

ภาคผนวก ก

หนังสือรับรองผลการตรวจวัดคุณภาพสิ่งแวดล้อม

ใบรับรองผลการตรวจวัดทิศทางลมและความเร็วลม



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Construction Area

Monitor period : 31 Mar 2023-07 Apr 2023

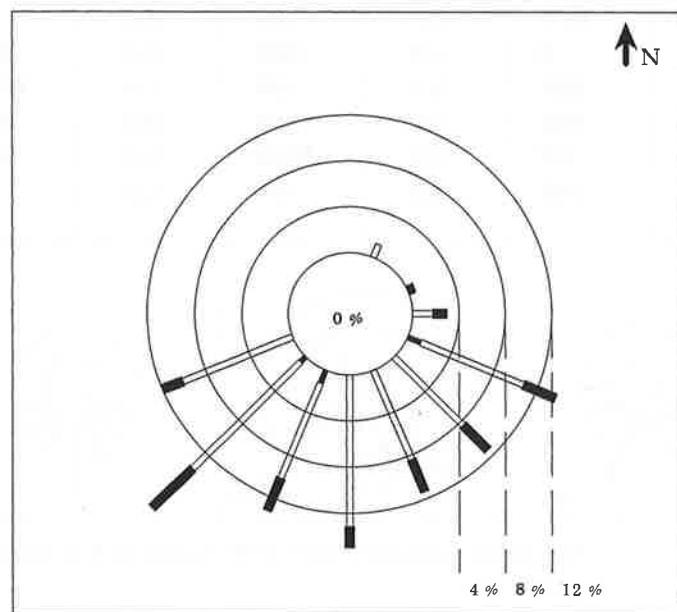
Wind Speed Model : NRG Symphonie

Serial No : A5084

Wind Direction Model : NRG Symphonie

Serial No : A5084

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	0.0120	0.0000	0.0000	0.0000	0.0000	0.0120
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0000	0.0000	0.0060	0.0000	0.0000	0.0000	0.0060
E	0.0000	0.0180	0.0120	0.0000	0.0000	0.0000	0.0299
ESE	0.0120	0.0958	0.0299	0.0000	0.0000	0.0000	0.1377
SE	0.0000	0.0838	0.0299	0.0000	0.0000	0.0000	0.1138
SSE	0.0000	0.0838	0.0299	0.0000	0.0000	0.0000	0.1138
S	0.0000	0.1317	0.0180	0.0000	0.0000	0.0000	0.1497
SSW	0.0120	0.0898	0.0299	0.0000	0.0000	0.0000	0.1317
SW	0.0060	0.1317	0.0479	0.0000	0.0000	0.0000	0.1856
WSW	0.0000	0.1018	0.0180	0.0000	0.0000	0.0000	0.1198
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



Application : WindPro Ver.1.0


Control : 16 Direction Calculation With
Calm Wind < 0.5 m/s


Data Unit : Direction in Deg.

Wind Speed in m/s

NOTE : Frequencies indicate direction from which
the wind is blowing

File Control : R:\Database\Windrose\FileControl\Win-223001-Construction Area 31 Mar 2023-07 Apr 2023


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Construction Area

Monitor period : 31 Mar 2023-07 Apr 2023

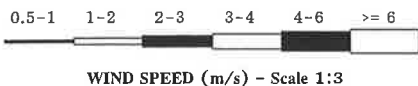
Wind Speed Model : NRG Symphonie

Serial No : A5084

Wind Direction Model : NRG Symphonie

Serial No : A5084

Time	Mar 31-Apr 01, 2023		01-02 Apr 2023		02-03 Apr 2023		03-04 Apr 2023	
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD
09:00 - 10:00	1.7	SE	1.1	SW	2.0	ESE	1.8	SSW
10:00 - 11:00	1.7	S	2.2	E	2.0	SW	2.1	SSW
11:00 - 12:00	1.8	S	1.7	SSE	2.0	SE	2.1	SE
12:00 - 13:00	1.4	SE	1.4	SW	1.6	SW	1.7	NNE
13:00 - 14:00	2.0	SE	2.0	SSW	1.7	NNE	1.9	SW
14:00 - 15:00	1.5	SE	1.0	SSE	1.0	SSW	1.9	WSW
15:00 - 16:00	1.7	ESE	1.5	E	1.0	SW	1.7	N
16:00 - 17:00	1.9	SSE	1.9	SW	1.9	SW	1.4	S
17:00 - 18:00	1.7	SE	1.7	E	2.1	SW	1.9	S
18:00 - 19:00	1.8	WSW	1.6	SW	1.9	S	1.8	SW
19:00 - 20:00	1.6	SE	1.5	SSW	1.3	WSW	2.4	SE
20:00 - 21:00	1.7	S	0.7	ESE	2.1	SE	1.6	SSE
21:00 - 22:00	1.9	ESE	2.1	SSE	2.1	SSW	1.8	WSW
22:00 - 23:00	1.7	ESE	2.2	WSW	2.0	WSW	1.8	S
23:00 - 24:00	1.7	S	1.9	WSW	2.4	SSW	0.9	ESE
00:00 - 01:00	1.9	SE	2.1	SW	1.4	SSE	1.8	SE
01:00 - 02:00	1.9	ESE	1.9	ESE	1.8	SW	1.8	S
02:00 - 03:00	2.0	SSW	2.4	SSE	2.4	SSW	1.8	SSW
03:00 - 04:00	1.6	ESE	1.4	SSW	1.7	SW	2.0	S
04:00 - 05:00	1.7	S	1.4	S	1.2	SSW	2.4	SSE
05:00 - 06:00	1.8	SE	2.0	ESE	2.1	SW	1.3	WSW
06:00 - 07:00	1.6	SSW	2.0	SSE	2.0	ENE	0.8	SSW
07:00 - 08:00	1.7	SSW	2.4	SW	1.6	WSW	1.3	ESE
08:00 - 09:00	1.6	SE	1.3	SSE	1.9	SW	1.6	S
Wind Rose								



File Control :R:\Database\Windrose\FileControl\Win-223001-Construction Area 31 Mar 2023-07 Apr 2023

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Preeda Somjai)

Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Construction Area

Monitor period : 31 Mar 2023-07 Apr 2023

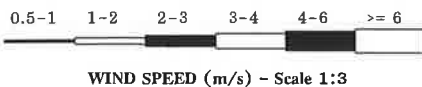
Wind Speed Model : NRG Symphonie

Serial No : A5084

Wind Direction Model : NRG Symphonie

Serial No : A5084

Time	04-05 Apr 2023		05-06 Apr 2023		06-07 Apr 2023		
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD	
09:00 - 10:00	1.8	SSE	2.4	S	1.4	ESE	
10:00 - 11:00	1.2	SW	1.5	WSW	1.2	WSW	
11:00 - 12:00	1.5	SSE	1.3	WSW	1.9	SW	
12:00 - 13:00	1.3	E	1.2	SSE	1.4	ESE	
13:00 - 14:00	1.7	S	2.9	WSW	2.0	S	
14:00 - 15:00	2.2	SSE	1.5	SSE	1.7	ESE	
15:00 - 16:00	2.2	ESE	2.5	SW	1.2	WSW	
16:00 - 17:00	2.0	ESE	2.0	S	2.0	S	
17:00 - 18:00	1.3	S	1.3	ESE	2.0	SSE	
18:00 - 19:00	1.6	WSW	1.8	S	2.2	SE	
19:00 - 20:00	2.0	SW	1.0	SSE	1.5	SSW	
20:00 - 21:00	1.9	SE	1.8	SW	1.9	SSW	
21:00 - 22:00	2.1	SW	1.8	WSW	1.3	SSE	
22:00 - 23:00	1.7	ESE	1.4	SW	1.3	SW	
23:00 - 24:00	1.4	WSW	1.5	S	2.1	SW	
00:00 - 01:00	2.3	ESE	1.9	SSE	1.9	SE	
01:00 - 02:00	2.0	ESE	1.9	SSW	2.1	SSW	
02:00 - 03:00	2.4	E	1.4	SSW	1.5	SW	
03:00 - 04:00	1.4	SE	1.6	SSW	1.7	SE	
04:00 - 05:00	1.8	ESE	1.8	S	1.5	S	
05:00 - 06:00	2.6	ESE	1.2	SW	1.5	SW	
06:00 - 07:00	1.1	WSW	1.5	SW	1.9	WSW	
07:00 - 08:00	1.2	SSW	1.4	WSW	2.0	S	
08:00 - 09:00	1.7	ESE	1.5	S	1.4	SW	
Wind Rose							



File Control :R:\Database\Windrose\FileControl\Win-223001-Construction Area 31 Mar 2023-07 Apr 2023

(Miss Katesarin Vorradetwittaya)

 Environmental Scientist

(Miss Preeda Somjai)

 Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTT Phenol Company Limited

Location : Nong Feab Community

Monitor period : 12-13 Jan 2023

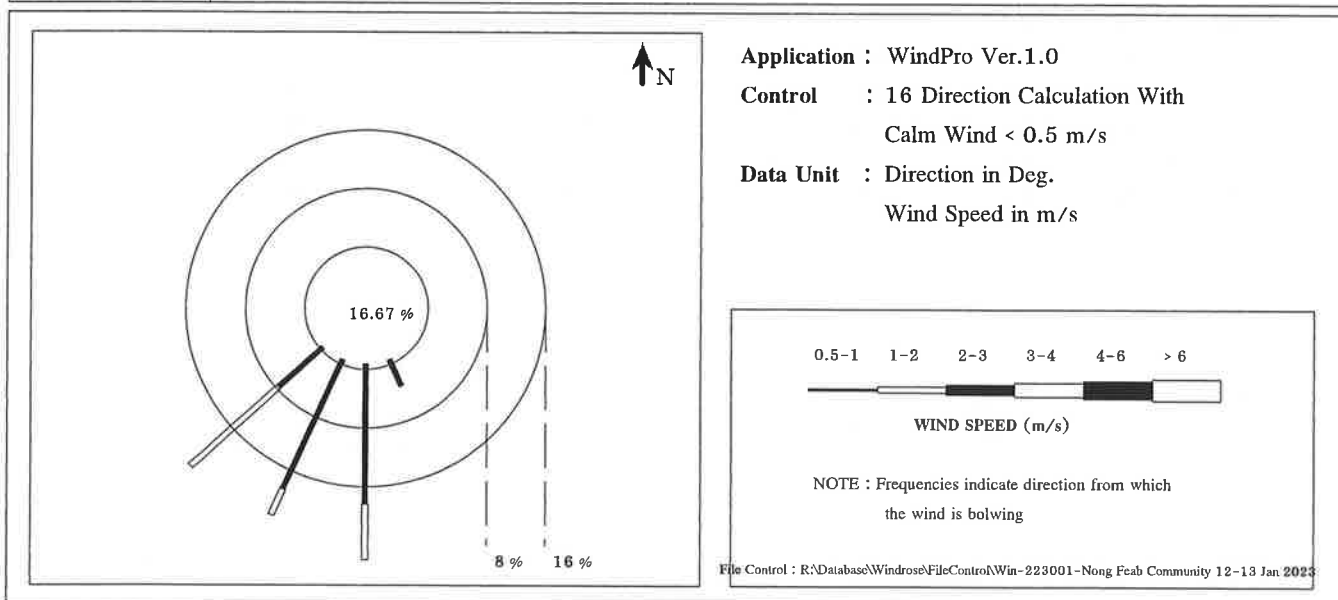
Wind Speed Model : NRG Symphonie

Serial No : 35262609

Wind Direction Model : NRG Symphonie

Serial No : 35262609

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
S	0.2083	0.0833	0.0000	0.0000	0.0000	0.0000	0.2917
SSW	0.2083	0.0417	0.0000	0.0000	0.0000	0.0000	0.2500
SW	0.0833	0.1667	0.0000	0.0000	0.0000	0.0000	0.2500
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.1667						



Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTT Phenol Company Limited

Location : Nong Feab Community

Monitor period : 12-13 Jan 2023

Wind Speed Model : NRG Symphonie

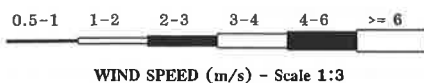
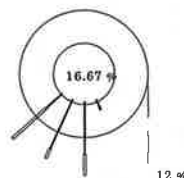
Serial No : 35262609

Wind Direction Model : NRG Symphonie

Serial No : 35262609

Time	12-13 Jan 2023	
	WS(m/s)	WD
14:00 - 15:00	1.2	SW
15:00 - 16:00	1.0	SW
16:00 - 17:00	0.6	SW
17:00 - 18:00	0.5	SSW
18:00 - 19:00	0.9	S
19:00 - 20:00	0.6	S
20:00 - 21:00	0.5	SSW
21:00 - 22:00	0.4	SSW
22:00 - 23:00	0.5	SW
23:00 - 24:00	0.5	SSW
00:00 - 01:00	0.5	S
01:00 - 02:00	0.4	SSW
02:00 - 03:00	0.4	SSW
03:00 - 04:00	0.5	SSW
04:00 - 05:00	0.4	SSW
05:00 - 06:00	0.5	S
06:00 - 07:00	0.5	SSW
07:00 - 08:00	0.6	SSE
08:00 - 09:00	0.8	S
09:00 - 10:00	1.1	S
10:00 - 11:00	1.5	SSW
11:00 - 12:00	1.1	SW
12:00 - 13:00	1.0	SW
13:00 - 14:00	1.0	S

Wind Rose



File Control :R:\Database\Windrose\FileControl\Win-223001-Nong Feab Community 12-13 Jan 2023

Ladawan W.
 (Miss Ladawan Wongcharoen)
 Environmental Scientist

Preeda S.
 (Miss Preeda Somjai)
 Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTT Phenol Company Limited

Location : Map Chalute Community

Monitor period : 12-13 Jan 2023

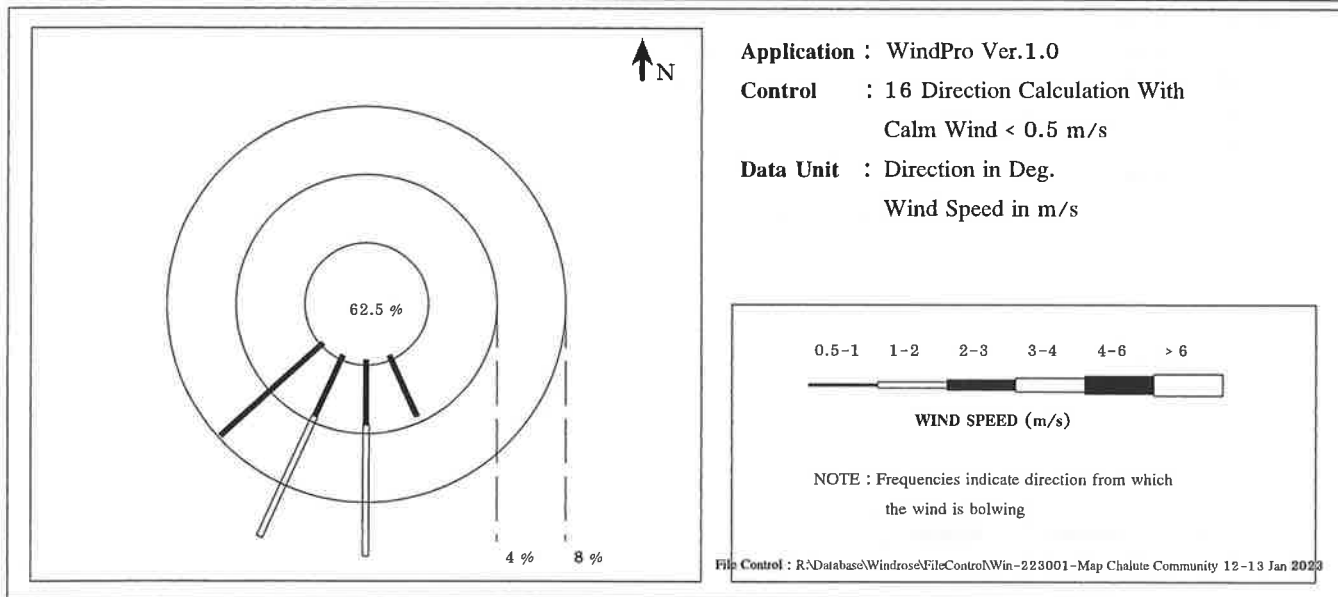
Wind Speed Model : NRG Symphonie

Serial No : 309013914

Wind Direction Model : NRG Symphonie

Serial No : 309013914

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
S	0.0417	0.0833	0.0000	0.0000	0.0000	0.0000	0.1250
SSW	0.0417	0.0833	0.0000	0.0000	0.0000	0.0000	0.1250
SW	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.6250						



Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-PTT Phenol Company Limited

Location : Map Chalute Community

Monitor period : 12-13 Jan 2023

Wind Speed Model : NRG Symphonie

Serial No : 309013914

Wind Direction Model : NRG Symphonie

Serial No : 309013914

Time	12-13 Jan 2023	
	WS(m/s)	WD
15:00 - 16:00	0.9	SSW
16:00 - 17:00	0.9	SW
17:00 - 18:00	0.5	SW
18:00 - 19:00	0.4	SSE
19:00 - 20:00	0.5	SSE
20:00 - 21:00	0.4	SSE
21:00 - 22:00	0.3	S
22:00 - 23:00	0.4	S
23:00 - 24:00	0.3	S
00:00 - 01:00	0.3	SSE
01:00 - 02:00	0.3	SSE
02:00 - 03:00	0.3	S
03:00 - 04:00	0.3	SW
04:00 - 05:00	0.3	SW
05:00 - 06:00	0.3	SW
06:00 - 07:00	0.4	SSW
07:00 - 08:00	0.4	ESE
08:00 - 09:00	0.3	SSW
09:00 - 10:00	0.4	SW
10:00 - 11:00	0.7	S
11:00 - 12:00	1.3	S
12:00 - 13:00	1.1	SSW
13:00 - 14:00	1.1	SSW
14:00 - 15:00	1.0	S

Wind Rose	
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File Control :R:\Database\Windrose\FileControl\Win-223001-Map Chalute Community 12-13 Jan 2023

Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTT Phenol Company Limited

Location : Map Chalute-Chak klang Community

Monitor period : 12-13 Jan 2023

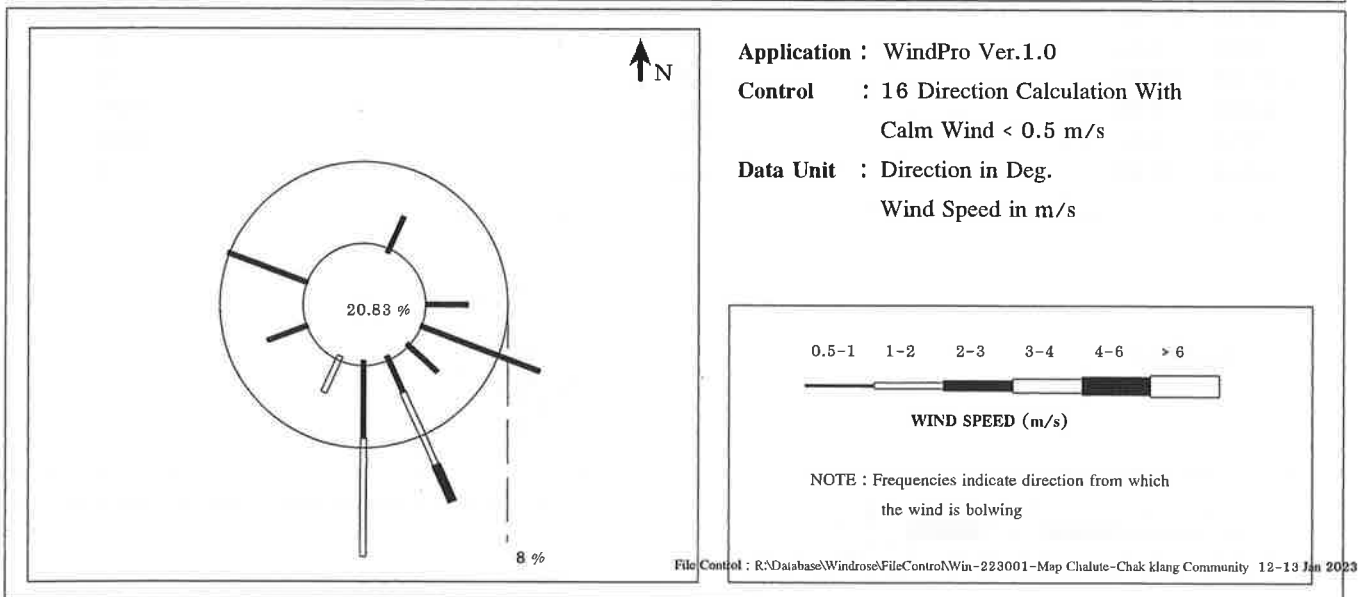
Wind Speed Model : NRG Symphonie

Serial No : 309016789

Wind Direction Model : NRG Symphonie

Serial No : 309016789

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	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
ESE	0.1250	0.0000	0.0000	0.0000	0.0000	0.0000	0.1250
SE	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
SSE	0.0417	0.0833	0.0417	0.0000	0.0000	0.0000	0.1667
S	0.0833	0.1250	0.0000	0.0000	0.0000	0.0000	0.2083
SSW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
SW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WSW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.2083						



Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTT Phenol Company Limited

Location : Map Chalute-Chak klang Community

Monitor period : 12-13 Jan 2023

Wind Speed Model : NRG Symphonie

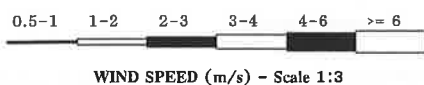
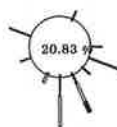
Serial No : 309016789

Wind Direction Model : NRG Symphonie

Serial No : 309016789

Time	12-13 Jan 2023	
	WS(m/s)	WD
15:00 - 16:00	1.5	S
16:00 - 17:00	1.4	SSW
17:00 - 18:00	0.8	S
18:00 - 19:00	0.7	ESE
19:00 - 20:00	0.6	SE
20:00 - 21:00	0.5	ESE
21:00 - 22:00	0.5	S
22:00 - 23:00	0.7	SSE
23:00 - 24:00	0.5	ESE
00:00 - 01:00	0.5	E
01:00 - 02:00	0.4	E
02:00 - 03:00	0.4	SE
03:00 - 04:00	0.4	WNW
04:00 - 05:00	0.5	WNW
05:00 - 06:00	0.6	WNW
06:00 - 07:00	0.8	WSW
07:00 - 08:00	0.6	NNE
08:00 - 09:00	0.4	W
09:00 - 10:00	0.4	NW
10:00 - 11:00	1.1	SSE
11:00 - 12:00	2.1	SSE
12:00 - 13:00	1.7	SSE
13:00 - 14:00	1.9	S
14:00 - 15:00	1.0	S

Wind Rose



File Control : R:\Database\Windrose\FileControl\Win-223001-Map Chalute-Chak klang Community 12-13 Jan 2023

Ladawan W.
(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTT Phenol Company Limited

Location : North Fence of Project

Monitor period : 12-13 Jan 2023

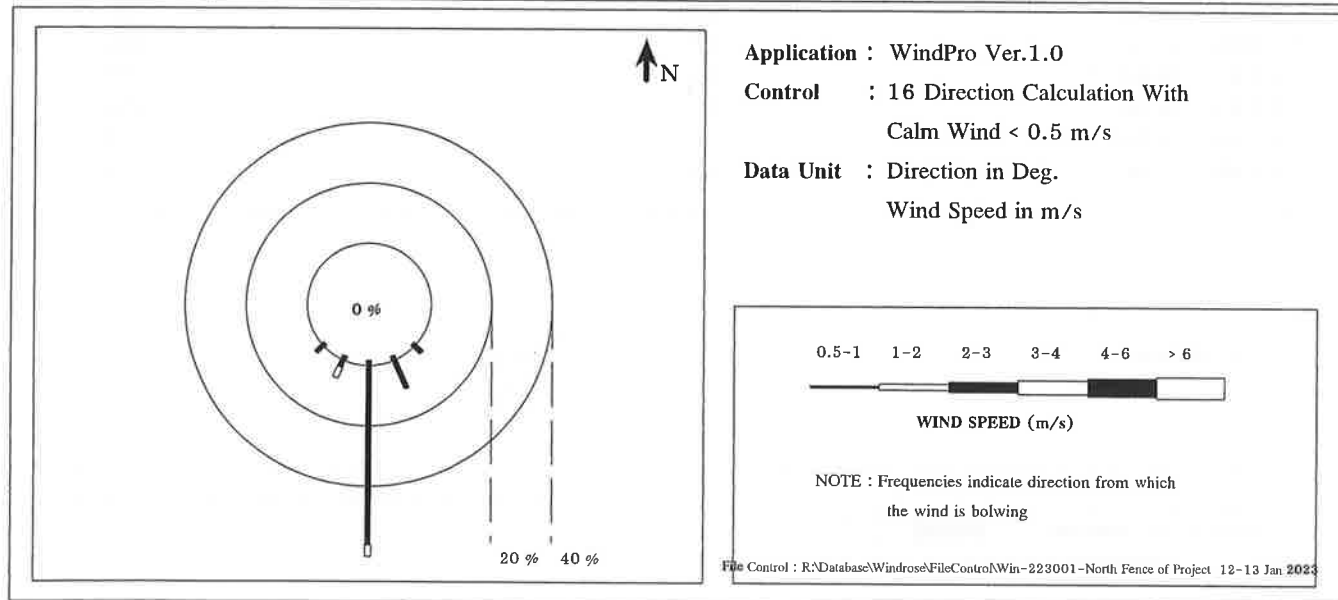
Wind Speed Model : NRG Symphonie

Serial No : 309016178

Wind Direction Model : NRG Symphonie

Serial No : 309016178

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
SSE	0.1250	0.0000	0.0000	0.0000	0.0000	0.0000	0.1250
S	0.6667	0.0417	0.0000	0.0000	0.0000	0.0000	0.7083
SSW	0.0417	0.0417	0.0000	0.0000	0.0000	0.0000	0.0833
SW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTT Phenol Company Limited

Location : North Fence of Project

Monitor period : 12-13 Jan 2023

Wind Speed Model : NRG Symphonie

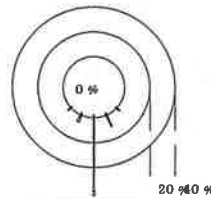
Serial No : 309016178

Wind Direction Model : NRG Symphonie

Serial No : 309016178

Time	12-13 Jan 2023	
	WS(m/s)	WD
13:00 - 14:00	0.7	S
14:00 - 15:00	1.0	SSW
15:00 - 16:00	0.9	SSE
16:00 - 17:00	0.8	S
17:00 - 18:00	0.6	S
18:00 - 19:00	0.6	S
19:00 - 20:00	0.8	S
20:00 - 21:00	0.8	S
21:00 - 22:00	0.7	S
22:00 - 23:00	0.7	S
23:00 - 24:00	0.7	S
00:00 - 01:00	0.6	S
01:00 - 02:00	0.6	S
02:00 - 03:00	0.7	S
03:00 - 04:00	0.6	S
04:00 - 05:00	0.5	S
05:00 - 06:00	0.6	S
06:00 - 07:00	0.5	S
07:00 - 08:00	0.5	SW
08:00 - 09:00	0.5	SSW
09:00 - 10:00	0.8	SE
10:00 - 11:00	0.9	SSE
11:00 - 12:00	0.9	SSE
12:00 - 13:00	1.1	S

Wind Rose



File Control : R:\Database\Windrose\FileControl\Win-223001-North Fence of Project 12-13 Jan 2023

Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTT Phenol Company Limited

Location : South Fence of Project

Monitor period : 12-13 Jan 2023

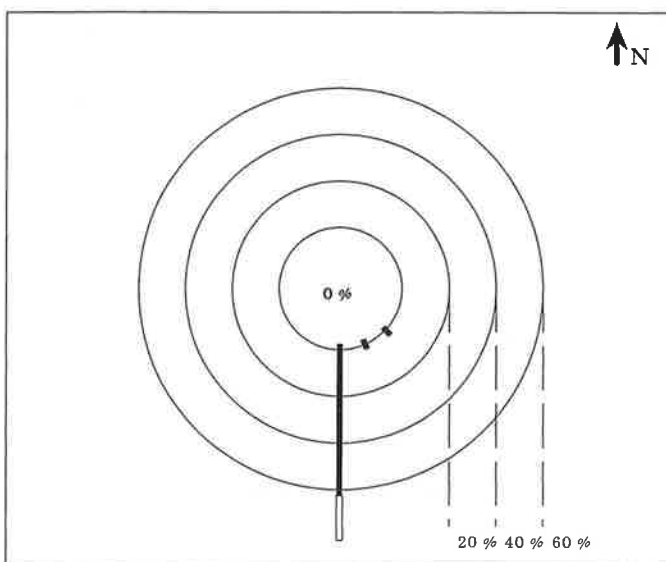
Wind Speed Model : NRG Symphonie

Serial No : 309015720

Wind Direction Model : NRG Symphonie

Serial No : 309015720

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
SSE	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
S	0.7083	0.2083	0.0000	0.0000	0.0000	0.0000	0.9167
SSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



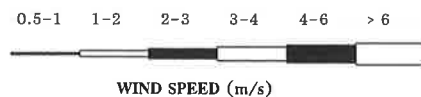
Application : WindPro Ver.1.0

Control : 16 Direction Calculation With

Calm Wind < 0.5 m/s

Data Unit : Direction in Deg.

Wind Speed in m/s



NOTE : Frequencies indicate direction from which
the wind is blowing

File Control : R:\Database\Windrose\FileControl\Win-223001-South Fence of Project 12-13 Jan 2023

Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTT Phenol Company Limited

Location : South Fence of Project

Monitor period : 12-13 Jan 2023

Wind Speed Model : NRG Symphonie

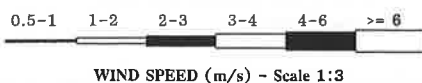
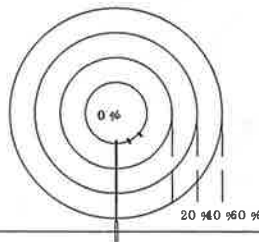
Serial No : 309015720

Wind Direction Model : NRG Symphonie

Serial No : 309015720

Time	12-13 Jan 2023	
	WS(m/s)	WD
12:00 - 13:00	0.8	S
13:00 - 14:00	1.2	S
14:00 - 15:00	1.1	S
15:00 - 16:00	0.9	S
16:00 - 17:00	0.6	S
17:00 - 18:00	0.7	S
18:00 - 19:00	0.9	S
19:00 - 20:00	0.9	S
20:00 - 21:00	0.8	S
21:00 - 22:00	0.8	S
22:00 - 23:00	0.8	S
23:00 - 24:00	0.7	S
00:00 - 01:00	0.6	S
01:00 - 02:00	0.8	S
02:00 - 03:00	0.7	S
03:00 - 04:00	0.5	S
04:00 - 05:00	0.6	S
05:00 - 06:00	0.5	S
06:00 - 07:00	0.5	S
07:00 - 08:00	0.6	SE
08:00 - 09:00	0.9	SSE
09:00 - 10:00	1.0	S
10:00 - 11:00	1.1	S
11:00 - 12:00	1.0	S

Wind Rose



File Control :R:\Database\Windrose\FileControl\Win-223001-South Fence of Project 12-13 Jan 2023

Ladawan W.
 (Miss Ladawan Wongcharoen)
 Environmental Scientist

Preeda S.
 (Miss Preeda Somjai)
 Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTT Phenol Company Limited

Location : Northeast Fence of Project

Monitor period : 12-13 Jan 2023

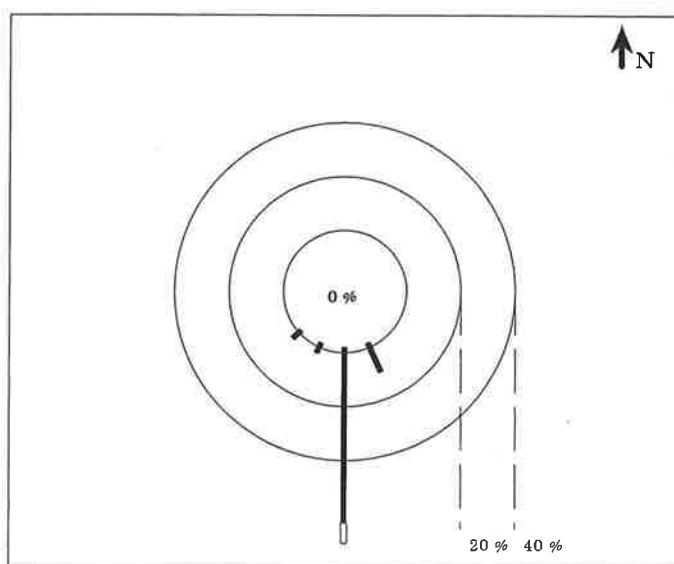
Wind Speed Model : NRG Symphonie

Serial No : 309012348

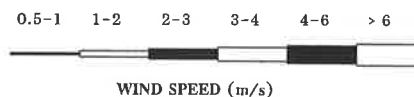
Wind Direction Model : NRG Symphonie

Serial No : 309012348

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.1250	0.0000	0.0000	0.0000	0.0000	0.0000	0.1250
S	0.7083	0.0833	0.0000	0.0000	0.0000	0.0000	0.7917
SSW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
SW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



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-223001-Northeast Fence of Project 12-13 Jan 2023

Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTT Phenol Company Limited

Location : Northeast Fence of Project

Monitor period : 12-13 Jan 2023

Wind Speed Model : NRG Symphonie

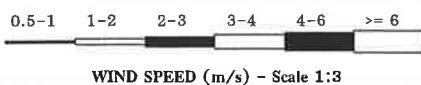
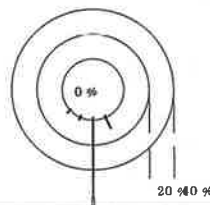
Serial No : 309012348

Wind Direction Model : NRG Symphonie

Serial No : 309012348

Time	12-13 Jan 2023	
	WS(m/s)	WD
13:00 - 14:00	0.7	S
14:00 - 15:00	1.0	S
15:00 - 16:00	0.9	S
16:00 - 17:00	0.8	S
17:00 - 18:00	0.6	S
18:00 - 19:00	0.6	S
19:00 - 20:00	0.8	S
20:00 - 21:00	0.8	S
21:00 - 22:00	0.7	S
22:00 - 23:00	0.7	S
23:00 - 24:00	0.7	S
00:00 - 01:00	0.6	S
01:00 - 02:00	0.6	S
02:00 - 03:00	0.7	S
03:00 - 04:00	0.6	S
04:00 - 05:00	0.5	S
05:00 - 06:00	0.6	S
06:00 - 07:00	0.5	S
07:00 - 08:00	0.5	SW
08:00 - 09:00	0.5	SSW
09:00 - 10:00	0.8	SSE
10:00 - 11:00	0.9	SSE
11:00 - 12:00	0.9	SSE
12:00 - 13:00	1.1	S

Wind Rose



File Control :R:\Database\Windrose\FileControl\Win-223001-Northeast Fence of Project 12-13 Jan 2023

Ladawan W.

(Miss Ladawan Wongcharoen)

Environmental Scientist

Preeda S.

(Miss Preeda Somjai)

Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTT Phenol Company Limited

Location : West Fence of Project

Monitor period : 12-13 Jan 2023

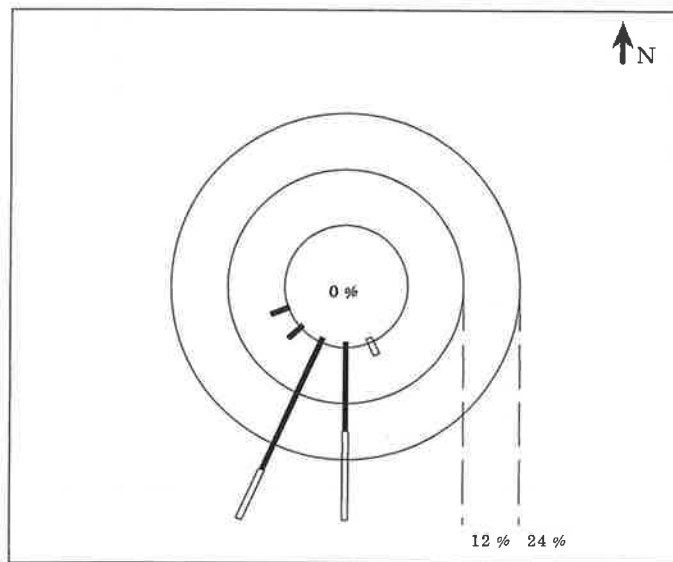
Wind Speed Model : NRG Symphonie

Serial No : 30909366

Wind Direction Model : NRG Symphonie

Serial No : 30909366

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
S	0.2083	0.2083	0.0000	0.0000	0.0000	0.0000	0.4167
SSW	0.3333	0.1250	0.0000	0.0000	0.0000	0.0000	0.4583
SW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
WSW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



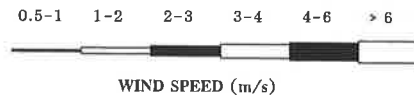
Application : WindPro Ver.1.0

Control : 16 Direction Calculation With

Calm Wind < 0.5 m/s

Data Unit : Direction in Deg.

Wind Speed in m/s



NOTE : Frequencies indicate direction from which the wind is blowing

File Control : R:\Database\Windrose\FileControl\Win-223001-West Fence of Project 12-13 Jan 2023

Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTT Phenol Company Limited

Location : West Fence of Project

Monitor period : 12-13 Jan 2023

Wind Speed Model : NRG Symphonie

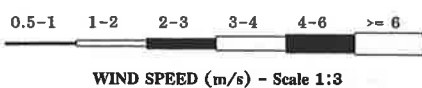
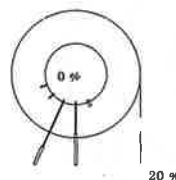
Serial No : 30909366

Wind Direction Model : NRG Symphonie

Serial No : 30909366

Time	12-13 Jan 2023	
	WS(m/s)	WD
13:00 - 14:00	0.9	S
14:00 - 15:00	1.4	S
15:00 - 16:00	1.3	SSW
16:00 - 17:00	1.0	S
17:00 - 18:00	0.7	S
18:00 - 19:00	0.8	S
19:00 - 20:00	1.0	S
20:00 - 21:00	1.0	SSW
21:00 - 22:00	0.9	S
22:00 - 23:00	0.9	SSW
23:00 - 24:00	0.9	SSW
00:00 - 01:00	0.8	SSW
01:00 - 02:00	0.7	SSW
02:00 - 03:00	0.9	SSW
03:00 - 04:00	0.8	SSW
04:00 - 05:00	0.5	SSW
05:00 - 06:00	0.7	S
06:00 - 07:00	0.5	SSW
07:00 - 08:00	0.5	WSW
08:00 - 09:00	0.6	SW
09:00 - 10:00	1.0	SSE
10:00 - 11:00	1.2	S
11:00 - 12:00	1.3	S
12:00 - 13:00	1.2	SSW

Wind Rose



File Control :R:\Database\Windrose\FileControl\Win-223001-West Fence of Project 12-13 Jan 2023

Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Nong Feab Community (A1)

Monitor period : 09-10 Feb 2023

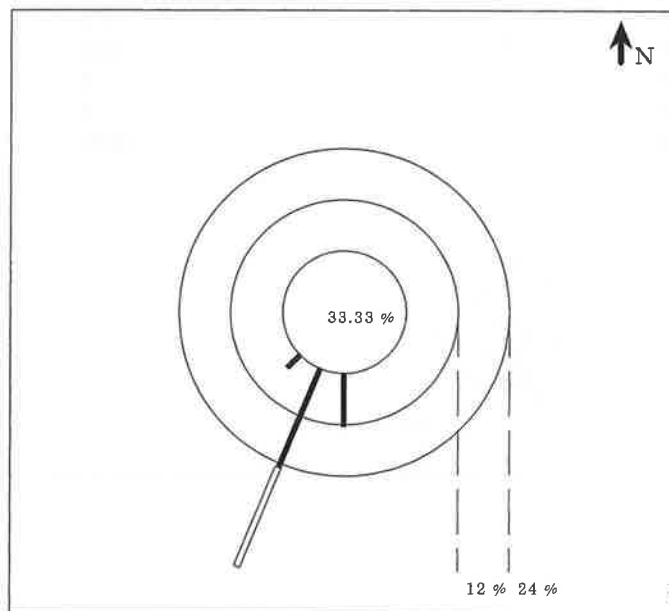
Wind Speed Model : NRG Symphonie

Serial No : 30909366

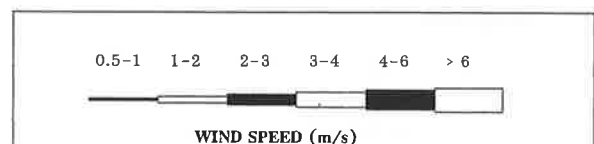
Wind Direction Model : NRG Symphonie

Serial No : 30909366

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.1250	0.0000	0.0000	0.0000	0.0000	0.0000	0.1250
SSW	0.2500	0.2500	0.0000	0.0000	0.0000	0.0000	0.5000
SW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.3333						



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-223001-Nong Feab Community (A1) 09-10 Feb 2023

Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Nong Feab Community (A1)

Monitor period : 09-10 Feb 2023

Wind Speed Model : NRG Symphonie

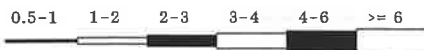
Serial No : 30909366

Wind Direction Model : NRG Symphonie

Serial No : 30909366

Time	09-10 Feb 2023	
	WS(m/s)	WD
09:00 - 10:00	0.4	S
10:00 - 11:00	0.6	SSW
11:00 - 12:00	1.3	SSW
12:00 - 13:00	1.5	SSW
13:00 - 14:00	1.4	SSW
14:00 - 15:00	1.4	SSW
15:00 - 16:00	1.0	SSW
16:00 - 17:00	1.0	SSW
17:00 - 18:00	0.6	SSW
18:00 - 19:00	0.6	SSW
19:00 - 20:00	0.7	S
20:00 - 21:00	0.6	SSW
21:00 - 22:00	0.4	S
22:00 - 23:00	0.5	SSW
23:00 - 24:00	0.4	SSW
00:00 - 01:00	0.5	SSW
01:00 - 02:00	0.5	S
02:00 - 03:00	0.4	SSW
03:00 - 04:00	0.4	SSW
04:00 - 05:00	0.4	S
05:00 - 06:00	0.5	S
06:00 - 07:00	0.4	S
07:00 - 08:00	0.4	SSW
08:00 - 09:00	0.5	SW

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

File Control :R:\Database\Windrose\FileControl\Win-223001-Nong Feab Community (A1) 09-10 Feb 2023

Ladawan N.

