

ภาคผนวก ง

ใบรับรองผลการตรวจวัดและวิเคราะห์คุณภาพสิ่งแวดล้อม

ใบรับรองผลการตรวจวัดคุณภาพอากาศจากปล่องระบายอากาศ

**SECOT CO., LTD.**

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพฯ 10800

239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envserv@secot.co.th

STACK EMISSION ANALYSIS REPORT

CLIENT NAME : Fuji Nihon Thai Inulin Co., Ltd. **REF. NO.** : Inulin-222049-Cert-Stack/Spray Dryer Burner (May2022)

SAMPLING BY : SECOT Co., Ltd. **SAMPLING DATE** : 06/05/2022

RECEIVED DATE : 07/05/2022 **ANALYTICAL DATE** : 09,11/05/2022

REPORT DATE : 13/05/2022 **SAMPLE CONDITION** : Normal

STACK LOCATION : Spray Dryer Burner **SITE OPERATOR** : Mr. Pisanu Seenampeng

SOURCE DESCRIPTION : Combustion **FUEL TYPE** : LPG

STACK DESCRIPTION

Height : 7.3 m **Flow Rate^{1/}** : 6.2 Ncu.m/min

Diameter : 0.2 m **Excess Oxygen** : 14.6 %

Temperature : 166.0 °C **Moisture Content** : 10.7 %

Gas Velocity : 5.4 m/s

PARAMETER	UNIT	RESULTS ^{1/}		STANDARD ^{2/}	ASSIGNED	REFERENCE
		14.6%O ₂	7.0%O ₂	7.0%O ₂	VALUE ^{3/}	METHOD
Sulfur Dioxide (SO ₂)	ppm	ND (<1.9)	ND (<4.2)	60	6	U.S. EPA Method 6
Oxides of Nitrogen (NO _x)	ppm	8.3	18.4	200	100	U.S. EPA Method 7

Phatchara Samanchan

(Miss Phatchara Samanchan)

Analyst

REG.NO. 7-239-ก-8183

Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

REG.NO. 7-239-ก-6419

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.4. ^{2/} Notification of the Ministry of Natural Resource and Environment B.E.2549 (2006).5. ^{3/} The value was assigned in EIA report.

6. ND means Non-detectable.

**SECOT CO., LTD.**

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพฯ 10800

239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envserv@secot.co.th

STACK EMISSION ANALYSIS REPORT

CLIENT NAME : Fuji Nihon Thai Inulin Co., Ltd. **REF. NO.** : Inulin-222049-Cert-Stack/Wet Scrubber (May2022)

SAMPLING BY : SECOT Co., Ltd. **SAMPLING DATE** : 06/05/2022

RECEIVED DATE : 07/05/2022 **ANALYTICAL DATE** : 09-10/05/2022

REPORT DATE : 20/05/2022 **SAMPLE CONDITION** : Normal

STACK LOCATION : Wet Scrubber **SITE OPERATOR** : Mr. Pisanu Seenampeng

SOURCE DESCRIPTION : Process

STACK DESCRIPTION

Height : 25.4 m **Flow Rate**^{1/} : 1,072 Ncu.m/min

Diameter : 1.6 m **Excess Oxygen** : 20.9 %

Temperature : 52.0 °C **Moisture Content** : 4.1 %

Gas Velocity : 10.2 m/s

PARAMETER	UNIT	RESULTS ^{1/}	STANDARD ^{2/}	ASSIGNED VALUE ^{3/}	REFERENCE METHOD
Particulate Matter (PM)	mg/Ncu.m	7.6	400	148	U.S. EPA Method 5

Phatchara Samanchan

(Miss Phatchara Samanchan)

Analyst

REG.NO.จ-239-จ-8183

Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

REG.NO.จ-239-ท-6419

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.4. ^{2/} Notification of the Ministry of Natural Resource and Environment B.E.2549 (2006).5. ^{3/} The value was assigned in EIA report.

**SECOT CO., LTD.**

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพฯ 10800

239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envserv@secot.co.th

STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: Fuji Nihon Thai Inulin Co., Ltd.	REF. NO.	: Inulin-222049-Cert-Stack/Boiler (May2022)
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 06/05/2022
RECEIVED DATE	: 07/05/2022	ANALYTICAL DATE	: 09,11/05/2022
REPORT DATE	: 13/05/2022	SAMPLE CONDITION	: Normal
STACK LOCATION	: Boiler	SITE OPERATOR	: Mr. Pisanu Seenampeng
SOURCE DESCRIPTION	: Combustion	FUEL TYPE	: LPG

STACK DESCRIPTION

Height	: 5.0 m	Flow Rate ^{1/}	: 115.5 Nm ³ /min
Diameter	: 0.8 m	Excess Oxygen	: 4.5 %
Temperature	: 85.0 °C	Moisture Content	: 7.9 %
Gas Velocity	: 4.9 m/s		

PARAMETER	UNIT	RESULTS ^{1/}		STANDARD ^{2/}	REFERENCE METHOD
		4.5%O ₂	7.0%O ₂	7.0%O ₂	
Sulfur Dioxide (SO ₂)	ppm	ND (<1.9)	ND (<1.6)	60	U.S. EPA Method 6
Oxides of Nitrogen (NO _x)	ppm	14.3	12.2	200	U.S. EPA Method 7

Phatchara Samanchan

(Miss Phatchara Samanchan)

Analyst

REG.NO.จ-239-ก-8183

Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

REG.NO.จ-239-ก-6419

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.4. ^{2/} Notification of the Ministry of Natural Resource and Environment B.E.2549 (2006).

5. ND means Non-detectable.

ใบรับรองผลการตรวจวัดคุณภาพอากาศในบรรยากาศ



Meteorological Monitoring Results : Wind Rose MTR-Inulin

Location : Than Thip Village

Monitor period : 04-11 May 2022

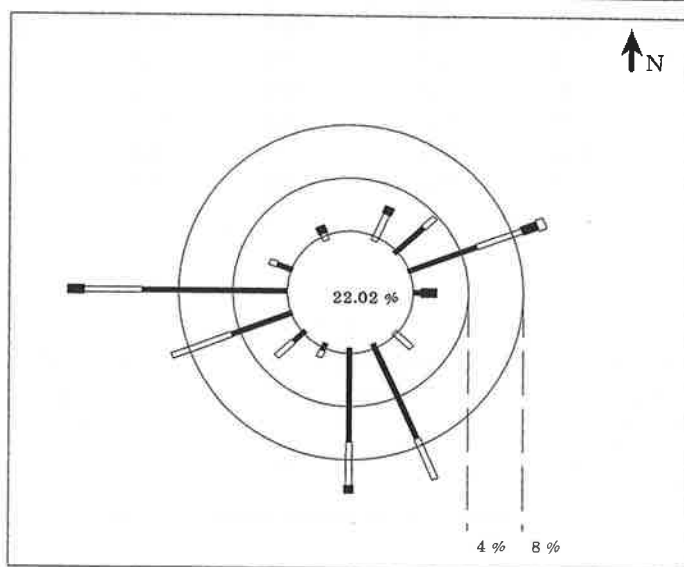
Wind Speed Model : NRG Symphonie

Serial No : 17112002

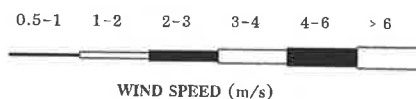
Wind Direction Model : NRG Symphonie

Serial No : 17112002

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNE	0.0000	0.0238	0.0060	0.0000	0.0000	0.0000	0.0298
NE	0.0298	0.0119	0.0000	0.0000	0.0000	0.0000	0.0417
ENE	0.0536	0.0357	0.0119	0.0060	0.0000	0.0000	0.1071
E	0.0060	0.0000	0.0119	0.0000	0.0000	0.0000	0.0179
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0000	0.0179	0.0000	0.0000	0.0000	0.0000	0.0179
SSE	0.0833	0.0357	0.0000	0.0000	0.0000	0.0000	0.1190
S	0.0774	0.0357	0.0060	0.0000	0.0000	0.0000	0.1190
SSW	0.0060	0.0060	0.0000	0.0000	0.0000	0.0000	0.0119
SW	0.0119	0.0179	0.0000	0.0000	0.0000	0.0000	0.0298
WSW	0.0476	0.0476	0.0000	0.0000	0.0000	0.0000	0.0952
W	0.1071	0.0417	0.0119	0.0000	0.0000	0.0000	0.1607
WNW	0.0119	0.0060	0.0000	0.0000	0.0000	0.0000	0.0179
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0060	0.0060	0.0000	0.0000	0.0000	0.0119
CALM	0.2202						



Application : WindPro Ver.1.0

Control : 16 Direction Calculation With
Calm Wind < 0.5 m/sData Unit : Direction in Deg.
Wind Speed in m/sNOTE : Frequencies indicate direction from which
the wind is blowing

File Control : R:\Database\Windrose\FileControl\Win-222049-Thanthip Village\04-11 May 2022

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-Inulin

Location : Than Thip Village

Monitor period : 04-11 May 2022

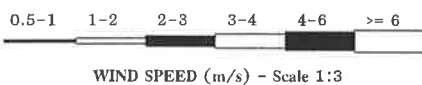
Wind Speed Model : NRG Symphonie

Serial No : 17112002

Wind Direction Model : NRG Symphonie

Serial No : 17112002

Time	04-05 May 2022		05-06 May 2022		06-07 May 2022		07-08 May 2022	
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD
10:00 - 11:00	2.3	NNW	2.0	E	0.4	W	0.3	W
11:00 - 12:00	1.6	WSW	1.4	ENE	0.5	WSW	0.5	W
12:00 - 13:00	1.6	N	1.5	NNW	0.3	ENE	0.5	W
13:00 - 14:00	1.9	SW	0.5	SSE	0.2	ESE	0.5	W
14:00 - 15:00	1.5	WSW	0.6	SSE	0.2	ESE	0.5	S
15:00 - 16:00	1.2	WSW	0.9	W	0.1	ESE	0.6	S
16:00 - 17:00	0.7	WSW	1.7	SSE	0.5	ESE	0.7	S
17:00 - 18:00	0.5	WSW	1.5	WSW	0.5	S	0.3	S
18:00 - 19:00	0.5	WSW	0.9	WSW	0.3	W	0.1	S
19:00 - 20:00	0.9	WSW	0.8	WSW	0.4	S	0.6	SSE
20:00 - 21:00	1.0	W	1.0	W	0.7	W	0.3	SE
21:00 - 22:00	0.2	WSW	0.8	SSE	0.5	W	0.2	WSW
22:00 - 23:00	0.5	WSW	0.5	SSE	1.0	ENE	0.8	ENE
23:00 - 24:00	0.3	WSW	0.6	SSE	1.0	S	0.5	S
00:00 - 01:00	0.4	W	0.6	NE	1.1	SSW	1.1	ENE
01:00 - 02:00	0.4	W	0.7	ENE	0.9	NE	1.8	NNE
02:00 - 03:00	0.7	WNW	0.9	WSW	1.4	SW	2.9	ENE
03:00 - 04:00	0.8	WNW	0.8	NE	1.7	NNE	1.2	S
04:00 - 05:00	0.6	W	0.8	ENE	1.4	WSW	0.5	ENE
05:00 - 06:00	0.7	WSW	1.0	S	1.7	NE	1.0	SSE
06:00 - 07:00	1.0	SW	0.6	W	1.5	SSE	0.5	NE
07:00 - 08:00	1.0	SW	0.5	W	1.5	SSE	0.6	SSE
08:00 - 09:00	1.0	WSW	0.7	SSE	1.0	W	0.6	ENE
09:00 - 10:00	1.0	NNE	0.4	S	0.6	WSW	0.7	S
Wind Rose								



File Control : R:\Database\Windrose\FileControl\Win-222049-Thanthip Village 04-11 May 2022

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-Inulin

Location : Than Thip Village

Monitor period : 04-11 May 2022

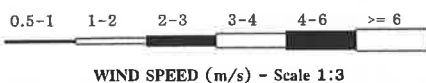
Wind Speed Model : NRG Symphonie

Serial No : 17112002

Wind Direction Model : NRG Symphonie

Serial No : 17112002

Time	08-09 May 2022		09-10 May 2022		10-11 May 2022		
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD	
10:00 - 11:00	0.8	S	0.3	S	1.3	W	
11:00 - 12:00	1.0	ENE	0.5	W	0.9	S	
12:00 - 13:00	0.7	S	0.5	SSE	1.0	S	
13:00 - 14:00	0.4	ENE	0.5	S	0.9	SSW	
14:00 - 15:00	0.1	ENE	0.5	S	1.2	S	
15:00 - 16:00	0.8	SSE	0.6	S	1.8	S	
16:00 - 17:00	0.7	SSE	0.7	E	1.7	W	
17:00 - 18:00	0.8	W	0.3	E	1.1	W	
18:00 - 19:00	0.7	W	0.1	S	2.0	WNW	
19:00 - 20:00	0.3	W	0.6	W	1.0	S	
20:00 - 21:00	0.6	W	0.3	WSW	0.9	SW	
21:00 - 22:00	0.8	W	0.2	WSW	0.4	SE	
22:00 - 23:00	0.5	SSE	0.8	ENE	1.9	SSE	
23:00 - 24:00	1.0	S	0.5	ENE	2.9	NNE	
00:00 - 01:00	0.6	S	1.1	ENE	2.9	S	
01:00 - 02:00	0.6	SSE	1.8	NNE	2.9	E	
02:00 - 03:00	1.4	SE	2.9	ENE	3.2	ENE	
03:00 - 04:00	1.7	SE	1.2	ENE	1.4	S	
04:00 - 05:00	1.4	NE	0.5	ENE	1.3	S	
05:00 - 06:00	1.7	SE	1.0	SSE	1.0	NE	
06:00 - 07:00	1.5	WSW	0.9	WSW	2.4	W	
07:00 - 08:00	1.5	WSW	0.8	SSE	2.2	W	
08:00 - 09:00	1.0	W	1.7	W	2.0	W	
09:00 - 10:00	0.6	SSE	1.1	W	1.3	W	
Wind Rose							



File Control :R:\Database\Windrose\FileControl\Win-222049-Thanthip Village 04-11 May 2022

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-Inulin

Location : Rang Wan Temple Area

Monitor period : 04-11 May 2022

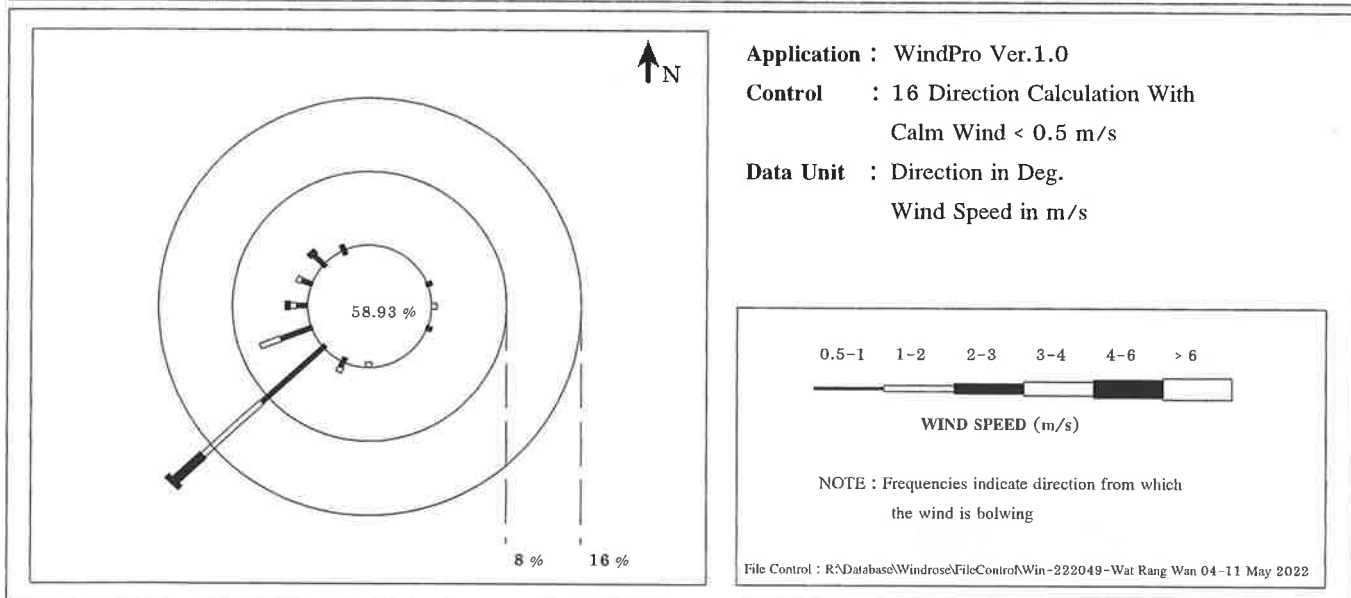
Wind Speed Model : NRG Symphonic

Serial No : 15102802

Wind Direction Model : NRG Symphonic

Serial No : 15102802

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0060	0.0000	0.0000	0.0000	0.0000	0.0000	0.0060
E	0.0000	0.0060	0.0000	0.0000	0.0000	0.0000	0.0060
ESE	0.0060	0.0000	0.0000	0.0000	0.0000	0.0000	0.0060
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
S	0.0000	0.0060	0.0000	0.0000	0.0000	0.0000	0.0060
SSW	0.0119	0.0060	0.0000	0.0000	0.0000	0.0000	0.0179
SW	0.0952	0.0893	0.0417	0.0000	0.0060	0.0000	0.2321
WSW	0.0357	0.0238	0.0000	0.0000	0.0000	0.0000	0.0595
W	0.0119	0.0060	0.0060	0.0000	0.0000	0.0000	0.0238
WNW	0.0119	0.0060	0.0000	0.0000	0.0000	0.0000	0.0179
NW	0.0179	0.0000	0.0060	0.0000	0.0000	0.0000	0.0238
NNW	0.0119	0.0000	0.0000	0.0000	0.0000	0.0000	0.0119
CALM	0.5893						



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-Inulin

Location : Rang Wan Temple Area

Monitor period : 04-11 May 2022

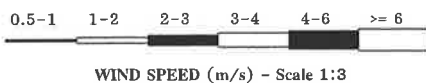
Wind Speed Model : NRG Symphonie

Serial No : 15102802

Wind Direction Model : NRG Symphonie

Serial No : 15102802

Time	04-05 May 2022		05-06 May 2022		06-07 May 2022		07-08 May 2022	
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD
09:00 - 10:00	0.2	ESE	0.0	NNW	0.1	WSW	0.1	NW
10:00 - 11:00	0.1	WNW	0.0	ENE	0.3	SSW	0.2	NW
11:00 - 12:00	0.0	WNW	0.1	E	0.7	SW	0.6	ENE
12:00 - 13:00	0.0	WNW	0.0	E	0.4	NW	2.6	NW
13:00 - 14:00	0.0	WNW	0.4	SSW	0.2	NNW	0.5	NW
14:00 - 15:00	0.2	WNW	0.2	SSW	0.0	NW	0.3	WNW
15:00 - 16:00	0.1	WNW	0.0	WNW	1.9	W	2.5	W
16:00 - 17:00	0.0	NNE	0.1	SSW	0.5	WNW	1.0	E
17:00 - 18:00	0.0	NNE	0.4	SW	0.2	N	0.1	NW
18:00 - 19:00	0.0	NNE	0.0	SSW	0.0	NNW	0.0	NW
19:00 - 20:00	0.1	NW	0.0	WNW	0.0	NW	0.1	NW
20:00 - 21:00	0.4	SW	0.0	W	0.0	NNW	0.0	NNW
21:00 - 22:00	0.7	WNW	0.1	SSW	0.0	NNW	0.1	WNW
22:00 - 23:00	0.4	NW	0.2	WNW	0.0	NNW	0.1	NW
23:00 - 24:00	0.4	WNW	0.3	WNW	0.0	NNW	0.5	NW
00:00 - 01:00	0.3	W	0.3	WNW	0.1	NNW	0.4	NW
01:00 - 02:00	0.6	W	0.0	SSW	0.0	NNW	0.3	NW
02:00 - 03:00	0.7	NW	0.9	SW	0.1	NE	0.2	NW
03:00 - 04:00	0.4	NW	0.0	W	0.2	N	0.1	NNW
04:00 - 05:00	0.4	NW	0.0	NW	0.3	NNW	0.1	NNW
05:00 - 06:00	0.8	NNW	0.0	NW	0.0	NNW	0.0	W
06:00 - 07:00	0.7	NNW	0.0	NW	0.0	NNW	0.0	SW
07:00 - 08:00	0.5	NW	0.0	NNW	0.0	NW	0.2	W
08:00 - 09:00	0.6	NW	0.0	E	0.1	NW	0.6	ESE
Wind Rose								



File Control :R:\Database\Windrose\FileControl\Win-222049-Wat Rang Wan 04-11 May 2022

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-Inulin

Location : Rang Wan Temple Area

Monitor period : 04-11 May 2022

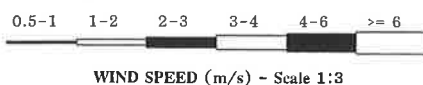
Wind Speed Model : NRG Symphonie

Serial No : 15102802

Wind Direction Model : NRG Symphonie

Serial No : 15102802

Time	08-09 May 2022		09-10 May 2022		10-11 May 2022		
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD	
09:00 - 10:00	0.3	S	1.1	SW	1.0	SW	
10:00 - 11:00	0.3	NNE	1.7	SW	0.7	SW	
11:00 - 12:00	1.7	WSW	1.5	SW	0.2	SW	
12:00 - 13:00	2.4	SW	1.7	SW	0.3	SW	
13:00 - 14:00	2.4	SW	0.6	SW	1.8	SSW	
14:00 - 15:00	2.4	SW	0.7	SW	0.8	SSW	
15:00 - 16:00	2.4	SW	0.0	SSW	1.7	SW	
16:00 - 17:00	2.6	SW	1.0	SSW	0.7	W	
17:00 - 18:00	4.0	SW	1.1	SW	0.1	W	
18:00 - 19:00	1.3	WNW	2.1	SW	0.3	W	
19:00 - 20:00	0.4	NW	1.9	SW	0.9	WSW	
20:00 - 21:00	0.5	WSW	1.1	SW	0.3	WSW	
21:00 - 22:00	0.6	SW	0.1	SW	0.3	WSW	
22:00 - 23:00	0.1	SW	1.5	SW	0.4	WSW	
23:00 - 24:00	0.4	SSW	1.0	SW	0.6	WSW	
00:00 - 01:00	0.7	SW	0.5	SW	0.5	WSW	
01:00 - 02:00	0.3	SW	1.2	SW	0.5	WSW	
02:00 - 03:00	0.5	SW	0.7	SW	0.6	WSW	
03:00 - 04:00	0.6	SW	0.6	SW	1.2	WSW	
04:00 - 05:00	0.6	SW	1.5	SW	0.2	SW	
05:00 - 06:00	0.5	SW	1.4	SW	1.3	WSW	
06:00 - 07:00	1.5	SW	2.6	SW	1.1	WSW	
07:00 - 08:00	1.9	SW	0.2	SW	0.2	SW	
08:00 - 09:00	1.8	SW	1.0	SW	1.3	S	
Wind Rose							



File Control :R:\Database\Windrose\FileControl\Win-222049-Wat Rang Wan 04-11 May 2022

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-Inulin

Location : Kosinarai Temple Area

Monitor period : 04-11 May 2022

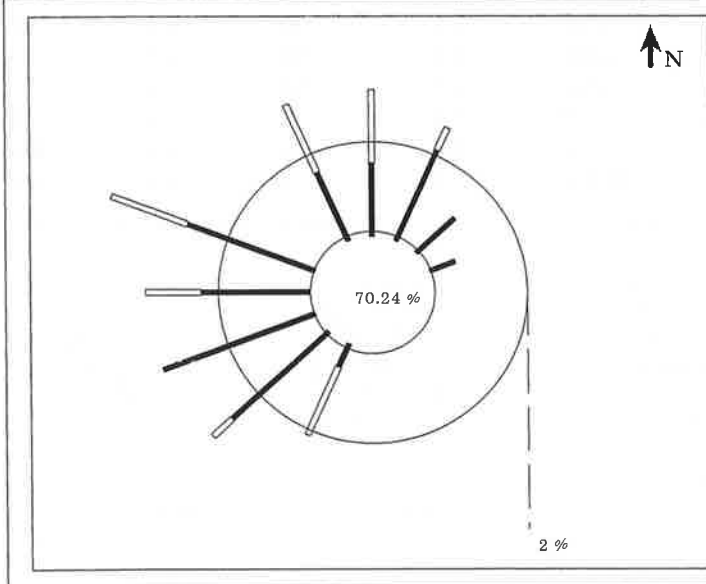
Wind Speed Model : NRG Symphonie

Serial No : 17112001

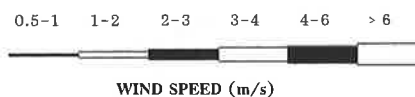
Wind Direction Model : NRG Symphonie

Serial No : 17112001

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0179	0.0179	0.0000	0.0000	0.0000	0.0000	0.0357
NNE	0.0238	0.0060	0.0000	0.0000	0.0000	0.0000	0.0298
NE	0.0119	0.0000	0.0000	0.0000	0.0000	0.0000	0.0119
ENE	0.0060	0.0000	0.0000	0.0000	0.0000	0.0000	0.0060
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
S	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSW	0.0060	0.0179	0.0000	0.0000	0.0000	0.0000	0.0238
SW	0.0298	0.0060	0.0000	0.0000	0.0000	0.0000	0.0357
WSW	0.0357	0.0000	0.0000	0.0000	0.0000	0.0000	0.0357
W	0.0238	0.0119	0.0000	0.0000	0.0000	0.0000	0.0357
WNW	0.0298	0.0179	0.0000	0.0000	0.0000	0.0000	0.0476
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0179	0.0179	0.0000	0.0000	0.0000	0.0000	0.0357
CALM	0.7024						



