.2	45.7
00:50-00:55 HOUR	50.4	49.5
00:55-01:00 HOUR	46.5	45.4
01:00-01:05 HOUR	48.9	48.4
01:05-01:10 HOUR	48.3	46.7
01:10-01:15 HOUR	48.7	49.0
01:15-01:20 HOUR	48.0	47.6
01:20-01:25 HOUR	51.0	49.3
01:25-01:30 HOUR	46.8	45.5
01:30-01:35 HOUR	46.4	44.6
01:35-01:40 HOUR	50.0	48.6
01:40-01:45 HOUR	50.7	48.8
01:45-01:50 HOUR	50.2	48.6
01:50-01:55 HOUR	49.7	48.9
01:55-02:00 HOUR	51.5	49.7
02:00-02:05 HOUR	51.6	49.9
02:05-02:10 HOUR	48.1	46.5
02:10-02:15 HOUR	47.0	44.4
02:15-02:20 HOUR	45.6	43.7
02:20-02:25 HOUR	50.5	48.9
02:25-02:30 HOUR	51.3	47.1
02:30-02:35 HOUR	46.1	43.2
02:35-02:40 HOUR	49.9	47.9
02:40-02:45 HOUR	45.4	43.5
02:45-02:50 HOUR	46.0	43.8
02:50-02:55 HOUR	49.0	47.3
02:55-03:00 HOUR	46.2	43.8
03:00-03:05 HOUR	46.4	44.7
03:05-03:10 HOUR	47.8	45.8
03:10-03:15 HOUR	51.4	49.9
03:15-03:20 HOUR	51.5	49.5
03:20-03:25 HOUR	49.8	48.4
03:25-03:30 HOUR	46.2	43.6
03:30-03:35 HOUR	47.2	46.0
03:35-03:40 HOUR	49.4	47.2
03:40-03:45 HOUR	52.0	49.7
03:45-03:50 HOUR	47.8	46.2
03:50-03:55 HOUR	50.7	49.3
03:55-04:00 HOUR	49.8	48.4
04:00-04:05 HOUR	50.5	46.1
04:05-04:10 HOUR	48.6	46.9
04:10-04:15 HOUR	47.4	45.1

TIME*	RESULT dB(A)	
	บริเวณชุมชนรอบตลาด-ซากกลาง (N4)	
	MAY 30 - 31, 2025	
	T25AL816-0014	
	LAeq 5 min	LA90 5 min
04:15-04:20 HOUR	46.8	45.1
04:20-04:25 HOUR	47.0	45.4
04:25-04:30 HOUR	47.3	45.7
04:30-04:35 HOUR	51.2	49.6
04:35-04:40 HOUR	48.5	46.4
04:40-04:45 HOUR	52.6	49.5
04:45-04:50 HOUR	51.4	50.1
04:50-04:55 HOUR	50.6	47.6
04:55-05:00 HOUR	48.8	46.7
05:00-05:05 HOUR	45.3	43.6
05:05-05:10 HOUR	47.3	45.7
05:10-05:15 HOUR	45.9	43.5
05:15-05:20 HOUR	46.9	44.4
05:20-05:25 HOUR	46.0	44.7
05:25-05:30 HOUR	51.3	49.6
05:30-05:35 HOUR	48.2	47.2
05:35-05:40 HOUR	49.4	47.7
05:40-05:45 HOUR	50.9	49.9
05:45-05:50 HOUR	45.9	44.9
05:50-05:55 HOUR	48.7	47.5
05:55-06:00 HOUR	46.7	45.5
06:00-06:05 HOUR	52.2	50.9
06:05-06:10 HOUR	47.3	46.4
06:10-06:15 HOUR	47.8	46.1
06:15-06:20 HOUR	55.3	53.2
06:20-06:25 HOUR	53.5	52.2
06:25-06:30 HOUR	51.2	50.2
06:30-06:35 HOUR	49.9	48.4
06:35-06:40 HOUR	50.9	49.8
06:40-06:45 HOUR	51.4	50.1
06:45-06:50 HOUR	50.6	49.5
06:50-06:55 HOUR	51.0	50.0
06:55-07:00 HOUR	49.6	48.5

REMARK : \*\* ISO 1996-1:2016

- \*\* NOTIFICATION OF NATION ENVIRONMENT BOARD NO. 15 B.E. 2540 (1997) (MARCH 12, 1977)
- \*\* NOTIFICATION OF THE POLLUTION CONTROL DEPARTMENT (B.E. 2540) REGARDING THE CALCULATION METHOD FOR SOUND LEVELS, DATED AUGUST 11, B.E. 2540
- \*\* NOTIFICATION OF THE MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT ON THE ESTABLISHMENT OF STANDARDS FOR CONTROLLING NOISE AND VIBRATION, DATED NOVEMBER 7, B.E. 2548
- \*\* NOTIFICATION OF THE DEPARTMENT OF INDUSTRIAL WORKS ON THE MEASUREMENT METHOD FOR NOISE POLLUTION, 24-HOUR AVERAGE NOISE LEVEL, AND MAXIMUM NOISE LEVEL FROM INDUSTRIAL OPERATIONS, B.E. 2553, DATED DECEMBER 20, B.E. 2553

*Sila Banjongjairuk*  
(MR SILA BANJONGJAIRUK)  
LABORATORY SUPERVISOR

## คุณภาพอากาศในสถานประกอบการ

---

## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : บริเวณเหนือก๊าซคลอรีน  
**SAMPLE TYPE** : WORKPLACE  
**SAMPLING DATE** : FEBRUARY 25, 2025  
**SAMPLING TIME** : 08:53-10:23 HOUR  
**SAMPLING BY** : MISS PIYANATCHAYA SAMPAOPHONG  
**ANALYZED BY** : MISS SUWAN KONGTHONG

**RECEIVED DATE** : FEBRUARY 26, 2025  
**ANALYTICAL DATE** : FEBRUARY 26-28, 2025  
**ISSUE DATE** : MARCH 10, 2025  
**REPORT NO.** : 2025-U019545  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AE078-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT
			บริเวณเหนือก๊าซคลอรีน T25AE078-0001
CHLORINE	ppm	ION CHROMATOGRAPHIC METHOD (NIOSH METHOD 6011)	< 0.001
SAMPLE CONDITION			COMPLETE

**REMARK**

**RESULT** : REFERENCE CONDITION IS 25 DEGREE CELSIUS AT 1 ATMOSPHERE.

*Budsakorn ✓*

(MISS BUDSAKORN LERDPANUMAS)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@seksui.com  
**SAMPLING SOURCE** : บริเวณหอพักจัดคลอรีน  
**SAMPLE TYPE** : WORKPLACE  
**SAMPLING DATE** : MAY 26, 2025  
**SAMPLING TIME** : 09:20-10:50 HOUR  
**SAMPLING BY** : MISS PIYANATCHAYA SAMPAOPHONG  
**ANALYZED BY** : MISS SUWAN KONGTHONG

**RECEIVED DATE** : JUNE 4, 2025  
**ANALYTICAL DATE** : JUNE 4-10, 2025  
**ISSUE DATE** : JUNE 17, 2025  
**REPORT NO.** : 2025-U053965  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AL863-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT
			บริเวณหอพักจัดคลอรีน T25AL863-0001
CHLORINE	ppm	ION CHROMATOGRAPHIC METHOD (NIOSH METHOD 6011)	< 0.001
<b>SAMPLE CONDITION</b>			COMPLETE

REMARK

RESULT : REFERENCE CONDITION IS 25 DEGREE CELSIUS AT 1 ATMOSPHERE.

*Budsakorn ✓*

(MISS BUDSAKORN LERDPANUMAS)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

<b>PROJECT NAME</b>	: โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)	<b>RECEIVED DATE</b>	: FEBRUARY 26, 2025
<b>CUSTOMER NAME</b>	: S AND L SPECIALTY POLYMERS CO., LTD.	<b>ANALYTICAL DATE</b>	: FEBRUARY 26 - MARCH 4, 2025
<b>ADDRESS</b>	: 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150	<b>ISSUE DATE</b>	: MARCH 10, 2025
<b>CONTACT INFORMATION</b>	: TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com	<b>REPORT NO.</b>	: 2025-U019548
<b>SAMPLING SOURCE</b>	: WAREHOUSE 1	<b>WORK NO.</b>	: 2024-010526
<b>SAMPLE TYPE</b>	: WORKPLACE	<b>ANALYSIS NO.</b>	: T25AE078-0002
<b>SAMPLING DATE</b>	: FEBRUARY 25, 2025		
<b>SAMPLING TIME</b>	: 08:50-16:50 HOUR		
<b>SAMPLING BY</b>	: MISS PIYANATCHAYA SAMPAOPHONG		
<b>ANALYZED BY</b>	: MISS JETJARIN TUMSA-AT		

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT
			WAREHOUSE 1 T25AE078-0002
TOTAL DUST <sup>c</sup>	mg/m <sup>3</sup>	NIOSH MANUAL OF ANALYTICAL METHOD (NMAM), METHOD 0500, FOURTH EDITION, 15th AUG, 1994	< 0.060
RESPIRABLE DUST <sup>a</sup>	mg/m <sup>3</sup>	NIOSH MANUAL OF ANALYTICAL METHOD (NMAM), METHOD 0600, FOURTH EDITION, 15th AUG, 1994	0.015
SAMPLE CONDITION			COMPLETE

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

REMARK

RESULT : REFERENCE CONDITION IS 25 DEGREE CELSIUS AT 1 ATMOSPHERE.

*Budsakorn ✓*

(MISS BUDSAKORN LERDPANUMAS)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : WAREHOUSE 1  
**SAMPLE TYPE** : WORKPLACE  
**SAMPLING DATE** : MAY 28, 2025  
**SAMPLING TIME** : 09:14-17:14 HOUR  
**SAMPLING BY** : MISS PIYANATCHAYA SAMPAOPHONG  
**ANALYZED BY** : MISS JETJARIN TUMSA-AT  
**RECEIVED DATE** : JUNE 4, 2025  
**ANALYTICAL DATE** : JUNE 4-9, 2025  
**ISSUE DATE** : JUNE 17, 2025  
**REPORT NO.** : 2025-U053966  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AL863-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT
			WAREHOUSE 1 T25AL863-0002
TOTAL DUST <sup>c</sup>	mg/m <sup>3</sup>	NIOSH MANUAL OF ANALYTICAL METHOD (NMAM), METHOD 0500, FOURTH EDITION, 15th AUG, 1994	< 0.060
RESPIRABLE DUST <sup>a</sup>	mg/m <sup>3</sup>	NIOSH MANUAL OF ANALYTICAL METHOD (NMAM), METHOD 0600, FOURTH EDITION, 15th AUG, 1994	0.011
SAMPLE CONDITION			COMPLETE

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

REMARK

RESULT : REFERENCE CONDITION IS 25 DEGREE CELSIUS AT 1 ATMOSPHERE.

*Budsakorn ✓*

(MISS BUDSAKORN LERDPANUMAS)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

<b>PROJECT NAME</b>	: โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)	<b>RECEIVED DATE</b>	: FEBRUARY 26, 2025
<b>CUSTOMER NAME</b>	: S AND L SPECIALTY POLYMERS CO., LTD.	<b>ANALYTICAL DATE</b>	: FEBRUARY 26 - MARCH 4, 2025
<b>ADDRESS</b>	: 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150	<b>ISSUE DATE</b>	: MARCH 10, 2025
<b>CONTACT INFORMATION</b>	: TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com	<b>REPORT NO.</b>	: 2025-U019550
<b>SAMPLING SOURCE</b>	: WAREHOUSE 2	<b>WORK NO.</b>	: 2024-010526
<b>SAMPLE TYPE</b>	: WORKPLACE	<b>ANALYSIS NO.</b>	: T25AE078-0003
<b>SAMPLING DATE</b>	: FEBRUARY 25, 2025		
<b>SAMPLING TIME</b>	: 08:48-16:48 HOUR		
<b>SAMPLING BY</b>	: MISS PIYANATCHAYA SAMPAOPHONG		
<b>ANALYZED BY</b>	: MISS JETJARIN TUMSA-AT		

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT
			WAREHOUSE 2 T25AE078-0003
TOTAL DUST <sup>c</sup>	mg/m <sup>3</sup>	NIOSH MANUAL OF ANALYTICAL METHOD (NMAM), METHOD 0500, FOURTH EDITION, 15th AUG, 1994	0.102
RESPIRABLE DUST <sup>a</sup>	mg/m <sup>3</sup>	NIOSH MANUAL OF ANALYTICAL METHOD (NMAM), METHOD 0600, FOURTH EDITION, 15th AUG, 1994	0.020
SAMPLE CONDITION			COMPLETE

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

REMARK

RESULT : REFERENCE CONDITION IS 25 DEGREE CELSIUS AT 1 ATMOSPHERE.

*Budsakorn ✓*

(MISS BUDSAKORN LERDPANUMAS)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : WAREHOUSE 2  
**SAMPLE TYPE** : WORKPLACE  
**SAMPLING DATE** : MAY 28, 2025  
**SAMPLING TIME** : 09:10-17:10 HOUR  
**SAMPLING BY** : MISS PIYANATCHAYA SAMPAOPHONG  
**ANALYZED BY** : MISS JETJARIN TUMSA-AT  
**RECEIVED DATE** : JUNE 4, 2025  
**ANALYTICAL DATE** : JUNE 4-9, 2025  
**ISSUE DATE** : JUNE 17, 2025  
**REPORT NO.** : 2025-U053968  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AL863-0004

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT
			WAREHOUSE 2 T25AL863-0004
TOTAL DUST <sup>c</sup>	mg/m <sup>3</sup>	NIOSH MANUAL OF ANALYTICAL METHOD (NMAM), METHOD 0500, FOURTH EDITION, 15th AUG, 1994	< 0.060
RESPIRABLE DUST <sup>a</sup>	mg/m <sup>3</sup>	NIOSH MANUAL OF ANALYTICAL METHOD (NMAM), METHOD 0600, FOURTH EDITION, 15th AUG, 1994	0.012
<b>SAMPLE CONDITION</b>			COMPLETE

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

REMARK

RESULT : REFERENCE CONDITION IS 25 DEGREE CELSIUS AT 1 ATMOSPHERE.

*Budsakorn ✓*

(MISS BUDSAKORN LERDPANUMAS)  
LABORATORY SUPERVISOR

## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**SAMPLING SOURCE** : LOADING PVC  
**SAMPLE TYPE** : WORKPLACE  
**SAMPLING DATE** : FEBRUARY 25, 2025  
**SAMPLING TIME** : 08:55-16:55 HOUR  
**SAMPLING BY** : MISS PIYANATCHAYA SAMPAOPHONG  
**ANALYZED BY** : MISS JETJARIN TUMSA-AT  
**RECEIVED DATE** : FEBRUARY 26, 2025  
**ANALYTICAL DATE** : FEBRUARY 26 - MARCH 4, 2025  
**ISSUE DATE** : MARCH 10, 2025  
**REPORT NO.** : 2025-U019552  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AE078-0004

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT
			LOADING PVC T25AE078-0004
TOTAL DUST <sup>c</sup>	mg/m <sup>3</sup>	NIOSH MANUAL OF ANALYTICAL METHOD (NMAM), METHOD 0500, FOURTH EDITION, 15th AUG, 1994	< 0.060
RESPIRABLE DUST <sup>a</sup>	mg/m <sup>3</sup>	NIOSH MANUAL OF ANALYTICAL METHOD (NMAM), METHOD 0600, FOURTH EDITION, 15th AUG, 1994	0.016
SAMPLE CONDITION			COMPLETE

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

REMARK

RESULT : REFERENCE CONDITION IS 25 DEGREE CELSIUS AT 1 ATMOSPHERE.

*Budsakorn ✓*

(MISS BUDSAKORN LERDPANUMAS)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaityasit.t@sekisui.com  
**SAMPLING SOURCE** : LOADING PVC  
**SAMPLE TYPE** : WORKPLACE  
**SAMPLING DATE** : MAY 28, 2025  
**SAMPLING TIME** : 09:17-17:17 HOUR  
**SAMPLING BY** : MISS PIYANATCHAYA SAMPAOPHONG  
**ANALYZED BY** : MISS JETJARIN TUMSA-AT  
**RECEIVED DATE** : JUNE 4, 2025  
**ANALYTICAL DATE** : JUNE 4-9, 2025  
**ISSUE DATE** : JUNE 17, 2025  
**REPORT NO.** : 2025-U053970  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AL863-0006

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT
			LOADING PVC T25AL863-0006
TOTAL DUST <sup>c</sup>	mg/m <sup>3</sup>	NIOSH MANUAL OF ANALYTICAL METHOD (NMAM), METHOD 0500, FOURTH EDITION, 15th AUG, 1994	< 0.060
RESPIRABLE DUST <sup>a</sup>	mg/m <sup>3</sup>	NIOSH MANUAL OF ANALYTICAL METHOD (NMAM), METHOD 0600, FOURTH EDITION, 15th AUG, 1994	0.011
SAMPLE CONDITION			COMPLETE

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT NOT IN SCOPE OF ACCREDITATION

### REMARK

RESULT : REFERENCE CONDITION IS 25 DEGREE CELSIUS AT 1 ATMOSPHERE.

*Budsakorn ✓*

(MISS BUDSAKORN LERDPANUMAS)  
LABORATORY SUPERVISOR



ระดับเสียงเฉลี่ยตลอดระยะเวลาการทำงาน

---

## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaivasit.t@sekisui.com  
**MEASURING PLACE** : S AND L SPECIALTY POLYMERS CO., LTD.  
**MEASURING TYPE** : WORKPLACE (NOISE) **RECEIVED DATE** : MAY 29, 2025  
**MEASURING DATE** : MAY 29, 2025 **ANALYTICAL DATE** : MAY 29, 2025  
**MEASURING TIME** : \* **ISSUE DATE** : JUNE 19, 2025  
**MEASURING EQUIPMENT** : INTEGRATED SOUND LEVEL METER \*\* **REPORT NO.** : 2025-U055647  
**MEASURED BY** : MISS PIYANATCHAYA SAMPAOPHONG **WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AN051-0001

ANALYSIS NO.	MEASURING SITE	TIME* (HOUR)	RESULT (dB(A))	
			L <sub>eq</sub> 12 hours	L <sub>max</sub> 12 hours
T25AN051-0001	COMPRESSOR HOUSE (N2)	09:00-21:00	83.7	96.6

### REMARK :

- \*\* DEPARTMENT OF LABOR PROTECTION AND WELFARE ANNOUNCEMENT REGARDING STANDARDS, METHODS FOR MEASUREMENT AND ANALYSIS OF WORKING CONDITIONS RELATED TO HEAT LEVELS, LIGHTING, OR NOISE, INCLUDING DURATION AND TYPES OF ACTIVITIES REQUIRED, DATED FEBRUARY 8, B.E. 2561 (2018).
- \*\* THE MINISTERIAL REGULATION (MINISTRY OF LABOR) ON ESTABLISHING STANDARDS FOR MANAGEMENT AND IMPLEMENTATION OF OCCUPATIONAL SAFETY, HEALTH, AND ENVIRONMENTAL CONDITIONS RELATED TO HEAT, LIGHTING AND NOISE, DATED OCTOBER 7, B.E. 2559 (2016).
- \*\* THE MINISTRY OF INDUSTRY ANNOUNCEMENT REGARDING SAFETY PROTECTION MEASURES FOR INDUSTRIAL OPERATIONS RELATED TO WORKING ENVIRONMENTAL CONDITIONS, DATED NOVEMBER 6, B.E. 2546 (2003).

*Nattawat*

(MR NATTAWAT DANGSAWAT)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUA PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaivasit.t@sekisui.com  
**MEASURING PLACE** : S AND L SPECIALTY POLYMERS CO., LTD.  
**MEASURING TYPE** : WORKPLACE (NOISE) **RECEIVED DATE** : MAY 27, 2025  
**MEASURING DATE** : MAY 27, 2025 **ANALYTICAL DATE** : MAY 27, 2025  
**MEASURING TIME** : \* **ISSUE DATE** : JUNE 19, 2025  
**MEASURING EQUIPMENT** : INTEGRATED SOUND LEVEL METER \*\* **REPORT NO.** : 2025-U055652  
**MEASURED BY** : MISS PIYANATCHAYA SAMPAOPHONG **WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AN051-0002

ANALYSIS NO.	MEASURING SITE	TIME* (HOUR)	RESULT (dB(A))	
			L <sub>Aeq</sub> 12 hours	L <sub>Amax</sub> 12 hours
T25AN051-0002	DRYER UNIT (N3)	09:03-21:03	86.0	101.0

**REMARK :**

- \*\* DEPARTMENT OF LABOR PROTECTION AND WELFARE ANNOUNCEMENT REGARDING STANDARDS, METHODS FOR MEASUREMENT AND ANALYSIS OF WORKING CONDITIONS RELATED TO HEAT LEVELS, LIGHTING, OR NOISE, INCLUDING DURATION AND TYPES OF ACTIVITIES REQUIRED, DATED FEBRUARY 8, B.E. 2561 (2018).  
\*\* THE MINISTERIAL REGULATION (MINISTRY OF LABOR) ON ESTABLISHING STANDARDS FOR MANAGEMENT AND IMPLEMENTATION OF OCCUPATIONAL SAFETY, HEALTH, AND ENVIRONMENTAL CONDITIONS RELATED TO HEAT, LIGHTING AND NOISE, DATED OCTOBER 7, B.E. 2559 (2016).  
\*\* THE MINISTRY OF INDUSTRY ANNOUNCEMENT REGARDING SAFETY PROTECTION MEASURES FOR INDUSTRIAL OPERATIONS RELATED TO WORKING ENVIRONMENTAL CONDITIONS, DATED NOVEMBER 6, B.E. 2546 (2003).

*Nattawat*

(MR NATTAWAT DANGSAWAT)  
LABORATORY SUPERVISOR



ปริมาณเสียงสะสมที่ตัวพนักงาน และระดับเสียงที่พนักงาน  
ได้รับเฉลี่ยตลอดเวลาการทำงาน  
(Time-Weighted Average-TWA)

---

## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**MEASURING PLACE** : S AND L SPECIALTY POLYMERS CO., LTD.  
**MEASURING TYPE** : WORKPLACE (NOISE DOSE)  
**MEASURING DATE** : FEBRUARY 25, 2025  
**MEASURING TIME** : \*  
**MEASURING EQUIPMENT** : NOISE DOSE METER\*\*  
**MEASURED BY** : MISS PIYANATCHAYA SAMPAOPHONG  
**RECEIVED DATE** : FEBRUARY 25, 2025  
**ANALYTICAL DATE** : FEBRUARY 25, 2025  
**ISSUE DATE** : FEBRUARY 28, 2025  
**REPORT NO.** : 2025-U016564  
**WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AE092-0001

ANALYSIS NO.	MEASURING SITE	TIME* (HOUR)	RESULT			
			LAVG <sup>a</sup> <sub>12 HOUR</sub> (dB(A))	TWA <sup>a</sup> <sub>8 HOUR</sub> (dB(A))	L <sub>Amax</sub> (dB(A)) <sup>c</sup>	DOSE (%) <sup>c</sup>
T25AE092-0001	PRODUCTION AREA 1 SAMPLING (ตอนผลิต การประตีสึก)	08:57-20:57	76.2	77.9	105	19.5

a : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARD INSTITUTE (TISI)

c : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

\*\* DEPARTMENT OF LABOR PROTECTION AND WELFARE ANNOUNCEMENT REGARDING STANDARDS, METHODS FOR MEASUREMENT AND ANALYSIS OF WORKING CONDITIONS RELATED TO HEAT LEVELS, LIGHTING, OR NOISE, INCLUDING DURATION AND TYPES OF ACTIVITIES REQUIRED, DATED FEBRUARY 8, B.E. 2561 (2018).

\*\* THE MINISTERIAL REGULATION (MINISTRY OF LABOR) ON ESTABLISHING STANDARDS FOR MANAGEMENT AND IMPLEMENTATION OF OCCUPATIONAL SAFETY, HEALTH, AND ENVIRONMENTAL CONDITIONS RELATED TO HEAT, LIGHTING AND NOISE, DATED OCTOBER 7, B.E. 2559 (2016).

\*\* THE MINISTRY OF INDUSTRY ANNOUNCEMENT REGARDING SAFETY PROTECTION MEASURES FOR INDUSTRIAL OPERATIONS RELATED TO WORKING ENVIRONMENTAL CONDITIONS, DATED NOVEMBER 6, B.E. 2546 (2003).

*Nattawat*

(MR NATTAWAT DANGSAWAT)  
LABORATORY SUPERVISOR



## ANALYSIS REPORT

**PROJECT NAME** : โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)  
**CUSTOMER NAME** : S AND L SPECIALTY POLYMERS CO., LTD.  
**ADDRESS** : 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150  
**CONTACT INFORMATION** : TEL : 092-457-0952 e-mail : Chaiyasit.t@sekisui.com  
**MEASURING PLACE** : S AND L SPECIALTY POLYMERS CO., LTD.  
**MEASURING TYPE** : WORKPLACE (NOISE DOSE) **RECEIVED DATE** : MAY 27, 2025  
**MEASURING DATE** : MAY 27, 2025 **ANALYTICAL DATE** : MAY 27, 2025  
**MEASURING TIME** : \* **ISSUE DATE** : JUNE 12, 2025  
**MEASURING EQUIPMENT** : NOISE DOSE METER \*\* **REPORT NO.** : 2025-U051402  
**MEASURED BY** : MISS PIYANATCHAYA SAMPAOPHONG **WORK NO.** : 2024-010526  
**ANALYSIS NO.** : T25AL864-0001 - T25AL864-0003

ANALYSIS NO.	MEASURING SITE	TIME* (HOUR)	RESULT			
			LAVG <sup>a</sup> <sub>12 HOUR</sub> (dB(A))	TWA <sup>a</sup> <sub>8 HOUR</sub> (dB(A))	L <sub>Amax</sub> (dB(A)) <sup>c</sup>	DOSE (%) <sup>c</sup>
T25AL864-0001	PRODUCTION AREA (คุณวสันต์ มุกดา)	08:50-20:50	83.7	85.5	113	112
T25AL864-0002	PRODUCTION AREA (คุณแวน พันคำสือ)	08:51-20:51	73.6	75.3	102	10.8
T25AL864-0003	PRODUCTION AREA (คุณนครินทร์ ขวรัตน์)	08:52-20:52	80.1	81.9	107	48.5

a : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARD INSTITUTE (TISI)

c : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

\*\* DEPARTMENT OF LABOR PROTECTION AND WELFARE ANNOUNCEMENT REGARDING STANDARDS, METHODS FOR MEASUREMENT AND ANALYSIS OF WORKING CONDITIONS RELATED TO HEAT LEVELS, LIGHTING, OR NOISE, INCLUDING DURATION AND TYPES OF ACTIVITIES REQUIRED, DATED FEBRUARY 8, B.E. 2561 (2018).

\*\* THE MINISTERIAL REGULATION (MINISTRY OF LABOR) ON ESTABLISHING STANDARDS FOR MANAGEMENT AND IMPLEMENTATION OF OCCUPATIONAL SAFETY, HEALTH, AND ENVIRONMENTAL CONDITIONS RELATED TO HEAT, LIGHTING AND NOISE, DATED OCTOBER 7, B.E. 2559 (2016).

\*\* THE MINISTRY OF INDUSTRY ANNOUNCEMENT REGARDING SAFETY PROTECTION MEASURES FOR INDUSTRIAL OPERATIONS RELATED TO WORKING ENVIRONMENTAL CONDITIONS, DATED NOVEMBER 6, B.E. 2546 (2003).

*Nattawat*

(MR NATTAWAT DANGSAWAT)  
LABORATORY SUPERVISOR

ความร้อนในสถานที่ปฏิบัติงาน

---

## ANALYSIS REPORT

<b>PROJECT NAME</b>	: โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)	<b>RECEIVED DATE</b>	: APRIL 28, 2025
<b>CUSTOMER NAME</b>	: S AND L SPECIALTY POLYMERS CO., LTD.	<b>ANALYTICAL DATE</b>	: APRIL 28, 2025
<b>ADDRESS</b>	: 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150	<b>ISSUE DATE</b>	: MAY 7, 2025
<b>CONTACT INFORMATION</b>	: TEL : 092-457-0952 e-mail : Chalyasit.t@sekisui.com	<b>REPORT NO.</b>	: 2025-U038824
<b>MEASURING PLACE</b>	: S AND L SPECIALTY POLYMERS CO., LTD.	<b>WORK NO.</b>	: 2024-010526
<b>MEASURING TYPE</b>	: WORKPLACE (HEAT STRESS)	<b>ANALYSIS NO.</b>	: T25AJ100-0001 - T25AJ100-0022
<b>MEASURING DATE</b>	: APRIL 28, 2025		
<b>MEASURING TIME</b>	: *		
<b>MEASURING EQUIPMENT</b>	: WET BULB GLOBE TEMPERATURE**		
<b>MEASURED BY</b>	: MISS PIYANATCHAYA SAMPAOPHONG		

ANALYSIS NO.	MEASURING SITE	DURATION TIME*	RESULT (DEGREE CELSIUS)				
			NWB	DB	GT	WBGT	WBGT AVG
T25AJ100-0001	AIR COMPRESSOR UNIT (คุณเอชินพ แสงไชย)	09:55-10:15 HOUR	28.7	34.5	36.8	31.1	23.3
		10:15-11:55 HOUR	20.3	25.1	25.3	21.8	
T25AJ100-0002	CANTEEN (คุณณัฏฐา จันทร์นุสรณ์)	13:25-15:25 HOUR	27.5	31.7	32.3	28.9	28.9
T25AJ100-0003	DRYER UNIT 1ST FL. (คุณเพ็ญทิพย์ พึ่งสุข)	10:15-10:35 HOUR	28.1	33.0	33.5	29.7	23.2
		10:35-12:15 HOUR	20.3	25.2	25.6	21.9	
T25AJ100-0004	DRYER UNIT 2ND FL. (คุณเพ็ญทิพย์ พึ่งสุข)	13:15-13:35 HOUR	28.0	34.8	35.1	30.1	23.2
		13:35-15:15 HOUR	20.2	25.1	25.4	21.8	
T25AJ100-0005	DRYER UNIT TOP FL. (คุณณัฏฐา จันทร์นุสรณ์)	13:18-13:38 HOUR	28.1	31.7	40.3	30.9	23.4
		13:38-15:18 HOUR	20.4	25.3	25.6	21.9	
T25AJ100-0006	PVC LOADING (คุณพวงษ์ แสนชัย)	13:00-13:45 HOUR	28.3	33.0	35.1	30.3	30.1
		13:45-15:00 HOUR	27.9	32.4	34.8	30.0	
T25AJ100-0007	QC ROOM (INSPECTION ROOM) (คุณณัฏฐา จันทร์นุสรณ์)	10:05-12:05 HOUR	19.5	24.4	25.2	21.2	21.2
T25AJ100-0008	QC ROOM (TEMP. CONTROL ROOM) (คุณเกตุมาลี สาคำดวง)	10:08-12:08 HOUR	17.5	22.1	22.4	19.0	19.0
T25AJ100-0009	REACTOR HOUSE 1ST FL. (คุณวิฑูรย์ ท้าวน้อย)	13:08-13:28 HOUR	29.9	33.8	36.8	32.0	23.3
		13:28-15:08 HOUR	20.0	24.9	25.4	21.6	
T25AJ100-0010	REACTOR HOUSE 2ND FL. (คุณสุริยา นงษ์ทอง)	13:10-13:30 HOUR	29.7	39.6	41.4	33.2	23.4
		13:30-15:10 HOUR	19.9	24.8	25.1	21.5	
T25AJ100-0011	RE-SLURRY HOUSE 1ST FL. (คุณเอชินพ แสงไชย)	13:02-13:22 HOUR	28.0	31.2	31.4	29.0	23.1
		13:22-15:02 HOUR	20.4	25.4	25.6	21.9	
T25AJ100-0012	RE-SLURRY HOUSE 2ND FL. (คุณนฤพล คงแก้ว)	10:02-10:22 HOUR	28.3	31.6	31.8	29.4	23.1
		10:22-12:02 HOUR	20.4	25.2	25.5	21.9	
T25AJ100-0013	RE-SLURRY HOUSE 3RD FL. (คุณนฤพล คงแก้ว)	13:05-13:25 HOUR	28.7	33.3	34.6	30.5	23.4
		13:25-15:05 HOUR	20.5	25.1	25.3	22.0	
T25AJ100-0014	SECURITY GUARDHOUSE (คนกนก สว่างรัตน์)	09:50-11:50 HOUR	27.4	31.5	33.9	29.1	29.1
T25AJ100-0015	TANK YARD (คุณสุกฤษฎ์ จันทร์มณี)	10:10-10:30 HOUR	27.9	33.3	34.5	29.9	22.9
		10:30-12:10 HOUR	20.0	24.8	25.2	21.5	



ANALYSIS NO.	MEASURING SITE	DURATION TIME*	RESULT (DEGREE CELSIUS)				
			NWB	DB	GT	WBGT	WBGT <sub>AVG</sub>
T25AJ100-0016	WAREHOUSE 1 (คุณณัฐพล เดชรลาริ)	13:20-15:20 HOUR	28.0	32.6	32.9	29.5	29.5
T25AJ100-0017	WAREHOUSE 2 (คุณวุฒิชัย มินวงษ์)	13:22-15:22 HOUR	27.4	31.9	32.2	28.8	28.8
T25AJ100-0018	WAREHOUSE 3 (คุณวิฑูรย์ ท้าวน้อย)	10:00-12:00 HOUR	28.0	31.6	31.8	29.2	29.2
T25AJ100-0019	WASHING TOWER (คุณเสกสรรค์ จันทวน)	13:12-13:32 HOUR	27.2	32.4	34.4	29.4	23.0
		13:32-15:12 HOUR	20.1	25.3	25.7	21.8	
T25AJ100-0020	WASTE AREA (คุณชัยสิทธิ์ ทองกันยา)	10:12-12:12 HOUR	29.3	35.1	38.1	31.9	31.9
T25AJ100-0021	WASTEWATER UNIT (คุณทองหล่อ แสนชัย)	09:58-10:18 HOUR	26.2	30.1	31.4	27.8	22.4
		10:18-11:58 HOUR	19.7	24.8	25.1	21.3	
T25AJ100-0022	MANHOLE OF REACTOR (คุณสุริยะ หงษ์ทอง)	09:52-10:12 HOUR	30.6	39.6	40.3	33.5	23.6
		10:12-11:52 HOUR	20.0	25.0	25.3	21.6	

\*\* DEPARTMENT OF LABOR PROTECTION AND WELFARE ANNOUNCEMENT REGARDING STANDARDS, METHODS FOR MEASUREMENT AND ANALYSIS OF WORKING CONDITIONS RELATED TO HEAT LEVELS, LIGHTING, OR NOISE, INCLUDING DURATION AND TYPES OF ACTIVITIES REQUIRED, DATED FEBRUARY 8, B.E. 2561 (2018).

\*\* THE MINISTERIAL REGULATION (MINISTRY OF LABOR) ON ESTABLISHING STANDARDS FOR MANAGEMENT AND IMPLEMENTATION OF OCCUPATIONAL SAFETY, HEALTH, AND ENVIRONMENTAL CONDITIONS RELATED TO HEAT, LIGHTING AND NOISE, DATED OCTOBER 7, B.E. 2559 (2016).

\*\* THE MINISTRY OF INDUSTRY ANNOUNCEMENT REGARDING SAFETY PROTECTION MEASURES FOR INDUSTRIAL OPERATIONS RELATED TO WORKING ENVIRONMENTAL CONDITIONS, DATED NOVEMBER 6, B.E. 2546 (2003).