(Miss Ladawan Wongcharoen)

Environmental Scientist

Preeda S.

(Miss Preeda Somjai)

Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Map Chalute Community (A2)

Monitor period : 09-10 Feb 2023

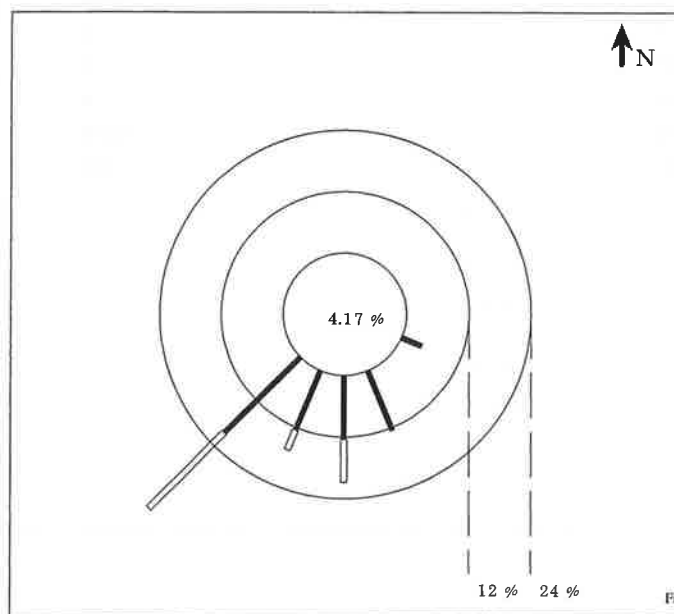
Wind Speed Model : NRG Symphonie

Serial No : 309015720

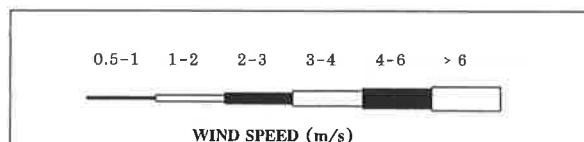
Wind Direction Model : NRG Symphonie

Serial No : 309015720

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.1250	0.0000	0.0000	0.0000	0.0000	0.0000	0.1250
S	0.1250	0.0833	0.0000	0.0000	0.0000	0.0000	0.2083
SSW	0.1250	0.0417	0.0000	0.0000	0.0000	0.0000	0.1667
SW	0.2083	0.2083	0.0000	0.0000	0.0000	0.0000	0.4167
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0417						



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-223001-Map Chalute Community (A2) 09-10 Feb 2023

Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Map Chalute Community (A2)

Monitor period : 09-10 Feb 2023

Wind Speed Model : NRG Symphonie

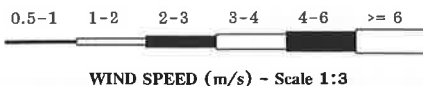
Serial No : 309015720

Wind Direction Model : NRG Symphonie

Serial No : 309015720

Time	09-10 Feb 2023	
	WS(m/s)	WD
10:00 - 11:00	1.3	SW
11:00 - 12:00	1.5	SW
12:00 - 13:00	1.6	S
13:00 - 14:00	1.8	SW
14:00 - 15:00	1.7	SW
15:00 - 16:00	1.5	SW
16:00 - 17:00	1.4	S
17:00 - 18:00	1.1	SSW
18:00 - 19:00	0.8	SW
19:00 - 20:00	0.8	SW
20:00 - 21:00	0.7	SW
21:00 - 22:00	0.6	SSW
22:00 - 23:00	0.7	SW
23:00 - 24:00	0.5	SSW
00:00 - 01:00	0.5	SSW
01:00 - 02:00	0.5	SSE
02:00 - 03:00	0.5	SSE
03:00 - 04:00	0.5	S
04:00 - 05:00	0.4	S
05:00 - 06:00	0.5	S
06:00 - 07:00	0.5	SSE
07:00 - 08:00	0.5	SW
08:00 - 09:00	0.5	S
09:00 - 10:00	0.8	ESE

Wind Rose	<p>4.17 %</p> <p>20 %</p>
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File Control :R:\Database\Windrose\FileControl\Win-223001-Map Chalute Community (A2) 09-10 Feb 2023

Ladawan W.
 (Miss Ladawan Wongcharoen)
 Environmental Scientist

Preeda S.
 (Miss Preeda Somjai)
 Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-PTTGC18 (Phenol Plant)

Location : Map Chalute-Chak Klang Community (A3)

Monitor period : 09-10 Feb 2023

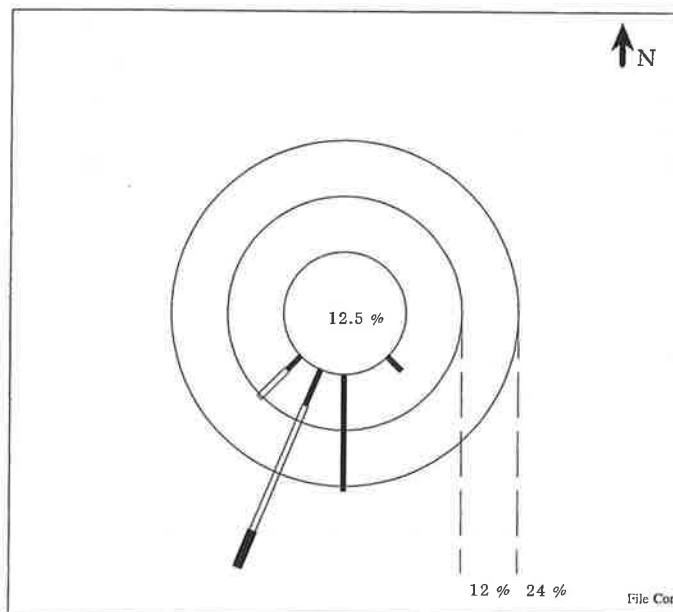
Wind Speed Model : NRG Symphonie

Serial No : 309013914

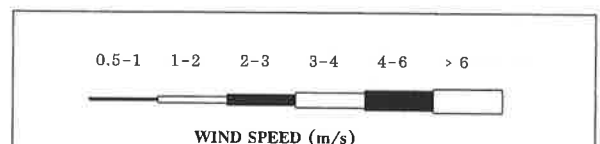
Wind Direction Model : NRG Symphonie

Serial No : 309013914

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
SSE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
S	0.2500	0.0000	0.0000	0.0000	0.0000	0.0000	0.2500
SSW	0.0833	0.2917	0.0833	0.0000	0.0000	0.0000	0.4583
SW	0.0417	0.0833	0.0000	0.0000	0.0000	0.0000	0.1250
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.1250						



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

Ladawan N.
(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Map Chalute-Chak klang Community (A3)

Monitor period : 09-10 Feb 2023

Wind Speed Model : NRG Symphonie

Serial No : 309013914

Wind Direction Model : NRG Symphonie

Serial No : 309013914

Time	09-10 Feb 2023	
	WS(m/s)	WD
10:00 - 11:00	1.3	SSW
11:00 - 12:00	1.8	SSW
12:00 - 13:00	1.9	SSW
13:00 - 14:00	2.0	SSW
14:00 - 15:00	2.0	SSW
15:00 - 16:00	1.8	SSW
16:00 - 17:00	1.5	SSW
17:00 - 18:00	1.2	SW
18:00 - 19:00	1.0	SSW
19:00 - 20:00	1.1	SW
20:00 - 21:00	1.0	SSW
21:00 - 22:00	0.7	SSW
22:00 - 23:00	0.8	SSW
23:00 - 24:00	0.5	S
00:00 - 01:00	0.6	S
01:00 - 02:00	0.5	S
02:00 - 03:00	0.5	S
03:00 - 04:00	0.4	S
04:00 - 05:00	0.5	S
05:00 - 06:00	0.5	S
06:00 - 07:00	0.4	S
07:00 - 08:00	0.6	SW
08:00 - 09:00	0.4	SSW
09:00 - 10:00	0.6	SE
Wind Rose		



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

File Control :R:\Database\Windrose\FileControl\Win-223001-Map Chalute-Chak klang Community (A3) 09-10 Feb 2023

Ladawan W.
(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : North Fence of Project (A4)

Monitor period : 09-10 Feb 2023

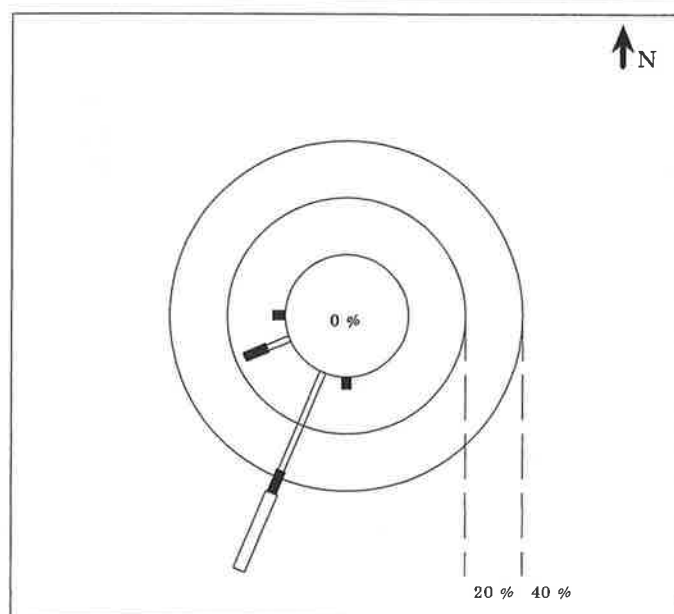
Wind Speed Model : NRG Symphonie

Serial No : 309016055

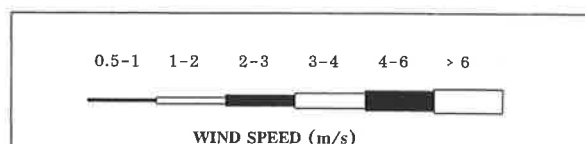
Wind Direction Model : NRG Symphonie

Serial No : 309016055

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0417	0.0000	0.0000	0.0000	0.0417
SSW	0.0000	0.3750	0.0833	0.2917	0.0000	0.0000	0.7500
SW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WSW	0.0000	0.0833	0.0833	0.0000	0.0000	0.0000	0.1667
W	0.0000	0.0000	0.0417	0.0000	0.0000	0.0000	0.0417
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



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-223001-North Fence of Project (A4) 09-10 Feb 2023

Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : North Fence of Project (A4)

Monitor period : 09-10 Feb 2023

Wind Speed Model : NRG Symphonie

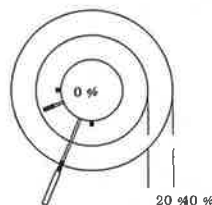
Serial No : 309016055

Wind Direction Model : NRG Symphonie

Serial No : 309016055

Time	09-10 Feb 2023	
	WS(m/s)	WD
09:00 - 10:00	2.2	S
10:00 - 11:00	3.0	SSW
11:00 - 12:00	3.2	SSW
12:00 - 13:00	3.3	SSW
13:00 - 14:00	3.6	SSW
14:00 - 15:00	3.6	SSW
15:00 - 16:00	3.7	SSW
16:00 - 17:00	3.0	SSW
17:00 - 18:00	2.7	WSW
18:00 - 19:00	2.1	SSW
19:00 - 20:00	2.2	W
20:00 - 21:00	2.1	SSW
21:00 - 22:00	1.6	SSW
22:00 - 23:00	1.9	SSW
23:00 - 24:00	1.3	SSW
00:00 - 01:00	1.8	SSW
01:00 - 02:00	1.3	SSW
02:00 - 03:00	1.4	SSW
03:00 - 04:00	1.2	SSW
04:00 - 05:00	1.5	WSW
05:00 - 06:00	1.4	SSW
06:00 - 07:00	1.2	SSW
07:00 - 08:00	1.9	WSW
08:00 - 09:00	2.3	WSW

Wind Rose



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

File Control :R:\Database\Windrose\FileControl\Win-223001-North Fence of Project (A4) 09-10 Feb 2023

Ladawan N.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : South Fence of Project (A5)

Monitor period : 09-10 Feb 2023

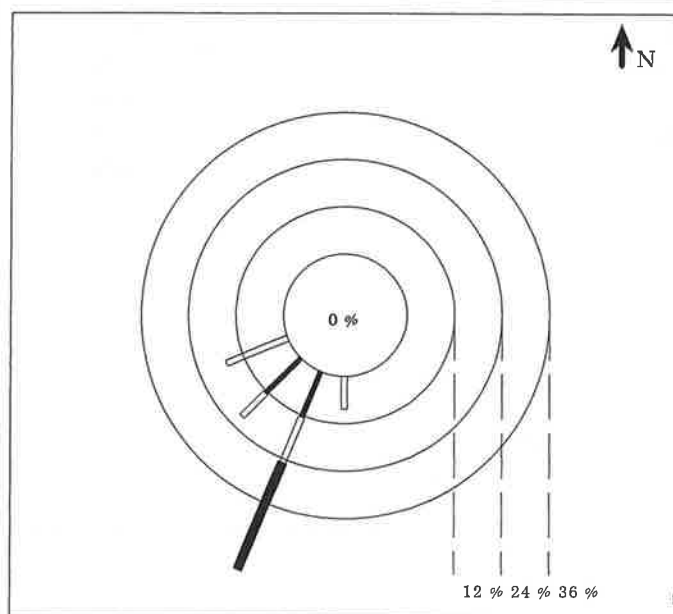
Wind Speed Model : NRG Symphonie

Serial No : 309018842

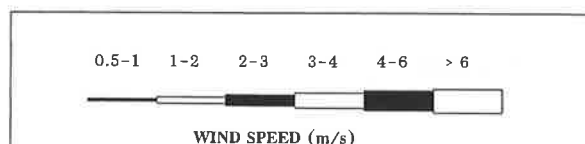
Wind Direction Model : NRG Symphonie

Serial No : 309018842

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0833	0.0000	0.0000	0.0000	0.0000	0.0833
SSW	0.1250	0.1250	0.2917	0.0000	0.0000	0.0000	0.5417
SW	0.1250	0.0833	0.0000	0.0000	0.0000	0.0000	0.2083
WSW	0.0000	0.1667	0.0000	0.0000	0.0000	0.0000	0.1667
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



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-223001-South Fence of Project (A5) 09-10 Feb 2023

Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : South Fence of Project (A5)

Monitor period : 09-10 Feb 2023

Wind Speed Model : NRG Symphonie

Serial No : 309018842

Wind Direction Model : NRG Symphonie

Serial No : 309018842

Time	09-10 Feb 2023	
	WS(m/s)	WD
08:00 - 09:00	1.5	S
09:00 - 10:00	1.7	S
10:00 - 11:00	2.0	SSW
11:00 - 12:00	2.2	SSW
12:00 - 13:00	2.3	SSW
13:00 - 14:00	2.5	SSW
14:00 - 15:00	2.5	SSW
15:00 - 16:00	2.5	SSW
16:00 - 17:00	2.0	SSW
17:00 - 18:00	1.8	WSW
18:00 - 19:00	1.4	SW
19:00 - 20:00	1.4	WSW
20:00 - 21:00	1.4	SSW
21:00 - 22:00	1.0	SSW
22:00 - 23:00	1.2	SSW
23:00 - 24:00	0.9	SW
00:00 - 01:00	1.1	SW
01:00 - 02:00	0.9	SW
02:00 - 03:00	0.9	SW
03:00 - 04:00	0.8	SSW
04:00 - 05:00	1.0	WSW
05:00 - 06:00	0.9	SSW
06:00 - 07:00	0.8	SSW
07:00 - 08:00	1.3	WSW

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

File Control :R:\Database\Windrose\FileControl\Win-223001-South Fence of Project (A5) 09-10 Feb 2023

Ladawan W.
 (Miss Ladawan Wongcharoen)
 Environmental Scientist

Preeda S.
 (Miss Preeda Somjai)
 Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Northeast Fence of Project (A6)

Monitor period : 09-10 Feb 2023

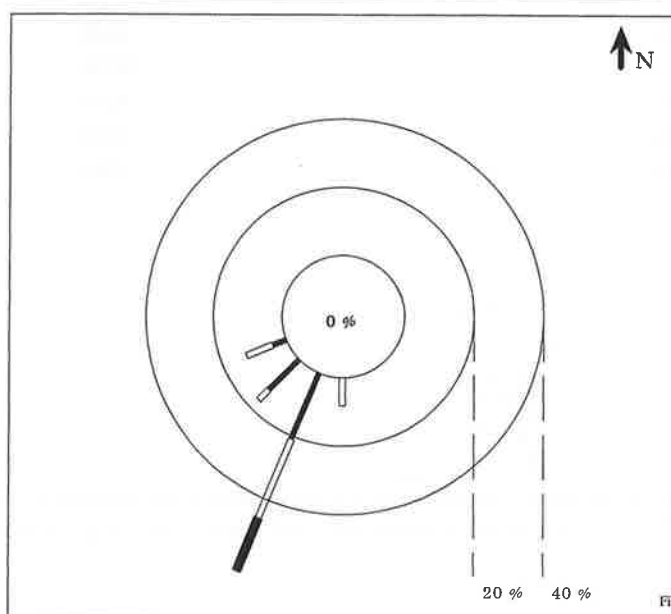
Wind Speed Model : NRG Symphonie

Serial No : 309016178

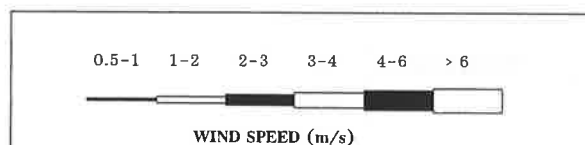
Wind Direction Model : NRG Symphonie

Serial No : 309016178

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0833	0.0000	0.0000	0.0000	0.0000	0.0833
SSW	0.2083	0.2500	0.1667	0.0000	0.0000	0.0000	0.6250
SW	0.1250	0.0417	0.0000	0.0000	0.0000	0.0000	0.1667
WSW	0.0417	0.0833	0.0000	0.0000	0.0000	0.0000	0.1250
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



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-223001-Northeast Fence of Project (A6) 09-10 Feb 2023

Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Northeast Fence of Project (A6)

Monitor period : 09-10 Feb 2023

Wind Speed Model : NRG Symphonie

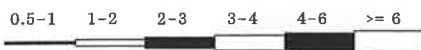
Serial No : 309016178

Wind Direction Model : NRG Symphonie

Serial No : 309016178

Time	09-10 Feb 2023	
	WS(m/s)	WD
08:00 - 09:00	1.0	S
09:00 - 10:00	1.3	S
10:00 - 11:00	1.8	SSW
11:00 - 12:00	1.9	SSW
12:00 - 13:00	2.0	SSW
13:00 - 14:00	2.2	SSW
14:00 - 15:00	2.2	SSW
15:00 - 16:00	2.2	SSW
16:00 - 17:00	1.8	SSW
17:00 - 18:00	1.5	WSW
18:00 - 19:00	1.1	SSW
19:00 - 20:00	1.2	SW
20:00 - 21:00	1.1	SSW
21:00 - 22:00	0.9	SSW
22:00 - 23:00	1.0	SSW
23:00 - 24:00	0.7	SW
00:00 - 01:00	0.9	SSW
01:00 - 02:00	0.7	SW
02:00 - 03:00	0.8	SSW
03:00 - 04:00	0.7	SSW
04:00 - 05:00	0.8	WSW
05:00 - 06:00	0.9	SW
06:00 - 07:00	0.8	SSW
07:00 - 08:00	1.4	WSW

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

File Control : R:\Database\Windrose\FileControl\Win-223001-Northeast Fence of Project (A6) 09-10 Feb 2023

Ladawan W.
 (Miss Ladawan Wongcharoen)
 Environmental Scientist

Preeda S.
 (Miss Preeda Somjai)
 Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-PTTGC18 (Phenol Plant)

Location : West Fence of Project (G9 Road) (A7)

Monitor period : 09-10 Feb 2023

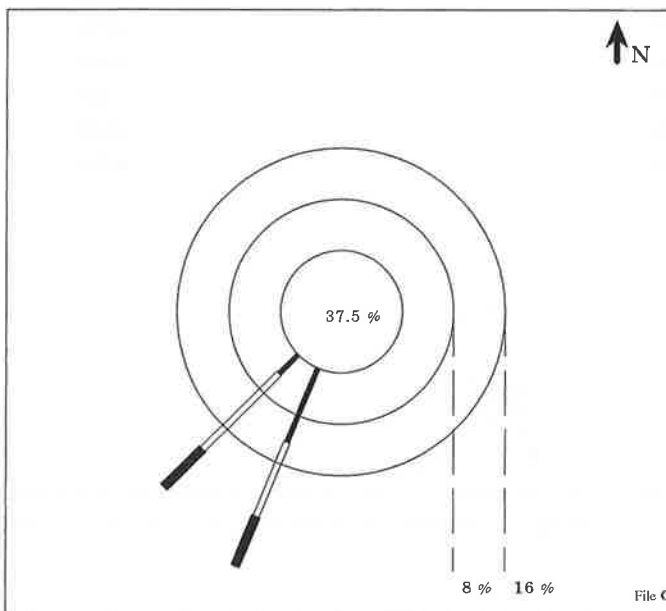
Wind Speed Model : NRG Symphonie

Serial No : 309012348

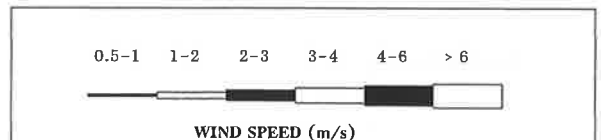
Wind Direction Model : NRG Symphonie

Serial No : 309012348

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.1250	0.1250	0.0833	0.0000	0.0000	0.0000	0.3333
SW	0.0417	0.1667	0.0833	0.0000	0.0000	0.0000	0.2917
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.3750						



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-223001-West Fence of Project (G9 Road) (A7) 09-10 Feb 2023

Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : West Fence of Project (G9 Road) (A7)

Monitor period : 09-10 Feb 2023

Wind Speed Model : NRG Symphonie

Serial No : 309012348

Wind Direction Model : NRG Symphonie

Serial No : 309012348

Time	09-10 Feb 2023	
	WS(m/s)	WD
09:00 - 10:00	1.1	SSW
10:00 - 11:00	1.6	SSW
11:00 - 12:00	1.9	SSW
12:00 - 13:00	2.1	SW
13:00 - 14:00	2.4	SW
14:00 - 15:00	2.3	SSW
15:00 - 16:00	2.1	SSW
16:00 - 17:00	1.7	SW
17:00 - 18:00	1.3	SW
18:00 - 19:00	0.7	SSW
19:00 - 20:00	0.7	SSW
20:00 - 21:00	0.6	SSW
21:00 - 22:00	0.4	SSW
22:00 - 23:00	0.4	SSW
23:00 - 24:00	0.4	SW
00:00 - 01:00	0.4	SSW
01:00 - 02:00	0.4	SW
02:00 - 03:00	0.4	SSW
03:00 - 04:00	0.4	SSW
04:00 - 05:00	0.5	SW
05:00 - 06:00	0.4	SW
06:00 - 07:00	0.4	SW
07:00 - 08:00	1.0	SW
08:00 - 09:00	1.4	SW
Wind Rose		



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

File Control :R:\Database\Windrose\FileControl\Win-223001-West Fence of Project (G9 Road) (A7) 09-10 Feb 2023

Ladawan N.
 (Miss Ladawan Wongcharoen)
 Environmental Scientist

Preeda S.
 (Miss Preeda Somjai)
 Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Nong Feab Community (A1)

Monitor period : 09-10 Mar 2023

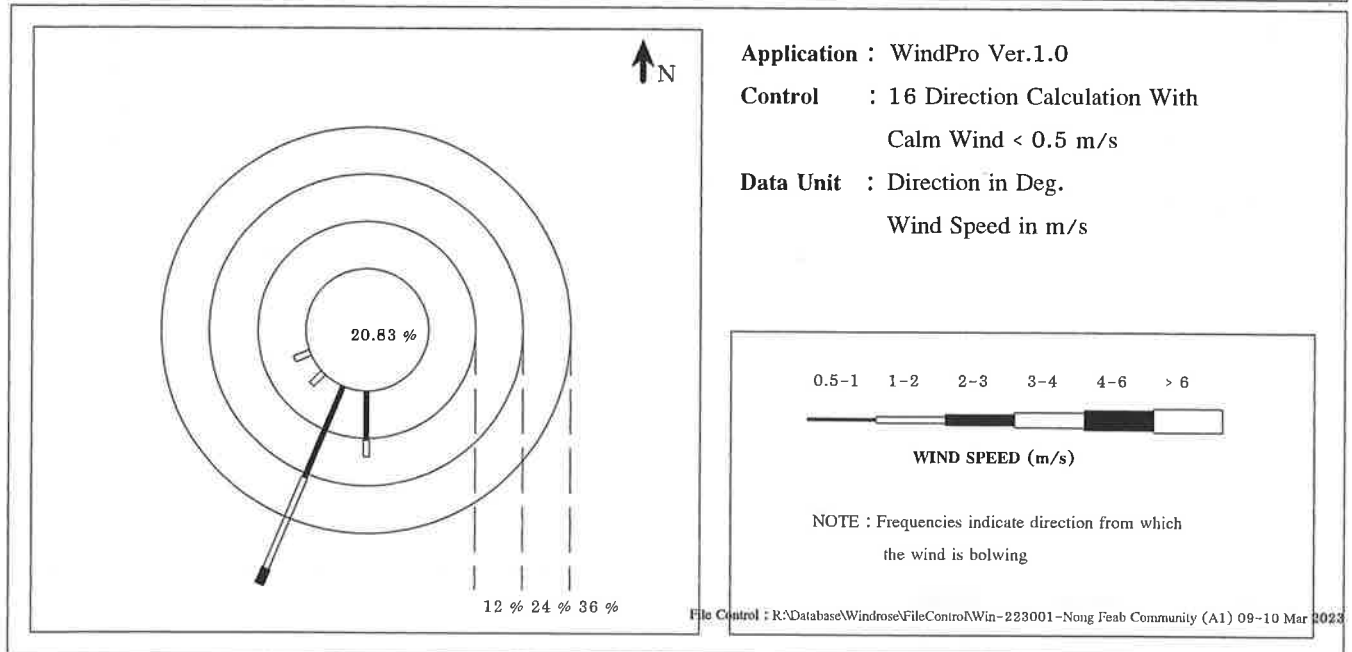
Wind Speed Model : NRG Symphonie

Serial No : 309019737

Wind Direction Model : NRG Symphonie

Serial No : 309019737

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.1250	0.0417	0.0000	0.0000	0.0000	0.0000	0.1667
SSW	0.2500	0.2500	0.0417	0.0000	0.0000	0.0000	0.5417
SW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
WSW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.2083						



Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Nong Feab Community (A1)

Monitor period : 09-10 Mar 2023

Wind Speed Model : NRG Symphonie

Serial No : 309019737

Wind Direction Model : NRG Symphonie

Serial No : 309019737

Time	09-10 Mar 2023	
	WS(m/s)	WD
13:00 - 14:00	1.3	SSW
14:00 - 15:00	1.9	SSW
15:00 - 16:00	1.3	WSW
16:00 - 17:00	1.1	SW
17:00 - 18:00	0.8	SSW
18:00 - 19:00	0.6	SSW
19:00 - 20:00	0.6	SSW
20:00 - 21:00	0.7	SSW
21:00 - 22:00	1.0	SSW
22:00 - 23:00	1.1	SSW
23:00 - 24:00	1.1	SSW
00:00 - 01:00	0.8	SSW
01:00 - 02:00	0.7	S
02:00 - 03:00	0.7	S
03:00 - 04:00	0.7	S
04:00 - 05:00	0.3	SSW
05:00 - 06:00	0.2	SSE
06:00 - 07:00	0.2	S
07:00 - 08:00	0.2	SSE
08:00 - 09:00	0.2	W
09:00 - 10:00	0.6	SSW
10:00 - 11:00	1.0	S
11:00 - 12:00	1.8	SSW
12:00 - 13:00	2.0	SSW
Wind Rose		



File Control :R:\Database\Windrose\FileControl\Win-223001-Nong Feab Community (A1) 09-10 Mar 2023

Ladawan W.
 (Miss Ladawan Wongcharoen)
 Environmental Scientist

Preeda S.
 (Miss Preeda Somjai)
 Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Map Chalute Community (A2)

Monitor period : 09-10 Mar 2023

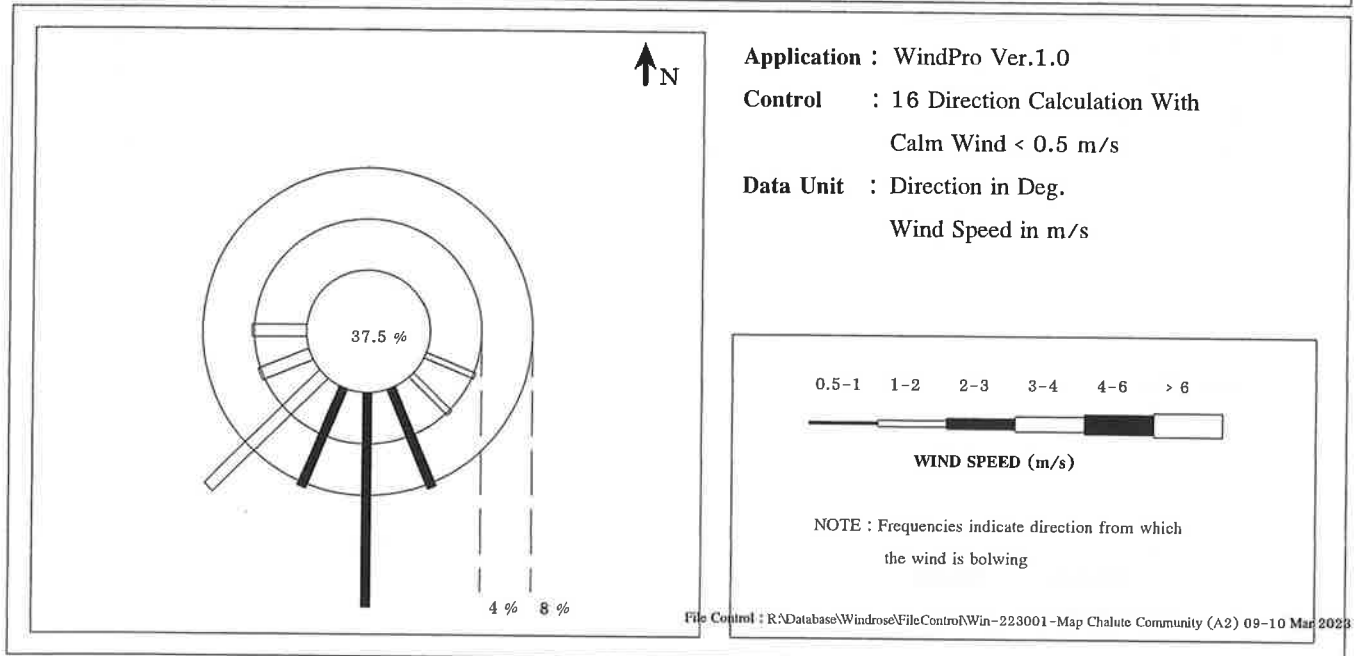
Wind Speed Model : NRG Symphonie

Serial No : 1208

Wind Direction Model : NRG Symphonie

Serial No : 1208

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
SE	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
SSE	0.0000	0.0000	0.0833	0.0000	0.0000	0.0000	0.0833
S	0.0000	0.0000	0.1667	0.0000	0.0000	0.0000	0.1667
SSW	0.0000	0.0000	0.0833	0.0000	0.0000	0.0000	0.0833
SW	0.0000	0.0000	0.0000	0.1250	0.0000	0.0000	0.1250
WSW	0.0000	0.0000	0.0000	0.0417	0.0000	0.0000	0.0417
W	0.0000	0.0000	0.0000	0.0417	0.0000	0.0000	0.0417
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.3750						



Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Map Chalute Community (A2)

Monitor period : 09-10 Mar 2023

Wind Speed Model : NRG Symphonie

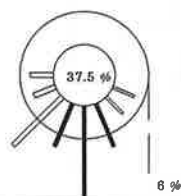
Serial No : 1208

Wind Direction Model : NRG Symphonie

Serial No : 1208

Time	09-10 Mar 2023	
	WS(m/s)	WD
12:00 - 13:00	2.1	SSE
13:00 - 14:00	3.2	SW
14:00 - 15:00	2.4	S
15:00 - 16:00	3.8	W
16:00 - 17:00	3.0	SSW
17:00 - 18:00	3.1	SW
18:00 - 19:00	2.4	S
19:00 - 20:00	2.7	SSW
20:00 - 21:00	1.7	ESE
21:00 - 22:00	2.6	S
22:00 - 23:00	3.0	SW
23:00 - 24:00	3.5	WSW
00:00 - 01:00	2.6	S
01:00 - 02:00	2.3	SSE
02:00 - 03:00	0.5	NNE
03:00 - 04:00	0.5	NE
04:00 - 05:00	0.5	NNE
05:00 - 06:00	0.3	NNE
06:00 - 07:00	0.3	NNE
07:00 - 08:00	0.3	NNE
08:00 - 09:00	0.4	NNE
09:00 - 10:00	0.3	NNE
10:00 - 11:00	0.2	NNE
11:00 - 12:00	1.9	SE

Wind Rose



File Control :R:\Database\Windrose\FileControl\Win-223001-Map Chalute Community (A2) 09-10 Mar 2023

Ladawan W.

(Miss Ladawan Wongcharoen)

Environmental Scientist

Preeda S.

(Miss Preeda Somjai)

Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Map Chalute-Chak klang Community (A3)

Monitor period : 09-10 Mar 2023

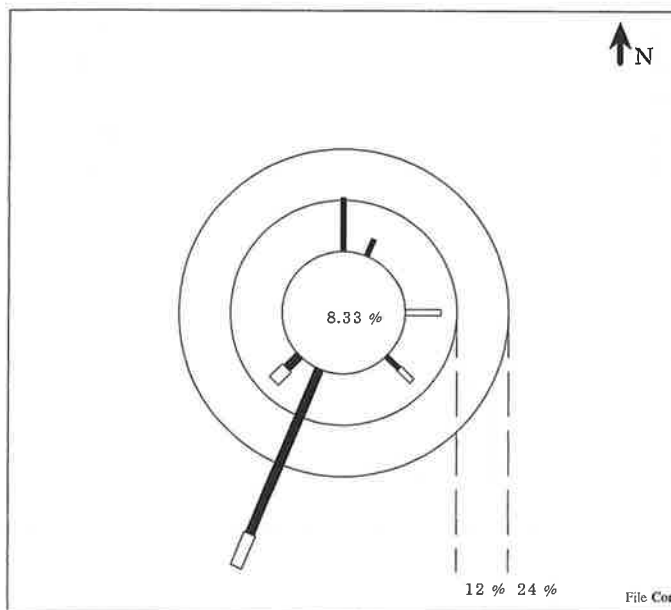
Wind Speed Model : NRG Symphonie

Serial No : A4907

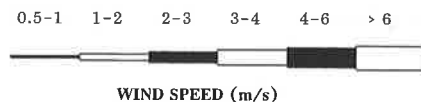
Wind Direction Model : NRG Symphonie

Serial No : A4907

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	0.1250	0.0000	0.0000	0.0000	0.0000	0.0000	0.1250
NNE	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0833	0.0000	0.0000	0.0000	0.0000	0.0833
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0417	0.0417	0.0000	0.0000	0.0000	0.0000	0.0833
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	0.0000	0.0000	0.4167	0.0833	0.0000	0.0000	0.5000
SW	0.0000	0.0000	0.0417	0.0417	0.0000	0.0000	0.0833
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0833						



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-223001-Map Chalute-Chak klang Community (A3) 09-10 Mar 2023

Ladawan H.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Map Chalute-Chak klang Community (A3)

Monitor period : 09-10 Mar 2023

Wind Speed Model : NRG Symphonie

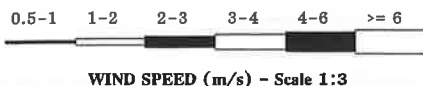
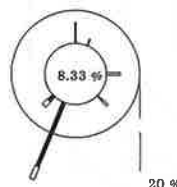
Serial No : A4907

Wind Direction Model : NRG Symphonie

Serial No : A4907

Time	09-10 Mar 2023	
	WS(m/s)	WD
14:00 - 15:00	2.2	SSW
15:00 - 16:00	2.3	SW
16:00 - 17:00	2.2	SSW
17:00 - 18:00	2.6	SSW
18:00 - 19:00	2.2	SSW
19:00 - 20:00	2.2	SSW
20:00 - 21:00	2.2	SSW
21:00 - 22:00	2.2	SSW
22:00 - 23:00	2.1	SSW
23:00 - 24:00	2.2	SSW
00:00 - 01:00	2.2	SSW
01:00 - 02:00	3.0	SSW
02:00 - 03:00	3.0	SW
03:00 - 04:00	3.2	SSW
04:00 - 05:00	0.4	N
05:00 - 06:00	0.4	WNW
06:00 - 07:00	0.7	N
07:00 - 08:00	0.6	NNE
08:00 - 09:00	0.8	N
09:00 - 10:00	0.6	N
10:00 - 11:00	0.5	SE
11:00 - 12:00	1.3	E
12:00 - 13:00	1.7	E
13:00 - 14:00	1.7	SE

Wind Rose



File Control :R:\Database\Windrose\FileControl\Win-223001-Map Chalute-Chak klang Community (A3) 09-10 Mar 2023

Ladawan W.

(Miss Ladawan Wongcharoen)

Environmental Scientist

Preeda S.