Application : WindPro Ver.1.0

Control : 16 Direction Calculation With
Calm Wind < 0.5 m/sData Unit : Direction in Deg.
Wind Speed in m/sNOTE : Frequencies indicate direction from which
the wind is blowing

File Control : R:\Database\Windrose\FileControl\Win-222049-Wat Kosinarai 04-11 May 2022

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-Inulin

Location : Kosinarai Temple Area

Monitor period : 04-11 May 2022

Wind Speed Model : NRG Symphonie

Serial No : 17112001

Wind Direction Model : NRG Symphonie

Serial No : 17112001

Time	04-05 May 2022		05-06 May 2022		06-07 May 2022		07-08 May 2022	
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD
11:00 - 12:00	0.1	WSW	1.3	SSW	1.0	NNW	1.3	NNW
12:00 - 13:00	0.2	SW	1.1	WNW	1.1	NNW	0.0	N
13:00 - 14:00	0.9	WNW	1.1	SSW	0.2	N	0.2	N
14:00 - 15:00	1.0	WNW	1.1	SW	0.3	NNE	0.4	N
15:00 - 16:00	0.9	WNW	1.0	WSW	0.5	N	0.3	N
16:00 - 17:00	0.6	W	0.7	WSW	0.2	N	0.3	N
17:00 - 18:00	0.3	WSW	0.6	W	0.0	N	0.1	N
18:00 - 19:00	0.3	ENE	0.4	W	0.1	N	1.1	NNE
19:00 - 20:00	0.3	W	0.1	W	0.2	N	0.2	N
20:00 - 21:00	0.3	W	0.1	W	0.1	N	0.5	N
21:00 - 22:00	0.2	WSW	0.0	WNW	0.2	NNE	0.1	NNE
22:00 - 23:00	0.4	W	0.1	N	0.2	WNW	0.4	NNW
23:00 - 24:00	0.4	W	0.2	N	0.1	WSW	0.0	N
00:00 - 01:00	0.5	SSE	0.3	N	0.1	N	0.0	N
01:00 - 02:00	0.1	ESE	0.2	N	0.1	N	0.4	W
02:00 - 03:00	0.0	ENE	0.1	N	0.0	N	0.4	W
03:00 - 04:00	0.0	ENE	0.3	N	0.3	W	0.1	WSW
04:00 - 05:00	0.0	ENE	0.4	NNE	0.2	WSW	0.3	ENE
05:00 - 06:00	0.1	NNE	0.8	NNE	0.3	NE	0.5	ENE
06:00 - 07:00	0.2	NE	0.7	NNE	0.6	NE	1.0	W
07:00 - 08:00	0.5	WSW	0.7	NNE	0.7	NE	0.4	W
08:00 - 09:00	0.9	WNW	0.2	N	0.0	W	0.6	SW
09:00 - 10:00	1.2	WNW	0.1	N	1.1	N	0.0	NNW
10:00 - 11:00	1.5	SSW	0.5	WNW	1.2	N	0.3	NNW
Wind Rose								



WIND SPEED (m/s) - Scale 1:3

File Control :R:\Database\Windrose\FileControl\Win-222049-Wat Kosinarai 04-11 May 2022

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-Inulin

Location : Kosinarai Temple Area

Monitor period : 04-11 May 2022

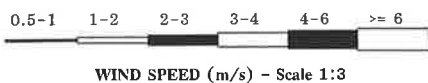
Wind Speed Model : NRG Symphonie

Serial No : 17112001

Wind Direction Model : NRG Symphonie

Serial No : 17112001

Time	08-09 May 2022		09-10 May 2022		10-11 May 2022		
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD	
11:00 - 12:00	0.6	NNW	0.2	WNW	0.2	WNW	
12:00 - 13:00	0.6	NNW	0.0	NNW	0.1	WNW	
13:00 - 14:00	0.3	NE	0.0	NNE	0.1	W	
14:00 - 15:00	0.2	ENE	0.1	NW	0.3	WSW	
15:00 - 16:00	0.9	W	0.3	NW	0.0	W	
16:00 - 17:00	0.8	SW	0.4	N	0.4	NW	
17:00 - 18:00	0.2	W	0.1	NNW	0.2	NW	
18:00 - 19:00	0.0	NNW	0.0	NNW	0.1	NW	
19:00 - 20:00	0.0	N	0.4	NNW	0.0	WNW	
20:00 - 21:00	0.0	N	1.0	NNW	0.4	WSW	
21:00 - 22:00	0.4	NNE	0.8	WSW	0.5	WNW	
22:00 - 23:00	0.3	N	0.5	SSW	0.4	WSW	
23:00 - 24:00	0.5	N	0.6	W	0.3	WSW	
00:00 - 01:00	0.9	NNE	0.5	SW	0.7	WSW	
01:00 - 02:00	1.1	N	0.5	SW	0.5	WSW	
02:00 - 03:00	0.0	N	0.4	NE	0.9	SW	
03:00 - 04:00	0.1	NNE	0.4	SW	1.1	W	
04:00 - 05:00	0.2	N	0.3	N	0.5	WSW	
05:00 - 06:00	0.4	NNE	0.0	W	0.4	WSW	
06:00 - 07:00	0.7	N	0.1	WSW	0.3	W	
07:00 - 08:00	0.4	NW	0.2	WSW	0.3	W	
08:00 - 09:00	0.3	NNW	0.5	WNW	0.0	W	
09:00 - 10:00	0.0	NNW	0.0	W	0.0	ENE	
10:00 - 11:00	0.0	NNW	0.1	W	0.9	SW	
Wind Rose							



File Control :R:\Database\Windrose\FileControl\Win-222049-Wat Kosinarai 04-11 May 2022

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพฯ 10800

239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envserv@secot.co.th

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: Fuji Nihon Thai Inulin Co., Ltd.	REFERENCE NO.	: Inulin-222049-Cert-Amb/TSP-May22
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 04-11/05/2022
RECEIVED DATE	: 12/05/2022	ANALYTICAL DATE	: 13-18/05/2022
REPORT DATE	: 20/05/2022	SAMPLE CONDITION	: Normal
STATION DESCRIPTION	: 1. Than Thip Village 2. Rang Wan Temple Area 3. Kosinarai Temple Area		

PARAMETER	SAMPLING DATE	UNITS	RESULTS			STANDARD*	REFERENCE
			1	2	3		METHODS
TSP (24 hr.)	04-05/05/2022	mg/m ³	0.069	0.066	0.065	0.330	High Volume
	05-06/05/2022	mg/m ³	0.061	0.075	0.070		Air Sampler/
	06-07/05/2022	mg/m ³	0.052	0.062	0.072		Gravimetric Method
	07-08/05/2022	mg/m ³	0.032	0.035	0.049		
	08-09/05/2022	mg/m ³	0.023	0.033	0.058		
	09-10/05/2022	mg/m ³	0.027	0.054	0.045		
	10-11/05/2022	mg/m ³	0.019	0.029	0.026		

Phatchara Samanchan

(Miss Phatchara Samanchan)

Analyst

Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. * Notification of the National Environment Board, No.24, B.E.2547.



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพฯ 10800

239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envserv@secot.co.th

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : Fuji Nihon Thai Inulin Co., Ltd. REFERENCE NO. : Inulin-222049-Cert-Amb/PM-10-May22
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 04-11/05/2022
RECEIVED DATE : 12/05/2022 ANALYTICAL DATE : 13-18/05/2022
REPORT DATE : 20/05/2022 SAMPLE CONDITION : Normal
STATION DESCRIPTION : 1. Than Thip Village
2. Rang Wan Temple Area
3. Kosinarai Temple Area

PARAMETER	SAMPLING DATE	UNITS	RESULTS			STANDARD*	REFERENCE METHODS
			1	2	3		
PM-10 (24 hr.)	04-05/05/2022	mg/m ³	0.028	0.036	0.041	0.120	High Volume
	05-06/05/2022	mg/m ³	0.031	0.052	0.051		Air Sampler/
	06-07/05/2022	mg/m ³	0.024	0.037	0.054		(Hi-Vol PM-10
	07-08/05/2022	mg/m ³	0.013	0.022	0.036		Size Selective Inlet)/
	08-09/05/2022	mg/m ³	0.011	0.018	0.037		Gravimetric Method
	09-10/05/2022	mg/m ³	0.020	0.031	0.028		
	10-11/05/2022	mg/m ³	0.009	0.021	0.018		

Phatchara Samanchan

(Miss Phatchara Samanchan)

Analyst

Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. * Notification of the National Environment Board, No.24, B.E.2547.



Ambient Air Monitoring Results : Sulfur dioxide MTR-Inulin

Location : Than Thip Village	Monitor Period : 04-11 May 2022
Analyzer Model : Teledyne T100	Station No : Shelter 1
Serial No : 2009	Site Operator : Mr.Jakree Intasan

Calibrator Model : Teledyne 700E	Serial No : 587
Calibration Gas Cylinder I.D.: EB0108319	
Certified Date : 13 Jan 2022	Cal Concentration (ppb) : 0,100,200,400
Expire Date : 12 Jan 2023	

Time	SO2 Concentration (ppm)						
	04-05 May 2022	05-06 May 2022	06-07 May 2022	07-08 May 2022	08-09 May 2022	09-10 May 2022	10-11 May 2022
10:00 - 11:00	0.0010	0.0036	0.0017	0.0013	0.0003	0.0017	0.0009
11:00 - 12:00	0.0004	0.0025	0.0010	0.0008	0.0003	0.0016	0.0014
12:00 - 13:00	0.0014	0.0026	0.0010	0.0003	0.0002	0.0017	0.0015
13:00 - 14:00	0.0075	0.0024	0.0009	0.0014	0.0009	0.0017	0.0016
14:00 - 15:00	0.0047	0.0020	0.0009	0.0013	0.0007	0.0012	0.0015
15:00 - 16:00	0.0046	0.0030	0.0008	0.0018	0.0017	0.0013	0.0015
16:00 - 17:00	0.0035	0.0030	0.0014	0.0016	0.0019	0.0016	0.0009
17:00 - 18:00	0.0031	0.0033	0.0027	0.0014	0.0015	0.0016	0.0017
18:00 - 19:00	0.0036	0.0037	0.0021	0.0017	0.0016	0.0015	0.0019
19:00 - 20:00	0.0055	0.0037	0.0024	0.0017	0.0018	0.0016	0.0019
20:00 - 21:00	0.0055	0.0037	0.0025	0.0018	0.0023	0.0019	0.0016
21:00 - 22:00	0.0043	0.0038	0.0025	0.0020	0.0019	0.0014	0.0020
22:00 - 23:00	0.0046	0.0038	0.0027	0.0017	0.0020	0.0018	0.0019
23:00 - 00:00	0.0058	0.0038	0.0022	0.0018	0.0015	0.0017	0.0019
00:00 - 01:00	0.0056	0.0041	0.0026	0.0021	0.0017	0.0021	0.0018
01:00 - 02:00	0.0020	0.0044	0.0032	0.0026	0.0021	0.0018	0.0019
02:00 - 03:00	0.0009	0.0047	0.0033	0.0026	0.0022	0.0020	0.0022
03:00 - 04:00	0.0051	0.0048	0.0032	0.0027	0.0022	0.0021	0.0025
04:00 - 05:00	0.0057	0.0048	0.0034	0.0027	0.0021	0.0022	0.0024
05:00 - 06:00	0.0054	0.0049	0.0033	0.0026	0.0024	0.0025	0.0030
06:00 - 07:00	0.0045	0.0049	0.0030	0.0029	0.0028	0.0026	0.0035
07:00 - 08:00	0.0041	0.0047	0.0023	0.0029	0.0030	0.0021	0.0029
08:00 - 09:00	0.0059	0.0035	0.0026	0.0030	0.0030	0.0032	0.0003
09:00 - 10:00	0.0059	0.0022	0.0010	0.0011	0.0019	0.0005	0.0023
Average-24Hr*	0.0042	0.0037	0.0022	0.0019	0.0018	0.0018	0.0019
Max-1Hr	0.0075	0.0049	0.0034	0.0030	0.0030	0.0032	0.0035
Min-1Hr	0.0004	0.0020	0.0008	0.0003	0.0002	0.0005	0.0003
Standard-1Hr	0.30 ppm(780 ug/cu.m)						
Standard-24Hr	0.12 ppm(300 ug/cu.m)						

Remark : * Average time between 10:00-10:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Ambient Air Monitoring Results : Sulfur dioxide MTR-Inulin

Location : Rang Wan Temple Area

Monitor Period : 04-11 May 2022

Analyzer Model : API 100A

Station No : Shelter 2

Serial No : 069

Site Operator : Mr.Jakree Intasan

Calibrator Model : Teledyne 700E

Serial No : 587

Calibration Gas Cylinder I.D.: EB0108319

Certified Date : 13 Jan 2022

Cal Concentration (ppb) : 0,100,200,400

Expire Date : 12 Jan 2023

Time	SO2 Concentration (ppm)						
	04-05 May 2022	05-06 May 2022	06-07 May 2022	07-08 May 2022	08-09 May 2022	09-10 May 2022	10-11 May 2022
09:00 - 10:00	0.0022	0.0027	0.0035	0.0037	0.0022	0.0030	0.0025
10:00 - 11:00	0.0010	0.0021	0.0037	0.0029	0.0023	0.0028	0.0025
11:00 - 12:00	0.0024	0.0024	0.0043	0.0032	0.0024	0.0025	0.0025
12:00 - 13:00	0.0023	0.0029	0.0036	0.0030	0.0026	0.0025	0.0025
13:00 - 14:00	0.0025	0.0032	0.0039	0.0029	0.0025	0.0022	0.0024
14:00 - 15:00	0.0033	0.0024	0.0034	0.0026	0.0024	0.0024	0.0027
15:00 - 16:00	0.0028	0.0024	0.0034	0.0025	0.0026	0.0024	0.0017
16:00 - 17:00	0.0028	0.0025	0.0035	0.0024	0.0026	0.0023	0.0037
17:00 - 18:00	0.0031	0.0026	0.0032	0.0029	0.0025	0.0022	0.0061
18:00 - 19:00	0.0031	0.0029	0.0040	0.0024	0.0030	0.0024	0.0031
19:00 - 20:00	0.0025	0.0036	0.0038	0.0023	0.0031	0.0026	0.0028
20:00 - 21:00	0.0031	0.0025	0.0026	0.0022	0.0024	0.0024	0.0024
21:00 - 22:00	0.0042	0.0025	0.0029	0.0020	0.0025	0.0026	0.0028
22:00 - 23:00	0.0029	0.0028	0.0024	0.0023	0.0026	0.0025	0.0024
23:00 - 00:00	0.0026	0.0022	0.0026	0.0021	0.0023	0.0025	0.0023
00:00 - 01:00	0.0026	0.0025	0.0024	0.0022	0.0022	0.0025	0.0022
01:00 - 02:00	0.0022	0.0024	0.0021	0.0020	0.0022	0.0023	0.0024
02:00 - 03:00	0.0026	0.0031	0.0022	0.0024	0.0023	0.0022	0.0024
03:00 - 04:00	0.0025	0.0034	0.0023	0.0020	0.0023	0.0022	0.0024
04:00 - 05:00	0.0026	0.0039	0.0024	0.0020	0.0024	0.0024	0.0025
05:00 - 06:00	0.0028	0.0050	0.0026	0.0021	0.0029	0.0026	0.0027
06:00 - 07:00	0.0034	0.0067	0.0028	0.0046	0.0033	0.0030	0.0048
07:00 - 08:00	0.0037	0.0068	0.0034	0.0033	0.0033	0.0037	0.0042
08:00 - 09:00	0.0034	0.0040	0.0032	0.0025	0.0036	0.0029	0.0028
Average-24Hr*	0.0028	0.0032	0.0031	0.0026	0.0026	0.0025	0.0029
Max-1Hr	0.0042	0.0068	0.0043	0.0046	0.0036	0.0037	0.0061
Min-1Hr	0.0010	0.0021	0.0021	0.0020	0.0022	0.0022	0.0017
Standard-1Hr	0.30 ppm(780 ug/cu.m)						
Standard-24Hr	0.12 ppm(300 ug/cu.m)						

Remark : * Average time between 09:00-09:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Ambient Air Monitoring Results : Sulfur dioxide MTR-Inulin

Location : Kosinarai Temple Area

Monitor Period : 04-11 May 2022

Analyzer Model : API 100A

Station No : Shelter 3

Serial No : 906

Site Operator : Mr.Jakree Intasan

Calibrator Model : Teledyne 700E

Serial No : 587

Calibration Gas Cylinder I.D.: EB0108319

Certified Date : 13 Jan 2022

Cal Concentration (ppb) : 0,100,200,400

Expire Date : 12 Jan 2023

Time	SO2 Concentration (ppm)						
	04-05 May 2022	05-06 May 2022	06-07 May 2022	07-08 May 2022	08-09 May 2022	09-10 May 2022	10-11 May 2022
11:00 - 12:00	0.0026	0.0024	0.0029	0.0028	0.0027	0.0024	0.0026
12:00 - 13:00	0.0026	0.0025	0.0027	0.0028	0.0030	0.0024	0.0024
13:00 - 14:00	0.0024	0.0025	0.0024	0.0028	0.0026	0.0021	0.0023
14:00 - 15:00	0.0023	0.0021	0.0020	0.0026	0.0025	0.0021	0.0019
15:00 - 16:00	0.0022	0.0022	0.0021	0.0023	0.0024	0.0020	0.0021
16:00 - 17:00	0.0022	0.0022	0.0024	0.0023	0.0023	0.0021	0.0020
17:00 - 18:00	0.0023	0.0022	0.0026	0.0022	0.0023	0.0018	0.0020
18:00 - 19:00	0.0021	0.0021	0.0023	0.0026	0.0024	0.0022	0.0021
19:00 - 20:00	0.0019	0.0021	0.0025	0.0026	0.0022	0.0021	0.0025
20:00 - 21:00	0.0023	0.0024	0.0025	0.0027	0.0027	0.0022	0.0022
21:00 - 22:00	0.0021	0.0022	0.0024	0.0027	0.0026	0.0025	0.0021
22:00 - 23:00	0.0020	0.0028	0.0028	0.0023	0.0031	0.0028	0.0026
23:00 - 00:00	0.0030	0.0028	0.0023	0.0027	0.0035	0.0035	0.0025
00:00 - 01:00	0.0035	0.0028	0.0026	0.0028	0.0038	0.0034	0.0030
01:00 - 02:00	0.0037	0.0029	0.0027	0.0029	0.0034	0.0042	0.0022
02:00 - 03:00	0.0031	0.0025	0.0023	0.0027	0.0031	0.0044	0.0022
03:00 - 04:00	0.0029	0.0027	0.0022	0.0025	0.0029	0.0043	0.0019
04:00 - 05:00	0.0027	0.0026	0.0028	0.0027	0.0031	0.0039	0.0023
05:00 - 06:00	0.0023	0.0021	0.0028	0.0027	0.0029	0.0028	0.0024
06:00 - 07:00	0.0022	0.0029	0.0032	0.0026	0.0027	0.0028	0.0023
07:00 - 08:00	0.0026	0.0026	0.0029	0.0028	0.0025	0.0029	0.0030
08:00 - 09:00	0.0025	0.0032	0.0032	0.0027	0.0025	0.0029	0.0028
09:00 - 10:00	0.0025	0.0031	0.0032	0.0027	0.0026	0.0031	0.0024
10:00 - 11:00	0.0026	0.0029	0.0031	0.0029	0.0024	0.0031	0.0025
Average-24Hr*	0.0025	0.0025	0.0026	0.0026	0.0028	0.0028	0.0023
Max-1Hr	0.0037	0.0032	0.0032	0.0029	0.0038	0.0044	0.0030
Min-1Hr	0.0019	0.0021	0.0020	0.0022	0.0022	0.0018	0.0019
Standard-1Hr	0.30 ppm(780 ug/cu.m)						
Standard-24Hr	0.12 ppm(300 ug/cu.m)						

Remark : * Average time between 11:00-11:00

(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

(Miss Preeda Somjai)
 Technical Management Team



Ambient Air Monitoring Results : Nitrogen dioxide MTR-Inulin

Location : Than Thip Village
Analyzer Model : Teledyne T200
Serial No : 110

Monitor Period : 04-11 May 2022
Station No : Shelter 1
Site Operator : Mr.Jakree Intasan

Calibrator Model : Teledyne 700E
Calibration Gas Cylinder I.D.: EB0108319
Certified Date : 13 Jan 2022
Expire Date : 12 Jan 2023

Serial No : 587

Cal Concentration (ppb) : 0,100,200,400

Time	NO2 Concentration (ppm)						
	04-05 May 2022	05-06 May 2022	06-07 May 2022	07-08 May 2022	08-09 May 2022	09-10 May 2022	10-11 May 2022
10:00 - 11:00	0.0067	0.0073	0.0079	0.0035	0.0045	0.0130	0.0143
11:00 - 12:00	0.0075	0.0062	0.0036	0.0042	0.0061	0.0080	0.0049
12:00 - 13:00	0.0185	0.0027	0.0039	0.0026	0.0064	0.0058	0.0012
13:00 - 14:00	0.0049	0.0011	0.0037	0.0029	0.0072	0.0118	0.0002
14:00 - 15:00	0.0019	0.0055	0.0027	0.0024	0.0032	0.0058	0.0027
15:00 - 16:00	0.0094	0.0025	0.0015	0.0036	0.0029	0.0055	0.0023
16:00 - 17:00	0.0054	0.0061	0.0006	0.0038	0.0047	0.0011	0.0011
17:00 - 18:00	0.0037	0.0087	0.0043	0.0040	0.0068	0.0020	0.0030
18:00 - 19:00	0.0059	0.0028	0.0041	0.0052	0.0099	0.0021	0.0025
19:00 - 20:00	0.0072	0.0031	0.0025	0.0047	0.0112	0.0029	0.0014
20:00 - 21:00	0.0029	0.0028	0.0055	0.0007	0.0095	0.0037	0.0014
21:00 - 22:00	0.0067	0.0040	0.0043	0.0074	0.0061	0.0080	0.0071
22:00 - 23:00	0.0071	0.0027	0.0028	0.0016	0.0129	0.0049	0.0018
23:00 - 00:00	0.0033	0.0045	0.0012	0.0027	0.0187	0.0030	0.0016
00:00 - 01:00	0.0039	0.0030	0.0006	0.0031	0.0089	0.0055	0.0023
01:00 - 02:00	0.0030	0.0052	0.0032	0.0031	0.0022	0.0049	0.0030
02:00 - 03:00	0.0039	0.0010	0.0028	0.0035	0.0004	0.0035	0.0027
03:00 - 04:00	0.0031	0.0051	0.0032	0.0054	0.0120	0.0046	0.0021
04:00 - 05:00	0.0011	0.0084	0.0026	0.0043	0.0054	0.0045	0.0024
05:00 - 06:00	0.0025	0.0070	0.0023	0.0029	0.0079	0.0036	0.0039
06:00 - 07:00	0.0110	0.0108	0.0024	0.0017	0.0071	0.0018	0.0027
07:00 - 08:00	0.0071	0.0107	0.0056	0.0119	0.0072	0.0058	0.0053
08:00 - 09:00	0.0071	0.0109	0.0039	0.0149	0.0095	0.0067	0.0064
09:00 - 10:00	0.0084	0.0134	0.0042	0.0084	0.0124	0.0083	0.0075
Average-24Hr*	0.0059	0.0056	0.0033	0.0045	0.0076	0.0053	0.0035
Max-1Hr	0.0185	0.0134	0.0079	0.0149	0.0187	0.0130	0.0143
Min-1Hr	0.0011	0.0010	0.0006	0.0007	0.0004	0.0011	0.0002
Standard-1Hr	0.17 ppm(320 ug/cu.m)						
Standard-24Hr							

Remark : * Average time between 10:00-10:00

(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

(Miss Preeda Somjai)
 Technical Management Team



Ambient Air Monitoring Results : Nitrogen dioxide MTR-Inulin

Location : Rang Wan Temple Area	Monitor Period : 04-11 May 2022
Analyzer Model : API 200A	Station No : Shelter 2
Serial No : 144	Site Operator : Mr.Jakree Intasan

Calibrator Model : Teledyne 700E	Serial No : 587
Calibration Gas Cylinder I.D.: EB0108319	
Certified Date : 13 Jan 2022	Cal Concentration (ppb) : 0,100,200,400
Expire Date : 12 Jan 2023	