*Nattawat*

(MR NATTAWAT DANGSAWAT)  
LABORATORY SUPERVISOR

ความเข้มแสงสว่างในสถานประกอบการ

---

## ANALYSIS REPORT

<b>PROJECT NAME</b>	: โครงการโรงงานผลิตซีพีวีซี (CHLORINATED POLYVINYL CHLORIDE RESIN)		
<b>CUSTOMER NAME</b>	: S AND L SPECIALTY POLYMERS CO., LTD.		
<b>ADDRESS</b>	: 5 PHANGMUANG CHAPOH 3-1 HUAI PONG MUEANG RAYONG RAYONG 21150		
<b>CONTACT INFORMATION</b>	: TEL : 092-457-0952 e-mail : Chaayasit.t@seksui.com		
<b>MEASURING PLACE</b>	: S AND L SPECIALTY POLYMERS CO., LTD.		
<b>MEASURING TYPE</b>	: WORKPLACE (LIGHT INTENSITY)	<b>RECEIVED DATE</b>	: MAY 29, 2025
<b>MEASURING DATE</b>	: MAY 29, 2025	<b>ANALYTICAL DATE</b>	: MAY 29, 2025
<b>MEASURING TIME</b>	: *	<b>ISSUE DATE</b>	: JUNE 12, 2025
<b>MEASURING EQUIPMENT</b>	: LUX METER **	<b>REPORT NO.</b>	: 2025-U051408
<b>MEASURED BY</b>	: MISS PIYANATCHAYA SAMPAOPHONG	<b>WORK NO.</b>	: 2024-010526
		<b>ANALYSIS NO.</b>	: T25AM353-0001 - T25AM353-0103

ANALYSIS NO.	MEASURING SITE	TIME *	RESULT (LUX)	
			LIGHT INTENSITY	
			SPOT MEASUREMENT	AREA MEASUREMENT
	<b>DAY TIME</b>			
	<b>อาคาร OFFICE : 2ND FLOOR</b>			
T25AM353-0001	โต๊ะทำงาน HSE	09:20 HOUR	588	-
T25AM353-0002	โต๊ะทำงาน BOI	09:21 HOUR	510	-
T25AM353-0003	โต๊ะทำงาน FA	09:22 HOUR	637	-
T25AM353-0004	โต๊ะทำงาน PURCHASE	09:23 HOUR	553	-
T25AM353-0005	โต๊ะทำงาน ME #1	09:24 HOUR	502	-
T25AM353-0006	โต๊ะทำงาน ME #2	09:25 HOUR	567	-
T25AM353-0007	โต๊ะทำงาน PD	09:26 HOUR	602	-
T25AM353-0008	โต๊ะทำงาน QCT	09:27 HOUR	532	-
	<b>ทางเดินภายในห้อง OFFICE</b>			
T25AM353-0009	POINT 1	09:29 HOUR	-	415
T25AM353-0010	POINT 2	09:30 HOUR	-	433
T25AM353-0011	POINT 3	09:31 HOUR	-	325
T25AM353-0012	POINT 4	09:32 HOUR	-	242
T25AM353-0013	POINT 5	09:33 HOUR	-	246
	AVERAGE		-	<b>332</b>
T25AM353-0014	โต๊ะทำงาน CEO	09:34 HOUR	514	-
	<b>ห้อง MEETING</b>			
T25AM353-0015	POINT 1	09:36 HOUR	-	397
T25AM353-0016	POINT 2	09:37 HOUR	-	330
T25AM353-0017	POINT 3	09:38 HOUR	-	697
	AVERAGE		-	<b>475</b>
	<b>ห้อง SEMINAR</b>			
T25AM353-0018	POINT 1	09:40 HOUR	-	477
T25AM353-0019	POINT 2	09:41 HOUR	-	715
T25AM353-0020	POINT 3	09:42 HOUR	-	723
T25AM353-0021	POINT 4	09:43 HOUR	-	887
T25AM353-0022	POINT 5	09:44 HOUR	-	809
T25AM353-0023	POINT 6	09:45 HOUR	-	588
	AVERAGE		-	<b>700</b>

ANALYSIS NO.	MEASURING SITE	TIME *	RESULT (LUX)	
			LIGHT INTENSITY	
			SPOT MEASUREMENT	AREA MEASUREMENT
T25AM353-0024	อาคาร OFFICE : 1ST FLOOR ทางเดินหน้าลิฟต์ POINT 1	09:47 HOUR	-	233
T25AM353-0025	POINT 2	09:48 HOUR	-	355
T25AM353-0026	POINT 3	09:49 HOUR	-	242
	AVERAGE		-	<b>277</b>
T25AM353-0027	โถะทำงาน RECEPTION	09:50 HOUR	694	-
	โถะประชุม RECEPTION			
T25AM353-0028	POINT 1	09:52 HOUR	-	402
T25AM353-0029	POINT 2	09:53 HOUR	-	379
	AVERAGE		-	<b>391</b>
	RECEPTION ROOM			
T25AM353-0030	POINT 1	09:55 HOUR	-	1,229
T25AM353-0031	POINT 2	09:56 HOUR	-	1,390
T25AM353-0032	POINT 3	09:57 HOUR	-	1,428
	AVERAGE		-	<b>1,349</b>
	CANTEEN : พื้นที่จำหน่ายอาหาร			
T25AM353-0033	POINT 1	09:59 HOUR	-	441
T25AM353-0034	POINT 2	10:00 HOUR	-	472
T25AM353-0035	POINT 3	10:01 HOUR	-	466
	AVERAGE		-	<b>459</b>
T25AM353-0036	จุดปรุงอาหาร	10:02 HOUR	306	-
T25AM353-0037	จุดเตรียมอาหาร	10:03 HOUR	312	-
T25AM353-0038	ล้างจาน	10:04 HOUR	303	-
	ทางเดินหน้าห้องน้ำ			
T25AM353-0039	POINT 1	10:06 HOUR	-	147
T25AM353-0040	POINT 2	10:07 HOUR	-	71
T25AM353-0041	POINT 3	10:08 HOUR	-	124
	AVERAGE		-	<b>114</b>
	ทางเดินหน้าลิฟต์ออกเกอร์			
T25AM353-0042	POINT 1	10:10 HOUR	-	985
T25AM353-0043	POINT 2	10:11 HOUR	-	1,220
T25AM353-0044	POINT 3	10:12 HOUR	-	1,641
	AVERAGE		-	<b>1,282</b>
	ห้องพยาบาล			
T25AM353-0045	POINT 1	10:14 HOUR	-	483
T25AM353-0046	POINT 2	10:15 HOUR	-	556
	AVERAGE		-	<b>519</b>
T25AM353-0047	โถะคอมพิวเตอร์ห้องพยาบาล	10:16 HOUR	504	-
T25AM353-0048	อาคาร WAREHOUSE 1/OFFICE LOGISTIC DESK AT WAREHOUSE 1	10:17 HOUR	437	-
T25AM353-0049	จุด CONTROL SILO 1	10:18 HOUR	224	-
T25AM353-0050	จุด CONTROL SILO 4	10:19 HOUR	208	-

ANALYSIS NO.	MEASURING SITE	TIME *	RESULT (LUX)	
			LIGHT INTENSITY	
			SPOT MEASUREMENT	AREA MEASUREMENT
T25AM353-0051	จุดยกสินค้า	10:20 HOUR	222	-
T25AM353-0052	อาคาร WAREHOUSE 2/จุด CONTROL SILO 2	10:21 HOUR	262	-
T25AM353-0053	จุด CONTROL SILO 3	10:22 HOUR	273	-
T25AM353-0054	อาคาร WAREHOUSE 3 (UNLOADING PVC)/ CONTROL PANEL	10:23 HOUR	992	-
T25AM353-0055	V53-2-P	10:24 HOUR	765	-
T25AM353-0056	V53-3-P	10:25 HOUR	882	-
T25AM353-0057	อาคาร SLURRY : 1ST FLOOR/จุดบังคับเลน #1	10:26 HOUR	936	-
T25AM353-0058	จุดบังคับเลน #2	10:27 HOUR	209	-
T25AM353-0059	เกทวาล์ว P32-1-P	10:28 HOUR	355	-
T25AM353-0060	อาคาร SLURRY : 2ND FLOOR/MANHOLE V32-1-P	10:29 HOUR	110	-
T25AM353-0061	MANHOLE Z32-1-P	10:30 HOUR	19	-
T25AM353-0062	MANHOLE V32-2-P	10:31 HOUR	33	-
T25AM353-0063	อาคาร SLURRY : 3RD FLOOR/MANHOLE V31-2-P พื้นที่ 1	10:32 HOUR	1,407	-
T25AM353-0064	MANHOLE V31-2-P พื้นที่ 2	10:33 HOUR	1,513	-
T25AM353-0065	MANHOLE V31-2-P พื้นที่ 3	10:34 HOUR	1,661	-
T25AM353-0066	MAINTENANCE SHOP : โต๊ะซ่อมบำรุง POINT 1	10:50 HOUR	-	353
T25AM353-0067	POINT 2	10:51 HOUR	-	379
	AVERAGE		-	<b>366</b>
T25AM353-0068	โต๊ะเอกสาร	10:52 HOUR	331	-
T25AM353-0069	อาคาร REACTOR HOUSE : 2ND FLOOR/Z11-4-A พื้นที่ 1	10:53 HOUR	3,747	-
T25AM353-0070	อาคาร REACTOR HOUSE : 2ND FLOOR/Z11-4-A พื้นที่ 2	10:54 HOUR	3,485	-
T25AM353-0071	อาคาร REACTOR HOUSE : 2ND FLOOR/Z11-4-A พื้นที่ 3	10:55 HOUR	3,293	-
T25AM353-0072	อาคาร REACTOR HOUSE : 1ST FLOOR/V11-2-A	10:56 HOUR	356	-
T25AM353-0073	P41-1-A	10:57 HOUR	394	-
T25AM353-0074	P41-2-A	10:58 HOUR	329	-
T25AM353-0075	CONTROL ROOM/โต๊ะประชุม POINT 1	11:00 HOUR	-	303
T25AM353-0076	POINT 2	11:01 HOUR	-	291
T25AM353-0077	POINT 3	11:02 HOUR	-	328
	AVERAGE		-	<b>307</b>
T25AM353-0078	โต๊ะทำงาน DSC REACTOR	11:03 HOUR	512	-
T25AM353-0079	โต๊ะทำงาน DSC UT	11:04 HOUR	426	-
T25AM353-0080	โต๊ะทำงาน SHIFT	11:05 HOUR	408	-
T25AM353-0081	QC ROOM : 2ND FLOOR/TEMP. CONTROL/เครื่องชั่ง	11:06 HOUR	825	-
T25AM353-0082	โต๊ะปฏิบัติการ	11:07 HOUR	876	-
T25AM353-0083	HOOD LAB	11:08 HOUR	806	-
T25AM353-0084	โต๊ะคอมพิวเตอร์	11:09 HOUR	849	-
T25AM353-0085	QC ROOM : 2ND FLOOR/INSPECTION ROOM/ โต๊ะปฏิบัติการ	11:10 HOUR	699	-

ANALYSIS NO.	MEASURING SITE	TIME *	RESULT (LUX)	
			LIGHT INTENSITY	
			SPOT MEASUREMENT	AREA MEASUREMENT
T25AM353-0086	เครื่อง MIXING ROLL	11:11 HOUR	515	-
T25AM353-0087	อาคาร DRYER UNIT : 1ST FLOOR/จุดเก็บตัวอย่าง จุดที่ 1	11:12 HOUR	233	-
T25AM353-0088	จุดเก็บตัวอย่าง จุดที่ 2	11:13 HOUR	282	-
T25AM353-0089	จุดเก็บตัวอย่าง จุดที่ 3	11:14 HOUR	294	-
T25AM353-0090	อาคาร DRYER UNIT : 2ND FLOOR/S17-1-D	11:15 HOUR	104	-
T25AM353-0091	S17-2-D	11:16 HOUR	103	-
T25AM353-0092	S17-4-D	11:17 HOUR	104	-
T25AM353-0093	ป้อมรถ. : โต๊ะทำงาน	11:18 HOUR	932	-
<b>NIGHT TIME</b>				
T25AM353-0094	อาคาร REACTOR HOUSE : 2ND FLOOR/Z11-4-A พื้นที่ 1	HOUR	356	-
T25AM353-0095	อาคาร REACTOR HOUSE : 1ST FLOOR/V11-2-A	20:00 HOUR	81	-
T25AM353-0096	P41-1-A	20:01 HOUR	384	-
T25AM353-0097	P41-2-A	20:02 HOUR	334	-
T25AM353-0098	อาคาร DRYER UNIT : 1ST FLOOR/จุดเก็บตัวอย่าง จุดที่ 1	20:03 HOUR	296	-
T25AM353-0099	จุดเก็บตัวอย่าง จุดที่ 2	20:04 HOUR	285	-
T25AM353-0100	จุดเก็บตัวอย่าง จุดที่ 3	20:05 HOUR	207	-
T25AM353-0101	อาคาร DRYER UNIT : 2ND FLOOR/S17-1-D	20:06 HOUR	102	-
T25AM353-0102	S17-2-D	20:07 HOUR	111	-
T25AM353-0103	S17-4-D	20:08 HOUR	118	-

REMARK :

- \*\* DEPARTMENT OF LABOR PROTECTION AND WELFARE ANNOUNCEMENT REGARDING STANDARDS, METHODS FOR MEASUREMENT AND ANALYSIS OF WORKING CONDITIONS RELATED TO HEAT LEVELS, LIGHTING, OR NOISE, INCLUDING DURATION AND TYPES OF ACTIVITIES REQUIRED, DATED FEBRUARY 8, B.E. 2561 (2018).
- \*\* THE MINISTERIAL REGULATION (MINISTRY OF LABOR) ON ESTABLISHING STANDARDS FOR MANAGEMENT AND IMPLEMENTATION OF OCCUPATIONAL SAFETY, HEALTH, AND ENVIRONMENTAL CONDITIONS RELATED TO HEAT, LIGHTING AND NOISE, DATED OCTOBER 7, B.E. 2559 (2016).
- \*\* THE MINISTRY OF INDUSTRY ANNOUNCEMENT REGARDING SAFETY PROTECTION MEASURES FOR INDUSTRIAL OPERATIONS RELATED TO WORKING ENVIRONMENTAL CONDITIONS, DATED NOVEMBER 6, B.E. 2546 (2003).

*Nattawat*

(MR NATTAWAT DANGSAWAT)  
LABORATORY SUPERVISOR

ภาคผนวก ง  
ใบรับรองการสอบเทียบเครื่องมือ

---

## List of Instruments Certification for Air & Noise Quality Analysis

No.	Instrument/Equipment	Parameter	Manufacturer	Model/Serial No.	Calibrator	Certification No.	Date of Calibration	Due date of Calibration	Remark
<b>Ambient</b>									
1	Orifice Transfer Standard Calibrator	Total Suspended Particulate (TSP)	Tisch Environmental, Inc.	TE-5025A 3383	Jiranatee Associates Co., Ltd.	COF-039-67	27 Sep 24	26 Sep 25	-
2	U-Tube Manometer	Total Suspended Particulate (TSP)	Dwyer	121-36-W/M -	Technology Promotion Association (Thailand-Japan)	25P112	19 Feb 25	18 Feb 26	-
3	Aneroid Barometer	Total Suspended Particulate (TSP) Chlorine	Barigo, Germany	-	Technology Promotion Association (Thailand-Japan)	24P1856	4 Jun 24	3 Jun 25	-
4	Digital Thermo - Hygrometer	Total Suspended Particulate (TSP) Chlorine	Digicon	TH-02 435031148	Technology Promotion Association (Thailand-Japan)	24H1487	15 Jul 24	14 Jul 25	-
5	Wind Speed/Wind Direction	WS/WD	LSI Lastem	DNA202/E-LOG BQ1705627/17037708	Jiranatee Associates Co., Ltd.	CWS-027-67	7 Aug 24	6 Aug 25	-
6	Sound Level Calibrator (Acoustic Calibrator)	Calibrate Sound Level Meter	01dB	CAL31 84065	Innovative Instrument Co., Ltd.	24-ACT-087	25 Jun 24	24 Jun 25	-
7	Sound Level Meter	$L_{Aeq\ 24\ hrs}$ , $L_{Aeq\ 1\ hr}$ , $L_{Amax}$ , $L_{A90}$ , $L_{Adn}$	Larson Davis	LxT2 0005290	Innovative Instrument Co., Ltd.	24-SLM-238	11 Jul 24	10 Jul 25	-
8	Sound Level Meter	$L_{Aeq\ 24\ hrs}$ , $L_{Aeq\ 1\ hr}$ , $L_{Amax}$ , $L_{A90}$ , $L_{Adn}$	Larson Davis	LxT2 0005293	Innovative Instrument Co., Ltd.	24-SLM-231	10 Jul 24	9 Jul 25	-

List of Instruments Certification for Air & Noise Quality Analysis

No.	Instrument/Equipment	Parameter	Manufacturer	Model/Serial No.	Calibrator	Certification No.	Date of Calibration	Due date of Calibration	Remark
Stack									
1	Pre-Test Console	Total Suspended Particulate Chlorine	Apex Instruments, USA.	XC-572-V 1904011	Envi Equipment Service Co., Ltd.	E24-08073	21 Aug 24	20 Aug 25	-
Water									
1	pH Meter	pH	Horiba	LAQUA-PH210 HA1G0008	Technology Promotion Association (Thailand-Japan)	24CH1153/1	18 Sep 24	17 Sep 25	-

## List of Instruments Certification for Air & Noise Quality Analysis

No.	Instrument/Equipment	Parameter	Manufacturer	Model/Serial No.	Calibrator	Certification No.	Date of Calibration	Due date of Calibration	Remark
<b>Workplace</b>									
1	Air Sampling Pump	Total Dust Chlorine	Sensidyne	GilAir 5 20150602025	Innovative Instrument Co., Ltd.	24-ASP-085	17 Jun 24	16 Jun 25	-
2	Air Sampling Pump	Total Dust Chlorine	Sensidyne	GilAir 5 20170701006	Innovative Instrument Co., Ltd.	24-ASP-090	20 Jun 24	19 Jun 25	-
3	Air Sampling Pump	Total Dust Chlorine	Sensidyne	GilAir 5 20220301018	Innovative Instrument Co., Ltd.	24-ASP-099	28 Jun 24	27 Jun 25	-
4	Air Sampling Pump	Total Dust Chlorine	Sensidyne	GilAir 5 20200401005	Innovative Instrument Co., Ltd.	24-ASP-185	24 Sep 24	23 Sep 25	-
5	Air Sampling Pump	Total Dust Chlorine	Sensidyne	GilAir 5 20220301022	Innovative Instrument Co., Ltd.	24-ASP-146	6 Sep 24	5 Sep 25	-
6	Air Sampling Pump	Total Dust Chlorine	Sensidyne	GilAir 5 20150602018	Innovative Instrument Co., Ltd.	24-ASP-068	3 Jun 24	2 Jun 25	-
7	Thermal Environment Monitor	Heat Meter	3M	QuesTemp 32 TPQ020022	Innovative Instrument Co.,Ltd.	24-TPM-369	15 Aug 24	14 Aug 25	-
8	Thermal Environment Monitor	Heat Meter	Quest Technologies, Inc	QuesTemp 34 OTE1010003	Innovative Instrument Co.,Ltd.	24-TPM-368	15 Aug 24	14 Aug 25	-
9	Sound Level Calibrator (Acoustic Calibrator)	Calibrate Sound Level Meter	Svantek	SV35A 73246	Innovative Instrument Co.,Ltd.	24-ACT-077	30 May 24	29 May 25	-
10	Sound Level Meter	$L_{Aeq\ 8\ hrs}$ , $L_{Amax}$	Rion, Japan	NL-42 00321432	Innovative Instrument Co.,Ltd.	25-SLM-057	19 Feb 25	18 Feb 26	-
11	Sound Level Meter	$L_{Aeq\ 8\ hrs}$ , $L_{Amax}$	Rion, Japan	NL-42 00709651	Sithiporn Associates Co., Ltd.	ACL25028	13 Jan 25	12 Jan 26	-
12	Noise Dosimeter	Noise Dosimeter	Svantek	SV 104 143227	Innovative Instrument Co.,Ltd.	24-NDM-179	16 Jul 24	15 Jul 25	-
13	Noise Dosimeter	Noise Dosimeter	Svantek	SV 104IS 106069	Innovative Instrument Co.,Ltd.	25-NDM-032	7 Feb 25	6 Feb 26	-
14	Digital Lux Meter	Lux	Extech Instrument, Taiwan	407026 A 062339	Innovative Instrument Co., Ltd.	24-LXM-198	1 Aug 24	31 Jul 25	-

## CERTIFICATE OF CALIBRATION

Certificate No. : COF-039-67

Page 2 of 2 Pages

### MEASUREMENT ITEM

MANUFACTURER

MODEL/TYPE

SERIAL NUMBER

ID NUMBER

CONDITION AS-RECEIVED

CUSTOMER

Tap Load Orifice

T0504

1E-5025A

3383

UAE EFM 063/2560

Used item

United Analyst and Engineering Consultant Co., Ltd.  
81 Soi Udomsak 41, Sukhumvit Road, Bangkok, Phrahanong,  
Bangkok 10260

RECEIVED DATE

16 Sep 2024

MEASUREMENT DATE

27 Sep 2024

ISSUE DATE

27 Sep 2024

### ENVIRONMENTAL CONDITIONS:

Ambient condition in the laboratory are as follows:

Temperature : 23.0 ± 3.0 °C

Relative Humidity : 55.0 ± 15.0 %RH

Atmospheric Pressure : 1020 ± 10 hPa

### CALIBRATION CONDITION:

Preconditioning : 24 hours at ambient condition.

Measurement Condition : The average values during measurement are 23.9 °C and 48.0 %RH.

NOTES: The certificate is valid only to the item calibrated on date and place of calibration.

### TABULATION OF RESULTS:

The table on next page give the measured values.

### Calibration procedure:

The Orifice gas flow device was calibrated against Standard Rotary Displacement Meter (Roots Meter) Model G63/MC/M20-20. The 98-CI-004 was used as a calibration gas.

### Traceability:

This certificate provides a traceability of the measurement to recognition of the national standards and to realization of the international system of units (SI) through the NIMT (National Metrology Institute of Thailand) via Certificate number: NMW-0003-23.

### Uncertainty of Measurement:

The reported uncertainty of measurement is based on the standard uncertainty multiplied by a coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty has been determined in accordance with the GUM "Evaluation of measurement data - Guide to the expression of uncertainty in measurement".

### MEASUREMENT RESULTS:

The Orifice gas flow device was calibrated by direct comparison method with the Standard Rotary Displacement Meter (Roots Meter). The humid gases used as a medium in the system. The standard conditions are 25 °C (298.15 K) and 760 mmHg for standard temperature and standard pressure respectively.

Table 1: The results of Q Standard calibration data

Plate	Flow rate m <sup>3</sup> /min	Pressure [Pa] mmHg	Temperature [°C]	Temperature [°F]	AP, meter mmHg	AP, Orifice inH <sub>2</sub> O	Y	Standard Flow [Q <sub>s</sub> ] m <sup>3</sup> /min
1	0.703	758.131	23.32	22.48	56.556	1.738	1.318	0.694
2	1.000	758.205	23.70	22.81	63.034	1.473	1.865	0.922
3	1.121	758.284	23.64	22.69	62.833	1.592	2.137	1.064
4	1.167	758.374	23.64	22.65	61.959	1.597	2.383	1.125
5	1.408	758.325	24.00	23.14	30.402	7.654	2.768	1.358

Slope (m): 2.05577

Intercept (b): -0.02807

Correlation coefficient (r): 0.99985

Uncertainty (k=2): 0.015 m<sup>3</sup>/min

Table 2: The results of Q actual calibration data

Plate	Flow rate m <sup>3</sup> /min	Pressure [Pa] mmHg	Temperature [°C]	Temperature [°F]	AP, meter mmHg	AP, Orifice inH <sub>2</sub> O	Y	Standard Flow [Q <sub>s</sub> ] m <sup>3</sup> /min
1	0.703	758.131	23.32	22.48	56.556	1.738	0.825	0.693
2	1.000	758.205	23.70	22.81	63.034	1.473	1.166	0.920
3	1.121	758.284	23.64	22.69	62.833	1.487	1.348	1.060
4	1.167	758.274	23.64	22.65	61.959	1.597	1.426	1.123
5	1.408	758.325	24.00	23.14	30.402	7.654	1.733	1.357

Slope (m): 1.78763

Intercept (b): -0.01358

Correlation coefficient (r): 0.99985

Uncertainty (k=2): 0.015 m<sup>3</sup>/min

\*\*\*End of Certificate of Calibration\*\*\*

Calibrated by:

☐ Mr. Sontep Phacholad

☒ Mr. Mitthapong Lertsamphol



Approved signatory:

Mr. Parinya Booncharoen  
Calibration Department Manager



THIS CERTIFICATE REPORT MAY NOT BE REPRODUCED EXCEPT IN FULL UNLESS PERMISSION FOR REPRODUCTION IS GRANTED IN WRITING FROM THE LABORATORY

เอกสารไม่ควบคุม

เอกสารไม่ควบคุม



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)  
CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES  
3344 PATTANAKARN ROAD SOI 18, SUKHUMVIT, SUKHUMVIT, BANGKOK 10230  
TEL: 6-2717-3060-24 FAX: 6-2716-9844

## Certificate of Calibration

Certificate No.: 25P112

Page: 1 of 2

Equipment:

U-Tube Manometer

Manufacturer:

Dwyer

Model:

121-36-WM

Serial No.:

-

ID No.:

UAE EFM 191/2561

Condition As-Received:

Used Item

Received Date:

10 February 2025

Calibration Date:

19 February 2025

Reference:

2502-0003WVG

Submitted by:

United Analyst and Engineering Consultant Co., Ltd.

Ambient Temperature:

( 23 ± 2 ) °C

Relative Humidity:

( 50 ± 10 ) %

Atmospheric Pressure:

1012 mbar

81 Soi Udomsak 41, Sukhumvit Road, Bangkok,

Phrahanong, Bangkok 10260

Procedure used:

The calibration was conducted by direct comparison method against Pressure Measuring Instruments Standard according to in-house calibration procedure CP-004, using "DKD-R 6-1"; Calibration of Pressure Gauges, Edition 03/2014 " as a guidelines.

### Condition of this result of calibration

1. Reference standards Instruments:

Instrument	Model	Serial No.	Certificate No.	Due Date
1) Pressure Calibrator	PC106P	1189	MP-0113-24	10 Jul 2025

2. This result of calibration was made on requested at the point specified by customer.

3. Scale and conversion factor is 1 kPa = 4.0146293 inH<sub>2</sub>O

4. This instrument was used clean air as pressure media.

5. This instrument was installed in vertical orientation and center of connector was used as the reference level.

6. The certificate is valid only to the item calibrated on date and place of calibration.

7. This Certification is traceable to the International System of Unit maintained at-

-National Institute of Metrology Thailand (NIMT)

Calibrated by: Noppadol Phongam

Issue Date: 21 February 2025

Approved Signatory:

Atapol P.

[ ] Phairat Pradapal

[ ] Sun Suwanasri

[x] Atapol Panurach

เอกสารไม่ควบคุม  
a 0250406



Cert.No.: 25P112

Page: 2 of 2

Result of calibration: Without adjustment

Function: Pressure Measurement

Increasing Pressure

Range: 0 inH<sub>2</sub>O to 36 inH<sub>2</sub>O

Scale Interval: 0.1 inH<sub>2</sub>O (The Fifth Estimate)

Applied Pressure (inH <sub>2</sub> O)	UUC Indication		AP (inH <sub>2</sub> O)	Error (inH <sub>2</sub> O)
	High-port side (inH <sub>2</sub> O)	Low-port side (inH <sub>2</sub> O)		
0.00	0.00	0.00	0.00	0.00
2.00	1.00	-0.98	1.98	-0.02
4.00	2.00	-1.98	3.98	-0.02
6.00	3.00	-3.02	6.02	0.02
8.00	4.00	-4.02	8.02	0.02
10.00	5.00	-5.04	10.04	0.04
12.00	6.00	-6.04	12.04	0.04
14.00	7.00	-7.08	14.08	0.08
16.00	8.00	-8.08	16.08	0.08
18.00	9.00	-9.08	18.08	0.08
20.00	10.00	-10.06	20.06	0.06
22.00	11.00	-11.08	22.08	0.08
24.00	12.00	-12.06	24.06	0.06
26.00	13.02	-13.10	26.12	0.12
28.00	14.02	-14.10	28.12	0.12
30.00	15.02	-15.10	30.12	0.12
32.00	16.02	-16.10	32.12	0.12
34.00	17.02	-17.08	34.10	0.10
35.50	17.86	-17.92	35.78	0.28

The uncertainty of measurement was ± 0.11 inH<sub>2</sub>O

\* UUC = Unit Under Calibration

\* ΔP = High-port side - Low-port side

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor  $k=2$ , providing a level of confidence of approximately 95 %.

-00-

Atapol P.

เอกสารไม่ควบคุม  
a 1037943



## Certificate of Calibration

Certificate No.: 24P1858  
Page: 1 of 2

Equipment: Aneroid Barometer

Manufacturer: Barigo

Model: -

Serial No.: -

ID No.: UAE.EMA2.115/2555

Condition As-Received: Used Item

Received Date: 24 May 2024

Calibration Date: 04 June 2024

Reference: 2405-0919WSC

Submitted by: United Analyst and Engineering Consultant Co., Ltd.

Ambient Temperature: ( 23 ± 2 ) °C

Relative Humidity: ( 50 ± 15 ) %

Atmospheric Pressure: 1006 mbar

81 Soi Udomsak 41, Sukhumvit Road,  
Bangchak, Phraekhong, Bangkok 10260

Procedure used: The calibration was conducted by direct comparison method against Pressure Measuring Instruments Standard according to in-house calibration procedure CP-P10, using " DKD-R 6-1 : Calibration of Pressure Gauges, Edition 03/2014 " as a guidelines.

### Condition of this result of calibration

1. Reference standards instruments:

Instrument	Model	Serial No.	Certificate No.	Due Date
1) Standard Barometer	DP1142	1422503046	MP-0094-24	03 May 2025

2. This instrument was installed in vertical orientation and center of the dial was used as the reference level.

3. This result of calibration was made on requested at the point specified by customer.

4. This result of calibration instrument was in absolute pressure.

5. This instrument was used clean air as pressure media.

6. The certificate is valid only to the item calibrated on date and place of calibration.

7. This Certification is traceable to the International System of Unit maintained through:-

-National Institute of Metrology Thailand (NIMT)

Calibrated by: Sukorn Khonkaew  
Issue Date: 06 June 2024

Approved Signatory: Athapol P.  
[ ] Phalinee Prabpaipal  
[ ] Sure Suwananasi  
[x] Athapol Panerach

เอกสารไม่ควบคุม  
0316956



Result of calibration:- Without adjustment

Function: Absolute Pressure Measurement

Range: 720 mmHg to 800 mmHg

Scale Interval: 1 mmHg (The Fifth Estimate)

Increasing Pressure

Applied Pressure (mmHg)	720.43	730.67	740.34	751.52	756.56	761.83	773.53	786.76
UUC* Indication (mmHg)	720.0	730.0	740.0	750.0	755.0	760.0	770.0	780.0
Error (mmHg)	-0.43	-0.67	-0.34	-1.52	-1.56	-1.83	-3.53	-8.76

Decreasing Pressure

Applied Pressure (mmHg)	786.76	773.60	761.89	756.65	751.59	740.72	730.68	720.59
UUC* Indication (mmHg)	780.0	770.0	760.0	755.0	750.0	740.0	730.0	720.0
Error (mmHg)	-6.76	-3.60	-1.89	-1.65	-1.59	-0.72	-0.68	-0.59

The uncertainty of measurement was ± 0.24 mmHg

\* UUC = Unit Under Calibration

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor k = 2, providing a level of confidence of approximately 95 %.

-000-

เอกสารไม่ควบคุม  
1165502



## Certificate of Calibration

Certificate No.: 24H1487  
Page: 1 of 2

Equipment: Digital Thermo-Hygrometer

Manufacturer: Digicon

Model: TH-02A

Serial No.: 455031148

ID No.: UAE.EFM.009/2567

Condition As-Received: New Item

Received Date: 10 July 2024

Calibration Date: 15 July 2024

to 17 July 2024

Reference: 2407-0393WSC

Submitted by: United Analyst and Engineering Consultant Co., Ltd.

Ambient Temperature: ( 25 ± 3 ) °C

Relative Humidity: ( 50 ± 20 ) %

81 Soi Udomsak 41, Sukhumvit Road, Bangchak,  
Phraekhong, Bangkok 10260

Procedure used: Calibration were conducted using in-house calibration procedure CP-H03 according to comparison with standard chilled mirror sensor for humidity measurement function and comparison with standard temperature probe for temperature measurement function into humidity / temperature chamber.

### Condition of this result of calibration

1. Reference standards instruments:

Instrument	Model	Serial No.	Certificate No.	Due Date
1) Standard Chilled Mirror Hygrometer Sensor	Dew Point II	31863	21819	25 Sep 2024
2) Handheld Thermometer With Sensor	1523	5717096	231321	08 Nov 2024

2. The certificate is valid only to the item calibrated on date and place of calibration.

3. This Certification is traceable to the International System of Unit maintained through:-

-Thunder Scientific Corporation, NVLAP Accreditation No. Calibration 200562-0

-Technology Promotion Association (Thailand-Japan), NSC-ONSC Accredited No. Calibration 0008

Calibrated by: Surasit Phaneudnol  
Issue Date: 17 July 2024

Approved Signatory: Viporn  
[ ] Chakrit Wewwanjua  
[x] Viporn Tantayawutti  
[ ] Unnopphol Harachai

เอกสารไม่ควบคุม



Result of Calibration:- Without Adjustment

Function: Humidity Measurement

Reference Temperature (°C)	Standard Humidity (%R.H.)	UUC* Reading (%R.H.)	Error (%R.H.)	Uncertainty of Measurement (±%R.H.)
25.0	40.1	39	-1.1	1.4
25.0	50.1	48	-2.1	1.6
25.0	60.0	56	-2.0	1.6
25.0	70.2	68	-2.2	1.6

Result of Calibration:- Without Adjustment

Function: Temperature Measurement

Standard Temperature (°C)	UUC* Reading (°C)	Error (°C)	Uncertainty of Measurement (±°C)
20.014	20.3	0.286	0.42
24.964	25.2	0.216	0.42
30.050	30.1	0.050	0.42
40.027	40.0	-0.027	0.42

UUC\* : Unit Under Calibration

The reported uncertainty of measurement was based on standard uncertainty multiplied by coverage factor k = 2.00, providing confidence level approximately 95%.

-000-

เอกสารไม่ควบคุม

## CERTIFICATE OF CALIBRATION

Page 1 of 2 Pages

**MEASUREMENT ITEM**: Cup anemometer  
**MANUFACTURER**: LSI Latham  
**MODEL/TYPE**: Sensor: DMA202  
Data logger: E-LOG  
**SERIAL NUMBER**: Sensor: B01705627  
Data logger: 17017708  
**ID NUMBER**: -  
**CONDITION AS-RECEIVED**: -  
**CUSTOMER**: United Analyst and Engineering Consultant Co., Ltd.  
81 Soi Udomsak 41, Sukhumvit Road, Bangkok,  
Prakhlong, Bangkok 10261

**RECEIVED DATE**: 02 Aug 2024  
**MEASUREMENT DATE**: 07 Aug 2024  
**ISSUE DATE**: 08 Aug 2024

### ENVIRONMENTAL CONDITIONS:

Ambient condition in the laboratory are as follow:  
Temperature:  $23.0 \pm 3.0$  °C  
Relative Humidity:  $55.0 \pm 15.0$  %RH  
Atmospheric Pressure: 1010 to 10

**PLACE OF CALIBRATION**: Efflux-type wind tunnel of Jiranatee Associates Co., Ltd.

**CALIBRATION CONDITIONS**: Wind tunnel cross-section area<sup>1</sup>: 900 cm<sup>2</sup>  
Wind direction frontal area<sup>2</sup>: 195 cm<sup>2</sup>  
Diameter of mounting pipe<sup>3</sup>: - mm  
Blockage ratio of test object<sup>4</sup>: 0.217 [-]

**Preconditioning**: 24 hours at ambient conditions.  
**Measurement Condition**: The average values during measurement are (23.8) °C, (43.5) %RH and (1009.0) hPa.

### TABULATION OF RESULTS:

The table on next page give the measured values.

Calibrated by:  
[Signature] Mr. Sarawat Thairat  
[Signature] Mr. Jiraporn Lertkarnjan



Approved signature:

[Signature]  
Mr. Parinya Booncharoen  
Calibration Department Manager

### Remarks:

- <sup>1</sup> Usage collection area of the wind tunnel
- <sup>2</sup> Projected cross-section area of the tested object include mounting pipe
- <sup>3</sup> Diameter of mounting pipe
- <sup>4</sup> Ratio: [-]

THIS CERTIFICATE OF CALIBRATION MAY NOT BE REPRODUCED EXCEPT IN FULL UNLESS PERMISSION FOR REPRODUCTION HAS BEEN OBTAINED IN WRITING FROM THE LABORATORY

เอกสารไม่ควบคุม

Page 2 of 2 Pages

### MEASUREMENT RESULTS<sup>5</sup>

The Cup anemometer, Unit Under Calibration (UUC) was exercised at 10 m/s for 5 minutes prior to calibration being performed. The standard air velocity (0.5 m/s) was calculated by a standard air velocity transducer which was installed 50 mm away from wind tunnel nozzle and installed 40 mm away from top of the test section and the standard air velocity 5 m/s to 35 m/s was calculated by a pitot tube with precision differential pressure meter which was installed 50 mm away from wind tunnel nozzle and installed 40 mm away from top of the test section. UUC was mounted on a round vertical tube of the lower plate at center of test section. The calibration was carried out under both rising and falling air velocity in the range of 1 m/s to 35 m/s at calibration interval of 1 m/s. The results of calibration and associated measurement uncertainties are reported in the table below.

$u_{ref}$ (m/s)	Temp. wind tunnel (°C)	Temp. room (°C)	$u_{ref}$ (m/s)	Error (m/s)	$U$ (k=2) (m/s)
1.093	23.98	24.05	0.9	-0.2	0.31
2.093	24.24	24.05	1.8	-0.3	0.31
3.124	24.03	24.05	2.9	-0.2	0.31
4.085	24.04	24.05	3.8	-0.3	0.31
5.09	23.68	24.05	4.9	-0.2	0.31
6.08	23.84	24.05	5.9	-0.2	0.31
6.99	23.52	24.05	6.8	-0.2	0.31
8.16	24.48	24.05	8.0	-0.2	0.31
9.17	23.50	24.05	9.1	-0.1	0.31
9.98	24.02	24.05	9.9	-0.1	0.31
11.04	23.46	24.05	11.1	0.0	0.31
12.05	23.64	24.05	12.1	0.1	0.31
13.02	23.46	24.05	13.0	-0.1	0.31
13.96	23.50	24.05	14.0	0.1	0.31
15.03	23.52	24.05	15.1	0.1	0.31
16.00	23.50	24.05	16.0	0.0	0.34

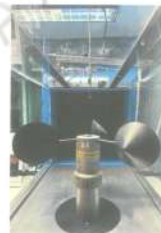
### Remarks:

<sup>5</sup> Calibration results only count for the tested circumstances and environmental conditions during which calibration took place

<sup>6</sup> Velocity of standard

<sup>7</sup> Velocity of Unit Under Calibration

### PHOTO OF CALIBRATION SET-UP



Calibration set-up of the Cup anemometer calibration in the wind tunnel of Jiranatee Associates Co., Ltd. The Cup anemometer shown may differ from the calibrated one. Remark: The proportion of the set-up is not true to scale due to imaging geometry.