(Miss Preeda Somjai)

Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-PTTGC18 (Phenol Plant)

Location : North Fence of Project (A4)

Monitor period : 09-10 Mar 2023

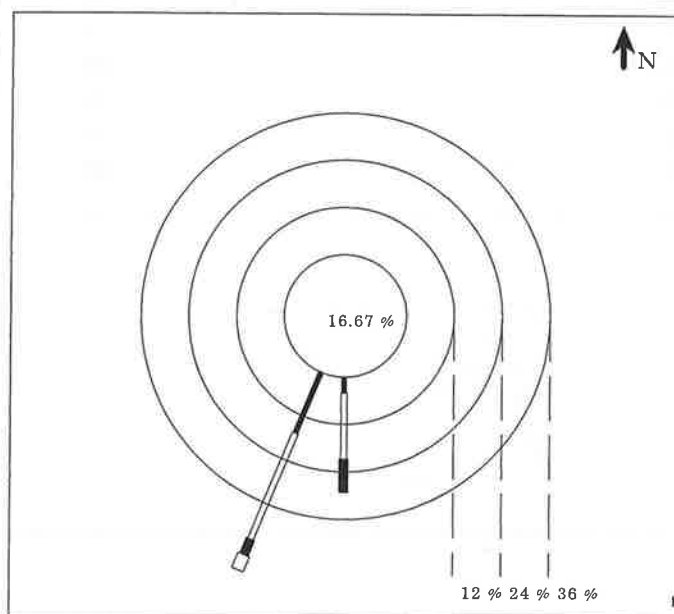
Wind Speed Model : NRG Symphonie

Serial No : 309013914

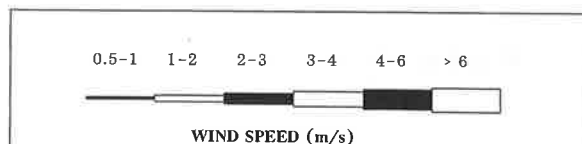
Wind Direction Model : NRG Symphonie

Serial No : 309013914

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0417	0.1667	0.0833	0.0000	0.0000	0.0000	0.2917
SSW	0.1667	0.2917	0.0417	0.0417	0.0000	0.0000	0.5417
SW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.1667						



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-223001-North Fence of Project (A4) 09-10 Mar 2023

Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : North Fence of Project (A4)

Monitor period : 09-10 Mar 2023

Wind Speed Model : NRG Symphonie

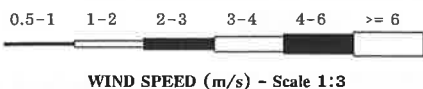
Serial No : 309013914

Wind Direction Model : NRG Symphonie

Serial No : 309013914

Time	09-10 Mar 2023	
	WS(m/s)	WD
13:00 - 14:00	1.8	S
14:00 - 15:00	3.3	SSW
15:00 - 16:00	2.2	SSW
16:00 - 17:00	1.8	SSW
17:00 - 18:00	1.3	SSW
18:00 - 19:00	0.8	SSW
19:00 - 20:00	0.8	SSW
20:00 - 21:00	1.1	SSW
21:00 - 22:00	1.7	S
22:00 - 23:00	1.8	S
23:00 - 24:00	1.5	SSW
00:00 - 01:00	1.2	SSW
01:00 - 02:00	0.9	SSW
02:00 - 03:00	1.1	SSW
03:00 - 04:00	1.2	S
04:00 - 05:00	0.5	SSW
05:00 - 06:00	0.0	SE
06:00 - 07:00	0.0	SSW
07:00 - 08:00	0.1	NE
08:00 - 09:00	0.0	N
09:00 - 10:00	0.7	S
10:00 - 11:00	1.8	SSW
11:00 - 12:00	2.8	S
12:00 - 13:00	2.9	S

Wind Rose	<p>16.67 %</p> <p>20 %</p>
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File Control :R:\Database\Windrose\FileControl\Win-223001-North Fence of Project (A4) 09-10 Mar 2023

Ladawan W.

(Miss Ladawan Wongcharoen)

Environmental Scientist

Preeda S.

(Miss Preeda Somjai)

Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : South Fence of Project (A5)

Monitor period : 09-10 Mar 2023

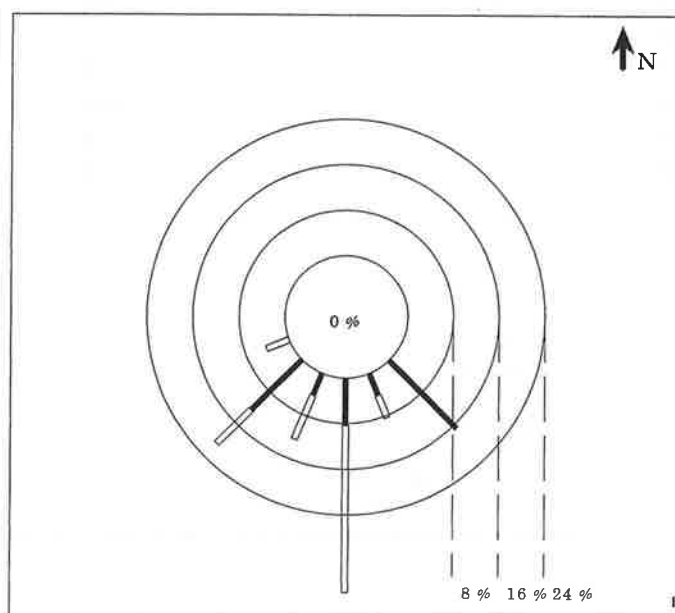
Wind Speed Model : NRG Symphonie

Serial No : 309012643

Wind Direction Model : NRG Symphonie

Serial No : 309012643

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.1667	0.0000	0.0000	0.0000	0.0000	0.0000	0.1667
SSE	0.0417	0.0417	0.0000	0.0000	0.0000	0.0000	0.0833
S	0.0833	0.2917	0.0000	0.0000	0.0000	0.0000	0.3750
SSW	0.0417	0.0833	0.0000	0.0000	0.0000	0.0000	0.1250
SW	0.1250	0.0833	0.0000	0.0000	0.0000	0.0000	0.2083
WSW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



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-223001-South Fence of Project (A5) 09-10 Mar 2023

Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : South Fence of Project (A5)

Monitor period : 09-10 Mar 2023

Wind Speed Model : NRG Symphonie

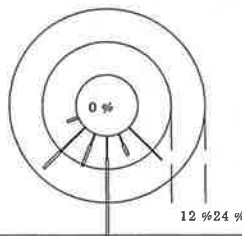
Serial No : 309012643

Wind Direction Model : NRG Symphonie

Serial No : 309012643

Time	09-10 Mar 2023	
	WS(m/s)	WD
12:00 - 13:00	1.4	SSW
13:00 - 14:00	1.8	S
14:00 - 15:00	1.6	S
15:00 - 16:00	1.7	WSW
16:00 - 17:00	1.4	SW
17:00 - 18:00	1.2	SW
18:00 - 19:00	0.9	SW
19:00 - 20:00	1.1	SSW
20:00 - 21:00	0.9	SSW
21:00 - 22:00	1.1	S
22:00 - 23:00	1.3	S
23:00 - 24:00	1.5	S
00:00 - 01:00	1.1	S
01:00 - 02:00	1.1	SSE
02:00 - 03:00	0.7	SE
03:00 - 04:00	0.6	SE
04:00 - 05:00	0.5	SE
05:00 - 06:00	0.5	S
06:00 - 07:00	0.5	S
07:00 - 08:00	0.5	SW
08:00 - 09:00	0.5	SW
09:00 - 10:00	0.7	SSE
10:00 - 11:00	0.9	SE
11:00 - 12:00	1.5	S

Wind Rose



File Control : R:\Database\Windrose\FileControl\Win-223001-South Fence of Project (A5) 09-10 Mar 2023

Ladawan W.
(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Northeast Fence of Project (A6)

Monitor period : 16-17 Mar 2023

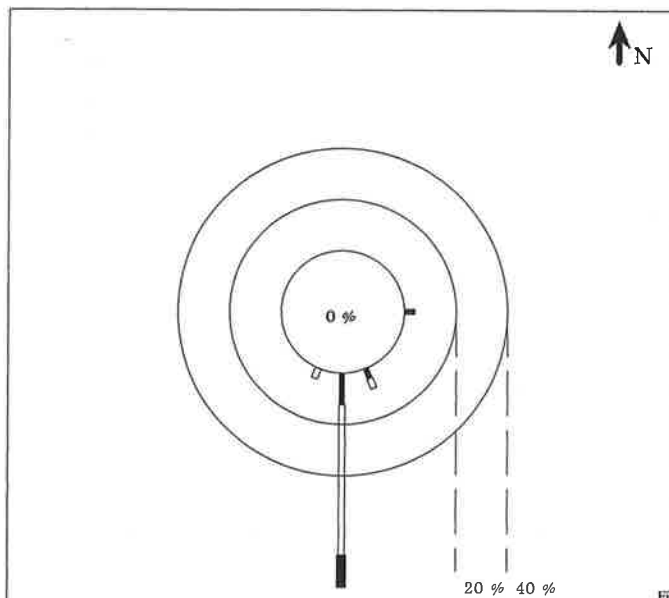
Wind Speed Model : NRG Symphonie

Serial No : 309015720

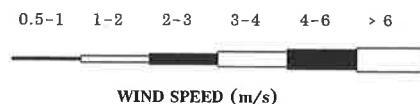
Wind Direction Model : NRG Symphonie

Serial No : 309015720

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
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	0.0417	0.0417	0.0000	0.0000	0.0000	0.0000	0.0833
S	0.1250	0.5833	0.1250	0.0000	0.0000	0.0000	0.8333
SSW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
SW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



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-223001-Northeast Fence of Project (A6) 16-17 Mar 2023

Ladawan N.
(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Northeast Fence of Project (A6)

Monitor period : 16-17 Mar 2023

Wind Speed Model : NRG Symphonie

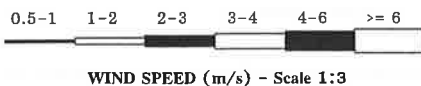
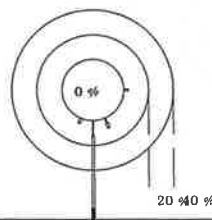
Serial No : 309015720

Wind Direction Model : NRG Symphonie

Serial No : 309015720

Time	16-17 Mar 2023	
	WS(m/s)	WD
10:00 - 11:00	1.7	S
11:00 - 12:00	1.8	S
12:00 - 13:00	2.2	S
13:00 - 14:00	2.3	S
14:00 - 15:00	2.2	S
15:00 - 16:00	1.7	S
16:00 - 17:00	1.3	SSE
17:00 - 18:00	0.8	E
18:00 - 19:00	0.8	SSE
19:00 - 20:00	0.9	S
20:00 - 21:00	1.2	S
21:00 - 22:00	1.2	S
22:00 - 23:00	1.3	S
23:00 - 24:00	1.3	S
00:00 - 01:00	1.3	S
01:00 - 02:00	1.5	S
02:00 - 03:00	1.6	SSW
03:00 - 04:00	1.3	S
04:00 - 05:00	1.3	S
05:00 - 06:00	0.8	S
06:00 - 07:00	0.9	S
07:00 - 08:00	1.4	S
08:00 - 09:00	1.3	S
09:00 - 10:00	1.9	S

Wind Rose



File Control :R:\Database\Windrose\FileControl\Win-223001-Northeast Fence of Project (A6) 16-17 Mar 2023

Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : West Fence of Project (G9 Road) (A7)

Monitor period : 09-10 Mar 2023

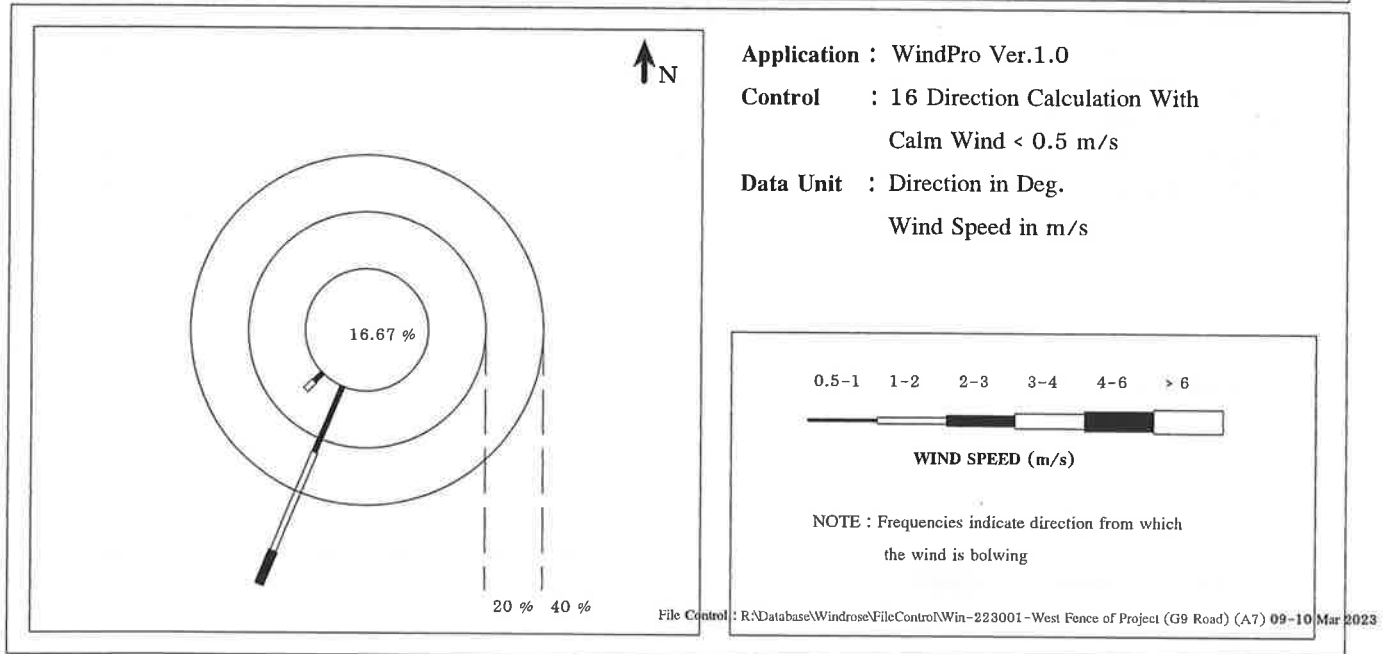
Wind Speed Model : NRG Symphonie

Serial No : 309018842

Wind Direction Model : NRG Symphonie

Serial No : 309018842

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.2500	0.3750	0.1250	0.0000	0.0000	0.0000	0.7500
SW	0.0417	0.0417	0.0000	0.0000	0.0000	0.0000	0.0833
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.1667						



Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : West Fence of Project (G9 Road) (A7)

Monitor period : 09-10 Mar 2023

Wind Speed Model : NRG Symphonie

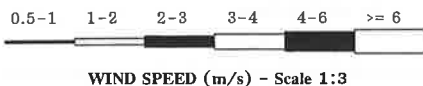
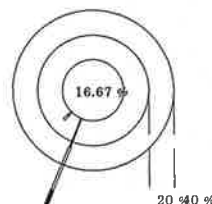
Serial No : 309018842

Wind Direction Model : NRG Symphonie

Serial No : 309018842

Time	09-10 Mar 2023	
	WS(m/s)	WD
13:00 - 14:00	1.5	SW
14:00 - 15:00	2.6	SSW
15:00 - 16:00	1.8	SSW
16:00 - 17:00	1.5	SSW
17:00 - 18:00	1.1	SSW
18:00 - 19:00	0.7	SW
19:00 - 20:00	0.7	SSW
20:00 - 21:00	0.9	SSW
21:00 - 22:00	1.4	SSW
22:00 - 23:00	1.5	SSW
23:00 - 24:00	1.2	SSW
00:00 - 01:00	1.0	SSW
01:00 - 02:00	0.8	SSW
02:00 - 03:00	0.9	SSW
03:00 - 04:00	1.0	SSW
04:00 - 05:00	0.5	SSW
05:00 - 06:00	0.1	SSW
06:00 - 07:00	0.1	WSW
07:00 - 08:00	0.2	SSE
08:00 - 09:00	0.1	NW
09:00 - 10:00	0.6	SSW
10:00 - 11:00	1.5	SSW
11:00 - 12:00	2.2	SSW
12:00 - 13:00	2.3	SSW

Wind Rose



File Control :R:\Database\Windrose\FileControl\Win-223001-West Fence of Project (G9 Road) (A7) 09-10 Mar 2023

Ladawan W.
(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Nong Feab Community (A1)

Monitor period : 10-11 Apr 2023

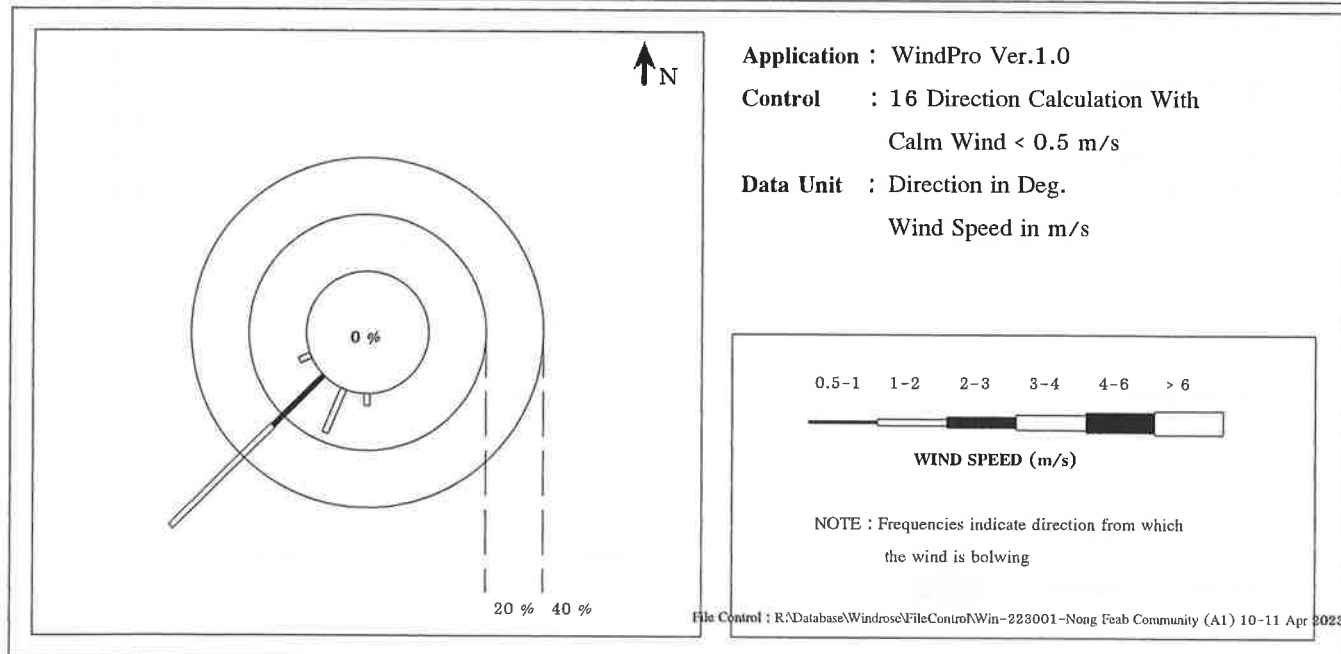
Wind Speed Model : NRG Symphonie

Serial No : 309015720

Wind Direction Model : NRG Symphonie

Serial No : 309015720

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
SSW	0.0000	0.1667	0.0000	0.0000	0.0000	0.0000	0.1667
SW	0.2500	0.5000	0.0000	0.0000	0.0000	0.0000	0.7500
WSW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Nong Feab Community (A1)

Monitor period : 10-11 Apr 2023

Wind Speed Model : NRG Symphonie

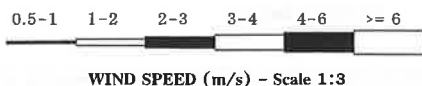
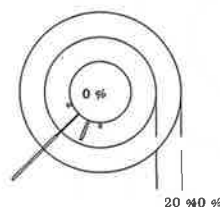
Serial No : 309015720

Wind Direction Model : NRG Symphonie

Serial No : 309015720

Time	10-11 Apr 2023	
	WS(m/s)	WD
09:00 - 10:00	0.5	SW
10:00 - 11:00	1.4	SW
11:00 - 12:00	1.5	S
12:00 - 13:00	1.8	SSW
13:00 - 14:00	1.9	SW
14:00 - 15:00	1.6	SSW
15:00 - 16:00	1.1	SW
16:00 - 17:00	1.0	SW
17:00 - 18:00	1.1	SW
18:00 - 19:00	1.4	SSW
19:00 - 20:00	1.2	SW
20:00 - 21:00	1.0	SSW
21:00 - 22:00	1.0	SW
22:00 - 23:00	1.0	SW
23:00 - 24:00	1.1	SW
00:00 - 01:00	1.2	WSW
01:00 - 02:00	1.4	SW
02:00 - 03:00	1.3	SW
03:00 - 04:00	0.9	SW
04:00 - 05:00	0.9	SW
05:00 - 06:00	0.8	SW
06:00 - 07:00	0.6	SW
07:00 - 08:00	0.8	SW
08:00 - 09:00	1.1	SW

Wind Rose



File Control :R:\Database\Windrose\FileControl\Win-223001-Nong Feab Community (A1) 10-11 Apr 2023

Ladawan W.
 (Miss Ladawan Wongcharoen)
 Environmental Scientist

Preeda S.
 (Miss Preeda Somjai)
 Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Map Chalute Community (A2)

Monitor period : 10-11 Apr 2023

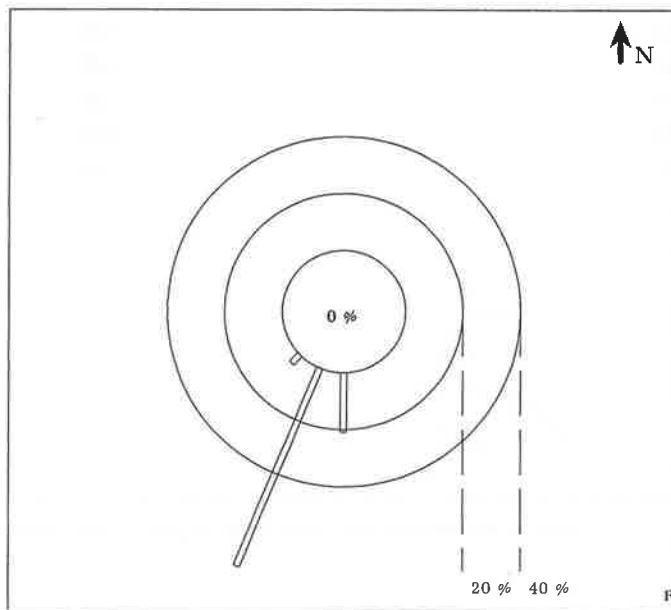
Wind Speed Model : NRG Symphonie

Serial No : 30909366

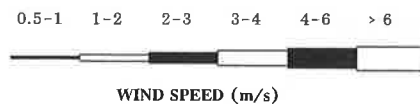
Wind Direction Model : NRG Symphonie

Serial No : 30909366

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	Total
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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.2083	0.0000	0.0000	0.0000	0.0000	0.2083
SSW	0.0000	0.7500	0.0000	0.0000	0.0000	0.0000	0.7500
SW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



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-223001-Map Chalute Community (A2) 10-11 Apr 2023

Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Map Chalute Community (A2)

Monitor period : 10-11 Apr 2023

Wind Speed Model : NRG Symphonie

Serial No : 30909366

Wind Direction Model : NRG Symphonie

Serial No : 30909366

Time	10-11 Apr 2023	
	WS(m/s)	WD
10:00 - 11:00	1.4	SSW
11:00 - 12:00	1.6	SSW
12:00 - 13:00	1.7	SSW
13:00 - 14:00	1.7	SSW
14:00 - 15:00	1.6	SSW
15:00 - 16:00	1.5	SW
16:00 - 17:00	1.4	SSW
17:00 - 18:00	1.3	SSW
18:00 - 19:00	1.4	S
19:00 - 20:00	1.3	S
20:00 - 21:00	1.1	S
21:00 - 22:00	1.2	SSW
22:00 - 23:00	1.4	SSW
23:00 - 24:00	1.3	SSW
00:00 - 01:00	1.3	SSW
01:00 - 02:00	1.4	SSW
02:00 - 03:00	1.4	S
03:00 - 04:00	1.2	SSW
04:00 - 05:00	1.2	SSW
05:00 - 06:00	1.1	SSW
06:00 - 07:00	1.1	SSW
07:00 - 08:00	1.2	SSW
08:00 - 09:00	1.2	SSW
09:00 - 10:00	1.0	S

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

File Control : R:\Database\Windrose\FileControl\Win-223001-Map Chalute Community (A2) 10-11 Apr 2023

Ladawan W.
 (Miss Ladawan Wongcharoen)
 Environmental Scientist

Preeda S.
 (Miss Preeda Somjai)
 Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Map Chalute-Chak klang Community (A3)

Monitor period : 10-11 Apr 2023

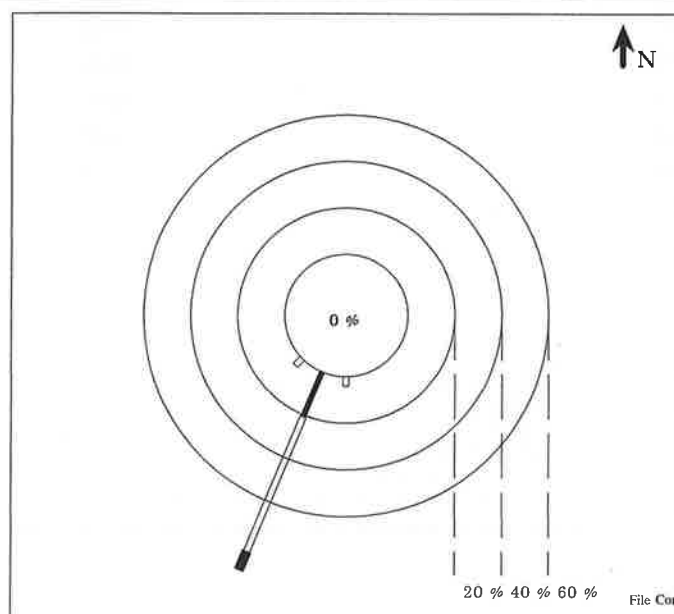
Wind Speed Model : NRG Symphonie

Serial No : 309013914

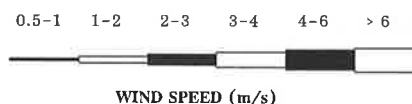
Wind Direction Model : NRG Symphonie

Serial No : 309013914

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
SSW	0.2083	0.6250	0.0833	0.0000	0.0000	0.0000	0.9167
SW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



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-223001-Map Chalute-Chak klang Community (A3) 10-11 Apr 2023

Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Map Chalute-Chak klang Community (A3)

Monitor period : 10-11 Apr 2023

Wind Speed Model : NRG Symphonie

Serial No : 309013914

Wind Direction Model : NRG Symphonie

Serial No : 309013914

Time	10-11 Apr 2023	
	WS(m/s)	WD
10:00 - 11:00	0.5	SSW
11:00 - 12:00	1.5	SSW
12:00 - 13:00	1.7	SSW
13:00 - 14:00	2.3	SSW
14:00 - 15:00	2.2	SSW
15:00 - 16:00	1.7	SW
16:00 - 17:00	1.3	SSW
17:00 - 18:00	1.1	SSW
18:00 - 19:00	1.2	SSW
19:00 - 20:00	1.1	SSW
20:00 - 21:00	0.9	SSW
21:00 - 22:00	1.0	SSW
22:00 - 23:00	1.3	SSW
23:00 - 24:00	1.2	SSW
00:00 - 01:00	1.4	SSW
01:00 - 02:00	1.5	S
02:00 - 03:00	1.3	SSW
03:00 - 04:00	1.2	SSW
04:00 - 05:00	0.8	SSW
05:00 - 06:00	0.7	SSW
06:00 - 07:00	0.9	SSW
07:00 - 08:00	1.0	SSW
08:00 - 09:00	1.2	SSW
09:00 - 10:00	1.3	SSW
Wind Rose		



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

File Control : R:\Database\Windrose\FileControl\Win-223001-Map Chalute-Chak klang Community (A3) 10-11 Apr 2023

Ladawan H.

(Miss Ladawan Wongcharoen)

Environmental Scientist

Preeda S.

(Miss Preeda Somjai)

Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : North Fence of Project (A4)

Monitor period : 10-11 Apr 2023

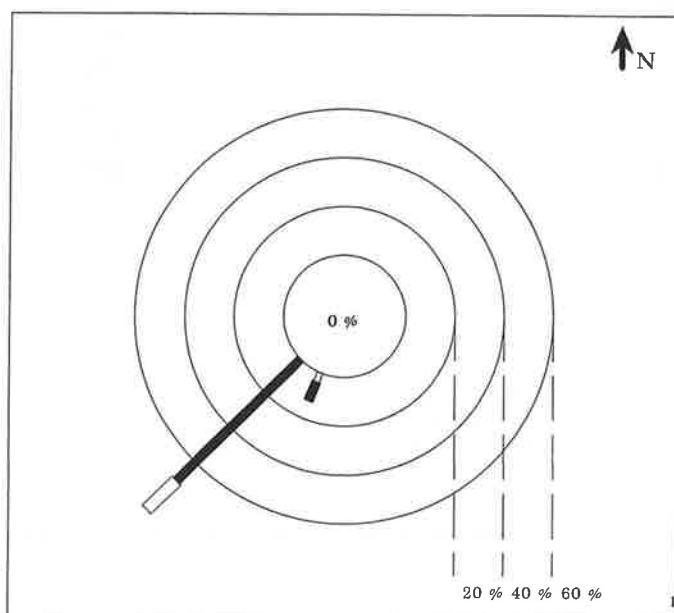
Wind Speed Model : NRG Symphonie

Serial No : 35262609

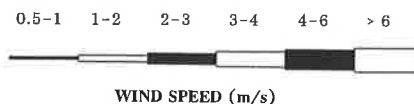
Wind Direction Model : NRG Symphonie

Serial No : 35262609

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0000	0.0417	0.0833	0.0000	0.0000	0.0000	0.1250
SW	0.0000	0.0000	0.7083	0.1667	0.0000	0.0000	0.8750
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



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-223001-North Fence of Project (A4) 10-11 Apr 2023

Ladawan W.

(Miss Ladawan Wongcharoen)

Environmental Scientist

Preeda S.

(Miss Preeda Somjai)

Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : North Fence of Project (A4)

Monitor period : 10-11 Apr 2023

Wind Speed Model : NRG Symphonie

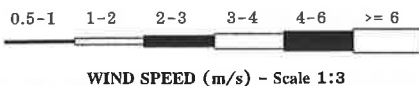
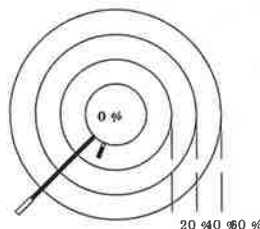
Serial No : 35262609

Wind Direction Model : NRG Symphonie

Serial No : 35262609

Time	10-11 Apr 2023	
	WS(m/s)	WD
09:00 - 10:00	1.8	SSW
10:00 - 11:00	2.3	SW
11:00 - 12:00	2.4	SW
12:00 - 13:00	3.1	SW
13:00 - 14:00	3.3	SW
14:00 - 15:00	3.2	SW
15:00 - 16:00	3.2	SW
16:00 - 17:00	2.8	SW
17:00 - 18:00	2.4	SW
18:00 - 19:00	2.5	SW
19:00 - 20:00	2.0	SW
20:00 - 21:00	2.0	SW
21:00 - 22:00	2.5	SW
22:00 - 23:00	2.7	SW
23:00 - 24:00	2.6	SW
00:00 - 01:00	2.6	SW
01:00 - 02:00	2.5	SW
02:00 - 03:00	2.7	SW
03:00 - 04:00	2.7	SSW
04:00 - 05:00	2.4	SW
05:00 - 06:00	2.3	SW
06:00 - 07:00	2.2	SW
07:00 - 08:00	2.1	SW
08:00 - 09:00	2.2	SSW

Wind Rose



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

File Control :R:\Database\Windrose\FileControl\Win-223001-North Fence of Project (A4) 10-11 Apr 2023

Ladawan W.

(Miss Ladawan Wongcharoen)

Environmental Scientist

Preeda S.

(Miss Preeda Somjai)

Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : South Fence of Project (A5)

Monitor period : 10-11 Apr 2023

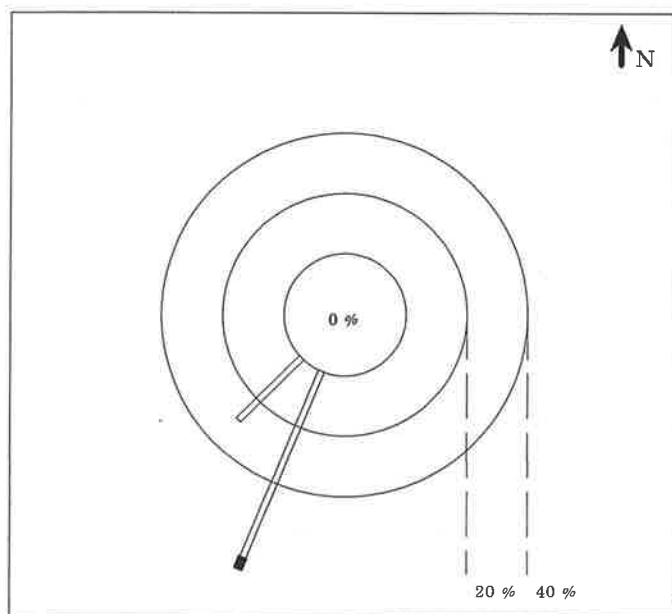
Wind Speed Model : NRG Symphonie

Serial No : 309016178

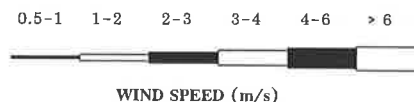
Wind Direction Model : NRG Symphonie

Serial No : 309016178

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0000	0.6667	0.0417	0.0000	0.0000	0.0000	0.7083
SW	0.0000	0.2917	0.0000	0.0000	0.0000	0.0000	0.2917
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



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-223001-South Fence of Project (A5) 10-11 Apr 2023

Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : South Fence of Project (A5)

Monitor period : 10-11 Apr 2023

Wind Speed Model : NRG Symphonie

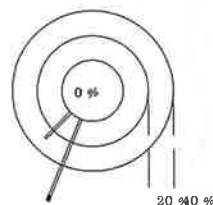
Serial No : 309016178

Wind Direction Model : NRG Symphonie

Serial No : 309016178

Time	10-11 Apr 2023	
	WS(m/s)	WD
08:00 - 09:00	1.4	SSW
09:00 - 10:00	1.2	SSW
10:00 - 11:00	1.6	SW
11:00 - 12:00	1.6	SW
12:00 - 13:00	1.9	SW
13:00 - 14:00	2.0	SSW
14:00 - 15:00	1.9	SSW
15:00 - 16:00	1.8	SSW
16:00 - 17:00	1.6	SSW
17:00 - 18:00	1.5	SW
18:00 - 19:00	1.6	SSW
19:00 - 20:00	1.4	SSW
20:00 - 21:00	1.4	SSW
21:00 - 22:00	1.5	SW
22:00 - 23:00	1.6	SSW
23:00 - 24:00	1.6	SSW
00:00 - 01:00	1.6	SSW
01:00 - 02:00	1.5	SSW
02:00 - 03:00	1.6	SW
03:00 - 04:00	1.6	SSW
04:00 - 05:00	1.4	SSW
05:00 - 06:00	1.4	SSW
06:00 - 07:00	1.4	SSW
07:00 - 08:00	1.4	SW

Wind Rose



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

File Control :R:\Database\Windrose\FileControl\Win-223001-South Fence of Project (A5) 10-11 Apr 2023

Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Northeast Fence of Project (A6)

Monitor period : 26-28 Apr 2023

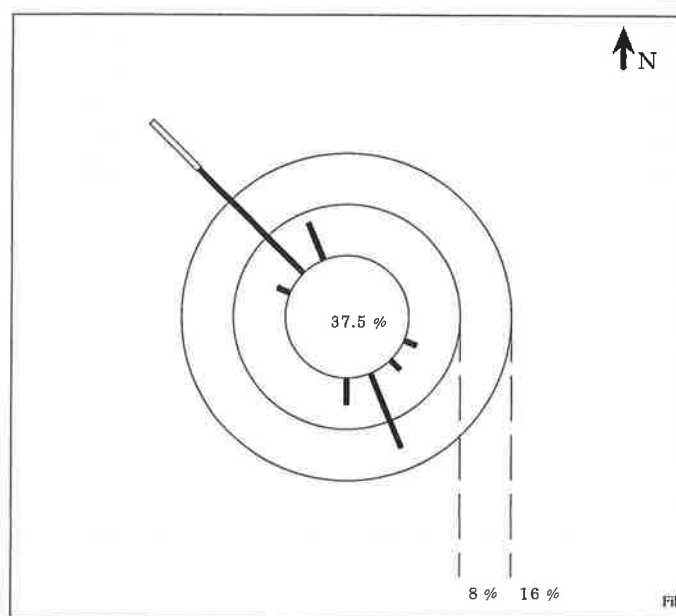
Wind Speed Model : NRG Symphonie

Serial No : 30901314

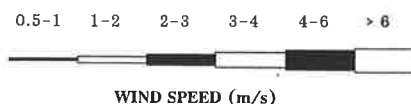
Wind Direction Model : NRG Symphonie

Serial No : 30901314


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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0208	0.0000	0.0000	0.0000	0.0000	0.0000	0.0208
SE	0.0208	0.0000	0.0000	0.0000	0.0000	0.0000	0.0208
SSE	0.1250	0.0000	0.0000	0.0000	0.0000	0.0000	0.1250
S	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
SSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0208	0.0000	0.0000	0.0000	0.0000	0.0000	0.0208
NW	0.2292	0.1042	0.0000	0.0000	0.0000	0.0000	0.3333
NNW	0.0625	0.0000	0.0000	0.0000	0.0000	0.0000	0.0625
CALM	0.3750						

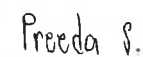


Application : WindPro Ver.1.0

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-223001-Northeast Fence of Project (A6) 26-28 Apr 2023


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Northeast Fence of Project (A6)

Monitor period : 26-28 Apr 2023

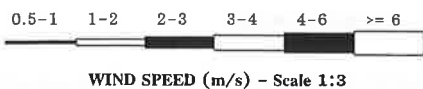
Wind Speed Model : NRG Symphonie

Serial No : 30901314

Wind Direction Model : NRG Symphonie

Serial No : 30901314

Time	26-27 Apr 2023		27-28 Apr 2023	
	WS(m/s)	WD	WS(m/s)	WD
11:00 - 12:00	1.3	NW	0.6	SSE
12:00 - 13:00	0.7	NW	0.7	SSE
13:00 - 14:00	0.5	NW	0.7	SSE
14:00 - 15:00	0.6	NNW	0.6	SSE
15:00 - 16:00	0.5	NW	0.5	SE
16:00 - 17:00	1.0	NW	0.4	SE
17:00 - 18:00	1.0	NW	0.4	S
18:00 - 19:00	0.6	NW	0.4	W
19:00 - 20:00	1.0	NW	0.4	S
20:00 - 21:00	0.8	NW	0.4	S
21:00 - 22:00	0.7	NW	0.4	S
22:00 - 23:00	0.4	S	0.4	S
23:00 - 24:00	0.4	NW	0.4	S
00:00 - 01:00	0.4	S	0.4	S
01:00 - 02:00	0.5	NNW	0.4	W
02:00 - 03:00	0.5	NNW	0.5	WNW
03:00 - 04:00	0.5	NW	0.4	WNW
04:00 - 05:00	0.4	S	0.4	S
05:00 - 06:00	0.7	NW	0.7	NW
06:00 - 07:00	1.2	NW	0.6	NW
07:00 - 08:00	0.6	NW	0.4	WNW
08:00 - 09:00	0.5	ESE	0.5	SSE
09:00 - 10:00	0.4	SE	0.5	S
10:00 - 11:00	0.5	SSE	0.6	S
Wind Rose				



File Control :R:\Database\Windrose\FileControl\Win-223001-Northeast Fence of Project (A6) 26-28 Apr 2023

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : West Fence of Project (G9 Road) (A7)

Monitor period : 10-11 Apr 2023

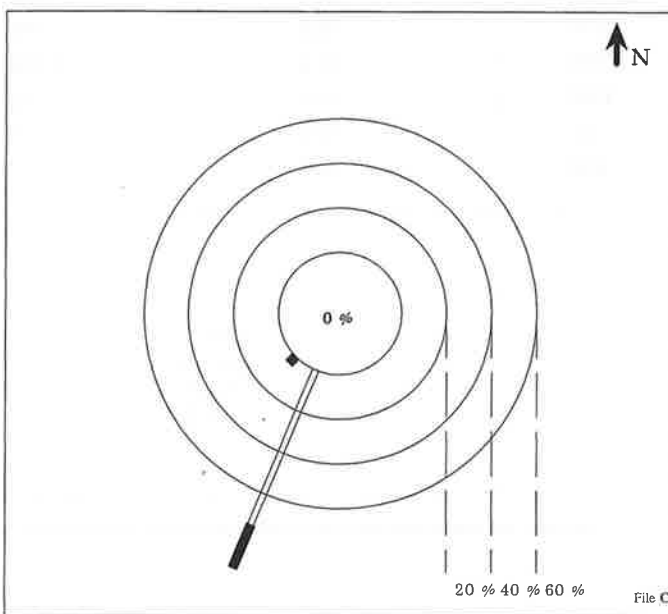
Wind Speed Model : NRG Symphonie

Serial No : 309012348

Wind Direction Model : NRG Symphonie

Serial No : 309012348

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0000	0.7500	0.2083	0.0000	0.0000	0.0000	0.9583
SW	0.0000	0.0000	0.0417	0.0000	0.0000	0.0000	0.0417
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



Application : WindPro Ver.1.0

Control : 16 Direction Calculation With

Calm Wind < 0.5 m/s

Data Unit : Direction in Deg.