Time	NO2 Concentration (ppm)						
	04-05 May 2022	05-06 May 2022	06-07 May 2022	07-08 May 2022	08-09 May 2022	09-10 May 2022	10-11 May 2022
09:00 - 10:00	0.0189	0.0161	0.0105	0.0036	0.0094	0.0122	0.0108
10:00 - 11:00	0.0054	0.0099	0.0071	0.0037	0.0062	0.0085	0.0075
11:00 - 12:00	0.0091	0.0087	0.0058	0.0042	0.0057	0.0069	0.0067
12:00 - 13:00	0.0093	0.0033	0.0060	0.0035	0.0060	0.0077	0.0038
13:00 - 14:00	0.0085	0.0071	0.0045	0.0027	0.0072	0.0044	0.0026
14:00 - 15:00	0.0106	0.0041	0.0052	0.0028	0.0056	0.0032	0.0026
15:00 - 16:00	0.0130	0.0047	0.0099	0.0041	0.0025	0.0083	0.0011
16:00 - 17:00	0.0129	0.0026	0.0014	0.0026	0.0045	0.0031	0.0026
17:00 - 18:00	0.0114	0.0029	0.0033	0.0042	0.0064	0.0037	0.0037
18:00 - 19:00	0.0103	0.0025	0.0046	0.0054	0.0081	0.0043	0.0064
19:00 - 20:00	0.0108	0.0031	0.0033	0.0054	0.0085	0.0053	0.0095
20:00 - 21:00	0.0105	0.0029	0.0087	0.0045	0.0088	0.0050	0.0147
21:00 - 22:00	0.0122	0.0043	0.0081	0.0033	0.0082	0.0045	0.0080
22:00 - 23:00	0.0157	0.0032	0.0012	0.0042	0.0097	0.0030	0.0021
23:00 - 00:00	0.0127	0.0052	0.0014	0.0034	0.0130	0.0032	0.0053
00:00 - 01:00	0.0136	0.0050	0.0015	0.0010	0.0104	0.0040	0.0020
01:00 - 02:00	0.0122	0.0035	0.0009	0.0009	0.0088	0.0039	0.0016
02:00 - 03:00	0.0098	0.0025	0.0007	0.0012	0.0064	0.0025	0.0024
03:00 - 04:00	0.0111	0.0040	0.0030	0.0005	0.0035	0.0020	0.0031
04:00 - 05:00	0.0150	0.0075	0.0008	0.0015	0.0053	0.0015	0.0037
05:00 - 06:00	0.0105	0.0054	0.0019	0.0016	0.0051	0.0025	0.0031
06:00 - 07:00	0.0143	0.0075	0.0024	0.0013	0.0072	0.0019	0.0021
07:00 - 08:00	0.0145	0.0083	0.0032	0.0084	0.0062	0.0063	0.0067
08:00 - 09:00	0.0134	0.0091	0.0041	0.0117	0.0077	0.0083	0.0163
Average-24Hr*	0.0119	0.0056	0.0041	0.0036	0.0071	0.0046	0.0054
Max-1Hr	0.0189	0.0161	0.0105	0.0117	0.0130	0.0122	0.0163
Min-1Hr	0.0054	0.0025	0.0007	0.0005	0.0025	0.0015	0.0011
Standard-1Hr	0.17 ppm(320 ug/cu.m)						
Standard-24Hr	-						

Remark : * Average time between 09:00-09:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Ambient Air Monitoring Results : Nitrogen dioxide MTR-Inulin

Location : Kosinarai Temple Area

Monitor Period : 04-11 May 2022

Analyzer Model : API 200A

Station No : Shelter 3

Serial No : 096

Site Operator : Mr.Jakree Intasan

Calibrator Model : Teledyne 700E

Serial No : 587

Calibration Gas Cylinder I.D.: EB0108319

Certified Date : 13 Jan 2022

Cal Concentration (ppb) : 0,100,200,400

Expire Date : 12 Jan 2023

Time	NO2 Concentration (ppm)						
	04-05 May 2022	05-06 May 2022	06-07 May 2022	07-08 May 2022	08-09 May 2022	09-10 May 2022	10-11 May 2022
11:00 - 12:00	0.0029	0.0061	0.0093	0.0053	0.0101	0.0032	0.0101
12:00 - 13:00	0.0052	0.0076	0.0116	0.0071	0.0056	0.0052	0.0042
13:00 - 14:00	0.0049	0.0035	0.0107	0.0066	0.0059	0.0031	0.0029
14:00 - 15:00	0.0037	0.0046	0.0067	0.0073	0.0047	0.0046	0.0027
15:00 - 16:00	0.0038	0.0054	0.0036	0.0205	0.0054	0.0028	0.0033
16:00 - 17:00	0.0043	0.0059	0.0044	0.0023	0.0076	0.0076	0.0067
17:00 - 18:00	0.0064	0.0069	0.0084	0.0151	0.0048	0.0052	0.0078
18:00 - 19:00	0.0056	0.0097	0.0072	0.0146	0.0133	0.0079	0.0075
19:00 - 20:00	0.0127	0.0110	0.0078	0.0108	0.0096	0.0091	0.0069
20:00 - 21:00	0.0068	0.0061	0.0064	0.0173	0.0107	0.0041	0.0056
21:00 - 22:00	0.0079	0.0049	0.0086	0.0269	0.0061	0.0062	0.0041
22:00 - 23:00	0.0096	0.0029	0.0016	0.0129	0.0075	0.0033	0.0073
23:00 - 00:00	0.0056	0.0022	0.0028	0.0069	0.0059	0.0027	0.0058
00:00 - 01:00	0.0047	0.0109	0.0050	0.0066	0.0098	0.0027	0.0049
01:00 - 02:00	0.0136	0.0025	0.0017	0.0061	0.0057	0.0117	0.0090
02:00 - 03:00	0.0114	0.0026	0.0049	0.0084	0.0064	0.0044	0.0118
03:00 - 04:00	0.0133	0.0047	0.0030	0.0136	0.0047	0.0137	0.0145
04:00 - 05:00	0.0143	0.0081	0.0084	0.0128	0.0148	0.0122	0.0118
05:00 - 06:00	0.0125	0.0097	0.0164	0.0139	0.0134	0.0126	0.0125
06:00 - 07:00	0.0159	0.0077	0.0120	0.0156	0.0141	0.0153	0.0135
07:00 - 08:00	0.0139	0.0078	0.0113	0.0139	0.0127	0.0083	0.0132
08:00 - 09:00	0.0104	0.0098	0.0077	0.0180	0.0080	0.0103	0.0071
09:00 - 10:00	0.0109	0.0054	0.0095	0.0144	0.0076	0.0075	0.0061
10:00 - 11:00	0.0057	0.0041	0.0076	0.0212	0.0091	0.0051	0.0048
Average-24Hr*	0.0086	0.0063	0.0074	0.0124	0.0085	0.0070	0.0077
Max-1Hr	0.0159	0.0110	0.0164	0.0269	0.0148	0.0153	0.0145
Min-1Hr	0.0029	0.0022	0.0016	0.0023	0.0047	0.0027	0.0027
Standard-1Hr	0.17 ppm(320 ug/cu.m)						
Standard-24Hr							

Remark : * Average time between 11:00-11:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Ambient Temperature Measurement Results


MTR- Inulin


Location	: Than Thip Village	Measurement Date	: 04-11 May 2022
Equipment Model	: 110-WS-16 THA	Site Operator	: Mr. Jakree Intasan
Serial No.	: L2540152		

Calibrator Model	: 9140	Calibration Date	: 29 January 2022
Serial No.	: AOA890		

Time	Measurement Results of Temperature (°C)						
	04-05 May 2022	05-06 May 2022	06-07 May 2022	07-08 May 2022	08-09 May 2022	09-10 May 2022	10-11 May 2022
10:00-11:00	28.9	31.8	28.9	28.0	29.4	28.7	29.5
11:00-12:00	29.2	31.3	29.7	30.0	31.8	28.4	29.3
12:00-13:00	29.3	30.3	30.6	30.5	31.3	29.1	29.9
13:00-14:00	27.9	28.1	30.6	31.8	32.2	29.6	28.5
14:00-15:00	28.6	28.0	30.5	32.0	30.2	29.3	29.0
15:00-16:00	24.5	27.9	28.1	30.2	29.1	28.1	29.3
16:00-17:00	28.1	27.8	27.1	29.1	28.1	27.0	28.1
17:00-18:00	27.3	27.7	27.4	28.5	26.2	28.0	27.9
18:00-19:00	27.0	27.6	26.0	28.9	26.6	26.9	26.2
19:00-20:00	27.6	27.6	25.6	27.9	26.4	26.8	25.4
20:00-21:00	27.2	26.4	25.3	26.3	27.0	26.7	25.4
21:00-22:00	27.1	26.4	25.1	26.5	26.3	26.8	25.6
22:00-23:00	24.8	26.3	25.1	26.9	25.5	26.6	25.5
23:00-24:00	24.7	25.5	25.3	25.8	27.9	26.2	25.6
00:00-01:00	24.4	25.3	25.5	25.4	26.1	25.1	26.3
01:00-02:00	24.3	25.3	25.4	25.7	26.6	25.8	26.2
02:00-03:00	26.2	25.9	25.1	25.2	26.1	25.1	26.2
03:00-04:00	26.3	25.1	25.0	25.6	27.1	25.8	26.7
04:00-05:00	26.3	25.0	25.8	25.3	25.6	25.3	26.5
05:00-06:00	25.3	26.2	25.1	26.1	25.5	26.0	27.2
06:00-07:00	26.3	26.8	26.5	25.8	25.2	25.3	28.8
07:00-08:00	26.8	26.2	26.3	27.0	25.4	25.4	27.9
08:00-09:00	28.6	27.9	27.1	27.7	26.6	29.6	27.8
09:00-10:00	31.5	27.8	28.0	28.3	27.0	29.0	29.2
Average-24 hr*	27.0	27.3	26.9	27.7	27.5	27.1	27.4
Min-1 hr	24.3	25.0	25.0	25.2	25.2	25.1	25.4
Max-1 hr	31.5	31.8	30.6	32.0	32.2	29.6	29.9

Remarks: * Average time between 10.00-10.00.


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Preeda Somjai)
Technical Management Team



Ambient Temperature Measurement Results

MTR- Inulin

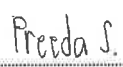
Location	: Rang Wan Temple Area	Measurement Date	: 04-11 May 2022
Equipment Model	: 110-WS-16 THA	Site Operator	: Mr. Jakree Intasan
Serial No.	: G1540004		

Calibrator Model	: 9140	Calibration Date	: 28 January 2022
Serial No.	: AOA890		

Time	Measurement Results of Temperature (°C)						
	04-05 May 2022	05-06 May 2022	06-07 May 2022	07-08 May 2022	08-09 May 2022	09-10 May 2022	10-11 May 2022
09:00-10:00	27.0	29.7	32.8	32.5	31.6	27.6	29.6
10:00-11:00	27.9	33.2	32.5	32.1	33.2	27.9	29.4
11:00-12:00	28.5	33.6	33.0	33.0	33.2	27.6	29.4
12:00-13:00	28.9	33.0	33.5	30.6	32.4	27.9	29.3
13:00-14:00	29.6	33.3	30.7	29.1	31.8	28.4	30.5
14:00-15:00	31.7	34.0	29.4	27.9	31.6	29.7	32.4
15:00-16:00	31.2	33.1	26.8	26.4	31.4	30.3	29.3
16:00-17:00	30.5	34.0	24.7	26.3	31.2	31.1	29.3
17:00-18:00	29.9	32.2	24.6	26.3	29.0	30.8	28.1
18:00-19:00	28.7	29.8	25.2	26.1	25.3	29.0	28.7
19:00-20:00	28.1	29.2	24.9	26.5	25.0	27.7	27.0
20:00-21:00	27.8	28.7	25.5	26.4	25.5	27.3	27.4
21:00-22:00	27.6	28.1	25.5	26.4	26.0	26.4	26.1
22:00-23:00	27.1	27.6	25.6	26.2	26.3	25.8	26.8
23:00-24:00	26.6	27.2	25.8	25.8	26.5	25.3	26.9
00:00-01:00	26.0	26.9	25.8	25.6	26.7	25.2	26.7
01:00-02:00	26.2	26.6	25.7	25.6	26.8	25.2	26.6
02:00-03:00	26.4	26.4	25.8	25.6	27.0	25.1	26.6
03:00-04:00	26.3	26.5	25.5	25.6	27.3	25.1	26.6
04:00-05:00	26.1	26.7	25.1	25.5	27.5	25.0	26.4
05:00-06:00	26.0	26.5	25.5	25.6	27.8	24.9	28.1
06:00-07:00	26.1	26.9	25.9	26.0	28.3	26.8	26.1
07:00-08:00	26.5	28.4	28.1	27.1	29.1	27.7	26.4
08:00-09:00	28.2	32.4	30.5	30.4	26.0	29.6	27.3
Average-24 hr*	27.9	29.7	27.4	27.4	28.6	27.4	28.0
Min-1 hr	26.0	26.4	24.6	25.5	25.0	24.9	26.1
Max-1 hr	31.7	34.0	33.5	33.0	33.2	31.1	32.4

Remarks: * Average time between 09.00-09.00.


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Preeda Somjai)
Technical Management Team



Ambient Temperature Measurement Results


MTR- Inulin


Location	: Kosinarai Temple Area	Measurement Date	: 04-11 May 2022
Equipment Model	: 110-WS-16 THA	Site Operator	: Mr. Jakree Intasan
Serial No.	: L3950311		

Calibrator Model	: 9140	Calibration Date	: 29 January 2022
Serial No.	: AOA890		

Time	Measurement Results of Temperature (°C)						
	04-05 May 2022	05-06 May 2022	06-07 May 2022	07-08 May 2022	08-09 May 2022	09-10 May 2022	10-11 May 2022
11:00-12:00	28.2	34.1	31.1	30.4	30.1	31.4	29.1
12:00-13:00	29.0	31.8	31.3	30.2	30.1	29.2	30.3
13:00-14:00	29.1	31.1	30.6	30.2	30.1	27.4	30.1
14:00-15:00	29.3	30.1	30.1	30.1	33.0	27.6	30.0
15:00-16:00	28.6	29.3	26.4	29.9	30.7	27.4	30.2
16:00-17:00	28.1	28.3	25.3	29.2	26.3	27.8	30.0
17:00-18:00	27.6	28.0	25.4	27.2	26.7	27.9	29.8
18:00-19:00	27.6	27.6	25.2	26.7	26.7	27.2	28.9
19:00-20:00	27.5	27.1	25.3	25.3	26.2	26.8	28.0
20:00-21:00	27.3	26.7	25.3	25.3	26.2	26.8	27.6
21:00-22:00	27.1	26.2	25.0	25.1	26.1	26.5	27.6
22:00-23:00	27.3	26.0	24.3	25.1	25.9	26.1	27.3
23:00-24:00	27.3	26.0	24.2	25.2	25.7	26.0	26.8
00:00-01:00	27.1	25.7	24.3	25.2	25.8	25.9	26.6
01:00-02:00	26.4	25.5	24.2	25.3	25.6	25.8	26.5
02:00-03:00	25.5	25.2	24.2	25.2	25.6	25.8	26.3
03:00-04:00	25.1	25.2	24.1	25.0	25.7	25.7	26.1
04:00-05:00	24.9	25.3	24.1	25.5	25.7	25.7	26.0
05:00-06:00	25.8	26.2	24.5	25.8	25.6	25.8	25.8
06:00-07:00	28.2	27.6	24.5	26.4	25.6	26.0	26.4
07:00-08:00	30.3	28.1	25.0	27.6	26.4	27.7	27.8
08:00-09:00	32.3	29.6	26.6	29.8	27.8	30.1	27.2
09:00-10:00	33.6	30.1	27.7	30.0	29.4	30.5	29.5
10:00-11:00	34.2	31.2	30.9	30.1	30.4	30.7	29.5
Average-24 hr*	28.2	28.0	26.2	27.3	27.4	27.4	28.1
Min-1 hr	24.9	25.2	24.1	25.0	25.6	25.7	25.8
Max-1 hr	34.2	34.1	31.3	30.4	33.0	31.4	30.3

Remarks: * Average time between 11.00-11.00.


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Preeda Somjai)
Technical Management Team

ใบรับรองผลการตรวจวัดคุณภาพน้ำ



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร 10800

239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: Fuji Nihon Thai Inulin Co., Ltd.	REQUEST SERVICE No.	: 0117/65
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 25/01/2022	SAMPLING TIME	: 10.25
RECEIVED DATE	: 26/01/2022	ANALYTICAL DATE	: 26/01/2022-01/02/2022
REPORT DATE	: 02/02/2022	SITE OPERATOR	: Mr. Chitpon Somprasong
SAMPLE CONDITION	: Normal	FILE CODE	: 222049_WW_January

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	
				บริเวณบ่อพักน้ำทิ้งก่อนระบาย ออกนอกพื้นที่โครงการ	STANDARD ^{1/}
Temperature	°C	2550	< 0.5	28.1	≤ 40
pH	-	4500-H ⁺ B	< 0.10	7.83	5.5-9.0
Color	ADMI	2120 F	< 6.0	21.0	≤ 300
Conductivity	μS/cm	2510 B	< 1.0	2,840	-
Total Dissolved Solids	mg/l	2540 C	< 50	300	≤ 5,000
Total Suspended Solids	mg/l	2540 D	< 5	28	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 5
BOD ₅	mg/l	5210 B	< 1.0	7.2	≤ 20
Dissolved Oxygen	mg/l	4500-O G	< 0.1	5.3	-
COD	mg/l	5220 D	< 40.00	52.94	≤ 120
Chromium (Cr)	mg/l	3120 B	< 0.001	<0.01	-
Copper (Cu)	mg/l	3120 B	< 0.001	ND	≤ 2.0
Iron (Fe)	mg/l	3120 B	< 0.004	0.14	-
Manganese (Mn)	mg/l	3120 B	< 0.001	0.01	≤ 5.0
Zinc (Zn)	mg/l	3120 B	< 0.003	0.02	≤ 5.0
Total Coliform Bacteria*	MPN/100 ml	9221 B	-	5,400	-

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21st ED. 2017 (AWWA, APHA, WEF)

(Miss Khemchuda Insorn)

Analyst

REG. NO. ๖-239-๓-5976

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. ๖-239-๓-5863

- Remark :**
1. Reported analysis refers to submitted sample only.
 2. This report shall not be reproduced, except in full, without official approval.
 3. ^{1/} Notification of the Ministry of Natural Resources and Environment, B.E.2559 (2016).
 4. *Total Coliform Bacteria analysis was performed by TEST TECH Co., Ltd.
 5. - Not available.



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร 10800

239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

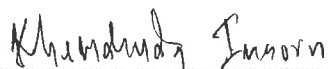
TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: Fuji Nihon Thai Inulin Co., Ltd.	REQUEST SERVICE No.	: 0370/65
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 24/02/2022	SAMPLING TIME	: 09.23
RECEIVED DATE	: 25/02/2022	ANALYTICAL DATE	: 25/02/2022-03/03/2022
REPORT DATE	: 08/03/2022	SITE OPERATOR	: Mr. Aniwat Pimwanna
SAMPLE CONDITION	: Normal	FILE CODE	: 222049_WW_February

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	
				บริเวณบ่อพักน้ำทิ้งก่อนระบาย ออกนอกพื้นที่โครงการ	STANDARD ^{1/}
Temperature	°C	2550	< 0.5	30.2	≤ 40
pH	-	4500-H ⁺ B	< 0.10	7.96	5.5-9.0
Color	ADMI	2120 F	< 6.0	46.2	≤ 300
Conductivity	μS/cm	2510 B	< 1.0	3,149	-
Total Dissolved Solids	mg/l	2540 C	< 50	1,398	≤ 5,000
Total Suspended Solids	mg/l	2540 D	< 5	9	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 5
BOD ₅	mg/l	5210 B	< 1.0	4.6	≤ 20
Dissolved Oxygen	mg/l	4500-O G	< 0.1	5.2	-
COD	mg/l	5220 D	< 40.00	46.36	≤ 120
Chromium (Cr)	mg/l	3120 B	< 0.001	< 0.01	-
Copper (Cu)	mg/l	3120 B	< 0.001	ND	≤ 2.0
Iron (Fe)	mg/l	3120 B	< 0.004	0.17	-
Manganese (Mn)	mg/l	3120 B	< 0.001	< 0.01	≤ 5.0
Zinc (Zn)	mg/l	3120 B	< 0.003	0.04	≤ 5.0
Total Coliform Bacteria*	MPN/100 ml	9221 B	-	1,700	-

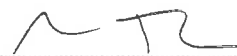
REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 23rd ED. 2017 (AWWA, APHA, WEF)



(Miss Khemchuda Insorn)

Analyst

REG. NO. ว-239-ค-5976



(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. ว-239-ค-5863

- Remark :**
1. Reported analysis refers to submitted sample only.
 2. This report shall not be reproduced, except in full, without official approval.
 3. ^{1/} Notification of the Ministry of Natural Resources and Environment, B.E.2559 (2016).
 4. *Total Coliform Bacteria analysis was performed by TEST TECH Co., Ltd.
 5. - Not available.



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร 10800

239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

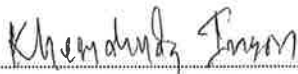
TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: Fuji Nihon Thai Inulin Co., Ltd.	REQUEST SERVICE No.	: 0618/65
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 24/03/2022	SAMPLING TIME	: 14.10
RECEIVED DATE	: 25/03/2022	ANALYTICAL DATE	: 25/03/2022-04/04/2022
REPORT DATE	: 08/04/2022	SITE OPERATOR	: Mr. Aniwat Pimwanna
SAMPLE CONDITION	: Normal	FILE CODE	: 222049_WW_March

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	
				บริเวณบ่อกักน้ำทิ้งก่อนระบาย ออกนอกพื้นที่โครงการ	STANDARD ^{1/}
Temperature	°C	2550	< 0.5	34.8	≤ 40
pH	-	4500-H ⁺ B	< 0.10	8.31	5.5-9.0
Color	ADMI	2120 F	< 6.0	37.5	≤ 300
Conductivity	μS/cm	2510 B	< 1.0	2,153	-
Total Dissolved Solids	mg/l	2540 C	< 50	1,504	≤ 5,000
Total Suspended Solids	mg/l	2540 D	< 5	7	≤ 50
Fat Oil & Græase	mg/l	5520 B	< 0.50	ND	≤ 5
BOD ₅	mg/l	5210 B	< 1.0	4.3	≤ 20
Dissolved Oxygen	mg/l	4500-O G	< 0.1	5.9	-
COD	mg/l	5220 D	< 40.00	< 40.00	≤ 120
Chromium (Cr)	mg/l	3120 B	< 0.001	ND	-
Copper (Cu)	mg/l	3120 B	< 0.001	ND	≤ 2.0
Iron (Fe)	mg/l	3120 B	< 0.004	0.21	-
Manganese (Mn)	mg/l	3120 B	< 0.001	< 0.01	≤ 5.0
Zinc (Zn)	mg/l	3120 B	< 0.003	< 0.02	≤ 5.0
Total Coliform Bacteria*	MPN/100 ml	9221 B	-	170	-

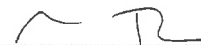
REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 23rd ED. 2017 (AWWA APHA WEF)



(Miss Khemchuda Insorn)

Analyst

REG. NO. ว-239-ก-5976



(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. ว-239-ก-5863

- Remark :**
1. Reported analysis refers to submitted sample only.
 2. This report shall not be reproduced, except in full, without official approval.
 3. ^{1/} Notification of the Ministry of Natural Resources and Environment, B.E.2559 (2016).
 4. *Total Coliform Bacteria analysis was performed by TEST TECH Co., Ltd.
 5. - Not available.



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร 10800

239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

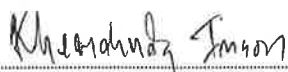
TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: Fuji Nihon Thai Inulin Co., Ltd.	REQUEST SERVICE No.	: 0705/65
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 04/04/2022	SAMPLING TIME	: 13.24
RECEIVED DATE	: 05/04/2022	ANALYTICAL DATE	: 05-12/04/2022
REPORT DATE	: 19/04/2022	SITE OPERATOR	: Mr. Aniwat Pimwanna
SAMPLE CONDITION	: Normal	FILE CODE	: 222049_WW_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	
				บริเวณบ่อพักน้ำทิ้งก่อนระบาย ออกนอกพื้นที่โครงการ	STANDARD ^{1/}
Temperature	°C	2550	< 0.5	32.5	≤ 40
pH	-	4500-H ⁺ B	< 0.10	8.16	5.5-9.0
Color	ADMI	2120 F	< 6.0	58.0	≤ 300
Conductivity	μS/cm	2510 B	< 1.0	4,233	-
Total Dissolved Solids	mg/l	2540 C	< 50	2,484	≤ 5,000
Total Suspended Solids	mg/l	2540 D	< 5	8	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 5
BOD ₅	mg/l	5210 B	< 1.0	5.0	≤ 20
Dissolved Oxygen	mg/l	4500-O G	< 0.1	4.6	-
COD	mg/l	5220 D	< 40.00	46.43	≤ 120
Chromium (Cr)	mg/l	3120 B	< 0.001	< 0.01	-
Copper (Cu)	mg/l	3120 B	< 0.001	< 0.02	≤ 2.0
Iron (Fe)	mg/l	3120 B	< 0.004	0.20	-
Manganese (Mn)	mg/l	3120 B	< 0.001	< 0.01	≤ 5.0
Zinc (Zn)	mg/l	3120 B	< 0.003	< 0.02	≤ 5.0
Total Coliform Bacteria*	MPN/100 ml	9221 B	-	33	-

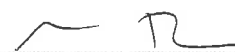
REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 23rd ED. 2017 (AWWA, APHA, WEF)



(Miss Khemchuda Insorn)

Analyst

REG. NO. ว-239-ค-5976



(Mrs. Araya Tippasuk)

Technical Management Team

REG. NO. ว-239-ค-5863

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. ^{1/} Notification of the Ministry of Natural Resources and Environment, B.E.2559 (2016).