เอกสารไม่ควบคุม

## CERTIFICATE OF CALIBRATION

Page 1 of 2 Pages

**MEASUREMENT ITEM**: Wind Direction Sensor  
**MANUFACTURER**: LSI Latham  
**MODEL/TYPE**: Sensor: DMA212  
Data logger: E-LOG  
**SERIAL NUMBER**: Sensor: 13020250  
Data logger: 17017708  
**ID NUMBER**: -  
**CONDITION AS-RECEIVED**: -  
**CUSTOMER**: United Analyst and Engineering Consultant Co., Ltd.  
81 Soi Udomsak 41, Sukhumvit Road, Bangkok,  
Prakhlong, Bangkok 10261

**RECEIVED DATE**: 02 Aug 2024  
**MEASUREMENT DATE**: 08 Aug 2024  
**ISSUE DATE**: 08 Aug 2024

### ENVIRONMENTAL CONDITIONS:

Ambient condition in the laboratory are as follow:  
Temperature:  $23.0 \pm 3.0$  °C  
Relative Humidity:  $55.0 \pm 15.0$  %RH  
Atmospheric Pressure: 1010 to 10

**PLACE OF CALIBRATION**: Efflux-type wind tunnel of Jiranatee Associates Co., Ltd.

**CALIBRATION CONDITION**: Wind tunnel cross-section area<sup>1</sup>: 900 cm<sup>2</sup>  
Wind direction frontal area<sup>2</sup>: 52 cm<sup>2</sup>  
Diameter of mounting pipe<sup>3</sup>: - mm  
Blockage ratio of test object<sup>4</sup>: 0.058 [-]

**Preconditioning**: 24 hours at ambient conditions.  
**Measurement Condition**: The average values during measurement are (24.9) °C, (45.1) %RH and (1005.2) hPa.

### TABULATION OF RESULTS:

The table on next page give the measured values.

Calibrated by:  
[Signature] Mr. Sarawat Thairat  
[Signature] Mr. Jiraporn Lertkarnjan



Approved signature:

[Signature]  
Mr. Parinya Booncharoen  
Calibration Department Manager

### Remarks:

- <sup>1</sup> Usage collection area of the wind tunnel
- <sup>2</sup> Projected cross-section area of the tested object include mounting pipe
- <sup>3</sup> Diameter of mounting pipe
- <sup>4</sup> Ratio: [-]

THIS CERTIFICATE OF CALIBRATION MAY NOT BE REPRODUCED EXCEPT IN FULL UNLESS PERMISSION FOR REPRODUCTION HAS BEEN OBTAINED IN WRITING FROM THE LABORATORY

เอกสารไม่ควบคุม

Page 2 of 2 Pages

### MEASUREMENT RESULTS<sup>5</sup>

The wind direction sensor was calibrated against standard rotary encoder by comparison method. During calibration, the measurement was carried out at 45° intervals in clockwise and counterclockwise directions after effort adjustment has been made. The flow speed of wind tunnel (usually 5 m/s) is kept constant while the sensor is rotated around its vertical axis. The results of calibration and associated measurement uncertainties are reported in the table below.

Air speed m/s	D° <sub>ref</sub> Degree (°)	D° <sub>UUC</sub> Degree (°)	Error Degree (°)	$U$ (k=2) Degree (°)
-	0.000	0	0	0.80
-	45.000	46	1	0.80
-	90.000	90	0	0.80
5.01	135.000	135	0	0.80
-	180.000	180	0	0.80
-	225.000	225	0	0.80
-	270.000	269	-1	0.80
-	315.000	314	-1	0.80

### Remarks:

<sup>5</sup> Calibration results only count for the tested circumstances and environmental conditions during which calibration took place

<sup>6</sup> Direction of standard

<sup>7</sup> Direction of Unit Under Calibration



เอกสารไม่ควบคุม

### Certificate of Calibration

#### Customer

Name : UNITED ANALYST AND ENGINEERING  
CONSULTANT CO.,LTD.  
Address : 81 Soi Udomsak 41, Sukhumvit Road, Bangkok,  
Prakanong, Bangkok 10260

Certificate No : 24-ACT-087  
Request No : Req-2024-1365

#### Unit Under Calibration Details

Measurement item : Acoustic Calibrator Class : 1  
Manufacturer : 01dB Range : 94 dB / 1000 Hz  
Model : CAL31 Instrument Status : Used  
Serial Number : 84065  
ID : UAE-EFM.167.2561

#### Calibration Environment and Details

Temperature :  $(23 \pm 2) ^\circ\text{C}$   
Humidity :  $(50 \pm 20) \% \text{RH}$   
Barometric Pressure :  $(1013 \pm 10.0) \text{ hPa}$   
Received Date : 20 June 2024  
Calibration Date : 25 June 2024

Location of Calibration : LAB 1 Acoustic

Calibration Procedure : In-house method CP-ACT-02 based on IEC 60942:2017 Electroacoustics - Sound calibrators

Reference Standard	Model	Serial Number	Traceable	Due Calibration
Sound Calibrator	SV 35A	58079	EEL	12 June 2025
THD Multimeter	2015	1047765	NIMT	16 January 2025

Traceability : This certificate provides traceability of measurement to recognized national standard, and to the realization of the international System of Units (SI).

#### Note

The reported uncertainty is based on standard uncertainty multiplied by the Coverage Factor  $k=2$ , providing a level of confidence approximately 95 %.

Calibrated By : Mr. Noppadol Luangart  
Service Calibration Engineer

Approved By : Mr. Pacit Mathavorn  
Service Calibration Engineer Supervisor

Issue Date : 25 June 2024

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the lab.  
ISO 9001:2015-2016-2017-2018-2019-2020-2021-2022-2023-2024

เอกสารไม่ควบคุม

Certificate No : 24-ACT-087

Request No : Req-2024-1365

#### Sound pressure level

Calibration Results : Without Adjustment

Calibration Range (dB)	Without Adjustment (dB)		Adjustment (dB)		Uncertainty ( $\pm$ dB)	Acceptance limit Class 1 ( $\pm$ dB)	Result
	Measured	Deviated value	Measured	Deviated value			
94 dB / 1000 Hz	93.78	-0.22	-	-	0.13	0.25	Pass

#### Frequency of Sound pressure level

Calibration Range (Hz)	Without Adjustment		Adjustment		Uncertainty ( $\pm$ %)	Acceptance limit Class 1 ( $\pm$ %)	Result
	Measured (Hz)	Deviated	Measured (Hz)	Deviated			
94 dB / 1000 Hz	1000.00	0.00	-	-	0.01	0.70	Pass

#### Total Harmonic Distortion plus Noise of Sound pressure level (THD+N %)

Calibration Range (Hz)	Without Adjustment	Adjustment	Uncertainty ( $\pm$ %)	Acceptance limit Class 1 ( $\pm$ %)	Result
	Measured (%)	Measured (%)			
94 dB / 1000 Hz	0.14	-	0.40	2.5	Pass

#### Note :

Function	Maximum-permitted Uncertainty of measurement
Sound pressure level	0.15 dB
Frequency	0.20%
Total distortion+noise	0.50%

Acceptance limit was IEC60642:2017 Class 1

The calibration results exclude the calibration pressure correction.

The calibration results exclude the microphone volume correction.

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the lab.  
ISO 9001:2015-2016-2017-2018-2019-2020-2021-2022-2023-2024

เอกสารไม่ควบคุม

Certificate No : 24-ACT-087

Request No : Req-2024-1365

#### Decision Rule for Statements of Conformity

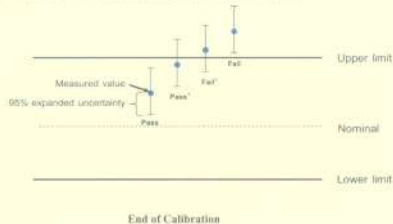
The standard decision rule employed for the statements of conformity to such calibration result will be applied using ILAC-G8:09/2018 Guidelines on the Reporting of Compliance with Specification in following Fig. and statements

Pass - The measurement result plus the expanded uncertainty with a 95% coverage probability were within the limit.

Pass<sup>1</sup> - The measurement result was within the limit. However, a portion of the expanded uncertainty of measurement at 95% exceeds the limit.

Fail<sup>1</sup> - The measurement result was out of the limit. However, a portion of the expanded uncertainty of measurement at 95% is within the limit.

Fail - The measurement result plus the expanded uncertainty with a 95% coverage probability were outside the limit.



The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the lab.  
ISO 9001:2015-2016-2017-2018-2019-2020-2021-2022-2023-2024

เอกสารไม่ควบคุม

### Certificate of Calibration

#### Customer

Name : UNITED ANALYST AND ENGINEERING CONSULTANT CO.,LTD.  
Address : 81 Soi Udomsak 41, Sukhumvit Road, Bangkok, Prakanong, Bangkok  
10260

Certificate No : 24-SLM-238  
Request No : Req-2024-1457

#### Unit Under Calibration Details

Measurement item : Sound Level Meter Microphone Class : 2  
Manufacturer : Larson Davis Microphone Model : 3755A04  
Model : LX2<sup>2</sup> Microphone S/N : 331857  
Serial Number : 005290 Pre-amplifier Model : PRMLX12B  
ID : UAE-EFM.166.2562 Pre-amplifier S/N : 056077  
Resolution : 0.1 dB Instrument Status : Used

#### Calibration Environment and Details

Temperature :  $23 ^\circ\text{C} \pm 2 ^\circ\text{C}$   
Humidity :  $50 \% \text{RH} \pm 20 \% \text{RH}$   
Barometric Pressure :  $1013 \text{ hPa} \pm 10 \text{ hPa}$   
Received Date : 2 July 2024  
Calibrated Date : 11 July 2024

Calibration Procedure :

Location of Calibration :

Reference Standard	Brand	Model	SN	Due calibration	Traceability
Standard Microphone	GRAS	40AN	188273	20 August 2024	GRAS
Multi-frequency Calibrator	Quest	Quest-cal	EFA000234	26 July 2024	TSI
Audio Generator	Stantek	504401	131	8 October 2024	WK Electric

#### Note

The reported uncertainty is based on standard uncertainty multiplied by the Coverage Factor  $k=2$ , providing a level of confidence approximately 95 %.

Calibrated By : Mr. Noppadol Luangart  
Service Calibration Engineer

Approved By : Mr. Pacit Mathavorn  
Calibration Engineer Supervisor

Issue Date : 11 July 2024

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the lab.  
ISO 9001:2015-2016-2017-2018-2019-2020-2021-2022-2023-2024

เอกสารไม่ควบคุม

Certificate No : 24-SLM-238  
Request No : Req-2024-1457

1. Indication at the calibration check frequency

UUC Setting	Nominal	Before Adjust		After Adjust		UNCERTAINTY	Acceptance Limit	Result
FAST / A / 37-139	Level	UUC	ERR	UUC	ERR			
Calibrator Setting	(dB)	(dB)	(dB)	(dB)	(dB)	(± dB)	(± dB)	
1000 Hz 114 dB	113.76	114.1	0.34	113.8	+0.04	0.20	0.30	Pass

Note : Absolute sensitivity was established by the use of Sound Calibrator Brand SVANTEK, Model SV 15A, SN: 500708

2. Self-generated noise, Microphone installed

UUC Setting	Measured	UNCERTAINTY
FAST / 37-139		
UUC Weighting	(dB)	(± dB)
A	25.4	0.10

3. Self-generated noise, Microphone replaced by the electrical input signal device

UUC Setting	Measured	UNCERTAINTY
FAST / 37-139		
UUC Weighting	(dB)	(± dB)
A	24.8	0.10
C	24.3	0.10
Z	26.6	0.10

4. Acoustic signal test of frequency weightings (Without Windscreen)

UUC Setting	Deviation from various Frequency Weighting Response curve	UNCERTAINTY	Acceptance Limit	Result
FAST / 37-139	A C Z	(± dB)	(± dB)	
STD Setting	(dB) (dB) (dB)			
125 Hz	0.1 0.2 0.2	0.60	1.5	Pass
1000 Hz	0.0 0.0 0.0	0.60	1.0	Pass
4000 Hz	0.0 0.0 0.0	0.60	2.0	Pass
8000 Hz	0.8 0.8 0.9	0.70	5.0	Pass

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of เอกสารไม่ควบคุม  
EIL/708-01.001 Rev.04 Issue date 1/6/24

Certificate No : 24-SLM-238  
Request No : Req-2024-1457

5. Electrical signal test of frequency weightings, Weighting network response with relative to 1 kHz

UUC Setting	Deviation from various Frequency Weighting Response curve	UNCERTAINTY	Acceptance Limit	Result
FAST / 37-139	A (dB) C (dB) Z (dB)	(± dB)	(± dB)	
STD Setting				
63 Hz	-0.2 -0.1 -0.1	0.20	2.0	Pass
125 Hz	-0.1 0.0 -0.1	0.20	1.5	Pass
250 Hz	-0.1 0.0 -0.1	0.20	1.5	Pass
500 Hz	-0.1 0.0 -0.1	0.20	1.5	Pass
1000 Hz	0.0 0.0 -0.1	0.20	1.0	Pass
2000 Hz	0.0 0.0 0.0	0.20	2.0	Pass
4000 Hz	0.0 0.0 0.0	0.20	3.0	Pass
8000 Hz	-0.1 -0.1 0.0	0.20	5.0	Pass
16000 Hz	-0.1 -0.1 -0.1	0.20	+5.0 INL	Pass

6. Frequency and time weightings at 1kHz

UUC Setting	STD	Measured		UNCERTAINTY	Acceptance	
FAST / 37-139	REF	UUC	ERR		Limit	Result
UUC Weighting	(dB)	(dB)	(dB)	(± dB)	(± dB)	
A	114.00	114.0	0.0	0.20	0.20	Pass
C	114.00	114.0	0.0		0.20	Pass
Z	114.00	114.0	0.0		0.20	Pass

UUC Setting	STD	Measured		UNCERTAINTY  (± dB)	Acceptance	Result
37-139 / A	REF	UUC	ERR		Limit	
UUC Time Response	(dB)	(dB)	(dB)		(± dB)	
Fast	114.00	114.0	0.0	-0.20	0.10	Pass
Slow	114.00	114.0	0.0		0.10	Pass
Log	114.00	114.0	0.0		0.10	Pass

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of เอกสารไม่ควบคุม  
EIL/708-01.001 Rev.04 Issue date 1/6/24

Certificate No : 24-SLM-238  
Request No : Req-2024-1457

7. Long Term Stability

UUC Setting	Measured	UNCERTAINTY	Acceptance Limit	Result
FAST / A / 37-139	UUC	(± dB)	(± dB)	
STD Setting	(dB)			
Initial	114.0			
Final	114.0			
Deviated	0.0	0.10	0.30	Pass

8. Level linearity on the reference level range

UUC Setting	Anticipated	Deviation		UNCERTAINTY  ( ± dB)	Acceptance	Result
FAST / A / 37-139	REF	UUC	ERR		Limit	
STD dB	(dB)	(dB)	(dB)		( ± dB)	
137.00	137	137.0	0.0	0.30	1.1	Pass
134.00	134	134.0	0.0		1.1	Pass
129.00	129	129.0	0.0		1.1	Pass
124.00	124	124.0	0.0		1.1	Pass
119.00	119	119.0	0.0		1.1	Pass
114.00	114	114.0	0.0		1.1	Pass
109.00	109	109.0	0.0		1.1	Pass
104.00	104	104.0	0.0		1.1	Pass
99.00	99	99.0	0.0		1.1	Pass
94.00	94	93.9	-0.1		1.1	Pass
89.00	89	88.9	-0.1		1.1	Pass
84.00	84	83.9	-0.1		1.1	Pass
79.00	79	78.9	-0.1		1.1	Pass
74.00	74	73.9	-0.1		1.1	Pass
69.00	69	68.9	-0.1		1.1	Pass
64.00	64	63.9	-0.1		1.1	Pass
59.00	59	58.9	-0.1		1.1	Pass
54.00	54	53.9	-0.1		1.1	Pass
49.00	49	48.9	-0.1		1.1	Pass
44.00	44	44.0	0.0		1.1	Pass
39.00	39	39.1	0.1	1.1	Pass	
34.00	34	34.2	0.2	1.1	Pass	
29.00	29	29.2	0.2	1.1	Pass	
24.00	24	24.3	0.3	1.1	Pass	
19.00	19	19.4	0.4	1.1	Pass	

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of เอกสารไม่ควบคุม  
EIL/708-01.001 Rev.04 Issue date 1/6/24

Certificate No : 24-SLM-238  
Request No : Req-2024-1457

9. Level linearity including the level range control

UUC Setting	STD	Measured		UNCERTAINTY  (± dB)	Acceptance	Result
FAST / A	REF	UUC	ERR		Limit	
UUC Range	(dB)	(dB)	(dB)		(± dB)	
37-139	40.10	40.2	0.1	0.30	1.1	Pass
	114	114.0	0.0		1.3	Pass

10. Tone burst response

UUC Setting	STD	Anticipated	Measured		UNCERTAINTY	Acceptance	
A / 37-139	Toneburst	Ref	UUC	ERR		Limit	Result
UUC Time Response	(ms)	(dB)	(dB)	(dB)	(± dB)	(± dB)	
Fast	200	135.0	135.0	0.0	± 20	1.0	Pass
	2	118.0	117.9	-0.1		+1.0, -2.5	Pass
	0.25	109.0	108.6	-0.4		+1.5, -5.0	Pass
Slow	200	128.6	128.5	-0.1		1.0	Pass
	2	109.0	108.9	-0.1		+1.0, -5.0	Pass
	200	129.0	129.0	0.0		1.0	Pass
NFL	2	109.0	109.0	0.0		+1.0, -2.5	Pass
	0.25	100.0	99.8	-0.2		+1.5, -5.0	Pass

11. Peak C sound level

UUC Setting	Anticipated	Measured		UNCERTAINTY	Acceptance Limit	Result
FAST / C / 95-142	REF	UUC	ERR	( ± dB)	( ± dB)	Pass
STD Setting	(dB)	(dB)	(dB)			
Complete cycle	137.4	136.6	-0.80			
Positive half cycle	136.4	136.2	-0.20	0.20	2.0	Pass
Negative half cycle	136.4	136.2	-0.20		2.0	Pass

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of เอกสารไม่ควบคุม  
EIL/708-01.001 Rev.04 Issue date 1/6/24

Certificate No : 24-SLM-238  
Request No : Req-2024-1457

### 12. Overload indication

UUC Setting	Measured	UNCERTAINTY	Acceptance Limit	Result
FAST / A / 37-139	UUC	(± dB)	(± dB)	Pass
STD Setting	(dB)			
Positive one-half cycle	138.8			
Negative one-half cycle	138.7			
Deviated	0.1			

### 13. High Level Stability

UUC Setting	Measured	UNCERTAINTY	Acceptance Limit	Result
FAST / A / 37-139	UUC	(± dB)	(± dB)	Pass
STD Setting	(dB)			
Initial	138.0			
Final	138.0			
Deviated	0.0			

#### Note :

Function	Maximum-permitted Uncertainty of measurement
1. Indication at the calibration check frequency	Not applicable
2. Self-generated noise, Microphone installed	Not applicable
3. Self-generated noise, Microphone replaced by the electrical input signal device	Not applicable
4. Acoustic signal test of frequency weightings at 10 Hz to 4 kHz	0.60 dB
4. Acoustic signal test of frequency weightings at >4 kHz to 10 kHz	0.70 dB
5. Electrical signal test of frequency weightings, Weighting network response with relative to 1 kHz	0.20 dB
6. Frequency and time weightings at 1kHz	0.20 dB
7. Long Term Stability	0.10 dB
8. Level linearity on the reference level range	0.30 dB
9. Level linearity including the level range control	0.30 dB
10. Tone burst response	0.30 dB
11. Peak C Sound level	0.35 dB
12. Overload indication	0.25 dB
13. High Level Stability	0.10 dB

Acceptance limit and Maximum-permitted Uncertainty was IEC 61672-2:2013

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of เอกสารไม่ควบคุม  
ISO 9001:2015 Rev. 04 Issue date 5/6/24

Certificate No : 24-SLM-238  
Request No : Req-2024-1457

#### Decision Rule for Statements of Conformity:

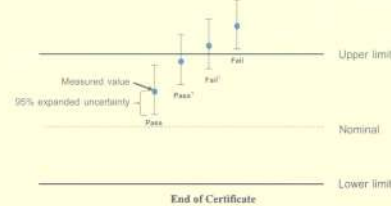
The standard decision rule employed for the statements of conformity in each calibration result will be applied using ILAC (08/01/2018) Guidelines on the Issuance of Compliance with Specification as following Fig. and statement.

Pass - The measurement result plus the expanded uncertainty with a 95% coverage probability, were within the limit.

Pass<sup>2</sup> - The measurement result was within the limit. However, a portion of the expanded uncertainty of measurement at 95% exceeds the limit.

Fail<sup>2</sup> - The measurement result was on the limit. However, a portion of the expanded uncertainty of measurement at 95% is within the limit.

Fail - The measurement result plus the expanded uncertainty with a 95% coverage probability were outside the limit.



The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of เอกสารไม่ควบคุม  
ISO 9001:2015 Rev. 04 Issue date 5/6/24

### Certificate of Calibration

#### Customer

Name : UNITED ANALYST AND ENGINEERING CONSULTANT CO., LTD.  
Address : 81 Soi Udomsak 41, Sukhumvit Road, Bangchak, Prakanong, Bangkok 10260

Certificate No : 24-SLM-231  
Request No : Req-2024-1450

#### Unit Under Calibration Details

Measurement Item : Sound Level Meter  
Manufacturer : Larson Davis  
Model : LX72  
Serial Number : 0005293  
ID : UAE-FFM-108-2362  
Resolution : 0.1 dB  
Microphone Class : 2  
Microphone Model : 375B02  
Microphone S/N : 11792  
Preamplifier Model : PRM-LX120  
Preamplifier S/N : 056073  
Instrument Status : Used

#### Calibration Environment and Details

Temperature : 23 °C ± 2 °C  
Humidity : 50 %RH ± 20 %RH  
Barometric Pressure : 1013 hPa ± 10 hPa  
Received Date : 1 July 2024  
Calibrated Date : 10 July 2024  
Calibration Procedure : In-house method CP-SLM-01 based on IEC 61672-2:2013 Electroacoustics - Sound level meters - Part 2: Periodic tests  
Location of Calibration : Lab Acoustic

#### Reference Standard

Instrument	Brand	Model	S/N	Due calibration	Traceability
Standard Microphone	GRAS	40AN	180273	29 August 2024	GRAS
Audiofrequency Calibrator	Quest	Quao-cal	EFA000234	26 July 2024	TIS
Audio Generator	Svanick	Svan401	131	8 October 2024	WK Electric

#### Note

The reported uncertainty is based on standard uncertainty multiplied by the Coverage Factor  $k = 2$ , providing a level of confidence approximately 95 %.

Calibrated By :   
Mr. Noppadon Luangrui  
Service Calibration Engineer

Approved By :   
Mr. Paitt Mathaveon  
Calibration Engineer Supervisor  
Issue Date : 10 July 2024

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of เอกสารไม่ควบคุม  
ISO 9001:2015 Rev. 04 Issue date 5/6/24

Certificate No : 24-SLM-231  
Request No : Req-2024-1450

#### 1. Indication at the calibration check frequency

UUC Setting	Nominal	Before Adjust		After Adjust		UNCERTAINTY	Acceptance Limit	Result
FAST / A / 37-139	Level	UUC	ERR	UUC	ERR	(± dB)	(± dB)	Pass
Calibrator Setting	(dB)	(dB)	(dB)	(dB)	(dB)			
1000 Hz (114 dB)	113.76	114.3	0.54	113.8	+0.04	0.20	0.30	

Note : Absolute sensitivity was established by the use of Sound Calibrator Brand SVANTEK, Model SV 35A, S/N: 59079

#### 2. Self-generated noise, Microphone installed

UUC Setting	Measured	UNCERTAINTY
FAST / 37-139		
UUC Weighting	(dB)	(± dB)
A	29.8	0.10

#### 3. Self-generated noise, Microphone replaced by the electrical input signal device

UUC Setting	Measured	UNCERTAINTY
FAST / 37-139		
UUC Weighting	(dB)	(± dB)
A	29.4	0.10
C	28.8	0.10
Z	32.9	0.10

#### 4. Acoustic signal test of frequency weightings (Without Windscreens)

UUC Setting	Deviation from various Frequency Weighting Response curve			UNCERTAINTY	Acceptance Limit	Result
FAST / 37-139	A	C	Z	(± dB)	(± dB)	Pass
STD Setting	(dB)	(dB)	(dB)			
125 Hz	0.0	0.1	0.1	0.60	1.5	
1000 Hz	0.0	0.0	0.0	0.60	1.0	Pass
4000 Hz	0.7	0.7	0.7	0.60	3.0	Pass
8000 Hz	1.4	1.4	1.5	0.70	5.0	Pass1

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of เอกสารไม่ควบคุม  
ISO 9001:2015 Rev. 04 Issue date 5/6/24

Certificate No : 24-SLM-231  
Request No : Req-2024-1450

5. Electrical signal test of frequency weightings, Weighting network response with relative to 1 kHz

Deviation from various Frequency				UNCERTAINTY	Acceptance Limit	Result
UUC Setting	Weighting Response curve					
FAST / 37-139	A (dB)	C (dB)	Z (dB)	(± dB)		
STD Setting	-0.2	-0.1	-0.1	0.20	2.0	Pass
63 Hz	-0.1	0.0	-0.1		1.5	Pass
125 Hz	-0.1	0.0	-0.1		1.5	Pass
250 Hz	-0.1	0.0	-0.1		1.5	Pass
500 Hz	-0.1	0.0	-0.1		1.0	Pass
1000 Hz	0.0	0.0	-0.1		2.0	Pass
2000 Hz	0.0	0.0	0.0		3.0	Pass
4000 Hz	0.0	0.0	0.0		5.0	Pass
8000 Hz	-0.1	-0.1	0.0		+5, -INF	Pass
16000 Hz	-0.1	-0.1	-0.1			

6. Frequency and time weightings at 1kHz

UUC Setting	STD REF	Measured		UNCERTAINTY (± dB)	Acceptance Limit (± dB)	Result
		UUC	ERR			
FAST / 37-139	(dB)	(dB)	(dB)	0.20	0.20	Pass
UUC Weighting	(dB)	(dB)	(dB)			
A	114.00	114.0	0.0			
C	114.00	114.0	0.0			
Z	114.00	114.0	0.0			

UUC Setting	STD REF	Measured		UNCERTAINTY (± dB)	Acceptance Limit (± dB)	Result
		UUC	ERR			
37-139 / A	(dB)	(dB)	(dB)	0.20	0.10	Pass
UUC Time Response	(dB)	(dB)	(dB)			
Fast	114.00	114.0	0.0			
Slow	114.00	114.0	0.0			
Leq	114.00	114.0	0.0			

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of เอกสารไม่ควบคุม

ISO 9001:2015 Rev.04 Issue date 1/4/24

Certificate No : 24-SLM-231  
Request No : Req-2024-1450

7. Long Term Stability

UUC Setting	Measured	UNCERTAINTY (± dB)	Acceptance Limit (± dB)	Result
FAST / A / 37-139	UUC (dB)			
STD Setting	(dB)	0.10	0.30	Pass
Initial	114.0			
Final	114.0			
Deviated	0.0			

8. Level linearity on the reference level range

UUC Setting	Anticipated REF	Deviation		UNCERTAINTY (± dB)	Acceptance Limit (± dB)	Result
		UUC	ERR			
FAST / A / 37-139	(dB)	(dB)	(dB)	0.30	1.1	Pass
STD dB	(dB)	(dB)	(dB)			
130.00	130	130.0	0.0			
134.00	134	134.0	0.0			
129.00	129	129.0	0.0			
124.00	124	124.0	0.0			
119.00	119	119.0	0.0			
114.00	114	114.0	0.0			
109.00	109	109.0	0.0			
104.00	104	104.0	0.0			
99.00	99	99.0	-0.1			
94.00	94	93.9	-0.1			
89.00	89	88.9	-0.1			
84.00	84	83.9	-0.1			
79.00	79	78.9	-0.1			
74.00	74	73.9	-0.1			
69.00	69	68.9	-0.1			
64.00	64	63.9	-0.1			
59.00	59	58.9	-0.1			
54.00	54	53.9	-0.1			
49.00	49	49.0	0.0			
44.00	44	44.1	0.1			
39.00	39	39.5	0.5			

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of เอกสารไม่ควบคุม

ISO 9001:2015 Rev.04 Issue date 1/4/24

Certificate No : 24-SLM-231  
Request No : Req-2024-1450

9. Level linearity including the level range control

UUC Setting	STD REF	Measured		UNCERTAINTY (± dB)	Acceptance Limit (± dB)	Result
		UUC	ERR			
FAST / A	(dB)	(dB)	(dB)	0.30	1.1	Pass
UUC Range	(dB)	(dB)	(dB)			
35-139	44.80	44.9	0.1			
	114	114.0	0.0			

10. Tone burst response

UUC Setting	STD Toneburst	Anticipated Ref	Measured		UNCERTAINTY (± dB)	Acceptance Limit (± dB)	Result
			UUC	ERR			
A / 37-139	(ms)	(dB)	(dB)	(dB)	0.20	1.0	Pass
UUC Time Response	(ms)	(dB)	(dB)	(dB)			
Fast	200	135.0	135.0	0.0			
	2	118.0	117.9	-0.1		+1.0, -2.5	
	0.25	109.0	108.6	-0.4		+1.5, -5.0	
Slow	200	128.6	128.3	-0.1		1.0	
	2	109.0	108.9	-0.1		+1.0, -5.0	
	200	129.0	129.0	0.0		1.0	
SEL	2	109.0	109.1	+0.1		+1.0, -2.5	
	0.25	100.0	99.8	-0.2		+1.5, -5.0	

11. Peak C Sound level

UUC Setting	Anticipated REF	Measured		UNCERTAINTY (± dB)	Acceptance Limit (± dB)	Result
		UUC	ERR			
FAST / C / 95-142	(dB)	(dB)	(dB)	0.20	3.0	Pass
STD Setting	(dB)	(dB)	(dB)			
Complete cycle	137.4	136.7	-0.70			
Positive half cycle	136.4	136.2	-0.20			
Negative half cycle	136.4	136.2	-0.20			

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of เอกสารไม่ควบคุม

ISO 9001:2015 Rev.04 Issue date 1/4/24

Certificate No : 24-SLM-231  
Request No : Req-2024-1450

12. Overload indication

UUC Setting	Measured	UNCERTAINTY (± dB)	Acceptance Limit (± dB)	Result
FAST / A / 37-139	UUC (dB)			
STD Setting	(dB)	0.20	1.5	Pass
Positive one-half cycle	143.7			
Negative one-half cycle	143.8			
Deviated	-0.1			

13. High Level Stability

UUC Setting	Measured	UNCERTAINTY (± dB)	Acceptance Limit (± dB)	Result
FAST / A / 37-139	UUC (dB)			
STD Setting	(dB)	0.10	0.30	Pass
Initial	138.0			
Final	138.0			
Deviated	0.0			

Note :

Function	Maximum-permitted Uncertainty of measurement
1. Indication at the calibration check frequency	Not applicable
2. Self-generated noise, Microphone installed	Not applicable
3. Self-generated noise, Microphone replaced by the electrical input signal device	Not applicable
4. Acoustic signal test of frequency weightings at 10 Hz to 4 kHz	0.60 dB
4. Acoustic signal test of frequency weightings at >4 kHz to 10 kHz	0.70 dB
5. Electrical signal test of frequency weightings, Weighting network response with relative to 1 kHz	0.20 dB
6. Frequency and time weightings at 1 kHz	0.20 dB
7. Long Term Stability	0.10 dB
8. Level linearity on the reference level range	0.30 dB
9. Level linearity including the level range control	0.30 dB
10. Tone burst response	0.30 dB
11. Peak C Sound level	0.35 dB
12. Overload indication	0.25 dB
13. High Level Stability	0.10 dB

\* Acceptance limit and Maximum-permitted Uncertainty was UUC < 0.072 + 0.2001

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of เอกสารไม่ควบคุม

ISO 9001:2015 Rev.04 Issue date 1/4/24

Certificate No : 24-SLM-231  
Request No : Req-2024-1450

#### Decision Rule for Statements of Conformity

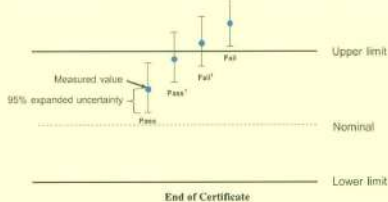
The statistical decision rule employed for the statements of conformity in each calibration result will be applied using ILAC-G8:09 2009, Guidelines on the Reporting of Compliance with Specification as following Fig. and statement:

**Pass** - The measurement result plus the expanded uncertainty with a 95% coverage probability were within the limit.

**Pass<sup>1</sup>** - The measurement result was within the limit. However, a portion of the expanded uncertainty of measurement at 95% exceeds the limit.

**Fail<sup>1</sup>** - The measurement result was out of the limit. However, a portion of the expanded uncertainty of measurement at 95% is within the limit.

**Fail** - The measurement result plus the expanded uncertainty with a 95% coverage probability were outside the limit.



End of Certificate

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval.

เอกสารไม่ควบคุม

131-108-SLM-001 Rev.01/2024 doc 5/624

Env Equipment Service Co., Ltd.  
110/254 Moo 3, Tambon Bang Rak Phatthana, Amphur Bang Bua Thong, Nonthaburi 11110  
Tel. 098 362 9152, 089 478 7885  
E-mail: sales@envi-ees.com

Certificate No.: E24-080073  
Page: 1 of 6

## CERTIFICATE OF CALIBRATION

Customer : United Analyst and Engineering Consultant Co., Ltd.  
Address : 81 Soi Udomsuk 41, Sukhumvit Road, Bangchak, Phrakhanong, Bangkok 10260  
Description of Equipment : Console meter  
Manufacturer : Apex Instrument  
Model Number : XC-572-V  
Serial Number : 1904011  
ID/Control No. : UAE-EFM 118/2562  
Environment Conditions : Temperature (25 ± 2) °C  
Humidity (50 ± 15) % RH  
Cal. Date : 21/08/2024  
Issue Date : 21/08/2024

#### Calibration Method or Calibration Procedure Used

US EPA Method (United State Environmental Protection Agency)

This certificate is traceable to national standard, which realize the units of measurement according to the International System of Units (SI).

#### Result of Calibration

This certificate may not be reproduced other than in full except with prior Written approval of the Technical Manager, Envi Equipment Service Company Limited.

These reported uncertainties of measurement are expanded by a coverage factor of k=2, providing a 95% confidence level.

Calibrated by : Mr. Sanya Sangnil

Approved by : (Mr. Mana Fuchhad)

Technical Manager

เอกสารไม่ควบคุม

Certificate No. : E24-080073  
Page : 2 of 6

### METHOD 5 CONSOLE CALIBRATION USING REFERENCE WET GAS METER W-NK-2.5-B-Z No.547425 5-POINT METRIC UNIT

Meter Console Information		Calibration Conditions		Factors/Conversions	
Console Model Number	XC-572-V	Date	21/08/2024	Std Temp	293 K
Console Serial Number	1904011	Calibration Reference No.	SER24-070028	Std Press	760 mm Hg
DGM Model Number	SK25EX	Barometric Pressure	758.16 mmHg	K1	0.386
DGM Serial Number	00008685	Calibration Meter Gamma	1.001	Console Leak Check	PASS

Calibration Data									
Metering Console					Calibration Meter				
Run Time	DGM Orifice	Volume	Volume	Outlet Temp	Outlet Temp	Volume	Volume	Outlet Temp	Outlet Temp
Elapsed	DH	Initial	Final	Initial	Final	Initial	Final	Initial	Final
(Q)	(P <sub>o</sub> )	(V <sub>in</sub> )	(V <sub>out</sub> )	(t <sub>in</sub> )	(t <sub>out</sub> )	(V <sub>wf</sub> )	(V <sub>wf</sub> )	(t <sub>in</sub> )	(t <sub>out</sub> )
min	mm H <sub>2</sub> O	m <sup>3</sup>	m <sup>3</sup>	°C	°C	m <sup>3</sup>	m <sup>3</sup>	°C	°C
11.97	13.0	1.2810	1.4210	30	30	247.58494	247.72266	28	28
12.02	13.0	1.4210	1.5610	30	30	247.72266	247.86142	27	27
8.43	26.0	1.5680	1.7080	29	29	247.86722	248.00508	27	27
8.40	26.0	1.7080	1.8480	29	29	248.00508	248.14262	26	26
13.78	40.0	1.8550	2.1350	29	29	248.15146	248.42930	26	26
13.82	40.0	2.1350	2.4150	29	29	248.42930	248.70800	26	26
10.28	70.0	2.4270	2.7070	30	30	248.71530	248.99226	25	25
10.33	70.0	2.7070	2.9870	30	30	248.99226	249.27106	25	25
8.95	90.0	3.0020	3.2820	31	31	249.27896	249.55508	25	25
8.92	90.0	3.2820	3.5620	31	31	249.55508	249.83062	25	25

Certificate No. : E24-080073  
Page : 3 of 6

### METHOD 5 CONSOLE CALIBRATION USING REFERENCE WET GAS METER W-NK-2.5-B-Z No.547425 5-POINT METRIC UNIT

Meter Console Information		Calibration Conditions		Factors/Conversions	
Console Model Number	XC-572-V	Date	21/08/2024	Std Temp	293 K
Console Serial Number	1904011	Calibration Reference No.	SER24-070028	Std Press	760 mm Hg
DGM Model Number	SK25EX	Barometric Pressure	758.16 mmHg	K1	0.386
DGM Serial Number	00008685	Calibration Meter Gamma	1.001	Console Leak Check	PASS

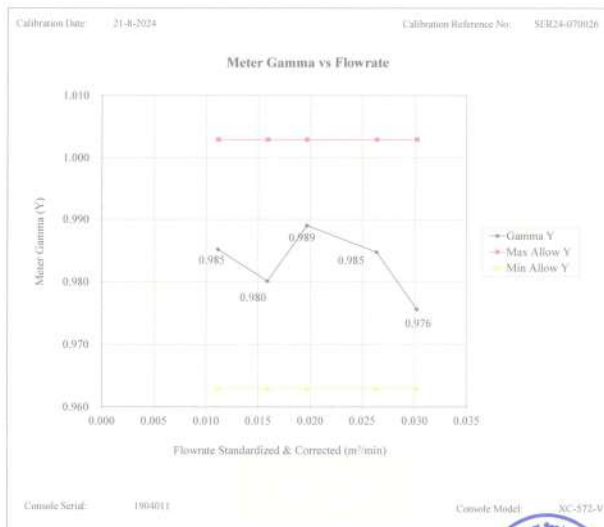
Calibration Data						
Standardized Data			Results			
			Calibration Factor		Flowrate	
Dry Gas Meter	Calibration Meter	Calibration Factor	Value	Variation	Std & Corr	Variation
(V <sub>cal</sub> )	(Q <sub>cal</sub> )	(V <sub>w</sub> )	(Q <sub>w</sub> )	(ΔV)	(Q <sub>std</sub> )	(ΔH <sub>g</sub> )
m <sup>3</sup>	m <sup>3</sup> /min	m <sup>3</sup>	m <sup>3</sup> /min		m <sup>3</sup> /min	mm H <sub>2</sub> O
0.136	0.011	0.134	0.011	0.981	-0.001	0.011
0.137	0.011	0.135	0.011	0.989	0.006	0.011
0.137	0.016	0.134	0.016	0.981	-0.002	0.016
0.137	0.016	0.134	0.016	0.979	-0.004	0.016
0.275	0.020	0.271	0.020	0.987	0.005	0.020
0.275	0.020	0.272	0.020	0.991	0.008	0.020
0.276	0.027	0.271	0.026	0.981	-0.001	0.026
0.276	0.027	0.273	0.026	0.988	0.005	0.026
0.277	0.031	0.271	0.030	0.977	-0.006	0.030
0.277	0.031	0.270	0.030	0.975	-0.008	0.030
			0.983	Y Average	45.160	ΔH <sub>g</sub> Average

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is ±0.02.  
For ΔH<sub>g</sub>, orifice pressure differential that equates to 0.75 cfm (0.0212 m<sup>3</sup>/min) at standard temperature and pressure, acceptable tolerance of individual values from the average is ±0.2 inches (5.1mm) H<sub>2</sub>O.