Wind Speed in m/s

0.5-1 1-2 2-3 3-4 4-6 > 6



WIND SPEED (m/s)

NOTE : Frequencies indicate direction from which the wind is blowing

File Control : R:\Database\Windrose\FileControl\Win-223001-West Fence of Project (G9 Road) (A7) 10-11 Apr 2023

Ladawan W.

(Miss Ladawan Wongcharoen)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : West Fence of Project (G9 Road) (A7)

Monitor period : 10-11 Apr 2023

Wind Speed Model : NRG Symphonie

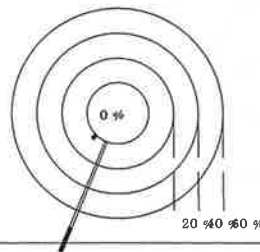
Serial No : 309012348

Wind Direction Model : NRG Symphonie

Serial No : 309012348

Time	10-11 Apr 2023	
	WS(m/s)	WD
09:00 - 10:00	1.2	SSW
10:00 - 11:00	2.0	SW
11:00 - 12:00	2.1	SSW
12:00 - 13:00	2.2	SSW
13:00 - 14:00	2.1	SSW
14:00 - 15:00	2.1	SSW
15:00 - 16:00	1.9	SSW
16:00 - 17:00	1.7	SSW
17:00 - 18:00	1.9	SSW
18:00 - 19:00	2.0	SSW
19:00 - 20:00	1.9	SSW
20:00 - 21:00	1.7	SSW
21:00 - 22:00	1.8	SSW
22:00 - 23:00	1.9	SSW
23:00 - 24:00	1.8	SSW
00:00 - 01:00	1.7	SSW
01:00 - 02:00	1.8	SSW
02:00 - 03:00	1.9	SSW
03:00 - 04:00	1.7	SSW
04:00 - 05:00	1.7	SSW
05:00 - 06:00	1.5	SSW
06:00 - 07:00	1.6	SSW
07:00 - 08:00	1.8	SSW
08:00 - 09:00	1.8	SSW

Wind Rose



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

File Control :R:\Database\Windrose\FileControl\Win-223001-West Fence of Project (G9 Road) (A7) 10-11 Apr 2023

Ladawan W.
 (Miss Ladawan Wongcharoen)
 Environmental Scientist

Preeda S.
 (Miss Preeda Somjai)
 Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-PTTGC18 (Phenol Plant)

Location : Nong Feab Community (A1)

Monitor period : 08-09 May 2023

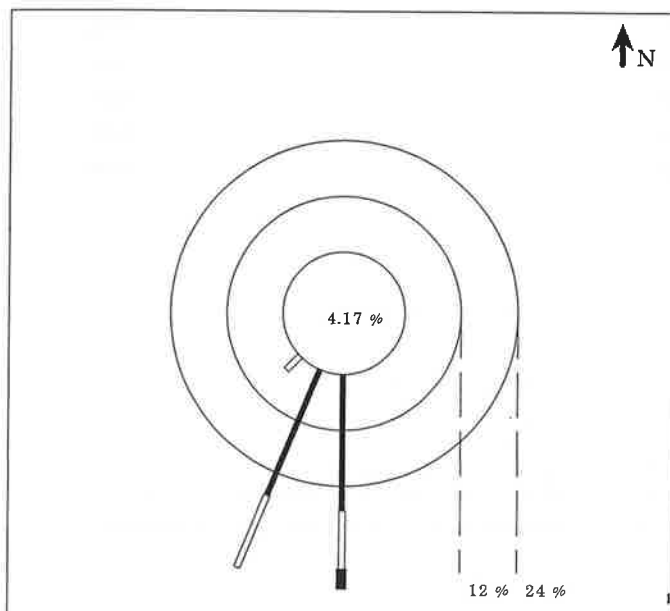
Wind Speed Model : NRG Symphonie

Serial No : 30909366

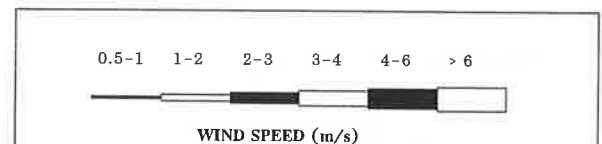
Wind Direction Model : NRG Symphonie

Serial No : 30909366

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.2917	0.1250	0.0417	0.0000	0.0000	0.0000	0.4583
SSW	0.2917	0.1667	0.0000	0.0000	0.0000	0.0000	0.4583
SW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0417						



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-223001-Nong Feab Community (A1) 08-09 May 2023

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Nong Feab Community (A1)

Monitor period : 08-09 May 2023

Wind Speed Model : NRG Symphonie

Serial No : 30909366

Wind Direction Model : NRG Symphonie

Serial No : 30909366

Time	08-09 May 2023	
	WS(m/s)	WD
12:00 - 13:00	0.7	SSW
13:00 - 14:00	1.2	SSW
14:00 - 15:00	1.1	SW
15:00 - 16:00	0.9	SSW
16:00 - 17:00	0.8	SSW
17:00 - 18:00	0.7	SSW
18:00 - 19:00	0.9	S
19:00 - 20:00	0.9	S
20:00 - 21:00	1.6	S
21:00 - 22:00	1.8	S
22:00 - 23:00	2.0	S
23:00 - 24:00	1.5	S
00:00 - 01:00	0.7	S
01:00 - 02:00	0.4	SSW
02:00 - 03:00	0.5	S
03:00 - 04:00	0.7	S
04:00 - 05:00	0.8	S
05:00 - 06:00	0.5	SSW
06:00 - 07:00	0.5	S
07:00 - 08:00	0.8	SSW
08:00 - 09:00	0.9	SSW
09:00 - 10:00	1.2	SSW
10:00 - 11:00	1.5	SSW
11:00 - 12:00	1.5	SSW

Wind Rose	
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File Control :R:\Database\Windrose\FileControl\Win-223001-Nong Feab Community (A1) 08-09 May 2023

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-PTTGC18 (Phenol Plant)

Location : Map Chalute Community (A2)

Monitor period : 08-09 May 2023

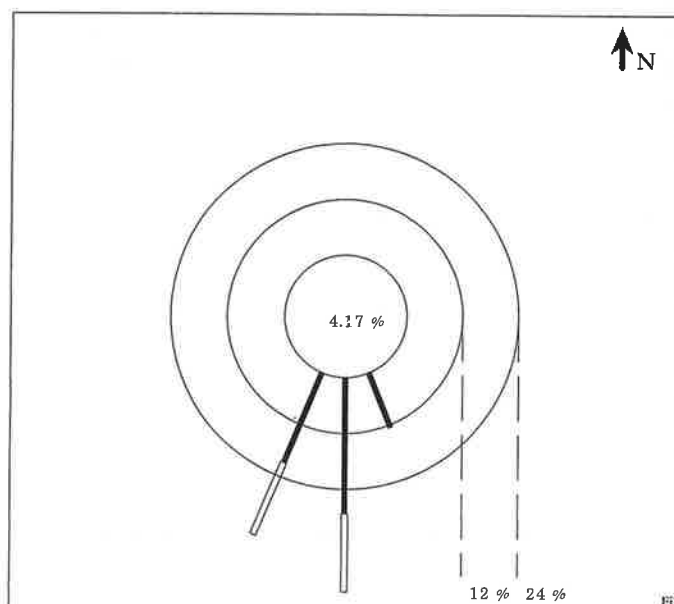
Wind Speed Model : NRG Symphonie

Serial No : 309012348

Wind Direction Model : NRG Symphonie

Serial No : 309012348

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.1250	0.0000	0.0000	0.0000	0.0000	0.0000	0.1250
S	0.2917	0.1667	0.0000	0.0000	0.0000	0.0000	0.4583
SSW	0.2083	0.1667	0.0000	0.0000	0.0000	0.0000	0.3750
SW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0417						



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-223001-Map Chalute Community (A2) 08-09 May 2023

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Map Chalute Community (A2)

Monitor period : 08-09 May 2023

Wind Speed Model : NRG Symphonie

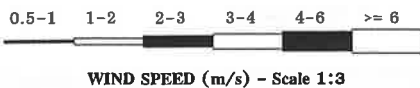
Serial No : 309012348

Wind Direction Model : NRG Symphonie

Serial No : 309012348

Time	08-09 May 2023	
	WS(m/s)	WD
13:00 - 14:00	1.0	SSW
14:00 - 15:00	0.9	SSW
15:00 - 16:00	0.8	SSW
16:00 - 17:00	0.7	SSW
17:00 - 18:00	0.6	S
18:00 - 19:00	0.8	S
19:00 - 20:00	0.8	S
20:00 - 21:00	1.4	S
21:00 - 22:00	1.6	S
22:00 - 23:00	1.7	S
23:00 - 24:00	1.3	S
00:00 - 01:00	0.6	SSE
01:00 - 02:00	0.4	SSE
02:00 - 03:00	0.5	SSE
03:00 - 04:00	0.7	S
04:00 - 05:00	0.7	S
05:00 - 06:00	0.5	S
06:00 - 07:00	0.5	SSE
07:00 - 08:00	0.7	S
08:00 - 09:00	0.8	SSW
09:00 - 10:00	1.0	SSW
10:00 - 11:00	1.3	SSW
11:00 - 12:00	1.3	SSW
12:00 - 13:00	0.5	SSW

Wind Rose	
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File Control :R:\Database\Windrose\FileControl\Win-223001-Map Chalute Community (A2) 08-09 May 2023

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Map Chalute-Chakklang Community (A3)

Monitor period : 08-09 May 2023

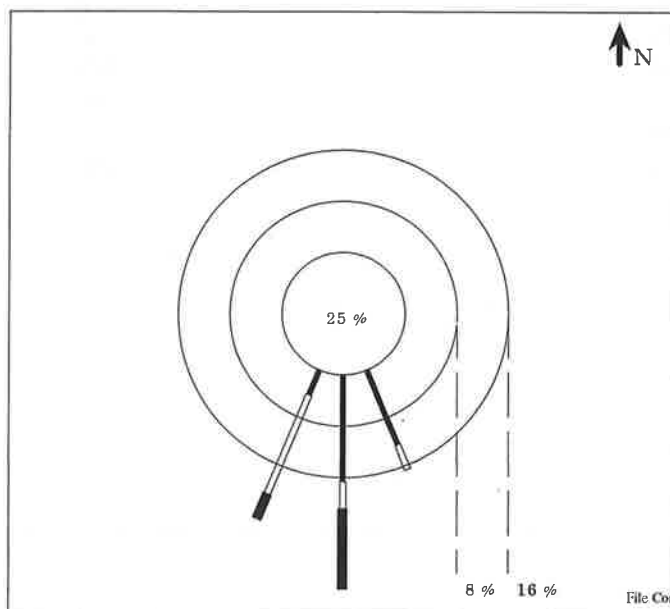
Wind Speed Model : NRG Symphonie

Serial No : 309013914

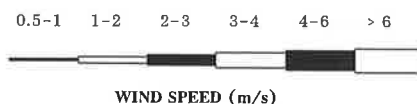
Wind Direction Model : NRG Symphonie

Serial No : 30909019

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.1250	0.0417	0.0000	0.0000	0.0000	0.0000	0.1667
S	0.1667	0.0417	0.1250	0.0000	0.0000	0.0000	0.3333
SSW	0.0417	0.1667	0.0417	0.0000	0.0000	0.0000	0.2500
SW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.2500						



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-223001-Map Chalute-Chakklang Community (A3) 08-09 May 2023

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Map Chalute-Chakklang Community (A3)

Monitor period : 08-09 May 2023

Wind Speed Model : NRG Symphonie

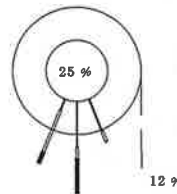
Serial No : 309013914

Wind Direction Model : NRG Symphonie

Serial No : 30909019

Time	08-09 May 2023	
	WS(m/s)	WD
12:00 - 13:00	1.0	S
13:00 - 14:00	1.3	SSW
14:00 - 15:00	1.3	SSW
15:00 - 16:00	1.1	SSW
16:00 - 17:00	0.5	SSW
17:00 - 18:00	0.5	S
18:00 - 19:00	0.3	SSE
19:00 - 20:00	0.6	SSE
20:00 - 21:00	1.5	SSE
21:00 - 22:00	2.3	S
22:00 - 23:00	2.5	S
23:00 - 24:00	2.2	S
00:00 - 01:00	0.6	SSE
01:00 - 02:00	0.0	SSE
02:00 - 03:00	0.0	SSE
03:00 - 04:00	0.4	SSE
04:00 - 05:00	0.6	SSE
05:00 - 06:00	0.2	SSE
06:00 - 07:00	0.1	SSE
07:00 - 08:00	0.5	S
08:00 - 09:00	0.9	S
09:00 - 10:00	0.8	S
10:00 - 11:00	1.8	SSW
11:00 - 12:00	2.0	SSW

Wind Rose



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

File Control :R:\Database\Windrose\FileControl\Win-223001-Map Chalute-Chakklang Community (A3) 08-09 May 2023

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : North Fence of Project (A4)

Monitor period : 08-09 May 2023

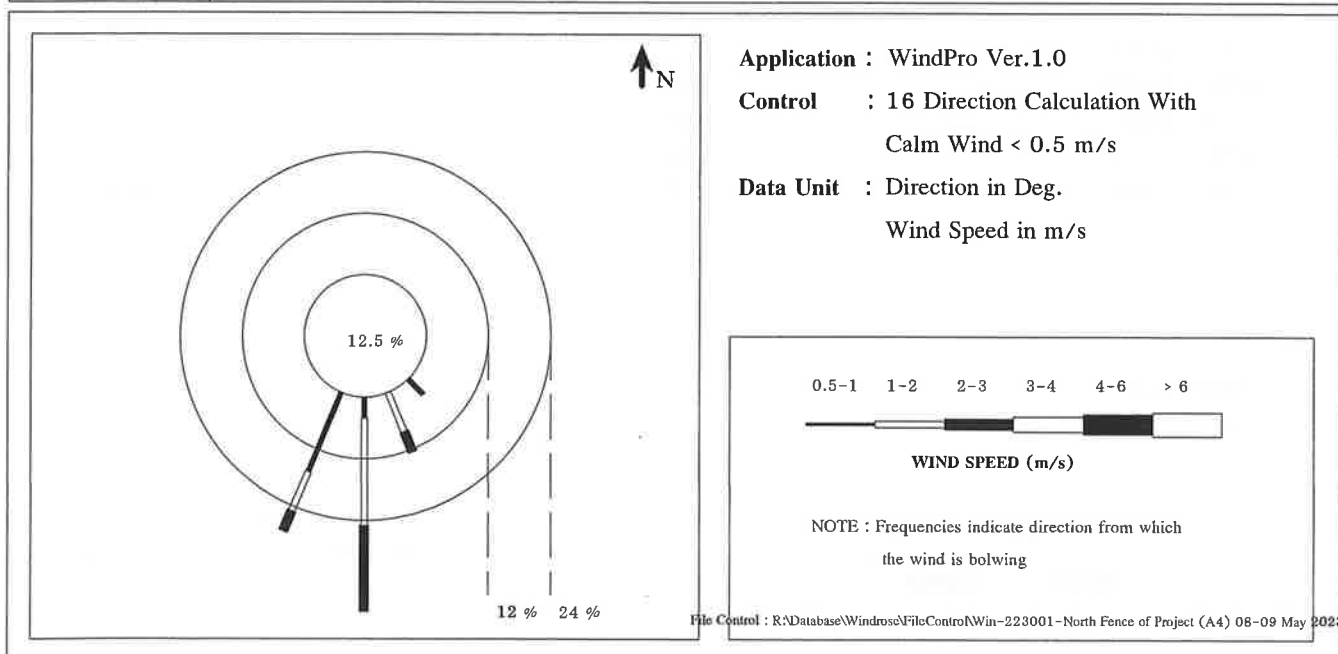
Wind Speed Model : NRG Symphonie

Serial No : 5086

Wind Direction Model : NRG Symphonie

Serial No : 5086

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
SSE	0.0000	0.0833	0.0417	0.0000	0.0000	0.0000	0.1250
S	0.0417	0.2083	0.1667	0.0000	0.0000	0.0000	0.4167
SSW	0.1667	0.0833	0.0417	0.0000	0.0000	0.0000	0.2917
SW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.1250						



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : North Fence of Project (A4)

Monitor period : 08-09 May 2023

Wind Speed Model : NRG Symphonie

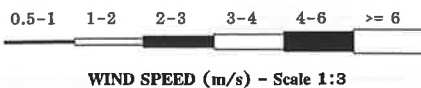
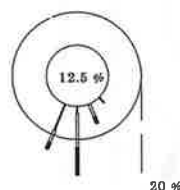
Serial No : 5086

Wind Direction Model : NRG Symphonie

Serial No : 5086

Time	08-09 May 2023	
	WS(m/s)	WD
10:00 - 11:00	2.1	S
11:00 - 12:00	1.5	SSE
12:00 - 13:00	1.0	SSW
13:00 - 14:00	1.0	S
14:00 - 15:00	2.1	SSW
15:00 - 16:00	0.8	SSW
16:00 - 17:00	1.2	S
17:00 - 18:00	0.2	S
18:00 - 19:00	0.3	SSW
19:00 - 20:00	2.2	S
20:00 - 21:00	2.0	S
21:00 - 22:00	1.8	SSE
22:00 - 23:00	2.0	S
23:00 - 24:00	0.6	SSW
00:00 - 01:00	1.1	SSW
01:00 - 02:00	0.5	SSW
02:00 - 03:00	0.8	SE
03:00 - 04:00	1.5	S
04:00 - 05:00	1.4	S
05:00 - 06:00	2.2	SSE
06:00 - 07:00	1.0	S
07:00 - 08:00	0.8	S
08:00 - 09:00	0.3	SSE
09:00 - 10:00	0.6	SSW

Wind Rose



File Control :R:\Database\Windrose\FileControl\Win-223001-North Fence of Project (A4) 08-09 May 2023

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : South Fence of Project (A5)

Monitor period : 08-09 May 2023

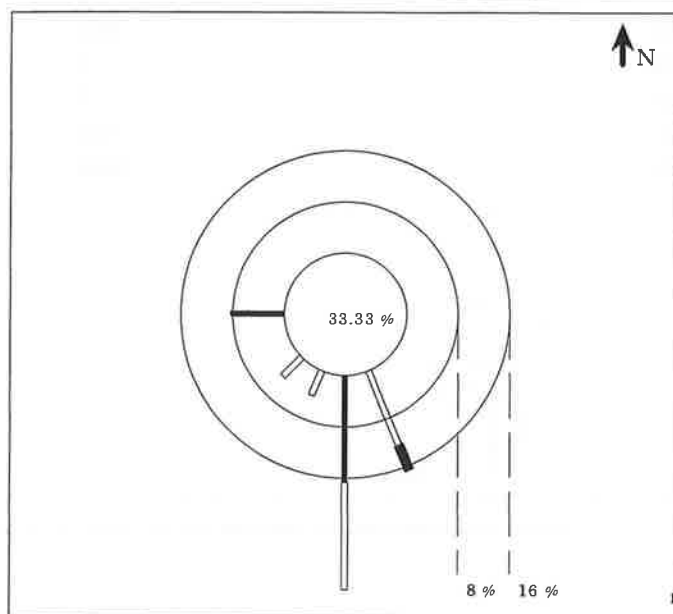
Wind Speed Model : NRG Symphonie

Serial No : 5090

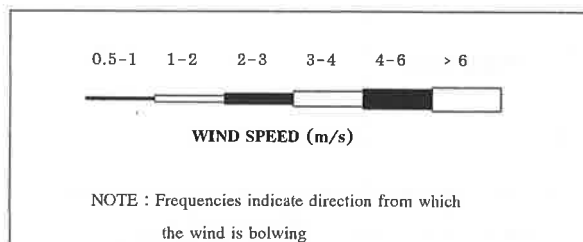
Wind Direction Model : NRG Symphonie

Serial No : 5090

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.1250	0.0417	0.0000	0.0000	0.0000	0.1667
S	0.1667	0.1667	0.0000	0.0000	0.0000	0.0000	0.3333
SSW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
SW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.3333						



Application : WindPro Ver.1.0

Control : 16 Direction Calculation With
Calm Wind < 0.5 m/sData Unit : Direction in Deg.
Wind Speed in m/s

File Control : R:\Database\Windrose\FileControl\Win-223001-South Fence of Project (A5) 08-09 May 2023

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : South Fence of Project (A5)

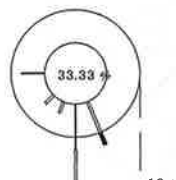
Monitor period : 08-09 May 2023

Wind Speed Model : NRG Symphonie

Serial No : 5090

Wind Direction Model : NRG Symphonie

Serial No : 5090

Time	08-09 May 2023	
	WS(m/s)	WD
10:00 - 11:00	1.2	SW
11:00 - 12:00	1.1	SSW
12:00 - 13:00	1.2	S
13:00 - 14:00	0.8	S
14:00 - 15:00	1.6	S
15:00 - 16:00	0.4	SSW
16:00 - 17:00	0.5	S
17:00 - 18:00	0.6	S
18:00 - 19:00	0.9	S
19:00 - 20:00	0.0	SSE
20:00 - 21:00	0.7	W
21:00 - 22:00	0.3	S
22:00 - 23:00	2.1	SSE
23:00 - 24:00	1.7	SSE
00:00 - 01:00	1.8	SSE
01:00 - 02:00	0.4	SSE
02:00 - 03:00	0.0	S
03:00 - 04:00	0.2	SSE
04:00 - 05:00	0.3	S
05:00 - 06:00	1.1	S
06:00 - 07:00	0.0	SE
07:00 - 08:00	0.8	W
08:00 - 09:00	1.3	SSE
09:00 - 10:00	1.0	S
Wind Rose		



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

File Control :R:\Database\Windrose\FileControl\Win-223001-South Fence of Project (A5) 08-09 May 2023

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Northeast Fence of Project (A6)

Monitor period : 08-09 May 2023

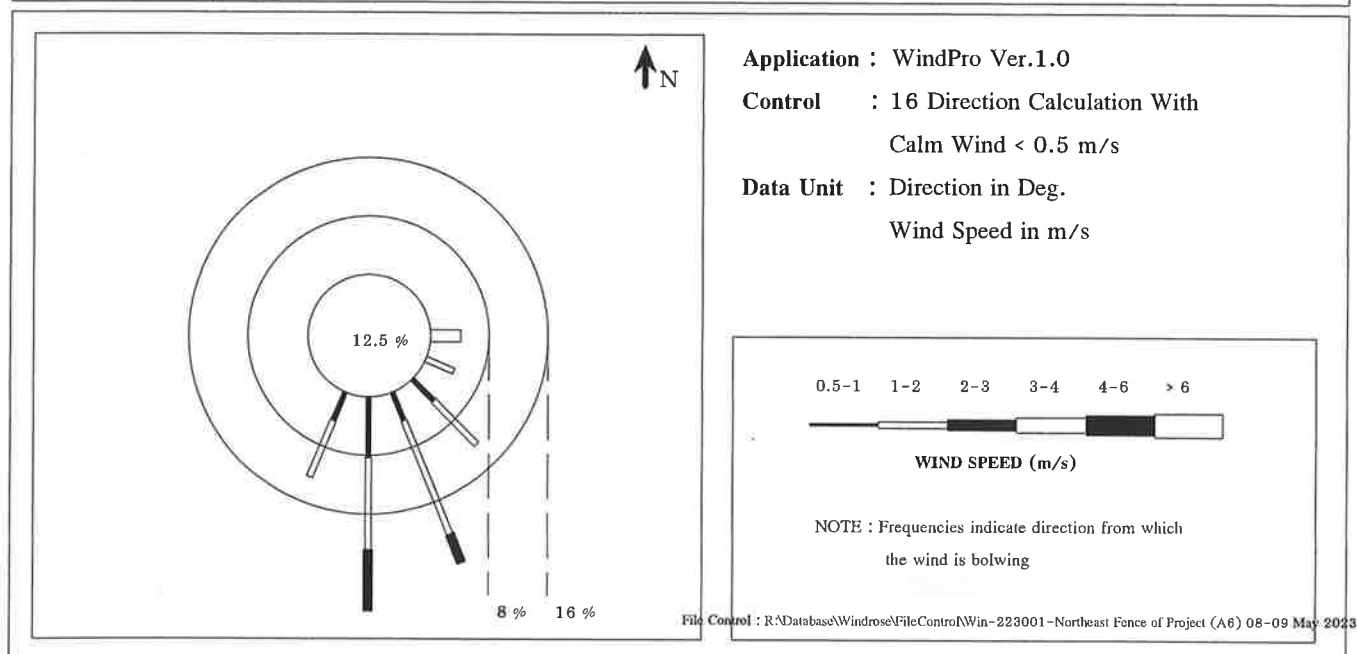
Wind Speed Model : NRG Symphonie

Serial No : 5084

Wind Direction Model : NRG Symphonie

Serial No : 5084

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0000	0.0000	0.0417	0.0000	0.0000	0.0417
ESE	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
SE	0.0417	0.0833	0.0000	0.0000	0.0000	0.0000	0.1250
SSE	0.0417	0.1667	0.0417	0.0000	0.0000	0.0000	0.2500
S	0.0833	0.1250	0.0833	0.0000	0.0000	0.0000	0.2917
SSW	0.0417	0.0833	0.0000	0.0000	0.0000	0.0000	0.1250
SW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.1250						



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Northeast Fence of Project (A6)

Monitor period : 08-09 May 2023

Wind Speed Model : NRG Symphonie

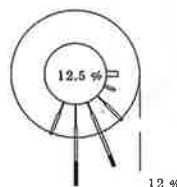
Serial No : 5084

Wind Direction Model : NRG Symphonie

Serial No : 5084

Time	08-09 May 2023	
	WS(m/s)	WD
10:00 - 11:00	1.4	SSW
11:00 - 12:00	1.3	SSE
12:00 - 13:00	1.6	S
13:00 - 14:00	0.6	S
14:00 - 15:00	1.2	S
15:00 - 16:00	0.2	S
16:00 - 17:00	0.9	S
17:00 - 18:00	0.3	S
18:00 - 19:00	0.5	SSW
19:00 - 20:00	1.9	SSW
20:00 - 21:00	2.7	SSE
21:00 - 22:00	1.8	SSE
22:00 - 23:00	2.2	S
23:00 - 24:00	1.1	SSE
00:00 - 01:00	1.8	SE
01:00 - 02:00	0.5	SE
02:00 - 03:00	1.0	SSE
03:00 - 04:00	1.7	SE
04:00 - 05:00	2.2	S
05:00 - 06:00	3.0	E
06:00 - 07:00	1.0	ESE
07:00 - 08:00	1.1	S
08:00 - 09:00	0.8	SSE
09:00 - 10:00	0.3	SSW

Wind Rose



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

File Control :R:\Database\Windrose\FileControl\Win-223001-Northeast Fence of Project (A6) 08-09 May 2023

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : West Fence of Project (G9 Road) (A7)

Monitor period : 08-09 May 2023

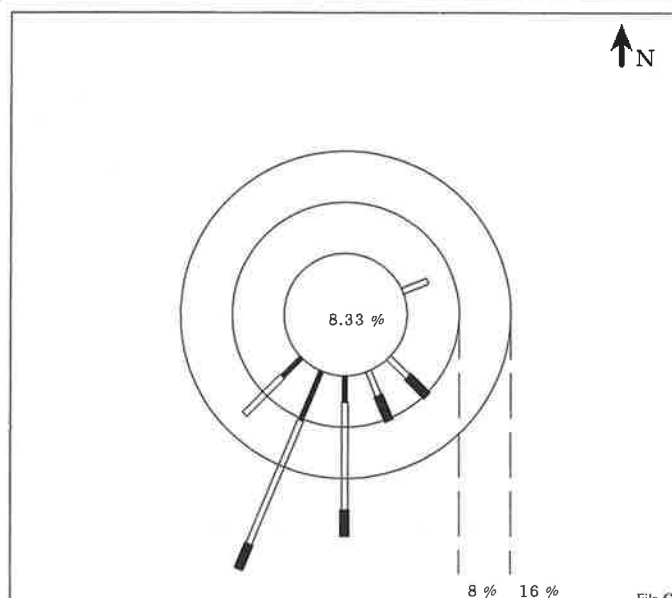
Wind Speed Model : NRG Symphonie

Serial No : 5092

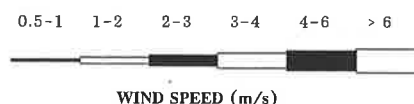
Wind Direction Model : NRG Symphonie

Serial No : 5092

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	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
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	0.0417	0.0417	0.0000	0.0000	0.0000	0.0833
SSE	0.0000	0.0417	0.0417	0.0000	0.0000	0.0000	0.0833
S	0.0417	0.1667	0.0417	0.0000	0.0000	0.0000	0.2500
SSW	0.0833	0.2083	0.0417	0.0000	0.0000	0.0000	0.3333
SW	0.0417	0.0833	0.0000	0.0000	0.0000	0.0000	0.1250
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0833						



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-223001-West Fence of Project (G9 Road) (A7) 08-09 May 2023

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : West Fence of Project (G9 Road) (A7)

Monitor period : 08-09 May 2023

Wind Speed Model : NRG Symphonie

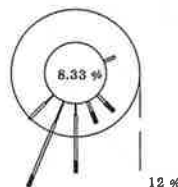
Serial No : 5092

Wind Direction Model : NRG Symphonie

Serial No : 5092

Time	08-09 May 2023	
	WS(m/s)	WD
11:00 - 12:00	1.7	SSW
12:00 - 13:00	2.1	S
13:00 - 14:00	1.0	SE
14:00 - 15:00	1.8	SSW
15:00 - 16:00	1.4	SSW
16:00 - 17:00	1.3	S
17:00 - 18:00	1.9	SSW
18:00 - 19:00	1.8	SW
19:00 - 20:00	1.5	SSE
20:00 - 21:00	1.8	S
21:00 - 22:00	0.9	S
22:00 - 23:00	1.8	S
23:00 - 24:00	1.3	SSW
00:00 - 01:00	0.9	SW
01:00 - 02:00	1.1	SW
02:00 - 03:00	0.2	SW
03:00 - 04:00	0.6	SSW
04:00 - 05:00	0.6	SSW
05:00 - 06:00	0.2	SSW
06:00 - 07:00	1.1	S
07:00 - 08:00	1.5	ENE
08:00 - 09:00	2.0	SSW
09:00 - 10:00	2.4	SE
10:00 - 11:00	2.3	SSE

Wind Rose



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

File Control :R:\Database\Windrose\FileControl\Win-223001-West Fence of Project (G9 Road) (A7) 08-09 May 2023

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Nong Feab Community (A1)

Monitor period : 01-02 Jun 2023

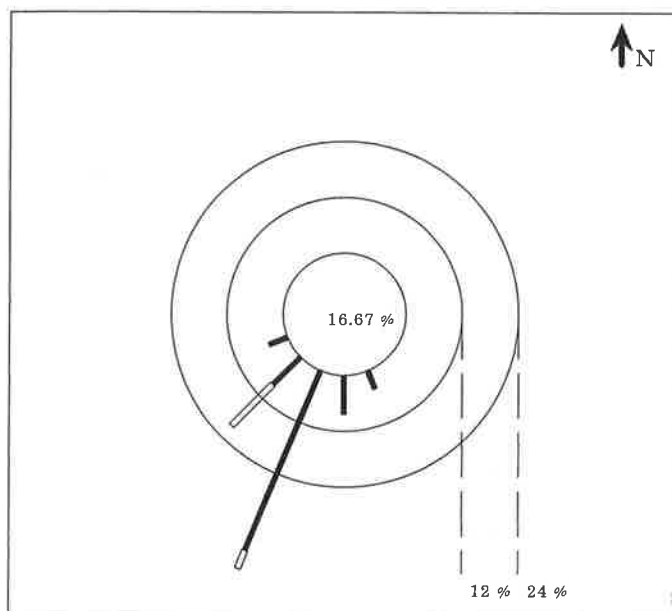
Wind Speed Model : NRG Symphonie

Serial No : A4905

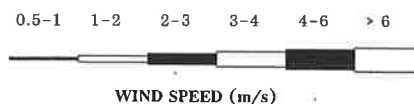
Wind Direction Model : NRG Symphonie

Serial No : A4905

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
S	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
SSW	0.4167	0.0417	0.0000	0.0000	0.0000	0.0000	0.4583
SW	0.0833	0.1250	0.0000	0.0000	0.0000	0.0000	0.2083
WSW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.1667						



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-223001-Nong Feab Community (A1) 01-02 Jun 2023

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Nong Feab Community (A1)

Monitor period : 01-02 Jun 2023

Wind Speed Model : NRG Symphonie

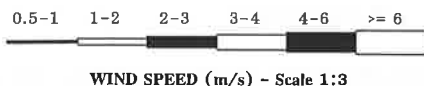
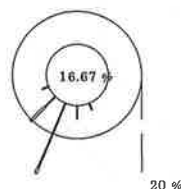
Serial No : A4905

Wind Direction Model : NRG Symphonie

Serial No : A4905


Time	01-02 Jun 2023	
	WS(m/s)	WD
12:00 - 13:00	1.0	SW
13:00 - 14:00	0.9	SSW
14:00 - 15:00	0.7	SSW
15:00 - 16:00	1.0	SSW
16:00 - 17:00	0.9	S
17:00 - 18:00	0.9	S
18:00 - 19:00	0.8	SSW
19:00 - 20:00	0.6	SSW
20:00 - 21:00	0.7	SSW
21:00 - 22:00	1.0	SW
22:00 - 23:00	0.8	SW
23:00 - 24:00	0.6	SSW
00:00 - 01:00	0.6	SSW
01:00 - 02:00	0.8	SW
02:00 - 03:00	0.5	SSW
03:00 - 04:00	0.4	SW
04:00 - 05:00	0.2	SW
05:00 - 06:00	0.3	SW
06:00 - 07:00	0.1	SW
07:00 - 08:00	0.5	WSW
08:00 - 09:00	0.7	SSW
09:00 - 10:00	0.7	SSE
10:00 - 11:00	1.1	SW
11:00 - 12:00	0.6	SSW


Wind Rose



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

File Control :R:\Database\Windrose\FileControl\Win-223001-Nong Feab Community (A1) 01-02 Jun 2023


 (Miss Katesarin Vorradetwittaya)
 Environmental Scientist


 (Miss Preeda Somjai)
 Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Map Chalute Community (A2)

Monitor period : 01-02 Jun 2023

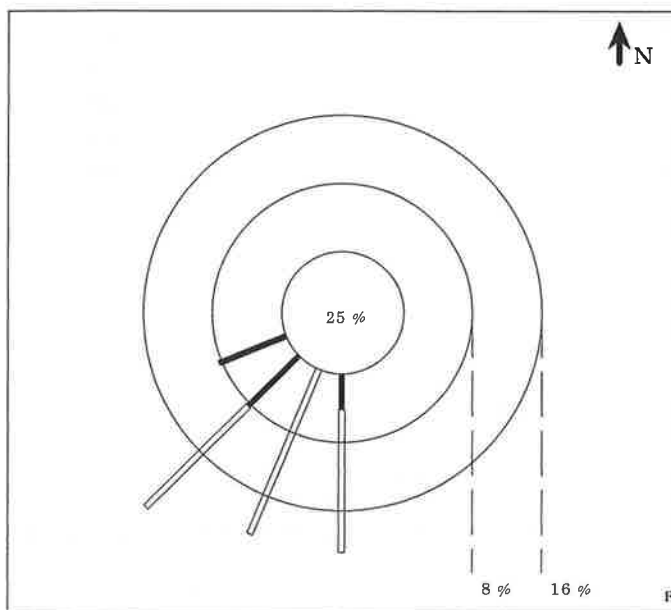
Wind Speed Model : NRG Symphonie

Serial No : 17112001

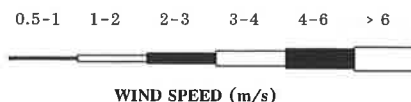
Wind Direction Model : NRG Symphonie

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	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0417	0.1667	0.0000	0.0000	0.0000	0.0000	0.2083
SSW	0.0000	0.2083	0.0000	0.0000	0.0000	0.0000	0.2083
SW	0.0833	0.1667	0.0000	0.0000	0.0000	0.0000	0.2500
WSW	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.2500						



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-223001-Map Chalute Community (A2) 01-02 Jun 2023

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Map Chalute Community (A2)

Monitor period : 01-02 Jun 2023

Wind Speed Model : NRG Symphonie

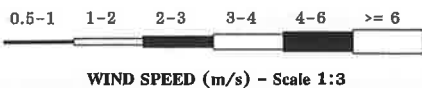
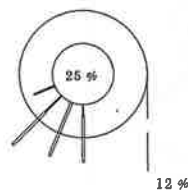
Serial No : 17112001

Wind Direction Model : NRG Symphonie

Serial No : 17112001

Time	01-02 Jun 2023	
	WS(m/s)	WD
12:00 - 13:00	1.3	SSW
13:00 - 14:00	1.2	SSW
14:00 - 15:00	1.2	SSW
15:00 - 16:00	1.1	SSW
16:00 - 17:00	1.0	S
17:00 - 18:00	1.1	S
18:00 - 19:00	1.1	S
19:00 - 20:00	0.9	S
20:00 - 21:00	1.1	S
21:00 - 22:00	1.2	SSW
22:00 - 23:00	1.1	SW
23:00 - 24:00	0.8	SW
00:00 - 01:00	0.8	SW
01:00 - 02:00	0.7	WSW
02:00 - 03:00	0.4	W
03:00 - 04:00	0.0	W
04:00 - 05:00	0.0	W
05:00 - 06:00	0.0	W
06:00 - 07:00	0.0	W
07:00 - 08:00	0.2	W
08:00 - 09:00	0.8	WSW
09:00 - 10:00	1.0	SW
10:00 - 11:00	1.2	SW
11:00 - 12:00	1.0	SW

Wind Rose



File Control :R:\Database\Windrose\FileControl\Win-223001-Map Chalute Community (A2) 01-02 Jun 2023

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Map Chalute-Chak klang Community (A3)