4. *Total Coliform Bacteria analysis was performed by TEST TECH Co., Ltd.

5. - Not available.



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร 10800

239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: Fuji Nihon Thai Inulin Co., Ltd.	REQUEST SERVICE No.	: 1111/65
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 24/05/2022	SAMPLING TIME	: 11.07
RECEIVED DATE	: 25/05/2022	ANALYTICAL DATE	: 25-30/05/2022
REPORT DATE	: 31/05/2022	SITE OPERATOR	: Mr. Aniwat Pimwanna
SAMPLE CONDITION	: Normal	FILE CODE	: 222049_WW_May

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	
				บริเวณบ่อกักน้ำทิ้งก่อนระบาย ออกนอกพื้นที่โครงการ	STANDARD ^{1/}
Temperature	°C	2550	< 0.5	36.6	≤ 40
pH	-	4500-H ⁺ B	< 0.10	8.10	5.5-9.0
Color	ADMI	2120 F	< 6.0	30.1	≤ 300
Conductivity	μS/cm	2510 B	< 1.0	819	-
Total Dissolved Solids	mg/l	2540 C	< 50	592	≤ 5,000
Total Suspended Solids	mg/l	2540 D	< 5	19	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 5
BOD ₅	mg/l	5210 B	< 1.0	6.5	≤ 20
Dissolved Oxygen	mg/l	4500-O G	< 0.1	5.2	-
COD	mg/l	5220 D	< 40.00	43.98	≤ 120
Chromium (Cr)	mg/l	3120 B	< 0.001	< 0.01	-
Copper (Cu) _T	mg/l	3120 B	< 0.001	ND	≤ 2.0
Iron (Fe)	mg/l	3120 B	< 0.004	0.31	-
Manganese (Mn)	mg/l	3120 B	< 0.001	< 0.01	≤ 5.0
Zinc (Zn)	mg/l	3120 B	< 0.003	0.02	≤ 5.0
Total Coliform Bacteria*	MPN/100 ml	9221 B	-	5,400	-

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 23rd ED, 2017 (AWWA, APHA, WEF)

(Miss Khemchuda Insorn)

Analyst

REG. NO. ๖-239-๓-5976

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. ๖-239-๓-5863

- Remark :**
1. Reported analysis refers to submitted sample only.
 2. This report shall not be reproduced, except in full, without official approval.
 3. ^{1/} Notification of the Ministry of Natural Resources and Environment, B.E.2559 (2016).
 4. *Total Coliform Bacteria analysis was performed by TEST TECH Co., Ltd.
 5. - Not available.



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร 10800

239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

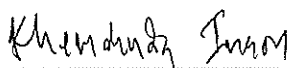
TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: Fuji Nihon Thai Inulin Co., Ltd.	REQUEST SERVICE No.	: 1403/65
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 30/06/2022	SAMPLING TIME	: 10.27
RECEIVED DATE	: 01/07/2022	ANALYTICAL DATE	: 01-07/07/2022
REPORT DATE	: 07/07/2022	SITE OPERATOR	: Mr. Chitpon Somprasong
SAMPLE CONDITION	: Normal	FILE CODE	: 222049_WW_June

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				บริเวณบ่อพักน้ำทิ้งก่อนระบาย ออกนอกพื้นที่โครงการ	
Temperature	°C	2550	< 0.5	31.3	≤ 40
pH	-	4500-H ⁺ B	< 0.10	7.77	5.5-9.0
Color	ADMI	2120 F	< 6.0	24.0	≤ 300
Conductivity	µS/cm	2510 B	< 1.0	231	-
Total Dissolved Solids	mg/l	2540 C	< 50	134	≤ 5,000
Total Suspended Solids	mg/l	2540 D	< 5	19	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 5
BOD ₅	mg/l	5210 B	< 1.0	6.5	≤ 20
Dissolved Oxygen	mg/l	4500-O G	< 0.1	5.1	-
COD	mg/l	5220 D	< 40.00	95.36	≤ 120
Chromium (Cr)	mg/l	3120 B	< 0.001	< 0.01	-
Copper (Cu)	mg/l	3120 B	< 0.001	< 0.02	≤ 2.0
Iron (Fe)	mg/l	3120 B	< 0.004	0.51	-
Manganese (Mn)	mg/l	3120 B	< 0.001	0.06	≤ 5.0
Zinc (Zn)	mg/l	3120 B	< 0.003	< 0.02	≤ 5.0
Total Coliform Bacteria*	MPN/100 ml	9221 B	-	3,500	-

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 23rd ED. 2017 (AWWA APHA WEF)



(Miss Khemchuda Insorn)

Analyst

REG. NO. ว-239-ก-5976



(Mrs. Araya Tippiaruk)

Technical Management Team

REG. NO. ว-239-ก-5863

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. ^{1/} Notification of the Ministry of Natural Resources and Environment, B.E.2559 (2016).

4. *Total Coliform Bacteria analysis was performed by TEST TECH Co., Ltd.

5. - Not available.

ใบรับรองผลการตรวจวัดคุณภาพน้ำผิวดิน



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร 10800

239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

SURFACE WATER ANALYSIS REPORT

CLIENT NAME	: Fuji Nihon Thai Inulin Co., Ltd.	REQUEST SERVICE NO.	: 0706/65
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 04/04/2022	SAMPLING TIME	: 09.42
RECEIVED DATE	: 05/04/2022	ANALYTICAL DATE	: 05-12/04/2022
REPORT DATE	: 22/04/2022	SITE OPERATOR	: Mr. Baworn Deechaiya
SAMPLE CONDITION	: Normal	FILE CODE	: 222049_SW_April
LOCATION DESCRIPTION	: 1 = แม่น้ำแม่กลองบริเวณเหนือปากลำรางสาธารณะที่รับน้ำทิ้งจากโครงการ 500 เมตร		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				1	
Temperature	°C	2550 B	< 0.5	26.7	n/
pH	-	4500-H ⁺ B	< 0.10	8.15	5 - 9
Conductivity	µS/cm	2510 B	< 1.0	227	-
Total Dissolved Solids	mg/l	2540 C	< 50	160	-
Total Suspended Solids	mg/l	2540 D	< 5	15	-
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	-
BOD ₅	mg/l	5210 B	< 1.0	< 1.0	≤ 2.0
Dissolved Oxygen	mg/l	4500-O C	< 0.1	5.2	≥ 4.0
Chromium (Cr)	mg/l	3113 B	< 0.001	0.003	-
Copper (Cu)	mg/l	3111 B	< 0.005	ND	≤ 0.1
Iron (Fe)	mg/l	3120 B	< 0.004	0.37	-
Manganese (Mn)	mg/l	3111 B	< 0.005	< 0.04	≤ 1.0
Zinc (Zn)	mg/l	3111 B	< 0.005	< 0.04	≤ 1.0
Total Coliform Bacteria*	MPN/100 ml	9221 B	< 1.8	16,000	≤ 20,000

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21st ED. 2017 (AWWA, APHA, WEF)

(Miss Khemchuda Insorn)

Analyst

(Mrs. Araya Tipparuk)

Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. " The Standard values of Surface Water Quality for class 3, notified by the National Environment Board No.8, B.E.2537 (1994).

4. ^{n/} naturally but changing by no more than 3 °C.

5. *Total Coliform Bacteria and Fecal Coliform Bacteria analyzed by TEST TECH Co., Ltd.

6. - Not available.



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร 10800

239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

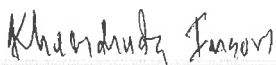
TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

SURFACE WATER ANALYSIS REPORT

CLIENT NAME	: Fuji Nihon Thai Inulin Co., Ltd.	REQUEST SERVICE NO.	: 0706/65
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 04/04/2022	SAMPLING TIME	: 10.00
RECEIVED DATE	: 05/04/2022	ANALYTICAL DATE	: 05-12/04/2022
REPORT DATE	: 22/04/2022	SITE OPERATOR	: Mr. Baworn Deechaiya
SAMPLE CONDITION	: Normal	FILE CODE	: 222049_SW_April
LOCATION DESCRIPTION	: 2 = แม่น้ำแม่กลองบริเวณปากลำรางสาธารณะที่รับน้ำทิ้งจากโครงการ		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				2	
Temperature	°C	2550 B	< 0.5	26.2	n/
pH	-	4500-H ⁺ B	< 0.10	8.10	5 - 9
Conductivity	µS/cm	2510 B	< 1.0	205	-
Total Dissolved Solids	mg/l	2540 C	< 50	126	-
Total Suspended Solids	mg/l	2540 D	< 5	18	-
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	-
BOD ₅	mg/l	5210 B	< 1.0	1.0	≤ 2.0
Dissolved Oxygen	mg/l	4500-O C	< 0.1	4.8	≥ 4.0
Chromium (Cr)	mg/l	3113 B	< 0.001	0.003	-
Copper (Cu)	mg/l	3111 B	< 0.005	ND	≤ 0.1
Iron (Fe)	mg/l	3120 B	< 0.004	0.38	-
Manganese (Mn)	mg/l	3111 B	< 0.005	< 0.04	≤ 1.0
Zinc (Zn)	mg/l	3111 B	< 0.005	< 0.04	≤ 1.0
Total Coliform Bacteria*	MPN/100 ml	9221 B	< 1.8	54,000	≤ 20,000

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 23rd ED, 2017 (AWWA, APHA, WEF)



(Miss Khemchuda Insorn)

Analyst



(Mrs. Araya Tipparuk)

Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. ^{1/} The Standard values of Surface Water Quality for class 3, notified by the National Environment Board No.8, B.E.2537 (1994).

4. ^{n/} naturally but changing by no more than 3 °C.

5. *Total Coliform Bacteria and Fecal Coliform Bacteria analyzed by TEST TECH Co., Ltd.

6. - Not available.



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร 10800
239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

SURFACE WATER ANALYSIS REPORT

CLIENT NAME	: Fuji Nihon Thai Inulin Co., Ltd.	REQUEST SERVICE NO.	: 0706/65
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 04/04/2022	SAMPLING TIME	: 10.12
RECEIVED DATE	: 05/04/2022	ANALYTICAL DATE	: 05-12/04/2022
REPORT DATE	: 22/04/2022	SITE OPERATOR	: Mr. Baworn Deechaiya
SAMPLE CONDITION	: Normal	FILE CODE	: 222049_SW_April
LOCATION DESCRIPTION	: 3 = แม่น้ำแม่กลองบริเวณท้ายปากลำรางสาธารณะที่รับน้ำทิ้งจากโครงการ 500 เมตร		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				3	
Temperature	°C	2550 B	< 0.5	26.6	n/
pH	-	4500-H ⁺ B	< 0.10	8.08	5 - 9
Conductivity	µS/cm	2510 B	< 1.0	195	-
Total Dissolved Solids	mg/l	2540 C	< 50	102	-
Total Suspended Solids	mg/l	2540 D	< 5	21	-
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	-
BOD ₅	mg/l	5210 B	< 1.0	1.1	≤ 2.0
Dissolved Oxygen	mg/l	4500-O C	< 0.1	5.0	≥ 4.0
Chromium (Cr)	mg/l	3113 B	< 0.001	0.003	-
Copper (Cu)	mg/l	3111 B	< 0.005	ND	≤ 0.1
Iron (Fe)	mg/l	3120 B	< 0.004	0.47	-
Manganese (Mn)	mg/l	3111 B	< 0.005	< 0.04	≤ 1.0
Zinc (Zn)	mg/l	3111 B	< 0.005	ND	≤ 1.0
Total Coliform Bacteria*	MPN/100 ml	9221 B	< 1.8	54,000	≤ 20,000

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 23rd ED. 2017 (AWWA, APHA, WEF)

(Miss Khemchuda Insorn)

Analyst

(Mrs. Araya Tipparuk)

Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. ^{1/} The Standard values of Surface Water Quality for class 3, notified by the National Environment Board No.8, B.E.2537 (1994).

4. ^{n/} naturally but changing by no more than 3 °C.

5. *Total Coliform Bacteria and Fecal Coliform Bacteria analyzed by TEST TECH Co., Ltd.

6. - Not available.



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร 10800

239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

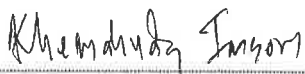
TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

SURFACE WATER ANALYSIS REPORT

CLIENT NAME	: Fuji Nihon Thai Inulin Co., Ltd.	REQUEST SERVICE NO.	: 0706/65
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 04/04/2022	SAMPLING TIME	: 11.00
RECEIVED DATE	: 05/04/2022	ANALYTICAL DATE	: 05-12/04/2022
REPORT DATE	: 22/04/2022	SITE OPERATOR	: Mr. Baworn Deechaiya
SAMPLE CONDITION	: Normal	FILE CODE	: 222049_SW_April
LOCATION DESCRIPTION	: 4 = บริเวณลำรางสาธารณะเหนือจุดระบายน้ำทิ้งของโครงการ 220 เมตร		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD
				4	
Temperature	°C	2550 B	< 0.5	26.0	-
pH	-	4500-H ⁺ B	< 0.10	8.04	-
Conductivity	µS/cm	2510 B	< 1.0	1,167	-
Total Dissolved Solids	mg/l	2540 C	< 50	658	-
Total Suspended Solids	mg/l	2540 D	< 5	14	-
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	-
BOD ₅	mg/l	5210 B	< 1.0	11.5	-
Dissolved Oxygen	mg/l	4500-O C	< 0.1	2.4	-
Chromium (Cr)	mg/l	3113 B	< 0.001	0.004	-
Copper (Cu)	mg/l	3111 B	< 0.005	ND	-
Iron (Fe)	mg/l	3120 B	< 0.004	0.32	-
Manganese (Mn)	mg/l	3111 B	< 0.005	< 0.04	-
Zinc (Zn)	mg/l	3111 B	< 0.005	< 0.04	-
Total Coliform Bacteria*	MPN/100 ml	9221 B	< 1.8	920,000	-

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 23rd ED. 2017 (AWWA, APHA, WEF)



(Miss Khemchuda Insorn)

Analyst



(Mrs. Araya Tipparuk)

Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. ¹ The Standard values of Surface Water Quality for class 5, notified by the National Environment Board No.8, B.E.2537 (1994).

4. *Total Coliform Bacteria and Fecal Coliform Bacteria analyzed by TEST TECH Co., Ltd.

5. - Not available.



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร 10800

239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

SURFACE WATER ANALYSIS REPORT

CLIENT NAME	: Fuji Nihon Thai Inulin Co., Ltd.	REQUEST SERVICE NO.	: 0706/65
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 04/04/2022	SAMPLING TIME	: 11.40
RECEIVED DATE	: 05/04/2022	ANALYTICAL DATE	: 05-12/04/2022
REPORT DATE	: 22/04/2022	SITE OPERATOR	: Mr. Baworn Deechaiya
SAMPLE CONDITION	: Normal	FILE CODE	: 222049_SW_April
LOCATION DESCRIPTION	: 5 = บริเวณลำรางสาธารณะท้ายจุดระบายน้ำทิ้งของโครงการ 250 เมตร		

PARAMETER	UNIT	ANALYSIS	ND	STATION	STANDARD
		METHODS	(non-detectable)		
Temperature	°C	2550 B	< 0.5	28.5	-
pH	-	4500-H ⁺ B	< 0.10	8.36	-
Conductivity	µS/cm	2510 B	< 1.0	1,688	-
Total Dissolved Solids	mg/l	2540 C	< 50	854	-
Total Suspended Solids	mg/l	2540 D	< 5	6	-
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	-
BOD ₅	mg/l	5210 B	< 1.0	3.8	-
Dissolved Oxygen	mg/l	4500-O C	< 0.1	3.1	-
Chromium (Cr)	mg/l	3113 B	< 0.001	0.003	-
Copper (Cu)	mg/l	3111 B	< 0.005	ND	-
Iron (Fe)	mg/l	3120 B	< 0.004	0.24	-
Manganese (Mn)	mg/l	3111 B	< 0.005	< 0.04	-
Zinc (Zn)	mg/l	3111 B	< 0.005	< 0.04	-
Total Coliform Bacteria*	MPN/100 ml	9221 B	< 1.8	350,000	-

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 23rd ED. 2017 (AWWA, APHA, WEF)

(Miss Khemchuda Insorn)

Analyst

(Mrs. Araya Tipparuk)

Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. ^{1/} The Standard values of Surface Water Quality for class 5, notified by the National Environment Board No.8, B.E.2537 (1994).

4. *Total Coliform Bacteria and Fecal Coliform Bacteria analyzed by TEST TECH Co., Ltd.

5. - Not available.

ใบรับรองผลการตรวจวัดระดับเสียง



Noise Monitoring Result : Community Noise MTR-Inulin

Location : Than Thip Village

Monitor Period : 04-11 May 2022

SLM Model : RION NL-21

Serial No : 00187515

Site Operator : Mr.Jakree Intasan

Calibrator Model : RION NC-74

Serial No : 34283648

Calibration Ref dB(A) : 94.0

Certified Date : 24 Dec 2021

SLM Reading / Adjust dB(A) : 94.0/0.0

Expire Date : 23 Dec 2022

Cal Sheet No.: NC-74-2022-045

Time	Equivalent Sound Pressure Level (dB(A))						
	04-05 May 2022	05-06 May 2022	06-07 May 2022	07-08 May 2022	08-09 May 2022	09-10 May 2022	10-11 May 2022
12:00 - 13:00	57.0	51.8	54.8	51.7	56.3	52.1	51.6
13:00 - 14:00	58.6	51.4	53.1	64.4	62.8	51.9	55.7
14:00 - 15:00	52.9	54.6	52.5	59.4	53.9	58.2	51.9
15:00 - 16:00	51.5	50.7	61.7	58.1	50.9	62.8	54.3
16:00 - 17:00	55.5	50.8	68.9	52.2	57.2	55.7	51.6
17:00 - 18:00	51.1	56.2	55.7	52.5	58.6	52.9	51.0
18:00 - 19:00	54.6	52.3	54.8	59.4	56.8	52.1	55.4
19:00 - 20:00	49.5	48.6	50.4	51.8	54.9	54.3	53.7
20:00 - 21:00	47.8	48.9	50.1	52.6	51.6	52.3	52.0
21:00 - 22:00	47.8	48.7	49.9	51.9	53.6	54.1	52.6
22:00 - 23:00	49.7	47.6	49.8	51.2	49.1	53.2	51.9
23:00 - 00:00	48.7	47.4	49.2	52.1	49.5	52.5	51.1
00:00 - 01:00	46.4	47.7	50.5	50.3	49.4	52.7	51.4
01:00 - 02:00	47.4	46.7	49.0	50.4	49.2	52.2	51.2
02:00 - 03:00	47.2	45.0	51.5	50.1	50.6	51.3	50.6
03:00 - 04:00	49.3	46.7	54.2	53.9	48.7	50.4	50.2
04:00 - 05:00	48.5	48.0	56.0	56.1	51.4	50.8	50.1
05:00 - 06:00	55.6	52.7	55.3	55.4	56.1	54.3	51.2
06:00 - 07:00	53.0	52.6	57.5	54.7	59.7	56.5	56.3
07:00 - 08:00	54.0	51.0	54.4	55.3	61.1	60.3	57.7
08:00 - 09:00	56.5	51.7	52.6	59.3	58.3	53.6	53.9
09:00 - 10:00	50.6	52.0	53.0	53.4	55.2	55.2	52.3
10:00 - 11:00	57.6	52.3	52.3	53.1	55.5	56.0	53.1
11:00 - 12:00	49.3	53.9	51.0	58.9	52.4	53.7	55.0
Leq(24)*	53.2	51.3	57.6	56.4	56.2	55.4	53.3
Ldn	57.8	56.1	61.3	60.6	60.7	60.1	58.7
Lmax**	75.3	77.6	93.8	86.6	78.2	82.6	81.7
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

Remark : * Average time between 12:00-12:00

** Maximum Sound Pressure Level between 12:00-12:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Background Noise MTR-Inulin

Location : Than Thip Village

Monitor Period : 04-11 May 2022

SLM Model : RION NL-21

Serial No : 00187515

Site Operator : Mr.Jakree Intasan

Calibrator Model : RION NC-74

Serial No : 34283648

Calibration Ref dB(A) : 94.0

Certified Date : 24 Dec 2021

SLM Reading / Adjust dB(A) : 94.0/0.0

Expire Date : 23 Dec 2022

Cal Sheet No.: NC-74-2022-045

Time	L90 (dB(A))						
	04-05 May 2022	05-06 May 2022	06-07 May 2022	07-08 May 2022	08-09 May 2022	09-10 May 2022	10-11 May 2022
12:00 - 13:00	50.2	44.2	46.5	46.9	49.0	47.3	46.7
13:00 - 14:00	47.4	44.4	45.4	50.8	48.3	48.2	46.7
14:00 - 15:00	46.9	45.6	47.9	47.8	48.1	47.3	45.6
15:00 - 16:00	47.0	45.8	45.3	52.6	46.0	50.4	45.3
16:00 - 17:00	46.9	46.1	53.5	49.0	47.0	47.0	46.4
17:00 - 18:00	47.0	47.3	51.6	48.7	51.4	47.5	46.8
18:00 - 19:00	46.4	45.4	47.8	48.3	51.3	47.3	47.4
19:00 - 20:00	47.3	46.3	46.9	48.0	49.6	47.3	47.4
20:00 - 21:00	45.6	47.7	48.5	50.6	48.3	46.4	47.4
21:00 - 22:00	45.1	46.9	47.7	49.8	49.1	49.0	48.5
22:00 - 23:00	45.0	45.8	47.8	49.0	47.5	52.1	50.1
23:00 - 00:00	45.4	46.1	47.0	49.1	48.2	50.9	49.7
00:00 - 01:00	44.0	45.1	46.9	47.6	48.1	51.2	49.9
01:00 - 02:00	43.5	43.6	46.6	47.6	47.5	50.7	48.8
02:00 - 03:00	43.9	43.4	46.8	46.9	46.7	48.6	49.3
03:00 - 04:00	43.7	43.5	48.5	48.0	45.8	48.1	49.3
04:00 - 05:00	44.0	43.9	55.0	55.3	46.5	47.9	48.1
05:00 - 06:00	45.1	43.9	53.6	54.4	50.6	47.9	46.7
06:00 - 07:00	46.1	44.4	47.1	49.8	55.6	50.4	50.7
07:00 - 08:00	46.8	44.6	47.6	49.5	49.9	51.6	50.3
08:00 - 09:00	47.1	46.0	47.9	50.8	50.1	46.5	47.8
09:00 - 10:00	45.0	45.6	47.6	49.9	50.1	46.7	46.9
10:00 - 11:00	45.5	46.0	47.2	50.0	48.4	47.0	47.4
11:00 - 12:00	44.4	44.9	47.6	48.7	47.9	47.3	46.5
L90(avg)*	46.1	45.4	49.2	50.2	49.4	48.9	48.2

Remark : * Average time between 12:00-12:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Community Noise MTR-Inulin