เอกสารไม่ควบคุม

เอกสารไม่ควบคุม

Meter Console Information		Calibration Conditions		Factors/Conversions	
Console Model Number	XC-572-V	Date	21/08/2024	Std Temp	293 K
Console Serial Number	1904011	Time	10:00 AM		
DGM Model Number	SK25EX	Calibration Reference No.	SER24-070026	Std Press	760 mm Hg
DGM Serial Number	00008685	Barometric Pressure	758.16 mmHg	K <sub>1</sub>	0.386
		Calibration Meter Gamma	1.001	Console Leak Check	PASS



เอกสารไม่ควบคุม

Meter Console Information		Calibration Conditions		Factors/Conversions	
Console Model Number	XC-572-V	Date	21/08/2024	Std Temp	293 K
Console Serial Number	1904011	Time	10:00 AM		
DGM Model Number	SK25EX	Calibration Reference No.	SER24-070026	Std Press	760 mm Hg
DGM Serial Number	00008685	Barometric Pressure	758.16 mmHg	K <sub>1</sub>	0.386
		Calibration Meter Gamma	1.001	Console Leak Check	PASS



เอกสารไม่ควบคุม

### THERMOCOUPLES SYSTEM CALIBRATION

Sampling System Equipment Information		Calibration Conditions	
Console Model Number	XC-572-V	Date	21/08/2024
Console Serial Number	1904011	Time	00:00 PM
DGM Model Number	SK25EX	Calibration Reference No.	SER24-070026
DGM Serial Number	00008685	Reference Thermometer	DIGICON
Meter Box Model Number	JENCO 765 KF	Serial Number	183169105
Meter Box Serial Number	JC 17215		

Results	
Console Thermocouple Simulator	
Meter Box Channel Temperature Reading (°C)	
Channel and test point	
Stack	-18.0 25.0 38.0 93.0 149.0 260.0 371.0 482.0 593.0 816.0 1038.0
Aux	-19.0 24.0 37.0 93.0 148.0 257.0 368.0 477.0 586.0 805.0 1025.0
Probe	-19.0 24.0 37.0 93.0 148.0
Filter	-19.0 24.0 37.0 93.0 148.0
Oven	-19.0 24.0 37.0 93.0 148.0
Exit	-19.0 24.0 37.0

Tolerance Range	
Stack	± 1.50% Absolute
Probe	± 3.0 °C
Filter	± 3.0 °C
Meter	± 3.0 °C
Exit	± 2.0 °C



เอกสารไม่ควบคุม



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)  
CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES  
534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250  
TEL 0-2717-3000-29 FAX 0-2719-9484



### Certificate of Calibration

Cert.No.: 24CH1153  
Page: 1 of 3

Equipment : pH Meter  
Manufacturer : Horiba  
Model : LAQUA-PH210  
Serial No. : HA1G0008  
ID No. : UAE,EFM,201/2564(EFM,pH,09/64)  
Condition As-Received: Used Item  
Received Date : 17 September 2024  
Calibration Date : 18 September 2024  
Reference : 2409-0632WSC-1  
Submitted by : United Analyst and Engineering Consultant Co.,Ltd.  
3 Soi Udomsuk 41, Sukhumvit Road,  
Bangchak, Phrakhanong, Bangkok 10260

Ambient Temperature : (25 ± 2.5) °C  
Relative Humidity : (50 ± 15) %  
In - house method :  
Calibration Procedure :  
- CP-CH5 by direct measurement with DC voltage standard and direct measurement with certified reference material (CRM)  
- CP-CH8 by comparison with temperature standard

Calibrated by : Warakorn Lernagatrakul

Approved by : \_\_\_\_\_  
Approved Signatory

( ) Unnophol Harachai  
( ) Ponpan Palpim  
(✓) Sathip Meangmai

Issue Date : 18 September 2024

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written approval of the head of Corporate Services 3: Equipment Calibration and Testing Services.

เอกสารไม่ควบคุม



Cert.No.: 24CH1153  
Page.: 2 of 3

#### Condition of this calibration result

##### 1. Reference Standard Instrument

Instrument	Serial No.	ID No.	Cert. No.	Due Date
1) Document Process Calibrator	54030049	130RC116	24E2759	25 Aug 2025
2) Ref. Standard Thermometer	4982054	110RC044	24I757	14 July 2025

- This Certification is traceable to SI Through Technology Promotion Association (Thailand - Japan)

2. Certified Reference Materials : The measurement results are traceable to SI through Hach Lenge GmbH Ltd., Deutsche Akkreditierungsstelle, Accredited No.D-RM-15184-01-00  
: The measurement results are traceable to SI through CPA chem Ltd., ANSI-ASQ National Accreditation Board, Accredited No. AR-1835

Buffer Solution	Manufacturer	Lot No.	Exp. date
pH 4.006	Hach Lenge GmbH	C03146	23 Feb 2026
pH 7.000	Hach Lenge GmbH	C03020	13 Dec 2024
pH 9.997	CPA chem	970853	25 Apr 2025

3. This certificate is valid only to the item calibrated on date and place of calibration.

#### Calibration Results

##### Function : mV Measurement

Performing standard curve by Document Process Calibrator at pH (4,7)(7,10)

Unit Under Calibration	Nominal Value	Standard Voltage Input	Actual Reading		Uncertainty of Measurement ( $\pm$ mV)	Coverage factor k
	pH	mV	mV	pH		
pH Meter S/N.: HA1G0008	4.00	177.48	177.5	4.01	0.058	2.00
	7.00	0.00	0.0	7.02	0.058	2.00
	7.00	0.00	0.0	7.02	0.058	2.00
	10.00	-177.48	-177.5	10.01	0.058	2.00



Cert.No.: 24CH1153  
Page.: 3 of 3

#### Calibration Results

##### Function : pH Measurement

Performing three buffers standard curve by using buffer nominal pH (4,7)(7,10)

Unit Under Calibration	Standard pH Buffer Solution	Actual pH Reading	Actual mV Reading (mV)	Uncertainty of pH Measurement ( $\pm$ )	Coverage factor k
pH Electrode S/N.: -	4.006	4.01	168.7	0.0077	2.00
	7.000	6.99	-3.2	0.0084	2.00
	7.000	7.00	-3.4	0.0092	2.05
	9.997	10.01	-174.4	0.011	2.05

##### Function : Temperature Measurement

( $^{\circ}$ ) Without adjustment

This equipment was connected with Temperature Probe;

- Model : 9652

- Serial No. : -

Dimension of probe

- Length : 103 mm.

- Diameter : 16 mm.

- Immersion Depth : 90 mm.

Calibration Point ( $^{\circ}$ C)	Standard Temperature ( $^{\circ}$ C)	UUC* Reading ( $^{\circ}$ C)	Error ( $^{\circ}$ C)	Uncertainty of measurement ( $\pm$ $^{\circ}$ C)	Coverage factor k
25.0	25.003	25.0	-0.003	0.13	2.00
30.0	30.002	30.0	-0.002	0.13	2.00
35.0	35.002	35.0	-0.002	0.13	2.00

Remark - UUC\* = Unit Under Calibration

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor k, providing a level of confidence of approximately 95 %.

-00-

เอกสารไม่ควบคุม

เอกสารไม่ควบคุม

INNOVATIVE INSTRUMENT CALIBRATION LAB  
INNOVATIVE INSTRUMENT CO., LTD HEAD OFFICE  
7 TH FLOOR 11, SORNCHITRAKARN 11 TAMBON BANG KHAO  
AMPHUR BANG PHU (SAMUT PRAKAN PROVINCE) 10940 THAILAND  
TEL : 0866-2116-7000 / FAX : 0866-2116-7140



Page 1/2

#### Certificate of Calibration

Customer : UNITED ANALYST AND ENGINEERING CONSULTANT CO.,LTD.  
Name :  
Address : 81 Soi Gilemak 41, Sukhumvit Road, Bangchak, Prakanong, Bangkok 10260  
Certificate No : 24-ASP-083  
Request No : Req-2024-1184

##### Unit Under Calibration Details

Measurement Item : Air Sampling Pump

Manufacturer : SENSIDYNE

Model : GDA-5

Serial Number : 20190602025

ID : UAE.FM.0192158

Location of Calibration : LAB # AIR VELOCITY METER

##### Calibration Environment and Details

Temperature : 23  $^{\circ}$ C  $\pm$  0.3  $^{\circ}$ C

Humidity : 55 %RH  $\pm$  20 %RH

Barometric Pressure : 1013 hPa  $\pm$  10 hPa

Revised Date : 4 June 2024

Calibration Date : 17 June 2024

Calibration Procedure : In-house method CP-ASP-01 based on ISO 11137 by Comparison With Standard Air Flow Meter

Reference Standard	Model	Serial Number	Traceable	Due Calibration
Air Flow Meter	Gilibrator J Standard flow	1801011003	Sensidyne	12 July 2024
Digital Thermometer with Probe	4T11	BM000057	Q Reten	1 March 2024
Humidity	CP12400	41000KDU051882	TPA	9 November 2024

##### Traceability :

This Certificate is traceable to SI Unit through Sensidyne AZI A Accreditation No. 3943.01

##### Note :

The reported uncertainty is based on standard uncertainty multiplied by the Coverage Factor k = 2, providing a level of confidence approximately 95 %.

Calibration By : Mr. Noppadol Luangpet  
Service Calibration Engineer

Approved By : Mr. Pait Muthaveen  
Calibration Engineer Supervisor  
Issue Date : 17 June 2024

INNOVATIVE INSTRUMENT CALIBRATION LAB  
INNOVATIVE INSTRUMENT CO., LTD HEAD OFFICE  
7 TH FLOOR 11, SORNCHITRAKARN 11 TAMBON BANG KHAO  
AMPHUR BANG PHU (SAMUT PRAKAN PROVINCE) 10940 THAILAND  
TEL : 0866-2116-7000 / FAX : 0866-2116-7140



Page 2/2

Certificate No : 24-ASP-083  
Request No : Req-2024-1184

##### Result of Calibration : HI

Temperature ( $^{\circ}$ C)	Pressure (kPa)	STD (l/min)	UUC (l/min)	Error (l/min)	Error (l/min, %)	** Allowable Range (l/min, %)	*** Back Pressure (inH <sub>2</sub> O)	Uncertainty (l/min)
24.80	99.07	1.807	1.800	-0.007	-0.7%	5 (%)	5	0.016
24.80	96.56	1.805	1.800	-0.005	-0.5%	5 (%)	15	0.018
24.80	92.78	1.808	1.800	-0.008	-0.8%	5 (%)	30	0.016
24.50	99.10	1.713	1.700	-0.013	-0.8%	5 (%)	5	0.027
24.50	96.50	1.712	1.700	-0.012	-0.7%	5 (%)	15	0.027
24.50	92.80	1.748	1.700	-0.048	-2.7%	5 (%)	30	0.029
24.70	99.15	2.816	2.800	-0.016	-0.8%	5 (%)	5	0.029
24.70	96.48	2.826	2.800	-0.026	-1.1%	5 (%)	15	0.030
24.70	92.80	2.839	2.800	-0.039	-1.9%	5 (%)	30	0.029
24.80	99.10	2.511	2.500	-0.011	-0.4%	5 (%)	5	0.040
24.80	96.58	2.539	2.500	-0.039	-1.5%	5 (%)	15	0.040
24.80	92.82	2.581	2.500	-0.081	-3.1%	5 (%)	30	0.041
24.70	99.02	3.023	3.000	-0.023	-0.8%	5 (%)	5	0.048
24.70	96.59	3.100	3.000	-0.100	-3.4%	5 (%)	15	0.049
24.50	94.03	3.156	3.000	-0.156	-4.9%	5 (%)	25	0.049
24.40	99.08	4.803	4.800	-0.003	-0.1%	5 (%)	5	0.064
24.40	97.75	4.118	4.800	-0.118	-2.8%	5 (%)	10	0.084
24.40	95.19	4.208	4.800	-0.208	-4.9%	5 (%)	20	0.085
24.40	99.03	5.827	5.800	-0.027	-0.5%	5 (%)	5	0.080
24.40	97.65	5.212	5.800	-0.212	-4.1%	5 (%)	10	0.081

##### Note

STD : Standard UUC : Unit Under Calibration

- UUC Reference Condition : At 25  $^{\circ}$ C, 101.3 kPa, Air

- Flow Rate was corrected for nonstandard operating condition by using equation :

$$Q_{meas} = Q_{ref} \times \frac{P_{ref}}{P} \times \frac{T_{meas}}{T_{ref}}$$

where : Q = Flow Rate P = Absolute Pressure T = Absolute Temperature  
Meas = Measurement Condition ref = Standard Condition

##### Note

\* Indicates non-accredited

\*\* Reference Specifications = 5% of set flow or  $\pm$  3 l/min whichever is higher

\*\*\* Specified in ISO 11137, Back Pressure control  $\pm$  1 mH<sub>2</sub>O

End of Certificate

เอกสารไม่ควบคุม

เอกสารไม่ควบคุม

Certificate of Calibration

Customer

Name : UNITED ANALYST AND ENGINEERING CONSULTANT CO.,LTD.  
Address : 81 Soi Udomsak 41, Sukhumvit Road, Bangchak, Prakanong, Bangkok 10260

Certificate No : 24-ASP-090

Request No : Req-2024-1252

Unit Under Calibration Details

Measurement Item : Air Sampling Pump  
Manufacturer : SENSODYNE  
Model : G0Air 3  
Serial Number : 2017070008  
ID : UAE-IFM-0172960  
Location of Calibration : LAB 4 AIR VELOCITY METER

Calibration Environment and Details

Temperature : 23 °C ± 1 °C  
Humidity : 55 %RH ± 20 %RH  
Barometric Pressure : 1013 hPa ± 10 hPa  
Received Date : 6 June 2024  
Calibration Date : 20 June 2024  
Calibration Procedure : In-house method CP-ASP-01 based on ISO 11137 by Comparison With Standard Air Flow Meter

Reference Standard	Model	Serial Number	Traceable	Due Calibration
Air Flow Meter	Gilibrator 3 Standard flow	19011011003	Sensodyne	12 July 2024
Digital Thermometer with Probe	GT11	08000057	Q-Bottom	1 March 2024
Barometer	CPQ2400	41000KDU051882	TPA	9 November 2024

Traceability :

This Certificate is traceable to SI Unit through Sensodyne A2LA Accreditation No. 1943.01

Note :

The reported uncertainty is based on standard uncertainty multiplied by the Coverage Factor  $k = 2$ , providing a level of confidence approximately 95 %

Calibration By : Mr. Noppadol Luangrat  
Service Calibration Engineer

Approved By : Mr. Pait Mathavorn  
Calibration Engineer Supervisor  
Issue Date : 20 June 2024

เอกสารไม่ควบคุม

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovator Instrument Co., Ltd.  
FM-708-AFM-01 Rev.00 Issue date 01/07/19

Certificate No : 24-ASP-090

Request No : Req-2024-1252

Result of Calibration : H

Temperature (°C)	Pressure (kPa)	STD (l/min)	UUC (l/min)	Error (l/min)	Error (l/min, %)	**Allowable Range (l/min, %)	***Back Pressure (hPa, l/min)	Uncertainty (l/min)
24.40	98.86	1.030	1.000	-0.010	-1 %	5 (%)	5	0.016
24.40	96.38	0.968	1.000	-0.032	-3.3 %	5 (%)	15	0.016
24.40	82.56	0.953	1.000	-0.047	-4.9 %	5 (%)	30	0.015
24.40	99.87	1.360	1.300	-0.005	-0.3 %	5 (%)	5	0.027
24.40	96.37	1.676	1.700	0.024	1.4 %	5 (%)	15	0.027
24.40	82.55	1.657	1.700	-0.043	-2.6 %	5 (%)	30	0.026
24.50	98.80	2.018	2.000	-0.018	-0.9 %	5 (%)	5	0.029
24.50	96.36	2.006	2.000	-0.006	-0.3 %	5 (%)	15	0.029
24.50	92.70	1.979	2.000	-0.021	-1.1 %	5 (%)	30	0.029
24.40	98.86	2.506	2.500	-0.006	-0.2 %	5 (%)	5	0.040
24.40	96.36	2.507	2.500	-0.007	-0.3 %	5 (%)	15	0.040
24.40	92.59	2.505	2.500	-0.005	-0.2 %	5 (%)	30	0.040
24.00	98.89	3.015	3.000	-0.015	-0.5 %	5 (%)	5	0.046
24.00	96.32	3.056	3.000	-0.056	-1.8 %	5 (%)	15	0.048
24.00	93.86	3.081	3.000	-0.081	-2.6 %	5 (%)	25	0.049
24.40	98.87	4.007	4.000	-0.007	-0.2 %	5 (%)	5	0.064
24.40	97.64	4.075	4.000	-0.075	-1.8 %	5 (%)	10	0.064
24.40	95.02	4.179	4.000	-0.179	-4.3 %	5 (%)	20	0.064
24.20	98.82	5.024	5.000	-0.024	-0.5 %	5 (%)	5	0.079
24.20	97.52	5.160	5.000	-0.160	-3.1 %	5 (%)	10	0.080

Note : STD : Standard UUC : Unit Under Calibration

- UUC Reference Condition : At 25 °C, 101.3 kPa, Air

- Flow Rate was corrected for non-standard operating condition by using equation :

$$Q_{meas} = Q_{ref} \times \frac{P_{ref}}{P} \times \frac{T_{meas}}{T_{ref}}$$

where : Q = Flow Rate P = Absolute Pressure T = Absolute Temperature

Meas = Measurement Condition ref = Standard Condition

Note

\* Indicates non accredited

\*\* Reference Specifications : ± 5% of set flow or ± 3 cc/min whichever is higher

\*\*\* Specified in ISO 11137, Back Pressure control ± 1 mH2O

End of Certificate

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovator Instrument Co., Ltd.  
FM-708-AFM-01 Rev.00 Issue date 01/07/19

Certificate of Calibration

Customer

Name : UNITED ANALYST AND ENGINEERING CONSULTANT CO.,LTD.  
Address : 81 Soi Udomsak 41, Sukhumvit Road, Bangchak, Prakanong, Bangkok 10260

Certificate No : 24-ASP-090

Request No : Req-2024-1328

Unit Under Calibration Details

Measurement Item : Air Sampling Pump  
Manufacturer : SENSODYNE  
Model : G0Air 5  
Serial Number : 2022101018  
ID : UAE-IFM-0972961  
Location of Calibration : LAB 4 AIR VELOCITY METER

Calibration Environment and Details

Temperature : 23 °C ± 1 °C  
Humidity : 55 %RH ± 20 %RH  
Barometric Pressure : 1013 hPa ± 10 hPa  
Received Date : 10 June 2024  
Calibration Date : 28 June 2024  
Calibration Procedure : In-house method CP-ASP-01 based on ISO 11137 by Comparison With Standard Air Flow Meter

Reference Standard	Model	Serial Number	Traceable	Due Calibration
Air Flow Meter	Gilibrator 3 Standard flow	19011011003	Sensodyne	12 July 2024
Digital Thermometer with Probe	GT11	08000057	Q-Bottom	1 March 2024
Barometer	CPQ2400	41000KDU051882	TPA	9 November 2024

Traceability :

This Certificate is traceable to SI Unit through Sensodyne A2LA Accreditation No. 1943.01

Note :

The reported uncertainty is based on standard uncertainty multiplied by the Coverage Factor  $k = 2$ , providing a level of confidence approximately 95 %

Calibration By : Mr. Noppadol Luangrat  
Service Calibration Engineer

Approved By : Mr. Pait Mathavorn  
Calibration Engineer Supervisor  
Issue Date : 28 June 2024

เอกสารไม่ควบคุม

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovator Instrument Co., Ltd.  
FM-708-AFM-01 Rev.00 Issue date 01/07/19

Certificate No : 24-ASP-090

Request No : Req-2024-1328

Result of Calibration : H

Temperature (°C)	Pressure (kPa)	STD (l/min)	UUC (l/min)	Error (l/min)	Error (l/min, %)	**Allowable Range (l/min, %)	***Back Pressure (hPa, l/min)	Uncertainty (l/min)
24.90	99.49	1.009	1.000	-0.009	-0.9 %	5 (%)	5	0.016
24.90	96.95	1.003	1.000	-0.003	-0.3 %	5 (%)	15	0.016
24.90	93.42	1.023	1.000	-0.023	-2.2 %	5 (%)	30	0.016
24.90	99.39	1.367	1.300	-0.007	-0.4 %	5 (%)	5	0.028
24.90	96.91	1.749	1.700	-0.049	-2.8 %	5 (%)	15	0.028
24.90	93.20	1.760	1.700	-0.060	-3.4 %	5 (%)	30	0.028
24.80	99.39	2.509	2.500	-0.009	-0.4 %	5 (%)	5	0.040
24.80	96.92	2.556	2.500	-0.056	-2.3 %	5 (%)	15	0.040
24.80	93.17	2.570	2.500	-0.070	-2.7 %	5 (%)	30	0.040
24.40	99.36	3.023	3.000	-0.023	-0.8 %	5 (%)	5	0.048
24.40	96.89	3.105	3.000	-0.105	-3.4 %	5 (%)	15	0.049
24.40	94.39	3.137	3.000	-0.137	-4.4 %	5 (%)	25	0.049
24.70	99.16	5.032	5.000	-0.032	-0.6 %	5 (%)	5	0.079
24.70	98.06	5.231	5.000	-0.231	-4.4 %	5 (%)	10	0.080

Note : STD : Standard UUC : Unit Under Calibration

- UUC Reference Condition : At 25 °C, 101.3 kPa, Air

- Flow Rate was corrected for non-standard operating condition by using equation :

$$Q_{meas} = Q_{ref} \times \frac{P_{ref}}{P} \times \frac{T_{meas}}{T_{ref}}$$

where : Q = Flow Rate P = Absolute Pressure T = Absolute Temperature

Meas = Measurement Condition ref = Standard Condition

Note

\* Indicates non accredited

\*\* Reference Specifications : ± 5% of set flow or ± 3 cc/min whichever is higher

\*\*\* Specified in ISO 11137, Back Pressure control ± 1 mH2O

End of Certificate

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovator Instrument Co., Ltd.  
FM-708-AFM-01 Rev.00 Issue date 01/07/19

Certificate of Calibration

Customer:

Name : UNITED ANALYST AND ENGINEERING CONSULTANT CO.,LTD.  
Address : 81 Soi Udomsak 41, Sukhumvit Road, Bangchak, Prakanong, Bangkok  
10260

Certificate No : 24-ASP-185

Request No : Req-2024-1324

Unit Under Calibration Details

Measurement Item : Air Sampling Pump  
Manufacturer : SENSIDYNE  
Model : GUAir 5  
Serial Number : 20209401005  
ID : UAE-EFM.055/2563

Location of Calibration : LAB 4 AIR VELOCITY METER

Instrument Status : Used

Calibration Environment and Details

Temperature : 23 °C ± 3 °C  
Humidity : 55 %RH ± 20 %RH  
Barometric Pressure : 1013 hPa ± 10 hPa  
Received Date : 10 June 2024  
Calibration Date : 24 September 2024

Calibration Procedure : In-house method CP-ASP-01 based on ISO 13137 by Comparison With Standard Air Flow Meter


Reference Standard	Model	Serial Number	Traceable	Due Calibration
Air Flow Meter	Gilibrator J Standard flow	19031011003	Sensidyne	2 August 2025
Digital Thermometer with Probe	GT11	08000057	Q Rehm	1 March 2025
Barometer	CPC2400	41000KDU651882	TPA	9 November 2024


Traceability :

This Certificate is traceable to SI Unit through Sensidyne A2LA Accreditation No. 3943.01

Note :

The reported uncertainty is based on standard uncertainty multiplied by the Coverage Factor  $k = 2$ , providing a level of confidence approximately 95 %.

Calibration By :   
Mr. Noppadol Lumgurt  
Service Calibration Engineer

Approved By :   
Mr. Paci Mathavorn  
Calibration Engineer Supervisor  
Issue Date : 24 September 2024

เอกสารไม่ควบคุม

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.

FM-708-AFM-01 Rev.03 Issue date 16/8/24

Certificate No : 24-ASP-185

Request No : Req-2024-1324

Result of Calibration : High(Without Adjustment)

Temperature (°C)	Pressure (kPa)	STD (l/min)	UUC (l/min)	Error (l/min)	Error (l/min, %)	MPE (l/min, %)	**Back Pressure (mH <sub>2</sub> O)	Uncertainty (l/min)	Result
24.50	99.55	1.012	1.000	-0.012	-1.2 %	5 %	5	0.0162	Pass
24.50	96.03	1.019	1.000	-0.019	-1.9 %	5 %	20	0.0163	Pass
24.50	91.97	1.052	1.000	-0.052	-4.9 %	5 %	35	0.0168	Pass
24.50	99.50	1.703	1.700	-0.003	-0.2 %	5 %	5	0.027	Pass
24.50	95.59	1.741	1.700	-0.041	-2.4 %	5 %	20	0.028	Pass
24.50	93.03	1.758	1.700	-0.058	-3.3 %	5 %	30	0.028	Pass
24.40	99.68	2.012	2.000	-0.012	-0.6 %	5 %	5	0.032	Pass
24.40	95.63	2.044	2.000	-0.044	-2.2 %	5 %	20	0.033	Pass
24.30	93.13	2.073	2.000	-0.073	-3.5 %	5 %	30	0.033	Pass
24.30	99.50	2.506	2.500	-0.006	-0.2 %	5 %	5	0.040	Pass
24.30	94.72	2.563	2.500	-0.063	-2.5 %	5 %	20	0.041	Pass
24.30	93.06	2.598	2.500	-0.098	-3.8 %	5 %	30	0.042	Pass
24.30	99.55	3.014	3.000	-0.014	-0.5 %	5 %	5	0.048	Pass
24.30	95.66	3.114	3.000	-0.114	-3.7 %	5 %	20	0.050	Pass
24.30	93.16	3.156	3.000	-0.156	-4.9 %	5 %	30	0.050	Pass
24.40	99.47	4.003	4.000	-0.003	-0.1 %	5 %	5	0.064	Pass
24.40	96.13	4.065	4.000	-0.065	-1.6 %	5 %	10	0.065	Pass
24.40	95.68	4.206	4.000	-0.206	-4.9 %	5 %	20	0.067	Pass
24.40	99.48	5.003	5.000	-0.003	-0.1 %	5 %	5	0.080	Pass
24.40	96.12	5.244	5.000	-0.244	-4.7 %	5 %	10	0.084	Pass

Note :

STD : Standard UUC : Unit Under Calibration

- UUC Reference Condition : At 25 °C, 101.3 kPa, Air

- Flow Rate was corrected for non-standard operating condition by using equation :

$$Q_{meas} = Q_{ref} \times \frac{P_{ref}}{P} \times \frac{T_{meas}}{T_{ref}}$$

where Q = Flow Rate P = Absolute Pressure T = Absolute Temperature  
meas = Measurement Condition ref = Standard Condition

เอกสารไม่ควบคุม

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.

FM-708-AFM-01 Rev.03 Issue date 16/8/24

Certificate No : 24-ASP-185

Request No : Req-2024-1324

Note

\* Indicates non accredited

\*\* Specified in ISO 13137, Back Pressure control ± 1 mH<sub>2</sub>O

MPE = Maximum Permissible Error (Specified in Manufacturer's Specification)

Decision Rule for Statements of Conformity

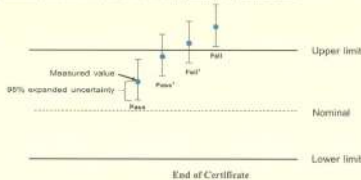
The standard decision rule employed for the statement of conformity to each calibration result will be applied using ILAC-G8:09/2019: Guidelines on the Reporting of Compliance with Specification as following Fig and statements

Pass - The measurement result plus the expanded uncertainty with a 95% coverage probability were within the limit.

Pass<sup>1</sup> - The measurement result was within the limit. However, a portion of the expanded uncertainty of measurement at 95% exceeds the limit.

Fail<sup>1</sup> - The measurement result was out of the limit. However, a portion of the expanded uncertainty of measurement at 95% is within the limit.

Fail - The measurement result plus the expanded uncertainty with a 95% coverage probability were outside the limit.



เอกสารไม่ควบคุม

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.

FM-708-AFM-01 Rev.03 Issue date 16/8/24

Certificate of Calibration

Customer:

Name : UNITED ANALYST AND ENGINEERING CONSULTANT CO.,LTD.  
Address : 81 Soi Udomsak 41, Sukhumvit Road, Bangchak, Prakanong, Bangkok  
10260

Certificate No : 24-ASP-146

Request No : Req-2024-1937

Unit Under Calibration Details

Measurement Item : Air Sampling Pump  
Manufacturer : SENSIDYNE  
Model : GUAir 5  
Serial Number : 2020301022  
ID : UAE-EFM.101/2565

Location of Calibration : LAB 4 AIR VELOCITY METER

Instrument Status : Used

Calibration Environment and Details

Temperature : 23 °C ± 3 °C  
Humidity : 55 %RH ± 20 %RH  
Barometric Pressure : 1013 hPa ± 10 hPa  
Received Date : 28 August 2024  
Calibration Date : 6 September 2024

Calibration Procedure : In-house method CP-ASP-01 based on ISO 13137 by Comparison With Standard Air Flow Meter


Reference Standard	Model	Serial Number	Traceable	Due Calibration
Air Flow Meter	Gilibrator J Standard flow	19031011003	Sensidyne	2 August 2025
Digital Thermometer with Probe	GT11	08000057	Q Rehm	1 March 2025
Barometer	CPC2400	41000KDU651882	TPA	9 November 2024

Traceability :

This Certificate is traceable to SI Unit through Sensidyne A2LA Accreditation No. 3943.01

Note :

The reported uncertainty is based on standard uncertainty multiplied by the Coverage Factor  $k = 2$ , providing a level of confidence approximately 95 %.

Calibration By :   
Mr. Noppadol Lumgurt  
Service Calibration Engineer

Approved By :   
Mr. Paci Mathavorn  
Calibration Engineer Supervisor  
Issue Date : 6 September 2024

เอกสารไม่ควบคุม

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.

FM-708-AFM-01 Rev.03 Issue date 16/8/24

Certificate No : 24-ASP-146

Request No : Req-2024-1937

Result of Calibration : High(Without Adjustment)

Temperature (°C)	Pressure (kPa)	STD (l/min)	UUC (l/min)	Error (l/min)	Error (l/min, %)	MPE (l/min, %)	**Back Pressure (inH <sub>2</sub> O)	Uncertainty (l/min)	Result
24.20	99.19	1.011	1.000	-0.011	-1.1 %	5 %	5	0.0162	Pass
24.20	95.38	1.049	1.000	-0.049	-4.7 %	5 %	20	0.0168	Pass1
24.20	91.73	1.050	1.000	-0.050	-4.8 %	5 %	35	0.0168	Pass1
24.30	99.19	1.706	1.700	-0.006	-0.4 %	5 %	5	0.027	Pass
24.30	95.41	1.725	1.700	-0.025	-1.4 %	5 %	20	0.028	Pass
24.30	92.82	1.714	1.700	-0.014	-0.8 %	5 %	30	0.027	Pass
24.20	99.19	2.013	2.000	-0.013	-0.6 %	5 %	5	0.032	Pass
24.20	95.39	2.010	2.000	-0.010	-0.5 %	5 %	20	0.032	Pass
24.20	92.85	2.008	2.000	-0.008	-0.4 %	5 %	30	0.032	Pass
24.20	99.17	2.507	2.500	-0.007	-0.3 %	5 %	5	0.040	Pass
24.20	95.26	2.503	2.500	-0.003	-0.1 %	5 %	20	0.040	Pass
24.20	92.87	2.474	2.500	0.026	1.1 %	5 %	30	0.040	Pass
24.20	99.15	3.016	3.000	-0.016	-0.5 %	5 %	5	0.048	Pass
24.20	95.22	3.028	3.000	-0.028	-0.9 %	5 %	20	0.048	Pass
24.20	92.78	3.004	3.000	-0.004	-0.1 %	5 %	30	0.048	Pass
24.20	99.12	4.008	4.000	-0.008	-0.2 %	5 %	5	0.064	Pass
24.20	97.85	4.005	4.000	-0.005	-0.1 %	5 %	10	0.064	Pass
24.20	95.25	4.018	4.000	-0.018	-0.4 %	5 %	20	0.064	Pass
24.20	99.10	5.008	5.000	-0.008	-0.2 %	5 %	5	0.080	Pass
24.20	97.81	5.036	5.000	-0.036	-0.7 %	5 %	10	0.081	Pass

Note : STD : Standard UUC : Unit Under Calibration  
- UUC Reference Condition : At 25 °C, 101.3 kPa, Air  
- Flow Rate was corrected for non-standard operating condition by using equation :

$$Q_{\text{meas}} = Q_{\text{ref}} \times \frac{P_{\text{ref}}}{P_{\text{meas}}} \times \frac{T_{\text{meas}}}{T_{\text{ref}}}$$

where : Q = Flow Rate P = Absolute Pressure T = Absolute Temperature  
meas = Measurement Condition ref = Standard Condition

เอกสารไม่ควบคุม

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.

FM-708-AFM-01 Rev.03 Issue date 16/8/24

Certificate No : 24-ASP-146

Request No : Req-2024-1937

Note

\* Indicates non accredited

\*\* Specified in ISO 13137, Back Pressure control  $\pm 1$  inH<sub>2</sub>O

MPE = Maximum Permissible Error (Specified in Manufacturer's Specification)

Decision Rule for Statements of Conformity

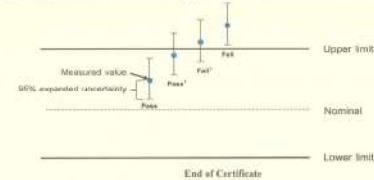
The standard decision rule employed for the statements of conformity to each calibration result will be applied using ILAC-G8:2019. Guidelines on the Reporting of Compliance with Specification as following Fig. and statements

Pass = The measurement result plus the expanded uncertainty with a 95% coverage probability, were within the limit.

Pass<sup>1</sup> = The measurement result was within the limit. However, a portion of the expanded uncertainty of measurement at 95% extends the limit.

Fail<sup>1</sup> = The measurement result was out of the limit. However, a portion of the expanded uncertainty of measurement at 95% is within the limit.

Fail = The measurement result plus the expanded uncertainty with a 95% coverage probability were outside the limit.



End of Certificate

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.

FM-708-AFM-01 Rev.03 Issue date 16/8/24

Certificate of Calibration

Certificate No : 24-ASP-068

Request No : Req-2024-1132

Customer : UNITED ANALYST AND ENGINEERING CONSULTANT CO., LTD.  
Name : UNITED ANALYST AND ENGINEERING CONSULTANT CO., LTD.  
Address : 81 Soi Udonnok 41, Nakhonin Road, Bangchud, Prakanong, Bangkok 10260

Unit Under Calibration Details

Measurement Item : Air Sampling Pump  
Manufacturer : SENSODYNE  
Model : Gilaer 5  
Serial Number : 20150602018  
ID : UAEFM01022558  
Location of Calibration : LAB 4 AIR VELOCITY METER

Calibration Environment Details

Temperature : 23 °C  $\pm$  3 °C  
Humidity : 55 %RH  $\pm$  20 %RH  
Barometric Pressure : 1013 hPa  $\pm$  10 hPa  
Received Date : 23 May 2024  
Calibration Date : 3 June 2024

Calibration Procedure : In-house method CP-ASP-01 based on ISO 13137 by Comparison With Standard Air Flow Meter

Reference Standard	Model	Serial Number	Traceable	Due Calibration
Air Flow Meter	Gilibrator 3 Standard flow	1801011003	Sensodyne	12 July 2024
Digital Thermometer with Probe	GT11	08000037	Q Rohm	1 March 2024
Barometer	CPG2400	41000KDU851882	1PA	9 November 2024

Traceability :

This Certificate is traceable to SI Unit through Sensodyne A21-A Accreditation No. 1943.01

Note :

The reported uncertainty is based on standard uncertainty multiplied by the Coverage Factor k = 2, providing a level of confidence approximately 95 %.

Calibration By : Mr. Noppadol Luangrat  
Service Calibration Engineer

Approved By : Mr. Puch Mathayoon  
Calibration Engineer Supervisor

Issue Date : 3 June 2024

$$Q_{\text{meas}} = Q_{\text{ref}} \times \frac{P_{\text{ref}}}{P_{\text{meas}}} \times \frac{T_{\text{meas}}}{T_{\text{ref}}}$$

where : Q = Flow Rate P = Absolute Pressure T = Absolute Temperature  
meas = Measurement Condition ref = Standard Condition

Note

\* Indicates non accredited

\*\* Reference Specifications  $\pm 5\%$  of set flow or  $\pm 3$  action whichever is higher

\*\*\* Specified in ISO 13137, Back Pressure control  $\pm 1$  inH<sub>2</sub>O

End of Certificate

เอกสารไม่ควบคุม

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.