Monitor period : 01-02 Jun 2023

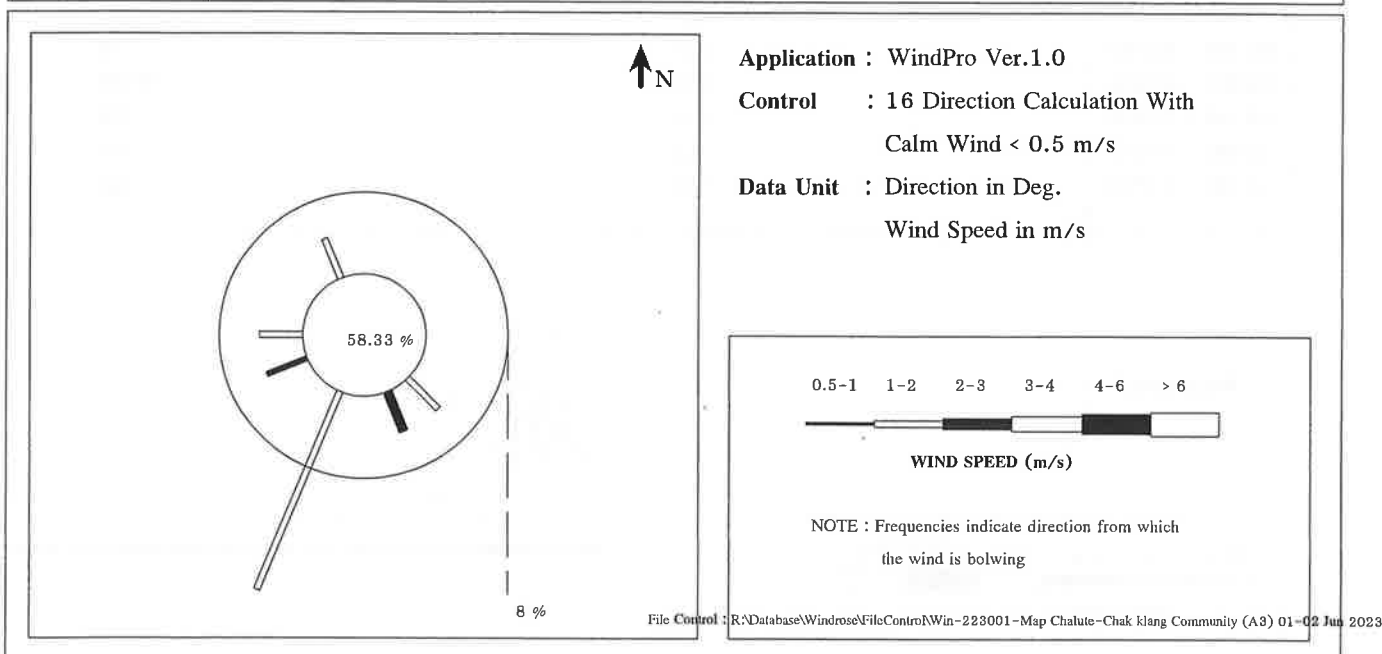
Wind Speed Model : NRG Symphonie

Serial No : A5090

Wind Direction Model : NRG Symphonie

Serial No : A5090

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
SSE	0.0000	0.0000	0.0417	0.0000	0.0000	0.0000	0.0417
S	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSW	0.0000	0.2083	0.0000	0.0000	0.0000	0.0000	0.2083
SW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WSW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
W	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
CALM	0.5833						



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Map Chalute-Chak klang Community (A3)

Monitor period : 01-02 Jun 2023

Wind Speed Model : NRG Symphonie

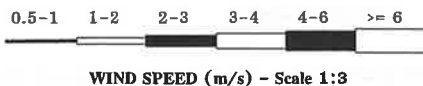
Serial No : A5090

Wind Direction Model : NRG Symphonie

Serial No : A5090

Time	01-02 Jun 2023	
	WS(m/s)	WD
12:00 - 13:00	0.9	WSW
13:00 - 14:00	2.7	SSE
14:00 - 15:00	1.7	SE
15:00 - 16:00	0.2	WSW
16:00 - 17:00	0.3	WSW
17:00 - 18:00	1.2	SSW
18:00 - 19:00	1.2	SSW
19:00 - 20:00	1.2	SSW
20:00 - 21:00	1.2	SSW
21:00 - 22:00	1.2	SSW
22:00 - 23:00	0.4	WSW
23:00 - 24:00	0.4	SE
00:00 - 01:00	0.1	NNW
01:00 - 02:00	0.2	NW
02:00 - 03:00	0.0	NW
03:00 - 04:00	0.0	NW
04:00 - 05:00	0.0	WSW
05:00 - 06:00	0.0	NW
06:00 - 07:00	1.4	NNW
07:00 - 08:00	0.0	WSW
08:00 - 09:00	0.0	SW
09:00 - 10:00	1.2	W
10:00 - 11:00	0.0	SW
11:00 - 12:00	0.0	SE

Wind Rose



File Control :R:\Database\Windrose\FileControl\Win-223001-Map Chalute-Chak klang Community (A3) 01-02 Jun 2023

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : North Fence of Project (A4)

Monitor period : 01-02 Jun 2023

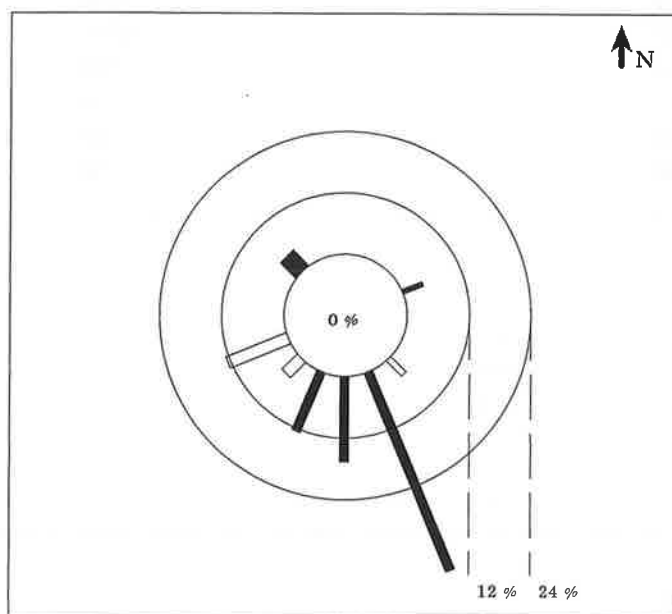
Wind Speed Model : NRG Symphonie

Serial No : A4901

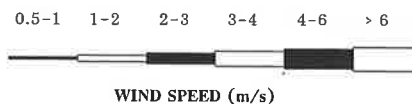
Wind Direction Model : NRG Symphonie

Serial No : A4901

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	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
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	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
SSE	0.0000	0.0000	0.4167	0.0000	0.0000	0.0000	0.4167
S	0.0000	0.0000	0.1667	0.0000	0.0000	0.0000	0.1667
SSW	0.0000	0.0000	0.1250	0.0000	0.0000	0.0000	0.1250
SW	0.0000	0.0000	0.0000	0.0417	0.0000	0.0000	0.0417
WSW	0.0000	0.0000	0.0000	0.1250	0.0000	0.0000	0.1250
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0417	0.0000	0.0417
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



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-223001-North Fence of Project (A4) 01-02 Jun 2023

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : North Fence of Project (A4)

Monitor period : 01-02 Jun 2023

Wind Speed Model : NRG Symphonie

Serial No : A4901

Wind Direction Model : NRG Symphonie

Serial No : A4901

Time	01-02 Jun 2023	
	WS(m/s)	WD
10:00 - 11:00	3.6	WSW
11:00 - 12:00	2.3	SSE
12:00 - 13:00	2.9	SSW
13:00 - 14:00	2.3	SSE
14:00 - 15:00	2.3	SSE
15:00 - 16:00	2.5	S
16:00 - 17:00	2.1	SSE
17:00 - 18:00	2.7	S
18:00 - 19:00	2.5	S
19:00 - 20:00	2.2	SSE
20:00 - 21:00	2.3	SSE
21:00 - 22:00	3.4	WSW
22:00 - 23:00	3.1	SW
23:00 - 24:00	0.9	ENE
00:00 - 01:00	1.8	SE
01:00 - 02:00	4.4	NW
02:00 - 03:00	2.1	SSE
03:00 - 04:00	2.0	SSE
04:00 - 05:00	2.2	SSE
05:00 - 06:00	2.2	SSE
06:00 - 07:00	3.6	WSW
07:00 - 08:00	2.7	SSW
08:00 - 09:00	2.8	SSW
09:00 - 10:00	2.6	S
Wind Rose		



File Control : R:\Database\Windrose\FileControl\Win-223001-North Fence of Project (A4) 01-02 Jun 2023

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : South Fence of Project (A5)

Monitor period : 01-02 Jun 2023

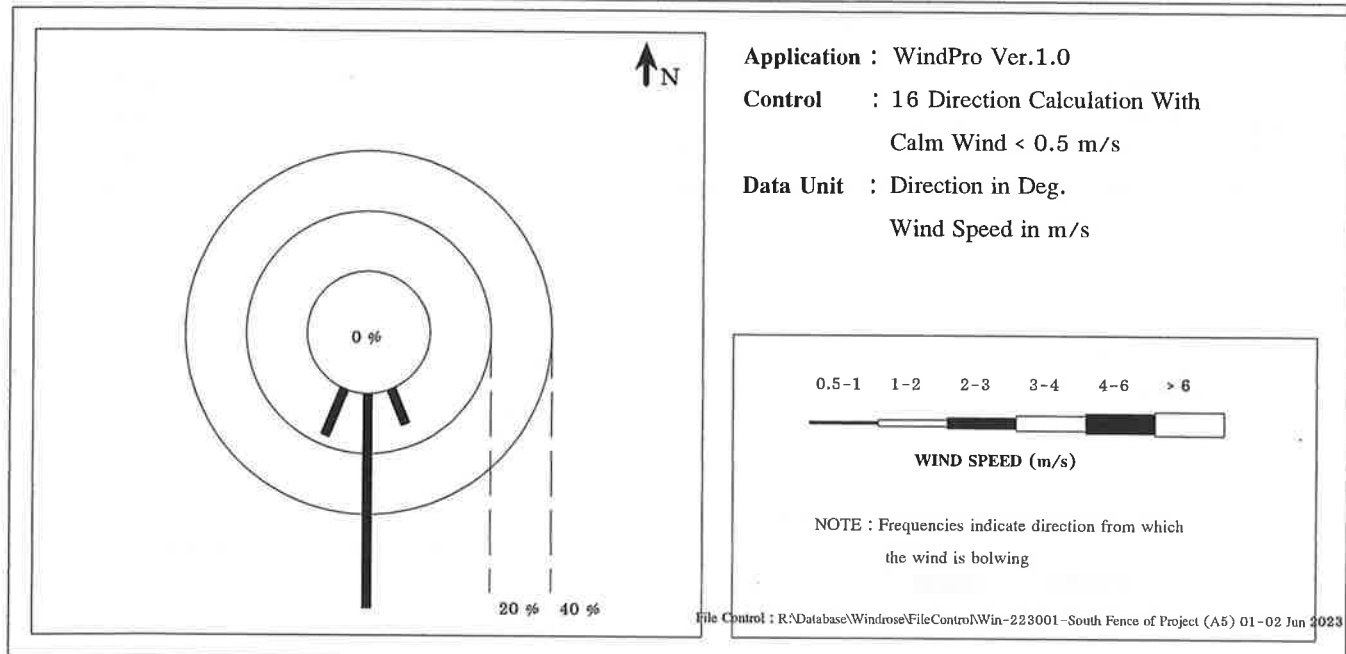
Wind Speed Model : NRG Symphonie

Serial No : A5084

Wind Direction Model : NRG Symphonie

Serial No : A5084

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.1250	0.0000	0.0000	0.0000	0.1250
S	0.0000	0.0000	0.7083	0.0000	0.0000	0.0000	0.7083
SSW	0.0000	0.0000	0.1667	0.0000	0.0000	0.0000	0.1667
SW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : South Fence of Project (A5)

Monitor period : 01-02 Jun 2023

Wind Speed Model : NRG Symphonie

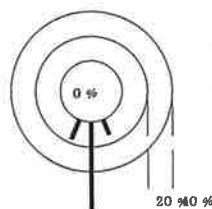
Serial No : A5084

Wind Direction Model : NRG Symphonie

Serial No : A5084

Time	01-02 Jun 2023	
	WS(m/s)	WD
10:00 - 11:00	2.6	S
11:00 - 12:00	2.7	SSW
12:00 - 13:00	2.7	SSW
13:00 - 14:00	2.8	SSW
14:00 - 15:00	2.7	SSW
15:00 - 16:00	2.7	S
16:00 - 17:00	2.6	S
17:00 - 18:00	2.6	S
18:00 - 19:00	2.5	S
19:00 - 20:00	2.5	S
20:00 - 21:00	2.4	S
21:00 - 22:00	2.4	S
22:00 - 23:00	2.4	S
23:00 - 24:00	2.4	S
00:00 - 01:00	2.4	S
01:00 - 02:00	2.4	S
02:00 - 03:00	2.4	S
03:00 - 04:00	2.4	S
04:00 - 05:00	2.3	SSE
05:00 - 06:00	2.3	SSE
06:00 - 07:00	2.3	SSE
07:00 - 08:00	2.5	S
08:00 - 09:00	2.6	S
09:00 - 10:00	2.5	S

Wind Rose



File Control :R:\Database\Windrose\FileControl\Win-223001-South Fence of Project (A5) 01-02 Jun 2023

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Northeast Fence of Project (A6)

Monitor period : 01-02 Jun 2023

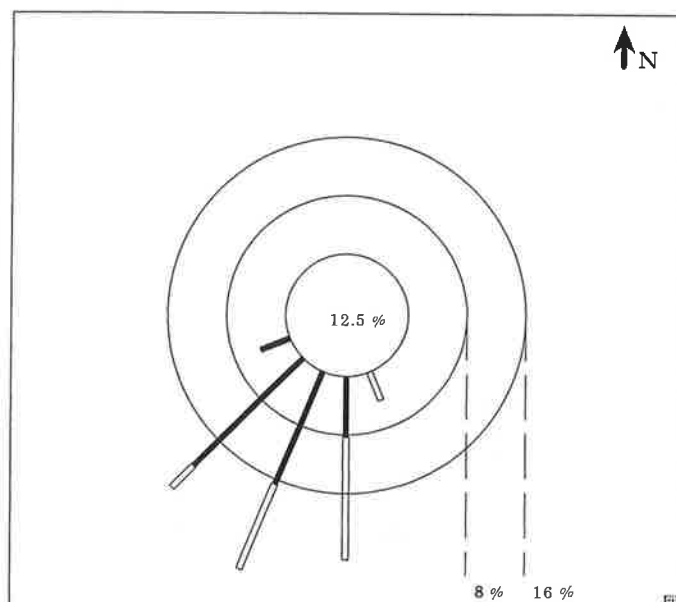
Wind Speed Model : NRG Symphonie

Serial No : A5086

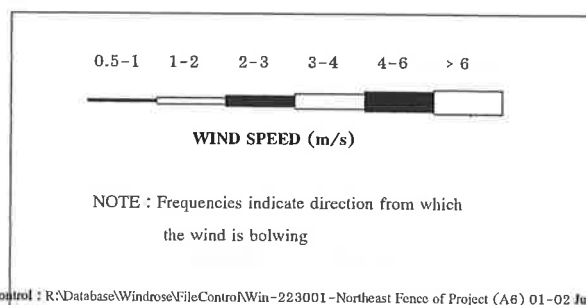
Wind Direction Model : NRG Symphonie

Serial No : A5086

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
S	0.0833	0.1667	0.0000	0.0000	0.0000	0.0000	0.2500
SSW	0.1667	0.1250	0.0000	0.0000	0.0000	0.0000	0.2917
SW	0.2083	0.0417	0.0000	0.0000	0.0000	0.0000	0.2500
WSW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.1250						



Application : WindPro Ver.1.0

Control : 16 Direction Calculation With
Calm Wind < 0.5 m/sData Unit : Direction in Deg.
Wind Speed in m/s

File Control : R:\Database\Windrose\FileControl\Win-223001-Northeast Fence of Project (A6) 01-02 Jun 2023

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : Northeast Fence of Project (A6)

Monitor period : 01-02 Jun 2023

Wind Speed Model : NRG Symphonie

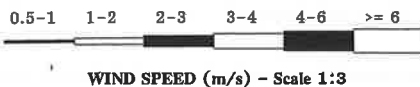
Serial No : A5086

Wind Direction Model : NRG Symphonie

Serial No : A5086

Time	01-02 Jun 2023	
	WS(m/s)	WD
10:00 - 11:00	1.1	SSW
11:00 - 12:00	1.1	S
12:00 - 13:00	1.0	SSW
13:00 - 14:00	1.1	S
14:00 - 15:00	1.0	SSE
15:00 - 16:00	1.0	S
16:00 - 17:00	1.0	S
17:00 - 18:00	0.8	S
18:00 - 19:00	0.9	S
19:00 - 20:00	1.1	SSW
20:00 - 21:00	0.9	SSW
21:00 - 22:00	0.8	SSW
22:00 - 23:00	0.8	SSW
23:00 - 24:00	0.9	SW
00:00 - 01:00	0.6	SW
01:00 - 02:00	0.5	SW
02:00 - 03:00	0.4	WNW
03:00 - 04:00	0.4	SW
04:00 - 05:00	0.3	SW
05:00 - 06:00	0.6	SW
06:00 - 07:00	0.8	SW
07:00 - 08:00	0.9	SSW
08:00 - 09:00	1.2	SW
09:00 - 10:00	0.8	WSW

Wind Rose	<p>12.5 %</p> <p>12 %</p>
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File Control :R:\Database\Windrose\FileControl\Win-223001-Northeast Fence of Project (A6) 01-02 Jun 2023

(Miss Katesarin Vorradetwittaya)

 Environmental Scientist

Preeda S.

 (Miss Preeda Somjai)

 Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : West Fence of Project (G9 Road) (A7)

Monitor period : 01-02 Jun 2023

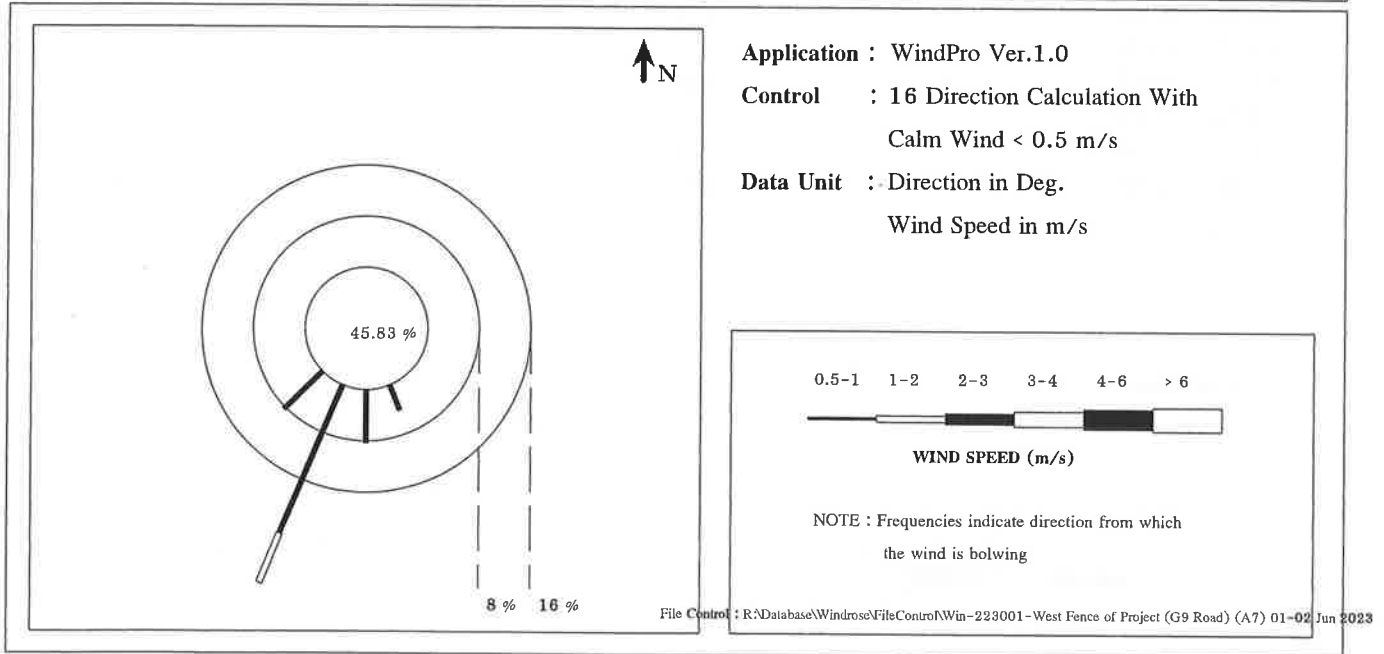
Wind Speed Model : NRG Symphonie

Serial No : A5092

Wind Direction Model : NRG Symphonie

Serial No : A5092

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
S	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
SSW	0.2500	0.0833	0.0000	0.0000	0.0000	0.0000	0.3333
SW	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.4583						



(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

(Miss Preeda Somjai)
 Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-PTTGC18 (Phenol Plant)

Location : West Fence of Project (G9 Road) (A7)

Monitor period : 01-02 Jun 2023

Wind Speed Model : NRG Symphonie

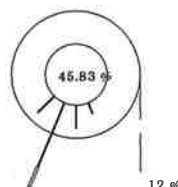
Serial No : A5092

Wind Direction Model : NRG Symphonie

Serial No : A5092

Time	01-02 Jun 2023	
	WS(m/s)	WD
10:00 - 11:00	0.7	SW
11:00 - 12:00	0.5	S
12:00 - 13:00	0.2	SSW
13:00 - 14:00	0.8	SSW
14:00 - 15:00	0.7	SSW
15:00 - 16:00	0.7	S
16:00 - 17:00	0.4	SSW
17:00 - 18:00	0.3	SSW
18:00 - 19:00	0.2	SSW
19:00 - 20:00	0.9	SW
20:00 - 21:00	0.4	SSW
21:00 - 22:00	0.3	S
22:00 - 23:00	0.3	S
23:00 - 24:00	1.0	SSW
00:00 - 01:00	0.5	SSW
01:00 - 02:00	0.8	SSW
02:00 - 03:00	0.3	SSW
03:00 - 04:00	0.5	SSW
04:00 - 05:00	0.1	SSW
05:00 - 06:00	0.8	SSW
06:00 - 07:00	0.5	SSE
07:00 - 08:00	0.4	NE
08:00 - 09:00	1.0	SSW
09:00 - 10:00	0.1	S

Wind Rose



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

File Control :R:\Database\Windrose\FileControl\Win-223001-West Fence of Project (G9 Road) (A7) 01-02 Jun 2023

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team

ใบรับรองผลการตรวจวัดคุณภาพอากาศในบรรยากาศ

**SECOT CO., LTD.**

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

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REF. NO.	: Phenol-223001-COA-Amb/TSP
	Branch 18 (Phenol Plant)	SAMPLING BY	: SECOT Co., Ltd.
SAMPLING DATE	: 31/03/2023-07/04/2023	RECEIVED DATE	: 19/04/2023
ANALYTICAL DATE	: 20-21/04/2023	REPORT DATE	: 25/04/2023
SAMPLE CONDITION	: Normal	OPERATOR	: Mr.Phuwadech Kaewjirakulsri
STATION DESCRIPTION	: Construction Area		

PARAMETER	SAMPLING DATE	UNITS	RESULTS	STANDARD*	REFERENCE
			CONSTRUCTION AREA		METHODS
TSP (24 hr.)	31/03/2023-01/04/2023	mg/m ³	0.030	0.330	High Volume
	01-02/04/2023	mg/m ³	0.029		Air Sampler/
	02-03/04/2023	mg/m ³	0.027		Gravimetric Method
	03-04/04/2023	mg/m ³	0.034		
	04-05/04/2023	mg/m ³	0.034		
	05-06/04/2023	mg/m ³	0.038		
	06-07/04/2023	mg/m ³	0.042		

Phatchara Samanchan
(Miss Phatchara Samanchan)
Analyst

Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)
Technical Management Team

- Remark :** 1. Reported analysis refers to submitted sample only.
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3. * Notification of the National Environment Board, No.24, B.E.2547.

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

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REF. NO.	: Phenol-223001-COA-Amb/PM10
	Branch 18 (Phenol Plant)	SAMPLING BY	: SECOT Co., Ltd.
SAMPLING DATE	: 31/03/2023-07/04/2023	RECEIVED DATE	: 19/04/2023
ANALYTICAL DATE	: 20-21/04/2023	REPORT DATE	: 25/04/2023
SAMPLE CONDITION	: Normal	OPERATOR	: Mr.Phuwadech Kaewjirakulsri
STATION DESCRIPTION	: Construction Area		

PARAMETER	SAMPLING DATE	UNITS	RESULTS	STANDARD*	REFERENCE
			CONSTRUCTION AREA		METHODS
PM-10 (24 hr.)	31/03/2023-01/04/2023	mg/m ³	0.018	0.120	High Volume
	01-02/04/2023	mg/m ³	0.017		Air Sampler
	02-03/04/2023	mg/m ³	0.019		(Hi-Vol PM-10 Size
	03-04/04/2023	mg/m ³	0.018		Selective Inlet)
	04-05/04/2023	mg/m ³	0.024		Gravimetric Method
	05-06/04/2023	mg/m ³	0.022		
	06-07/04/2023	mg/m ³	0.027		

Phatchara Samanchan

(Miss Phatchara Samanchan)

Analyst

Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

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

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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

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Phenol Company Limited (Phenol)	REQUEST SERVICE No.	: 0058/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 12-13/01/2023	ANALYTICAL DATE	: 19/01/2023
SAMPLING TIME	: 15:21-14:21, 16:00-15:45, 16:34-16:03	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 14/01/2023	FILE CODE	: 223001_TO-15_January
REPORT DATE	: 20/01/2023		
LOCATION DESCRIPTION	A1 = Nong Feab Community A2 = Map Chalute Community A3 = Map Chalute-Chakklang Community		

Compound	SAMPLING LOCATION								STANDARD* (µg/m ³)
	Non Detection								
			A1		A2		A3		
	ppbv	µg/m ³	ppbv	µg/m ³	ppbv	µg/m ³	ppbv	µg/m ³	
Acetone	0.10	0.24	2.94	6.99	3.45	8.20	5.57	13.24	-
Benzene	0.004	0.013	0.21	0.67	1.17	3.74	1.29	4.12	7.6
Cumene	0.10	0.49	ND	ND	0.53	2.61	1.33	6.54	-

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd : EPA Methods TO-15,1999

Sirinon Chimsa-nga

(Miss Siriwan Chimsa-nga)

Analyst

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

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

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

3. * Notification of the Pollution Control Department, dated December 18,B.E.2551(2008), which was published in the Royal Government Gazette Vol. 126, Special Part 13D dated January 27, B.E. 2552 (2009).

4. - Not available.



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


AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Phenol Company Limited (Phenol)	REQUEST SERVICE No.	: 0058/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 12-13/01/2023	ANALYTICAL DATE	: 19/01/2023
SAMPLING TIME	: 14:23-13:55, 13:37-13:40, 14:06-13:50, 14:32-14:02	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 14/01/2023	FILE CODE	: 223001_TO-15_January
REPORT DATE	: 20/01/2023		
LOCATION DESCRIPTION	: A4 = North Fence of Project A5 = South Fence of Project	A6 = Northeast Fence of Project A7 = West Fence of Project (G9 Road)	

Compound	Non Detection		SAMPLING LOCATION								STANDARD* ($\mu\text{g}/\text{m}^3$)
			A4		A5		A6		A7		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Benzene	0.004	0.013	0.87	2.78	0.17	0.54	0.64	2.04	5.88	18.78	7.6

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd : EPA Methods TO-15, 1999

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)
Analyst


(Mrs. Araya Tipparuk)
Technical Management Team

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

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

3. * Notification of the Pollution Control Department, dated December 18, B.E.2551(2008), which was published in the Royal Government Gazette Vol. 126, Special Part 13D dated January 27, B.E. 2552 (2009).



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

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd. Branch 18 (Phenol Plant)	REQUEST SERVICE No.	: 0165/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 03-04/02/2023	ANALYTICAL DATE	: 07/02/2023
SAMPLING TIME	: 10:35-10:30	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 05/02/2023	FILE CODE	: 223001_TO-15_February
REPORT DATE	: 09/02/2023		

Compound	SAMPLING LOCATION				STANDARD* (µg/m ³)
	Non Detection		West Fence of Project (G9 Road)		
	ppbv	µg/m ³	ppbv	µg/m ³	
Benzene	0.004	0.013	1.38	4.41	7.6

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd : EPA Methods TO-15,1999

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)

Analyst

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0203/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 13/02/2023
SAMPLING DATE	: 09-10/02/2023	SAMPLE CONDITION	: Normal
SAMPLING TIME	: 11:39-11:10, 10:53-11:40, 11:19-11:29	FILE CODE	: 223001_TO-15_February
RECEIVED DATE	: 11/02/2023		
REPORT DATE	: 15/02/2023		
LOCATION DESCRIPTION	A1 = Nong Feab Community A3 = Map Chalute-Chakklang Community A2 = Map Chalute Community		

Compound	SAMPLING LOCATION								STANDARD* (µg/m ³)
	Non Detection		A1		A2		A3		
	ppbv	µg/m ³	ppbv	µg/m ³	ppbv	µg/m ³	ppbv	µg/m ³	
Acetone	0.10	0.24	2.45	5.82	4.12	9.79	3.43	8.15	
Benzene	0.004	0.013	0.13	0.42	0.64	2.04	1.00	3.19	7.6
Cumene	0.10	0.49	ND	ND	0.78	3.83	0.93	4.57	

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd : EPA Methods TO-15,1999

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)
Analyst

Araya Tipparuk
(Mrs. Araya Tipparuk)
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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Phenol Company Limited (Phenol)	REQUEST SERVICE No.	: 0203/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 13/02/2023
SAMPLING DATE	: 09-10/02/2023	SAMPLE CONDITION	: Normal
SAMPLING TIME	: 10:17-10:30 , 09:57-10:15, 10:08-10:22, 10:29-10:38	FILE CODE	: 223001_TO-15_February
RECEIVED DATE	: 11/02/2023		
REPORT DATE	: 15/02/2023		
LOCATION DESCRIPTION	A4 = North Fence of Project A5 = South Fence of Project		
	A6 = Northeast Fence of Project A7 = West Fence of Project (G9 Road)		

Compound	Non Detection		SAMPLING LOCATION								STANDARD* ($\mu\text{g}/\text{m}^3$)
			A4		A5		A6		A7		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Benzene	0.004	0.013	0.70	2.24	0.13	0.42	0.91	2.91	0.14	0.45	7.6

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd : EPA Methods TO-15,1999

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)
Analyst

Araya Tipparuk
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Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0399/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 13-14/03/2023
SAMPLING DATE	: 09-10/03/2023	SAMPLE CONDITION	: Normal
SAMPLING TIME	: 14:53-14:30, 15:39-14:52, 15:23-15:13	FILE CODE	: 223001_TO-15_March
RECEIVED DATE	: 11/03/2023		
REPORT DATE	: 15/03/2023		
LOCATION DESCRIPTION	: A1 = Nong Feab Community A2 = Map Chalute Community	A3 = Map Chalute-Chakklang Community	

Compound	Non Detection		SAMPLING LOCATION						STANDARD* (µg/m ³)
			A1		A2		A3		
	ppbv	µg/m ³	ppbv	µg/m ³	ppbv	µg/m ³	ppbv	µg/m ³	
Acetone	0.10	0.24	7.81	18.56	9.91	23.55	10.47	24.88	-
Benzene	0.004	0.013	0.36	1.15	0.42	1.34	0.40	1.28	7.6
Cumenc	0.10	0.49	ND	ND	0.19	0.93	0.57	2.80	-

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd : EPA Methods TO-15, 1999

Jutarat Jaemruen
(Miss Jutarat Jaemruen)
Analyst

(Mrs. Araya Tipparuk)
Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Phenol Company Limited (Phenol) Branch 18 (Phenol Plant)	REQUEST SERVICE No.	: 0399/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 09-10/03/2023	ANALYTICAL DATE	: 13-14/03/2023
SAMPLING TIME	: 14:14-14:02, 13:54-13:50, 14:27-14:11	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 11/03/2023	FILE CODE	: 223001_TO-15_March
REPORT DATE	: 15/03/2023		
LOCATION DESCRIPTION	A4 = North Fence of Project A7 = West Fence of Project (G9 Road) A5 = South Fence of Project		

Compound	Non Detection		SAMPLING LOCATION						STANDARD* (µg/m ³)
			A4		A5		A7		
	ppbv	µg/m ³	ppbv	µg/m ³	ppbv	µg/m ³	ppbv	µg/m ³	
Benzene	0.004	0.013	0.95	3.03	0.30	0.96	0.31	0.99	7.6

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd : EPA Methods TO-15,1999

Jutarat Jaemruen
(Miss Jutarat Jaemruen)

Analyst

Araya Tipparuk

(Mrs. Araya Tipparuk)

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0455/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 20/03/2023
SAMPLING DATE	: 16-17/03/2023	SAMPLE CONDITION	: Normal
SAMPLING TIME	: 10:40-11:15	FILE CODE	: 223001_TO-15_March
RECEIVED DATE	: 18/03/2023		
REPORT DATE	: 23/03/2023		
LOCATION DESCRIPTION	: A6 = Northeast Fence of Project		

Compound	SAMPLING LOCATION				STANDARD* ($\mu\text{g}/\text{m}^3$)
	Non Detection		A6		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Benzene	0.004	0.013	0.87	2.78	7.6

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd : EPA Methods TO-15, 1999

Jutarat Jaemruen
(Miss Jutarat Jaemruen)
Analyst

MR
(Mrs. Araya Tipparuk)
Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0578/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 18-19/04/2023
SAMPLING DATE	: 10-11/04/2023	SAMPLE CONDITION	: Normal
SAMPLING TIME	: 10:57-10:35, 11:11-10:52, 11:24-11:03	FILE CODE	: 223001_TO-15_April
RECEIVED DATE	: 12/04/2023		
REPORT DATE	: 21/04/2023		
LOCATION DESCRIPTION	: A1 = Nong Feab Community	A3 = Map Chalute-Chakklang Community	
	A2 = Map Chalute Community		

Compound	SAMPLING LOCATION								STANDARD* (µg/m ³)
	Non Detection		A1		A2		A3		
	ppbv	µg/m ³	ppbv	µg/m ³	ppbv	µg/m ³	ppbv	µg/m ³	
Acetone	0.10	0.24	3.28	7.79	4.35	10.34	5.55	13.19	-
Benzene	0.004	0.013	0.08	0.26	0.21	0.67	0.13	0.42	7.6
Cumene	0.10	0.49	ND	ND	0.84	4.13	0.40	1.97	-

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd : EPA Methods TO-15,1999

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

Araya Tipparuk

(Mrs. Araya Tipparuk)

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Phenol Company Limited (Phenol)	REQUEST SERVICE No.	: 0578/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 18-19/04/2023
SAMPLING DATE	: 10-11/04/2023	SAMPLE CONDITION	: Normal
SAMPLING TIME	: 10:19-10:03, 09:57-09:49, 10:28-10:08	FILE CODE	: 223001_TO-15_April
RECEIVED DATE	: 12/04/2023		
REPORT DATE	: 21/04/2023		
LOCATION DESCRIPTION	A4 = North Fence of Project A7 = West Fence of Project (G9 Road) A5 = South Fence of Project		

Compound	Non Detection		SAMPLING LOCATION						STANDARD* (µg/m ³)
			A4		A5		A7		
	ppbv	µg/m ³	ppbv	µg/m ³	ppbv	µg/m ³	ppbv	µg/m ³	
Benzene	0.004	0.013	0.55	1.76	0.04	0.13	0.04	0.13	7.6

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd : EPA Methods TO-15,1999

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(Miss Jutarat Jaemruen)

Analyst

Araya Tipparuk

(Mrs. Araya Tipparuk)

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Phenol Company Limited (Phenol)	REQUEST SERVICE No.	: 0651/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 03/05/2023
SAMPLING DATE	: 26-27/04/2023	SAMPLE CONDITION	: Normal
SAMPLING TIME	: 10:35-10:30	FILE CODE	: 223001_TO-15_April
RECEIVED DATE	: 28/04/2023		
REPORT DATE	: 05/05/2023		
LOCATION DESCRIPTION	: A6 = Northeast Fence of Project		

Compound	SAMPLING LOCATION				STANDARD* (µg/m ³)
	Non Detection		A6		
	ppbv	µg/m ³	ppbv	µg/m ³	
Benzene	0.004	0.013	1.21	3.87	7.6

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd : EPA Methods TO-15,1999

Jutarat Jaemruen

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Analyst

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0723/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 12/05/2023
SAMPLING DATE	: 08-09/05/2023	SAMPLE CONDITION	: Normal
SAMPLING TIME	: 13:13-13:18, 14:16-13:40, 13:35-13:33	FILE CODE	: 223001_TO-15_May
RECEIVED DATE	: 10/05/2023		
REPORT DATE	: 15/05/2023		
LOCATION DESCRIPTION	A1 = Nong Feab Community A3 = Map Chalute-Chakklang Community A2 = Map Chalute Community		

Compound	Non Detection		SAMPLING LOCATION						STANDARD*
			A1		A2		A3		
	ppbv	µg/m ³	ppbv	µg/m ³	ppbv	µg/m ³	ppbv	µg/m ³	(µg/m ³)
Acetone	0.10	0.24	2.00	4.75	3.04	7.22	4.73	11.24	-
Benzene	0.004	0.013	0.19	0.61	0.67	2.14	0.41	1.31	7.6
Cumene	0.10	0.49	ND	ND	0.17	0.84	0.32	1.57	-

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd : EPA Methods TO-15, 1999

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(Miss Siriwan Chimsa-nga)
Analyst

Araya Tipparuk
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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Phenol Company Limited (Phenol) Branch 18 (Phenol Plant)	REQUEST SERVICE No.	: 0723/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 08-09/05/2023	ANALYTICAL DATE	: 12/05/2023
SAMPLING TIME	: 10:15-10:04, 09:50-10:19, 10:00-10:10, 10:25-09:55	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 10/05/2023	FILE CODE	: 223001_TO-15_May
REPORT DATE	: 15/05/2023		
LOCATION DESCRIPTION	A4 = North Fence of Project A5 = South Fence of Project A6 = Northeast Fence of Project A7 = West Fence of Project (G9 Road)		

Compound	Non Detection		SAMPLING LOCATION								STANDARD*
			A4		A5		A6		A7		
	ppbv	µg/m ³	ppbv	µg/m ³	ppbv	µg/m ³	ppbv	µg/m ³	ppbv	µg/m ³	(µg/m ³)
Benzene	0.004	0.013	1.94	6.20	0.26	0.83	1.30	4.14	0.91	2.91	7.6

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd : EPA Methods TO-15,1999

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)
Analyst

MT
(Mrs. Araya Tipparuk)
Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0889/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING BY	: SECOT Co., Ltd.	ANALYTICAL DATE	: 06-07/06/2023
SAMPLING DATE	: 01-02/06/2023	SAMPLE CONDITION	: Normal
SAMPLING TIME	: 10:22-10:20, 10:43-10:25, 11:03-10:30	FILE CODE	: 223001 TO-15 June
RECEIVED DATE	: 03/06/2023		
REPORT DATE	: 08/06/2023		
LOCATION DESCRIPTION	A1 = Nong Feab Community A3 = Map Chalute-Chakklang Community A2 = Map Chalute Community		

Compound	Non Detection		SAMPLING LOCATION						STANDARD* (µg/m ³)
			A1		A2		A3		
	ppbv	µg/m ³	ppbv	µg/m ³	ppbv	µg/m ³	ppbv	µg/m ³	
Acetone	0.10	0.24	6.20	14.73	5.69	13.52	19.60	46.58	-
Benzene	0.004	0.013	0.19	0.61	0.45	1.44	0.11	0.35	7.6
Cumene	0.10	0.49	ND	ND	0.13	0.64	0.34	1.67	-

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd : EPA Methods TO-15, 1999

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)
Analyst


(Mrs. Araya Tipparuk)
Technical Management Team

- Remark : 1. Reported analysis refers to submitted sample only.
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3. * Notification of the Pollution Control Department, dated December 18, B.E. 2551 (2008), which was published in the Royal Government Gazette Vol. 126, Special Part 13D dated January 27, B.E. 2552 (2009).
4. - Not available.