Location : Rangwan Temple Area

Monitor Period : 04-11 May 2022

SLM Model : RION NL-21

Serial No : 00198274

Site Operator : Mr.Jakree Intasan

Calibrator Model : RION NC-74

Serial No : 34283648

Calibration Ref dB(A) : 94.0

Certified Date : 24 Dec 2021

SLM Reading / Adjust dB(A) : 94.0/0.0

Expire Date : 23 Dec 2022

Cal Sheet No.: NC-74-2022-045

Time	Equivalent Sound Pressure Level (dB(A))						
	04-05 May 2022	05-06 May 2022	06-07 May 2022	07-08 May 2022	08-09 May 2022	09-10 May 2022	10-11 May 2022
10:00 - 11:00	55.4	52.9	52.7	55.0	60.0	57.6	61.9
11:00 - 12:00	56.4	56.2	56.2	52.6	55.8	57.2	61.8
12:00 - 13:00	61.4	55.4	57.3	62.3	53.7	57.1	59.2
13:00 - 14:00	57.8	57.1	57.6	55.1	62.0	64.7	58.3
14:00 - 15:00	54.0	55.0	68.1	54.4	58.7	75.6	56.9
15:00 - 16:00	54.1	52.1	68.5	54.5	56.3	72.6	57.4
16:00 - 17:00	53.0	54.2	53.6	60.2	55.4	55.7	60.0
17:00 - 18:00	54.3	57.0	51.3	54.9	54.8	56.5	53.7
18:00 - 19:00	57.8	51.7	50.6	55.7	57.2	54.5	54.8
19:00 - 20:00	69.3	55.7	54.0	53.9	53.3	55.5	56.9
20:00 - 21:00	54.8	53.1	52.5	54.3	57.8	56.8	57.6
21:00 - 22:00	51.7	52.0	52.3	55.4	69.3	60.7	54.3
22:00 - 23:00	52.3	53.5	51.6	55.6	54.8	51.8	60.6
23:00 - 00:00	58.2	51.5	52.7	53.8	51.7	52.8	52.9
00:00 - 01:00	51.7	51.1	54.4	54.5	52.3	51.1	50.2
01:00 - 02:00	49.6	49.8	55.0	52.6	58.2	51.9	52.8
02:00 - 03:00	53.3	54.8	53.5	54.0	51.7	51.8	51.0
03:00 - 04:00	55.4	52.2	55.6	54.1	49.6	51.3	48.8
04:00 - 05:00	62.8	61.9	57.9	59.0	53.3	51.9	49.0
05:00 - 06:00	65.0	63.1	59.8	59.5	55.4	55.8	52.0
06:00 - 07:00	63.1	61.3	54.1	61.0	62.8	63.3	63.6
07:00 - 08:00	72.1	59.2	57.1	61.0	65.0	61.7	56.9
08:00 - 09:00	57.6	57.2	58.0	58.4	63.1	60.9	57.8
09:00 - 10:00	56.7	51.9	56.6	59.3	72.1	68.5	60.1
Leq(24)*	62.1	56.7	59.5	57.3	62.2	65.0	57.9
Ldn	66.9	64.3	63.3	63.5	65.0	66.5	63.5
Lmax **	96.0	85.8	94.7	89.2	96.0	98.6	92.1
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

Remark : * Average time between 10:00-10:00

** Maximum Sound Pressure Level between 10:00-10:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Background Noise MTR-Inulin

Location : Rangwan Temple Area

Monitor Period : 04-11 May 2022

SLM Model : RION NL-21

Serial No : 00198274

Site Operator : Mr.Jakree Intasan

Calibrator Model : RION NC-74

Serial No : 34283648

Calibration Ref dB(A) : 94.0

Certified Date : 24 Dec 2021


SLM Reading / Adjust dB(A) : 94.0/0.0


Expire Date : 23 Dec 2022

Cal Sheet No.: NC-74-2022-045

Time	L90 (dB(A))						
	04-05 May 2022	05-06 May 2022	06-07 May 2022	07-08 May 2022	08-09 May 2022	09-10 May 2022	10-11 May 2022
10:00 - 11:00	45.5	47.1	46.4	47.0	57.7	52.6	46.7
11:00 - 12:00	45.3	44.2	47.2	46.6	47.9	50.1	46.7
12:00 - 13:00	47.0	47.6	45.2	52.3	44.6	46.6	46.3
13:00 - 14:00	52.1	45.1	45.6	51.4	47.3	49.9	49.4
14:00 - 15:00	46.0	44.8	51.9	50.4	47.5	47.0	51.7
15:00 - 16:00	44.9	44.1	48.7	50.2	48.1	46.1	48.2
16:00 - 17:00	46.1	46.9	47.9	47.3	48.6	47.0	46.3
17:00 - 18:00	47.8	49.5	47.1	46.2	48.8	46.4	46.1
18:00 - 19:00	50.3	48.5	46.9	47.6	50.4	47.6	45.9
19:00 - 20:00	49.1	50.9	48.1	47.9	46.9	48.6	46.7
20:00 - 21:00	50.1	49.0	49.9	51.6	50.3	51.6	50.3
21:00 - 22:00	49.8	48.6	50.0	52.8	49.1	51.3	50.0
22:00 - 23:00	49.9	50.3	50.2	51.6	50.1	50.7	48.5
23:00 - 00:00	50.5	50.7	51.0	51.1	49.8	49.5	50.1
00:00 - 01:00	47.9	50.1	52.3	51.1	49.9	50.1	49.2
01:00 - 02:00	47.6	45.1	52.8	48.6	50.5	50.9	49.3
02:00 - 03:00	47.1	49.7	49.1	50.6	47.9	50.6	49.7
03:00 - 04:00	51.1	42.9	46.4	48.3	47.6	50.1	47.4
04:00 - 05:00	50.0	46.8	48.6	47.2	47.1	49.6	46.0
05:00 - 06:00	48.2	48.3	50.1	51.0	51.1	46.5	48.0
06:00 - 07:00	48.4	47.9	47.0	50.1	50.0	49.0	50.4
07:00 - 08:00	52.9	49.9	47.6	48.8	48.2	47.0	48.3
08:00 - 09:00	52.6	50.9	50.3	48.4	48.4	50.9	48.8
09:00 - 10:00	53.1	43.9	49.0	52.0	52.9	50.9	56.5
L90(avg)*	49.6	48.2	49.2	50.0	50.2	49.6	49.4

Remark : * Average time between 10:00-10:00


 (Miss Katesarin Vorradetwittaya)
 Environmental Scientist


 (Miss Preeda Somjai)
 Technical Management Team



Noise Monitoring Result : Community Noise MTR-Inulin

Location : Kosinarai Temple Area

Monitor Period : 04-11 May 2022

SLM Model : RION NL-21

Serial No : 00187511

Site Operator : Mr.Jakree Intasan

Calibrator Model : RION NC-74

Serial No : 34283648

Calibration Ref dB(A) : 94.0

Certified Date : 24 Dec 2021

SLM Reading / Adjust dB(A) : 94.0/0.0

Expire Date : 23 Dec 2022

Cal Sheet No.: NC-74-2022-045

Time	Equivalent Sound Pressure Level (dB(A))						
	04-05 May 2022	05-06 May 2022	06-07 May 2022	07-08 May 2022	08-09 May 2022	09-10 May 2022	10-11 May 2022
13:00 - 14:00	62.3	71.5	64.7	70.5	71.6	60.9	60.6
14:00 - 15:00	63.6	73.2	64.4	70.9	72.0	61.7	63.4
15:00 - 16:00	63.4	67.2	66.2	68.8	72.6	64.0	65.6
16:00 - 17:00	62.2	66.7	70.2	72.7	61.4	62.8	74.8
17:00 - 18:00	64.5	68.5	65.3	71.0	66.6	60.2	69.9
18:00 - 19:00	63.0	69.6	65.5	71.5	62.7	60.2	71.2
19:00 - 20:00	61.8	62.4	65.1	70.4	60.1	66.7	63.1
20:00 - 21:00	61.1	63.1	64.6	70.4	63.2	61.0	61.2
21:00 - 22:00	59.2	65.8	65.8	65.0	59.9	62.4	67.0
22:00 - 23:00	59.4	67.5	64.6	66.0	59.4	65.8	65.9
23:00 - 00:00	59.9	67.2	67.0	69.3	58.6	65.6	64.7
00:00 - 01:00	59.7	67.7	66.2	60.9	58.5	61.8	65.0
01:00 - 02:00	60.5	66.1	67.8	61.3	57.8	60.8	63.5
02:00 - 03:00	62.6	64.4	64.9	62.7	58.4	61.2	63.0
03:00 - 04:00	61.9	67.8	68.4	60.6	60.3	62.7	63.0
04:00 - 05:00	62.6	67.6	70.7	65.7	60.3	61.9	61.5
05:00 - 06:00	65.9	70.7	72.2	69.1	61.4	60.0	62.8
06:00 - 07:00	63.0	64.7	70.5	66.8	63.6	60.3	62.8
07:00 - 08:00	65.7	71.6	71.1	70.6	59.6	61.2	65.6
08:00 - 09:00	67.3	69.4	69.3	71.6	62.3	62.1	63.7
09:00 - 10:00	67.5	64.8	69.0	69.7	58.8	65.5	68.0
10:00 - 11:00	67.5	70.4	68.8	70.7	59.4	69.6	64.2
11:00 - 12:00	68.3	69.9	68.9	64.7	59.8	66.3	64.3
12:00 - 13:00	76.4	64.9	72.3	70.1	60.7	61.5	64.7
Leq(24)*	66.3	68.5	68.4	69.1	65.0	63.6	66.6
Ldn	69.9	74.1	75.1	73.3	68.3	69.4	71.0
Lmax **	98.4	97.4	104.8	111.2	94.4	100.5	98.1
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

Remark : * Average time between 13:00-13:00

** Maximum Sound Pressure Level between 13:00-13:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Background Noise

MTR-Inulin

Location : Kosinarai Temple Area

Monitor Period : 04-11 May 2022

SLM Model : RION NL-21

Serial No : 00187511

Site Operator : Mr.Jakree Intasan

Calibrator Model : RION NC-74

Serial No : 34283648

Calibration Ref dB(A) : 94.0

Certified Date : 24 Dec 2021


SLM Reading / Adjust dB(A) : 94.0/0.0


Expire Date : 23 Dec 2022

Cal Sheet No.: NC-74-2022-045

Time	L90 (dB(A))						
	04-05 May 2022	05-06 May 2022	06-07 May 2022	07-08 May 2022	08-09 May 2022	09-10 May 2022	10-11 May 2022
13:00 - 14:00	54.3	59.1	57.0	63.5	55.0	54.1	53.3
14:00 - 15:00	57.3	60.3	54.3	58.0	54.4	54.8	54.4
15:00 - 16:00	56.1	60.7	54.8	62.5	54.8	54.9	55.4
16:00 - 17:00	55.2	59.0	60.6	59.7	53.0	54.6	54.5
17:00 - 18:00	55.7	57.3	57.1	60.2	54.4	53.5	53.0
18:00 - 19:00	55.1	54.2	57.0	60.5	54.3	53.6	54.3
19:00 - 20:00	53.2	55.7	56.5	59.9	52.5	54.9	56.4
20:00 - 21:00	53.3	54.0	54.9	59.1	52.0	54.2	54.2
21:00 - 22:00	52.6	55.8	54.9	56.0	52.6	54.7	57.5
22:00 - 23:00	53.0	55.7	56.6	58.1	52.2	58.1	56.9
23:00 - 00:00	53.3	58.5	57.4	56.9	51.6	56.5	53.8
00:00 - 01:00	53.3	56.5	57.1	57.8	51.8	55.0	55.0
01:00 - 02:00	53.7	56.9	57.4	56.3	51.7	55.5	53.0
02:00 - 03:00	53.8	57.9	57.8	55.5	51.8	58.9	54.0
03:00 - 04:00	53.7	58.1	58.8	55.6	52.6	55.9	54.2
04:00 - 05:00	53.7	59.2	59.0	55.2	52.1	53.7	52.7
05:00 - 06:00	53.5	58.8	58.6	53.0	52.8	53.4	53.7
06:00 - 07:00	54.5	57.2	62.1	54.2	52.0	53.8	54.6
07:00 - 08:00	58.2	57.8	64.6	55.7	51.3	53.9	53.2
08:00 - 09:00	58.6	55.6	62.3	56.0	52.6	54.1	52.4
09:00 - 10:00	58.5	56.5	62.4	54.6	52.1	54.3	55.3
10:00 - 11:00	58.7	57.7	61.9	54.3	52.6	54.7	55.3
11:00 - 12:00	58.3	58.5	60.7	55.4	52.7	53.7	56.1
12:00 - 13:00	60.9	58.1	60.1	55.2	53.9	53.8	55.2
L90(avg)*	56.0	57.8	59.4	58.1	52.9	55.0	54.7

Remark : * Average time between 13:00-13:00


 (Miss Katesarin Vorradetwittaya)
 Environmental Scientist


 (Miss Preeda Somjai)
 Technical Management Team

ใบรับรองผลการตรวจวัดนิเวศแหล่งน้ำ



สถานีวิจัยประมงศรีราชา
101/12 หมู่ 9 ต.บางพระ
อ.ศรีราชา จ.ชลบุรี 20110
โทร./โทรสาร. (038) 311379

รายงานผลการวิเคราะห์แพลงก์ตอนพืชและแพลงก์ตอนสัตว์
ตาราง ผลการวิเคราะห์แพลงก์ตอนพืชและแพลงก์ตอนสัตว์ (เก็บตัวอย่างวันที่ 4 เมษายน 2565)

กลุ่ม/สกุลของแพลงก์ตอน	ปริมาณแพลงก์ตอน (หน่วยต่อลูกบาศก์เมตร)				
	S1	S2	S3	S4	S5
แพลงก์ตอนพืช					
Division Cyanophyta					
Class Cyanophyceae					
Order Chroococcales					
Family Chroococcaceae					
<i>Chroococcus</i> sp.	-	-	-	-	8,000
<i>Microcystis</i> sp.	-	-	-	-	15,000
Order Nostocales					
Family Oscillatoriaceae					
<i>Oscillatoria</i> sp.	466,000	297,000	-	3,713,000	2,660,000
<i>Spirulina</i> sp.	-	-	32,000	-	-
Family Nostocaceae					
<i>Cylindrospermum</i> sp.	14,000	-	-	-	-
<i>Raphidiopsis</i> sp.	41,000	99,000	6,000	-	-
Family Rivulariaceae					
<i>Calothrix</i> sp.	-	25,000	-	158,000	23,000

ตาราง ผลการวิเคราะห์แพลงก์ตอนพืชและแพลงก์ตอนสัตว์ (เก็บตัวอย่างวันที่ 4 เมษายน 2565)
(ต่อ)

กลุ่ม/สกุลของแพลงก์ตอน	ปริมาณแพลงก์ตอน (หน่วยต่อลูกบาศก์เมตร)				
	S1	S2	S3	S4	S5
Division Chlorophyta					
Class Chlorophyceae					
Order Chlorococcales					
Family Volvocaceae					
<i>Eudorina</i> sp.	27,000	8,000	-	-	30,000
<i>Gonium</i> sp.	-	-	-	16,000	15,000
Family Hydrodictyaceae					
<i>Pediastrum</i> sp.	7,000	25,000	32,000	869,000	433,000
Family Coelastraceae					
<i>Coelastrum</i> sp.	7,000	-	-	8,000	38,000
Family Oocystaceae					
<i>Ankistrodesmus</i> sp.	-	-	-	-	23,000
<i>Dictyosphaerium</i> sp.	82,000	8,000	25,000	-	8,000
<i>Kirchneriella</i> sp.	-	-	6,000	-	-
<i>Oocystis</i> sp.	-	8,000	-	24,000	-
Family Scenedesmaceae					
<i>Micractinium</i> sp.	-	-	-	-	23,000
<i>Scenedesmus</i> sp.	-	-	-	261,000	-
Order Zygnematales					
Family Desmidiaceae					
<i>Arthodesmus</i> sp.	7,000	-	-	-	-
<i>Cosmarium</i> sp.	-	50,000	-	-	-
<i>Staurastrum</i> sp.	192,000	66,000	19,000	948,000	403,000

ตาราง ผลการวิเคราะห์แพลงก์ตอนพืชและแพลงก์ตอนสัตว์ (เก็บตัวอย่างวันที่ 4 เมษายน 2565)
(ต่อ)

กลุ่ม/สกุลของแพลงก์ตอน	ปริมาณแพลงก์ตอน (หน่วยต่อลูกบาศก์เมตร)				
	S1	S2	S3	S4	S5
Class Euglenophyceae					
Order Euglenales					
Family Euglenaceae					
<i>Euglena</i> sp.	14,000	-	6,000	1,264,000	1,064,000
<i>Lepocinclis</i> sp.	-	-	-	15,800,000	2,812,000
<i>Phacus</i> sp.	-	-	13,000	6,794,000	1,520,000
<i>Strombomonas</i> sp.	21,000	-	-	-	-
<i>Trachelomonas</i> sp.	-	-	6,000	316,000	91,000
Division Chromophyta					
Class Bacillariophyceae					
Order Biddulphales					
Suborder Coscinodiscineae					
Family Thalassiosiraceae					
<i>Cyclotella</i> sp.	219,000	165,000	202,000	-	266,000
Family Melosiraceae					
<i>Melosira</i> sp.	14,000	-	38,000	-	-
Family Aulacoseiraceae					
<i>Aulacoseira</i> sp.	55,000	41,000	151,000	55,000	304,000
Suborder Biddulphiineae					
Family Biddulphiaceae					
<i>Biddulphia</i> sp.	-	-	19,000	-	-
Order Bacillariales					
Suborder Fragilariineae					
Family Fragilariaceae					
<i>Fragilaria</i> sp.	-	-	-	103,000	251,000
<i>Synedra</i> sp.	62,000	149,000	76,000	47,000	289,000

ตาราง ผลการวิเคราะห์แพลงก์ตอนพืชและแพลงก์ตอนสัตว์ (เก็บตัวอย่างวันที่ 4 เมษายน 2565)

(ต่อ)

กลุ่ม/สกุลของแพลงก์ตอน	ปริมาณแพลงก์ตอน (หน่วยต่อลูกบาศก์เมตร)				
	S1	S2	S3	S4	S5
Suborder Bacillariineae					
Family Eunotiaceae					
<i>Eunotia</i> sp.	21,000	-	-	-	-
Family Achnantheaceae					
<i>Achnantheidium</i> sp.	-	-	-	-	68,000
Family Cymbellaceae					
<i>Cymbella</i> sp.	-	17,000	-	-	-
<i>Gomphonema</i> sp.	-	17,000	-	-	-
Family Naviculaceae					
<i>Amphora</i> sp.	14,000	-	-	-	281,000
<i>Gyrosigma</i> sp.	55,000	33,000	50,000	-	-
<i>Hantzschia</i> sp.	-	-	6,000	-	-
<i>Navicula</i> sp.	-	33,000	13,000	1,501,000	456,000
<i>Pinnularia</i> sp.	-	-	-	577,000	152,000
Family Bacillariaceae					
<i>Nitzschia</i> sp.	69,000	-	-	-	84,000
Family Rhopalodiaceae					
<i>Epithemia</i> sp.	-	-	-	32,000	-
Family Surirellaceae					
<i>Surirella</i> sp.	27,000	8,000	101,000	-	23,000
Class Dinophyceae					
Order Gonyaulacalea					
Family Ceratiaceae					
<i>Ceratium</i> sp.	-	-	-	8,000	8,000

ตาราง ผลการวิเคราะห์แพลงก์ตอนพืชและแพลงก์ตอนสัตว์ (เก็บตัวอย่างวันที่ 4 เมษายน 2565)

(ต่อ)

กลุ่ม/สกุลของแพลงก์ตอน	ปริมาณแพลงก์ตอน (หน่วยต่อลูกบาศก์เมตร)				
	S1	S2	S3	S4	S5
Order Peridiniales					
Family Peridiniaceae					
<i>Peridinium</i> sp.	240,000	132,000	25,000	-	-
แพลงก์ตอนสัตว์					
Phylum Protozoa					
Subphylum Plasmodroma					
Class Sarcodina					
Subclass Rhizopoda					
Order Testacida					
Family Arcellidae					
<i>Arcella</i> sp.	62,000	8,000	120,000	47,000	84,000
Family Diffugiidae					
<i>Diffugia</i> sp.	14,000	-	19,000	-	30,000
Family Euglyphidae					
<i>Euglypha</i> sp.	14,000	66,000	32,000	63,000	38,000
Subphylum Ciliophora					
Class Ciliata					
Subclass Holotricha					
Order Gymnostomatida					
<i>Colops</i> sp.	21,000	8,000	-	8,000	30,000
<i>Didinium</i> sp.	14,000	-	-	24,000	8,000
Order Hymenostomatida					
<i>Paramecium</i> sp.	7,000	-	-	8,000	-
Subclass Spirotricha					
Order Hypotrochida					
<i>Aspidisca</i> sp.	-	-	-	-	15,000

ตาราง ผลการวิเคราะห์แพลงก์ตอนพืชและแพลงก์ตอนสัตว์ (เก็บตัวอย่างวันที่ 4 เมษายน 2565)

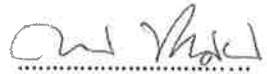
(ต่อ)

กลุ่ม/สกุลของแพลงก์ตอน	ปริมาณแพลงก์ตอน (หน่วยต่อลูกบาศก์เมตร)				
	S1	S2	S3	S4	S5
Phylum Rotifera					
Class Monogononta					
Order Ploima					
Family Brachionidae					
<i>Brachionus</i> sp.	-	-	-	24,000	23,000
<i>Colurella</i> sp.	-	-	-	-	8,000
<i>Keratella</i> sp.	-	-	-	-	8,000
Family Lecanidae					
<i>Lecane</i> sp.	7,000	8,000	-	16,000	30,000
Family Notommatidae					
<i>Cephalodella</i> sp.	-	-	-	16,000	23,000
Family Tricercidae					
<i>Trochosphaera</i> sp.	-	-	-	-	8,000
Family Asplanchnidae					
<i>Asplanchna</i> sp.	7,000	-	-	24,000	23,000
Family Synchaetidae					
<i>Polyarthra</i> sp.	-	-	-	-	8,000
Order Flosculariacea					
Family Testudinellidae					
<i>Testudinella</i> sp.	7,000	-	-	-	-
Class Digononta					
Family Philodinidae					
<i>Rotaria</i> sp.	-	-	-	24,000	23,000

ตาราง ผลการวิเคราะห์แพลงก์ตอนพืชและแพลงก์ตอนสัตว์ (เก็บตัวอย่างวันที่ 3 ธันวาคม 2564)
(ต่อ)

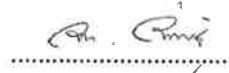
กลุ่ม/สกุลของแพลงก์ตอน	ปริมาณแพลงก์ตอน (หน่วยต่อลูกบาศก์เมตร)				
	S1	S2	S3	S4	S5
Phylum Arthropoda					
Class Crustacea					
Subclass Copepoda					
Copepod nauplii	7,000	-	-	-	53,000
ชนิดของแพลงก์ตอนพืช	21	18	19	19	27
ชนิดของแพลงก์ตอนสัตว์	10	4	3	10	16
ชนิดแพลงก์ตอนรวม	31	22	22	29	43
ปริมาณแพลงก์ตอนพืช	1,654,000	1,181,000	826,000	32,494,000	11,348,000
ปริมาณแพลงก์ตอนสัตว์	160,000	90,000	171,000	254,000	412,000
ปริมาณแพลงก์ตอนรวม	1,814,000	1,271,000	997,000	32,748,000	11,760,000
ค่าดัชนีความหลากหลาย	2.3534	2.3683	2.3897	1.6338	2.2850
แพลงก์ตอนพืช					
ค่าดัชนีความหลากหลาย	1.9579	0.8729	0.8063	2.1158	2.5278
แพลงก์ตอนสัตว์					
ค่าดัชนีความสม่ำเสมอ	0.7730	0.8194	0.8116	0.5549	0.6933
แพลงก์ตอนพืช					
ค่าดัชนีความสม่ำเสมอ	0.8503	0.6297	0.7339	0.9189	0.6602
แพลงก์ตอนสัตว์					

- หมายเหตุ :
1. สถานี S1 : แม่น้ำแม่กลองบริเวณเหนือปากลำรางสาธารณะที่รับน้ำทิ้งจากโครงการ 500 เมตร
 2. สถานี S2 : แม่น้ำแม่กลองบริเวณปากลำรางสาธารณะที่รับน้ำทิ้งจากโครงการ
 3. สถานี S3 : แม่น้ำแม่กลองบริเวณท้ายปากลำรางสาธารณะที่รับน้ำทิ้งจากโครงการ 500 เมตร
 4. สถานี S4 : บริเวณลำรางสาธารณะเหนือจุดระบายน้ำทิ้งของโครงการ 220 เมตร
 5. สถานี S5 : บริเวณลำรางสาธารณะท้ายจุดระบายน้ำทิ้งของโครงการ 250 เมตร



(นางสาวกนกวรรณ ขวาค่อน)

ผู้วิเคราะห์



(นายชลงกต อินทรชาติ)

หัวหน้าสถานีวิจัยประมงศรีราชา



สถานีวิจัยประมงศรีราชา
101/12 หมู่ 9 ต. บางพระ
อ. ศรีราชา จ. ชลบุรี 20110
โทร./โทรสาร. (038) 311379

รายงานผลการวิเคราะห์สัตว์หน้าดิน

ตาราง ผลการวิเคราะห์สัตว์หน้าดิน (เก็บตัวอย่างวันที่ 4 เมษายน 2565)

ชนิดสัตว์หน้าดิน	ปริมาณสัตว์หน้าดิน (ตัวต่อตารางเมตร)				
	S1	S2	S3	S4	S5
Phylum Annelida Class Clitellata Order Lumbriculida Family Lumbriculidae <i>Lumbriculus</i> sp. (ไส้เดือนน้ำจืด)	89	30	75	45	623
Phylum Arthropoda Class Insecta Order Diptera Family Chironomidae <i>Chironomus</i> sp. (หนอนแดง) Order Ephemeroptera Family Ephemeridae <i>Ephemera</i> sp. (ตัวอ่อนแมลงชีปะขาว)	134	45	30	15	-
Phylum Mollusca Class Gastropoda Order Architenioglossa Family Ampullariidae <i>Pomacea</i> sp. (หอยเชอรี่)	-	-	30	-	15