FM-708-AFM-01 Rev.02 Issue date 05/07/19

Certificate No : 24-ASP-068

Request No : Req-2024-1132

Result of Calibration : HI

Temperature (°C)	Pressure (kPa)	STD (l/min)	UUC (l/min)	Error (l/min)	Error (l/min, %)	**Absolute Range (l/min, %)	***Back Pressure (inH <sub>2</sub> O)	Uncertainty (l/min)
24.50	99.72	1.014	1.000	-0.014	-1.4 %	5 %	5	0.036
24.50	96.45	0.953	1.000	0.047	4.9 %	5 %	15	0.036
24.50	93.33	0.954	1.000	0.046	4.8 %	5 %	30	0.035
24.50	99.71	1.712	1.700	-0.012	-0.7 %	5 %	5	0.028
24.50	97.12	1.828	1.700	0.122	4.4 %	5 %	15	0.063
24.50	92.26	1.886	1.700	0.114	6.6 %	5 %	30	0.028
25.00	99.66	2.029	2.000	-0.029	-1.4 %	5 %	5	0.029
25.00	97.12	2.014	2.000	-0.014	-0.7 %	5 %	15	0.029
25.00	91.32	2.030	2.000	-0.030	-1.5 %	5 %	30	0.029
24.80	99.65	2.513	2.500	-0.013	-0.5 %	5 %	5	0.040
24.80	97.08	2.566	2.500	-0.066	-2.6 %	5 %	15	0.042
24.80	91.28	2.580	2.500	-0.080	-3.1 %	5 %	30	0.041
24.50	99.63	3.028	3.000	-0.028	-0.9 %	5 %	5	0.044
24.30	97.13	3.082	3.000	-0.082	-2.7 %	5 %	15	0.048
24.30	94.59	3.136	3.000	-0.136	-4.9 %	5 %	25	0.048
24.40	99.61	4.011	4.000	-0.011	-0.3 %	5 %	5	0.064
24.40	98.30	4.083	4.000	-0.083	-2.1 %	5 %	10	0.064
24.40	95.78	4.208	4.000	-0.208	-4.9 %	5 %	20	0.064
24.40	99.52	5.025	5.000	-0.025	-0.5 %	5 %	5	0.080
24.40	98.28	5.168	5.000	-0.168	-3.3 %	5 %	10	0.080

Note : STD : Standard UUC : Unit Under Calibration

- UUC Reference Condition : At 25 °C, 101.3 kPa, Air

- Flow Rate was corrected for non-standard operating condition by using equation :

$$Q_{\text{meas}} = Q_{\text{ref}} \times \frac{P_{\text{ref}}}{P_{\text{meas}}} \times \frac{T_{\text{meas}}}{T_{\text{ref}}}$$

where : Q = Flow Rate P = Absolute Pressure T = Absolute Temperature  
meas = Measurement Condition ref = Standard Condition

Note

\* Indicates non accredited

\*\* Reference Specifications  $\pm 5\%$  of set flow or  $\pm 3$  action whichever is higher

\*\*\* Specified in ISO 13137, Back Pressure control  $\pm 1$  inH<sub>2</sub>O

End of Certificate

เอกสารไม่ควบคุม

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.

FM-708-AFM-01 Rev.02 Issue date 05/07/19



### Certificate of Calibration

**Customer** : UNITED ANALYST AND ENGINEERING CONSULTANT CO.,LTD.  
**Name** : UNITED ANALYST AND ENGINEERING CONSULTANT CO.,LTD.  
**Address** : 81 Soi Udomsak 41, Sukhumvit Road, Bangchak, Prakanong, Bangkok 10260

**Certificate No** : 24-TPM-369  
**Request No** : Req-2024-1692  
**Page** : 1/2

#### Unit Under Calibration Details

**Calibration Parameter** : Temperature  
**Instrument Name** : Thermal Environment Monitor  
**Manufacturer** : 3M  
**Model** : QT-32  
**Serial Number** : TPQ020022  
**Resolution** : 0.1 °C  
**ID Number** : UAE-FPM-003-2559

**Range Calibration** : 20 °C to 60 °C  
**Type of Sensor** : RTD  
**Sensor Diameter (mm)** : 4.5  
**Calibration Position (mm)** : 67.5  
**Instrument Status** : Used

#### Calibration Environment and Details

**Temperature** : 23 °C ± 3 °C  
**Humidity** : 55 %RH ± 15 %RH  
**Received Date** : 2 August 2024  
**Calibrated Date** : 15 August 2024  
**Calibration Procedure** : In-house method CP-TPM-01 by Comparison with Standard Thermometers.

**Reference Standard** : Digital Thermometer with Sensor, Manufacturer: GINGO GINGO, Model: GT11-RTD100, SN: 08000057, ID: 02-TPM  
Which was calibrated on 1 March 2024, Calibration Certificate No. : QR24-0478

**Traceability** : This Certificate is traceable to SI Unit through Quality Reborn Co., Ltd., NSC-ONSC Accreditation No.: Calibration 0292

#### Note

The reported uncertainty is based on standard uncertainty multiplied by the Coverage Factor  $k=2$ , providing a level of confidence approximately 95 %.

**Approved By** :   
Mr. Noppadon Luangrat  
Technical Manager  
**Issue Date** : 19 August 2024

เอกสารไม่ควบคุม

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.  
FSM-700-TPM-01 Rev.01 Issue date 13/02/20



**Calibration Note**  
UUC Adjustment : ☒ Not Adjust

**Certificate No** : 24-TPM-369  
**Request No** : Req-2024-1692  
**Page** : 2/2

#### Result of Calibration :

UUC Sensor	Standard Temperature (°C)	UUC Reading (°C)	Correction (°C)	Coverability (°C)
WET	20.011	20.0	0.0	0.13
	25.011	25.1	-0.1	0.13
	30.011	30.0	0.0	0.13
	35.017	35.1	-0.1	0.13
	40.017	40.0	0.0	0.13
	45.018	45.1	-0.1	0.13
DRY	50.041	50.1	-0.1	0.13
	60.044	60.1	-0.1	0.13
	20.012	20.0	0.0	0.13
	25.010	25.1	-0.1	0.13
	30.013	30.0	0.0	0.13
	35.015	35.2	-0.2	0.13
GLOBE	40.017	40.0	0.0	0.13
	45.018	45.1	-0.1	0.13
	50.041	50.1	-0.1	0.13
	60.045	60.1	-0.1	0.13
	20.012	20.0	0.0	0.13
	25.010	25.0	0.0	0.13

End of Certificate

**Calibrated By** :   
Mr. Sitchek Insupkietnukul

เอกสารไม่ควบคุม

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.  
FSM-700-TPM-01 Rev.01 Issue date 13/02/20



### Certificate of Calibration

**Customer** : UNITED ANALYST AND ENGINEERING CONSULTANT CO.,LTD.  
**Name** : UNITED ANALYST AND ENGINEERING CONSULTANT CO.,LTD.  
**Address** : 81 Soi Udomsak 41, Sukhumvit Road, Bangchak, Prakanong, Bangkok 10260

**Certificate No** : 24-TPM-368  
**Request No** : Req-2024-1691  
**Page** : 1/2

#### Unit Under Calibration Details

**Calibration Parameter** : Temperature  
**Instrument Name** : Thermal Environment Monitor  
**Manufacturer** : TSI (QUEST)  
**Model** : QT-54  
**Serial Number** : QTE1R10001  
**Resolution** : 0.1 °C  
**ID Number** : UAE-EMAZ-090-2553

**Range Calibration** : 20 °C to 60 °C  
**Type of Sensor** : RTD  
**Sensor Diameter (mm)** : 4.5  
**Calibration Position (mm)** : 67.5  
**Instrument Status** : Used

#### Calibration Environment and Details

**Temperature** : 23 °C ± 3 °C  
**Humidity** : 55 %RH ± 15 %RH  
**Received Date** : 2 August 2024  
**Calibrated Date** : 15 August 2024  
**Calibration Procedure** : In-house method CP-TPM-01 by Comparison with Standard Thermometer.

**Reference Standard** : Digital Thermometer with Sensor, Manufacturer: GINGO GINGO, Model: GT11-RTD100, SN: 08000057, ID: 02-TPM  
Which was calibrated on 1 March 2024, Calibration Certificate No. : QR24-0478

**Traceability** : This Certificate is traceable to SI Unit through Quality Reborn Co., Ltd., NSC-ONSC Accreditation No.: Calibration 0292

#### Note

The reported uncertainty is based on standard uncertainty multiplied by the Coverage Factor  $k=2$ , providing a level of confidence approximately 95 %.

**Approved By** :   
Mr. Noppadon Luangrat  
Technical Manager  
**Issue Date** : 19 August 2024

เอกสารไม่ควบคุม

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.  
FSM-700-TPM-01 Rev.01 Issue date 13/02/20



**Calibration Note**  
UUC Adjustment : ☒ Not Adjust

**Certificate No** : 24-TPM-368  
**Request No** : Req-2024-1691  
**Page** : 2/2

#### Result of Calibration :

UUC Sensor	Standard Temperature (°C)	UUC Reading (°C)	Correction (°C)	Coverability (°C)
WET	20.011	20.2	-0.2	0.13
	25.011	25.2	-0.2	0.13
	30.011	30.2	-0.2	0.13
	35.017	35.1	-0.1	0.13
	40.018	40.2	-0.2	0.13
	45.018	45.1	-0.1	0.13
DRY	50.041	50.1	-0.1	0.13
	60.045	60.1	-0.1	0.13
	20.012	20.1	-0.1	0.13
	25.010	25.1	-0.1	0.13
	30.013	30.1	-0.1	0.13
	35.014	35.1	-0.1	0.13
GLOBE	40.017	40.1	-0.1	0.13
	45.018	45.2	-0.2	0.13
	50.040	50.1	-0.1	0.13
	60.045	60.1	-0.1	0.13
	20.012	20.2	-0.2	0.13
	25.010	25.1	-0.1	0.13

End of Certificate

**Calibrated By** :   
Mr. Sitchek Insupkietnukul

เอกสารไม่ควบคุม

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.  
FSM-700-TPM-01 Rev.01 Issue date 13/02/20

### Certificate of Calibration

#### Customer

Name : UNITED ANALYST AND ENGINEERING  
CONSULTANT CO.,LTD.  
Address : 81 Soi Udomsak 41, Sukhumvit Road, Bangchak, Prakanong,  
Bangkok 10260

Certificate No : 24-ACT-077  
Request No : Req-2024-1138

#### Unit Under Calibration Details

Measurement item : Acoustic Calibrator Class : 1  
Manufacturer : SVANTEK Range : 94, 114 dB / 1000 Hz  
Model : SV 35A Instrument Status : Used  
Serial Number : 73246  
ID : UAE.EFM.104/2561

#### Calibration Environment and Details


Temperature : ( 23 ± 2 °C )  
Humidity : ( 50 ± 20 %RH )  
Barometric Pressure : ( 1013 ± 10.0 hPa )  
Received Date : 23 May 2024  
Calibration Date : 30 May 2024  
Location of Calibration : LAB 1 Acoustic  
Calibration Procedure : In-house method CP-ACT-02 based on IEC 60942:2017 Electroacoustics - Sound calibrators


Reference Standard	Model	Serial Number	Traceable	Due Calibration
Sound Calibrator	SV 35A	58079	EEL	31 May 2024
THD Multimeter	2015	1047765	NIMT	16 January 2025

**Traceability** : This certificate provides traceability of measurement to recognized national standard, and to the realization of the international System of Units (SI).

#### Note

The reported uncertainty is based on standard uncertainty multiplied by the Coverage Factor  $k=2$ , providing a level of confidence approximately 95 %.

Calibrated By :   
Mr. Noppadon Luangart  
Service Calibration Engineer

Approved By :   
Mr. Pacit Mathavorn  
Calibration Engineer Supervisor  
Issue Date : 30 May 2024

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the **เอกสารไม่ควบคุม**  
FM-708-ACT-02 Rev 01 Issue date:8/7/23

Certificate No : 24-ACT-077  
Request No : Req-2024-1138

#### Sound pressure level

#### Calibration Results : Without Adjustment

Calibration Range (dB)	Without Adjustment (dB)		Adjustment (dB)		Uncertainty ( ± dB )	Acceptance limit Class 1 ( ± dB )
	Measured	Deviated value	Measured	Deviated value		
94 dB / 1000 Hz	93.83	-0.17	-	-	0.13	0.25
114 dB / 1000 Hz	113.80	-0.20	-	-	0.13	0.25

#### Frequency of Sound pressure level

Calibration Range (Hz)	Without Adjustment		Adjustment		Uncertainty ( ± % )	Acceptance limit Class 1 ( ± % )
	Measured (Hz)	Deviated value	Measured (Hz)	Deviated value		
94 dB / 1000 Hz	1000.00	0.00	-	-	0.01	0.70
114 dB / 1000 Hz	1000.00	0.00	-	-	0.01	0.70

#### Total Harmonic Distortion plus Noise of Sound pressure level (THD+N %)

Calibration Range (Hz)	Without Adjustment	Adjustment	Uncertainty ( ± % )	Acceptance limit Class 1 ( ± % )
	Measured (%)	Measured (%)		
94 dB / 1000 Hz	0.09	-	0.40	2.5
114 dB / 1000 Hz	0.28	-	0.40	2.5

#### Note :

Function	Maximum-permitted Uncertainty of measurement
Sound pressure level	0.15 dB
Frequency	0.20%
Total distortion+noise	0.50%

- Acceptance limit was IEC60942:2017 Class 1  
- The calibration results exclude the calibrator pressure correction  
- The calibration results exclude the microphone volume correction

#### End of Calibration

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the **เอกสารไม่ควบคุม**  
FM-708-ACT-02 Rev 01 Issue date:8/7/23

### Certificate of Calibration

#### Customer

Name : UNITED ANALYST AND ENGINEERING CONSULTANT CO.,LTD.  
Address : 81 Soi Udomsak 41, Sukhumvit Road, Bangchak, Prakanong, Bangkok  
10260

Certificate No : 25-SLM-057  
Request No : Req-2025-0401

#### Unit Under Calibration Details

Measurement item : Sound Level Meter Microphone Class : 2  
Manufacturer : RION Microphone Model : UC-52  
Model : SL-42 Microphone S/N : 139073  
Serial Number : 00321432 Preamplifier Model : N19-24  
ID : UAE.EMA2.081/2555 Preamplifier S/N : 11452  
Resolution : 0.1 dB Instrument Status : Used

#### Calibration Environment and Details

Temperature : 23 °C ± 2 °C  
Humidity : 50 %RH ± 20 %RH  
Barometric Pressure : 1013 hPa ± 10 hPa  
Received Date : 13 February 2025  
Calibrated Date : 19 February 2025  
Calibration Procedure : In-house method CP-SLM-01 based on IEC 61672-3 : 2013 Electroacoustics - Sound level meters - Part 3: Periodic tests  
Location of Calibration : Lab Acoustic


#### Reference Standard

Instrument	Brand	Model	SN	Due calibration	Traceability
Standard Microphone	Briel & Kjaer	4192	2284985	25 June 2025	NIMT
Audio Generator	Svante	80401	131	13 October 2025	NK Electric

#### Note

The reported uncertainty is based on standard uncertainty multiplied by the Coverage Factor  $k=2$ , providing a level of confidence approximately 95 %.

Calibrated By :   
Mr. Noppadon Luangart  
Service Calibration Engineer

Approved By :   
Mr. Pacit Mathavorn  
Calibration Engineer Supervisor  
Issue Date : 19 February 2025

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the **เอกสารไม่ควบคุม**  
FM-708-SLM-01 Rev. 04 Issue date:5/6/24

Certificate No : 25-SLM-057  
Request No : Req-2025-0401

#### 1. Indication at the calibration check frequency

UUC Setting FAST / A / 30-130	Nominal Level	Before Adjust		After Adjust		UNCERTAINTY ( ± dB )	Acceptance Limit ( ± dB )	Result
		UUC (dB)	ERR (dB)	UUC (dB)	ERR (dB)			
Calibrator Setting	(dB)							
1000 Hz 134 dB	113.76	113.5	-0.26	113.8	+0.04	0.20	0.30	Pass

Note : Absolute sensitivity was established by the use of Sound Calibrator Brand SVANTER, Model SV 35A, SN.58079.

#### 2. Self-generated noise, Microphone installed

UUC Setting FAST / 30-130	Measured	UNCERTAINTY
UUC Weighting	(dB)	( ± dB )
A	22.8	0.10

#### 3. Self-generated noise, Microphone replaced by the electrical input signal device

UUC Setting FAST / 30-130	Measured	UNCERTAINTY
UUC Weighting	(dB)	( ± dB )
A	14.5	0.10
C	19.3	0.10
Z	22.8	0.10

#### 4. Acoustic signal test of frequency weightings (Without Windscreen)

UUC Setting FAST / 30-130	Deviation from various Frequency Weighting Response curve			UNCERTAINTY ( ± dB )	Acceptance Limit ( ± dB )	Result
	A	C	Z			
125 Hz	1.3	1.3	1.3	0.60	1.5	Pass
1000 Hz	0.0	0.0	0.0	0.60	1.0	Pass
4000 Hz	-0.1	-0.2	-0.1	0.60	3.0	Pass
8000 Hz	-2.6	-2.6	-2.6	0.70	5.0	Pass

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the **เอกสารไม่ควบคุม**  
FM-708-SLM-01 Rev. 04 Issue date:5/6/24

Certificate No : 25-SLM-057  
Request No : Req-2025-0401

##### 5. Electrical signal test of frequency weightings, Weighting network response with relative to 1 kHz

Electrical signal test in frequency weighting, weighting network response with relative to a 100						
UUC Setting	Deviation from various Frequency			UNCERTAINTY	Acceptance	Result
FAST / 30-130	Weighting Response curve				Limit	
STD Setting	A (dB)	C (dB)	Z (dB)	( $\pm$ dB)	( $\pm$ dB)	
63 Hz	-0.3	-0.1	0.0	0.20	2.0	Pass
125 Hz	-0.1	0.0	0.0		1.5	Pass
250 Hz	-0.1	0.0	0.0		1.5	Pass
500 Hz	0.0	0.0	0.0		1.5	Pass
1000 Hz	0.0	0.0	0.0		1.0	Pass
2000 Hz	0.0	0.1	0.0		2.0	Pass
4000 Hz	0.0	0.0	0.0		3.0	Pass
8000 Hz	0.1	0.1	0.0		5.0	Pass
16000 Hz	-1.3	-1.4	0.0		+5, -INF	Pass

##### 6. Frequency and time weightings at 1kHz

UUC Setting	STD	Measured		UNCERTAINTY ( $\pm$ dB)	Acceptance Limit ( $\pm$ dB)	Result
FAST / 30-130	REF	UUC	ERR			
UUC Weighting	(dB)	(dB)	(dB)	0.20	0.20	Pass
A	114.00	114.0	0.0			
C	114.00	114.0	0.0			
Z	114.00	114.0	0.0			

UUC Setting	STD	Measured		UNCERTAINTY ( $\pm$ dB)	Acceptance Limit ( $\pm$ dB)	Result
30-130 / A	REF	UUC	ERR			
UUC Time Response	(dB)	(dB)	(dB)	0.20	0.10	Pass
Fast	114.00	114.0	0.0			
Slow	114.00	114.0	0.0			
Log	114.00	114.0	0.0			

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.

PM-208-SLM-01 Rev.04 Issue date 5/6/24

เอกสารไม่ควบคุม

Certificate No : 25-SLM-057  
Request No : Req-2025-0401

##### 7. Long Term Stability

UUC Setting	Measured	UNCERTAINTY ( $\pm$ dB)	Acceptance Limit ( $\pm$ dB)	Result
FAST / A / 30-130	UUC			
STD Setting	(dB)	0.10	0.30	Pass
Initial	114.0			
Final	114.0			
Deviated	0.0			

##### 8. Level linearity on the reference level range

UUC Setting	Anticipated	Deviation		UNCERTAINTY ( $\pm$ dB)	Acceptance Limit ( $\pm$ dB)	Result
FAST / A / 30-130	REF	UUC	ERR			
STD dB	(dB)	(dB)	(dB)	0.30	1.1	Pass
138.00	138	137.9	-0.1			
134.00	134	134.0	0.0			
129.00	129	128.9	-0.1			
124.00	124	124.0	0.0			
119.00	119	119.0	0.0			
114.00	114	114.0	0.0			
109.00	109	109.0	0.0			
104.00	104	104.0	0.0			
99.00	99	99.0	0.0			
94.00	94	94.0	0.0			
89.00	89	89.0	0.0			
84.00	84	84.0	0.0			
79.00	79	79.0	0.0			
74.00	74	74.0	0.0			
69.00	69	69.0	0.0			
64.00	64	64.0	0.0			
59.00	59	59.0	0.0			
54.00	54	54.0	0.0			
49.00	49	49.0	0.0			
44.00	44	44.0	0.0			
39.00	39	39.0	0.0			
34.00	34	33.9	-0.1			
29.00	29	28.9	-0.1			
24.00	24	23.9	-0.1			

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.

PM-208-SLM-01 Rev.04 Issue date 5/6/24

เอกสารไม่ควบคุม

Certificate No : 25-SLM-057  
Request No : Req-2025-0401

##### 9. Level linearity including the level range control

UUC Setting	STD	Measured		UNCERTAINTY ( $\pm$ dB)	Acceptance Limit ( $\pm$ dB)	Result
FAST / A	REF	UUC	ERR			
UUC Range	(dB)	(dB)	(dB)	0.30	1.1	Pass
30-130	29.50	29.6	0.1			
	114	114.0	0.0			

##### 10. Tone burst response

UUC Setting	STD	Anticipated	Measured		UNCERTAINTY ( $\pm$ dB)	Acceptance Limit ( $\pm$ dB)	Result
A / 30-130	Toneburst	Ref	UUC	ERR			
UUC Time Response	(ms)	(dB)	(dB)	(dB)	0.20	1.0	Pass
Fast	200	126.0	126.0	0.0			
	2	109.0	109.0	0.0			
	0.25	100.0	99.9	-0.1			
Slow	200	119.6	119.6	0.0			
	2	100.0	100.0	0.0			
	200	120.0	120.0	0.0			
SEL	2	100.0	100.0	0.0			
	0.25	91.0	90.9	-0.1			

##### 11. Peak C Sound level

UUC Setting	Anticipated	Measured		UNCERTAINTY ( $\pm$ dB)	Acceptance Limit ( $\pm$ dB)	Result
FAST / C / 55-141	REF	UUC	ERR			
STD Setting	(dB)	(dB)	(dB)	0.20	3.0	Pass
Complete cycle	136.4	136.4	0.00			
Positive half cycle	135.4	135.2	-0.20			
Negative half cycle	135.4	135.2	-0.20			

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.

PM-208-SLM-01 Rev.04 Issue date 5/6/24

เอกสารไม่ควบคุม

Certificate No : 25-SLM-057  
Request No : Req-2025-0401

##### 12. Overload indication

UUC Setting	Measured	UNCERTAINTY ( $\pm$ dB)	Acceptance Limit ( $\pm$ dB)	Result
FAST / A / 30-130	UUC			
STD Setting	(dB)	0.20	1.5	Pass
Positive one-half cycle	139.5			
Negative one-half cycle	139.3			
Deviated	0.2			

##### 13. High Level Stability

UUC Setting	Measured	UNCERTAINTY ( $\pm$ dB)	Acceptance Limit ( $\pm$ dB)	Result
FAST / A / 30-130	UUC			
STD Setting	(dB)	0.10	0.30	Pass
Initial	129.0			
Final	129.0			
Deviated	0.0			

##### Note :

Function	Maximum-permitted Uncertainty of measurement
1. Indication at the calibration check frequency	Not applicable
2. Self-generated noise, Microphone installed	Not applicable
3. Self-generated noise, Microphone replaced by the electrical input signal device	Not applicable
4. Acoustic signal test of frequency weightings at 10 Hz to 4 kHz	0.60 dB
4. Acoustic signal test of frequency weightings at >4 kHz to 10 kHz	0.70 dB
5. Electrical signal test of frequency weightings, Weighting network response with relative to 1 kHz	0.20 dB
6. Frequency and time weightings at 1kHz	0.20 dB
7. Long Term Stability	0.10 dB
8. Level linearity on the reference level range	0.30 dB
9. Level linearity including the level range control	0.30 dB
10. Tone burst response	0.30 dB
11. Peak C Sound level	0.35 dB
12. Overload indication	0.25 dB
13. High Level Stability	0.10 dB

~Acceptance limit and Maximum-permitted Uncertainty was IEC 61672-1:2003

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.

PM-208-SLM-01 Rev.04 Issue date 5/6/24

เอกสารไม่ควบคุม

Certificate No. : 25-SLM-057  
Request No. : Reg-2025-0401

#### Decision Rule for Statements of Conformity

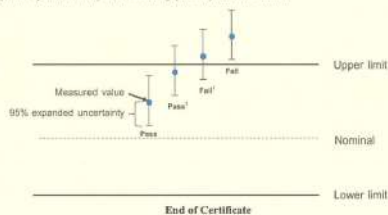
The standard decision rule employed for the statements of conformity to each calibration result will be applied using ILAC-08/09/2019. Guidelines on the Reporting of Compliance with Specification as following Fig. and statements

**Pass** - The measurement result plus the expanded uncertainty with a 95% coverage probability were within the limit.

**Pass<sup>1</sup>** - The measurement result was within the limit. However, a portion of the expanded uncertainty of measurement at 95% exceeds the limit.

**Fail<sup>1</sup>** - The measurement result was out of the limit. However, a portion of the expanded uncertainty of measurement at 95% is within the limit.

**Fail** - The measurement result plus the expanded uncertainty with a 95% coverage probability were outside the limit.



The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.  
PM-108-SLM-01 Rev.04 Issue date: 5/6/24

เอกสารไม่ควบคุม

Cert. No. : ACL25028  
Pages : 1 of 8

## Calibration Certificate

**Equipment :** SOUND LEVEL METER  
**Manufacturer :** RION  
**Model :** NL-42 / Microphone UC-52 / Preamplifier NH-24  
**Serial No.:** 00709651 / 188529 / 00801  
**ID No.:** UAE.EFM.019/2564

**Condition As Found :** GOOD

**Customer :** UNITED ANALYST AND ENGINEERING CONSULTANT (UAE)  
81 SOI UDOMSUK 41, SUKHUMVIT ROAD,  
BANGCHAK SUB-DISTRICT,  
PHRAKHANONG DISTRICT, BANGKOK 10260  
THAILAND.

**Location :** -  
**Ambient Temperature :** ( 23.0 ± 3 ) °C  
**Pressure :** ( 101.3 ± 3 ) kPa  
**Relative Humidity :** ( 50.0 ± 20 ) %

**Received Date :** 03 JANUARY 2025  
**Calibration Date :** 13 - 14 JANUARY 2025  
**Date of Issue :** 15 JANUARY 2025

**Calibrated by :** Nathakorn Pisutpaisan

**Approved by :**   
( Thanakul Peichurai )

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

เอกสารไม่ควบคุม

Cert. No. : ACL25028  
Job No. : VC68AC0056  
Pages : 2 of 8

**Calibration Procedure :** CP-AC-01

#### Calibration Method :

This equipment was calibrated by follow on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.

For tests results of each items were made by observation of each Instruments display and also with SLM's display.

#### Condition of this result of calibration :

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0009-24	05-FEB-25
Waveform Generator	33511B	MY52302742	EF-0007-24	05-FEB-25
Digital Multimeter	33461A	MY53220104	EEL_BP 21/0267	13-FEB-25
Digital Multimeter	33461A	MY53220076	EEL_BP 20/0267	15-FEB-25
Digital Multimeter	34461A	MY60024273	EEL_BP 22/0267	15-FEB-25
Programmable Attenuator	MAT-1070	62100114	EF-0008-24	05-FEB-25
Condenser Microphone	4180	2977900	AA-1001-24	12-FEB-25
Measuring Amplifier	NA-42KAI	34560495	AA-3001-24	05-FEB-25

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

- 3.1 National Institute of Metrology (Thailand).
- 3.2 Thailand Institute of Scientific and Technological Research (TISTR).

เอกสารไม่ควบคุม

Cert. No. : ACL25028  
Job No. : VC68AC0056  
Pages : 3 of 8

#### Summary of Measurement Result :

Parameter	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	0.2	N/A
2. Self-generated noise	0.2	N/A
3. Acoustical signal tests of frequency weightings		
125 Hz	0.3	0.6
1000 Hz	0.3	0.6
8000 Hz	0.3	0.7
4. Electrical signal tests of frequency weightings		
For 10 Hz to 4 kHz	0.3	0.6
For > 4 kHz to 10 kHz	0.3	0.7
For > 10 kHz to 20 kHz	0.3	1.0
5. Frequency and time weightings at 1 kHz	0.2	0.2
6. Long - term stability	0.1	0.1
7. Level linearity on the reference level range	0.2	0.3
8. Level linearity including the level range control	0.2	0.3
9. Tone burst response	0.2	0.3
10. Peak C sound level	0.2	0.35
11. Overload indication	0.2	0.25
12. High level stability	0.1	0.1

เอกสารไม่ควบคุม

Cert. No. : ACL25028  
Job No. : VC68AC0056  
Page : 4 of 8

## Result of calibration :

## 1. Absolute sensitivity

Reference Acoustic Signal ( dB )	Measured Value ( dB )	Deviation ( dB )	Acceptance Limit ( dB )
93.9 (93.94)	93.9	0.0	±0.3

## 2. Self-generated noise

## 2.1 Normal test

Measured Value ( dB )
14.6

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Weighting ( dB )
A - weight	11.6
C - weight	17.5
Flat	23.4

## 3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.7	0.7	0.7	± 1.5
1000	0.2	0.2	0.2	± 1.0
8000	0.7	0.7	0.7	±5.0

เอกสารไม่ควบคุม

Cert. No. : ACL25028  
Job No. : VC68AC0056  
Pages : 5 of 8

## 4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	-0.1	-0.1	-0.1	±2.0
125	0.0	0.0	0.0	±1.5
250	0.0	0.0	-0.1	±1.5
500	0.0	0.0	-0.1	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.0	0.0	±5.0

## 5. Frequency and time weightings at 1 kHz

## 5.1 Frequency weightings at 1 kHz

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.2
C - weight	94.0	94.0	0.0	± 0.2
Flat	94.0	94.0	0.0	± 0.2

## 5.2 Time weighting at 1 kHz

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	94.0	94.0	0.0	± 0.1
Slow	94.0	94.0	0.0	± 0.1
Leq	94.0	94.0	0.0	± 0.1

## 6. Long - term stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.1

เอกสารไม่ควบคุม

Cert. No. : ACL25028  
Job No. : VC68AC0056  
Pages : 6 of 8

## 7. Level linearity on the reference level range

Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
137.0	137.1	0.1	± 1.1
136.0	136.1	0.1	± 1.1
135.0	135.1	0.1	± 1.1
134.0	134.1	0.1	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.1	0.1	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.1	0.1	± 1.1
114.0	114.1	0.1	± 1.1
109.0	109.1	0.1	± 1.1
104.0	104.1	0.1	± 1.1
99.0	99.1	0.1	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	54.0	0.0	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	39.0	0.0	± 1.1
34.0	34.0	0.0	± 1.1
30.0	30.0	0.0	± 1.1
29.0	29.1	0.1	± 1.1
28.0	28.0	0.0	± 1.1
27.0	27.0	0.0	± 1.1
26.0	26.1	0.1	± 1.1
25.0	25.2	0.2	± 1.1

เอกสารไม่ควบคุม

Cert. No. : ACL25028  
Job No. : VC68AC0056  
Pages : 7 of 8

## 8. Level linearity including the level range control

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
130	94.0	94.0	0.0	±1.1

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
130	29.0	29.1	0.1	±1.1

## 9. Tone burst response

Time Weighting	Tone burst duration, Tb ( ms )	Cycle	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.0	0.0	±1.0

เอกสารไม่ควบคุม

Cert. No. : ACL25028  
Job No. : VC68AC0056  
Pages : 8 of 8

## 10. Peak C sound level

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value, L <sub>peak</sub> ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	130.0	130.0	0.0	±3.0
One	133.4	133.1	-0.3	±3.0

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	±2.0
Positive half cycle	135.4	135.1	-0.3	±2.0
Negative half cycle	135.4	135.1	-0.3	±2.0

## 11. Overload indication

Measured value ( dB )		Deviated Value ( dB )	Acceptance Limits ( dB )
Positive one-half cycle	Negative one-half cycle		
89.6	89.5	-0.1	±1.5

## 12. High level stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$   
or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

เอกสารไม่ควบคุม

## Certificate of Calibration

## Customer:

Name : UNITED ANALYST AND ENGINEERING CONSULTANT CO., LTD.  
Address : 81 Soi Udomok 41, Sukhumvit Road, Bangkok, Prakanong, Bangkok 10260  
Certificate No : 24-NDM-179  
Request No : Req-2024-1546

## Unit Under Calibration Details

Measurement Item : Noise Dosimeter  
Manufacturer : SVANTEK  
Model : SV 104  
Serial Number : 143227  
ID : UAE EFM 1452566  
Resolution : 0.1 dB  
Microphone Class : 2  
Microphone Model : SV27  
Microphone S/N : 103025  
Preamplifier Model : -  
Preamplifier S/N : -  
Instrument Status : Used

## Calibration Environment and Details

Temperature : 23 °C ± 2 °C  
Humidity : 50 %RH ± 20 %RH  
Barometric Pressure : 1013 kPa ± 10 kPa  
Received Date : 9 July 2024  
Calibrated Date : 16 July 2024  
Calibration Procedure : In-house method CP-NDM-01 based on IEC 61325 : 2017  
Location of Calibration : Lab Acoustic

## Reference Standard

Instrument	Brand	Model	S/N	Due calibration	Traceability
Multifrequency Calibrator	Quest	Quest-cal	EFA000234	25 July 2024	TSI
Standard Microphone	GRAS	40AN	188273	21 August 2024	GRAS
Site Generator	Swaatch	Svaan401	131	9 October 2024	WK Electric
Timer	EXTENCH	-	05-ACT	14 March 2025	TPA

## Note

The reported uncertainty is based on standard uncertainty multiplied by the Coverage Factor  $k = 2$ , providing a level of confidence approximately 95 %.Calibrated By :   
Mr. Noppadon Luangnui  
Service Calibration EngineerApproved By :   
Mr. Pait Mahaveon  
Calibration Engineer Supervisor

Issue Date : 16 July 2024

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of เอกสารไม่ควบคุม  
P36/700-NDM-01 Rev.04 Issue date 5/9/24Certificate No : 24-NDM-179  
Request No : Req-2024-1546

## 1. Absolute acoustical sensitivity

UUC Setting	Time		Exposure Measurement			UNCERTAINTY (%)	Tolerances Limit (%)	Result
FAST / A / 55-140	Ref	UUC	Ref (Pa·h)	UUC (Pa·h)	Error (%)			
Calibrator Setting	(s)	(s)						
1000 Hz 114 dB	120	120	3.17	3.13	-1.3	3.1	-21, ±26	Pass

Note : Absolute sensitivity was established by the use of Sound Calibrator Brand SVANTEK, Model SV 35A, SN: 59079

## 2. Frequency weightings

UUC Setting	Deviation from various Frequency Weighting		UNCERTAINTY ( ± dB )	Tolerances Limit ( ± dB )	Result
FAST / 55-140	A	C			
STD Setting	(dB)	(dB)			
563 Hz	0.1	0.2	0.40	2.0	Pass
125 Hz	0.0	0.1	0.40	1.5	Pass
250 Hz	-0.2	-0.2	0.40	1.5	Pass
500 Hz	-0.1	-0.1	0.40	1.5	Pass
1000 Hz	0.0	0.0	0.40	-	-
2000 Hz	0.4	0.5	0.40	2.0	Pass
4000 Hz	2.2	2.1	0.40	3.0	Pass
8000 Hz	0.0	-0.1	0.40	5.0	Pass

Certificate No : 24-NDM-179  
Request No : Req-2024-1546

## 3. Linearity of response to steady signals

## a. Sound exposure meter, linearity of response for changes of input sinusoidal signal level

UUC Setting	FAST / A / High											
1000 Hz	Ref	(dB)	55.0	80.0	95.0	100.0	110.0	114.0	120.0	130.0	140.0	
	Level A	(dB)	54.7	80.1	90.2	100.0	110.0	114.0	120.0	130.0	140.0	
	Error	(dB)	-0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	
8000 Hz	Ref	(dB)		88.9	98.9	108.9	112.9	118.9	128.9	138.9		
	Level A	(dB)		88.9	98.9	108.9	112.9	118.9	128.9	138.7		
	Error	(dB)		0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2		
63 Hz	Ref	(dB)						87.8	93.8	103.8	113.8	
	Level A	(dB)						87.5	93.8	103.8	113.8	
	Error	(dB)						0.0	0.0	0.0	0.0	
Tolerances Limit		(±dB)	1.0									
UNCERTAINTY		(±dB)	0.3									
Result			Pass									

## b. Sound exposure meter linearity of error

UUC Setting	Time		Exposure Measurement			UNCERTAINTY	Tolerances	Result
FAST / A / 55-140	Ref	UUC	Ref	UUC	Error			
Calibrator Setting	(s)	(s)	(Pa·h)	(Pa·h)	(%)	(%)	Limit	
							(%)	
1000 Hz 110 dB	27	27	0.30	0.30	0.00	5.6		Pass
1000 Hz 110 dB	45	45	0.50	0.50	0.00			Pass
1000 Hz 110 dB	90	90	1.00	0.99	-1.00			Pass
1000 Hz 110 dB	180	180	2.00	1.98	-1.00			Pass
1000 Hz 120 dB	36	36	4.00	3.94	-1.50			Pass
1000 Hz 120 dB	72	72	8.00	7.87	-1.63	5.6		Pass
1000 Hz 120 dB	90	90	10.00	9.90	-1.00			Pass
1000 Hz 120 dB	180	180	20.00	19.76	-1.20			Pass
1000 Hz 120 dB	360	360	40.00	39.42	-1.45			Pass
1000 Hz 120 dB	720	720	80.00	78.66	-1.68			Pass

Certificate No : 24-NDM-179  
Request No : Req-2024-1546

#### 4. Response to short duration

##### a. Response for sinusoidal signals - reference level

UUC Setting	Time		Exposure Measurement			UNCERTAINTY	Tolerances	Result
FAST / A / 55:140	Ref	UUC	Ref	UUC	Error			
Calibrator Setting	(s)	(s)	(Pa <sup>2</sup> h)	(Pa <sup>2</sup> h)	(Pa <sup>2</sup> h)	(Pa <sup>2</sup> h)	(Pa <sup>2</sup> h)	
4000 Hz 95 dB	2846	2846	1.00	0.98	-0.02	0.037	-0.29 ~ +0.41	Pass

##### b. Sound exposure meter response for series of toneburst impulses

UUC Setting	Time		Exposure Measurement			UNCERTAINTY	Tolerances	Result
FAST / A / 55:140	Ref	UUC	Ref	UUC	Error			
Calibrator Setting	(s)	(s)	(Pa <sup>2</sup> h)	(Pa <sup>2</sup> h)	(%)	(%)	(%)	
Burst 1 ms, 95 dB	2846	2846	1.00	0.98	-2.00	5.6	-21 ~ +26	Pass
Burst 1 ms, 100 dB	900	900	1.00	0.98	-2.00		-29 ~ +41	Pass
Burst 1 ms, 108 dB	143	143	1.00	0.99	-1.00		-29 ~ +41	Pass

#### 5. Response to unipolar pulse

UUC Setting		Time	Exposure Measurement		UNCERTAINTY	Tolerances	
FAST / A / 55:140		UUC	UUC	Different		Limit	Result
Calibrator Setting		(s)	(Pa h)	(%)	(%)	(%)	
Continuous Rectangle +		29	10.13	0.00	3.7	-21 ~ +26	Pass
Continuous Rectangle -			10.13				Pass

\* Indicates non accredited

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of เอกสารไม่ควบคุม  
PM-108-NDM-01 Rev.01 Issue date 3/8/24

Certificate No : 24-NDM-179  
Request No : Req-2024-1546

#### Decision Rule for Statements of Conformity

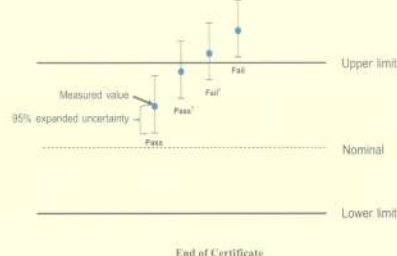
The standard decision rule employed for the statements of conformity to each calibration result will be applied using ILAC-GA09:2013. Guidelines on the Reporting of Compliance with Specification as following Fig. and statements

Pass - The measurement result plus the expanded uncertainty with a 95% coverage probability, were within the limit.