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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Phenol Company Limited (Phenol) Branch 18 (Phenol Plant)	REQUEST SERVICE No.	: 0889/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 01-02/06/2023	ANALYTICAL DATE	: 06-07/06/2023
SAMPLING TIME	: 09:59-10:05, 09:37-09:49, 09:50-10:00, 10:10-10:10	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 03/06/2023	FILE CODE	: 223001_TO-15_June
REPORT DATE	: 08/06/2023		
LOCATION DESCRIPTION	: A4 = North Fence of Project A5 = South Fence of Project	A6 = Northeast Fence of Project A7 = West Fence of Project (G9 Road)	

Compound	Non Detection		SAMPLING LOCATION								STANDARD*
			A4		A5		A6		A7		
	ppbv	µg/m ³	ppbv	µg/m ³	ppbv	µg/m ³	ppbv	µg/m ³	ppbv	µg/m ³	(µg/m ³)
Benzene	0.004	0.013	0.32	1.02	0.06	0.19	1.44	4.60	0.04	0.13	7.6

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd : EPA Methods TO-15, 1999

Siriwan Chimsa-nga

(Miss Siriwan Chimsa-nga)

Analyst

(Mrs. Araya Tipparuk)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Phenol Company Limited	REF. NO.	: Phenol-223001-COA-Amb/Jan2023
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 12-13/01/2023
RECEIVE DATE	: 16/01/2023	ANALYTICAL DATE	: 18/01/2023
REPORT DATE	: 27/01/2023	SAMPLE CONDITION	: Normal
INSTRUMENT	: Impingment Absorption	SITE OPERATOR	: Mr. Siwanon Kulawong
ROTAMETER NO.	: 320-5-245-W (H01)	ROTAMETER MODEL	: 320-5-245W
CALIBRATOR S/N	: 160100	CALIBRATOR MODEL	: Defender 520 Low Flow
LOCATIONS	: A1 = Nong Feab Community : A2 = Map Chalute Community : A3 = Map Chalute-Chakklang Community		

PARAMETER	UNIT	ND (Non-detectable)	RESULTS			REFERENCE METHOD
			A1	A2	A3	
Phenol (Avg. 24 hr.)	ppm	<0.02	ND	ND	ND	U.S.EPA Method TO-8

Sudaporn Soonthorn

(Miss Sudaporn Soonthorn)

Analyst

Narisa Poowasanpet

(Miss Narisa Poowasanpet)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REF. NO.	: Phenol-223001-COA-Amb/Feb2023
	Branch 18 (Phenol Plant)	SAMPLING BY	: SECOT Co., Ltd.
SAMPLING DATE	: 09-10/02/2023	RECEIVE DATE	: 13/02/2023
ANALYTICAL DATE	: 21/02/2023	REPORT DATE	: 23/02/2023
SAMPLE CONDITION	: Normal	INSTRUMENT	: Impingment Absorption
ROTAMETER NO.	: 320-5-245-W (H01)	ROTAMETER MODEL	: 320-5-245W
CALIBRATOR S/N	: 160100	CALIBRATOR MODEL	: Defender 520 Low Flow
SITE OPERATOR	: Mr. Aniwat Pimwanna		
LOCATIONS	: A1 = Nong Feab Community		
	A2 = Map Chalute Community		
	A3 = Map Chalute-Chakklang Community		

PARAMETER	UNIT	ND	RESULTS			REFERENCE
		(Non-detectable)	A1	A2	A3	METHOD
Phenol (Avg. 24 hr.)	ppm	<0.02	ND	ND	ND	U.S.EPA Method TO-8


(Miss Sudaporn Soonthorn)
Analyst


(Miss Narisa Poowasanpetch)
Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REF. NO.	: Phenol-223001-COA-Amb/Mar2023
	Branch 18 (Phenol Plant)	SAMPLING BY	: SECOT Co., Ltd.
SAMPLING DATE	: 09-10/03/2023	RECEIVE DATE	: 13/03/2023
ANALYTICAL DATE	: 20/03/2023	REPORT DATE	: 22/03/2023
SAMPLE CONDITION	: Normal	INSTRUMENT	: Impingment Absorption
ROTAMETER NO.	: 320-235-4600W (L01)	ROTAMETER MODEL	: 320-235-4600W
CALIBRATOR S/N	: 160100	CALIBRATOR MODEL	: Defender 520-L
SITE OPERATOR	: Mr. Siwanon Kulawong		
LOCATIONS	: A1 = Nong Feab Community		
	A2 = Map Chalute Community		
	A3 = Map Chalute-Chakklang Community		

PARAMETER	UNIT	ND (Non-detectable)	RESULTS			REFERENCE METHOD
			A1	A2	A3	
Phenol (Avg. 24 hr.)	ppm	<0.02	ND	ND	ND	U.S.EPA Method TO-8

Sudaporn Soonthorn

(Miss Sudaporn Soonthorn)

Analyst

Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REF. NO.	: Phenol-223001-COA-Amb/Apr2023
	Branch 18 (Phenol Plant)	SAMPLING BY	: SECOT Co., Ltd.
SAMPLING DATE	: 10-11/04/2023	RECEIVE DATE	: 12/04/2023
ANALYTICAL DATE	: 20/04/2023	REPORT DATE	: 25/04/2023
SAMPLE CONDITION	: Normal	INSTRUMENT	: Impingment Absorption
CALIBRATOR S/N	: 160100	CALIBRATOR MODEL	: Defender 520-L
SITE OPERATOR	: Mr. Siwanon Kulawong		
LOCATIONS	: A1 = Nong Feab Community		
	A2 = Map Chalute Community		
	A3 = Map Chalute-Chakklang Community		

PARAMETER	UNIT	ND (Non-detectable)	RESULTS			REFERENCE METHOD
			A1	A2	A3	
Phenol (Avg. 24 hr.)	ppm	<0.02	ND	ND	ND	U.S.EPA Method TO-8

Sudaporn Soonthorn

(Miss Sudaporn Soonthorn)

Analyst

Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. **REF. NO.** : Phenol-223001-COA-Amb/May2023
Branch 18 (Phenol Plant) **SAMPLING BY** : SECOT Co., Ltd.
SAMPLING DATE : 08-09/05/2023 **RECEIVE DATE** : 11/05/2023
ANALYTICAL DATE : 19/05/2023 **REPORT DATE** : 20/05/2023
SAMPLE CONDITION : Normal **INSTRUMENT** : Impingment Absorption
CALIBRATOR S/N : 160100 **CALIBRATOR MODEL** : Defender 520-L
SITE OPERATOR : Mr. Phuwadech Kaewjirakulsri
LOCATIONS : A1 = Nong Feab Community
A2 = Map Chalute Community
A3 = Map Chalute-Chakklang Community

PARAMETER	UNIT	ND (Non-detectable)	RESULTS			REFERENCE METHOD
			A1	A2	A3	
Phenol (Avg. 24 hr.)	ppm	<0.02	ND	ND	ND	U.S.EPA Method TO-8

Sudaporn Soonthorn
(Miss Sudaporn Soonthorn)
Analyst

Narisa Poowasanpet
(Miss Narisa Poowasanpetch)
Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REF. NO.	: Phenol-223001-COA-Amb/Jun2023
	Branch 18 (Phenol Plant)	SAMPLING BY	: SECOT Co., Ltd.
SAMPLING DATE	: 01-02/06/2023	RECEIVE DATE	: 06/06/2023
ANALYTICAL DATE	: 15/06/2023	REPORT DATE	: 16/06/2023
SAMPLE CONDITION	: Normal	INSTRUMENT	: Impingment Absorption
CALIBRATOR S/N	: 160100	CALIBRATOR MODEL	: Defender 520-L
SITE OPERATOR	: Miss Mareeyanee Hawae		
LOCATIONS	: A1 = Nong Feab Community		
	A2 = Map Chalute Community		
	A3 = Map Chalute-Chakklang Community		

PARAMETER	UNIT	ND (Non-detectable)	RESULTS			REFERENCE METHOD
			A1	A2	A3	
Phenol (Avg. 24 hr.)	ppm	<0.02	ND	ND	ND	U.S.EPA Method TO-8

Sudaporn Soonthorn

(Miss Sudaporn Soonthorn)

Analyst

Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REF. NO.	: Phenol-223001-COA-Stk/Feb2023
	Branch 18 (Phenol Plant)	SAMPLING BY	: SECOT Co., Ltd.
SAMPLING DATE	: 09/02/2023	RECEIVED DATE	: 13/02/2023
ANALYTICAL DATE	: 13/02/2023	REPORT DATE	: 17/02/2023
SAMPLE CONDITION	: Normal	OPERATOR	: Mr. Kittipong Thakoengsuk
STACK LOCATION	: Charcoal Adsorber 1 (X-1204)	FUEL TYPE	:
SOURCE DESCRIPTION	: Process		

STACK DESCRIPTION

Height	: 80	m	Gas Velocity	: 19.3	m/s
Diameter	: 0.9	m	Flow rate ^{1/}	: 694	Ncu.m/min
Temperature	: 25.0	°C	Excess Oxygen	: 5.4	%

PARAMETER	UNIT	ND (Non-detectable)	RESULT ^{1/}	ASSIGNED VALUE ^{2/}	REFERENCE METHODS
Total Hydrocarbon	ppm	<0.10	236	250	Flame Ionization Detector

Sudaporn Soonthorn
(Miss Sudaporn Soonthorn)
Analyst

Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)
Technical Management Team

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 3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.
 4. ^{2/} Assigned value in Environmental and Health Impact Assessment Report (EHIA) No.6 and 7 of PTT Global Chemical PublicCo., Ltd. Branch 18 (Phenol Plant).



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REF. NO.	: Phenol-223001-COA-Stk/May2023
	Branch 18 (Phenol Plant)	SAMPLING BY	: SECOT Co., Ltd.
SAMPLING DATE	: 08/05/2023	RECEIVED DATE	: 09/05/2023
ANALYTICAL DATE	: 10/05/2023	REPORT DATE	: 17/05/2023
SAMPLE CONDITION	: Normal	OPERATOR	: Mr. Rattanachai Chobthamkij
STACK LOCATION	: Charcoal Adsorber 1 (X-1204)	FUEL TYPE	: -
SOURCE DESCRIPTION	: Process		

STACK DESCRIPTION

Height	: 80	m	Gas Velocity	: 19.9	m/s
Diameter	: 0.9	m	Flow rate ^{1/}	: 709	Ncu.m/min
Temperature	: 26.2	°C	Excess Oxygen	: 5.3	%

PARAMETER	UNIT	ND (Non-detectable)	RESULT ^{1/}	ASSIGNED VALUE ^{2/}	REFERENCE METHODS
Total Hydrocarbon	ppm	<0.10	173	250	Flame Ionization Detector

Sudaporn Soonthorn

(Miss Sudaporn Soonthorn)

Analyst

Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

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3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

4. ^{2/} Assigned value in Environmental and Health Impact Assessment Report (EHIA) No.6 and 7 of PTT Global Chemical Public Co., Ltd. Branch 18 (Phenol Plant).



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REF. NO.	: Phenol-223001-COA-Stk/Feb2023
	Branch 18 (Phenol Plant)	SAMPLING BY	: SECOT Co., Ltd.
SAMPLING DATE	: 09/02/2023	RECEIVED DATE	: 13/02/2023
ANALYTICAL DATE	: 15/02/2023	REPORT DATE	: 17/02/2023
SAMPLE CONDITION	: Normal	OPERATOR	: Mr. Kittipong Thakoengsuk
STACK LOCATION	: Charcoal Adsorber 2 (V-4102)	FUEL TYPE	: -
SOURCE DESCRIPTION	: Process		

STACK DESCRIPTION

Height	: 3.5 m	Gas Velocity	: 0.6 m/s
Diameter	: 0.2 m	Flow rate ^{1/}	: 1.0 Ncu.m/min
Temperature	: 31.0 °C	Excess Oxygen	: 20.9 %

PARAMETER	UNIT	ND (Non-detectable)	RESULT ^{1/}	ASSIGNED VALUE ^{2/}	REFERENCE METHODS
Benzene	ppm	<0.06	ND	0.0004	U.S. EPA Method 18

Sudaporn Soonthorn

(Miss Sudaporn Soonthorn)

Analyst

Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

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 3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.
 4. ^{2/} Assigned value in Environmental and Health Impact Assessment Report (EHIA) No.6 and 7 of PTT Global Chemical PublicCo., Ltd. Branch 18 (Phenol Plant).



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REF. NO.	: Phenol-223001-COA-Stk/May2023
	Branch 18 (Phenol Plant)	SAMPLING BY	: SECOT Co., Ltd.
SAMPLING DATE	: 08/05/2023	RECEIVED DATE	: 09/05/2023
ANALYTICAL DATE	: 11/05/2023	REPORT DATE	: 17/05/2023
SAMPLE CONDITION	: Normal	OPERATOR	: Mr. Rattanachai Chobthamkij
STACK LOCATION	: Charcoal Adsorber 2 (V-4102)	FUEL TYPE	: -
SOURCE DESCRIPTION	: Process		

STACK DESCRIPTION

Height	: 3.5	m	Gas Velocity	: 0.6	m/s
Diameter	: 0.2	m	Flow rate ^{1/}	: 1.0	Ncu.m/min
Temperature	: 34.0	°C	Excess Oxygen	: 10.3	%

PARAMETER	UNIT	ND (Non-detectable)	RESULT ^{1/}	ASSIGNED VALUE ^{2/}	REFERENCE METHODS
Benzene	ppm	<0.06	ND	0.0004	U.S. EPA Method 18

Sudaporn Soonthorn
(Miss Sudaporn Soonthorn)

Analyst

Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)

Technical Management Team

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3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

4. ^{2/} Assigned value in Environmental and Health Impact Assessment Report (EHIA) No.6 and 7 of PTT Global Chemical Public Co., Ltd. Branch 18 (Phenol Plant).



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REF. NO.	: Phenol-223001-COA-Stk/Feb2023
	Branch 18 (Phenol Plant)	SAMPLING BY	: SECOT Co., Ltd.
SAMPLING DATE	: 09/02/2023	RECEIVED DATE	: 13/02/2023
ANALYTICAL DATE	: 15/02/2023	REPORT DATE	: 17/02/2023
SAMPLE CONDITION	: Normal	OPERATOR	: Mr. Kittipong Thakoengsuk
STACK LOCATION	: Charcoal Adsorber 3 (D-1510A)	FUEL TYPE	: -
SOURCE DESCRIPTION	: Process		

STACK DESCRIPTION

Height	: 9.6	m	Gas Velocity	: 0.6	m/s
Diameter	: 0.2	m	Flow rate ^{1/}	: 1.3	Ncu.m/min
Temperature	: 36.0	°C	Excess Oxygen	: 2.8	%

PARAMETER	UNIT	ND (Non-detectable)	RESULT ^{1/}	ASSIGNED VALUE ^{2/}	REFERENCE METHODS
Cumene	ppm	<0.04	ND	5	U.S. EPA Method 18

Sudaporn Soonthorn
(Miss Sudaporn Soonthorn)
Analyst

Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)
Technical Management Team

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 3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.
 4. ^{2/} Assigned value in Environmental and Health Impact Assessment Report (EHIA) No.6 and 7 of PTT Global Chemical PublicCo., Ltd. Branch 18 (Phenol Plant).



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REF. NO.	: Phenol-223001-COA-Stk/May2023
	Branch 18 (Phenol Plant)	SAMPLING BY	: SECOT Co., Ltd.
SAMPLING DATE	: 08/05/2023	RECEIVED DATE	: 09/05/2023
ANALYTICAL DATE	: 11/05/2023	REPORT DATE	: 17/05/2023
SAMPLE CONDITION	: Normal	OPERATOR	: Mr. Rattanachai Chobthamkij
STACK LOCATION	: Charcoal Adsorber 3 (D-1510A)	FUEL TYPE	: -
SOURCE DESCRIPTION	: Process		

STACK DESCRIPTION

Height	: 9.6	m	Gas Velocity	: 1.1	m/s
Diameter	: 0.2	m	Flow rate ^{1/}	: 2.4	Ncu.m/min
Temperature	: 35.0	°C	Excess Oxygen	: 3.0	%

PARAMETER	UNIT	ND (Non-detectable)	RESULT ^{1/}	ASSIGNED VALUE ^{2/}	REFERENCE METHODS
Cumene	ppm	<0.04	ND	5	U.S. EPA Method 18

Sudaporn Soonthorn

(Miss Sudaporn Soonthorn)

Analyst

Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

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

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3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

4. ^{2/} Assigned value in Environmental and Health Impact Assessment Report (EHIA) No.6 and 7 of PTT Global Chemical Public Co., Ltd. Branch 18 (Phenol Plant).



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REF. NO.	: Phenol-223001-COA-Stk/Feb2023
	Branch 18 (Phenol Plant)	SAMPLING BY	: SECOT Co., Ltd.
SAMPLING DATE	: 10/02/2023	RECEIVED DATE	: 13/02/2023
ANALYTICAL DATE	: 13/02/2023	REPORT DATE	: 17/02/2023
SAMPLE CONDITION	: Normal	OPERATOR	: Mr. Kittipong Thakoengsuk
STACK LOCATION	: Charcoal Adsorber 5 (V-9104)	FUEL TYPE	: -
SOURCE DESCRIPTION	: Process		

STACK DESCRIPTION

Height	: 4.0	m	Gas Velocity	: 0.6	m/s
Diameter	: 0.2	m	Flow rate ^{1/}	: 1.0	Ncu.m/min
Temperature	: 33.0	°C	Excess Oxygen	: 1.9	%

PARAMETER	UNIT	ND (Non-detectable)	RESULT ^{1/}	ASSIGNED VALUE ^{2/}	REFERENCE METHODS
Cumene	ppm	<0.04	ND	5	U.S. EPA Method 18

Sudaporn Soonthorn
(Miss Sudaporn Soonthorn)
Analyst

Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)
Technical Management Team

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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REF. NO.	: Phenol-223001-COA-Stk/May2023
	Branch 18 (Phenol Plant)	SAMPLING BY	: SECOT Co., Ltd.
SAMPLING DATE	: 08/05/2023	RECEIVED DATE	: 09/05/2023
ANALYTICAL DATE	: 11/05/2023	REPORT DATE	: 17/05/2023
SAMPLE CONDITION	: Normal	OPERATOR	: Mr. Rattanachai Chobthamkij
STACK LOCATION	: Charcoal Adsorber 5 (V-9104)	FUEL TYPE	: -
SOURCE DESCRIPTION	: Process		

STACK DESCRIPTION

Height	: 4.0 m	Gas Velocity	: 0.6 m/s
Diameter	: 0.2 m	Flow rate ^{1/}	: 1.0 Ncu.m/min
Temperature	: 35.0 °C	Excess Oxygen	: 1.8 %

PARAMETER	UNIT	ND (Non-detectable)	RESULT ^{1/}	ASSIGNED VALUE ^{2/}	REFERENCE METHODS
Cumene	ppm	<0.04	ND	5	U.S. EPA Method 18

Sudaporn Soonthorn
(Miss Sudaporn Soonthorn)

Analyst

Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)

Technical Management Team

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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REF. NO.	: Phenol-223001-COA-Stk/Feb2023
	Branch 18 (Phenol Plant)	SAMPLING BY	: SECOT Co., Ltd.
SAMPLING DATE	: 10/02/2023	RECEIVED DATE	: 13/02/2023
ANALYTICAL DATE	: 13/02/2023	REPORT DATE	: 17/02/2023
SAMPLE CONDITION	: Normal	OPERATOR	: Mr. Kittipong Thakoengsuk
STACK LOCATION	: Charcoal Adsorber 6 (X-2204)	FUEL TYPE	: -
SOURCE DESCRIPTION	: Process		

STACK DESCRIPTION

Height	: 70.5	m	Gas Velocity	: 5.3	m/s
Diameter	: 0.7	m	Flow rate ^{1/}	: 116.5	Ncu.m/min
Temperature	: 26.0	°C	Excess Oxygen	: 4.1	%

PARAMETER	UNIT	ND (Non-detectable)	RESULT ^{1/}	ASSIGNED VALUE ^{2/}	REFERENCE METHODS
Total Hydrocarbon	ppm	<0.10	207	250	Flame Ionization Detector

Sudporn Soonthorn
(Miss Sudaporn Soonthorn)
Analyst

Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)
Technical Management Team

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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REF. NO.	: Phenol-223001-COA-Stk/May2023
	Branch 18 (Phenol Plant)	SAMPLING BY	: SECOT Co., Ltd.
SAMPLING DATE	: 08/05/2023	RECEIVED DATE	: 09/05/2023
ANALYTICAL DATE	: 10/05/2023	REPORT DATE	: 17/05/2023
SAMPLE CONDITION	: Normal	OPERATOR	: Mr. Rattanachai Chobthamkij
STACK LOCATION	: Charcoal Adsorber 6 (X-2204)	FUEL TYPE	: -
SOURCE DESCRIPTION	: Process		

STACK DESCRIPTION

Height	: 70.5	m	Gas Velocity	: 5.7	m/s
Diameter	: 0.7	m	Flow rate ^{1/}	: 122.9	Ncu.m/min
Temperature	: 28.8	°C	Excess Oxygen	: 4.7	%

PARAMETER	UNIT	ND (Non-detectable)	RESULT ^{1/}	ASSIGNED VALUE ^{2/}	REFERENCE METHODS
Total Hydrocarbon	ppm	<0.10	220	250	Flame Ionization Detector

Sudaporn Soonthorn

(Miss Sudaporn Soonthorn)

Analyst

Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REF. NO.	: Phenol-223001-COA-Stk/Feb2023
	Branch 18 (Phenol Plant)	SAMPLING BY	: SECOT Co., Ltd.
SAMPLING DATE	: 10/02/2023	RECEIVED DATE	: 13/02/2023
ANALYTICAL DATE	: 16/02/2023	REPORT DATE	: 17/02/2023
SAMPLE CONDITION	: Normal	OPERATOR	: Mr. Kittipong Thakoengsuk
STACK LOCATION	: Scrubber 1 (V-4101)	FUEL TYPE	: -
SOURCE DESCRIPTION	: Process		

STACK DESCRIPTION

Height	: 3.5	m	Gas Velocity	: 0.6	m/s
Diameter	: 0.1	m	Flow rate ^{1/}	: 0.2	Ncu.m/min
Temperature	: 33.0	°C	Excess Oxygen	: 17.2	%

PARAMETER	UNIT	ND (Non-detectable)	RESULT ^{1/}	ASSIGNED VALUE ^{2/}	REFERENCE METHODS
Phenol	ppm	<0.05	ND	3	U.S. EPA Method 18

Sudaporn Soonthorn
(Miss Sudaporn Soonthorn)
Analyst

Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)
Technical Management Team

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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REF. NO.	: Phenol-223001-COA-Stk/May2023
	Branch 18 (Phenol Plant)	SAMPLING BY	: SECOT Co., Ltd.
SAMPLING DATE	: 08/05/2023	RECEIVED DATE	: 09/05/2023
ANALYTICAL DATE	: 16/05/2023	REPORT DATE	: 17/05/2023
SAMPLE CONDITION	: Normal	OPERATOR	: Mr. Rattanachai Chobthamkij
STACK LOCATION	: Scrubber 1 (V-4101)	FUEL TYPE	: -
SOURCE DESCRIPTION	: Process		

STACK DESCRIPTION

Height	: 3.5	m	Gas Velocity	: 0.4	m/s
Diameter	: 0.1	m	Flow rate ^{1/}	: 0.2	Ncu.m/min
Temperature	: 36.0	°C	Excess Oxygen	: 16.0	%

PARAMETER	UNIT	ND (Non-detectable)	RESULT ^{1/}	ASSIGNED VALUE ^{2/}	REFERENCE METHODS
Phenol	ppm	<0.05	ND	3	U.S. EPA Method 18

Sudaporn Soonthorn
(Miss Sudaporn Soonthorn)

Analyst

Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)

Technical Management Team

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ใบรับรองผลการตรวจวัดคุณภาพน้ำ



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Phenol Company Limited (Phenol)	REQUEST SERVICE No.	: 0057/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 13/01/2023	SAMPLING TIME	: 10.30
RECEIVED DATE	: 14/01/2023	ANALYTICAL DATE	: 14-21/01/2023
REPORT DATE	: 23/01/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
SAMPLE CONDITION	: Normal	FILE CODE	: 223001_WW_January
LOCATION DESCRIPTION	: W1= น้ำเสียจากกระบวนการผลิตก่อนบำบัดใน Equalization Tank		

PARAMETER	UNIT	ANALYSIS	ND	STATION	STANDARD
		METHODS	(non-detectable)	W1	
Temperature	°C	2550 B	< 0.5	31.6	-
pH	-	4500-H ⁺ B	< 0.10	12.31	-
Color	ADMI	2120 F	< 6.0	24.7	-
Total Dissolved Solids	mg/l	2540 C	< 50	16,890	-
Total Suspended Solids	mg/l	2540 D	< 5	45	-
Fat Oil & Grease	mg/l	5520 B	< 0.50	1.3	-
Phenols	mg/l	5530 B,D	< 0.10	8.3	-
BOD ₅	mg/l	5210 B	< 1.0	1,818	-
COD	mg/l	5220 D	< 40.00	6,406	-
Acetone	µg/l	5030 C / 8260 D	< 0.62	638,020	-
Benzene	µg/l	5030 C / 8260 D	< 0.20	31	-
Cumene	µg/l	5030 C / 8260 D	< 0.50	78,360	-

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

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020

(Miss Khemchuda Insorn)

Analyst

REG. NO. ๖-239-ก-5976

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. ๖-239-ก-5863

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0137/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 14.48
SAMPLING DATE	: 02/02/2023	ANALYTICAL DATE	: 03-10/02/2023
RECEIVED DATE	: 03/02/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
REPORT DATE	: 10/02/2023	FILE CODE	: 223001_WW_February
SAMPLE CONDITION	: Normal		
LOCATION DESCRIPTION	: W1= น้ำเสียจากกระบวนการผลิตก่อนบำบัดใน Equalization Tank		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD
				W1	
Temperature	°C	2550 B	< 0.5	33.3	-
pH	-	4500-H ⁺ B	< 0.10	11.92	-
Color	ADMI	2120 F	< 6.0	26.9	-
Total Dissolved Solids	mg/l	2540 C	< 50	14,530	-
Total Suspended Solids	mg/l	2540 D	< 5	27	-
Fat Oil & Grease	mg/l	5520 B	< 0.50	0.86	-
Phenols	mg/l	5530 B,D	< 0.10	7.2	-
BOD ₅	mg/l	5210 B	< 1.0	2,580	-
COD	mg/l	5220 D	< 40.00	4,216	-
Acetone	µg/l	5030 C / 8260 D	< 0.62	711,400	-
Benzene	µg/l	5030 C / 8260 D	< 0.20	53.00	-
Cumene	µg/l	5030 C / 8260 D	< 0.50	46,250	-

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

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020.

(Miss Khemchuda Insorn)

Analyst

REG. NO. ว-239-ค-5976

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. ว-239-ค-5863

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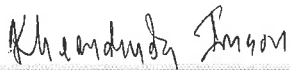
WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0330/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 14.25
SAMPLING DATE	: 02/03/2023	ANALYTICAL DATE	: 03-10/03/2023
RECEIVED DATE	: 03/03/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
REPORT DATE	: 13/03/2023	FILE CODE	: 223001_WW_March
SAMPLE CONDITION	: Normal		
LOCATION DESCRIPTION	: W1= น้ำเสียจากกระบวนการผลิตก่อนบำบัดใน Equalization Tank		

PARAMETER	UNIT	ANALYSIS	ND	STATION	STANDARD
		METHODS	(non-detectable)	W1	
Temperature	°C	2550 B	< 0.5	34.5	-
pH	-	4500-H ⁺ B	< 0.10	11.79	-
Color	ADMI	2120 F	< 6.0	32.1	-
Total Dissolved Solids	mg/l	2540 C	< 50	17,420	-
Total Suspended Solids	mg/l	2540 D	< 5	< 5	-
Fat Oil & Grease	mg/l	5520 B	< 0.50	1.9	-
Phenols	mg/l	5530 B,D	< 0.10	8.9	-
BOD ₅	mg/l	5210 B	< 1.0	1,108	-
COD	mg/l	5220 D	< 40.00	4,994	-
Acetone	µg/l	5030 C / 8260 D	< 0.62	711,850	-
Benzene	µg/l	5030 C / 8260 D	< 0.20	240	-
Cumene	µg/l	5030 C / 8260 D	< 0.50	56,920	-

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


REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE 3rd ED. 2020.



(Miss Khemchuda Insorn)

Analyst

REG. NO. ๖-239-๓-5976



(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. ๖-239-๓-5863

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0553/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 14.35
SAMPLING DATE	: 07/04/2023	ANALYTICAL DATE	: 08-18/04/2023
RECEIVED DATE	: 08/04/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
REPORT DATE	: 19/04/2023	FILE CODE	: 223001_WW_April
SAMPLE CONDITION	: Normal		
LOCATION DESCRIPTION	: W1= น้ำเสียจากกระบวนการผลิตก่อนบำบัดใน Equalization Tank		

PARAMETER	UNIT	ANALYSIS	ND	STATION	STANDARD
		METHODS	(non-detectable)	W1	
Temperature	°C	2550 B	< 0.5	34.2	-
pH	-	4500-H ⁺ B	< 0.10	11.68	-
Color	ADMI	2120 F	< 6.0	24.2	-
Total Dissolved Solids	mg/l	2540 C	< 50	16,290	-
Total Suspended Solids	mg/l	2540 D	< 5	< 5	-
Fat Oil & Grease	mg/l	5520 B	< 0.50	5.4	-
Phenols	mg/l	5530 B,D	< 0.10	13.4	-
BOD ₅	mg/l	5210 B	< 1.0	616	-
COD	mg/l	5220 D	< 40.00	3,496	-
Acetone	µg/l	5030 C / 8260 D	< 0.62	647,150	-
Benzene	µg/l	5030 C / 8260 D	< 0.20	ND	-
Cumene	µg/l	5030 C / 8260 D	< 0.50	56,600	-

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

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020.

(Miss Khemchuda Insorn)

Analyst

REG. NO. ว-239-ค-5976

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. ว-239-ค-5863

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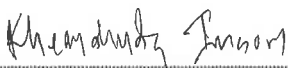
WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0733/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 09.26
SAMPLING DATE	: 11/05/2023	ANALYTICAL DATE	: 12-17/05/2023
RECEIVED DATE	: 12/05/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
REPORT DATE	: 18/05/2023	FILE CODE	: 223001_WW_May
SAMPLE CONDITION	: Normal		
LOCATION DESCRIPTION	: W1= น้ำเสียจากกระบวนการผลิตก่อนบำบัดใน Equalization Tank		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD
				W1	
Temperature	°C	2550 B	< 0.5	35.1	-
pH	-	4500-H ⁺ B	< 0.10	11.71	-
Color	ADMI	2120 F	< 6.0	22.1	-
Total Dissolved Solids	mg/l	2540 C	< 50	15,250	-
Total Suspended Solids	mg/l	2540 D	< 5	8	-
Fat Oil & Grease	mg/l	5520 B	< 0.50	4.4	-
Phenols	mg/l	5530 B,D	< 0.10	10.3	-
BOD ₅	mg/l	5210 B	< 1.0	1,580	-
COD	mg/l	5220 D	< 40.00	4,168	-
Acetone	µg/l	5030 C / 8260 D	< 0.62	510,000	-
Benzene	µg/l	5030 C / 8260 D	< 0.20	ND	-
Cumene	µg/l	5030 C / 8260 D	< 0.50	61,400	-

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

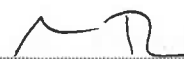
REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020.



(Miss Khemchuda Insorn)

Analyst

REG. NO. ว-239-ค-5976



(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. ว-239-ค-5863

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 3. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0869/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 10:20
SAMPLING DATE	: 01/06/2023	ANALYTICAL DATE	: 02-08/06/2023
RECEIVED DATE	: 02/06/2023	SITE OPERATOR	: Mr. Watcharakon Pramakhate
REPORT DATE	: 09/06/2023	FILE CODE	: 223001_WW_June
SAMPLE CONDITION	: Normal		
LOCATION DESCRIPTION	: W1= น้ำเสียจากกระบวนการผลิตก่อนบำบัดใน Equalization Tank		

PARAMETER	UNIT	ANALYSIS	ND	STATION	STANDARD
		METHODS	(non-detectable)	W1	
Temperature	°C	2550 B	< 0.5	36.1	-
pH	-	4500-H ⁺ B	< 0.10	11.64	-
Color	ADMI	2120 F	< 6.0	23.2	-
Total Dissolved Solids	mg/l	2540 C	< 50	15,790	-
Total Suspended Solids	mg/l	2540 D	< 5	35	-
Fat Oil & Grease	mg/l	5520 B	< 0.50	2.6	-
Phenols	mg/l	5530 B,D	< 0.10	10.1	-
BOD ₅	mg/l	5210 B	< 1.0	862	-
COD	mg/l	5220 D	< 40.00	4,012	-
Acetone	µg/l	5030 C / 8260 D	< 0.62	596,500	-
Benzene	µg/l	5030 C / 8260 D	< 0.20	0.20	-
Cumene	µg/l	5030 C / 8260 D	< 0.50	69,560	-

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

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020.

(Miss Khemchuda Insorn)

Analyst

REG. NO. ว-239-ท-5976

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. ว-239-ท-5863

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Phenol Company Limited (Phenol)	REQUEST SERVICE No.	: 0057/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 13/01/2023	SAMPLING TIME	: 10.15
RECEIVED DATE	: 14/01/2023	ANALYTICAL DATE	: 14-21/01/2023
REPORT DATE	: 23/01/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
SAMPLE CONDITION	: Normal	FILE CODE	: 223001_WW_January
LOCATION DESCRIPTION	: W2 = น้ำทิ้งหลังจากการบำบัดใน Final Polishing Pond		

PARAMETER	UNIT	ANALYSIS	ND	STATION	STANDARD ^{1/}
		METHODS	(non-detectable)	W2	
Temperature	°C	2550 B	< 0.5	34.4	≤ 40
pH	-	4500-H ⁺ B	< 0.10	8.30	5.5-9.0
Color	ADMI	2120 F	< 6.0	36.2	≤ 300
Total Dissolved Solids	mg/l	2540 C	< 50	9,070	^{2/}
Total Suspended Solids	mg/l	2540 D	< 5	46	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 5
Phenols	mg/l	5530 B,C	< 0.001	ND	≤ 1
BOD ₅	mg/l	5210 B	< 1.0	4.8	≤ 20
COD	mg/l	5220 D	< 40.00	64.06	≤ 120
Benzene	µg/l	5030 C / 8260 D	< 0.20	ND	-

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

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020.

(Miss Khemchuda Insorn)

Analyst

REG. NO. ว-239-ก-5976

(Mrs. Araya Tipparak)

Technical Management Team

REG. NO. ว-239-ก-5863

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4. ^{2/} In case of discharging effluent into water resources containing TDS of more than 3,000 mg/l, TDS in the effluent to be discharged must exceed TDS in the water resources by not more than 5,000 mg/l.

5. - Not available.



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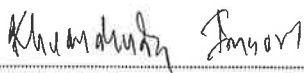
WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0137/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 14.32
SAMPLING DATE	: 02/02/2023	ANALYTICAL DATE	: 03-10/02/2023
RECEIVED DATE	: 03/02/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
REPORT DATE	: 10/02/2023	FILE CODE	: 223001_WW_February
SAMPLE CONDITION	: Normal		
LOCATION DESCRIPTION	: W2 = น้ำทิ้งหลังจากการบำบัดใน Final Polishing Pond		

PARAMETER	UNIT	ANALYSIS	ND	STATION	STANDARD ^{1/}
		METHODS	(non-detectable)	W2	
Temperature	°C	2550 B	< 0.5	36.6	≤ 40
pH	-	4500-H ⁺ B	< 0.10	8.00	5.5-9.0
Color	ADMI	2120 F	< 6.0	36.7	≤ 300
Total Dissolved Solids	mg/l	2540 C	< 50	6,660	^{2/}
Total Suspended Solids	mg/l	2540 D	< 5	40	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 5
Phenols	mg/l	5530 B,C	< 0.001	ND	≤ 1
BOD ₅	mg/l	5210 B	< 1.0	4.9	≤ 20
COD	mg/l	5220 D	< 40.00	61.71	≤ 120
Benzene	µg/l	5030 C / 8260 D	< 0.20	ND	

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

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020.



(Miss Khemchuda Insorn)

Analyst

REG. NO. ว-239-ค-5976



(Mrs. Araya Tipparak)

Technical Management Team

REG. NO. ว-239-ค-5863

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5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0330/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 14.16
SAMPLING DATE	: 02/03/2023	ANALYTICAL DATE	: 03-10/03/2023
RECEIVED DATE	: 03/03/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
REPORT DATE	: 13/03/2023	FILE CODE	: 223001_WW_March
SAMPLE CONDITION	: Normal		
LOCATION DESCRIPTION	: W2 = น้ำทิ้งหลังจากการบำบัดใน Final Polishing Pond		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				W2	
Temperature	°C	2550 B	< 0.5	37.8	≤ 40
pH	-	4500-H ⁺ B	< 0.10	8.11	5.5-9.0
Color	ADMI	2120 F	< 6.0	37.9	≤ 300
Total Dissolved Solids	mg/l	2540 C	< 50	7,970	^{2/}
Total Suspended Solids	mg/l	2540 D	< 5	23	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 5
Phenols	mg/l	5530 B,C	< 0.001	ND	≤ 1
BOD ₅	mg/l	5210 B	< 1.0	4.7	≤ 20
COD	mg/l	5220 D	< 40.00	67.65	≤ 120
Benzene	µg/l	5030 C / 8260 D	< 0.20	ND	-

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

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020.

(Miss Khemchuda Insorn)

Analyst

REG. NO. ๖-239-ค-5976

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. ๖-239-ค-5863

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 5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0553/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 14.25
SAMPLING DATE	: 07/04/2023	ANALYTICAL DATE	: 08-18/04/2023
RECEIVED DATE	: 08/04/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
REPORT DATE	: 19/04/2023	FILE CODE	: 223001_WW_April
SAMPLE CONDITION	: Normal		
LOCATION DESCRIPTION	: W2 = น้ำทิ้งหลังจากการบำบัดใน Final Polishing Pond		

PARAMETER	UNIT	ANALYSIS	ND	STATION	STANDARD ^{1/}
		METHODS	(non-detectable)	W2	
Temperature	°C	2550 B	< 0.5	37.7	≤ 40
pH	-	4500-H ⁺ B	< 0.10	8.02	5.5-9.0
Color	ADMI	2120 F	< 6.0	40.4	≤ 300
Total Dissolved Solids	mg/l	2540 C	< 50	12,230	^{2/}
Total Suspended Solids	mg/l	2540 D	< 5	30	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 5
Phenols	mg/l	5530 B,C	< 0.001	ND	≤ 1
BOD ₅	mg/l	5210 B	< 1.0	11.9	≤ 20
COD	mg/l	5220 D	< 40.00	80.57	≤ 120
Benzene	μg/l	5030 C / 8260 D	< 0.20	ND	-

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

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-5976

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-ก-5863

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5. - Not available.



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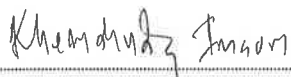
WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0733/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 09.20
SAMPLING DATE	: 11/05/2023	ANALYTICAL DATE	: 12-17/05/2023
RECEIVED DATE	: 12/05/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
REPORT DATE	: 18/05/2023	FILE CODE	: 223001_WW_May
SAMPLE CONDITION	: Normal		
LOCATION DESCRIPTION	: W2 = น้ำทิ้งหลังจากการบำบัดใน Final Polishing Pond		

PARAMETER	UNIT	ANALYSIS	ND	STATION	STANDARD ^{1/}
		METHODS	(non-detectable)	W2	
Temperature	°C	2550 B	< 0.5	37.5	≤ 40
pH	-	4500-H ⁺ B	< 0.10	8.28	5.5-9.0
Color	ADMI	2120 F	< 6.0	25.9	≤ 300
Total Dissolved Solids	mg/l	2540 C	< 50	5,432	^{2/}
Total Suspended Solids	mg/l	2540 D	< 5	12	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 5
Phenols	mg/l	5530 B,C	< 0.001	ND	≤ 1
BOD ₅	mg/l	5210 B	< 1.0	3.8	≤ 20
COD	mg/l	5220 D	< 40.00	62.26	≤ 120
Benzene	µg/l	5030 C / 8260 D	< 0.20	ND	-

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

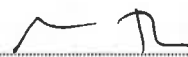
REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0869/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 10:10
SAMPLING DATE	: 01/06/2023	ANALYTICAL DATE	: 02-08/06/2023
RECEIVED DATE	: 02/06/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
REPORT DATE	: 09/06/2023	FILE CODE	: 223001_WW_June
SAMPLE CONDITION	: Normal		
LOCATION DESCRIPTION	: W2 = น้ำทิ้งหลังจากการบำบัดใน Final Polishing Pond		

PARAMETER	UNIT	ANALYSIS	ND	STATION	STANDARD ^{1/}
		METHODS	(non-detectable)	W2	
Temperature	°C	2550 B	< 0.5	39.1	≤ 40
pH	-	4500-H ⁺ B	< 0.10	8.16	5.5-9.0
Color	ADMI	2120 F	< 6.0	31.8	≤ 300
Total Dissolved Solids	mg/l	2540 C	< 50	6,350	^{2/}
Total Suspended Solids	mg/l	2540 D	< 5	13	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 0.50	ND	≤ 5
Phenols	mg/l	5530 B,C	< 0.001	ND	≤ 1
BOD ₅	mg/l	5210 B	< 1.0	6.3	≤ 20
COD	mg/l	5220 D	< 40.00	56.06	≤ 120
Benzene	µg/l	5030 C / 8260 D	< 0.20	ND	-

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

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020.