ตาราง ผลการวิเคราะห์สัตว์หน้าดิน (เก็บตัวอย่างวันที่ 4 เมษายน 2565)

(ต่อ)

ชนิดสัตว์หน้าดิน	ปริมาณสัตว์หน้าดิน (ตัวต่อตารางเมตร)				
	S1	S2	S3	S4	S5
ชนิดสัตว์หน้าดิน	2	2	3	2	2
ปริมาณสัตว์หน้าดิน	223	75	135	60	638
ค่าดัชนีความหลากหลายสัตว์หน้าดิน	0.6726	0.6730	0.9950	0.5623	0.1114

- หมายเหตุ :
1. สถานี S1 : แม่น้ำแม่กลองบริเวณเหนือปากลำรางสาธารณะที่รับน้ำทิ้งจากโครงการ 500 เมตร
 2. สถานี S2 : แม่น้ำแม่กลองบริเวณปากลำรางสาธารณะที่รับน้ำทิ้งจากโครงการ
 3. สถานี S3 : แม่น้ำแม่กลองบริเวณท้ายปากลำรางสาธารณะที่รับน้ำทิ้งจาก โครงการ 500 เมตร
 4. สถานี S4 : บริเวณลำรางสาธารณะเหนือจุดระบายน้ำทิ้งของโครงการ 220 เมตร
 5. สถานี S5 : บริเวณลำรางสาธารณะท้ายจุดระบายน้ำทิ้งของโครงการ 250 เมตร

.....
นายอรรถวุฒิ กันทะวงศ์

(นายอรรถวุฒิ กันทะวงศ์)

ผู้วิเคราะห์

.....
นายอลงกต อินทรชาติ

(นายอลงกต อินทรชาติ)

หัวหน้าสถานีวิจัยประมงศรีราชา



สถานีวิจัยประมงศรีราชา
101/12 หมู่ 9 ต. บางพระ
อ. ศรีราชา จ. ชลบุรี 20110
โทร./โทรสาร. (038) 311379

รายงานผลการวิเคราะห์ไข่ปลาและลูกปลา

ตาราง ผลการวิเคราะห์ไข่ปลาและลูกปลา (เก็บตัวอย่างวันที่ 4 เมษายน 2565)

ชนิดไข่ปลาและลูกปลา	ปริมาณไข่ปลาและลูกปลา (ตัวต่อ 1,000 ลูกบาศก์เมตร)				
	S1	S2	S3	S4	S5
Phylum Chordata					
Class Actinopterygii					
Order Anabantiformes					
Family Osphronemidae					
<i>Trichopodus trichopterus</i> (ลูกปลากรรเชียง)	5	15	11	9	-
ชนิดลูกปลา	1	1	1	1	-
ปริมาณลูกปลา	5	15	11	9	-
ค่าดัชนีความหลากหลายของลูกปลา	0.0000	0.0000	0.0000	0.0000	-
ปริมาณไข่ปลา	-	-	-	-	-

- หมายเหตุ :
1. สถานี S1 : แม่น้ำแม่กลองบริเวณเหนือปากลำรางสาธารณะที่รับน้ำทิ้งจากโครงการ 500 เมตร
 2. สถานี S2 : แม่น้ำแม่กลองบริเวณปากลำรางสาธารณะที่รับน้ำทิ้งจากโครงการ
 3. สถานี S3 : แม่น้ำแม่กลองบริเวณท้ายปากลำรางสาธารณะที่รับน้ำทิ้งจากโครงการ 500 เมตร
 4. สถานี S4 : บริเวณลำรางสาธารณะเหนือจุดระบายน้ำทิ้งของโครงการ 220 เมตร
 5. สถานี S5 : บริเวณลำรางสาธารณะท้ายจุดระบายน้ำทิ้งของโครงการ 250 เมตร

(นางสาวกนกวรรณ ขวาค่อน)

ผู้วิเคราะห์

(นายอลงกต อินทรชาติ)

หัวหน้าสถานีวิจัยประมงศรีราชา



ภาพที่ 1 ลูกปลากระดี่หม้อ (*Trichopodus trichopterus*)

ใบรับรองผลการตรวจวัดคุณภาพอากาศในสถานประกอบการ



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร 10800

239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 0390/65
For	: Fuji Nihon Thai Inulin Co., Ltd.	Sampling Date	: 24/02/2022
Address	: No. 15 , Moo 17 , Seang Chuto Road , Tapha Subdistrict, Banpong District, Ratchaburi Province 70110	Received Date	: 28/02/2022
Tel/Fax	: 032-371116/032-371118	Test Date	: 02/03/2022
		Report Date	: 07/03/2022

SAMPLE DESCRIPTION / SAMPLING INFORMATION

Sample Designated As	: Workplace Air	Sampling Method	: Filtration
Sampling By	: SECOT Co., Ltd.	Sample Condition	: Normal

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND	RESULT	STANDARD
				mg/m ³	mg/m ³	mg/m ³
กระบวนการ Inulin Concentration และ Glucose Concentration	24/02/2022	Total dust	NIOSH 0500 /Microbalance	< 0.25	ND	15
	08:25-10:25					
	24/02/2022	Respirable dust	NIOSH 0600 /Microbalance	< 0.25	ND	5
	08:25-09:55					
กระบวนการ Drying	24/02/2022	Total dust	NIOSH 0500 /Microbalance	< 0.25	ND	15
	08:20-10:20					
	24/02/2022	Respirable dust	NIOSH 0600 /Microbalance	< 0.25	ND	5
	08:20-09:50					

Analyst By : Phatchara Samanchan
(Miss Phatchara Samanchan)

Approved By :

Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)

Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. Notification of the Occupational Safety and Health Administration (OSHA).

4. ND = non-detectable.



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร 10800

239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 0957/65
For	: Fuji Nihon Thai Inulin Co., Ltd.	Sampling Date	: 06/05/2022
Address	: No. 15 , Moo 17 , Seang Chuto Road , Tapha Subdistrict, Banpong District, Ratchaburi Province 70110	Received Date	: 07/05/2022
Tel/Fax	: 032-371116/032-371118	Test Date	: 09/05/2022
		Report Date	: 17/05/2022

SAMPLE DESCRIPTION / SAMPLING INFORMATION

Sample Designated As	: Workplace Air	Sampling Method	: Filtration
Sampling By	: SECOT Co., Ltd.	Sample Condition	: Normal

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND	RESULT	STANDARD
				mg/m ³	mg/m ³	mg/m ³
กระบวนการ Inulin Concentration และ Glucose Concentration	06/05/2022	Total dust	NIOSH 0500 /Microbalance	< 0.25	ND	15
	10:12-12:12					
	06/05/2022	Respirable dust	NIOSH 0600 /Microbalance	< 0.25	ND	5
	10:12-12:12					
กระบวนการ Drying	06/05/2022	Total dust	NIOSH 0500 /Microbalance	< 0.25	ND	15
	10:14-12:14					
	06/05/2022	Respirable dust	NIOSH 0600 /Microbalance	< 0.25	ND	5
	10:14-12:14					

Analyst By : Phatchara Samanchan
(Miss Phatchara Samanchan)

Approved By :

Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)

Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. Notification of the Occupational Safety and Health Administration (OSHA).

4. ND = non-detectable.

ใบรับรองผลการตรวจวัดระดับเสียงในสถานประกอบการ



Noise Monitoring Result : Working Noise MTR-Inulin

Location : Melting Area

Monitor Period : Feb 24, 2022

SLM Model : CASELLA CEL-246

Serial No : 3173243

Site Operator : Mr. Chakkrid Karakate

Calibrator Model : CASELLA CEL120/2

Serial No : 2839225

Calibration Ref dB(A) : 114.0

Certified Date : Dec 24, 2021

SLM Reading / Adjust dB(A) : 114.0/0.0

Expire Date : Dec 23, 2022

Cal Sheet No.: CEL120/2-2022-013

Time	Equivalent Sound Pressure Level (dB(A))	
	Feb 24, 2022	
00:00 - 01:00		
01:00 - 02:00		
02:00 - 03:00		
03:00 - 04:00		
04:00 - 05:00		
05:00 - 06:00		
06:00 - 07:00		
07:00 - 08:00		
08:00 - 09:00		74.3
09:00 - 10:00		74.4
10:00 - 11:00		74.4
11:00 - 12:00		74.0
12:00 - 13:00		74.4
13:00 - 14:00		74.7
14:00 - 15:00		74.5
15:00 - 16:00		74.5
16:00 - 17:00		
17:00 - 18:00		
18:00 - 19:00		
19:00 - 20:00		
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		
Leq(8)*		74.4
Lmax **		76.2
Standard-8Hr		90 dB(A)
Standard-Max		140 dB(A)

Remark : * Average time between 08:00-16:00

** Maximum Sound Pressure Level between 08:00-16:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Sununta Sirawuttinanon)
Technical Management Team



Noise Monitoring Result : Working Noise MTR-Inulin

Location : Chromatographic Separation Unit Area

Monitor Period : Feb 24, 2022

SLM Model : CASELLA CEL-246

Serial No : 3173312

Site Operator : Mr. Chakkrid Karakate

Calibrator Model : CASELLA CEL120/2

Serial No : 2839225

Calibration Ref dB(A) : 114.0

Certified Date : Dec 24, 2021

SLM Reading / Adjust dB(A) : 114.0/0.0

Expire Date : Dec 23, 2022

Cal Sheet No.: CEL120/2-2022-013

Time	Equivalent Sound Pressure Level (dB(A))	
	Feb 24, 2022	
00:00 - 01:00		
01:00 - 02:00		
02:00 - 03:00		
03:00 - 04:00		
04:00 - 05:00		
05:00 - 06:00		
06:00 - 07:00		
07:00 - 08:00		
08:00 - 09:00	76.2	
09:00 - 10:00	76.6	
10:00 - 11:00	76.3	
11:00 - 12:00	75.8	
12:00 - 13:00	79.1	
13:00 - 14:00	80.0	
14:00 - 15:00	79.6	
15:00 - 16:00	79.4	
16:00 - 17:00		
17:00 - 18:00		
18:00 - 19:00		
19:00 - 20:00		
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		
Leq(8)*	78.2	
Lmax **	82.0	
Standard-8Hr	90 dB(A)	
Standard-Max	140 dB(A)	

Remark : * Average time between 08:00-16:00

** Maximum Sound Pressure Level between 08:00-16:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Sununta Sirawuttinanon)
Technical Management Team



Noise Monitoring Result : Working Noise MTR-Inulin

Location : Burner Area

Monitor Period : Feb 24, 2022

SLM Model : CASELLA CEL-246

Serial No : 3173161

Site Operator : Mr. Chakkrid Karakate

Calibrator Model : CASELLA CEL120/2

Serial No : 2839225

Calibration Ref dB(A) : 114.0

Certified Date : Dec 24, 2021

SLM Reading / Adjust dB(A) : 114.0/0.0

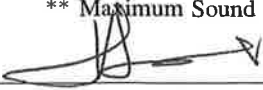
Expire Date : Dec 23, 2022

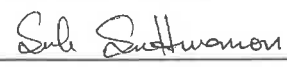
Cal Sheet No.: CEL120/2-2022-013

Time	Equivalent Sound Pressure Level (dB(A))
	Feb 24, 2022
00:00 - 01:00	
01:00 - 02:00	
02:00 - 03:00	
03:00 - 04:00	
04:00 - 05:00	
05:00 - 06:00	
06:00 - 07:00	
07:00 - 08:00	
08:00 - 09:00	83.8
09:00 - 10:00	84.3
10:00 - 11:00	83.7
11:00 - 12:00	83.4
12:00 - 13:00	83.2
13:00 - 14:00	83.2
14:00 - 15:00	83.3
15:00 - 16:00	83.2
16:00 - 17:00	
17:00 - 18:00	
18:00 - 19:00	
19:00 - 20:00	
20:00 - 21:00	
21:00 - 22:00	
22:00 - 23:00	
23:00 - 24:00	
Leq(8)*	83.5
Lmax**	86.2
Standard-8Hr	90 dB(A)
Standard-Max	140 dB(A)

Remark : * Average time between 08:00-16:00

** Maximum Sound Pressure Level between 08:00-16:00


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Sununta Sirawuttinanon)
Technical Management Team



Noise Monitoring Result : Working Noise MTR-Inulin

Location : Evaporation Area
SLM Model : CASELLA CEL-246
Site Operator : Mr. Chakkrid Karakate

Monitor Period : Feb 24, 2022
Serial No : 3173339

Calibrator Model : CASELLA CEL120/2
Calibration Ref dB(A) : 114.0
SLM Reading / Adjust dB(A) : 114.0/0.0
Cal Sheet No.: CEL120/2-2022-013

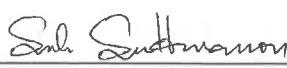
Serial No : 2839225
Certified Date : Dec 24, 2021
Expire Date : Dec 23, 2022

Time	Equivalent Sound Pressure Level (dB(A))	
	Feb 24, 2022	
00:00 - 01:00		
01:00 - 02:00		
02:00 - 03:00		
03:00 - 04:00		
04:00 - 05:00		
05:00 - 06:00		
06:00 - 07:00		
07:00 - 08:00		
08:00 - 09:00	87.8	
09:00 - 10:00	88.0	
10:00 - 11:00	87.8	
11:00 - 12:00	87.6	
12:00 - 13:00	87.5	
13:00 - 14:00	87.5	
14:00 - 15:00	88.0	
15:00 - 16:00	87.8	
16:00 - 17:00		
17:00 - 18:00		
18:00 - 19:00		
19:00 - 20:00		
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		
Leq(8)*	87.8	
Lmax **	89.8	
Standard-8Hr	90 dB(A)	
Standard-Max	140 dB(A)	

Remark : * Average time between 08:00-16:00

** Maximum Sound Pressure Level between 08:00-16:00


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Sununta Sirawuttinanon)
Technical Management Team



Noise Monitoring Result : Working Noise MTR-Inulin

Location : Atomizer Area
SLM Model : CASELLA CEL-246
Site Operator : Mr. Chakkrid Karakate

Monitor Period : Feb 24, 2022
Serial No : 3173343

Calibrator Model : CASELLA CEL120/2
Calibration Ref dB(A) : 114.0
SLM Reading / Adjust dB(A) : 114.0/0.0
Cal Sheet No.: CEL120/2-2022-013

Serial No : 2839225
Certified Date : Dec 24, 2021
Expire Date : Dec 23, 2022

Time	Equivalent Sound Pressure Level (dB(A))	
	Feb 24, 2022	
00:00 - 01:00		
01:00 - 02:00		
02:00 - 03:00		
03:00 - 04:00		
04:00 - 05:00		
05:00 - 06:00		
06:00 - 07:00		
07:00 - 08:00		
08:00 - 09:00	80.5	
09:00 - 10:00	80.8	
10:00 - 11:00	80.4	
11:00 - 12:00	80.4	
12:00 - 13:00	80.3	
13:00 - 14:00	80.3	
14:00 - 15:00	80.1	
15:00 - 16:00	79.9	
16:00 - 17:00		
17:00 - 18:00		
18:00 - 19:00		
19:00 - 20:00		
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		
Leq(8)*	80.3	
Lmax **	83.3	
Standard-8Hr	90 dB(A)	
Standard-Max	140 dB(A)	

Remark : * Average time between 08:00-16:00

** Maximum Sound Pressure Level between 08:00-16:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Sununta Sirawuttinanon)
Technical Management Team



Noise Monitoring Result : Working Noise MTR-Inulin

Location : Boiler Area	Monitor Period : Feb 24, 2022
SLM Model : CASELLA CEL-246	Serial No : 3173156
Site Operator : Mr. Chakkrid Karakate	

Calibrator Model : CASELLA CEL120/2	Serial No : 2839225
Calibration Ref dB(A) : 114.0	Certified Date : Dec 24, 2021
SLM Reading / Adjust dB(A) : 114.0/0.0	Expire Date : Dec 23, 2022
Cal Sheet No.: CEL120/2-2022-013	

Time	Equivalent Sound Pressure Level (dB(A))
	Feb 24, 2022
00:00 - 01:00	
01:00 - 02:00	
02:00 - 03:00	
03:00 - 04:00	
04:00 - 05:00	
05:00 - 06:00	
06:00 - 07:00	
07:00 - 08:00	
08:00 - 09:00	77.0
09:00 - 10:00	77.2
10:00 - 11:00	77.6
11:00 - 12:00	76.3
12:00 - 13:00	76.7
13:00 - 14:00	76.9
14:00 - 15:00	77.7
15:00 - 16:00	76.9
16:00 - 17:00	
17:00 - 18:00	
18:00 - 19:00	
19:00 - 20:00	
20:00 - 21:00	
21:00 - 22:00	
22:00 - 23:00	
23:00 - 24:00	
Leq(8)*	77.1
Lmax **	87.9
Standard-8Hr	90 dB(A)
Standard-Max	140 dB(A)

Remark : * Average time between 08:00-16:00

** Maximum Sound Pressure Level between 08:00-16:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Sununta Sirawuttinanon)
Technical Management Team



บริษัท ซีคอต จำกัด

SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพฯ 10800

239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envserv@secot.co.th

SOUND PRESSURE LEVEL AT EACH FREQUENCY REPORT

CLIENT NAME	: Fuji Nihon Thai Inulin Co., Ltd.	REFERENCE NO.	: Inulin-222049-Cert-Octave (Feb2022)
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Sound Level Meter (Octave Band)
MEASUREMENT LOCATION	: Inulin Plant	CALIBRATOR	: Sound Calibrator
MEASUREMENT DATE	: 24/02/2022	CALIBRATOR TYPE	: CEL-120/2 S/N : 2839225
SITE OPERATOR	: Mr. Chackkrid Karakate	CALIBRATION REF.	: 114 dB @1,000 Hz

Locations	Sound Level (dBA)	Sound Pressure Level at each Frequency (dBA)									
		31.5	63	125	250	500	1,000	2,000	4,000	8,000	16,000
Evaporation	87.7	46.0	54.2	64.4	74.7	77.7	82.1	84.4	77.4	70.6	56.1
Atomizer	81.1	38.6	46.0	57.8	66.2	72.5	75.8	77.2	71.7	62.3	45.6
Chromatographic Separation Unit	77.0	39.7	46.8	52.3	61.0	66.7	70.8	73.7	68.6	58.4	37.8
Burner	84.5	40.8	55.4	66.3	69.7	75.3	78.4	80.5	76.3	67.7	53.1
Melting	74.8	38.5	42.5	51.3	58.9	65.3	69.5	71.1	69.7	53.9	33.4
Boiler	76.7	34.9	50.2	60.4	63.1	66.5	71.2	72.3	68.2	61.2	53.3

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

Technical Management Team

- Remark :**
1. Reported analysis refers to submitted sample only.
 2. This report shall not be reproduced, except in full, without official approval.



Noise Monitoring Result : Working Noise MTR-Inulin

Location : Melting Area

Monitor Period : May 06, 2022

SLM Model : CASELLA CEL-246

Serial No : 3173324

Site Operator : Mr. Thanawut Duansaeng

Calibrator Model : CASELLA CEL120/2

Serial No : 2839225

Calibration Ref dB(A) : 114.0

Certified Date : Dec 24, 2021

SLM Reading / Adjust dB(A) : 113.9/0.1

Expire Date : Dec 23, 2022

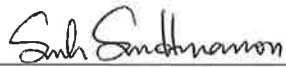
Cal Sheet No.: CEL120/2-2022-049

Time	Equivalent Sound Pressure Level (dB(A))	
	May 06, 2022	
00:00 - 01:00		
01:00 - 02:00		
02:00 - 03:00		
03:00 - 04:00		
04:00 - 05:00		
05:00 - 06:00		
06:00 - 07:00		
07:00 - 08:00		
08:00 - 09:00		
09:00 - 10:00		
10:00 - 11:00		72.9
11:00 - 12:00		77.1
12:00 - 13:00		77.1
13:00 - 14:00		73.6
14:00 - 15:00		73.7
15:00 - 16:00		78.9
16:00 - 17:00		74.8
17:00 - 18:00		74.4
18:00 - 19:00		
19:00 - 20:00		
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		
Leq(8)*		75.8
Lmax **		91.3
Standard-8Hr		90 dB(A)
Standard-Max		140 dB(A)

Remark : * Average time between 10:00-18:00

** Maximum Sound Pressure Level between 10:00-18:00


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Sununta Sirawuttinanon)
Technical Management Team



Noise Monitoring Result : Working Noise MTR-Inulin

Location : Chromatographic Separation Unit Area

Monitor Period : May 06, 2022

SLM Model : CASELLA CEL-246

Serial No : 3173161

Site Operator : Mr. Thanawut Duansaeng

Calibrator Model : CASELLA CEL120/2

Serial No : 2839225

Calibration Ref dB(A) : 114.0

Certified Date : Dec 24, 2021

SLM Reading / Adjust dB(A) : 114.2/-0.2


Expire Date : Dec 23, 2022


Cal Sheet No.: CEL120/2-2022-049

Time	Equivalent Sound Pressure Level (dB(A))
	May 06, 2022
00:00 - 01:00	
01:00 - 02:00	
02:00 - 03:00	
03:00 - 04:00	
04:00 - 05:00	
05:00 - 06:00	
06:00 - 07:00	
07:00 - 08:00	
08:00 - 09:00	
09:00 - 10:00	
10:00 - 11:00	79.4
11:00 - 12:00	79.5
12:00 - 13:00	79.7
13:00 - 14:00	79.9
14:00 - 15:00	79.8
15:00 - 16:00	82.0
16:00 - 17:00	80.0
17:00 - 18:00	80.1
18:00 - 19:00	
19:00 - 20:00	
20:00 - 21:00	
21:00 - 22:00	
22:00 - 23:00	
23:00 - 24:00	
Leq(8)*	80.1
Lmax **	89.6
Standard-8Hr	90 dB(A)
Standard-Max	140 dB(A)

Remark : * Average time between 10:00-18:00

** Maximum Sound Pressure Level between 10:00-18:00


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Sununta Sirawuttinanon)
Technical Management Team



Noise Monitoring Result : Working Noise MTR-Inulin

Location : Burner Area

SLM Model : CASELLA CEL-246

Site Operator : Mr. Thanawut Duansaeng

Monitor Period : May 06, 2022

Serial No : 3173312

Calibrator Model : CASELLA CEL120/2

Calibration Ref dB(A) : 114.0

SLM Reading / Adjust dB(A) : 114.3/-0.3

Cal Sheet No.: CEL120/2-2022-049

Serial No : 2839225


Certified Date : Dec 24, 2021


Expire Date : Dec 23, 2022

Time	Equivalent Sound Pressure Level (dB(A))	
	May 06, 2022	
00:00 - 01:00		
01:00 - 02:00		
02:00 - 03:00		
03:00 - 04:00		
04:00 - 05:00		
05:00 - 06:00		
06:00 - 07:00		
07:00 - 08:00		
08:00 - 09:00		
09:00 - 10:00		
10:00 - 11:00	83.2	
11:00 - 12:00	83.2	
12:00 - 13:00	83.3	
13:00 - 14:00	83.3	
14:00 - 15:00	83.5	
15:00 - 16:00	84.3	
16:00 - 17:00	83.6	
17:00 - 18:00	83.6	
18:00 - 19:00		
19:00 - 20:00		
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		
Leq(8)*	83.5	
Lmax **	91.4	
Standard-8Hr	90 dB(A)	
Standard-Max	140 dB(A)	

Remark : * Average time between 10:00-18:00

** Maximum Sound Pressure Level between 10:00-18:00


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Sununta Sirawuttinanon)
Technical Management Team



Noise Monitoring Result : Working Noise MTR-Inulin

Location : Evaporation Area

Monitor Period : May 06, 2022

SLM Model : CASELLA CEL-246

Serial No : 3173156

Site Operator : Mr. Thanawut Duansaeng

Calibrator Model : CASELLA CEL120/2

Serial No : 2839225

Calibration Ref dB(A) : 114.0

Certified Date : Dec 24, 2021

SLM Reading / Adjust dB(A) : 114.1/-0.1

Expire Date : Dec 23, 2022

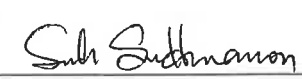
Cal Sheet No.: CEL120/2-2022-049

Time	Equivalent Sound Pressure Level (dB(A))
	May 06, 2022
00:00 - 01:00	
01:00 - 02:00	
02:00 - 03:00	
03:00 - 04:00	
04:00 - 05:00	
05:00 - 06:00	
06:00 - 07:00	
07:00 - 08:00	
08:00 - 09:00	
09:00 - 10:00	
10:00 - 11:00	85.4
11:00 - 12:00	84.4
12:00 - 13:00	84.2
13:00 - 14:00	84.4
14:00 - 15:00	84.6
15:00 - 16:00	85.3
16:00 - 17:00	85.2
17:00 - 18:00	85.1
18:00 - 19:00	
19:00 - 20:00	
20:00 - 21:00	
21:00 - 22:00	
22:00 - 23:00	
23:00 - 24:00	
Leq(8)*	84.8
Lmax **	91.7
Standard-8Hr	90 dB(A)
Standard-Max	140 dB(A)