Pass<sup>2</sup> - The measurement result was within the limit. However, a portion of the expanded uncertainty of measurement at 95% exceeds the limit.

Fail<sup>1</sup> - The measurement result was out of the limit. However, a portion of the expanded uncertainty of measurement at 95% is within the limit.

Fail - The measurement result plus the expanded uncertainty with a 95% coverage probability were outside the limit.



The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of เอกสารไม่ควบคุม  
PM-108-NDM-01 Rev.01 Issue date 3/8/24

#### Certificate of Calibration

##### Customer

Name : UNITED ANALYST AND ENGINEERING CONSULTANT CO.,LTD. Certificate No : 25-NDM-032  
Address : 81 Soi Udomrak 41, Sukhumvit Road, Hingchak, Prakanong, Bangkok 10260 Request No : Req-2024-2864

##### Unit Under Calibration Details

Measurement item : Noise Dosimeter Microphone Class : 2  
Manufacturer : SVANTEK Microphone Model : SV 27IS  
Model : SV 104IS Microphone S/N : 106312  
Serial Number : 160669 Preamplifier Model : -  
ID : UAEFFM1692564 Preamplifier S/N : -  
Resolution : 0.1 dB Instrument Status : Used

##### Calibration Environment and Details

Temperature : 23 °C ± 2 °C  
Humidity : 50 %RH ± 20 %RH  
Barometric Pressure : 1013 hPa ± 10 hPa  
Received Date : 20 December 2024  
Calibrated Date : 7 February 2025  
Calibration Procedure : In-house method CP-NDM-01 based on IEC 61252 : 2017  
Location of Calibration : Lab Acoustic

##### Reference Standard

Instrument	Brand	Model	SN	Due calibration	Traceability
Standard Microphone	Brüel&Kjær	4192	2294985	25 June 2025	NIMT
Audio Generator	SvanteK	SVAN 401	131	9 October 2024	WK Electric
Timer	EXTECH	-	05-ACT	14 March 2025	TPA

##### Note

The reported uncertainty is based on standard uncertainty multiplied by the Coverage Factor k = 2, providing a level of confidence approximately 95 %.

Calibrated By :   
Mr. Noppadol Luangrat  
Service Calibration Engineer

Approved By :   
Mr. Pait Mahavorn  
Calibration Engineer Supervisor  
Issue Date : 7 February 2025

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of เอกสารไม่ควบคุม  
PM-108-NDM-01 Rev.01 Issue date 2/9/24

Certificate No : 25-NDM-032  
Request No : Req-2024-2864

#### 1. Absolute acoustical sensitivity

UUC Setting	Time		Exposure Measurement			UNCERTAINTY	Tolerances	Result
FAST / A / 60:140	Ref	UUC	Ref	UUC	Error			
Calibrator Setting	(s)	(s)	(Pa <sup>2</sup> h)	(Pa <sup>2</sup> h)	(%)	(%)	(%)	
1000 Hz 114 dB	120	120	3.17	3.13	-1.3	3.1	-21 ~ +26	Pass

Note : Absolute sensitivity was established by the use of Sound Calibrator Brand SVANTEK, Model SV 35A, SN: 58079.

#### 2. Frequency weightings

UUC Setting	Deviation from various Frequency Weighting		UNCERTAINTY	Tolerances	Result
FAST / 60-140	A	C			
STD Setting	(dB)	(dB)	(± dB)	(± dB)	
63 Hz	0.3	0.5	0.40	2.0	Pass
125 Hz	0.4	0.5	0.40	1.5	Pass
250 Hz	-0.1	0.0	0.40	1.5	Pass
500 Hz	-0.2	0.0	0.40	1.5	Pass
1000 Hz	0.0	0.0	0.40	-	-
2000 Hz	0.2	0.3	0.40	2.0	Pass
4000 Hz	1.8	1.8	0.40	3.0	Pass
8000 Hz	2.9	3.3	0.40	5.0	Pass

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of เอกสารไม่ควบคุม  
PM-108-NDM-01 Rev.01 Issue date 2/9/24

Certificate No : 25-NDM-032  
Request No : Req-2024-2864

3. Linearity of response to steady signals

a. Sound exposure meter, linearity of response for changes of input sinusoidal signal level

UUC Setting	Ref	(dB)	FAST / A / High									
			60.0	80.0	90.0	100.0	110.0	120.0	130.0	140.0		
1000 Hz	Level A	(dB)	60.3	80.2	90.2	100.1	110.1	120.1	130.1	140.1		
	Error	(dB)	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1		
	Ref	(dB)	88.9	98.9	108.9	118.9	128.9	138.9	148.9			
8000 Hz	Level A	(dB)				89.0	99.0	109.0	119.0	129.0		
	Error	(dB)				0.1	0.1	0.1	0.1	0.1		
	Ref	(dB)				87.8	97.8	107.8	117.8	127.8		
63 Hz	Level A	(dB)										
	Error	(dB)										
	Ref	(dB)										
Tolerances Limit			1.0									
UNCERTAINTY			0.3									
Result			Pass									

b. Sound exposure meter linearity of error

UUC Setting	Time	Exposure Measurement			UNCERTAINTY	Tolerances	Result
		Ref	UUC	Error			
FAST / A / 60-140		Ref	UUC	Error			
Calibrator Setting	(s)	(s)	(Pa <sup>2</sup> h)	(Pa <sup>2</sup> h)	(%)	(%)	
1000 Hz 110 dB	27	27	0.30	0.30	0.00		Pass
1000 Hz 119 dB	45	45	0.50	0.50	0.00		Pass
1000 Hz 110 dB	90	90	1.00	0.99	-1.00	5.0	Pass
1000 Hz 119 dB	180	180	2.00	1.98	-1.00		Pass
1000 Hz 120 dB	36	36	4.00	4.03	+0.75		Pass
1000 Hz 129 dB	72	72	8.00	8.05	+0.63		Pass
1000 Hz 120 dB	90	90	10.00	10.13	+1.30	5.6	Pass
1000 Hz 129 dB	180	180	20.00	20.22	+1.10		Pass
1000 Hz 129 dB	360	360	40.00	40.34	+0.85		Pass
1000 Hz 120 dB	720	720	80.00	80.49	+0.61		Pass

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.

PM-708-NDM-01 Rev.03 Issue date 25/24

เอกสารไม่ควบคุม

Certificate No : 25-NDM-032  
Request No : Req-2024-2864

4. Response to short duration

a. Response for sinusoidal signals - reference level

UUC Setting	Time	Exposure Measurement			UNCERTAINTY	Tolerances	Result
		Ref	UUC	Error			
FAST / A / 60-140		Ref	UUC	Error			
Calibrator Setting	(s)	(s)	(Pa <sup>2</sup> h)	(Pa <sup>2</sup> h)	(%)	(%)	
4000 Hz 95 dB	2846	2846	1.00	1.00	0.00	0.032	Pass

b. Sound exposure meter response for series of toneburst impulses

UUC Setting	Time		Exposure Measurement			UNCERTAINTY	Tolerances	Result
FAST / A / 60-140	Ref	UUC	Ref	UUC	Error		Limit	
Calibrator Setting	(s)	(s)	(Pa <sup>2</sup> h)	(Pa <sup>2</sup> h)	(%)	(%)	(%)	
Burst 1 ms, 95 dB	2846	2846	1.00	1.00	0.00	5.6	-21 ~ +26	Pass
Burst 1 ms, 100 dB	990	990	1.00	1.00	0.00		-29 ~ +41	Pass
Burst 1 ms, 105 dB	143	143	1.00	1.01	+1.00		-29 ~ +41	Pass

5. Response to unipolar pulse

UUC Setting	Time	Exposure Measurement		UNCERTAINTY	Tolerances	Result
FAST / A / 60-140	UUC	UUC	Different		Limit	
Calibrator Setting	(s)	(Pa <sup>2</sup> h)	(%)	(%)	(%)	
Continuous Rectangle +	29	10.37	0.00	3.7	-21 +26	Pass
Continuous Rectangle -		10.37				Pass

\* Indicates non accredited

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.

PM-708-NDM-01 Rev.03 Issue date 25/24

เอกสารไม่ควบคุม

Certificate No : 25-NDM-032  
Request No : Req-2024-2864

Decision Rule for Statements of Conformity

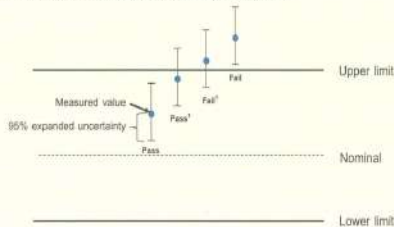
The standard decision rule employed for the statements of conformity to each calibration result will be applied using IAC-GB-992019: Guidelines on the Reporting of Compliance with Specification as following Fig. and statements

Pass - The measurement result plus the expanded uncertainty with a 95% coverage probability were within the limit.

Pass<sup>1</sup> - The measurement result was within the limit. However, a portion of the expanded uncertainty of measurement at 95% exceeds the limit.

Fail<sup>1</sup> - The measurement result was out of the limit. However, a portion of the expanded uncertainty of measurement at 95% is within the limit.

Fail - The measurement result plus the expanded uncertainty with a 95% coverage probability were outside the limit.



End of Certificate

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.

PM-708-NDM-01 Rev.03 Issue date 25/24

เอกสารไม่ควบคุม

Certificate of Calibration

Customer

Name : UNITED ANALYST AND ENGINEERING CONSULTANT CO., LTD.  
Address : 81 Soi Udomsak 41, Sukhumvit Road, Bangchak, Prakanong, Bangkok 10260

Certificate No : 24-LXM-198

Request No : Req-2024-1490  
Page : 1/3

Unit Under Calibration Details

Instrument Name : Light Meter  
Manufacturer : EXTECH  
Model : 407026  
Serial Number : A062339  
Resolution : 1, -10 lx  
ID Number : UAE.FM.112/2566

Range Calibration : 2000 / 20000 lx  
Accuracy : 4 % of Reading + 2 digits  
Instrument Status : Used

Calibration Environment and Details

Temperature : 25 °C ± 2 °C  
Humidity : 60 %RH ± 20 %RH  
Received Date : 3 July 2024  
Calibrated Date : 1 August 2024

Calibration Procedure : The measurement was done in accordance with CP-LXM-01

Reference Standard : Photometer and Illuminance Sensor, Serial No. : 30662/2, 30392/2, which was calibrated on 31 October 2023, Certificate No. : TP-1045-23

Traceability

This Certificate is traceable to International System of Unit (SI) Unit through National Institute of Metrology (Thailand)

Note

The reported uncertainty is based on a standard uncertainty multiplied by the Coverage Factor  $k = 2$ , providing a level of confidence approximately 95 %.

Approved By :   
Mr. Pait Mathavorn  
Calibration Engineer Supervisor  
Issue Date : 1 August 2024

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.

PM-708-LXM-01 Rev.02 Issue date 1/7/24

เอกสารไม่ควบคุม

#### Calibration Note

UUC Adjustment : Zero adjustment before use

Certificate No : 24-LXM-198

Request No : Req-2024-1490

Page : 2/3

#### Result of Calibration :

UUC Range (ks)	Standard (ks)	UUC Reading (ks)	Correction (ks)	Uncertainty (ks)	MPE (ks)	Result
2000	* D	0	0	0.58	2	N/A
	50	50	0	2.5 % of Reading	4	N/A
	100	100	0	2.3 % of Reading	6	N/A
	200	201	-1	2.2 % of Reading	10	N/A
	300	301	-1	2.2 % of Reading	14	N/A
	400	402	-2	2.2 % of Reading	18	N/A
	600	604	-4	2.2 % of Reading	26	N/A
	800	806	-6	2.2 % of Reading	34	N/A
	1000	1004	-4	2.2 % of Reading	42	N/A
	1200	1205	-5	2.2 % of Reading	50	N/A
	1400	1408	-8	2.2 % of Reading	58	N/A
	1600	1611	-11	2.2 % of Reading	66	N/A
	1800	1809	-9	2.2 % of Reading	74	N/A
	2000	1990	10	2.2 % of Reading	82	N/A
20000	3000	2980	20	2.2 % of Reading	121	N/A
	4000	3970	30	2.2 % of Reading	161	N/A
	5000	4950	50	2.2 % of Reading	200	N/A

\* Indicates non accredited

MPE = Maximum Permissible Error (Specified in Manufacturer's Specification)

N/A = Not Available, Customer does not require a statement of conformity

เอกสารไม่ควบคุม

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.

FM-308-LXM-01 Rev-02 Issue date 1/7/24

Certificate No : 24-LXM-198

Request No : Req-2024-1490

Page : 3/3

#### Decision Rule for Statements of Conformity

The standard decision rule employed for the statements of conformity to each calibration result will be applied using IAC-QR/09/2019:

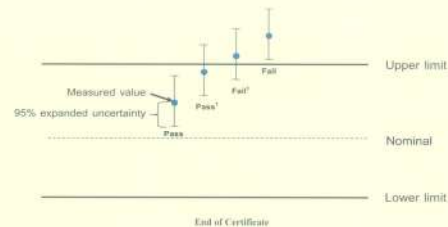
Guidelines on the Reporting of Compliance with Specification as following Fig. and statements

Pass = The measurement result plus the expanded uncertainty with a 95% coverage probability were within the limit.

Pass<sup>1</sup> = The measurement result was within the limit. However, a portion of the expanded uncertainty of measurement at 95% exceeds the limit.

Fail<sup>1</sup> = The measurement result was out of the limit. However, a portion of the expanded uncertainty of measurement at 95% is within the limit.

Fail = The measurement result plus the expanded uncertainty with a 95% coverage probability were outside the limit.



End of Certificate

Calibrated By :

Mr. Noppakorn Luangjan

เอกสารไม่ควบคุม

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.

FM-308-LXM-01 Rev-02 Issue date 1/7/24

## List of Instrument Certificates for Environmental Quality Analysis

No.	Instrument/Equipment	Parameter	Manufacturer	Model/Serial No.	Calibrator	Certification No.	Date of Calibration	Due date of Calibration*
1	Analytical Balance	FAT OIL AND GREASE	Mettler Toledo	AB204-S/FACT / 1129361010	United Analyst and Engineering Consultant Co., Ltd.	250422 1 BL002 25	23/4/2025	22/4/2026
2	Analytical Balance	TOTAL DISSOLVED SOLIDS	Mettler Toledo	XSR205DU / C210685394	National Food Institute,Ministry of Industry, Thailand	2502226-002-01	20/3/2025	19/3/2026
3	Analytical Balance	TOTAL SUSPENDED SOLIDS	Mettler Toledo	XSR205DU / C009071872	National Food Institute,Ministry of Industry, Thailand	2502226-001-01	20/3/2025	19/3/2026
4	BOD Incubator	BIOCHEMICAL OXYGEN DEMAND	ARCO	UC4-1320 / 13URC4S013201	Technology Promotion Association (Thailand-Japan)	25TM205	8/2/2025	7/2/2026
5	DO Meter	BIOCHEMICAL OXYGEN DEMAND	YSI	5100 / 11B 101863	Technology Promotion Association (Thailand-Japan)	25TW29	18/2/2025	16/2/2026
6	pH Meter	pH	Horiba	LAQUA-PH210 / HA1M0043	technology promotion association (thailand-japan	25CH263	28/2/2025	27/2/2026
7	SCT Meter	CONDUCTIVITY (umhos/cm)	YSI Environmental	Pro 30 / 23A104805	Technology Promotion Association (Thailand-Japan)	25CH360	20/3/2025	18/3/2026

**Due Date of Calibration\*** : Based on the annual calibration plan. At least 1 time per year.

List of Instrument Certificates for Environmental Quality Analysis

No.	Instrument/Equipment	Parameter	Manufacturer	Model/Serial No.	Calibrator	Certification No.	Date of Calibration	Due date of Calibration*
1	pH Meter and pH Electrode	pH (1:1)	Mettler Toledo	pH S20 SevenEasyTM / 1231155210	National Food Institute Ministry of Industry, Thailand	2501844-001-01	24/2/2025	23/2/2026

Due Date of Calibration\* : Based on the annual calibration plan. At least 1 time per year.

List of Instrument Certificates for Environmental Quality Analysis

No.	Instrument/Equipment	Parameter	Manufacturer	Model/Serial No.	Calibrator	Certification No.	Date of Calibration	Due date of Calibration*
1	pH Meter	pH	Horiba	LAQUA-PH210 / HA1F0002	Technology Promotion Association (Thailand-Japan)	24CH1071	27/8/2024	25/7/2025

Due Date of Calibration\* : Based on the annual calibration plan. At least 1 time per year.

## Certificate of Calibration

Certificate No.: 250422-1-BL002-25

Code No.: BL002-25

Page: 1 of 3

**Customer Name:** United Analyst and Engineering Consultant Co., Ltd.  
**Address:** 3 Soi Udom suk 41, Sukhumvit Rd., Bang Chak, Phrakhanong, Bangkok 10260.

**Equipment:** Electronic Balance

**Manufacturer:** Mettler Toledo

**Model:** AB204-S/FACT

**Serial No.:** 1129361010

**Asset No.:** UAE.WAS.002/2552

**Building:** N/A

**Floor:** 1

**Room:** 107

**Received Date:** April 22, 2025

**Date of Calibration:** April 23, 2025

**Calibration Conditions:** Temperature 22.8 °C to 23.4 °C  
Humidity 54.8 % to 68.9 %  
Pressure 756.6 mmHg to 758.2 mmHg

**Calibrated by:** Sakkarin Srirahang

**Approved by:** Suwit Chotnok

**Signature:**

**Issued Date:** April 25, 2025

**Note:** 1) The Uncertainties are for a confidence probability of approximately 95%

2) This Certificate is valid only to the item calibrated on date and place of calibration.

3) This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation Scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the United Analyst and Engineering Consultant Co., Ltd. (UAE)

เอกสารไม่ควบคุม

Certificate No.: 250422-1-BL002-25

Code No.: BL002-25

Page: 3 of 3

**Equipment:** Electronic Balance  
**Model:** AB204-S/FACT  
**Serial No.:** 1129361010  
**Max. Capacity:** 220 g  
**Calibration Date:** April 23, 2025

**Manufacturer:** Mettler Toledo  
**Readability:** 0.0001 g  
**ID No.:** UAE.WAS.002/2552

**Calibration Result:** (Continued)

**Calibration Range:** 0 - 200 g

**Calibration Adjustment:** Internal Calibration

3. Error of Indication from nominal or conventional mass value:

Nominal Value (g)	Reference Value (g)	Indication (g)	Correction (g)	Uncertainty (± mg)	Coverage Factor k
Unload	0.0000000	0.0000	0.0000	0.10	2.05
0.01	0.0100025	0.0099	0.0001	0.10	2.05
0.05	0.0500056	0.0500	0.0000	0.10	2.05
0.1	0.1000012	0.0999	0.0001	0.10	2.05
0.5	0.5000133	0.5000	0.0000	0.10	2.05
1	1.0000105	1.0000	0.0000	0.10	2.05
10	10.000010	10.0000	0.0000	0.11	2.04
40	40.000076	40.0000	0.0000	0.14	2.00
50	50.000056	50.0000	0.0001	0.13	2.00
80	80.000107	80.0000	0.0001	0.18	2.00
100	100.000109	99.9999	0.0002	0.17	2.00
120	120.000015	119.9999	0.0001	0.21	2.00
150	150.000165	149.9998	0.0003	0.24	2.00
160	160.000175	159.9997	0.0003	0.26	2.00
200	200.000129	199.9998	0.0004	0.30	2.00

4. Effect of Tare test:

Tare Load (g)	Test Load (g)	Indication (g)	Correction (g)
100	20.000041	19.9999	0.0001
	40.000076	39.9998	0.0002
	60.000066	59.9997	0.0003
	80.000107	79.9999	0.0002
	100.000168	100.0004	-0.0003

**Remark:**

The report uncertainty of measurement was based on standard uncertainty multiplied by coverage factor k, providing

o—o—End—o—o

เอกสารไม่ควบคุม

Certificate No.: 250422-1-BL002-25

Code No.: BL002-25

Page: 2 of 3

**Equipment:** Electronic Balance  
**Model:** AB204-S/FACT  
**Serial No.:** 1129361010  
**Max. Capacity:** 220 g  
**Calibration Date:** April 23, 2025  
**Condition As-Received:** In Condition

**Manufacturer:** Mettler Toledo  
**Readability:** 0.0001 g  
**ID No.:** UAE.WAS.002/2552

**Condition of Equipment:**

**Condition of This Result of Calibration:**

1. Calibration Method: This instrument was calibrated by method UAE.CP.CAL.006 In House Method based on UKAS Lab 14 : 2022

2. Reference Standards:

Reference Standard:	Model	Serial No.	Calibrated By	Certificate No.	Traceability	Due Date
Standard Weight Class E2 (OIML)	1 mg to 1 kg	8749109122	ANARC	25-009359	Mettler-Toledo	21-Jan-27
Standard Weight Class F1 (OIML)	1 mg to 200 g	11119512	ANARC	24-013840	Mettler-Toledo	04-Feb-26

**Instrument**

Instrument	Model	Serial No.	Calibrated By	Certificate No.	Traceability	Due Date
Thermo-Hydro-Baro Meter	MH-382SD	AK-46457	SUCCESS	SG-H-00997/ET	Success Gateway	21-Nov-25
Thermo-Hydro-Baro Meter	MH-382SD	AK-46457	TPA	25FT95	TPA	25-Feb-26

3. This certification is traceable to SI Unit

4. This certification was certified only for the instrument we calibrated

5. This result of calibration was found accurate as shown on date and place of calibration only.

6. Through the reference standard laboratory of ANARC 25-009359 Calibration 0152

**Calibration Result:**

1. Repeatability of Reading:

Nominal Value (g)	Standard Deviation of Reading (g)
200*	0.000045

2. Eccentric or off-center loading:

A mass of 100 g was placed and moved to various position on pan

The Balance reading obtained is given in the table.



1 (g)	2 (g)	3 (g)	4 (g)	5 (g)	Maximum Difference (g)
100.0000	99.9996	99.9997	100.0003	100.0005	0.0005

เอกสารไม่ควบคุม



มูลนิธิสถาบันพัฒนาอุตสาหกรรมอาหาร  
Foundation for Industrial Development National Food Institute  
Food Industrial Laboratory Service Center



## Calibration Certificate

**Certificate No.:** 2502226-002-01  
**Client name:** UNITED ANALYST AND ENGINEERING CONSULTANT CO., LTD.  
**Address:** 3 Soi Udomsuk 41, Sukhumvit Road, Bangkok, Phrakhanong, Bangkok 10260

Page 1 of 4

**Equipment:** Electronic Balance

**Manufacturer:** METTLER TOLEDO

**Model:** XSR205DU

**Serial No.:** C210605394

**ID No.:** UAE.WAO.010/2565

**Order No.:** 2502226

**Operation No.:** 2502226-002

**Date of Receipt:** 19 March 2025

**Date of Calibration:** 20 March 2025

**Calibrated by:** Mr. Yothin Charoensuk  
Scientist

**Approved by:** Mr. Pheraphat Tuanjit  
(Mr. Pheraphat Tuanjit)  
Manager, Division of Calibration Laboratory  
Responsible for the Technical Management Team

**Date of Issue:** 25 March 2025

The uncertainties are for a confidence probability of approximately 95%

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation Scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the National Food Institute.

FCS-009 Revision: 01 Date: 20-01-65

เอกสารไม่ควบคุม

## Calibration Report

Certificate No.: 2502226-002-01

Equipment: Electronic Balance  
Model: XSR2050U  
Serial No.: C210685394  
Capacity: 82 g / 220 g  
Manufacturer: METTLER TOLEDO  
Resolution: 0.00001 g / 0.0001 g  
ID No.: UAE.WAO.010/2565

Date of Calibration: 20 March 2025 Page 2 of 4

Environment Condition: Ambient Temperature: 21.2 ± 0.6 °C Relative Humidity: 48 ± 3.5 %

Place of Calibration: 208 Balance Room, UNITED ANALYST AND ENGINEERING CONSULTANT CO.,LTD.

Condition of Equipment: Good Condition

Condition of This Results of Calibration:

1. Calibration Method: NFI Method W-MA-001 In House Method based on UKAS Lab 34 : 2019

2. Reference Standards:

Reference Standard Model Serial No. Calibrated By Certificate No. Due Date  
Standard Weight Class E2 1mg to 200g 8505567572 TCS M24H1005 19 April 2025

Instrument Model Serial No. Calibrated By Certificate No. Due Date  
Thermo-Hygro Meter 608-H1 NFI.BTH.017/23 Quality Reborn Q625-0542 10 February 2025

3. This certification is traceable to SI UNIT.

4. This certificate was certified only for the instrument we calibrated.

5. This result of calibration was found accurate as shown on date and place of calibration only.

Calibration Results:

1. Repeatability of Reading:

Nominal Value ( g )	Standard Deviation of Reading ( g )
40	0.000042
80	0.000042
100	0.000000
200	0.000000

2. Off-Center Error:

A mass of 100 g was placed and moved to various position on pan.

The balance reading obtained is given in the table.

1	2	3	4	5	6	(Maximum Difference)
( g )	( g )	( g )	( g )	( g )	( g )	( g )
100.0001	100.0001	100.0001	100.0001	100.0001	100.0001	0.0000

FCS-012 Revision: 01 Date: 20-04-65

2008 หอสมุดกรุงเทพ 36 หมู่ 5 แขวงคลองตันใต้ เขตวัฒนา กรุงเทพมหานคร 10110  
2008 Soi 36, Asoke Avenue Road, Bang Yi Khan Subdistrict, Bang Phai District, Bangkok 10700, Thailand  
Tel : +662 0422 6000 Fax : +662 0422 6005

เอกสารไม่ควบคุม

for N. Vignat

## Calibration Report

Certificate No.: 2502226-002-01

Equipment: Electronic Balance  
Model: XSR2050U  
Serial No.: C210685394  
Capacity: 82 g / 220 g  
Manufacturer: METTLER TOLEDO  
Resolution: 0.00001 g / 0.0001 g  
ID No.: UAE.WAO.010/2565

Date of Calibration: 20 March 2025 Page 3 of 4

Calibration Results: (Continued)

Calibration Range: 0-80 g

Calibration Adjustment: Internal Calibration

3. Departure from Nominal Value: (Range: 0 - 82 g ; Resolution: 0.00001 g )

Nominal Value ( g )	Standard Value ( g )	Average Reading ( g )	Correction ( g )	Uncertainty ( ± g )	Coverage Factor k
Uncord	0.000000	0.000000	-0.000000	0.00000087	2.00
0.001	0.001003	0.001000	-0.000003	0.0000096	2.00
0.005	0.005002	0.005001	-0.000001	0.0000092	2.00
0.01	0.010003	0.010002	-0.000002	0.0000088	2.00
0.05	0.049996	0.050001	-0.000001	0.0000096	2.00
0.1	0.100011	0.100002	-0.000001	0.000011	2.00
0.5	0.500016	0.500004	-0.000002	0.000014	2.00
1	1.000003	1.000005	-0.000005	0.000016	2.00
2	2.000023	2.000006	-0.000004	0.000017	2.00
5	5.000015	5.000006	-0.000005	0.000020	2.00
10	10.000009	10.000005	-0.000004	0.000026	2.00
20	20.000030	20.000007	-0.000004	0.000037	2.00
30	30.000039	30.000009	-0.000005	0.000050	2.00
50	50.000028	50.000008	-0.000005	0.000068	2.00
80	80.000067	80.000013	-0.000006	0.00011	2.00

FCS-012 Revision: 01 Date: 20-04-65

2008 หอสมุดกรุงเทพ 36 หมู่ 5 แขวงคลองตันใต้ เขตวัฒนา กรุงเทพมหานคร 10110  
2008 Soi 36, Asoke Avenue Road, Bang Yi Khan Subdistrict, Bang Phai District, Bangkok 10700, Thailand  
Tel : +662 0422 6000 Fax : +662 0422 6005

เอกสารไม่ควบคุม

for N. Vignat

## Calibration Report

Certificate No.: 2502226-002-01

Equipment: Electronic Balance  
Model: XSR2050U  
Serial No.: C210685394  
Capacity: 82 g / 220 g  
Manufacturer: METTLER TOLEDO  
Resolution: 0.00001 g / 0.0001 g  
ID No.: UAE.WAO.010/2565

Date of Calibration: 20 March 2025 Page 4 of 4

Calibration Results: (Continued)

Calibration Range: >80-200 g

Calibration Adjustment: Internal Calibration

3. Departure from Nominal Value: (Range: >80 - 200 g ; Resolution: 0.0001 g )

Nominal Value ( g )	Standard Value ( g )	Average Reading ( g )	Correction ( g )	Uncertainty ( ± g )	Coverage Factor k
90	90.00010	90.00002	-0.00001	0.00015	2.00
100	100.00006	100.00001	0.00000	0.00016	2.00
110	110.00007	110.00002	-0.00001	0.00017	2.00
120	120.00009	120.00002	-0.00001	0.00018	2.00
130	130.00010	130.00002	-0.00001	0.00019	2.00
140	140.00013	140.00002	-0.00001	0.00019	2.00
150	150.00009	150.00002	-0.00001	0.00021	2.00
160	160.00010	160.00002	-0.00001	0.00022	2.00
170	170.00012	170.00002	-0.00001	0.00023	2.00
200	200.00013	200.00002	-0.00001	0.00028	2.00

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor k, providing a level of confidence of approximately 95 %.

\*\*\*\*\* End \*\*\*\*\*

FCS-012 Revision: 01 Date: 20-04-65

2008 หอสมุดกรุงเทพ 36 หมู่ 5 แขวงคลองตันใต้ เขตวัฒนา กรุงเทพมหานคร 10110  
2008 Soi 36, Asoke Avenue Road, Bang Yi Khan Subdistrict, Bang Phai District, Bangkok 10700, Thailand  
Tel : +662 0422 6000 Fax : +662 0422 6005

เอกสารไม่ควบคุม

for N. Vignat

## Calibration Certificate

Certificate No.: 2502226-001-01

Client name: UNITED ANALYST AND ENGINEERING CONSULTANT CO.,LTD.  
Address: 3 Soi Udomsuk 41, Sukhumvit Road, Bangchack, Prakanhong, Bangkok 10260

Date of Calibration: 20 March 2025 Page 1 of 4

Equipment: Electronic Balance

Manufacturer: METTLER TOLEDO

Model: XSR2050U

Serial No.: C009071872

ID No.: UAE.WAO.012/2563

Order No.: 2502226

Operation No.: 2502226-001

Date of Receipt: 19 March 2025

Date of Calibration: 20 March 2025

Calibrated by Mr.YoThin Charuemsuk

Approved by ( Mr.Pheraphat Tuanjit )

Manager, Division of Calibration Laboratory

Responsible for the Technical Management Team

Date of Issue: 25 March 2025

The uncertainties are for a confidence probability of approximately 95%

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation Scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the National Food Institute.

The uncertainties are for a confidence probability of approximately 95%

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation Scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the National Food Institute.

FCS-009 Revision: 01 Date: 20-04-65

2008 หอสมุดกรุงเทพ 36 หมู่ 5 แขวงคลองตันใต้ เขตวัฒนา กรุงเทพมหานคร 10110  
2008 Soi 36, Asoke Avenue Road, Bang Yi Khan Subdistrict, Bang Phai District, Bangkok 10700, Thailand  
Tel : +662 0422 6000 Fax : +662 0422 6005

เอกสารไม่ควบคุม





Equipment : BOD Incubator  
Condition As-Received : Used Item  
Reference : 2502-0166OC-1

Cert. No.: 25TM205  
Page : 2 of 3

#### Procedure Used :-

Calibration were conducted using calibration procedure CP-OT02 based on TLAS G-20 according to direct measurement method with Data Acquisition which connected with Resistance Temperature Detector ( RTD ).

The temperature scale used was based on ITS-90.

#### Condition of this result of calibration

##### 1. Reference standard instrument:-

Instrument	Serial No.	Cert. No.	Traceable	Due Date
1 ) Data Acquisition	MY57013623	24LM71	TPA	12 May 2025

2. This certificate is valid only to the item calibrated on date and place of calibration.

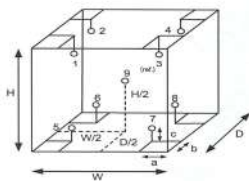
3. This certification is traceable to the International System of Unit.

Remark : TPA : Technology Promotion Association ( Thailand - Japan )

Result of Calibration :- ( \* ) Without Adjustment

Function of UUC\* : Temperature Source

Fresh air setting : Not Available



#### Probe Installation Details :

a = 10 cm  
b = 10 cm  
c = 10 cm

#### Dimension of Chamber :

D = 0.52 m  
W = 1.2 m  
H = 1.2 m  
Capacity = 0.89 m<sup>3</sup>

Environment during calibration		
	Beginning	Finished
Temp. ( °C )	26	25
REL.Humid. ( % )	49	52
AC Supply ( Volt )	221	220

Position :	Ref. Std. ID No.:
1	21-17RTD-01
2	21-17RTD-02
3	17RTD-03
4	24-17RTD-04
5	17RTD-05
6	17RTD-06
7	17RTD-07
8	23-17RTD-08
9 (ref.)	23-17RTD-09



Equipment : BOD Incubator  
Condition As-Received : Used Item  
Reference : 2502-0166OC-1

Cert. No.: 25TM205  
Page : 3 of 3

#### Result of Calibration :-

( \* ) Without Adjustment

Function of UUC\* : Temperature Source

Fresh air setting : Not Available

Calibration Point ( °C )	UUC* Setting ( °C )	UUC* Reading ( °C )	Temperature stability ( ± °C )	Temperature uniformity ( °C )	Overall Variation ( °C )	Coverage Factor k
20.0	20.0	19.9	0.36	0.56	0.99	2

Calibration Point ( °C )	Measured Temperature ( °C )									Uncertainty ( ± °C )
	1	2	3	4	5	6	7	8	9 (ref.)	
20.0	19.841	19.714	20.110	19.862	19.747	19.710	19.676	19.789	19.695	0.54

Average\* : The average of 30 values in each position.

Temperature stability : One-half of the greatest maximum difference of measured temperature at any one sensor.

Temperature uniformity : The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time or at as close an observation time as possible to determine the temperature pattern or homogeneity within the chamber under steady-state conditions.

Overall Variation : The Difference of the maximum and minimum measured temperatures throughout observation.

UUC\* : Unit Under Calibration

Note : The reported uncertainty of measurement was included stability and excluded uniformity .

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor k, providing a level of confidence of approximately 95 %.

-o0o-

เอกสารไม่ควบคุม

เอกสารไม่ควบคุม



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)  
CORPORATE SERVICES 3 : EQUIPMENT CALIBRATION AND TESTING SERVICES  
534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250  
TEL. 0-2717-3000 FAX. 0-2719-9484

## Certificate of Testing

Cert.No.: 25TW29  
Page: 1 of 2

Equipment : DO Meter  
Manufacturer : YSI  
Model : 5100  
Serial No. : 11B 101863  
ID No. : UAE.WAO.004/2554  
Received Date : 14 February 2025  
Test Date : 17 February 2025  
Reference : 2502-0473DSC-1  
Submitted by : United Analyst and Engineering Consultant Co.,Ltd.  
3 Soi Udomsuk 41, Sukhumvit Road, Bangkok,  
Phrakhanong, Bangkok 10260

Laboratory Condition :  
Temperature ( 25 ± 5 ) °C  
Humidity ( 50 ± 20 ) %  
Test Procedure : In - house method : CP-CH9  
by Comparison Technique with Azide Modification Method

Tested by : Walalak Sirinthean

Approved by :   
Approved Signatory

( ) Chakrit Waewwanjua  
( ) Ponpan Palpim  
(✓) Salthip Meangmai

Issue Date : 18 February 2025



Cert.No.: 25TW29  
Page: 2 of 2

#### Condition of this result of calibration

##### 1. Reference Standard Instruments :

This certification is traceable to the International System of Unit through the reference standards laboratory of Industrial Calibration Center, Technology Promotion Association (Thailand-Japan).