(Miss Khemchuda Insorn)

Analyst

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(Mrs. Araya Tipparuk)

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5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Phenol Company Limited (Phenol)	REQUEST SERVICE No.	: 0057/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 13/01/2023	SAMPLING TIME	: 10.40
RECEIVED DATE	: 14/01/2023	ANALYTICAL DATE	: 16/01/2023
REPORT DATE	: 23/01/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
SAMPLE CONDITION	: Normal	FILE CODE	: 223001_WW_January
LOCATION DESCRIPTION	: W3 = น้ำทิ้งหลังผ่านการบำบัดใน Final Polishing Buffer Tank		

PARAMETER	UNIT	ANALYSIS	ND	STATION
		METHODS	(non-detectable)	W3
Benzene	µg/l	5030 C / 8260 D	< 0.20	ND

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020.

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

(Mrs. Araya Tipparuk)

(Mrs. Araya Tipparuk)

Technical Management Team

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

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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	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0137/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 14.52
SAMPLING DATE	: 02/02/2023	ANALYTICAL DATE	: 04/02/2023
RECEIVED DATE	: 03/02/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
REPORT DATE	: 10/02/2023	FILE CODE	: 223001_WW_February
SAMPLE CONDITION	: Normal		
LOCATION DESCRIPTION	: W3 = น้ำทิ้งหลังผ่านการบำบัดใน Final Polishing Buffer Tank		

PARAMETER	UNIT	ANALYSIS	ND	STATION
		METHODS	(non-detectable)	W3
Benzene	µg/l	5030 C / 8260 D	< 0.20	ND

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020.

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

Araya Tipparuk

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0330/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 14.34
SAMPLING DATE	: 02/03/2023	ANALYTICAL DATE	: 07/03/2023
RECEIVED DATE	: 03/03/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
REPORT DATE	: 13/03/2023	FILE CODE	: 223001_WW_March
SAMPLE CONDITION	: Normal		
LOCATION DESCRIPTION	: W3 = น้ำทิ้งหลังผ่านการบำบัดใน Final Polishing Buffer Tank		

PARAMETER	UNIT	ANALYSIS	ND	STATION
		METHODS	(non-detectable)	W3
Benzene	µg/l	5030 C / 8260 D	< 0.20	ND

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020.

Jutarat Jaemruen
(Miss Jutarat Jaemruen)
Analyst

Araya Tipparuk
(Mrs. Araya Tipparuk)
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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0553/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 14.40
SAMPLING DATE	: 07/04/2023	ANALYTICAL DATE	: 10/04/2023
RECEIVED DATE	: 08/04/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
REPORT DATE	: 19/04/2023	FILE CODE	: 223001_WW_April
SAMPLE CONDITION	: Normal		
LOCATION DESCRIPTION	: W3 = น้ำทิ้งหลังผ่านการบำบัดใน Final Polishing Buffer Tank		

PARAMETER	UNIT	ANALYSIS	ND	STATION
		METHODS	(non-detectable)	W3
Benzene	µg/l	5030 C / 8260 D	< 0.20	ND

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020.

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(Miss Jutarat Jaemruen)

Analyst

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0733/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 09.35
SAMPLING DATE	: 11/05/2023	ANALYTICAL DATE	: 12/05/2023
RECEIVED DATE	: 12/05/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
REPORT DATE	: 18/05/2023	FILE CODE	: 223001_WW_May
SAMPLE CONDITION	: Normal		
LOCATION DESCRIPTION	: W3 = น้ำทิ้งหลังผ่านการบำบัดใน Final Polishing Buffer Tank		

PARAMETER	UNIT	ANALYSIS	ND	STATION
		METHODS	(non-detectable)	W3
Benzene	µg/l	5030 C / 8260 D	< 0.20	ND

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020.

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(Miss Jutarat Jaemruen)

Analyst

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0869/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 10:30
SAMPLING DATE	: 01/06/2023	ANALYTICAL DATE	: 02/06/2023
RECEIVED DATE	: 02/06/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
REPORT DATE	: 09/06/2023	FILE CODE	: 223001_WW_June
SAMPLE CONDITION	: Normal		
LOCATION DESCRIPTION	: W3 = น้ำทิ้งหลังผ่านการบำบัดใน Final Polishing Buffer Tank		

PARAMETER	UNIT	ANALYSIS	ND	STATION
		METHODS	(non-detectable)	W3
Benzene	µg/l	5030 C / 8260 D	< 0.20	ND

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020.

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

Araya Tipparuk

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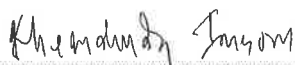
WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Phenol Company Limited (Phenol)	REQUEST SERVICE No.	: 0057/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 13/01/2023	SAMPLING TIME	: 10.55
RECEIVED DATE	: 14/01/2023	ANALYTICAL DATE	: 14-21/01/2023
REPORT DATE	: 23/01/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
SAMPLE CONDITION	: Normal	FILE CODE	: 223001_WW_January

LOCATION DESCRIPTION : W5 = น้ำทิ้งจากพนักงานหลังบำบัดด้วยถังบำบัดน้ำเสียสำเร็จรูปและน้ำทิ้งจากโรงอาหาร
หลังบำบัดด้วยถังบำบัดแบบไร้อากาศและเติมอากาศแบบสำเร็จรูปในบ่อตรวจสอบ

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				W5	
Total Suspended Solids	mg/l	2540 D	< 5	28	≤ 200
Fat Oil & Grease	mg/l	5520 B	< 0.50	1.6	≤ 10
BOD ₅	mg/l	5210 B	< 1.0	47.8	≤ 500

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



(Miss Khemchuda Insorn)

Analyst

REG. NO. ๖-239-ค-5976



(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. ๖-239-ค-5863

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WATER AND WASTEWATER ANALYSIS REPORT

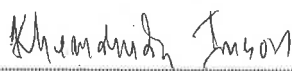
CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0137/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 14.59
SAMPLING DATE	: 02/02/2023	ANALYTICAL DATE	: 03-10/02/2023
RECEIVED DATE	: 03/02/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
REPORT DATE	: 10/02/2023	FILE CODE	: 223001_WW_February
SAMPLE CONDITION	: Normal		

LOCATION DESCRIPTION : W5 = น้ำทิ้งจากพนักงานหลังบำบัดด้วยถังบำบัดน้ำเสียสำเร็จรูปและน้ำทิ้งจากโรงอาหาร

หลังบำบัดด้วยถังบำบัดแบบไร้อากาศและเติมอากาศแบบสำเร็จรูปในบ่อตรวจสอบ

PARAMETER	UNIT	ANALYSIS	ND	STATION	STANDARD ^{1/}
		METHODS	(non-detectable)	W5	
Total Suspended Solids	mg/l	2540 D	< 5	51	≤ 200
Fat Oil & Grease	mg/l	5520 B	< 0.50	0.57	≤ 10
BOD ₅	mg/l	5210 B	< 1.0	62.0	≤ 500

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

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REQUEST SERVICE No. : 0330/66
Branch 18 (Phenol Plant) SAMPLING METHOD : Grab
SAMPLING BY : SECOT Co., Ltd. SAMPLING TIME : 14.47
SAMPLING DATE : 02/03/2023 ANALYTICAL DATE : 03-10/03/2023
RECEIVED DATE : 03/03/2023 SITE OPERATOR : Mr. Watcharakan Pramakhate
REPORT DATE : 13/03/2023 FILE CODE : 223001_WW_March
SAMPLE CONDITION : Normal
LOCATION DESCRIPTION : W5 = น้ำทิ้งจากพนักงานหลังบำบัดด้วยถังบำบัดน้ำเสียสำเร็จรูปและน้ำทิ้งจากโรงอาหาร

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PARAMETER	UNIT	ANALYSIS	ND	STATION	STANDARD ^{1/}
		METHODS	(non-detectable)	W5	
Total Suspended Solids	mg/l	2540 D	< 5	32	≤ 200
Fat Oil & Grease	mg/l	5520 B	< 0.50	2.6	≤ 10
BOD ₅	mg/l	5210 B	< 1.0	53.8	≤ 500

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

(Miss Khemchuda Insorn)

Analyst

REG. NO. ๖-239-ก-5976

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. ๖-239-ก-5863

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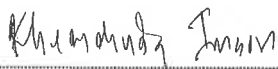
WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0553/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 14.55
SAMPLING DATE	: 07/04/2023	ANALYTICAL DATE	: 08-18/04/2023
RECEIVED DATE	: 08/04/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
REPORT DATE	: 19/04/2023	FILE CODE	: 223001_WW_April
SAMPLE CONDITION	: Normal		

LOCATION DESCRIPTION : W5 = น้ำทิ้งจากพนักงานหลังบำบัดด้วยถังบำบัดน้ำเสียสำเร็จรูปและน้ำทิ้งจากโรงอาหาร
หลังบำบัดด้วยถังบำบัดแบบไร้อากาศและเติมอากาศแบบสำเร็จรูปในบ่อตรวจสอบ

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				W5	
Total Suspended Solids	mg/l	2540 D	< 5	18	≤ 200
Fat Oil & Grease	mg/l	5520 B	< 0.50	0.50	≤ 10
BOD ₅	mg/l	5210 B	< 1.0	29.0	≤ 500

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



(Miss Khemchuda Insorn)

Analyst

REG. NO. ๖-239-ค-5976



(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. ๖-239-ค-5863

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WATER AND WASTEWATER ANALYSIS REPORT

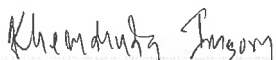
CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0733/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 09.48
SAMPLING DATE	: 11/05/2023	ANALYTICAL DATE	: 12-17/05/2023
RECEIVED DATE	: 12/05/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
REPORT DATE	: 18/05/2023	FILE CODE	: 223001_WW_May
SAMPLE CONDITION	: Normal		

LOCATION DESCRIPTION : W5 = น้ำทิ้งจากพนักงานหลังบำบัดด้วยถังบำบัดน้ำเสียสำเร็จรูปและน้ำทิ้งจากโรงอาหาร

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PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				W5	
Total Suspended Solids	mg/l	2540 D	< 5	31	≤ 200
Fat Oil & Grease	mg/l	5520 B	< 0.50	2.4	≤ 10
BOD ₅	mg/l	5210 B	< 1.0	59.0	≤ 500

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



(Miss Khemchuda Insorn)

Analyst

REG. NO. ๖-239-ก-5976



(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. ๖-239-ก-5863

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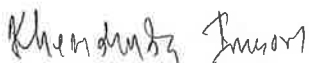
WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0869/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 10:40
SAMPLING DATE	: 01/06/2023	ANALYTICAL DATE	: 02-08/06/2023
RECEIVED DATE	: 02/06/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
REPORT DATE	: 09/06/2023	FILE CODE	: 223001_WW_June
SAMPLE CONDITION	: Normal		

LOCATION DESCRIPTION : W5 = น้ำทิ้งจากพนักงานหลังบำบัดด้วยถังบำบัดน้ำเสียสำเร็จรูปและน้ำทิ้งจากโรงอาหาร
หลังบำบัดด้วยถังบำบัดแบบไร้อากาศและเติมอากาศแบบสำเร็จรูปในบ่อตรวจสอบ

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD "
				W5	
Total Suspended Solids	mg/l	2540 D	< 5	71	≤ 200
Fat Oil & Grease	mg/l	5520 B	< 0.50	4.1	≤ 10
BOD ₅	mg/l	5210 B	< 1.0	45.0	≤ 500

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



(Miss Khemchuda Insorn)

Analyst

REG. NO. ๖-239-ค-5976



(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. ๖-239-ค-5863

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 3. " Assigned value in Environmental Impact Assessment Report (EIA) of PTT Global Chemical Pubic (Phenol Plant), November 2019 (B.E.2562).



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SURFACE WATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0139/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 10.30
SAMPLING DATE	: 02/02/2023	ANALYTICAL DATE	: 04/02/2023
RECEIVED DATE	: 03/02/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
REPORT DATE	: 06/02/2023	FILE CODE	: 223001_SW_February
SAMPLE CONDITION	: Normal		
LOCATION DESCRIPTION	: B1 = ในลำราง ณ จุดปล่อยน้ำทิ้งของนิคมอุตสาหกรรมดับบลิวเอชเอ ตะวันออก (มาบตาพุด)		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION B1	STANDARD
Benzene	µg/l	5030 C / 8260 D	< 0.20	ND	

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3RD ED., 2020.

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

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COASTAL WATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0139/66
	: Branch 18 (Phenol Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 10.42-10.59
SAMPLING DATE	: 02/02/2023	ANALYTICAL DATE	: 04/02/2023
RECEIVED DATE	: 03/02/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
REPORT DATE	: 06/02/2023	FILE CODE	: 223001_CW_February
SAMPLE CONDITION	: Normal		
LOCATION DESCRIPTION	: B2 = ในน้ำทะเล ณ จุดรวมของลำรางสาธารณะกับทะเล		
	: B3 = ในน้ำทะเลห่างจากจุดรวมของลำรางสาธารณะกับทะเล 500 เมตร		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION		STANDARD
				B2	B3	
Benzene	µg/l	5030 C / 8260 D	< 0.20	ND	ND	-

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020.

Jutarat Jaemruen
(Miss Jutarat Jaemruen)
Analyst

Araya Tipparuk
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Technical Management Team

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SURFACE WATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0735/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 10.25
SAMPLING DATE	: 11/05/2023	ANALYTICAL DATE	: 12/05/2023
RECEIVED DATE	: 12/05/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
REPORT DATE	: 17/05/2023	FILE CODE	: 223001_SW_May
SAMPLE CONDITION	: Normal		
LOCATION DESCRIPTION	: B1 = ในลำราง ณ จุดปล่อยน้ำทิ้งของนิคมอุตสาหกรรมคืบพลิวเอชเอ ตะวันออก (มาบตาพุด)		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION B1	STANDARD
Benzene	µg/l	5030 C / 8260 D	< 0.20	ND	-

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020.

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

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COASTAL WATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd.	REQUEST SERVICE No.	: 0735/66
	Branch 18 (Phenol Plant)	SAMPLING METHOD	: Grab
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING TIME	: 10.38, 14.00
SAMPLING DATE	: 11/05/2023	ANALYTICAL DATE	: 12/05/2023
RECEIVED DATE	: 12/05/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
REPORT DATE	: 17/05/2023	FILE CODE	: 223001_CW_May
SAMPLE CONDITION	: Normal		
LOCATION DESCRIPTION	: B2 = ในน้ำทะเล ณ จุดรวมของลำรางสาธารณะกับทะเล		
	B3 = ในน้ำทะเลห่างจากจุดรวมของลำรางสาธารณะกับทะเล 500 เมตร		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION		STANDARD
				B2	B3	
Benzene	µg/l	5030 C / 8260 D	< 0.20	ND	ND	-

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020.

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

Araya Tipparuk

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GROUND WATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd. (Phenol Plant)	REQUEST SERVICE No.	: 0742/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Pneumatic Bladder Pump
SAMPLING DATE	: 09/05/2023	SAMPLING TIME	: 11:24-11:31
RECEIVED DATE	: 12/05/2023	ANALYTICAL DATE	: 15, 17-19/05/2023
REPORT DATE	: 19/05/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
SAMPLE CONDITION	: Normal	FILE CODE	: 223001_GW_May
SAMPLE DESCRIPTION	: UW1 : บริเวณ Truck Loading		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				UW1	
Acetone	mg/l	6200 B	< 0.001	ND	≤ 230
Benzene	mg/l	6200 B	< 0.0002	0.0003	≤ 0.2
Phenol	mg/l	6410 B	< 0.00025	ND	≤ 72

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

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

REG. NO. ว-239-ก-5827

Araya Tipparuk

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Technical Management Team

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GROUND WATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd. (Phenol Plant)	REQUEST SERVICE No. :	0742/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Pneumatic Bladder Pump
SAMPLING DATE	: 09/05/2023	SAMPLING TIME	: 10:47-11:00
RECEIVED DATE	: 12/05/2023	ANALYTICAL DATE	: 15, 17-19/05/2023
REPORT DATE	: 19/05/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
SAMPLE CONDITION	: Normal	FILE CODE	: 223001_GW_May
SAMPLE DESCRIPTION	: UW2 : ทิศเหนือใกล้หอหล่อเย็นสายการผลิตที่ 2		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				UW2	
Acetone	mg/l	6200 B	< 0.001	ND	≤ 230
Benzene	mg/l	6200 B	< 0.0002	ND	≤ 0.2
Phenol	mg/l	6410 B	< 0.00025	ND	≤ 72

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

Jutarat Jaemruen

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GROUND WATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd. (Phenol Plant)	REQUEST SERVICE No.	: 0742/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Pneumatic Bladder Pump
SAMPLING DATE	: 09/05/2023	SAMPLING TIME	: 10:13-10:23
RECEIVED DATE	: 12/05/2023	ANALYTICAL DATE	: 15, 17-19/05/2023
REPORT DATE	: 19/05/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
SAMPLE CONDITION	: Normal	FILE CODE	: 223001_GW_May
SAMPLE DESCRIPTION	: UW3 : ริมรั้วทิศตะวันตกของโครงการ (สายการผลิตที่ 2) ติดถนน จี 9		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ¹⁾
				UW3	
Acetone	mg/l	6200 B	< 0.001	ND	≤ 230
Benzene	mg/l	6200 B	< 0.0002	ND	≤ 0.2
Phenol	mg/l	6410 B	< 0.00025	ND	≤ 72

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

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

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 3. ¹⁾ Notification of the Ministry of Industry, B.E.2559 (2016).



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GROUND WATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd. (Phenol Plant)	REQUEST SERVICE No.	: 0742/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Pneumatic Bladder Pump
SAMPLING DATE	: 11/05/2023	SAMPLING TIME	: 10:36-10:45
RECEIVED DATE	: 12/05/2023	ANALYTICAL DATE	: 15, 17-19/05/2023
REPORT DATE	: 19/05/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
SAMPLE CONDITION	: Normal	FILE CODE	: 223001_GW_May
SAMPLE DESCRIPTION	: UW4 : พื้นที่วางโกล์สถานถังที่ 6 (สายการผลิตที่ 2)		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^U
				UW4	
Acetone	mg/l	6200 B	< 0.001	ND	≤ 230
Benzene	mg/l	6200 B	< 0.0002	ND	≤ 0.2
Phenol	mg/l	6410 B	< 0.00025	ND	≤ 72

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

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

REG. NO. ๖-239-๖-5827

(Mrs. Araya Tipparuk)

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Technical Management Team

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GROUND WATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd. (Phenol Plant)	REQUEST SERVICE No.	: 0742/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Pneumatic Bladder Pump
SAMPLING DATE	: 10/05/2023	SAMPLING TIME	: 10:20-10:28
RECEIVED DATE	: 12/05/2023	ANALYTICAL DATE	: 15, 17-19/05/2023
REPORT DATE	: 19/05/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
SAMPLE CONDITION	: Normal	FILE CODE	: 223001_GW_May
SAMPLE DESCRIPTION	: UW5 : บริเวณส่วนการผลิตฟีนอล (สายการผลิตที่ 2)		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				UW5	
Acetone	mg/l	6200 B	< 0.001	ND	≤ 230
Benzene	mg/l	6200 B	< 0.0002	ND	≤ 0.2
Phenol	mg/l	6410 B	< 0.00025	ND	≤ 72

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

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(Miss Jutarat Jaemruen)

Analyst

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Technical Management Team

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GROUND WATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd. (Phenol Plant)	REQUEST SERVICE No.	: 0742/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Pneumatic Bladder Pump
SAMPLING DATE	: 09/05/2023	SAMPLING TIME	: 14:53-15:04
RECEIVED DATE	: 12/05/2023	ANALYTICAL DATE	: 15, 17-19/05/2023
REPORT DATE	: 19/05/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
SAMPLE CONDITION	: Normal	FILE CODE	: 223001_GW_May
SAMPLE DESCRIPTION	: UW6 : บริเวณลานถังแห่งที่ 1 (สายการผลิตที่ 1)		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				UW6	
Acetone	mg/l	6200 B	< 0.001	ND	≤ 230
Benzene	mg/l	6200 B	< 0.0002	ND	≤ 0.2
Phenol	mg/l	6410 B	< 0.00025	ND	≤ 72

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

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

REG. NO. ๖-239-๖-5827

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GROUND WATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd. (Phenol Plant)	REQUEST SERVICE No.	: 0742/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Pneumatic Bladder Pump
SAMPLING DATE	: 09/05/2023	SAMPLING TIME	: 15:31-15:40
RECEIVED DATE	: 12/05/2023	ANALYTICAL DATE	: 15, 17-19/05/2023
REPORT DATE	: 19/05/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
SAMPLE CONDITION	: Normal	FILE CODE	: 223001_GW_May
SAMPLE DESCRIPTION	: UW7 : บริเวณหอหล่อเย็น (สายการผลิตที่ 1)		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				UW7	
Acetone	mg/l	6200 B	< 0.001	ND	≤ 230
Benzene	mg/l	6200 B	< 0.0002	ND	≤ 0.2
Phenol	mg/l	6410 B	< 0.00025	ND	≤ 72

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

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

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Technical Management Team

REG. NO. ว-239-ท-5863

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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

GROUND WATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd. (Phenol Plant)	REQUEST SERVICE No.	: 0742/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Pneumatic Bladder Pump
SAMPLING DATE	: 10/05/2023	SAMPLING TIME	: 15:37-16:00
RECEIVED DATE	: 12/05/2023	ANALYTICAL DATE	: 15, 17-19/05/2023
REPORT DATE	: 19/05/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
SAMPLE CONDITION	: Normal	FILE CODE	: 223001_GW_May
SAMPLE DESCRIPTION	: UW8 : บริเวณหอเผา		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				UW8	
Acetone	mg/l	6200 B	< 0.001	ND	≤ 230
Benzene	mg/l	6200 B	< 0.0002	ND	≤ 0.2
Phenol	mg/l	6410 B	< 0.00025	ND	≤ 72

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

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

REG. NO. ๖-239-๖-5827

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. ๖-239-๖-5863

- 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 Industry, B.E.2559 (2016).



บริษัท ซีคอต จำกัด
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GROUND WATER ANALYSIS REPORT

CLIENT NAME	: PTT Global Chemical Public Co., Ltd. (Phenol Plant)	REQUEST SERVICE No.	: 0742/66
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Pneumatic Bladder Pump
SAMPLING DATE	: 10/05/2023	SAMPLING TIME	: 10:52-11:10
RECEIVED DATE	: 12/05/2023	ANALYTICAL DATE	: 15, 17-19/05/2023
REPORT DATE	: 19/05/2023	SITE OPERATOR	: Mr. Watcharakan Pramakhate
SAMPLE CONDITION	: Normal	FILE CODE	: 223001_GW_May
SAMPLE DESCRIPTION	: UW9 : บริเวณอาคารเก็บกากของเสีย		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				UW9	
Acetone	mg/l	6200 B	< 0.001	ND	≤ 230
Benzene	mg/l	6200 B	< 0.0002	ND	≤ 0.2
Phenol	mg/l	6410 B	< 0.00025	ND	≤ 72

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

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

REG. NO. ๖-239-๓-5827

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. ๖-239-๓-5863

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ใบรับรองผลการตรวจวัดระดับเสียงทั่วไป



Noise Monitoring Result : Community Noise

MTR-PTTGC18 (Phenol Plant)

Location : Construction Area

Monitor Period : 31 Mar 2023-07 Apr 2023

SLM Model : RION NL-21

Serial No : 00187481

Site Operator : Mr. Phuwadech Kaewjirakulsri

Calibrator Model : RION NC-74

Serial No : 34283648

Calibration Ref dB(A) : 94.0

Certified Date : 13 Jan 2023

SLM Reading / Adjust dB(A) : 94.3/-0.3

Expire Date : 12 Jan 2024

Cal Sheet No.: NC-74-2023-023

Time	Equivalent Sound Pressure Level (dB(A))						
	31 Mar-01 Apr 2023	01-02 Apr 2023	02-03 Apr 2023	03-04 Apr 2023	04-05 Apr 2023	05-06 Apr 2023	06-07 Apr 2023
11:00 - 12:00	55.8	59.7	56.3	62.4	58.1	61.4	55.8
12:00 - 13:00	55.4	55.9	55.9	55.6	57.9	61.0	55.7
13:00 - 14:00	58.2	59.2	55.9	56.0	55.5	56.2	61.8
14:00 - 15:00	57.5	60.4	57.0	62.3	56.1	57.1	69.7
15:00 - 16:00	66.8	61.1	56.1	61.5	56.5	58.3	68.1
16:00 - 17:00	60.5	56.9	57.2	63.0	59.5	58.3	56.6
17:00 - 18:00	59.3	57.0	56.4	56.6	58.6	59.0	56.7
18:00 - 19:00	56.6	56.8	56.3	56.5	64.4	57.8	55.6
19:00 - 20:00	56.0	57.3	56.0	57.5	56.7	56.4	55.7
20:00 - 21:00	55.4	57.4	56.1	61.0	58.6	58.9	55.6
21:00 - 22:00	55.4	57.3	56.1	56.0	55.9	56.5	55.7
22:00 - 23:00	55.5	57.3	56.3	56.2	55.9	55.8	55.9
23:00 - 00:00	56.2	57.3	56.3	56.0	56.2	55.9	55.8
00:00 - 01:00	56.4	58.2	56.2	56.0	56.2	56.0	55.7
01:00 - 02:00	56.2	58.2	56.7	56.0	56.3	55.9	55.6
02:00 - 03:00	55.7	58.0	57.3	56.3	56.2	55.8	55.8
03:00 - 04:00	56.2	58.1	57.1	56.9	56.8	55.8	56.4
04:00 - 05:00	55.8	57.9	57.1	56.9	57.3	56.2	56.9
05:00 - 06:00	55.5	58.0	56.9	57.0	57.2	57.1	56.8
06:00 - 07:00	55.6	57.1	56.8	56.9	57.2	57.2	56.5
07:00 - 08:00	55.9	57.0	56.7	56.7	57.6	57.1	56.3
08:00 - 09:00	57.4	57.6	56.6	56.4	56.8	56.7	58.5
09:00 - 10:00	62.5	69.2	59.6	56.8	57.1	56.1	65.4
10:00 - 11:00	61.4	67.5	65.0	64.1	60.3	58.5	58.7
Leq(24)*	58.7	60.7	57.7	58.9	58.0	57.6	60.9
Ldn	63.1	65.1	63.4	63.6	63.4	63.0	64.2
Lmax **	105.4	85.0	91.6	94.2	100.3	83.3	93.4
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

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

** Maximum Sound Pressure Level between 11:00-11:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Background Noise

MTR-PTTGC18 (Phenol Plant)

Location : Construction Area

Monitor Period : 31 Mar 2023-07 Apr 2023

SLM Model : RION NL-21

Serial No : 00187481

Site Operator : Mr. Phuwadech Kaewjirakulsri

Calibrator Model : RION NC-74

Serial No : 34283648

Calibration Ref dB(A) : 94.0

Certified Date : 13 Jan 2023

SLM Reading / Adjust dB(A) : 94.3/-0.3

Expire Date : 12 Jan 2024

Cal Sheet No.: NC-74-2023-023

Time	L90 (dB(A))						
	31 Mar-01 Apr 2023	01-02 Apr 2023	02-03 Apr 2023	03-04 Apr 2023	04-05 Apr 2023	05-06 Apr 2023	06-07 Apr 2023
11:00 - 12:00	54.7	54.9	55.3	54.9	55.2	55.9	54.8
12:00 - 13:00	54.5	55.0	55.1	54.7	54.9	56.7	54.9
13:00 - 14:00	54.7	55.4	55.1	54.8	54.8	55.1	55.3
14:00 - 15:00	55.0	55.7	55.4	55.1	54.9	56.1	59.1
15:00 - 16:00	55.1	55.6	55.2	56.7	55.0	55.5	58.7
16:00 - 17:00	55.1	55.5	55.3	55.5	55.7	55.5	55.1
17:00 - 18:00	54.9	56.0	55.2	55.3	55.3	55.6	55.1
18:00 - 19:00	55.1	56.0	55.3	55.2	55.6	55.3	55.0
19:00 - 20:00	55.0	56.4	55.4	55.5	55.3	55.2	55.1
20:00 - 21:00	54.7	56.4	55.4	55.6	55.8	55.7	55.0
21:00 - 22:00	54.7	56.3	55.4	55.3	55.3	55.3	55.1
22:00 - 23:00	54.8	56.4	55.6	55.4	55.3	55.3	55.2
23:00 - 00:00	55.2	56.3	55.5	55.4	55.6	55.3	55.2
00:00 - 01:00	55.8	57.4	55.5	55.4	55.5	55.3	55.1
01:00 - 02:00	55.2	57.4	55.6	55.4	55.6	55.2	55.0
02:00 - 03:00	54.9	57.1	56.6	55.5	55.5	55.0	55.1
03:00 - 04:00	55.2	57.2	56.4	56.4	55.8	55.1	55.3
04:00 - 05:00	54.9	56.6	56.5	56.4	56.7	55.3	56.3
05:00 - 06:00	54.7	57.1	55.7	56.4	56.7	56.5	55.8
06:00 - 07:00	54.8	55.9	55.6	56.0	55.8	56.7	55.4
07:00 - 08:00	54.7	55.8	55.4	55.5	56.9	56.5	55.2
08:00 - 09:00	55.0	55.7	55.4	55.3	55.6	55.2	55.3
09:00 - 10:00	57.7	57.6	55.4	55.2	55.5	55.1	56.0
10:00 - 11:00	58.3	56.5	55.7	55.6	55.4	55.2	55.5
L90(avg)*	55.3	56.3	55.6	55.6	55.6	55.6	55.7

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

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Community Noise MTR-PTTGC18 (Phenol Plant)

Location : Nong Feab Community (N1)

Monitor Period : 31 Mar 2023-07 Apr

SLM Model : Cirrus CR161B

Serial No 2023 : G301345

Site Operator : Mr. Phuwadech Kaewjirakulsri

Calibrator Model : Cirrus CR:515

Serial No : 94296

Calibration Ref dB(A) : 94.0

Certified Date : 20 Dec 2022

SLM Reading / Adjust dB(A) : 93.7/0.0

Expire Date : 19 Dec 2023

Cal Sheet No.: CR-515-2023-038

Time	Equivalent Sound Pressure Level (dB(A))						
	31 Mar-01 Apr 2023	01-02 Apr 2023	02-03 Apr 2023	03-04 Apr 2023	04-05 Apr 2023	05-06 Apr 2023	06-07 Apr 2023
18:00 - 19:00	59.0	53.6	56.0	55.1	54.4	57.4	52.9
19:00 - 20:00	55.4	54.2	50.2	52.7	52.2	54.2	51.1
20:00 - 21:00	51.7	51.6	49.6	57.6	49.3	51.7	52.2
21:00 - 22:00	49.7	51.7	50.5	50.4	49.7	51.6	45.3
22:00 - 23:00	48.7	50.4	47.8	49.6	48.7	50.4	48.4
23:00 - 00:00	49.0	46.3	49.0	48.7	47.1	46.3	44.3
00:00 - 01:00	49.4	46.8	49.4	49.6	45.6	49.4	44.7
01:00 - 02:00	48.4	46.2	42.3	45.5	43.8	48.4	42.3
02:00 - 03:00	46.8	46.8	42.3	44.2	42.4	46.8	42.3
03:00 - 04:00	49.0	47.2	45.5	45.5	43.8	47.2	44.0
04:00 - 05:00	50.4	50.4	50.4	50.4	49.9	50.4	48.6
05:00 - 06:00	48.1	56.2	55.8	55.8	57.7	48.1	47.2
06:00 - 07:00	54.4	64.8	64.9	53.7	64.8	54.4	54.4
07:00 - 08:00	55.8	55.8	64.0	55.8	64.2	55.3	55.3
08:00 - 09:00	55.5	53.9	52.8	55.3	53.9	53.5	53.5
09:00 - 10:00	52.6	50.6	53.2	51.7	50.6	52.6	52.6
10:00 - 11:00	51.4	51.4	52.3	51.3	52.5	51.7	61.3
11:00 - 12:00	53.0	52.6	51.6	53.1	55.1	54.0	53.2
12:00 - 13:00	53.0	50.2	55.1	55.0	54.8	55.0	53.9
13:00 - 14:00	52.2	52.4	51.9	52.1	53.1	52.1	52.3
14:00 - 15:00	53.1	54.9	51.2	53.5	52.6	51.2	52.8
15:00 - 16:00	52.9	51.5	52.6	52.4	55.0	51.1	52.6
16:00 - 17:00	55.0	54.4	55.9	55.7	55.1	52.6	54.8
17:00 - 18:00	54.3	53.2	54.3	64.9	55.1	53.7	55.9
Leq(24)*	53.1	54.6	55.9	55.1	56.1	52.5	53.1
Ldn	57.3	62.4	62.6	58.6	62.7	57.0	56.3
Lmax **	81.8	81.6	86.3	86.5	81.2	83.3	80.7
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

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

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

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Background Noise MTR-PTTGC18 (Phenol Plant)

Location : Nong Feab Community (N1)

Monitor Period : 31 Mar 2023-07 Apr 2023

SLM Model : Cirrus CR161B

Serial No : G301345

Site Operator : Mr. Phuwadech Kaewjirakulsri

Calibrator Model : Cirrus CR:515

Serial No : 94296

Calibration Ref dB(A) : 94.0

Certified Date : 20 Dec 2022

SLM Reading / Adjust dB(A) : 93.7/0.0

Expire Date : 19 Dec 2023

Cal Sheet No.: CR-515-2023-038

Time	L90 (dB(A))						
	31 Mar-01 Apr 2023	01-02 Apr 2023	02-03 Apr 2023	03-04 Apr 2023	04-05 Apr 2023	05-06 Apr 2023	06-07 Apr 2023
18:00 - 19:00	50.5	46.4	45.9	48.0	48.7	46.4	45.8
19:00 - 20:00	48.0	45.5	45.0	46.3	46.6	47.6	43.0
20:00 - 21:00	45.3	44.8	43.3	46.5	44.3	45.3	41.6
21:00 - 22:00	42.0	43.5	43.4	45.3	43.6	43.0	41.8
22:00 - 23:00	42.0	43.6	42.5	44.5	43.5	43.6	42.5
23:00 - 00:00	42.1	41.4	42.1	44.4	41.2	41.4	41.2
00:00 - 01:00	42.4	41.1	42.4	44.4	40.6	42.4	40.5
01:00 - 02:00	41.7	41.2	39.6	41.2	39.9	41.7	39.6
02:00 - 03:00	41.4	40.7	40.1	40.5	39.5	40.7	40.1
03:00 - 04:00	41.7	40.8	40.4	40.4	40.0	40.8	40.0
04:00 - 05:00	41.2	41.2	41.2	41.2	40.2	41.2	40.3
05:00 - 06:00	42.4	42.4	42.5	42.5	42.0	42.4	42.2
06:00 - 07:00	46.3	57.3	57.3	46.8	57.3	46.3	46.3
07:00 - 08:00	48.6	48.6	54.9	48.6	55.4	48.1	48.1
08:00 - 09:00	46.8	46.8	45.9	47.4	46.8	46.2	46.2
09:00 - 10:00	44.2	44.8	46.2	44.7	44.8	44.2	44.2
10:00 - 11:00	46.0	46.0	45.3	46.0	45.7	45.8	47.2
11:00 - 12:00	45.9	44.6	44.4	46.7	47.7	46.9	46.0
12:00 - 13:00	46.2	44.3	46.2	46.4	47.2	49.1	46.6
13:00 - 14:00	46.1	44.3	45.6	46.9	45.8	47.2	46.0
14:00 - 15:00	45.3	45.2	45.5	45.8	45.2	46.1	45.5
15:00 - 16:00	45.3	45.3	45.3	46.1	46.3	45.0	45.6
16:00 - 17:00	47.7	46.9	48.4	47.6	47.6	45.6	47.3
17:00 - 18:00	47.6	47.7	48.2	53.2	48.0	47.3	48.7
L90(avg)*	45.7	47.1	48.0	46.5	48.3	45.4	44.9

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

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Community Noise

MTR-PTTGC18 (Phenol Plant)

Location : Map Chalute Community (N2)
SLM Model : Cirrus CR161B
Site Operator : Mr. Phuwadech Kaewjirakulsri

Monitor Period : 31 Mar 2023-07 Apr 2023
Serial No : G301354

Calibrator Model : Cirrus CR:515
Calibration Ref dB(A) : 94.0
SLM Reading / Adjust dB(A) : 93.7/0.0
Cal Sheet No.: CR-515-2023-038

Serial No : 94296
Certified Date : 20 Dec 2022
Expire Date : 19 Dec 2023

Time	Equivalent Sound Pressure Level (dB(A))						
	31 Mar-01 Apr 2023	01-02 Apr 2023	02-03 Apr 2023	03-04 Apr 2023	04-05 Apr 2023	05-06 Apr 2023	06-07 Apr 2023
16:00 - 17:00	55.9	57.3	48.4	57.7	53.8	54.4	52.1
17:00 - 18:00	57.5	54.9	50.3	55.5	51.9	52.5	60.9
18:00 - 19:00	56.0	53.4	46.7	57.2	50.0	55.6	50.2
19:00 - 20:00	52.0	52.8	48.2	52.9	53.8	53.2	48.1
20:00 - 21:00	51.4	51.4	47.4	50.6	49.5	50.5	51.3
21:00 - 22:00	50.0	49.0	51.0	54.3	48.7	49.0	49.8
22:00 - 23:00	53.6	48.4	49.0	50.2	48.3	48.4	49.6
23:00 - 00:00	48.5	49.3	48.6	58.0	50.3	49.3	53.5
00:00 - 01:00	51.0	51.0	49.4	51.1	48.9	49.7	51.2
01:00 - 02:00	46.6	46.6	50.8	51.0	54.2	48.3	46.7
02:00 - 03:00	46.1	46.1	46.6	52.2	48.8	47.1	45.9
03:00 - 04:00	61.1	48.2	47.2	51.8	48.3	47.4	61.1
04:00 - 05:00	47.8	47.5	47.4	51.5	49.4	47.2	47.4
05:00 - 06:00	50.6	51.1	48.0	52.8	49.1	48.1	49.1
06:00 - 07:00	56.1	56.1	49.6	56.4	51.4	49.6	55.7
07:00 - 08:00	56.8	56.8	48.3	56.4	49.1	48.2	55.8
08:00 - 09:00	56.3	54.4	49.3	59.4	48.6	49.3	57.1
09:00 - 10:00	56.4	54.5	51.2	55.9	49.2	51.2	56.2
10:00 - 11:00	56.0	54.1	46.7	54.8	51.1	46.7	55.8
11:00 - 12:00	56.5	54.9	45.9	53.2	46.5	45.9	53.2
12:00 - 13:00	55.8	58.5	48.1	53.9	46.1	48.1	55.4
13:00 - 14:00	56.7	57.6	47.2	55.7	49.1	54.5	56.8
14:00 - 15:00	53.3	54.7	56.4	56.8	56.2	57.1	54.7
15:00 - 16:00	54.0	53.3	56.5	56.8	55.8	55.5	54.2
Leq(24)*	55.0	53.9	50.2	55.2	51.2	51.6	54.9
Ldn	60.8	58.0	55.5	60.4	56.9	55.8	60.7
Lmax **	83.0	82.3	79.7	80.1	77.1	80.1	83.0
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

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

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

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Background Noise

MTR-PTTGC18 (Phenol Plant)

Location : Map Chalute Community (N2)