Remark : * Average time between 10:00-18:00

** Maximum Sound Pressure Level between 10:00-18:00


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Sununta Sirawuttinanon)
Technical Management Team



Noise Monitoring Result : Working Noise MTR-Inulin

Location : Atomizer Area

Monitor Period : May 06, 2022

SLM Model : CASELLA CEL-246

Serial No : 3173318

Site Operator : Mr. Thanawut Duansaeng

Calibrator Model : CASELLA CEL120/2

Serial No : 2839225

Calibration Ref dB(A) : 114.0

Certified Date : Dec 24, 2021

SLM Reading / Adjust dB(A) : 114.4/-0.4


Expire Date : Dec 23, 2022

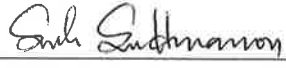
Cal Sheet No.: CEL120/2-2022-049

Time	Equivalent Sound Pressure Level (dB(A))
	May 06, 2022
00:00 - 01:00	
01:00 - 02:00	
02:00 - 03:00	
03:00 - 04:00	
04:00 - 05:00	
05:00 - 06:00	
06:00 - 07:00	
07:00 - 08:00	
08:00 - 09:00	
09:00 - 10:00	
10:00 - 11:00	79.5
11:00 - 12:00	79.1
12:00 - 13:00	79.4
13:00 - 14:00	79.7
14:00 - 15:00	79.5
15:00 - 16:00	82.4
16:00 - 17:00	79.9
17:00 - 18:00	80.1
18:00 - 19:00	
19:00 - 20:00	
20:00 - 21:00	
21:00 - 22:00	
22:00 - 23:00	
23:00 - 24:00	
Leq(8)*	80.1
Lmax **	95.0
Standard-8Hr	90 dB(A)
Standard-Max	140 dB(A)

Remark : * Average time between 10:00-18:00

** Maximum Sound Pressure Level between 10:00-18:00


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Sununta Sirawuttinanon)
Technical Management Team



Noise Monitoring Result : Working Noise MTR-Inulin

Location : Boiler Area

Monitor Period : May 06, 2022

SLM Model : CASELLA CEL-246

Serial No : 3173339

Site Operator : Mr. Thanawut Duansaeng

Calibrator Model : CASELLA CEL120/2

Serial No : 2839225

Calibration Ref dB(A) : 114.0

Certified Date : Dec 24, 2021

SLM Reading / Adjust dB(A) : 114.6/-0.6


Expire Date : Dec 23, 2022

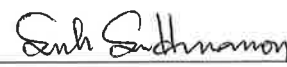
Cal Sheet No.: CEL120/2-2022-049

Time	Equivalent Sound Pressure Level (dB(A))	
	May 06, 2022	
00:00 - 01:00		
01:00 - 02:00		
02:00 - 03:00		
03:00 - 04:00		
04:00 - 05:00		
05:00 - 06:00		
06:00 - 07:00		
07:00 - 08:00		
08:00 - 09:00		
09:00 - 10:00		
10:00 - 11:00	79.8	
11:00 - 12:00	79.6	
12:00 - 13:00	81.0	
13:00 - 14:00	80.8	
14:00 - 15:00	80.0	
15:00 - 16:00	82.1	
16:00 - 17:00	80.5	
17:00 - 18:00	81.2	
18:00 - 19:00		
19:00 - 20:00		
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		
Leq(8)*	80.7	
Lmax **	96.1	
Standard-8Hr	90 dB(A)	
Standard-Max	140 dB(A)	

Remark : * Average time between 10:00-18:00

** Maximum Sound Pressure Level between 10:00-18:00


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Sununta Sirawuttinanon)
Technical Management Team



บริษัท ซีคอต จำกัด

SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพฯ 10800

239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envserv@secot.co.th

SOUND PRESSURE LEVEL AT EACH FREQUENCY REPORT

CLIENT NAME	: Fuji Nihon Thai Inulin Co., Ltd.	REFERENCE NO.	: Inulin-222049-Cert-Octave (May2022)
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Sound Level Meter (Octave Band)
MEASUREMENT LOCATION	: Inulin Plant	CALIBRATOR	: Sound Calibrator
MEASUREMENT DATE	: 06/05/2022	CALIBRATOR TYPE	: CEL-120/1 S/N : 0254955
SITE OPERATOR	: Mr. Thanawut Duansaeng	CALIBRATION REF.	: 114 dB @1,000 Hz

Locations	Sound Level (dBA)	Sound Pressure Level at each Frequency (dBA)									
		31.5	63	125	250	500	1,000	2,000	4,000	8,000	16,000
Burner	83.1	41.4	57.0	63.6	69.5	75.0	78.0	78.6	73.4	64.2	49.1
Evaporation	84.0	47.3	52.7	62.1	72.1	75.7	78.5	80.1	74.1	65.3	51.0
Melting	77.3	37.1	44.1	52.4	63.1	66.7	70.8	72.5	71.7	62.4	47.4
Atomizer	80.3	38.5	46.8	61.7	67.2	74.4	74.7	75.1	70.2	61.1	45.8
Boiler	79.5	34.4	50.3	61.1	66.0	67.9	73.3	75.7	71.9	64.5	53.1
Chromatographic Separation Unit	78.8	37.0	46.8	53.3	62.4	67.4	71.4	76.4	69.7	60.1	42.9

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.
2. This report shall not be reproduced, except in full, without official approval.

ภาคผนวก จ

ข้อมูลการตรวจเทียบเครื่องมือ
(Calibration Data Sheets)



CONTROL UNIT CALIBRATION

(Metric units, mm)

Date 13 Jan 22

	Initial	Final	Average	
Barometric press, Pb	759	759	759	mmHg

Dry Gas Meter Data

Console No. M50-08

Metering System ID

DGM Number 971415

DGM Model ES-110

Calibrated by : Montri P.

Reference Dry Gas Meter Data

Serial No. 358794

Model S110

Correction factor (Yr) 0.9966

Last Calibration Date 8 Jan 22

Orifice manometer setting, ΔH mm H2O	Ref. DGM Volume V _r Liters	DGM Volume V _m Liters	Temperature (°C)				Time Θ min	DGM Correction factor (Y)	ΔH@ mm
			Ref DGM T _r	Dry Gas Meter					
				Inlet T _i	Outlet T _o	Avg T _m			
12.5	100.0	101.7	23	23	22	22.5	9.23	0.9771	49.1298
25.0	100.1	100.9	23	23	22	22.5	6.73	0.9847	52.1391
50.0	100.0	100.0	23	23	22	22.5	4.88	0.9902	55.0134
76.0	100.0	98.8	23	23	22	22.5	3.93	0.9997	54.2067
100.0	100.0	99.1	23	23	22	22.5	3.93	0.9945	52.8042
150.0	100.2	97.3	23	23	22	22.5	2.82	1.0099	54.6989

Average	0.9927	52.9987
---------	--------	---------

Approved by :

(Miss Katesarin Vorradetwittaya)



PITOT TUBE CALIBRATION

Calibration Location: SECOT

Calibration Date : 14/01/2022

Calibrated duct No.: 1

Calibration Standard Pitot tube data

Pitot No. : Std-01

Coefficient (Cp) : 1

Type S Pitot No. : PS10-01

Calibrated by : Mr. Montri P.

A Side Calibration

Run No.	ΔP_{std} (mm H ₂ O)	ΔP_s (mm H ₂ O)	Cp(s)	Deviation, δ Cp(s) - Cp(A)
1	7.55	10.75	0.8380	0.0032
2	7.55	10.75	0.8380	0.0032
3	7.55	11.00	0.8285	-0.0064

C_{P(A),avg} 0.8349

B Side Calibration

Run No.	ΔP_{std} (mm H ₂ O)	ΔP_s (mm H ₂ O)	Cp(s)	Deviation, δ Cp(s) - Cp(B)
1	7.55	11.00	0.8285	-0.0097
2	7.55	10.75	0.8380	-0.0001
3	7.55	10.50	0.8480	0.0098

C_{P(B),avg} 0.8382

| CP(A)-CP(B) | = 0.0033

C_{P(Avg)} = 0.8365

Approved by : 
(Miss Katesarin Vorradetwittaya)

*** δ must be ≤ 0.01 for the test to be acceptable ***
 *** | Cp(A)-Cp(B) | must also be < 0.01 if average of Cp(A) and Cp(B) is to be used ***



CONTROL UNIT CALIBRATION

(Metric units, mm)

Date 13 Jan 22

	Initial	Final	Average	
Barometric press, Pb	759	759	759	mmHg

Dry Gas Meter Data

Console No. M50-08

Metering System ID

DGM Number 971415

DGM Model ES-110

Calibrated by : Montri P.

Reference Dry Gas Meter Data

Serial No. 358794

Model S110

Correction factor (Yr) 0.9966

Last Calibration Date 8 Jan 22

Orifice manometer setting, ΔH mm H2O	Ref. DGM Volume V _r Liters	DGM Volume V _m Liters	Temperature (°C)				Time Θ min	DGM Correction factor (Y)	ΔH@ mm
			Ref DGM T _r	Dry Gas Meter					
				Inlet T _i	Outlet T _o	Avg T _m			
12.5	100.0	101.7	23	23	22	22.5	9.23	0.9771	49.1298
25.0	100.1	100.9	23	23	22	22.5	6.73	0.9847	52.1391
50.0	100.0	100.0	23	23	22	22.5	4.88	0.9902	55.0134
76.0	100.0	98.8	23	23	22	22.5	3.93	0.9997	54.2067
100.0	100.0	99.1	23	23	22	22.5	3.93	0.9945	52.8042
150.0	100.2	97.3	23	23	22	22.5	2.82	1.0099	54.6989

Average	0.9927	52.9987
---------	--------	---------

Approved by :

(Miss Katesarin Vorradetwittaya)



PITOT TUBE CALIBRATION

Calibration Location: SECOT

Calibration Date : 14/01/2022

Calibrated duct No.: 1

Calibration Standard Pitot tube data

Pitot No. : Std-01

Coefficient (Cp) : 1

Type S Pitot No. : PS20-02

Calibrated by : Mr. Montri P.

A Side Calibration

Run No.	ΔP_{std} (mm H ₂ O)	ΔP_s (mm H ₂ O)	Cp(s)	Deviation, δ Cp(s) - Cp(A)
1	7.55	10.55	0.8460	0.0085
2	7.55	11.00	0.8285	-0.0090
3	7.55	10.75	0.8380	0.0006

C_{P(A),avg} 0.8375

B Side Calibration

Run No.	ΔP_{std} (mm H ₂ O)	ΔP_s (mm H ₂ O)	Cp(s)	Deviation, δ Cp(s) - Cp(B)
1	7.55	11.00	0.8285	-0.0097
2	7.55	10.50	0.8480	0.0098
3	7.55	10.75	0.8380	-0.0001

C_{P(B),avg} 0.8382

| CP(A)-CP(B) | = 0.0007

C_{P(Avg)} = 0.8378

Approved by : 
(Miss Katesarin Vorradetwittaya)

*** δ must be ≤ 0.01 for the test to be acceptable ***
 *** | Cp(A)-Cp(B) | must also be < 0.01 if average of Cp(A) and Cp(B) is to be used ***



High Volume TSP & PM-10 Calibration Data Sheet

Calibration Location : SECOT Co.,Ltd. Calibration Date : Feb 3, 2022
Hi-Vol Pump No. : BH-022 Indicator No. : CM-01
Amb. Temp (°C) : 25 Press (mmHg) : 760
Calibration by : Mr.Punkawin K.

Plate	Indicate (X) (cm.)	True H ₂ O (in.)	Actual Flow (Y) (cfm)	XY	X ²	Remark
18	19.20	12.80	59.50	1,143.00	368.60	
13	15.60	10.30	53.71	837.80	243.40	
10	12.00	8.10	47.77	573.30	144.00	
7	7.60	5.10	38.17	290.10	57.80	
5	4.80	3.10	30.04	144.20	23.00	
Sum	59.20	39.40	229.19	2,988.40	836.80	

Calibrated by : Punkawin Approved by : Wittaya K.



High Volume TSP & PM-10 Calibration Data Sheet

Calibration Location : SECOT Co.,Ltd. Calibration Date : Feb 3, 2022
Hi-Vol Pump No. : BH-035 Indicator No. : CM-01
Amb. Temp (°C) : 25 Press (mmHg) : 760
Calibration by : Mr.Punkawin K.

Plate	Indicate (X) (cm.)	True H ₂ O (in.)	Actual Flow (Y) (cfm)	XY	X ²	Remark
18	19.20	12.80	59.53	1,142.98	368.64	
13	15.40	10.10	53.20	819.28	237.16	
10	12.40	8.10	47.77	592.35	153.76	
7	8.20	5.20	38.53	315.95	67.24	
5	4.80	3.10	30.04	144.19	23.04	
Sum	60.00	39.30	229.07	3,014.74	849.84	

Calibrated by : Punkawin Approved by : Wifaya K.



High Volume TSP & PM-10 Calibration Data Sheet

Calibration Location : SECOT Co.,Ltd. Calibration Date : Feb 3, 2022

Hi-Vol Pump No. : BH-014 Indicator No. : CM-01

Amb. Temp (°C) : 25 Press (mmHg) : 760

Calibration by : Mr.Punkawin K.

Plate	Indicate (X) (cm.)	True H ₂ O (in.)	Actual Flow (Y) (cfm)	XY	X ²	Remark
18	17.60	12.60	59.07	1,039.70	309.80	
13	14.00	10.20	53.45	748.30	196.00	
10	11.20	7.80	46.90	525.30	125.40	
7	7.20	5.20	38.50	277.40	51.80	
5	4.00	3.10	30.04	120.20	16.00	
Sum	54.00	38.90	227.96	2,710.90	699.00	

Calibrated by : *Punkawin K.* Approved by : *Mr. Panya K.*



High Volume TSP & PM-10 Calibration Data Sheet

Calibration Location : SECOT Co.,Ltd. Calibration Date : Jan 13, 2022

Hi-Vol Pump No. : BH-002 Indicator No. : CM-01

Amb. Temp (°C) : 25 Press (mmHg) : 760

Calibration by : Mr.Punkawin K.

Plate	Indicate (X) (cm.)	True H ₂ O (in.)	Actual Flow (Y) (cfm)	XY	X ²	Remark
18	16.20	11.90	57.45	930.69	262.44	
13	13.40	9.30	51.10	684.74	179.56	
10	11.00	7.40	45.72	502.92	121.00	
7	7.00	4.90	37.44	262.08	49.00	
5	4.20	3.00	29.58	124.24	17.64	
Sum	51.80	36.50	221.29	2,504.67	629.64	

Calibrated by : Punkawin Approved by : Witayan K.



High Volume TSP & PM-10 Calibration Data Sheet

Calibration Location : SECOT Co.,Ltd. Calibration Date : Jan 14, 2022

Hi-Vol Pump No. : BH-026 Indicator No. : CM-01

Amb. Temp (°C) : 25 Press (mmHg) : 760

Calibration by : Mr.Punkawin K.

Plate	Indicate (X) (cm.)	True H ₂ O (in.)	Actual Flow (Y) (cfm)	XY	X ²	Remark
18	17.40	12.60	59.07	1,027.82	302.76	
13	14.20	10.00	52.94	751.75	201.64	
10	11.00	7.70	46.61	512.71	121.00	
7	7.20	5.00	37.81	272.23	51.84	
5	4.00	3.00	29.58	118.32	16.00	
Sum	53.80	38.30	226.01	2,682.83	693.24	

Calibrated by : Punkawin Approved by : W. Haya K.



High Volume TSP & PM-10 Calibration Data Sheet

Calibration Location : SECOT Co.,Ltd. Calibration Date : Jan 13, 2022

Hi-Vol Pump No. : BH-029 Indicator No. : CM-01

Amb. Temp (°C) : 25 Press (mmHg) : 760

Calibration by : Mr.Punkawin K.

Plate	Indicate (X) (cm.)	True H ₂ O (in.)	Actual Flow (Y) (cfm)	XY	X ²	Remark
18	19.40	12.50	58.84	1,141.50	376.36	
13	15.40	10.10	53.20	819.28	237.16	
10	11.80	7.80	46.90	553.42	139.24	
7	8.00	5.00	37.81	302.48	64.00	
5	4.80	3.10	30.04	144.19	23.04	
Sum	59.40	38.50	226.79	2,960.87	839.80	

Calibrated by : Punkawin Approved by : Wittaya K.



Temperature Sensor Calibration

Date : 29 Jan 22

Temp: (°C) 24

Barometric Pressure: Pb (mmHg) 758

REFERENCE STANDARD INSTRUMENT

Equipment : Dry Well Calibrator

Model No. 9140

Serial No. A0A890

ManuFacter . Hart Scientific

UNIT UNDER TEST

Equipment : TEMP / HUMIDITY SENSOR

Model No. 110-WS-16 THA

Serial No. L2540152

ManuFacter . NOVA LYNX

Standard Reading	Temperature Reading
20.0	20.10
25.0	25.30
30.0	30.26
35.0	35.17
40.0	40.37

Calibrated by : Wittaya KApproved by : [Signature]



Temperature Sensor Calibration

Date : 28 Jan 22

Temp: (°C) 24

Barometric Pressure: Pb (mmHg) 759

REFERENCE STANDARD INSTRUMENT

Equipment : Dry Well Calibrator

Model No. 9140

Serial No. A0A890

Manufacturer : Hart Scientific

UNIT UNDER TEST

Equipment : TEMP / HUMIDITY SENSOR

Model No. 110-WS-16 THA

Serial No. G1540004

Manufacturer : NOVA LYNX

Standard Reading	Temperature Reading
20.0	20.14
25.0	25.04
30.0	30.11
35.0	35.11
40.0	40.10

Calibrated by : Wittaya K.Approved by : [Signature]



Temperature Sensor Calibration

Date : 29 Jan 22

Temp: (°C) 24

Barometric Pressure: Pb (mmHg) 758

REFERENCE STANDARD INSTRUMENT

Equipment : Dry Well Calibrator

Model No. 9140

Serial No. A0A890

Manufacturer : Hart Scientific

UNIT UNDER TEST

Equipment : TEMP / HUMIDITY SENSOR

Model No. 110-WS-16 THA

Serial No. L3950311

Manufacturer : NOVA LYNX

Standard Reading	Temperature Reading
20.0	20.12
25.0	24.96
30.0	30.12
35.0	34.97
40.0	39.99

Calibrated by :

Approved by :

**SOUND LEVEL METER CALIBRATION**

Calibration Location:

SECOT

Calibration Date:

May 4, 22

SOUND LEVEL CALIBRATOR

Brand	Model	Serial No.	Calibrated (dB)	Frequency (Hz)
RION	NC-74	34283648	94.00	1000

No.	Brand	Model	Serial No.	Microphone Serial No.	SLM Reading (dB)	dB Adjust
56	RION	NL-21	00187511	117816	94.0	0.0
60	RION	NL-21	00187515	117820	94.0	0.0
92	RION	NL-21	00198274	123477	94.0	0.0

Calibrated by :

Approved by :



**ELECTRICAL AND ELECTRONICS INSTITUTE
FOUNDATION FOR INDUSTRIAL DEVELOPMENT**

975 Moo 4, Bangpoo Industrial Estate, Soi 8, Sukhumvit Road km 37,

Phraek Sa, Mueang Samut Prakan, Samut Prakan 10280

Tel: +66 2709 4860-8 Fax: +66 2324 0917-8



Certificate No.: CP20210095EA

Operation No.: CP2021120016

Certificate of Calibration

Equipment: Sound Calibrator

Manufacturer: RION

Model/Type: NC-74

Serial No.: 34283648

ID No.: -

Customer: SECOT Co.,Ltd.

Address: 239 Rimklongprapa Rd., Bangsue,
Bangkok 10800 Thailand

Received Date: 21 December 2021

Calibrated Date: 24 December 2021

Issued Date: 28 December 2021

Calibrated by: Ms. Juntaporn Kunhakom

Approved by: _____

(Mr. Sittichai Swaksuriyawong)

Group Manager

This report was prepared electronically using applicable electronic signature. Printing or copy of file are considered as a copy of the document.

The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor $k = 2.00$, providing a level of confidence of approximately 95%. This certificate may not be reproduced other than in full except with the prior written approval of the Electrical and Electronics Institute, Foundation for Industrial Development.

Certificate No.: CP20210095EA

Calibration Report

Equipment: Sound Calibrator
Manufacturer: RION
Model/Type: NC-74
Serial No.: 34283648
ID No.: -
Ambient Temperature: (23 ± 2) °C
Relative Humidity: (50 ± 15) %
Pressure: (101.3 ± 1.5) kPa

Method of Calibration :-

IEC 60942:2017

Condition of this result of calibration

1. Reference standards instrument :-

Instrument	Model	Serial No.	Cert. No.	Due Date
1) Standard microphone	4180	2661000	AA-1010-21	13 June 2022
2) Waveform Generator	33511B	MY52302264	0144RF21	17 June 2022
3) Audio Analyzing DMM	2015-P	4079144	E1U210398	2 February 2022
4) Pressure humidity and Temperature Transmitter	PTU301	F0640002	CL1-P210047 0255TE21	16 June 2022 7 July 2022

2. This result of calibration was found accurate as shown on **date** and place of calibration only.

3. This certification is traceable to the international system of unit maintained at :-

Reference standards instrument for Acoustic function

- National Institute of Metrology (Thailand)

Reference standards instrument for Electrical function

- Electrical and Electronics Institute; ONSC Accredited Calibration No.0119

Result of Calibration:-

1. Function : Sound pressure level

Norminal Frequency (Hz)	Specified Sound Pressure level (dB)	Measured value (dB)	Deviated value ^[1] (dB)	Acceptance limit ^[3] (dB)
1000	94	94.22	0.22	±0.25

2. Function : Frequency

Norminal Sound Pressure level (dB)	Specified Frequency (Hz)	Measured value (Hz)	Deviated value ^[2] (%)	Acceptance limit ^[3] (%)
94	1000	1003.0	0.3	±0.7

Certificate No.: CP20210095EA

Calibration Report

3. Function : Total distortion + noise

Normal	Normal	Measured value ^[4]	Acceptance limit ^[5]
Sound Pressure level (dB)	Frequency (Hz)	(%)	(%)
94	1000	1.3	2.5

Uncertainty of measurement

Function	Uncertainty	Maximum-permitted uncertainty of measurement
Sound pressure level	0.10 dB	0.15 dB
Frequency	0.10 %	0.20 %
Total distortion + noise	0.40 %	0.50 %

- Note:
- [1] The deviated value is the absolute value of the difference between the measured value and the corresponding specified sound pressure level.
 - [2] The deviated value is the absolute value of the difference in percent between the measured value and the corresponding specified frequency.
 - [3] The acceptance limit is for the deviated value.
 - [4] The measured value is the total distortion + noise, measured over the frequency range from 20 Hz to 20 kHz.
 - [5] The acceptance limit is for the Measured value.

Remarks: 1. Using the 1/2-inch microphone adaptor NC-74-002.
2. Acceptance limit was IEC 60942:2017 Class 1.

- - End of Report - -



THAILAND INSTITUTE OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH (TISTR)

Mechanical Engineering Standards Laboratory Soi 1, Bangpoo Industrial Estate, Muang, Samutprakan 10280, Thailand.

Request No.23-65/0223

MTC.No.23-65/0223-01

Number of page(s) 2

CALIBRATION CERTIFICATE

Nomenclature : DRYCAL

Manufacturer : Mesa Labs

Serial No.: 114069

Model : Defender 520-H

Scale range : 300 ml/min to 30,000 ml/min

Subdivision : (0.0001, 0.001) L/min

Submitted by : SECOT CO.,LTD.

239, Rimklongprapa Road, Bangsue,

Bangkok 10800, Thailand.

Received date : 26 January 2022

Condition of measured item : Normal

Calibration date : 2 February 2022

Standard :

Standard	Certificate No.	Date due	Traceability
RTD Thermometer	PSL-T 336/63	6-Apr-22	TISTR
Molbox/Pressure Transducer/UpStream	MP-0013-21	25-Jan-23	NIMT
Primary Flow Calibrator S/N 119521	MW-0012-21	31-Mar-23	NIMT
Primary Flow Calibrator S/N 119216	MW-0013-21	25-Mar-23	NIMT

Calibrated by :

Terasak Panna

(Mr.Terasak Panna)

Approved by :

(Ms.Kirana Luanghifun)

Director

Mechanical Engineering Standards Laboratory

Ref. 2013265012600367001

Issued Date 2 February 2022

The results relate only to the items tested/calibrated or value assigned.

Advertising the Report/Certificate and publicity of the results except in full are prohibited unless written permission is obtained from the governor of TISTR.