Instruments	Serial No.	ID No.	Certificate No.	Due Date
1. Burette	-	130BU10	23CG1172	22 Mar 2025
2. Balance	14233821	110RC001	24MM131	04 July 2025

##### 2. Standard Material :-

Material	Manufacturer	Lot.No.	Assay
Sodium Thiosulfate 5-Hydrate AR	KEMAUS	2203162447	99.6%

Result : Dissolved Oxygen Meter Adjustment With Air 100 %  
Dissolved Oxygen Probe No.: 24F100202

Titration Method (Azide Modification Method)	DO Meter Reading	Standard Deviation
(mg/L)	(mg/L)	(mg/L)
8.22	8.22	0.0055

This report was certified only for the instrument we tested.It is allowable to use for study  
Intend to use for advertising and referral purpose is prohibited.This report may not be reproduced  
other in full, without written approval of the laboratory

-o0o-

เอกสารไม่ควบคุม

เอกสารไม่ควบคุม

## Certificate of Calibration

Cert.No.: 25CH263  
Page.: 1 of 3

Equipment :	pH Meter
Manufacturer :	Horiba
Model :	LAQUA-PH210
Serial No. :	HA1M0043
ID No. :	UAE.EFM.013/2565(EFM,pH.03/65)
Condition As-Received:	Used Item
Received Date :	25 February 2025
Calibration Date :	26 to 28 February 2025
Reference :	2502-0783WSC-3
Submitted by :	United Analyst and Engineering Consultant Co.,Ltd. 3 Soi Udomsuk 41, Sukhumvit Road, Bangchak, Phrakhanong, Bangkok 10260

<b>Ambient Temperature :</b>	(25 ± 2.5) °C
<b>Relative Humidity :</b>	(50 ± 15) %
<b>Calibration Procedure :</b>	In - house method : <ul style="list-style-type: none"> <li>- CP-CH5 by direct measurement with DC voltage standard and direct measurement with certified reference material (CRM)</li> <li>- CP-CH8 by comparison with temperature standard</li> </ul>

Calibrated by : Warakorn Lerngagtrakul

Approved by : \_\_\_\_\_  
Approved Signatory

( ) Chakrit Waewwanjua  
( ) Ponpan Paipim  
(✓) Saithip Meangmai


**Issue Date :** 28 February 2025

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services

## เอกสารไม่ควบคุม

Verification of Certificate									
Certificate No. 201929			Equipment: DO Meter						
Brand : YSI			Model : 5100						
Serial No. 118 101863			ID No. : USE-WHO-P007-2554						
Calibration results									
Titration Method	Standard Deviation	Do meter Reading	Error% (mg/L)	Correction% (mg/L)	Error   Total Error (mg/L)	Judgment (± mg/L)	(Total Error < Judgment) (mg/L)		
8.22	0.0055	8.22	0.0000	0.0000	0.0	0.02	pass		


☒ PASS  
☐ NOT PASS

Recorder No. 1040.5 (Std. thermometer)  
104.10 (Huge input)  
(Std. buffer solution)

MVR 30.65  
 PH 10.05  
 (RTN) (STN)  
 Verify Approve



**Cert.No.:** 25CH263  
**Page.:** 2 of 3

Condition of this calibration result

- ### 1. Reference Standard Instrument

<u>Instrument</u>	<u>Serial No.</u>	<u>ID No.</u>	<u>Cert. No.</u>	<u>Due Date</u>
1) Document Process Calibrator	54030049	130RC116	24E2759	25 Aug 2025
2) Ref. Standard Thermometer	4982054	110RC044	24I757	14 July 2025

- This Certification is traceable to SI Throught Technology Promotion Association (Thailand - Japan)

2. Certified Reference Materials :The measurement results are traceable to SI through Hach Lenge GmbH Ltd., Deutsche Akkreditierungsstelle, Accredited No,D-RM-15184-01-00
- : The measurement results are traceable to SI through CPA chem Ltd., ANSI-ASQ National Accreditation Board, Accredited No, AR-1835

<u>Buffer Solution</u>	<u>Manufacturer</u>	<u>Lot No.</u>	<u>Exp. date</u>
pH 4.007	CPA chem	1066665	18 Jan 2027
pH 6.999	Hach Lenge GmbH	C03220	29 Oct 2026
pH 10.010	CPA chem	1066669	18 Jan 2026

3. This certificate is valid only to the item calibrated on date and place of calibration.

### Calibration Results

**Function : mV Measurement**

Performing standard curve by Document Process Calibrator at pH (4,7)(7,10)

Unit Under Calibration	Nominal Value	Standard Voltage Input	Actual Reading		Uncertainty of Measurement ( $\pm$ mV)	Coverage factor <i>k</i>
	pH	mV	mV	pH		
pH Meter	4.00	177.48	177.4	4.01	0.058	2.00
S/N: HA1M0043	7.00	0.00	-0.1	7.00	0.058	2.00
	7.00	0.00	-0.1	7.00	0.058	2.00
	10.00	-177.48	-177.6	10.01	0.058	2.00



Cert.No.: 25CH263  
Page.: 3 of 3

#### Calibration Results

Function : pH Measurement

Performing three buffers standard curve by using buffer nominal pH (4,7)(7,10)

Unit Under Calibration	Standard pH Buffer Solution	Actual pH Reading	Actual mV Reading (mV)	Uncertainty of pH Measurement ( $\pm$ )	Coverage factor $k$
pH Electrode S/N.: 992H0385	4.007	4.01	147.9	0.0085	2.05
	6.999	7.00	-24.3	0.0092	2.00
	6.999	7.01	-24.4	0.0085	2.00
	10.010	10.01	-197.8	0.0092	2.00

Function : Temperature Measurement

(\*) Without adjustment

This equipment was connected with Temperature Probe;

- Model : 9652  
- Serial No. : 992H0385

Dimension of probe

- Length : 110 mm.  
- Diameter : 16 mm.  
- Immersion Depth : 80 mm.

Calibration Point ( $^{\circ}\text{C}$ )	Standard Temperature ( $^{\circ}\text{C}$ )	UUC* Reading ( $^{\circ}\text{C}$ )	Error ( $^{\circ}\text{C}$ )	Uncertainty of measurement ( $\pm$ $^{\circ}\text{C}$ )	Coverage factor $k$
15.0	15.003	15.0	-0.003	0.13	2.00
30.0	30.004	30.0	-0.004	0.13	2.00
45.0	45.002	45.0	-0.002	0.13	2.00

Remark - UUC\* = Unit Under Calibration

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor  $k$ , providing a level of confidence of approximately 95 %.

-o0o-



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)  
CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES  
534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250  
TEL.0-2717-3000-29 FAX.0-2719-9484



## Certificate of Calibration

Cert.No.: 25CH360  
Page.: 1 of 3

Equipment : Conductivity Meter  
Manufacturer : YSI Environmental  
Model : Pro 30  
Serial No. : 23A104805  
ID No. : UAE,EFM,067/2566(EFM,SCT,03/66)  
Condition As-Received: Used Item  
Received Date : 18 March 2025  
Calibration Date : 20 March 2025  
Reference : 2503-0610WSC-2  
Submitted by : United Analyst and Engineering Consultant Co.,Ltd.  
3 Soi Udomsuk 41, Sukhumvit Road,  
Bangchak, Phrakhanong, Bangkok 10260  
Ambient Temperature : ( $25 \pm 2.5$ )  $^{\circ}\text{C}$   
Relative Humidity : ( $50 \pm 15$ ) %  
Calibration Procedure: In-house method :  
- CP-CH6 by direct measurement  
with certified reference material (CRM)  
- CP-CH8 by comparison with temperature standard

Calibrated by : Warakorn Lemgagtrakul

Approved by : Approved Signatory

( ) Chakrit Waewwanjua  
( ) Ponpan Paipim  
(✓) Saithip Meangmai

Issue Date : 21 March 2025

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written  
Approval of the head of Corporate Services 3: Equipment Calibration and Testing Services.



Cert.No.: 25CH360  
Page.: 2 of 3

#### Condition of this result of calibration

1. Reference Standard Instrument :-

Instrument	Serial No.	ID No.	Certificate No.	Due date
1) Thermometer	1963878	130RC095	24I995	09 Sep 2025
2) Ref. Std. Thermometer	4982054	110RC044	24I757	14 July 2025

- This Certification is traceable to SI Through Technology Promotion Association (Thailand - Japan)

2. Certified Reference Materials :-

- Conductivity calibration solution, CPA chem Ltd., The measurement results are traceable to SI through CPA chem Ltd., ANSI-ASQ National Accreditation Board, Accredited No. AR-1835

Conductivity Solution	Manufacturer	Lot No.	Exp. date
1412.9 $\mu\text{S/cm}$	CPA Chem	1005307	15 June 2025
12,881 $\text{mS/cm}$	CPA Chem	1005308	15 June 2025

- Control Conductivity calibration solution temperature by Water bath ( $25 \pm 0.1$ )  $^{\circ}\text{C}$

3. This certificate is valid only to the item calibrated on date and place of calibration.

#### Calibration results

Function : Conductivity Measurement

(\*) After Adjustment at 1412.9  $\mu\text{S/cm}$

Conductivity Electrode Serial No.: 23A100616

Standard Conductivity Solution	Before Adjustment UUC* Reading	After Adjustment UUC* Reading	Uncertainty of Measurement ( $\pm$ )	Coverage factor $k$
1412.9 $\mu\text{S/cm}$	1330 $\mu\text{S/cm}$	1414 $\mu\text{S/cm}$	9.2 $\mu\text{S/cm}$	2.00
12,881 $\text{mS/cm}$	12,10 $\text{mS/cm}$	12,92 $\text{mS/cm}$	0,086 $\text{mS/cm}$	2,00

Remark : - UUC\* = Unit Under Calibration



Cert.No.: 25CH360  
Page.: 3 of 3

#### Calibration Results

Function : Temperature Measurement

This equipment was connected with Temperature Probe;

- Model : PRO 30 COND-T  
- Serial No. : 23A100616

Dimension of probe;

- Length : 94 mm  
- Diameter : 2,5 mm  
- Immersion Depth : 90 mm

Calibration Result : Without adjustment

Calibration Point ( $^{\circ}\text{C}$ )	Standard Temperature ( $^{\circ}\text{C}$ )	UUC* Reading ( $^{\circ}\text{C}$ )	Error ( $^{\circ}\text{C}$ )	Uncertainty of Measurement ( $\pm$ $^{\circ}\text{C}$ )	Coverage factor $k$
15.0	15.004	14.8	-0.204	0.13	2.00
30.0	30.000	29.8	-0.200	0.13	2.00
45.0	45.004	44.8	-0.204	0.13	2.00

Remark : - UUC\* = Unit Under Calibration

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor  $k$ , providing a level of confidence of approximately 95 %.

-o0o-

## Calibration Certificate

**Certificate No.:** 2501844-001-01  
**Client name:** UNITED ANALYST AND ENGINEERING CONSULTANT CO.,LTD.  
**Address:** 3 Soi Udomsuk 41, Sukhumvit Road,  
Bangchack, Prakhong, Bangkok 10260

Page 1 of 5

**Equipment:** pH Meter  
**Manufacturer:** METTLER TOLEDO  
**Model:** SevenEasy pH  
**Serial No.:** 1231155210  
**ID No.:** UAE.WAT.010/2553  
**Order No.:** 2501844  
**Operation No.:** 2501844-001  
**Date of Receipt:** 24 February 2025  
**Date of Calibration:** 24 February 2025

**Calibrated by:** Mr. Manee Sornsaek Specialist  
**Approved by:** (Mr. Pheraphat Tuanjit)  
Manager, Division of Calibration Laboratory  
Responsible for the Technical Management Team  
**Date of Issue:** 27 February 2025

The uncertainties are for a confidence probability of approximately 95%.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation Scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the National Food Institute.

F-CS-009 Revision: 01 Date: 20-04-65

## Calibration Report

**Certificate No.:** 2501844-001-01  
**Equipment:** pH Meter  
**Manufacturer:** METTLER TOLEDO  
**Serial No.:** 1231155210  
**ID No.:** UAE.WAT.010/2553  
**Resolution:** 0.01 pH ; 1 mV  
**Model:** SevenEasy pH  
**Type:** Bench top

Page 2 of 5

**Date of Calibration:** 24 February 2025  
**Location:** Chemical Calibration Laboratory, National Food Institute  
**Environment Condition:** Ambient Temperature: ( 23.4 ± 1.5 ) °C Relative Humidity: ( 54 ± 3 ) %  
**Condition of Equipment:** Good Condition  
**Condition of this Results of Calibration**

1. Calibration Method: W-CO-002: In house method based on direct measurement by using standard voltage calibrator and certified reference material (CRM)  
2. Reference Standards / Certified Reference Material

Instruments	Serial / ID No.	Manufacturer	Certificate No.	Due Date
2.1 DC Voltage Calibrator	2709007	Fuke	24E1752	30 May 2025
2.2 Digital Thermometer	2709007	Fuke	Z600376-002-01	29 October 2025
2.3 Thermo-Hygro Meter	NFI-BTH-013223	Isto	CG-670426-01	21 May 2025

Certified Reference Material	Lot No.	Manufacturer	Ref. N.	Expire Date
2.4 pH buffer 4.008 (Primary pH buffer Solution)	1016435	CPAchem	PH216.LS	26 July 2026
2.5 pH buffer 6.865 (Primary pH buffer Solution)	949166	CPAchem	PH217.LS	30 November 2025
2.6 pH buffer 10.01 (Primary pH buffer Solution)	1016437	CPAchem	PH220.LS	25 July 2025
2.7 pH buffer 7.00 (Standard pH buffer Solution)	003108	HACH LANGE GmbH	S11M004	16 October 2025

3. This certification is traceable to The International System of Units (SI Unit)  
3.1 Instruments Np.2.1 through NSC-TISI-TIS 17025 Laboratory Accreditation of Calibration No.008  
3.2 Instruments Np.2.2 to 2.3 through NSC-TISI-TIS 17025 Laboratory Accreditation of Calibration No.061  
3.3 Certified Reference Material Np.2.4 to 2.6 traceable to Primary measurement method- Fixed cell using calibrated thermometer, barometer, and nephelometer. The Standard Solution preparation and certified by CPAchem Ltd is accredited to ISO 17034 and ISO/IEC 17025  
3.4 Certified Reference Material Np.2.7 traceable to PTB Certificate Nr. PTB-PhDA-863/3050423 and Certificate Nr. PTB-PhDA-555/3062022 (PTB: Physikalisch-Technische Bundesanstalt, Braunschweig, Germany)

4. This certificate was certified only for the instrument we calibrated.  
5. This result of calibration was found accurate as shown on date and place of calibration only.

F-CS-012 Revision: 01 Date: 20-04-65

## Calibration Report

**Certificate No.:** 2501844-001-01  
**Equipment:** pH Meter  
**Manufacturer:** METTLER TOLEDO  
**Serial No.:** 1231155210  
**ID No.:** UAE.WAT.010/2553  
**Resolution:** 0.01 pH ; 1 mV  
**Model:** SevenEasy pH  
**Type:** Bench top

**Date of Calibration:** 24 February 2025 Page 3 of 5

### Calibration Results:

1. Calibration of pH Meter (Manual Temperature Compensation at 25 °C)

Nominal pH	DC Voltage Standard (mV)	Average Indicator Reading		Uncertainty (±mV)	Coverage Factor (k)
		mV	pH		
0	414.122	414	-0.01	0.58	2.00
2	296.815	296	1.99	0.58	2.00
4	177.463	176	4.00	0.58	2.00
6	59.180	59	6.00	0.58	2.00
7	0.001	0	7.00	0.58	2.00
8	-59.159	-59	8.00	0.58	2.00
10	-177.462	-177	10.00	0.58	2.00
12	-296.813	-296	12.00	0.58	2.00
14	-414.121	-414	14.00	0.58	2.00

2. Calibration of pH Meter with Electrode (Manual Temperature Compensation at 25 °C)

**Equipment:** pH Electrode  
**Manufacturer:** METTLER TOLEDO  
**Serial No.:** 3065701  
**Type:** Combined Electrode  
**Model:** InLab Solids  
**ID No.:** N/A

**Performance of Electrode system** (Three-Point Calibration at pH 4, 7 and 10)

Certified Value @25 °C (pH)	Average Indicator Reading		Relative Slope (%)	Uncertainty (± pH)	Coverage Factor (k)
	pH	mV			
4.008	4.00	165	-	0.0071	2.00
7.001	7.00	-8	97.5	0.0086	2.00
10.010	10.01	-176	95.5	0.0083	2.00
6.876	6.88	0	-	0.0071	2.00

F-CS-012 Revision: 01 Date: 20-04-65

## Calibration Report

**Certificate No.:** 2501844-001-01  
**Equipment:** Digital Thermometer with RTD (pH Meter)  
**Resolution:** 0.1 °C  
**Model:** SevenEasy pH  
**Serial No.:** 1231155210  
**ID No.:** UAE.WAT.010/2553  
**Manufacturer:** METTLER TOLEDO

Page 4 of 5

**Location:** Chemical Calibration Laboratory, National Food Institute  
**Environment Condition:** Ambient Temperature: 23.4 °C ± 1.0 °C  
Relative Humidity: 55.1 % ± 1.7 %

### Condition of this results of Calibration:

1. Calibration Method: In house method: W-TE-025 by comparison with standard thermometer.  
- The Calibration is determined by comparing with a known temperature from a standard resistance thermometer.  
- The temperature scale in use at this laboratory is the International Temperature scale of 1990 (ITS-90).

2. Reference Standard Instrument

Instrument	Model	Serial No.	Certificate No.	Due Date	Through
HANDHELD THERMOMETER	1523	2119154	PSLT 081567	24-Jun-25	T&E
Platinum Resistance Thermometer (PRT)	9627A	877332			

Support Equipment: Low Temperature Bath (AMETEK RTC-187), Model: RTC-187C, S/N: 670900-00018

3. This certificate is traceable to International System of Units (SI Units).  
4. This certificate was certified only for the instrument we calibrated.  
5. This result of calibration was found accurate as shown on date and place of calibration only.  
6. Condition of Calibrated item: Good  
7. Result of Calibration: ☒ Without adjustment ☐ After adjustment

F-CS-012 Revision: 01 Date: 20-04-65

## Calibration Report

**Certificate No.:** 2501844-001-01  
**Equipment:** Digital Thermometer with RTD (pH Meter)  
**Resolution:** 0.1 °C **Model:** SevenEasy pH  
**Serial No.:** 1231155210 **ID No.:** UAE WAT 010/2553  
**Manufacturer:** METTLER TOLEDO  
**Date of Calibration:** 24 February 2025 Page 5 of 5

**Calibration point:** 20.0, 25.0 and 30.0 °C

**Calibration result:**

- The probe was immersed in liquid bath or dry bath to a minimum depth of 120 mm.
- Description of probe, model: N/A S/N: N/A
- Dimension of probe: Diameter 4 mm, Length 120 mm.
- Sheath material: Stainless Steel

UUC Reading (°C)	Standard Temperature (°C)	Correction Value (°C)	Uncertainty ± (°C)
25.1	20.001	0.1	0.099
25.1	25.002	0.1	0.099
30.1	30.003	0.1	0.099

**Note:**

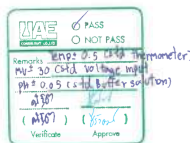
- UUC: Unit Under Calibration

The report uncertainty of measurement was based on standard uncertainty multiplied by coverage factor  $k=2$ , providing a level of confidence of approximately 95 %.

----- End -----

F-CS-012 Revision: 01 Date: 20-04-65

25000 ถนนพหลโยธิน 36 แขวงลาดยาว เขตจตุจักร กรุงเทพมหานคร 10130 **เอกสารไม่ควบคุม**  
25000 3rd Fl., Anan Asoke Road, Wang Thonglang Subdistrict, Wang Phnom District, Bangkok, 10703, Thailand  
Tel: +66(0)2-26421000 Fax: +66(0)2-26421001



## Certificate of Calibration

**Cert.No.:** 24CH1071  
**Page:** 1 of 3

**Equipment:** pH Meter  
**Manufacturer:** Horiba  
**Model:** LAQUA-PH210  
**Serial No.:** HA1F0002  
**ID No.:** UAE.EFM.200/2564(EFM,pH.08/64)  
**Condition As-Received:** Used Item  
**Received Date:** 27 August 2024  
**Calibration Date:** 28 August 2024  
**Reference:** 2408-0882WSC-2  
**Submitted by:** United Analyst and Engineering Consultant Co.,Ltd.  
3 Soi Udomsuk 41, Sukhumvit Road,  
Bangchak, Phrakhanong, Bangkok 10260

**Ambient Temperature:** (25 ± 2.5) °C  
**Relative Humidity:** (50 ± 15) %  
**Calibration Procedure:** In-house method:  
- CP-CH5 by direct measurement with DC voltage standard and direct measurement with certified reference material (CRM)  
- CP-CH8 by comparison with temperature standard

**Calibrated by:** Warakorn Lernagatrakul

**Approved by:**  Approved Signatory

( ) Unnopphol Harachai  
( ) Ponpan Palpim  
(✓) Saithip Meangmai

**Issue Date:** 29 August 2024

**The Uncertainties are for a confidence probability of approximately 95%**

This certificate may not be reproduced other than in full, except with the prior written approval of the head of Corporate Services 3: Equipment Calibration and Testing Services.

**Cert.No.:** 24CH1071  
**Page:** 2 of 3

### Condition of this calibration result

1. Reference Standard Instrument

Instrument	Serial No.	ID No.	Cert. No.	Due Date
1) Document Process Calibrator	43160066	130RC092	24E1320	22 Apr 2025
2) Ref. Standard Thermometer	2188080	130RC044	23I1216	10 Oct 2024

- This Certification is traceable to SI Through Technology Promotion Association (Thailand - Japan)

2. Certified Reference Materials :The measurement results are traceable to SI through Hach Lenge GmbH LI Deutsche Akkreditierungsstelle, Accredited No.D-RM-15164-01-00

Buffer Solution	Manufacturer	Lot No.	Exp. date
pH 4.006	Hach Lenge GmbH	C03146	23 Feb 2026
pH 6.999	Hach Lenge GmbH	C03145	28 Feb 2026
pH 9.997	CPA chem	970853	25 Apr 2025

3. This certificate is valid only to the item calibrated on date and place of calibration.

### Calibration Results

**Function:** mV Measurement

Performing standard curve by Document Process Calibrator at pH (4.7)(7.10)

Unit Under Calibration	Nominal Value	Standard Voltage Input	Actual Reading		Uncertainty of Measurement (±mV)	Coverage factor k
			mV	pH		
pH Meter S/N: HA1F0002	4.00	177.48	177.6	4.01	0.058	2.00
	7.00	0.00	0.1	7.02	0.058	2.00
	7.00	0.00	0.1	7.02	0.058	2.00
	10.00	-177.48	-177.4	10.01	0.058	2.00



Cert.No.: 24CH1071

Page.: 3 of 3

#### Calibration Results

Function : pH Measurement

Performing three buffers standard curve by using buffer nominal pH (4,7)(7,10)

Unit Under Calibration	Standard pH Buffer Solution	Actual pH Reading	Actual mV Reading (mV)	Uncertainty of pH Measurement ( $\pm$ )	Coverage factor $k$
pH Electrode S/N.: Q9AG0067	4,006	4,00	182,5	0,0090	2,05
	6,999	6,99	6,9	0,0084	2,00
	6,999	7,00	6,8	0,0085	2,00
	9,997	10,01	-167,6	0,0095	2,00

Function : Temperature Measurement

( \* ) Without adjustment

This equipment was connected with Temperature Probe;

- Model : 9652-10D

- Serial No. : Q9AG0067

Dimension of probe

- Length : 103 mm.

- Diameter : 16 mm.

- Immersion Depth : 90 mm.

Calibration Point ( °C )	Standard Temperature ( °C )	UUC* Reading ( °C )	Error ( °C )	Uncertainty of measurement ( $\pm$ °C )	Coverage factor $k$
20,0	20,002	20,0	-0,002	0,13	2,00
25,0	25,004	25,0	-0,004	0,13	2,00
45,0	45,002	45,0	-0,002	0,13	2,00

Remark - UUC\* = Unit Under Calibration

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor  $k$ , providing a level of confidence of approximately 95 %.

-000-

ภาคผนวก จ

หนังสืออนุญาตขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

---



เอกสารแนบท้ายหนังสือตอบรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกสาร  
บริษัท ยูนิค แอนาไลติกส์ แอนด์ เอ็นจิเนียริง คอนซัลแตนท์ จำกัด เลขทะเบียน ๖-๑๕๕  
ที่ อก ๐๓๑๐(๑)/ ๑๐ ๑๕๕ ลงวันที่ ๐๗ กุมภาพันธ์ ๒๕๖๕

๕. เจ้าหน้าที่ห้องปฏิบัติการวิเคราะห์เอกสาร จำนวน ๑๕๔ ราย

- ๑) นายสุทนต์ พันสิงห์
- ๒) นายพิษณุ ใจบุญผล
- ๓) นางสาวโกลิณณ์ เกื้อสง
- ๔) นายสมชาติ อุทุมรัตน์
- ๕) นางสาวปาริชาติ ทองแก้ว
- ๖) นางสาวกัญญา สมพงษ์
- ๗) นางสาววรรณิ์ สายบุญเรือน
- ๘) นายฤทธิพงษ์ นามทรัพย์
- ๙) นางสาวอรพินธ์ อ่อนคง
- ๑๐) นายศุภกิจทิพย์ พงษ์วิจิตร
- ๑๑) นายฤทธิพงษ์ นามทรัพย์
- ๑๒) นางสาวพรพิมล แก้วทอง
- ๑๓) นายอภิรักษ์ ทวีทรัพย์
- ๑๔) นายณัฏฐ์ ปานใจดี
- ๑๕) นายศุภพร ธนะพิรุณ
- ๑๖) นางสาวศศิมา โยธา
- ๑๗) นางสาวภาวดี สุทธิ
- ๑๘) นางสาวสมณัญญ์ อภิพัทธ์ปภา
- ๑๙) นายศุภพัชร จงแสงเกียรติ
- ๒๐) นางสาวสุภาวดี อธิษฐาน
- ๒๑) นายพชรพงศ์ เหล่าจรรยา
- ๒๒) นายสุวิทย์ พันธุรักษ์
- ๒๓) นางสาวพัชรา คณิศกุล
- ๒๔) นางสาวณัฏฐา เลิศคำจันทร์
- ๒๕) นายพีรพัฒน์ บุญศิริศิลป์
- ๒๖) นายจิรวัฒน์ เลื่อนอ้อม
- ๒๗) นายณัฏฐ์ ธนธรรมรัตน์
- ๒๘) นายณัฏฐ์ ไร่สี
- ๒๙) นายปริยชาติ กอนภัสสร
- ๓๐) นายธีรวัฒน์ มาตย์โพธิ์ศรี
- ๓๑) นายบุญฤทธิชัย ก้อนสิน
- ๓๒) นายพรวิมล ไกรฤกษ์
- ๓๓) นายอติเดช แสงจันทร์
- ๓๔) ว่าที่ร้อยตรีณัฐพงศ์ เมืองชัย
- ๓๕) นายอนันท์ เกษปะเสถียร

- ๓๖) นายสุทนต์ พันสิงห์
- ๓๗) นายพิษณุ ใจบุญผล
- ๓๘) นางสาวโกลิณณ์ เกื้อสง
- ๓๙) นายสมชาติ อุทุมรัตน์
- ๔๐) นางสาวปาริชาติ ทองแก้ว
- ๔๑) นางสาวกัญญา สมพงษ์
- ๔๒) นางสาววรรณิ์ สายบุญเรือน
- ๔๓) นายฤทธิพงษ์ นามทรัพย์
- ๔๔) นางสาวอรพินธ์ อ่อนคง
- ๔๕) นายศุภกิจทิพย์ พงษ์วิจิตร
- ๔๖) นายฤทธิพงษ์ นามทรัพย์
- ๔๗) นางสาวพรพิมล แก้วทอง
- ๔๘) นายอภิรักษ์ ทวีทรัพย์
- ๔๙) นายณัฏฐ์ ปานใจดี
- ๕๐) นายศุภพร ธนะพิรุณ
- ๕๑) นางสาวศศิมา โยธา
- ๕๒) นางสาวภาวดี สุทธิ
- ๕๓) นางสาวสมณัญญ์ อภิพัทธ์ปภา
- ๕๔) นายศุภพัชร จงแสงเกียรติ
- ๕๕) นางสาวสุภาวดี อธิษฐาน
- ๕๖) นายพชรพงศ์ เหล่าจรรยา
- ๕๗) นายสุวิทย์ พันธุรักษ์
- ๕๘) นางสาวพัชรา คณิศกุล
- ๕๙) นางสาวณัฏฐา เลิศคำจันทร์
- ๖๐) นายพีรพัฒน์ บุญศิริศิลป์
- ๖๑) นายจิรวัฒน์ เลื่อนอ้อม
- ๖๒) นายณัฏฐ์ ธนธรรมรัตน์
- ๖๓) นายณัฏฐ์ ไร่สี
- ๖๔) นายปริยชาติ กอนภัสสร
- ๖๕) นายธีรวัฒน์ มาตย์โพธิ์ศรี
- ๖๖) นายบุญฤทธิชัย ก้อนสิน
- ๖๗) นายพรวิมล ไกรฤกษ์
- ๖๘) นายอติเดช แสงจันทร์
- ๖๙) ว่าที่ร้อยตรีณัฐพงศ์ เมืองชัย
- ๗๐) นายอนันท์ เกษปะเสถียร

๓๖) นางสาวภาวดี...

๓๖) นายณัฏฐ์...

- ๗๑) นายณัฏฐ์ วงศ์คำ
- ๗๒) นายประทีปชัย เมื่อนาม
- ๗๓) นางสาวณัฏฐา ลำซัด
- ๗๔) นางสาวภาวดี อธิษฐาน
- ๗๕) นางสาวบุญญา มอญจวน
- ๗๖) นายสมพร อมรลักษณ์
- ๗๗) นางสาวศศิมา โยธา
- ๗๘) นางสาวภาวดี สุทธิ
- ๗๙) นางสาวสมณัญญ์ อภิพัทธ์ปภา
- ๘๐) นายศุภพัชร จงแสงเกียรติ
- ๘๑) นางสาวสุภาวดี อธิษฐาน
- ๘๒) นายพชรพงศ์ เหล่าจรรยา
- ๘๓) นายสุวิทย์ พันธุรักษ์
- ๘๔) นางสาวพัชรา คณิศกุล
- ๘๕) นางสาวณัฏฐา เลิศคำจันทร์
- ๘๖) นายพีรพัฒน์ บุญศิริศิลป์
- ๘๗) นายจิรวัฒน์ เลื่อนอ้อม
- ๘๘) นายณัฏฐ์ ธนธรรมรัตน์
- ๘๙) นายณัฏฐ์ ไร่สี
- ๙๐) นายปริยชาติ กอนภัสสร
- ๙๑) นายธีรวัฒน์ มาตย์โพธิ์ศรี
- ๙๒) นายบุญฤทธิชัย ก้อนสิน
- ๙๓) นายพรวิมล ไกรฤกษ์
- ๙๔) นายอติเดช แสงจันทร์
- ๙๕) ว่าที่ร้อยตรีณัฐพงศ์ เมืองชัย
- ๙๖) นายอนันท์ เกษปะเสถียร

- ๙๗) นายสุทนต์ พันสิงห์
- ๙๘) นายพิษณุ ใจบุญผล
- ๙๙) นางสาวโกลิณณ์ เกื้อสง
- ๑๐๐) นายสมชาติ อุทุมรัตน์
- ๑๐๑) นางสาวปาริชาติ ทองแก้ว
- ๑๐๒) นางสาวกัญญา สมพงษ์
- ๑๐๓) นางสาววรรณิ์ สายบุญเรือน
- ๑๐๔) นายฤทธิพงษ์ นามทรัพย์
- ๑๐๕) นางสาวอรพินธ์ อ่อนคง
- ๑๐๖) นายศุภกิจทิพย์ พงษ์วิจิตร
- ๑๐๗) นายฤทธิพงษ์ นามทรัพย์
- ๑๐๘) นางสาวพรพิมล แก้วทอง
- ๑๐๙) นายอภิรักษ์ ทวีทรัพย์
- ๑๑๐) นายณัฏฐ์ ปานใจดี
- ๑๑๑) นายศุภพร ธนะพิรุณ
- ๑๑๒) นางสาวศศิมา โยธา
- ๑๑๓) นางสาวภาวดี สุทธิ
- ๑๑๔) นางสาวสมณัญญ์ อภิพัทธ์ปภา
- ๑๑๕) นายศุภพัชร จงแสงเกียรติ
- ๑๑๖) นางสาวสุภาวดี อธิษฐาน
- ๑๑๗) นายพชรพงศ์ เหล่าจรรยา
- ๑๑๘) นายสุวิทย์ พันธุรักษ์
- ๑๑๙) นางสาวพัชรา คณิศกุล
- ๑๒๐) นางสาวณัฏฐา เลิศคำจันทร์
- ๑๒๑) นายพีรพัฒน์ บุญศิริศิลป์
- ๑๒๒) นายจิรวัฒน์ เลื่อนอ้อม
- ๑๒๓) นายณัฏฐ์ ธนธรรมรัตน์
- ๑๒๔) นายณัฏฐ์ ไร่สี
- ๑๒๕) นายปริยชาติ กอนภัสสร
- ๑๒๖) นายธีรวัฒน์ มาตย์โพธิ์ศรี
- ๑๒๗) นายบุญฤทธิชัย ก้อนสิน
- ๑๒๘) นายพรวิมล ไกรฤกษ์
- ๑๒๙) นายอติเดช แสงจันทร์
- ๑๓๐) ว่าที่ร้อยตรีณัฐพงศ์ เมืองชัย
- ๑๓๑) นายอนันท์ เกษปะเสถียร

๑๓๑) นางสาวปาริชาติ...

- ๓๖) นางสาวภาวดี สุทธิ
- ๓๗) นายณัฏฐ์ วงศ์คำ
- ๓๘) นายประทีปชัย เมื่อนาม
- ๓๙) นางสาวณัฏฐา ลำซัด
- ๔๐) นางสาวบุญญา มอญจวน
- ๔๑) นายสมพร อมรลักษณ์
- ๔๒) นางสาวศศิมา โยธา
- ๔๓) นางสาวภาวดี สุทธิ
- ๔๔) นางสาวสมณัญญ์ อภิพัทธ์ปภา
- ๔๕) นายศุภพัชร จงแสงเกียรติ
- ๔๖) นางสาวสุภาวดี อธิษฐาน
- ๔๗) นายพชรพงศ์ เหล่าจรรยา
- ๔๘) นายสุวิทย์ พันธุรักษ์
- ๔๙) นางสาวพัชรา คณิศกุล
- ๕๐) นางสาวณัฏฐา เลิศคำจันทร์
- ๕๑) นายพีรพัฒน์ บุญศิริศิลป์
- ๕๒) นายจิรวัฒน์ เลื่อนอ้อม
- ๕๓) นายณัฏฐ์ ธนธรรมรัตน์
- ๕๔) นายณัฏฐ์ ไร่สี
- ๕๕) นายปริยชาติ กอนภัสสร
- ๕๖) นายธีรวัฒน์ มาตย์โพธิ์ศรี
- ๕๗) นายบุญฤทธิชัย ก้อนสิน
- ๕๘) นายพรวิมล ไกรฤกษ์
- ๕๙) นายอติเดช แสงจันทร์
- ๖๐) ว่าที่ร้อยตรีณัฐพงศ์ เมืองชัย
- ๖๑) นายอนันท์ เกษปะเสถียร

- ๖๒) นางสาวภาวดี...
- ๖๓) นายณัฏฐ์...
- ๖๔) นางสาวโกลิณณ์...
- ๖๕) นายสมชาติ...
- ๖๖) นางสาวปาริชาติ...
- ๖๗) นางสาวกัญญา...
- ๖๘) นางสาววรรณิ์...
- ๖๙) นายฤทธิพงษ์...
- ๗๐) นางสาวอรพินธ์...
- ๗๑) นายศุภกิจทิพย์...
- ๗๒) นายฤทธิพงษ์...
- ๗๓) นางสาวพรพิมล...
- ๗๔) นายอภิรักษ์...
- ๗๕) นายณัฏฐ์...
- ๗๖) นายศุภพร...
- ๗๗) นางสาวศศิมา...
- ๗๘) นางสาวภาวดี...
- ๗๙) นางสาวสมณัญญ์...
- ๘๐) นายศุภพัชร...
- ๘๑) นางสาวสุภาวดี...
- ๘๒) นายพชรพงศ์...
- ๘๓) นายสุวิทย์...
- ๘๔) นางสาวพัชรา...
- ๘๕) นางสาวณัฏฐา...
- ๘๖) นายพีรพัฒน์...
- ๘๗) นายจิรวัฒน์...
- ๘๘) นายณัฏฐ์...
- ๘๙) นายณัฏฐ์...
- ๙๐) นายปริยชาติ...
- ๙๑) นายธีรวัฒน์...
- ๙๒) นายบุญฤทธิชัย...
- ๙๓) นายพรวิมล...
- ๙๔) นายอติเดช...
- ๙๕) ว่าที่ร้อยตรี...
- ๙๖) นายอนันท์...

- ๑๓๑) นางสาวปาริชาติ...
- ๑๓๒) นางสาวภาวดี...
- ๑๓๓) นายณัฏฐ์...
- ๑๓๔) นางสาวโกลิณณ์...
- ๑๓๕) นายสมชาติ...
- ๑๓๖) นางสาวปาริชาติ...
- ๑๓๗) นางสาวกัญญา...
- ๑๓๘) นางสาววรรณิ์...
- ๑๓๙) นายฤทธิพงษ์...
- ๑๔๐) นางสาวอรพินธ์...
- ๑๔๑) นายศุภกิจทิพย์...
- ๑๔๒) นายฤทธิพงษ์...
- ๑๔๓) นางสาวพรพิมล...
- ๑๔๔) นายอภิรักษ์...
- ๑๔๕) นายณัฏฐ์...
- ๑๔๖) นายศุภพร...
- ๑๔๗) นางสาวศศิมา...
- ๑๔๘) นางสาวภาวดี...
- ๑๔๙) นางสาวสมณัญญ์...
- ๑๕๐) นายศุภพัชร...
- ๑๕๑) นางสาวสุภาวดี...
- ๑๕๒) นายพชรพงศ์...
- ๑๕๓) นายสุวิทย์...
- ๑๕๔) นางสาวพัชรา...
- ๑๕๕) นางสาวณัฏฐา...
- ๑๕๖) นายพีรพัฒน์...
- ๑๕๗) นายจิรวัฒน์...
- ๑๕๘) นายณัฏฐ์...
- ๑๕๙) นายณัฏฐ์...
- ๑๖๐) นายปริยชาติ...
- ๑๖๑) นายธีรวัฒน์...
- ๑๖๒) นายบุญฤทธิชัย...
- ๑๖๓) นายพรวิมล...
- ๑๖๔) นายอติเดช...
- ๑๖๕) ว่าที่ร้อยตรี...
- ๑๖๖) นายอนันท์...

- ๑๖๗) นางสาวภาวดี...
- ๑๖๘) นายณัฏฐ์...
- ๑๖๙) นางสาวโกลิณณ์...
- ๑๗๐) นายสมชาติ...
- ๑๗๑) นางสาวปาริชาติ...
- ๑๗๒) นางสาวกัญญา...
- ๑๗๓) นางสาววรรณิ์...
- ๑๗๔) นายฤทธิพงษ์...
- ๑๗๕) นางสาวอรพินธ์...
- ๑๗๖) นายศุภกิจทิพย์...
- ๑๗๗) นายฤทธิพงษ์...
- ๑๗๘) นางสาวพรพิมล...
- ๑๗๙) นายอภิรักษ์...
- ๑๘๐) นายณัฏฐ์...
- ๑๘๑) นายศุภพร...
- ๑๘๒) นางสาวศศิมา...
- ๑๘๓) นางสาวภาวดี...
- ๑๘๔) นางสาวสมณัญญ์...
- ๑๘๕) นายศุภพัชร...
- ๑๘๖) นางสาวสุภาวดี...
- ๑๘๗) นายพชรพงศ์...
- ๑๘๘) นายสุวิทย์...
- ๑๘๙) นางสาวพัชรา...
- ๑๙๐) นางสาวณัฏฐา...
- ๑๙๑) นายพีรพัฒน์...
- ๑๙๒) นายจิรวัฒน์...
- ๑๙๓) นายณัฏฐ์...
- ๑๙๔) นายณัฏฐ์...
- ๑๙๕) นายปริยชาติ...
- ๑๙๖) นายธีรวัฒน์...
- ๑๙๗) นายบุญฤทธิชัย...
- ๑๙๘) นายพรวิมล...
- ๑๙๙) นายอติเดช...
- ๒๐๐) ว่าที่ร้อยตรี...
- ๒๐๑) นายอนันท์...

เอกสารแนบท้ายหนังสือข้ออาญาขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท ยูนิเทค แอแนลิติกส์ แอนด์ เอ็นจิเนียริ่ง คอนซัลแตนท์ จำกัด เลขทะเบียน ๖-๑๕๕  
ที่ ๑๓ ๐๓๑๐(๑) ๑๐ ๘ ๘ ลงวันที่ ๐๗ กุมภาพันธ์ ๒๕๖๕

ขอประชาสัมพันธ์ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๑๕๗ รายการ

น้ำได้ดิน จำนวน 46 รายการ

ลำดับ	สารเคมี	วิธีวิเคราะห์
1	Aldrin	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>
2	Arsenic	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>(4)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>
3	Barium	Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>
4	α-BHC	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>
5	β-BHC	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>
6	δ-BHC	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>
7	γ-BHC	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>
8	Biochemical Oxygen Demand	1) 5-Day BOD Test, Azide Modification Method <sup>(4)</sup> 2) 5-Day BOD Test, Membrane Electrode Method <sup>(4)</sup>
9	Cadmium	1) Digestion, Direct Air-Acetylene Flame Method <sup>(4)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>
10	Chemical Oxygen Demand	1) Closed Reflux, Titrimetric Method <sup>(4)</sup> 2) Closed Reflux, Colorimetric Method <sup>(4)</sup> 3) Open Reflux, Titrimetric Method <sup>(4)</sup>
11	Chlordane	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>
12	Chromium	1) Digestion, Direct Air-Acetylene Flame Method <sup>(4)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>
13	Color	ADMI Weighted-Ordinate Spectrophotometric Method <sup>(4)</sup>
14	Copper	1) Digestion, Direct Air-Acetylene Flame Method <sup>(4)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>
15	Cyanide	1) Distillation, Colorimetric Method <sup>(4)</sup> 2) Total Cyanide after Distillation, by Flow Injection Analysis Method <sup>(4)</sup>
16	o,p'-DDT	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>
17	4,4'-DDD	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>
18	4,4'-DDE	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>
19	4,4'-DDT	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>
20	Dieldrin	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>
21	Endosulfan I	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>
22	Endosulfan II	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>
23	Endosulfan sulfate	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>
24	Endrin	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>

25 Endrin aldehyde...

ลำดับ	สารเคมี	วิธีวิเคราะห์
25	Endrin aldehyde	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>
26	Formaldehyde	Distillation, Colorimetric Method <sup>(2)</sup>
27	Free Chlorine	1) Iodometric Method <sup>(4)</sup> 2) DPD Ferrous Titrimetric Method <sup>(4)</sup>
28	Heptachlor	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>
29	Heptachlor Epoxide	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>
30	Hexavalent Chromium	Colorimetric Method <sup>(4)</sup>
31	Lead	1) Digestion, Direct Air-Acetylene Flame Method <sup>(4)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>
32	Manganese	1) Digestion, Direct Air-Acetylene Flame Method <sup>(4)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>
33	Mercury	Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>(4)</sup>
34	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>
35	Nickel	1) Digestion, Direct Air-Acetylene Flame Method <sup>(4)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>
36	Oil & Grease	1) Liquid-Liquid, Partition-Gravimetric Method <sup>(4)</sup> 2) Soxhlet Extraction Method <sup>(4)</sup>
37	pH	Electrometric Method <sup>(4)</sup>
38	Phenols	1) Distillation, Chloroform Extraction Method <sup>(4)</sup> 2) Distillation, Direct Photometric Method <sup>(4)</sup>
39	Selenium	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>(4)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>
40	Sulfide	1) Iodometric Method <sup>(4)</sup> 2) Methylene Blue Method <sup>(4)</sup>
41	Temperature	Laboratory and Field Methods <sup>(4)</sup>
42	Total Dissolved Solids	Dried at 180 °C <sup>(4)</sup>
43	Total Kjeldahl Nitrogen	Semi-Micro-Kjeldahl Method <sup>(4)</sup>
44	Total Suspended Solids	Dried from 103 to 105 °C <sup>(4)</sup>
45	Trivalent Chromium	1) Digestion, Direct Air-Acetylene Flame Method <sup>(4)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup> Colorimetric Method; Calculation <sup>(4)</sup>
46	Zinc	1) Digestion, Direct Air-Acetylene Flame Method <sup>(4)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>

น้ำได้ดิน...

น้ำได้ดิน จำนวน 126 รายการ

ลำดับ	สารเคมี	วิธีวิเคราะห์
1	Acenaphthene	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
2	Acetone	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
3	Aldrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
4	Anthracene	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
5	Antimony	Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>
6	Arsenic	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>(4)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>
7	Atrazine	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
8	Barium	Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>
9	Benz(a)anthracene	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
10	Benzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
11	Benzo(b)fluoranthene	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
12	Benzo(k)fluoranthene	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
13	Benzoic acid	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>

14 Benzo(a)pyrene...

ลำดับ	สารเคมี	วิธีวิเคราะห์
14	Benzo(a)pyrene	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
15	Benzo(g,h,i)perylene	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
16	Beryllium	Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>
17	Bis(2-chloroethyl)ether	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
18	Bis(2-ethylhexyl)phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
19	Bromodichloromethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
20	Bromoform	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
21	Butanol	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
22	Butyl benzyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
23	Cadmium	1) Digestion, Direct Air-Acetylene Flame Method <sup>(4)</sup> 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method <sup>(4)</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>
24	Carbazole	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
25	Carbon disulfide	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
26	Carbon tetrachloride	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
27	Chlordane	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
28	p-Chloroaniline	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>

29 Chlorobenzene...

ลำดับ	สารเคมี	วิธีวิเคราะห์
29	Chlorobenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
30	Chlorodibromomethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
31	Chloroform	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
32	2-Chlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
33	Chromium	1) Digestion, Direct Air-Acetylene Flame Method <sup>(4)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>
34	Chromium (III)	1) Digestion, Direct Air-Acetylene Flame Method; Colorimetric Method; Calculation <sup>(4)</sup> 2) Digestion, Inductively Coupled Plasma Method; Colorimetric Method; Calculation <sup>(4)</sup>
35	Chromium (VI)	Colorimetric Method <sup>(4)</sup>
36	Chrysene	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
37	Cyanide	Distillation, Colorimetric Method <sup>(4)</sup>
38	2,4-D	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup>
39	DDD	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
40	DDE	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
41	DDT	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
42	Dibenz(a,h)anthracene	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>

43 Di-n-butyl phthalate...

ลำดับ	สารเคมี	วิธีวิเคราะห์
43	Di-n-butyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
44	1,2-Dichlorobenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
45	1,3-Dichlorobenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
46	1,4-Dichlorobenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
47	3,3'-Dichlorobenzidine	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
48	1,1-Dichloroethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
49	1,2-Dichloroethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
50	1,1-Dichloroethylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
51	cis-1,2-Dichloroethylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
52	trans-1,2-Dichloroethylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
53	2,4-Dichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
54	1,2-Dichloropropane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
55	1,3-Dichloropropane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
56	1,3-Dichloropropene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
57	Dieldrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
58	Diethyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
59	2,4-Dimethylphenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
60	2,4-Dinitrophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>

61 2,4-Dinitrotoluene...

ลำดับ	สารเคมี	วิธีวิเคราะห์
61	2,4-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
62	2,6-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
63	Di-n-Octyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
64	Endosulfan	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
65	Endrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
66	Ethylbenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
67	Fluoranthene	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
68	Fluorene	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
69	Heptachlor	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
70	Heptachlor epoxide	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
71	Hexachlorobenzene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
72	Hexachloro-1,3-butadiene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
73	n-Hexane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>

74  $\alpha$ -HCH...

ลำดับ	สารเคมี	วิธีวิเคราะห์
74	$\alpha$ -HCH	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
75	$\beta$ -HCH	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
76	$\gamma$ -HCH	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
77	Hexachlorocyclopentadiene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
78	Hexachloroethane	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
79	Indeno(1,2,3-cd)pyrene	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
80	Isophorone	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
81	Lead	1) Digestion, Direct Air-Acetylene Flame Method <sup>(4)</sup> 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method <sup>(4)</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>
82	Manganese	1) Digestion, Direct Air-Acetylene Flame Method <sup>(4)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>
83	Mercury	Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>(4)</sup>
84	Methanol	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
85	Methoxychlor	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
86	Methyl bromide	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>

87 Methylene chloride...

ลำดับ	สารมลพิษ	วิธีวิเคราะห์
87	Methylene chloride	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
88	2-Methylphenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
89	2-Methylnaphthalene	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
90	Methyl tert-butyl ether	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
91	Naphthalene	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
92	Nickel	1) Digestion, Direct Air-Acetylene Flame Method <sup>(4)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>
93	Nitrobenzene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
94	N-Nitrosodiphenylamine	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
95	N-Nitrosodi-n-propylamine	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
96	Polychlorinated Biphenyls - PCB 1016 - PCB 1221 - PCB 1232 - PCB-1242 - PCB-1248 - PCB-1254 - PCB-1260	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
97	Pentachlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
98	pH	Electrometric Method <sup>(4)</sup>
99	Phenanthrene	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>

100 Phenol...

ลำดับ	สารมลพิษ	วิธีวิเคราะห์
100	Phenol	1) Distillation, Chloroform Extraction Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
101	Pyrene	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
102	Selenium	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>(4)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>
103	Silver	Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>
104	Styrene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
105	1,1,2,2-Tetrachloroethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
106	Tetrachloroethylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
107	Toluene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
108	Toxaphene	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(4)</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
109	TPH (C <sub>9</sub> - C <sub>9</sub> )	1) Purge and Trap, Gas Chromatographic Method <sup>(12,22)</sup> 2) Purge and Trap, Gas Chromatographic/Mass spectrometric Method <sup>(12,23)</sup>
110	TPH (C <sub>9</sub> - C <sub>10</sub> )	Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(12,22)</sup>
111	TPH (C <sub>9</sub> - C <sub>10</sub> )	Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(12,22)</sup>
112	1,2,4-Trichlorobenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
113	1,1,1-Trichloroethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
114	1,1,2-Trichloroethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
115	Trichloroethylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>

116 2,4,5-Trichlorophenol...

ลำดับ	สารมลพิษ	วิธีวิเคราะห์
116	2,4,5-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
117	2,4,6-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
118	1,3,5-Trimethylbenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
119	Vanadium	Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>
120	Vinyl acetate	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
121	Vinyl chloride	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
122	m-Xylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
123	o-Xylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
124	p-Xylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
125	Xylene (Total)	Purge and Trap Gas Chromatographic/Mass Spectrometric Method <sup>(4)</sup>
126	Zinc	1) Digestion, Direct Air-Acetylene Flame Method <sup>(4)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(4)</sup>

தாகக் கெட்ட (பொருள்வாய்) จำนวน 25 รายการ

ลำดับ	สารมลพิษ	วิธีวิเคราะห์
1	Antimony	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>(3)</sup>
2	Arsenic	1) Isokinetic Sampling, Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>(3)</sup> 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>(3)</sup>
3	Cadmium	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method <sup>(3)</sup> 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>(3)</sup>
4	Carbon Monoxide	Instrumental Analyzer Method <sup>(3)</sup>
5	Chlorine	Isokinetic Sampling, Ion Chromatographic Method <sup>(3)</sup>
6	Chromium	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method <sup>(3)</sup>

Chromium (ดี)... 23

ลำดับ	สารมลพิษ	วิธีวิเคราะห์
6	Chromium (ดี)	2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>(3)</sup>
7	Cobalt	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>(3)</sup>
8	Copper	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method <sup>(3)</sup> 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>(3)</sup>
9	Cresol	Absorption Sampling, Gas Chromatographic Method <sup>(3)</sup>
10	Dioxins/Furans	Isokinetic Sampling <sup>(3)</sup>
11	Hydrogen Chloride	Isokinetic Sampling, Ion Chromatographic Method <sup>(3)</sup>
12	Hydrogen Fluoride	Isokinetic Sampling, Ion Chromatographic Method <sup>(3)</sup>
13	Hydrogen Sulfide	Absorption Sampling, Iodometric Method <sup>(3)</sup>
14	Lead	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method <sup>(3)</sup> 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>(3)</sup>
15	Manganese	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method <sup>(3)</sup> 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>(3)</sup>
16	Mercury	Isokinetic Sampling, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>(3)</sup>
17	Nickel	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method <sup>(3)</sup> 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>(3)</sup>
18	Opacity	Ringelmann's Method <sup>(1)</sup>
19	Oxides of Nitrogen	1) Absorption Sampling, Phenoldisulfonic acid Method <sup>(3)</sup> 2) Instrumental Analyzer Method <sup>(3)</sup>
20	Selenium	1) Isokinetic Sampling, Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>(3)</sup> 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>(3)</sup>
21	Sulfur Dioxide	1) Absorption Sampling, Barium-Thorin Titrimetric Method <sup>(3)</sup> 2) Instrumental Analyzer Method <sup>(3)</sup>
22	Sulfuric Acid	Isokinetic Sampling, Barium-Thorin Titrimetric Method <sup>(3)</sup>

23 Total Suspended Particulate...

ลำดับ	สารมลพิษ	วิธีวิเคราะห์
23	Total Suspended Particulate	Isokinetic Sampling, Gravimetric Method <sup>(3)</sup>
24	Vanadium	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>(3)</sup>
25	Xylene	1) Bag Sampling, Gas Chromatographic Method <sup>(3)</sup> 2) Adsorption Sampling, Gas Chromatographic Method <sup>(3)</sup>

สิ่งบ่งชี้หรือวัตถุที่ไม่ใช่แล้ว จำนวน 35 รายการ

ลำดับ	สารมลพิษ	วิธีวิเคราะห์
1	Aldrin	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(3,9,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup>
2	Antimony	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3,6,14)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>
3	Arsenic	1) Waste Extraction, Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>(3,6,14)</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3,6,14)</sup> 3) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>(7,14)</sup> 4) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>
4	Barium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3,6,14)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>
5	Beryllium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3,6,14)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>
6	Cadmium	1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method <sup>(3,6,15)</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3,6,14)</sup> 3) Digestion, Flame Atomic Absorption Spectrometric Method <sup>(1,15)</sup> 4) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>
7	Chlordane	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(3,9,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup>

8 Chromium...

ลำดับ	สารมลพิษ	วิธีวิเคราะห์
8	Chromium	1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method <sup>(3,6,15)</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3,6,14)</sup> 3) Digestion, Flame Atomic Absorption Spectrometric Method <sup>(1,15)</sup> 4) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>
9	Chromium (III)	1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method; Waste Extraction, Colorimetric Method; Calculation <sup>(3,6,15,17)</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method; Waste Extraction, Colorimetric Method; Calculation <sup>(3,6,14,17)</sup> 3) Digestion, Flame Atomic Absorption Spectrometric Method; Alkaline Digestion, Colorimetric Method; Calculation <sup>(7,6,13,17)</sup> 4) Digestion, Inductively Coupled Plasma Method; Alkaline Digestion, Colorimetric Method; Calculation <sup>(7,6,14,17)</sup>
10	Chromium (VI)	1) Waste Extraction, Colorimetric Method <sup>(3,17)</sup> 2) Alkaline Digestion, Colorimetric Method <sup>(8,17)</sup>
11	Cobalt	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3,6,14)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>
12	Copper	1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method <sup>(3,6,15)</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3,6,14)</sup> 3) Digestion, Flame Atomic Absorption Spectrometric Method <sup>(1,15)</sup> 4) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>
13	2,4-D	1) Waste Extraction, Gas Chromatographic Method <sup>(3,9,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup>
14	DDD	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(3,9,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup>

15 DDE...

ลำดับ	สารมลพิษ	วิธีวิเคราะห์
15	DDE	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(3,9,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup>
16	DDT	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(3,9,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup>
17	Dieldrin	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(3,9,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup>
18	Endrin	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(3,9,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup>
19	Heptachlor	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(3,9,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup>
20	Lead	1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method <sup>(3,6,15)</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3,6,14)</sup> 3) Digestion, Flame Atomic Absorption Spectrometric Method <sup>(7,15)</sup> 4) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>
21	Lindane	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(3,9,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup>
22	Mercury	1) Waste Extraction, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>(3,19)</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3,6,14)</sup> 3) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>(1,19)</sup> 4) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>

Mercury (Hg)...

ลำดับ	สารมลพิษ	วิธีวิเคราะห์
22	Mercury (Hg)	5) Thermal Decomposition Amalgamation and Atomic Absorption Spectrometric Method <sup>(20)</sup>
23	Methoxychlor	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(3,9,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup>
24	Molybdenum	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3,6,14)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>
25	Nickel	1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method <sup>(3,6,15)</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3,6,14)</sup> 3) Digestion, Flame Atomic Absorption Spectrometric Method <sup>(7,15)</sup> 4) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>
26	Polychlorinated Biphenyls - Aroclor 1016 - Aroclor 1221 - Aroclor 1232 - Aroclor 1242 - Aroclor 1248 - Aroclor 1254 - Aroclor 1260 - 2-Chlorobiphenyl - 2,3-Dichlorobiphenyl - 2,2',5-Trichlorobiphenyl - 2,4',5-Trichlorobiphenyl - 2,2',3,5'-Tetrachlorobiphenyl - 2,2',5,5'-Tetrachlorobiphenyl - 2,3',4,4'-Tetrachlorobiphenyl - 2,2',3,4,5'-Pentachlorobiphenyl - 2,2',4,5,5'-Pentachlorobiphenyl - 2,3,3',4',6'-Pentachlorobiphenyl	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(3,9,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup>

Polychlorinated Biphenyls (PCB)...

ลำดับ	สารพิษ	วิธีวิเคราะห์
27	Polychlorinated Biphenyls(๓๑) - 2,2',3,4,4',5'- Hexachlorobiphenyl - 2,2',3,4,5,5'- Hexachlorobiphenyl - 2,2',3,5,5',6'- Hexachlorobiphenyl - 2,2',4,4',5,5'- Hexachlorobiphenyl - 2,2',3,3',4,4',5'- Heptachlorobiphenyl - 2,2',3,4,4',5,5'- Heptachlorobiphenyl - 2,2',3,4,4',5,6'- Heptachlorobiphenyl - 2,2',3,4',5,5',6'- Heptachlorobiphenyl - 2,2',3,3',4,4',5,5',6'- Nonachlorobiphenyl Pentachlorophenol	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(3,9,28)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(9,28)</sup> Electrometric Method <sup>(3,32)</sup> 3) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>(3,6,21)</sup> 4) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3,6,14)</sup> 5) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>(7,21)</sup> 6) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup> 7) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3,6,14)</sup> 8) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup> 9) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3,6,14)</sup> 10) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>
28	pH	
29	Selenium	1) Waste Extraction, Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>(3,6,21)</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3,6,14)</sup> 3) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>(7,21)</sup> 4) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>
30	Silver	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3,6,14)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>
31	Thallium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3,6,14)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>

32 Toxaphene...

ลำดับ	สารพิษ	วิธีวิเคราะห์
32	Toxaphene	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method <sup>(3,9,28)</sup> 2) Ultrasonic Extraction, Gas Chromatographic Method <sup>(9,28)</sup>
33	Trichloroethylene	1) Waste Extraction, Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(3,12,27)</sup> 2) Waste Extraction, Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(3,12,27)</sup> 3) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(3,27)</sup> 4) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(3,27)</sup>
34	Vanadium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3,6,14)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>
35	Zinc	1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method <sup>(3,6,15)</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>(3,6,14)</sup> 3) Digestion, Flame Atomic Absorption Spectrometric Method <sup>(7,15)</sup> 4) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>

สิ้น จำนวน 125 รายการ

ลำดับ	สารพิษ	วิธีวิเคราะห์
1	Acenaphthene	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,28)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
2	Acetone	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(3,27)</sup>
3	Aldrin	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,28)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
4	Anthracene	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,28)</sup>

Anthracene (๓๒)...

ลำดับ	สารพิษ	วิธีวิเคราะห์
4	Anthracene (๓๑)	2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
5	Antimony	Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>
6	Arsenic	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>(7,14)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>
7	Atrazine	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
8	Barium	Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>
9	Benz(a)anthracene	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,28)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
10	Benzene	1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(12,27)</sup> 2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(11,27)</sup>
11	Benzo(b)fluoranthene	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,28)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
12	Benzo(k)fluoranthene	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,28)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
13	Benzoic acid	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
14	Benzo(a)pyrene	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,28)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
15	Benzo(g,h,i)perylene	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,28)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
16	Beryllium	Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>

17 Bis(2-chloroethyl)ether...

ลำดับ	สารพิษ	วิธีวิเคราะห์
17	Bis(2-chloroethyl)ether	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
18	Bis(2-ethylhexyl)phthalate	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
19	Bromodichloromethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(12,27)</sup>
20	Bromoform	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(12,27)</sup>
21	Butanol	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(12,27)</sup>
22	Butyl benzyl phthalate	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
23	Cadmium	1) Digestion, Flame Atomic Absorption Spectrometric Method <sup>(7,13)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>
24	Carbazole	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(12,28)</sup>
25	Carbon disulfide	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(12,27)</sup>
26	Carbon tetrachloride	1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(12,27)</sup> 2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(12,27)</sup>
27	Chlordane	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,28)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
28	p-Chloroaniline	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
29	Chlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(12,27)</sup>
30	Chlorodibromomethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(12,27)</sup>
31	Chloroform	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(12,27)</sup>
32	2-Chlorophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>

33 Chromium...

ลำดับ	สารมลพิษ	วิธีวิเคราะห์
33	Chromium	1) Digestion, Flame Atomic Absorption Spectrometric Method <sup>(7,13)</sup>
34	Chromium (III)	2) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup> 1) Digestion, Flame Atomic Absorption Spectrometric Method; Alkaline Digestion, Colorimetric Method; Calculation <sup>(7A,15,17)</sup> 2) Digestion, Inductively Coupled Plasma Method; Alkaline Digestion, Colorimetric Method; Calculation <sup>(7A,14,17)</sup>
35	Chromium (VI)	Alkaline Digestion, Colorimetric Method <sup>(8,17)</sup>
36	Chrysene	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
37	Cyanide	Extraction, Distillation, Colorimetric Method <sup>(29,30)</sup>
38	2,4-D	Ultrasonic Extraction, Gas Chromatographic Method <sup>(26)</sup>
39	DDD	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
40	DDE	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
41	DDT	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
42	Dibenz(a,h)anthracene	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
43	Di-n-butyl phthalate	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
44	1,2-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup>

45 1,3-Dichlorobenzene...

ลำดับ	สารมลพิษ	วิธีวิเคราะห์
45	1,3-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup>
46	1,4-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup>
47	3,3'-Dichlorobenzidine	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
48	1,1-Dichloroethane	1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup> 2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(11,27)</sup>
49	1,2-Dichloroethane	1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup> 2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(11,27)</sup>
50	1,1-Dichloroethylene	1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup> 2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(11,27)</sup>
51	cis-1,2-Dichloroethylene	1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup> 2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(11,27)</sup>
52	trans-1,2-Dichloroethylene	1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup> 2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(11,27)</sup>
53	2,4-Dichlorophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
54	1,2-Dichloropropane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup>
55	1,3-Dichloropropane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup>
56	1,3-Dichloropropene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup>
57	Dieldrin	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>

58 Diethyl phthalate...

ลำดับ	สารมลพิษ	วิธีวิเคราะห์
58	Diethyl phthalate	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
59	2,4-Dimethylphenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
60	2,4-Dinitrophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
61	2,4-Dinitrotoluene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
62	2,6-Dinitrotoluene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
63	Di-n-Octyl phthalate	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
64	Endosulfan	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
65	Endrin	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
66	Ethylbenzene	1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup> 2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(11,27)</sup>
67	Fluoranthene	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
68	Fluorene	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
69	Heptachlor	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
70	Heptachlor epoxide	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup>

Heptachlor epoxide (He)...

ลำดับ	สารมลพิษ	วิธีวิเคราะห์
70	Heptachlor epoxide (He)	2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
71	Hexachlorobenzene	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
72	Hexachloro-1,3-butadiene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup>
73	n-Hexane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup>
74	α-HCH	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
75	β-HCH	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
76	γ-HCH	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
77	Hexachlorocyclopentadiene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
78	Hexachloroethane	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
79	Indeno(1,2,3-cd)pyrene	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
80	Isophorone	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(10,28)</sup>
81	Lead	1) Digestion, Flame Atomic Absorption Spectrometric Method <sup>(7,15)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>
82	Manganese	1) Digestion, Flame Atomic Absorption Spectrometric Method <sup>(7,15)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>

83 Mercury...

ลำดับ	สารเคมี	วิธีวิเคราะห์
83	Mercury	1) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[9]</sup> 2) Thermal Decomposition Amalgamation and Atomic Absorption Spectrometric Method <sup>[20]</sup>
84	Methanol	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[3,27]</sup>
85	Methoxychlor	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>[10,23]</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[10,28]</sup>
86	Methyl bromide	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[3,27]</sup>
87	Methylene chloride	1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[3,27]</sup> 2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>[11,27]</sup>
88	2-Methylphenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[9,28]</sup>
89	2-Methylnaphthalene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[10,28]</sup>
90	Methyl tert-butyl ether	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[3,27]</sup>
91	Naphthalene	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>[10,23]</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[9,28]</sup>
92	Nickel	1) Digestion, Flame Atomic Absorption Spectrometric Method <sup>[7,15]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[7,14]</sup>
93	Nitrobenzene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[9,28]</sup>
94	N-Nitrosodiphenylamine	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[9,28]</sup>
95	N-Nitrosodi-n-propylamine	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[9,28]</sup>
96	Polychlorinated Biphenyls - Aroclor 1016	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>[10,28]</sup>

Polychlorinated Biphenyls(คอป)

ลำดับ	สารมลพิษ	วิธีวิเคราะห์
96	<p>Polychlorinated Biphenyls(๕๑)</p> <ul style="list-style-type: none"> <li>- Aroclor 1221</li> <li>- Aroclor 1232</li> <li>- Aroclor 1242</li> <li>- Aroclor 1248</li> <li>- Aroclor 1254</li> <li>- Aroclor 1260</li> </ul> <p>Polychlorinated Biphenyls</p> <ul style="list-style-type: none"> <li>- 2-Chlorobiphenyl</li> <li>- 2,3-Dichlorobiphenyl</li> <li>- 2,2',5-Trichlorobiphenyl</li> <li>- 2,4',5-Trichlorobiphenyl</li> <li>- 2,2',3,5-Tetrachlorobiphenyl</li> <li>- 2,2',5,5'-Tetrachlorobiphenyl</li> <li>- 2,3',4,4'-Tetrachlorobiphenyl</li> <li>- 2,2',3,4,5-</li> </ul> <p>Pentachlorobiphenyl</p> <ul style="list-style-type: none"> <li>- 2,2',4,5,5'-</li> </ul> <p>Pentachlorobiphenyl</p> <ul style="list-style-type: none"> <li>- 2,3,3',4',6-</li> </ul> <p>Pentachlorobiphenyl</p> <ul style="list-style-type: none"> <li>- 2,2',3,4,4',5-</li> </ul> <p>Hexachlorobiphenyl</p> <ul style="list-style-type: none"> <li>- 2,2',3,4,5,5'-</li> </ul> <p>Hexachlorobiphenyl</p> <ul style="list-style-type: none"> <li>- 2,2',3,5,5',6-</li> </ul> <p>Hexachlorobiphenyl</p> <ul style="list-style-type: none"> <li>- 2,2',4,4',5,5'-</li> </ul> <p>Hexachlorobiphenyl</p> <ul style="list-style-type: none"> <li>- 2,2',3,3',4,4',5-</li> </ul> <p>Heptachlorobiphenyl</p> <ul style="list-style-type: none"> <li>- 2,2',3,4,4',5,5'-</li> </ul> <p>Heptachlorobiphenyl</p> <ul style="list-style-type: none"> <li>- 2,2',3,4,4',5,6-</li> </ul> <p>Heptachlorobiphenyl</p> <ul style="list-style-type: none"> <li>- 2,2',3,4',5,5',6-</li> </ul> <p>Heptachlorobiphenyl</p> <ul style="list-style-type: none"> <li>- 2,2',3,3',4,4',5,5',6-</li> </ul> <p>Nonachlorobiphenyl</p>	<p>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method<sup>[10,126]</sup></p> <p>Ultrasonic Extraction, Gas Chromatographic Method<sup>[10,240]</sup></p>

97 Pentachlorophenol

ลำดับ	สารมลพิษ	วิธีวิเคราะห์
97	Pentachlorophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(15,28)</sup>
98	Phenanthrene	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(18,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(15,28)</sup>
99	Phenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(15,28)</sup>
100	Pyrene	1) Ultrasonic Extraction, Gas Chromatographic Method <sup>(18,23)</sup> 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(15,28)</sup>
101	Selenium	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>(7,21)</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>
102	Silver	Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>
103	Styrene	1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup> 2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(1,27)</sup>
104	1,1,2,2-Tetrachloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup>
105	Tetrachloroethylene	1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup> 2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(1,27)</sup>
106	Toluene	1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,27)</sup> 2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(1,27)</sup>
107	Toxaphene	Ultrasonic Extraction, Gas Chromatographic Method <sup>(19,23)</sup>
108	TPH (C <sub>5</sub> -C <sub>6</sub> )	1) Purge and Trap, Gas Chromatographic Method <sup>(13,22)</sup> 2) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(13,22)</sup>
109	TPH (C <sub>8</sub> -C <sub>16</sub> )	Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,22)</sup>
110	TPH (C <sub>&gt;16</sub> -C <sub>35</sub> )	Ultrasonic Extraction, Gas Chromatographic Method <sup>(10,22)</sup>

111 1,2,4-Trichlorobenzene.

ลำดับ	สารมลพิษ	วิธีการตรวจ
111	1,2,4-Trichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(1,2,7)</sup>
112	1,1,1-Trichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(1,2,7)</sup>
113	1,1,2-Trichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(1,3,7)</sup>
114	Trichloroethylene	1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(1,2,7)</sup> 2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(1,2,7)</sup>
115	2,4,5-Trichlorophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(6,28)</sup>
116	2,4,6-Trichlorophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>(6,28)</sup>
117	1,3,5-Trimethylbenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(1,2,7)</sup>
118	Vanadium	Digestion, Inductively Coupled Plasma Method <sup>(7,14)</sup>
119	Vinyl acetate	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(1,2,7)</sup>
120	Vinyl chloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(1,2,7)</sup>
121	m-Xylene	1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(1,2,7)</sup> 2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(1,2,7)</sup>
122	o-Xylene	1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(1,2,7)</sup> 2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(1,2,7)</sup>
123	p-Xylene	1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(1,2,7)</sup> 2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(1,2,7)</sup>
124	Xylene (Total)	1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>(1,2,7)</sup> 2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>(1,2,7)</sup>

125 Zinc.

ลำดับ	สารเคมี	วิธีวิเคราะห์
125	Zinc	1) Digestion, Flame Atomic Absorption Spectrometric Method <sup>[13]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[7,14]</sup>

## เอกสารอ้างอิง

- กระทรวงอุตสาหกรรม: ประกาศกระทรวงอุตสาหกรรม, พ.ศ. 2549. เรื่อง กำหนดค่าปริมาณธาตุหนักที่เจือปนในอากาศที่ระบายออกจากรถยนต์ของรถยนต์ที่ใช้เครื่องยนต์เป็นเชื้อเพลิง. ราชกิจจานุเบกษา. 4 ธันวาคม 2549. เล่มที่ 123 ตอนพิเศษ 1254.
- สมาคมวิศวกรรมสิ่งแวดล้อมแห่งประเทศไทย. คู่มือวิเคราะห์น้ำเสีย. พิมพ์ครั้งที่ 4. กรุงเทพฯ: เรือนแก้วการพิมพ์, 2547.
- กระทรวงอุตสาหกรรม: ประกาศกระทรวงอุตสาหกรรม, พ.ศ. 2566. เรื่อง การจัดการสิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว. ราชกิจจานุเบกษา. 31 พฤษภาคม 2566. เล่มที่ 140 ตอนพิเศษ 126 4.
- APHA, AWWA, WEF. Standard Methods for the Examination of Water and Wastewater. 24<sup>th</sup> ed. Washington, DC: APHA, 2023.
- United States Environmental Protection Agency. Standards of Performance for New Stationary Sources. 40 CFR 60. Appendix A, 2020.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. SW-846, 2014.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. Acid Digestion of Sediments, Sludges, and Soils. SW-846 Method 3050B, 1996.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. Alkaline Digestion for Hexavalent Chromium. SW-846 Method 3060A, 1996.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste 3. Physical/Chemical Methods. Separatory Funnel Liquid-Liquid Extraction. SW-846 Method 3510C, 1996.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. Ultrasonic Extraction. SW-846 Method 3550C, 2007.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. Volatile Organic Compounds in Various Sample Matrices Using Equilibrium Headspace Analysis. SW-846 Method 5021A, 2014.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. Purge and Trap for Aqueous Samples. SW-846 Method 5030C, 2003.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. Closed System Purge and Trap and Extraction for Volatile Organics in Soil and Waste Sample. SW-846 Method 5035A, 2000.
- United States...

- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. Inductively Coupled Plasma-Optical Emission Spectrometry. SW-846 Method 6010D, 2014.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. Flame Atomic Absorption Spectrophotometry. SW-846 Method 7000B, 2007.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. Arsenic (Atomic Absorption, Gaseous Hydride). SW-846 Method 7061A, 1992.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. Chromium, Hexavalent (Colorimetric). SW-846 Method 7196A, 1992.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. Mercury in Liquid Waste (Manual Cold Vapor Technique). SW-846 Method 7470A, 1994.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique). SW-846 Method 7471B, 1998.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. Mercury in Solids and Solutions by Thermal Decomposition, Amalgamation, and Atomic Absorption Spectrophotometry. SW-846 Method 7473, 2007.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. Selenium (Atomic Absorption, Borohydride Reduction). SW-846 Method 7742, 1994.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. Nonhalogenated Organics Using GC/FID. SW-846 Method 8015D, 2003.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. Organochlorine Pesticides by Gas Chromatography. SW-846 Method 8081B, 2007.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. Polychlorinated Biphenyls (PCBs) by Gas Chromatography. SW-846 Method 8082A, 2007.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. Organochlorine Pesticides by Gas Chromatography. SW-846 Method 8081B, 2007.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. Chlorinated Herbicides by GC Using Methylation or Pentafluorobenzoylation Derivatization. SW-846 Method 8151A, 1996.
- United States...

- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. Volatile Organic Compounds by Gas Chromatography/ Mass Spectrometry. SW-846 Method 8260D, 2018.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry. SW-846 Method 8270E, 2018.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. Cyanide Extraction Procedure for Solids and Oils. SW-846 Method 9013A, 2014.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. Cyanide in Waters and Extracts using Titrimetric and Manual Spectrophotometric Procedures. SW-846 Method 9014, 2014.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. pH Electrometric Measurement. SW-846 Method 9040C, 2004.
- United States Environmental Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. Soil and Waste pH. SW-846 Method 9045D, 2004.