FM.BL.MTC.002 Rev.4

Head Office

35,Mu 3 Tambon Khlong Ha, Amphoe Khlong Luang,

Changwat Pathumthani 12120, Thailand

Tel. (66) 0 2577 9000

Fax. (66) 0 2577 9009

E-mail : rumpai@tistr.or.th Website:www.tistr.or.th

Office/Laboratory

Soi 1C, Bangpoo Industrial Estate, Sukhumvit Road,

Amphoe Muang, Changwat Samutprakan 10280, Thailand

Tel. (66) 0 2323 1672-80 ext. 115, 116

Fax. (66) 0 2323 9165

E-mail : mtc@tistr.or.th

Office

196 Phahonyothin Road, Chatuchak, Bangkok 10900,

Thailand

Tel. (66) 0 2579 1121-30 ext. 5219, 5225, 5217

Fax. (66) 0 2579 8592

E-mail : sumalee@tistr.or.th



THAILAND INSTITUTE OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH (TISTR)

Mechanical Engineering Standards Laboratory Soi 1, Bangpoo Industrial Estate, Muang, Samutprakan 10280, Thailand.

Request No.23-65/0223

2/2

MTC.No.23-65/0223-01

Calibration point : (1.5, 5.0, 10, 15, 25) L/min

Ambient condition : Temperature (23 ± 3) °C , Relative humidity (55 ± 15) %

Atmospheric pressure (1010 ± 13) hPa

Calibration method : The flowmeter (UUC) was calibrated by comparison method with standard flowmeter according to CP-370.01.

The reported value is the value that converted to value at reference condition within pressure and temperature of the actual gas entering the UUC

Measurement data :

UUC Value (L/min)	Standard Value (L/min)	Temperature (°C)	Pressure (hPa)	Deviation (%)	Uncertainty (%)
1.4960	1.4724	24.974	1010.11	+1.60	0.86
5.0027	4.9459	24.949	1010.43	+1.15	0.87
9.9986	9.9044	24.909	1011.29	+0.95	0.96
15.020	14.900	24.892	112.50	+0.80	0.96
25.117	24.876	25.120	1016.35	+0.97	0.96

The reported expanded uncertainties are based on standard uncertainties multiplied by a coverage factor $k=2$, which provides a level of confidence of approximately 95%.

The end of calibration certificate.

T/S

The results relate only to the items tested/calibrated or value assigned.

Advertising the Report/Certificate and publicity of the results except in full are prohibited unless written permission is obtained from the governor of TISTR.

FM.BL.MTC.002 Rev.4

Head Office

35 Mu 3 Tambon Khlong Ha, Amphoe Khlong Luang,
Changwat Pathumthani 12120, Thailand
Tel. (66) 0 2577 9000
Fax. (66) 0 2577 9009
E-mail : rumpai@tistr.or.th Website:www.tistr.or.th

Office/Laboratory

Soi 1C, Bangpoo Industrial Estate, Sukhumvit Road,
Amphoe Muang, Changwat Samutprakan 10280, Thailand
Tel. (66) 0 2323 1672-80 ext. 115, 116
Fax. (66) 0 2323 9165
E-mail : mtc@tistr.or.th

Office

196 Phahonyothin Road, Chatuchak, Bangkok 10900,
Thailand
Tel. (66) 0 2579 1121-30 ext. 5219, 5225, 5217
Fax. (66) 0 2579 8592
E-mail : sumalee@tistr.or.th



THAILAND INSTITUTE OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH (TISTR)

Mechanical Engineering Standards Laboratory Soi 1, Bangpoo Industrial Estate, Muang, Samutprakan 10280, Thailand.

Request No.23-65/0223

MTC.No.23-65/0223-02

Number of page(s) 2

CALIBRATION CERTIFICATE

Nomenclature : DRYCAL

Manufacturer : Mesa Labs

Serial No.: 160100

Model : Defender 520-L

Scale range : 5 ml/min to 500 ml/min

Subdivision : (0.001, 0.01) ml/min

Submitted by : SECOT CO.,LTD.

239, Rimklongprapa Road, Bangsue,
Bangkok 10800, Thailand.

Received date : 26 January 2022

Condition of measured item : Normal

Calibration date : 3 February 2022

Standard :

Standard	Certificate No.	Date due	Traceability
RTD Thermometer	PSL-T 336/63	6-Apr-22	TISTR
Molbox/Pressure Transducer/UpStream	MP-0013-21	25-Jan-23	NIMT
Primary Flow Calibrator S/N 117982	MW-0011-21	8-Apr-23	NIMT

Calibrated by :

Terasak Panna

(Mr.Terasak Panna)

Approved by

(Ms.Kirana Luanghirun)

Director
TISTR

Mechanical Engineering Standards Laboratory

Ref. 2013265012600367002

Issued Date 3 February 2022

The results relate only to the items tested/calibrated or value assigned.

Advertising the Report/Certificate and publicity of the results except in full are prohibited unless written permission is obtained from the governor of TISTR.

FM.BL.MTC.002 Rev.4

Head Office

35 Mu 3 Tambon Khlong Ha, Amphoe Khlong Luang,

Changwat Pathumthani 12120, Thailand

Tel. (66) 0 2577 9000

Fax. (66) 0 2577 9009

E-mail : rumpal@tistr.or.th Website:www.tistr.or.th

Office/Laboratory

Soi 1C, Bangpoo Industrial Estate, Sukhumvit Road,
Amphoe Muang, Changwat Samutprakan 10280, Thailand

Tel. (66) 0 2323 1672-80 ext. 115, 116

Fax. (66) 0 2323 9165

E-mail : mtc@tistr.or.th

Office

196 Phahonyothin Road, Chatuchak, Bangkok 10900,
Thailand

Tel. (66) 0 2579 1121-30 ext. 5219, 5225, 5217

Fax. (66) 0 2579 8592

E-mail : sumalee@tistr.or.th



THAILAND INSTITUTE OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH (TISTR)

Mechanical Engineering Standards Laboratory Soi 1, Bangpoo Industrial Estate, Muang, Samutprakan 10280, Thailand.

Request No.23-65/0223

2/2

MTC.No.23-65/0223-02

Calibration point : (20, 50, 100, 200, 400) ml/min

Ambient condition : Temperature (23 ± 3) °C , Relative humidity (55 ± 15) %

Atmospheric pressure (1010 ± 13) hPa

Calibration method : The flowmeter (UUC) was calibrated by comparison method with standard flowmeter according to CP-370.01.

The reported value is the value that converted to value at reference condition within pressure and temperature of the actual gas entering the UUC

Measurement data :

UUC Value (ml/min)	Standard Value (ml/min)	Temperature (°C)	Pressure (hPa)	Deviation (%)	Uncertainty (%)
*22.473	22.553	25.071	1009.97	-0.35	1.08
53.343	53.559	25.077	1009.93	-0.40	1.01
102.11	103.17	25.075	1010.08	-1.02	1.04
199.33	202.02	25.035	1010.16	-1.33	1.06
404.44	411.64	24.950	1010.43	-1.75	1.00

The reported expanded uncertainties are based on standard uncertainties multiplied by a coverage factor $k=2$, which provides a level of confidence of approximately 95%.

* : The calibration point is not the scope of accreditation.

The end of calibration certificate.

TS

The results relate only to the items tested/calibrated or value assigned.
The Report/Certificate and publicity of the results except in full are prohibited unless written permission is obtained from the governor of TISTR.

FM.BL.MTC.002 Rev

Office/Laboratory
Bangpoo Industrial Estate, Soi 1C, Bangpoo Industrial Estate, Sukhumvit Road,

Office
196 Phahonyothin Road, Chatuchak, Bangkok 10900

**SOUND LEVEL METER CALIBRATION**Calibration Location: **SECOT**Calibration Date: **Feb 24, 22****SOUND LEVEL CALIBRATOR**

Brand	Model	Serial No.	Calibrated (dB)	Frequency (Hz)		
CASELLA	CEL120/2	2839225	114.0	1000		
No.	Brand	Model	Serial No.	Microphone Serial No.	SLM Reading (dB)	dB Adjust
9	CASELLA	CEL-246	3173156	3173156	114.0	0.0
10	CASELLA	CEL-246	3173161	3173161	114.0	0.0
11	CASELLA	CEL-246	3173243	3173243	114.0	0.0
16	CASELLA	CEL-246	3173312	3173312	114.0	0.0
23	CASELLA	CEL-246	3173339	3173339	114.0	0.0
24	CASELLA	CEL-246	3173343	3173343	114.0	0.0

Calibrated by :

Approved by :



**ELECTRICAL AND ELECTRONICS INSTITUTE
FOUNDATION FOR INDUSTRIAL DEVELOPMENT**

975 Moo 4, Bangpoo Industrial Estate, Soi 8, Sukhumvit Road km 37,

Phraek Sa, Mueang Samut Prakan, Samut Prakan 10280

Tel: +66 2709 4860-8 Fax: +66 2324 0917-8



Certificate No.: CP20210096EA
Operation No.: CP2021120017

Certificate of Calibration

Equipment: Sound Calibrator
Manufacturer: CASELLA
Model/Type: CEL-120/2
Serial No.: 2839225
ID No.: -
Customer: SECOT Co.,Ltd.
Address: 239 Rimklongprapa Rd., Bangsue,
Bangkok 10800 Thailand
Received Date: 21 December 2021
Calibrated Date: 24 December 2021
Issued Date: 28 December 2021
Calibrated by: Ms. Juntaporn Kunhakom

Approved by: _____

(Mr. Sittichai Swaksuriyawong)
Group Manager

This report was prepared electronically using applicable electronic signature. Printing or copy of file are considered as a copy of the document.

The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor $k = 2.00$, providing a level of confidence of approximately 95%. This certificate may not be reproduced other than in full except with the prior written approval of the Electrical and Electronics Institute, Foundation for Industrial Development.

Certificate No.: CP20210096EA

Calibration Report

Equipment: Sound Calibrator
Manufacturer: CASELLA
Model/Type: CEL-120/2
Serial No.: 2839225
ID No.:

Ambient Temperature: $(23 \pm 2) ^\circ\text{C}$
Relative Humidity: $(50 \pm 15) \%$
Pressure: $(101.3 \pm 1.5) \text{ kPa}$

Method of Calibration :-

IEC 60942:2017

Condition of this result of calibration

1. Reference standards instrument :-

Instrument	Model	Serial No.	Cert. No.	Due Date
1) Standard microphone	4180	2661000	AA-1010-21	13 June 2022
2) Waveform Generator	33511B	MY52302264	0144RF21	17 June 2022
3) Audio Analyzing DMM	2015-P	4079144	E1U210398	2 February 2022
4) Pressure humidity and Temperature Transmitter	PTU301	F0640002	CL1-P210047 0255TE21	16 June 2022 7 July 2022

2. This result of calibration was found accurate as shown on date and place of calibration only.

3. This certification is traceable to the international system of unit maintained at :-

Reference standards instrument for Acoustic function

- National Institute of Metrology (Thailand)

Reference standards instrument for Electrical function

- Electrical and Electronics Institute; ONSC Accredited Calibration No.0119

Result of Calibration:-

1. Function : Sound pressure level

Norminal Frequency (Hz)	Specified Sound Pressure level (dB)	Measured value (dB)	Deviated value ^[1] (dB)	Acceptance limit ^[3] (dB)
1000	114	114.20	0.20	± 0.40

2. Function : Frequency

Norminal Sound Pressure level (dB)	Specified Frequency (Hz)	Measured value (Hz)	Deviated value ^[2] (%)	Acceptance limit ^[3] (%)
114	1000	1000.0	0.0	± 1.7

Certificate No.: CP20210096EA

Calibration Report

3. Function : Total distortion + noise

Norminal Sound Pressure level (dB)	Norminal Frequency (Hz)	Measured value ^[4] (%)	Acceptance limit ^[5] (%)
114	1000	0.4	3.0

Uncertainty of measurement

Function	Uncertainty	Maximum-permitted uncertainty of measurement
Sound pressure level	0.10 dB	0.35 dB
Frequency	0.10 %	0.20 %
Total distortion + noise	0.40 %	1.00 %

- Note:
- [1] The deviated value is the absolute value of the difference between the measured value and the corresponding specified sound pressure level.
 - [2] The deviated value is the absolute value of the difference in percent between the measured value and the corresponding specified frequency.
 - [3] The acceptance limit is for the deviated value.
 - [4] The measured value is the total distortion + noise, measured over the frequency range from 20 Hz to 20 kHz.
 - [5] The acceptance limit is for the Measured value.

Remarks: 1. Acceptance limit was IEC 60942:2017 Class 2.

-- End of Report --



**ELECTRICAL AND ELECTRONICS INSTITUTE
FOUNDATION FOR INDUSTRIAL DEVELOPMENT**

975 Moo 4, Bangpoo Industrial Estate, Soi 8, Sukhumvit Road km 37,

Phraek Sa, Mueang Samut Prakan, Samut Prakan 10280

Tel: +66 2709 4860-8 Fax: +66 2324 0917-8



Certificate No.: CP20210096EA
Operation No.: CP2021120017

Certificate of Calibration

Equipment: Sound Calibrator

Manufacturer: CASELLA

Model/Type: CEL-120/2

Serial No.: 2839225

ID No.: -

Customer: SECOT Co.,Ltd.

Address: 239 Rimklongprapa Rd., Bangsue,
Bangkok 10800 Thailand

Received Date: 21 December 2021

Calibrated Date: 24 December 2021

Issued Date: 28 December 2021

Calibrated by: Ms. Juntaporn Kunhakom

Approved by: _____

(Mr. Sittichai Swaksuriyawong)
Group Manager

This report was prepared electronically using applicable electronic signature. Printing or copy of file are considered as a copy of the document.

The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor $k = 2.00$, providing a level of confidence of approximately 95%. This certificate may not be reproduced other than in full except with the prior written approval of the Electrical and Electronics Institute, Foundation for Industrial Development.

Certificate No.: CP20210096EA

Calibration Report

Equipment: Sound Calibrator
Manufacturer: CASELLA
Model/Type: CEL-120/2
Serial No.: 2839225
ID No.: -
Ambient Temperature: $(23 \pm 2) ^\circ\text{C}$
Relative Humidity: $(50 \pm 15) \%$
Pressure: $(101.3 \pm 1.5) \text{ kPa}$

Method of Calibration :-
IEC 60942:2017

Condition of this result of calibration

1. Reference standards instrument :-

Instrument	Model	Serial No.	Cert. No.	Due Date
1) Standard microphone	4180	2661000	AA-1010-21	13 June 2022
2) Waveform Generator	33511B	MY52302264	0144RF21	17 June 2022
3) Audio Analyzing DMM	2015-P	4079144	E1U210398	2 February 2022
4) Pressure humidity and Temperature Transmitter	PTU301	F0640002	CL1-P210047 0255TE21	16 June 2022 7 July 2022

2. This result of calibration was found accurate as shown on date and place of calibration only.

3. This certification is traceable to the international system of unit maintained at :-

Reference standards instrument for Acoustic function

- National Institute of Metrology (Thailand)

Reference standards instrument for Electrical function

- Electrical and Electronics Institute; ONSC Accredited Calibration No.0119

Result of Calibration:-

1. Function : Sound pressure level

Normalinal Frequency (Hz)	Specified Sound Pressure level (dB)	Measured value (dB)	Deviated value ^[1] (dB)	Acceptance limit ^[3] (dB)
1000	114	114.20	0.20	± 0.40

2. Function : Frequency

Normalinal Sound Pressure level (dB)	Specified Frequency (Hz)	Measured value (Hz)	Deviated value ^[2] (%)	Acceptance limit ^[3] (%)
114	1000	1000.0	0.0	± 1.7

Certificate No.: CP20210096EA

Calibration Report

3. Function : Total distortion + noise

Normal	Normal	Measured value ^[4]	Acceptance limit ^[5]
Sound Pressure level (dB)	Frequency (Hz)	(%)	(%)
114	1000	0.4	3.0

Uncertainty of measurement

Function	Uncertainty	Maximum-permitted uncertainty of measurement
Sound pressure level	0.10 dB	0.35 dB
Frequency	0.10 %	0.20 %
Total distortion + noise	0.40 %	1.00 %

- Note:
- [1] The deviated value is the absolute value of the difference between the measured value and the corresponding specified sound pressure level.
 - [2] The deviated value is the absolute value of the difference in percent between the measured value and the corresponding specified frequency.
 - [3] The acceptance limit is for the deviated value.
 - [4] The measured value is the total distortion + noise, measured over the frequency range from 20 Hz to 20 kHz.
 - [5] The acceptance limit is for the Measured value.

Remarks: 1. Acceptance limit was IEC 60942:2017 Class 2.

- - End of Report - -

**SOUND LEVEL METER CALIBRATION**Calibration Location: **SECOT**Calibration Date: **May 6, 22****SOUND LEVEL CALIBRATOR**

Brand	Model	Serial No.	Calibrated (dB)	Frequency (Hz)		
CASELLA	CEL120/2	2839225	114.0	1000		
No.	Brand	Model	Serial No.	Microphone Serial No.	SLM Reading (dB)	dB Adjust
9	CASELLA	CEL-246	3173156	3173156	114.1	-0.1
10	CASELLA	CEL-246	3173161	3173161	114.2	-0.2
16	CASELLA	CEL-246	3173312	3173312	114.3	-0.3
17	CASELLA	CEL-246	3173318	3173318	114.4	-0.4
18	CASELLA	CEL-246	3173324	3173324	113.9	0.1
23	CASELLA	CEL-246	3173339	3173339	114.6	-0.6

Calibrated by :

Approved by :



**ELECTRICAL AND ELECTRONICS INSTITUTE
FOUNDATION FOR INDUSTRIAL DEVELOPMENT**

975 Moo 4, Bangpoo Industrial Estate, Soi 8, Sukhumvit Road km 37,

Phraek Sa, Mueang Samut Prakan, Samut Prakan 10280

Tel: +66 2709 4860-8 Fax: +66 2324 0917-8



Certificate No.: CP20210096EA

Operation No.: CP2021120017

Certificate of Calibration

Equipment: Sound Calibrator

Manufacturer: CASELLA

Model/Type: CEL-120/2

Serial No.: 2839225

ID No.:

Customer: SECOT Co.,Ltd.

Address: 239 Rimklongprapa Rd., Bangsue,
Bangkok 10800 Thailand

Received Date: 21 December 2021

Calibrated Date: 24 December 2021

Issued Date: 28 December 2021

Calibrated by: Ms. Juntaporn Kunhakorn

Approved by: _____

(Mr. Sittichai Swaksuriyawong)
Group Manager

This report was prepared electronically using applicable electronic signature. Printing or copy of file are considered as a copy of the document.

The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor $k = 2.00$, providing a level of confidence of approximately 95%. This certificate may not be reproduced other than in full except with the prior written approval of the Electrical and Electronics Institute, Foundation for Industrial Development.

Certificate No.: CP20210096EA

Calibration Report

Equipment: Sound Calibrator
Manufacturer: CASELLA
Model/Type: CEL-120/2
Serial No.: 2839225
ID No.: -
Ambient Temperature: (23 ± 2) °C
Relative Humidity: (50 ± 15) %
Pressure: (101.3 ± 1.5) kPa

Method of Calibration :-

IEC 60942:2017

Condition of this result of calibration

1. Reference standards instrument :-

Instrument	Model	Serial No.	Cert. No.	Due Date
1) Standard microphone	4180	2661000	AA-1010-21	13 June 2022
2) Waveform Generator	33511B	MY52302264	0144RF21	17 June 2022
3) Audio Analyzing DMM	2015-P	4079144	E1U210398	2 February 2022
4) Pressure humidity and Temperature Transmitter	PTU301	F0640002	CL1-P210047 0255TE21	16 June 2022 7 July 2022

2. This result of calibration was found accurate as shown on date and place of calibration only.

3. This certification is traceable to the international system of unit maintained at :-

Reference standards instrument for Acoustic function

- National Institute of Metrology (Thailand)

Reference standards instrument for Electrical function

- Electrical and Electronics Institute; ONSC Accredited Calibration No.0119

Result of Calibration:-

1. Function : Sound pressure level

Normal	Specified Sound	Measured value	Deviated value ^[1]	Acceptance limit ^[3]
Frequency (Hz)	Pressure level (dB)	(dB)	(dB)	(dB)
1000	114	114.20	0.20	±0.40

2. Function : Frequency

Normal Sound	Specified Frequency	Measured value	Deviated value ^[2]	Acceptance limit ^[3]
Pressure level (dB)	(Hz)	(Hz)	(%)	(%)
114	1000	1000.0	0.0	±1.7

Certificate No.: CP20210096EA

Calibration Report

3. Function : Total distortion + noise

Norminal Sound Pressure level (dB)	Norminal Frequency (Hz)	Measured value ^[4] (%)	Acceptance limit ^[5] (%)
114	1000	0.4	3.0

Uncertainty of measurement

Function	Uncertainty	Maximum-permitted uncertainty of measurement
Sound pressure level	0.10 dB	0.35 dB
Frequency	0.10 %	0.20 %
Total distortion + noise	0.40 %	1.00 %

- Note:
- [1] The deviated value is the absolute value of the difference between the measured value and the corresponding specified sound pressure level.
 - [2] The deviated value is the absolute value of the difference in percent between the measured value and the corresponding specified frequency.
 - [3] The acceptance limit is for the deviated value.
 - [4] The measured value is the total distortion + noise, measured over the frequency range from 20 Hz to 20 kHz.
 - [5] The acceptance limit is for the Measured value.

Remarks: 1. Acceptance limit was IEC 60942:2017 Class 2.

-- End of Report --



**ELECTRICAL AND ELECTRONICS INSTITUTE
FOUNDATION FOR INDUSTRIAL DEVELOPMENT**

975 Moo 4, Bangpoo Industrial Estate, Soi 8, Sukhumvit Road km 37,

Phraek Sa, Mueang Samut Prakan, Samut Prakan 10280

Tel: +66 2709 4860-8 Fax: +66 2324 0917-8



Certificate No.: CP20210097EA
Operation No.: CP2021120018

Certificate of Calibration

Equipment: Sound Calibrator
Manufacturer: CASELLA
Model/Type: CEL-120/1
Serial No.: 0254955
ID No.:
Customer: SECOT Co.,Ltd.
Address: 239 Rimklongprapa Rd., Bangsue,
Bangkok 10800 Thailand
Received Date: 21 December 2021
Calibrated Date: 24 December 2021
Issued Date: 28 December 2021
Calibrated by: Ms. Juntaporn Kunhakom

Approved by: _____

(Mr. Sittichai Swaksuriyawong)
Group Manager

This report was prepared electronically using applicable electronic signature. Printing or copy of file are considered as a copy of the document.

The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor $k = 2.00$, providing a level of confidence of approximately 95%. This certificate may not be reproduced other than in full except with the prior written approval of the Electrical and Electronics Institute, Foundation for Industrial Development.

Certificate No.: CP20210097EA

Calibration Report

Equipment: Sound Calibrator
Manufacturer: CASELLA
Model/Type: CEL-120/1
Serial No.: 0254955
ID No.:
Ambient Temperature: (23 ± 2) °C
Relative Humidity: (50 ± 15) %
Pressure: (101.3 ± 1.5) kPa

Method of Calibration :-

IEC 60942:2017

Condition of this result of calibration

1. Reference standards instrument :-

	Instrument	Model	Serial No.	Cert. No.	Due Date
1)	Standard microphone	4180	2661000	AA-1010-21	13 June 2022
2)	Waveform Generator	33511B	MY52302264	0144RF21	17 June 2022
3)	Audio Analyzing DMM	2015-P	4079144	E1U210398	2 February 2022
4)	Pressure humidity and Temperature Transmitter	PTU301	F0640002	CL1-P210047 0255TE21	16 June 2022 7 July 2022

2. This result of calibration was found accurate as shown on date and place of calibration only.

3. This certification is traceable to the international system of unit maintained at :-

Reference standards instrument for Acoustic function

- National Institute of Metrology (Thailand)

Reference standards instrument for Electrical function

- Electrical and Electronics Institute; ONSC Accredited Calibration No.0119

Result of Calibration:-

1. Function : Sound pressure level

Normal Frequency (Hz)	Specified Sound Pressure level (dB)	Measured value (dB)	Deviated value ^[1] (dB)	Acceptance limit ^[3] (dB)
1000	94	93.92	-0.08	±0.25
1000	114	113.95	-0.05	±0.25

2. Function : Frequency

Normal Sound Pressure level (dB)	Specified Frequency (Hz)	Measured value (Hz)	Deviated value ^[2] (%)	Acceptance limit ^[3] (%)
94	1000	1000.0	0.0	±0.7
114	1000	1000.0	0.0	±0.7

Certificate No.: CP20210097EA

Calibration Report

3. Function : Total distortion + noise

Norminal Sound Pressure level (dB)	Norminal Frequency (Hz)	Measured value ^[4] (%)	Acceptance limit ^[5] (%)
94	1000	2.5	2.5
114	1000	0.4	2.5

Uncertainty of measurement

Function	Uncertainty	Maximum-permitted uncertainty of measurement
Sound pressure level	0.10 dB	0.15 dB
Frequency	0.10 %	0.20 %
Total distortion + noise	0.40 %	0.50 %

- Note:
- [1] The deviated value is the absolute value of the difference between the measured value and the corresponding specified sound pressure level.
 - [2] The deviated value is the absolute value of the difference in percent between the measured value and the corresponding specified frequency.
 - [3] The acceptance limit is for the deviated value.
 - [4] The measured value is the total distortion + noise, measured over the frequency range from 20 Hz to 20 kHz.
 - [5] The acceptance limit is for the Measured value.

Remarks: 1. Acceptance limit was IEC 60942:2017 Class 1.

-- End of Report --