Monitor Period : 31 Mar 2023-07 Apr 2023

SLM Model : Cirrus CR161B

Serial No : G301354

Site Operator : Mr. Phuwadech Kaewjirakulsri

Calibrator Model : Cirrus CR:515

Serial No : 94296

Calibration Ref dB(A) : 94.0

Certified Date : 20 Dec 2022

SLM Reading / Adjust dB(A) : 93.7/0.0

Expire Date : 19 Dec 2023

Cal Sheet No.: CR-515-2023-038

Time	L90 (dB(A))						
	31 Mar-01 Apr 2023	01-02 Apr 2023	02-03 Apr 2023	03-04 Apr 2023	04-05 Apr 2023	05-06 Apr 2023	06-07 Apr 2023
16:00 - 17:00	49.7	48.3	44.9	48.3	46.7	47.8	45.6
17:00 - 18:00	47.6	47.9	44.3	48.4	45.6	47.2	45.0
18:00 - 19:00	46.8	47.4	44.5	47.4	46.5	46.7	45.0
19:00 - 20:00	47.2	47.0	44.4	46.6	45.2	45.5	45.3
20:00 - 21:00	46.7	46.7	44.4	46.2	45.1	45.0	46.8
21:00 - 22:00	46.2	45.5	44.9	46.7	45.8	45.5	46.4
22:00 - 23:00	46.1	45.6	45.6	46.8	45.4	45.6	46.1
23:00 - 00:00	46.2	45.3	45.6	49.5	45.7	45.3	46.3
00:00 - 01:00	44.9	44.9	45.4	49.3	46.3	46.0	45.5
01:00 - 02:00	44.9	44.9	44.9	49.3	45.1	45.7	44.8
02:00 - 03:00	44.9	44.9	44.9	49.5	45.2	45.0	44.8
03:00 - 04:00	44.8	45.6	44.9	49.2	45.8	44.9	44.8
04:00 - 05:00	44.9	44.7	45.5	48.5	45.4	45.5	44.9
05:00 - 06:00	45.4	44.2	44.9	48.7	45.9	44.9	45.3
06:00 - 07:00	49.3	49.3	45.6	50.6	46.8	45.6	46.4
07:00 - 08:00	49.1	49.1	45.8	49.6	45.5	45.7	49.1
08:00 - 09:00	48.8	46.8	45.4	50.3	45.8	45.4	48.8
09:00 - 10:00	49.0	47.1	45.4	49.2	45.4	45.3	48.9
10:00 - 11:00	48.6	46.6	44.8	48.3	45.2	44.8	48.7
11:00 - 12:00	49.2	47.6	44.8	48.8	44.8	44.9	47.9
12:00 - 13:00	48.2	48.4	45.2	48.3	44.9	45.2	47.6
13:00 - 14:00	48.7	47.4	45.0	49.2	45.4	45.6	48.8
14:00 - 15:00	47.9	46.4	45.1	47.2	49.1	47.4	47.6
15:00 - 16:00	47.9	45.4	46.8	47.2	49.3	47.5	47.0
L90(avg)*	47.5	46.8	45.2	48.6	46.1	45.8	46.8

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

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Community Noise

MTR-PTTGC18 (Phenol Plant)

Location : Map Chalute Chakklang Community (N3)

Monitor Period : 31 Mar 2023-07 Apr 2023

SLM Model : RION NL-21

Serial No : 00187511

Site Operator : Mr. Phuwadech Kaewjirakulsri

Calibrator Model : RION NC-74

Serial No : 34283648

Calibration Ref dB(A) : 94.0

Certified Date : 13 Jan 2023

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

Expire Date : 12 Jan 2024

Cal Sheet No.: NC-74-2023-024

Time	Equivalent Sound Pressure Level (dB(A))						
	31 Mar-01 Apr 2023	01-02 Apr 2023	02-03 Apr 2023	03-04 Apr 2023	04-05 Apr 2023	05-06 Apr 2023	06-07 Apr 2023
18:00 - 19:00	64.6	60.6	59.9	63.1	58.3	62.6	51.2
19:00 - 20:00	69.4	52.6	65.5	58.3	57.9	63.7	49.9
20:00 - 21:00	67.1	62.7	67.8	58.3	59.1	66.6	61.0
21:00 - 22:00	68.5	65.0	62.6	57.0	58.0	53.1	61.3
22:00 - 23:00	62.6	64.0	55.1	56.1	67.7	66.7	68.4
23:00 - 00:00	63.6	59.4	55.1	56.0	66.9	51.7	59.5
00:00 - 01:00	58.1	71.5	54.8	58.0	62.9	48.5	50.6
01:00 - 02:00	67.2	60.8	57.4	58.1	50.0	48.0	51.6
02:00 - 03:00	63.0	60.0	58.0	52.4	75.9	48.1	50.5
03:00 - 04:00	60.0	66.4	63.8	57.2	69.3	47.7	48.8
04:00 - 05:00	63.6	55.0	53.2	51.6	66.1	48.1	47.7
05:00 - 06:00	66.0	53.9	52.9	59.2	72.0	47.9	47.2
06:00 - 07:00	59.3	57.2	57.7	67.5	51.2	48.2	47.2
07:00 - 08:00	68.7	58.8	55.8	60.2	51.2	48.7	47.1
08:00 - 09:00	61.9	60.0	59.7	59.3	55.4	54.6	47.5
09:00 - 10:00	60.5	57.7	59.7	66.0	56.9	51.3	47.5
10:00 - 11:00	66.8	61.1	62.2	57.7	52.6	54.0	52.7
11:00 - 12:00	60.0	60.2	61.7	52.3	58.6	53.4	61.1
12:00 - 13:00	59.3	50.5	56.4	64.3	67.8	51.2	49.1
13:00 - 14:00	63.1	55.2	59.8	60.0	61.7	51.2	69.2
14:00 - 15:00	54.6	57.0	59.2	56.2	52.7	51.5	56.3
15:00 - 16:00	58.4	62.4	60.8	51.8	50.1	50.5	55.0
16:00 - 17:00	53.1	61.2	63.7	54.6	49.1	50.7	55.0
17:00 - 18:00	57.6	56.8	57.9	60.4	48.6	51.4	56.9
Leq(24)*	64.3	62.3	60.9	60.3	65.9	58.2	59.8
Ldn	70.1	70.5	65.2	66.6	75.3	64.2	66.1
Lmax **	95.5	98.7	99.2	95.8	98.6	98.0	96.2
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

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

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

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Background Noise

MTR-PTTGC18 (Phenol Plant)

Location : Map Chalute Chakklang Community (N3)

Monitor Period : 31 Mar 2023-07 Apr 2023

SLM Model : RION NL-21

Serial No : 00187511

Site Operator : Mr. Phuwarech Kaewjirakulsri

Calibrator Model : RION NC-74

Serial No : 34283648

Calibration Ref dB(A) : 94.0

Certified Date : 13 Jan 2023

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

Expire Date : 12 Jan 2024

Cal Sheet No.: NC-74-2023-024

Time	L90 (dB(A))						
	31 Mar-01 Apr 2023	01-02 Apr 2023	02-03 Apr 2023	03-04 Apr 2023	04-05 Apr 2023	05-06 Apr 2023	06-07 Apr 2023
18:00 - 19:00	57.4	48.7	46.9	45.8	52.8	46.6	47.3
19:00 - 20:00	55.6	48.8	49.0	47.6	50.8	45.9	47.1
20:00 - 21:00	54.1	48.6	51.5	48.3	49.5	45.4	47.0
21:00 - 22:00	53.9	48.9	47.7	47.9	47.3	45.8	47.1
22:00 - 23:00	54.1	46.8	45.7	49.8	45.8	49.7	46.9
23:00 - 00:00	56.1	46.8	46.5	48.8	44.4	47.9	47.3
00:00 - 01:00	54.8	47.6	52.3	52.6	48.9	47.2	47.3
01:00 - 02:00	54.9	46.8	44.8	50.7	47.8	46.8	48.0
02:00 - 03:00	54.5	47.4	44.9	46.7	44.8	47.0	48.3
03:00 - 04:00	53.2	47.5	43.5	46.0	45.0	46.7	46.9
04:00 - 05:00	53.6	46.3	44.1	44.5	48.3	46.8	46.7
05:00 - 06:00	53.8	45.5	44.6	45.0	48.5	46.5	46.5
06:00 - 07:00	54.4	53.9	44.8	48.0	48.9	46.7	46.0
07:00 - 08:00	55.2	45.9	44.8	48.1	49.2	47.3	46.1
08:00 - 09:00	53.8	46.7	44.4	47.5	49.1	48.9	46.1
09:00 - 10:00	54.9	47.9	45.1	48.2	50.7	48.9	45.9
10:00 - 11:00	51.7	47.8	46.3	46.5	49.9	49.9	46.1
11:00 - 12:00	51.4	47.9	45.1	47.2	49.5	50.1	46.5
12:00 - 13:00	51.2	47.2	44.6	47.0	49.0	47.7	46.7
13:00 - 14:00	51.7	46.5	44.6	53.0	49.1	47.2	49.1
14:00 - 15:00	51.4	46.6	45.9	48.2	49.3	48.4	52.0
15:00 - 16:00	51.1	47.4	42.9	48.3	47.4	49.0	45.8
16:00 - 17:00	50.4	47.6	45.4	48.7	46.9	48.8	48.1
17:00 - 18:00	49.4	47.6	45.7	49.8	46.8	48.1	48.3
L90(avg)*	53.9	48.0	46.6	48.6	48.8	47.8	47.5

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

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Community Noise MTR-PTTGC18 (Phenol Plant)

Location : South Fence of Project Site (N4)

Monitor Period : 31 Mar 2023-07 Apr 2023

SLM Model : RION NL-21

Serial No : 00521703

Site Operator : Mr. Phuwadech Kaewjirakulsri

Calibrator Model : RION NC-74

Serial No : 34283648

Calibration Ref dB(A) : 94.0

Certified Date : 13 Jan 2023

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

Expire Date : 12 Jan 2024

Cal Sheet No.: NC-74-2023-024

Time	Equivalent Sound Pressure Level (dB(A))						
	31 Mar-01 Apr 2023	01-02 Apr 2023	02-03 Apr 2023	03-04 Apr 2023	04-05 Apr 2023	05-06 Apr 2023	06-07 Apr 2023
11:00 - 12:00	68.9	67.8	69.5	68.0	69.3	69.5	69.3
12:00 - 13:00	68.9	67.8	69.5	68.0	69.1	69.6	69.4
13:00 - 14:00	69.0	67.4	69.5	67.9	69.2	69.1	68.0
14:00 - 15:00	69.0	67.9	69.4	68.0	69.0	68.9	68.0
15:00 - 16:00	69.2	68.3	69.5	68.1	69.0	69.0	69.5
16:00 - 17:00	69.1	68.5	69.6	68.0	69.1	69.1	69.4
17:00 - 18:00	69.3	68.6	69.7	68.2	69.2	69.2	68.1
18:00 - 19:00	69.6	69.2	70.0	68.0	69.4	69.4	68.0
19:00 - 20:00	69.6	69.8	69.9	68.4	69.5	69.5	68.2
20:00 - 21:00	69.8	69.8	69.5	69.4	69.5	69.7	69.5
21:00 - 22:00	69.8	70.0	69.7	69.2	69.4	69.5	69.5
22:00 - 23:00	69.8	70.1	69.5	69.6	69.5	69.6	69.4
23:00 - 00:00	69.8	70.2	69.6	69.5	69.7	69.5	69.8
00:00 - 01:00	69.6	70.3	69.6	69.7	69.9	69.5	69.8
01:00 - 02:00	69.8	70.2	69.6	70.0	69.8	69.8	69.9
02:00 - 03:00	69.9	70.1	69.8	70.1	70.0	70.4	69.8
03:00 - 04:00	70.0	70.2	69.9	70.0	70.2	70.1	70.1
04:00 - 05:00	69.7	70.3	69.8	70.0	70.3	70.1	70.2
05:00 - 06:00	69.5	70.2	69.8	70.0	70.3	70.3	69.9
06:00 - 07:00	69.2	70.1	69.9	70.1	70.3	70.4	69.8
07:00 - 08:00	69.0	70.0	69.3	69.7	70.3	70.2	69.8
08:00 - 09:00	69.0	69.8	68.8	69.0	70.3	70.1	69.9
09:00 - 10:00	69.2	69.7	68.6	69.0	70.0	69.9	69.3
10:00 - 11:00	67.8	69.4	68.3	69.2	69.7	69.7	69.0
Leq(24)*	69.4	69.5	69.5	69.1	69.7	69.7	69.4
Ldn	76.0	76.5	76.1	76.1	76.3	76.3	76.2
Lmax **	86.9	77.9	76.8	83.0	85.5	91.1	83.0
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

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

** Maximum Sound Pressure Level between 11:00-11:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Background Noise MTR-PTTGC18 (Phenol Plant)

Location : South Fence of Project Site (N4)

Monitor Period : 31 Mar 2023-07 Apr 2023

SLM Model : RION NL-21

Serial No : 00521703

Site Operator : Mr. Phuwadech Kaewjirakulsri

Calibrator Model : RION NC-74

Serial No : 34283648

Calibration Ref dB(A) : 94.0

Certified Date : 13 Jan 2023

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

Expire Date : 12 Jan 2024

Cal Sheet No.: NC-74-2023-024

Time	L90 (dB(A))						
	31 Mar-01 Apr 2023	01-02 Apr 2023	02-03 Apr 2023	03-04 Apr 2023	04-05 Apr 2023	05-06 Apr 2023	06-07 Apr 2023
11:00 - 12:00	68.2	67.1	68.9	67.2	68.6	68.9	68.7
12:00 - 13:00	68.2	67.0	68.8	67.0	68.4	68.7	68.6
13:00 - 14:00	68.2	66.7	68.8	67.1	68.5	68.4	67.2
14:00 - 15:00	68.2	67.1	68.8	67.2	68.3	68.3	67.0
15:00 - 16:00	68.4	67.5	68.9	67.3	68.3	68.2	68.8
16:00 - 17:00	68.5	67.9	68.9	67.3	68.3	68.3	68.8
17:00 - 18:00	68.7	68.0	69.1	67.5	68.5	68.5	67.3
18:00 - 19:00	68.9	68.3	69.4	67.4	68.7	68.7	67.3
19:00 - 20:00	69.0	69.2	69.3	67.6	68.9	69.0	67.5
20:00 - 21:00	69.2	69.3	69.0	68.8	68.9	69.2	68.9
21:00 - 22:00	69.3	69.4	69.2	68.8	68.8	69.0	68.9
22:00 - 23:00	69.3	69.6	69.0	69.0	69.0	69.0	68.8
23:00 - 00:00	69.2	69.6	69.1	68.9	69.2	69.0	69.2
00:00 - 01:00	69.1	69.6	69.1	69.2	69.3	69.0	69.3
01:00 - 02:00	69.3	69.6	69.1	69.4	69.3	69.3	69.3
02:00 - 03:00	69.3	69.6	69.3	69.5	69.4	69.5	69.3
03:00 - 04:00	69.4	69.7	69.3	69.5	69.7	69.6	69.6
04:00 - 05:00	69.1	69.7	69.3	69.4	69.7	69.6	69.6
05:00 - 06:00	68.9	69.7	69.2	69.4	69.7	69.7	69.3
06:00 - 07:00	68.5	69.5	69.3	69.5	69.7	69.8	69.3
07:00 - 08:00	67.9	69.4	68.4	68.0	69.7	69.6	69.2
08:00 - 09:00	68.5	69.2	68.2	67.9	69.7	69.6	69.3
09:00 - 10:00	68.5	69.1	67.9	68.5	69.4	69.3	68.4
10:00 - 11:00	67.1	68.7	67.6	68.5	69.1	69.1	67.9
L90(avg)*	68.7	68.9	68.9	68.4	69.1	69.1	68.7

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

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Community Noise

MTR-PTTGC18 (Phenol Plant)

Location : West Fence of Project Site (N5)

Monitor Period : 31 Mar 2023-07 Apr 2023

SLM Model : RION NL-21

Serial No : 00487734

Site Operator : Mr. Phuwadech Kaewjirakulsri

Calibrator Model : RION NC-74

Serial No : 34283648

Calibration Ref dB(A) : 94.0

Certified Date : 13 Jan 2023

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


Expire Date : 12 Jan 2024


Cal Sheet No.: NC-74-2023-024

Time	Equivalent Sound Pressure Level (dB(A))						
	31 Mar-01 Apr 2023	01-02 Apr 2023	02-03 Apr 2023	03-04 Apr 2023	04-05 Apr 2023	05-06 Apr 2023	06-07 Apr 2023
11:00 - 12:00	61.2	59.9	59.9	59.9	56.1	58.5	60.8
12:00 - 13:00	64.7	59.7	60.2	60.1	61.3	60.5	60.4
13:00 - 14:00	63.6	59.6	59.9	57.6	60.7	60.6	60.5
14:00 - 15:00	61.8	59.6	61.8	54.6	60.4	60.3	60.3
15:00 - 16:00	62.7	60.0	62.7	55.1	60.3	60.4	60.4
16:00 - 17:00	63.9	60.6	63.9	55.3	60.5	59.8	60.5
17:00 - 18:00	63.2	60.9	63.2	57.4	61.1	60.3	61.1
18:00 - 19:00	61.5	70.9	60.4	58.6	62.8	63.5	61.3
19:00 - 20:00	62.3	60.4	60.2	57.5	61.3	61.1	60.4
20:00 - 21:00	60.8	60.2	60.0	57.8	61.5	61.3	60.2
21:00 - 22:00	60.4	60.0	60.8	54.7	60.9	60.9	60.0
22:00 - 23:00	61.0	59.9	60.4	53.7	60.2	60.7	59.9
23:00 - 00:00	60.4	60.1	60.1	50.6	60.2	60.6	60.6
00:00 - 01:00	59.8	60.0	59.9	53.1	60.3	60.4	59.8
01:00 - 02:00	59.7	60.0	60.0	53.1	60.2	60.6	61.2
02:00 - 03:00	59.6	59.7	60.0	54.0	59.9	60.4	60.4
03:00 - 04:00	59.8	59.9	60.1	53.0	60.0	60.0	60.0
04:00 - 05:00	60.0	60.1	59.8	52.4	60.0	60.1	60.1
05:00 - 06:00	60.5	60.5	60.0	52.9	60.2	60.3	60.2
06:00 - 07:00	60.8	60.6	60.5	52.8	60.9	61.2	60.9
07:00 - 08:00	60.9	60.8	60.8	55.3	60.8	60.8	60.6
08:00 - 09:00	60.0	60.1	60.1	58.5	61.5	60.8	60.8
09:00 - 10:00	59.9	59.8	59.8	57.9	60.5	58.5	60.1
10:00 - 11:00	60.9	60.1	59.9	55.8	60.0	59.9	60.0
Leq(24)*	61.5	61.8	60.8	56.2	60.6	60.6	60.5
Ldn	66.9	66.9	66.7	60.3	66.7	66.9	66.8
Lmax **	88.2	81.5	84.8	89.0	87.3	87.2	80.7
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

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

** Maximum Sound Pressure Level between 11:00-11:00


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Background Noise MTR-PTTGC18 (Phenol Plant)

Location : West Fence of Project Site (N5)

Monitor Period : 31 Mar 2023-07 Apr 2023

SLM Model : RION NL-21

Serial No : 00487734

Site Operator : Mr. Phuwadech Kaewjirakulsri

Calibrator Model : RION NC-74

Serial No : 34283648

Calibration Ref dB(A) : 94.0

Certified Date : 13 Jan 2023

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

Expire Date : 12 Jan 2024

Cal Sheet No.: NC-74-2023-024

Time	L90 (dB(A))						
	31 Mar-01 Apr 2023	01-02 Apr 2023	02-03 Apr 2023	03-04 Apr 2023	04-05 Apr 2023	05-06 Apr 2023	06-07 Apr 2023
11:00 - 12:00	59.7	59.0	59.4	59.0	49.5	52.4	59.6
12:00 - 13:00	59.9	59.0	59.4	59.4	59.9	59.5	59.7
13:00 - 14:00	60.0	59.0	59.3	51.0	59.8	59.5	59.6
14:00 - 15:00	59.9	58.8	59.9	48.8	59.5	59.2	59.2
15:00 - 16:00	60.1	59.2	60.1	48.5	59.4	59.0	59.0
16:00 - 17:00	63.0	59.5	63.0	49.9	59.6	59.0	59.6
17:00 - 18:00	60.1	59.6	60.1	50.6	59.9	59.2	59.9
18:00 - 19:00	60.2	60.0	59.7	51.2	59.9	59.5	60.0
19:00 - 20:00	59.8	59.7	59.6	51.1	60.0	59.7	59.7
20:00 - 21:00	59.7	59.6	59.7	50.9	60.3	60.2	59.6
21:00 - 22:00	59.5	59.7	59.7	50.2	59.9	60.1	59.7
22:00 - 23:00	59.6	59.6	59.5	49.6	59.6	59.9	59.6
23:00 - 00:00	59.5	59.7	59.7	48.1	59.6	59.9	59.9
00:00 - 01:00	59.4	59.7	59.6	48.8	59.6	59.9	59.0
01:00 - 02:00	59.3	59.5	59.5	50.4	59.7	59.9	60.0
02:00 - 03:00	59.2	59.4	59.7	52.3	59.6	59.7	59.7
03:00 - 04:00	59.5	59.5	59.7	49.8	59.6	59.6	59.6
04:00 - 05:00	59.6	59.7	59.5	49.7	59.6	59.7	59.7
05:00 - 06:00	59.8	59.9	59.6	50.0	59.8	59.8	59.8
06:00 - 07:00	59.6	59.8	59.8	50.6	60.0	60.0	60.0
07:00 - 08:00	59.5	59.6	59.6	51.6	59.9	59.6	59.8
08:00 - 09:00	59.3	59.4	59.4	52.4	59.9	59.6	59.6
09:00 - 10:00	59.3	59.3	59.3	50.2	59.5	52.4	59.4
10:00 - 11:00	59.2	59.4	59.3	48.9	59.3	59.3	59.3
L90(avg)*	59.9	59.5	59.8	52.3	59.6	59.3	59.6

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

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team

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.	: 0262/66
For	: PTT Global Chemical Public Co., Ltd. (Phenol Plant)	Sampling Date	: 21/02/2023
Address	: 9 Soi G9 WHA Eastern Industrial Estate (Map Ta Phut), Pakomsongkrohraj Rd., Map Ta Phut, Muang, Rayong 21150	Received Date	: 22/02/2023
		Test Date	: 22/02/2023, 01/03/2023
		Report Date	: 03/03/2023
Tel/Fax	: 66(0) 38-643-8000/66(0) 38-643-3809		

SAMPLE DESCRIPTION / SAMPLING INFORMATION

Sample Designated As	: Workplace Air	Sampling Method	: Sorbent Adsorption/ Sampling Bag
Sampling By	: SECOT Co., Ltd.	Sample Condition	: Normal

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND	RESULT	STANDARD
				ppm	ppm	ppm
บริเวณส่วนการผลิตฟีนอล สายการผลิตที่ 1 (P1)	21/02/2023 09:10-13:10	Phenol	NIOSH 2546/GC FID	< 0.01	ND	5
บริเวณส่วนการผลิตฟีนอล สายการผลิตที่ 2 (P2)	21/02/2023 09:00-13:00	Phenol	NIOSH 2546/GC FID	< 0.01	ND	5
บริเวณลานถังเก็บฟีนอล (P3)	21/02/2023 09:18-13:18	Phenol	NIOSH 2546/GC FID	< 0.01	ND	5
บริเวณ Truck Loading (P8)	21/02/2023 09:40-09:55	NMHC	Flame Ionization detection/ NMHC Analyzer	< 0.05	0.65	-

Analyst By : Sudaporn Soonthorn
(Miss Sudaporn Soonthorn)

Approved By : Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)
Technical Management Team

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3. Notification of the Department of Labour Protection and Welfare, B.E.2560 (2017).

4. ND = non-detectable.

5. - No Standard.



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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.	: 0262/66
For	: PTT Global Chemical Public Co., Ltd. (Phenol Plant)	Sampling Date	: 21/02/2023
Address	: 9 Soi G9 WHA Eastern Industrial Estate (Map Ta Phut), Pakomsongkrohraj Rd., Map Ta Phut, Muang, Rayong 21150	Received Date	: 22/02/2023
		Test Date	: 24/02/2023
Tel/Fax	: 66(0) 38-643-8000/66(0) 38-643-3809	Report Date	: 03/03/2023

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND ppm	RESULT ppm	STANDARD ppm
บริเวณส่วนการผลิตฟีนอล สายการผลิตที่ 1 (P1)	21/02/2023 09:10-13:10	Acetone	modified NIOSH 1300/GC MS	< 0.03	ND	1,000
บริเวณส่วนการผลิตฟีนอล สายการผลิตที่ 2 (P2)	21/02/2023 09:00-13:00	Acetone	modified NIOSH 1300/GC MS	< 0.03	ND	1,000
บริเวณถังเก็บอะซิโตน (P7)	21/02/2023 09:28-13:28	Acetone	modified NIOSH 1300/GC MS	< 0.03	1.86	1,000

Analyst By: Jutarat Jaemruen
(Miss Jutarat Jaemruen)

Approved By: Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)
Technical Management Team

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ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 0262/66
For	: PTT Global Chemical Public Co., Ltd. (Phenol Plant)	Sampling Date	: 21/02/2023
Address	: 9 Soi G9 WHA Eastern Industrial Estate (Map Ta Phut), Pakornsongkrohraj Rd., Map Ta Phut, Muang, Rayong 21150	Received Date	: 22/02/2023
		Test Date	: 01/03/2023
Tel/Fax	: 66(0) 38-643-8000/66(0) 38-643-3809	Report Date	: 03/03/2023

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND ppm	RESULT ppm	STANDARD ppm
บริเวณส่วนการผลิตคิวมิน	21/02/2023	Benzene	NIOSH 1501/GC FID	< 0.02	0.18	1
สายการผลิตที่ 1 (P4)	09:20-13:20	Cumene	NIOSH 1501/GC FID	< 0.01	ND	50
บริเวณส่วนการผลิตคิวมิน	21/02/2023	Benzene	NIOSH 1501/GC FID	< 0.02	ND	1
สายการผลิตที่ 2 (P5)	09:12-13:12	Cumene	NIOSH 1501/GC FID	< 0.01	ND	50
บริเวณลานถังเก็บเบนซีน (P6)	21/02/2023 09:32-13:32	Benzene	NIOSH 1501/GC FID	< 0.02	0.15	1
บริเวณถังเก็บคิวมิน (Cumene Storage Tank) (P9)	21/02/2023 09:36-13:36	Cumene	NIOSH 1501/GC FID	< 0.01	0.19	50
บริเวณถังเก็บคิวมิน (Cumene Rundown Tank) (P10)	21/02/2023 09:31-13:31	Cumene	NIOSH 1501/GC FID	< 0.01	0.49	50

Analyst By :

Sudaporn Soonthorn

(Miss Sudaporn Soonthorn)

Approved By :

Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

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

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3. Notification of the Department of Labour Protection and Welfare, B.E.2560 (2017).

4. ND = non-detectable.



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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.	: 0729/66
For	: PTT Global Chemical Public Co., Ltd. (Phenol Plant)	Sampling Date	: 09/05/2023
Address	: 9 Soi G9 WHA Eastern Industrial Estate (Map Ta Phut), Pakomsongkrohraj Rd., Map Ta Phut, Muang, Rayong, 21150	Received Date	: 11/05/2023
		Test Date	: 15-16/05/2023
Tel/Fax	: 66(0) 38-643-8000/66(0) 38-643-3809	Report Date	: 20/05/2023

SAMPLE DESCRIPTION / SAMPLING INFORMATION

Sample Designated As	: Workplace Air	Sampling Method	: Sorbent Adsorption/ Sampling Bag
Sampling By	: SECOT Co., Ltd.	Sample Condition	: Normal

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND	RESULT	STANDARD
				ppm	ppm	ppm
บริเวณส่วนการผลิตฟีนอล สายการผลิตที่ 1 (P1)	09/05/2023 07:45-10:45	Phenol	NIOSH 2546/GC FID	< 0.01	ND	5
บริเวณส่วนการผลิตฟีนอล สายการผลิตที่ 2 (P2)	09/05/2023 07:50-10:50	Phenol	NIOSH 2546/GC FID	< 0.01	ND	5
บริเวณลานถังเก็บฟีนอล (P3)	09/05/2023 10:55-13:55	Phenol	NIOSH 2546/GC FID	< 0.01	ND	5
บริเวณ Truck Loading (P8)	09/05/2023 08:00-08:15	NMHC	Flame Ionization detection/ NMHC Analyzer	< 0.05	0.55	-

Analyst By:

Sudaporn Soonthorn

(Miss Sudaporn Soonthorn)

Approved By:

Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

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ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 0729/66
For	: PTT Global Chemical Public Co., Ltd. (Phenol Plant)	Sampling Date	: 09/05/2023
Address	: 9 Soi G9 WHA Eastern Industrial Estate (Map Ta Phut), Pakornsongkrohraj Rd., Map Ta Phut, Muang, Rayong, 21150	Received Date	: 11/05/2023
		Test Date	: 17/05/2023
Tel/Fax	: 66(0) 38-643-8000/66(0) 38-643-3809	Report Date	: 20/05/2023

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND	RESULT	STANDARD
				ppm	ppm	ppm
บริเวณส่วนการผลิตฟีนอล สายการผลิตที่ 1 (P1)	09/05/2023 07:45-09:45	Acetone	modified NIOSH 1300/GC MS	< 0.03	ND	1,000
บริเวณส่วนการผลิตฟีนอล สายการผลิตที่ 2 (P2)	09/05/2023 09:47-11:47	Acetone	modified NIOSH 1300/GC MS	< 0.03	ND	1,000
บริเวณถังเก็บอะซิโตน (P7)	09/05/2023 11:50-13:50	Acetone	modified NIOSH 1300/GC MS	< 0.03	ND	1,000

Analyst By : Jutarat Jaemruen
(Miss Jutarat Jaemruen)

Approved By : Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)
Technical Management Team

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ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 0729/66
For	: PTT Global Chemical Public Co., Ltd. (Phenol Plant)	Sampling Date	: 09/05/2023
Address	: 9 Soi G9 WHA Eastern Industrial Estate (Map Ta Phut), Pakornsongkrohraj Rd., Map Ta Phut, Muang, Rayong, 21150	Received Date	: 11/05/2023
		Test Date	: 15/05/2023
Tel/Fax	: 66(0) 38-643-8000/66(0) 38-643-3809	Report Date	: 20/05/2023

SAMPLE DESCRIPTION / SAMPLING INFORMATION

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

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND	RESULT	STANDARD
				ppm	ppm	ppm
บริเวณส่วนการผลิตคิวมิน	09/05/2023	Benzene	NIOSH 1501/GC FID	< 0.02	0.06	1
สายการผลิตที่ 1 (P4)	07:57-10:57	Cumene	NIOSH 1501/GC FID	< 0.01	ND	50
บริเวณส่วนการผลิตคิวมิน	09/05/2023	Benzene	NIOSH 1501/GC FID	< 0.02	ND	1
สายการผลิตที่ 2 (P5)	07:30-10:30	Cumene	NIOSH 1501/GC FID	< 0.01	ND	50
บริเวณลานถังเก็บเบนซีน (P6)	09/05/2023 11:05-14:05	Benzene	NIOSH 1501/GC FID	< 0.02	ND	1
บริเวณถังเก็บคิวมิน (Cumene Storage Tank) (P9)	09/05/2023 11:15-14:15	Cumene	NIOSH 1501/GC FID	< 0.01	ND	50
บริเวณถังเก็บคิวมิน (Cumene Rundown Tank) (P10)	09/05/2023 11:08-14:08	Cumene	NIOSH 1501/GC FID	< 0.01	ND	50

Analyst By :

Sudaporn Soonthorn

(Miss Sudaporn Soonthorn)

Approved By :

Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

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4. ND = non-detectable.

ใบรับรองผลการตรวจวัดระดับเสียงในสถานประกอบการ



Noise Monitoring Result : Working Noise MTR-PTTGC18 (Phenol Plant)

Location : Air Compressor 1 (S1)

Monitor Period : May 09, 2023

SLM Model : SCARLET ST-21D

Serial No : 820724

Site Operator : Mr. Phuwadech Kaewjirakulsri

Calibrator Model : Cirrus CR:515

Serial No : 94296

Calibration Ref dB(A) : 94.0

Certified Date : Sep 12, 2022

SLM Reading / Adjust dB(A) : 93.7/0.0

Expire Date : Sep 11, 2023

Cal Sheet No.: CR-515-2023-049

Time	Equivalent Sound Pressure Level (dB(A))
	May 09, 2023
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	77.7
09:00 - 10:00	77.2
10:00 - 11:00	77.2
11:00 - 12:00	78.6
12:00 - 13:00	77.0
13:00 - 14:00	76.9
14:00 - 15:00	76.9
15:00 - 16:00	76.8
16:00 - 17:00	77.0
17:00 - 18:00	76.9
18:00 - 19:00	77.1
19:00 - 20:00	77.3
20:00 - 21:00	
21:00 - 22:00	
22:00 - 23:00	
23:00 - 24:00	
Leq(12)*	77.2
Lmax **	114.8
Standard-12Hr	87 dB(A)
Standard-Max	140 dB(A)

Remark : * Average time between 08:00-20:00

** Maximum Sound Pressure Level between 08:00-20:00


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Sununta Sirawuttinanon)
Technical Management Team



Noise Monitoring Result : Working Noise MTR-PTTGC18 (Phenol Plant)

Location : Air Compressor 2 (S2)

Monitor Period : May 09, 2023

SLM Model : SCARLET ST-21D

Serial No : 820722

Site Operator : Mr. Phuwadech Kaewjirakulsri

Calibrator Model : Cirrus CR:515

Serial No : 94296

Calibration Ref dB(A) : 94.0

Certified Date : Sep 12, 2022

SLM Reading / Adjust dB(A) : 93.7/0.0


Expire Date : Sep 11, 2023


Cal Sheet No.: CR-515-2023-049

Time	Equivalent Sound Pressure Level (dB(A))	
	May 09, 2023	
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	82.6	
09:00 - 10:00	83.0	
10:00 - 11:00	83.1	
11:00 - 12:00	83.2	
12:00 - 13:00	82.9	
13:00 - 14:00	82.6	
14:00 - 15:00	81.6	
15:00 - 16:00	82.8	
16:00 - 17:00	82.8	
17:00 - 18:00	82.8	
18:00 - 19:00	82.7	
19:00 - 20:00	82.7	
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		
Leq(12)*	82.7	
Lmax **	108.1	
Standard-12Hr	87 dB(A)	
Standard-Max	140 dB(A)	

Remark : * Average time between 08:00-20:00

** Maximum Sound Pressure Level between 08:00-20:00


(Miss Katesarin Vorradetwittaya)
Environmental Scientist



(Miss Sununta Sirawuttinanon)
Technical Management Team



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

NOISE MEASUREMENT REPORT : NOISE DOSE

CLIENT NAME	: PTT Global Public Co., Ltd.	REFERENCE NO.	: Phenol-223001-COA-ND
	Branch 18 (Phenol Plant)	INSTRUMENT	: Dosemeter
MEASUREMENT BY	: SECOT Co., Ltd.	CALIBRATOR MODEL	: Cirrus RC:110A
MEASUREMENT DATE	: 09/05/2023	SERIAL NO. :	: 95168
OPERATOR	: Miss Salisa Ainree	CALIBRATION REF.	: 1,000 Hz, 114 dB

LOCATION	OPERATOR ID	DATE	TIME	RESULTS		STANDARD*
				%DOSE	TWA 12 hr. (dBA)	TWA 12 hr. (dBA)
Phenol Plant 1	26006106	09/05/2023	07.24-19.00	47.3	80.0	83.0
	26006541	09/05/2023	07.24-19.00	18.0	75.8	
	26006019	09/05/2023	07.25-19.00	30.2	78.1	
	26005902	09/05/2023	07.24-19.00	88.1	82.7	
Phenol Plant 2	26006859	09/05/2023	07.33-19.00	81.1	82.3	
	26006065	09/05/2023	07.33-19.00	84.4	82.5	
	26006704	09/05/2023	07.24-19.00	69.6	81.7	
	26006104	09/05/2023	07.24-19.00	38.1	79.1	

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

Technical Management Team

- Remark :**
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 3. * Notification of the Department of Labour Protection and Welfare, B.E.2561 (2018).
 4. TWA means Time Weighted Average.

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HEAT STRESS MEASUREMENT REPORT

CLIENT NAME : PTT Global Chemical Public Co., Ltd. REFERENCE NO. : Phenol-223001-COA-Heat/Mar2023
Branch 18 (Phenol Plant)
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : WBGT METER
MEASUREMENT DATE : 16/03/2023 SERIAL NO. : 3522210173
MEASUREMENT LOCATION : Flare radius 60 meters TYPE : JT2011-E2A

LOCATION	TIME	MEASURED TEMPERATURE (°C)					STANDARD (°C) *
		NWB	DB	GT	WBGT _{Out}	WBGT _{Avg}	WBGT
Flare radius 60 meters	12.59-13.29	26.8	30.8	34.6	28.8	29.1	34.0
	13.29-13.59	27.2	31.1	33.5	28.9		
	13.59-14.29	27.3	31.7	34.0	29.1		
	14.29-14.59	27.8	31.4	34.3	29.5		

Ladawan W.

(Miss Ladawan Wongcharoen)

Environmental Scientist

Sununta Sirawuttinanon

(Miss Sununta Sirawuttinanon)

Technical Management Team

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

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3. * WBGT standard was notified by the Ministry of Industry, B.E.2546 (2003) and the Ministerial Regulations of Labor, B.E.2559 (2016).

4. NWB = Natural Wet Bulb Temperature

DB = Dry Bulb Temperature

GT = Globe Temperature

WBGT = Wet Bulb Globe Temperature

5. Work Load : Light work load = 34°C, Moderate work load = 32°C and Heavy work load = 30°C

ใบรับรองผลการตรวจวัดคุณภาพดิน



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร 10800
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SOIL ANALYSIS REPORT

CLIENT NAME	: PTT Phenol Company Limited (Phenol)	REQUEST SERVICE No. :	1088/64
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Hand Auger
SAMPLING DATE	: 13/05/2021	SAMPLING TIME	: 14.40-14.50
RECEIVED DATE	: 17/05/2021	ANALYTICAL DATE	: 18, 22-24/05/2021
REPORT DATE	: 25/05/2021	SITE OPERATOR	: Mr. Watcharakan Pramakhate
SAMPLE CONDITION	: Normal	FILE CODE	: 221001_Soil_May
SAMPLE DESCRIPTION	: UW1 : บริเวณ Truck Loading		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				UW1	
Acetone	mg/kg	5035 A / 8260 D	< 0.001	ND	≤ 1,000
Benzene	mg/kg	5035 A / 8260 D	< 0.00025	ND	≤ 15
Phenol	mg/kg	3550 C / 8270 E	< 0.025	ND	≤ 1,000

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020

Natsiri L.
(Miss Natsiri Lerterapipat)

Analyst

REG. NO. ๖-239-๖-6423

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. ๖-239-๖-5863

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SOIL ANALYSIS REPORT

CLIENT NAME	: PTT Phenol Company Limited (Phenol)	REQUEST SERVICE No.	: 1088/64
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Hand Auger
SAMPLING DATE	: 15/05/2021	SAMPLING TIME	: 09.30-09.40
RECEIVED DATE	: 17/05/2021	ANALYTICAL DATE	: 18, 22-24/05/2021
REPORT DATE	: 25/05/2021	SITE OPERATOR	: Mr. Watcharakan Pramakhate
SAMPLE CONDITION	: Normal	FILE CODE	: 221001_Soil_May
SAMPLE DESCRIPTION	: UW2 : ทิศเหนือใกล้หออกล้างเป็นสายการผลิต 2		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				UW2	
Acetone	mg/kg	5035 A / 8260 D	< 0.001	ND	≤ 1,000
Benzene	mg/kg	5035 A / 8260 D	< 0.00025	ND	≤ 15
Phenol	mg/kg	3550 C / 8270 E	< 0.025	ND	≤ 1,000

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 1st ED., 2020

Natsiri L.

(Miss Natsiri Leritrapipat)

Analyst

REG. NO. 7-239-ท-6423

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Technical Management Team

REG. NO. 7-239-ท-5863

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SOIL ANALYSIS REPORT

CLIENT NAME	: PTT Phenol Company Limited (Phenol)	REQUEST SERVICE No. :	1088/64
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Hand Auger
SAMPLING DATE	: 15/05/2021	SAMPLING TIME	: 10.00-10.10
RECEIVED DATE	: 17/05/2021	ANALYTICAL DATE	: 18, 22-24/05/2021
REPORT DATE	: 25/05/2021	SITE OPERATOR	: Mr. Watcharakan Pramakhate
SAMPLE CONDITION	: Normal	FILE CODE	: 221001_Soil_May
SAMPLE DESCRIPTION	: UW3 : ริมรั้วทิศตะวันตกของโครงการ(สายการผลิต2)ติดถนน G 9		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				UW3	
Acetone	mg/kg	5035 A / 8260 D	< 0.001	ND	≤ 1,000
Benzene	mg/kg	5035 A / 8260 D	< 0.00025	ND	≤ 15
Phenol	mg/kg	3550 C / 8270 E	< 0.025	ND	≤ 1,000

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020

Natsiri L.
(Miss Natsiri Lertterapipat)
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REG. NO. 1-239-0-6423


(Mrs. Araya Tipparuk)
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REG. NO. 1-239-0-5863

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SOIL ANALYSIS REPORT

CLIENT NAME	: PTT Phenol Company Limited (Phenol)	REQUEST SERVICE No. :	1088/64
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Hand Auger
SAMPLING DATE	: 15/05/2021	SAMPLING TIME	: 11.15-11.25
RECEIVED DATE	: 17/05/2021	ANALYTICAL DATE	: 18, 22-24/05/2021
REPORT DATE	: 25/05/2021	SITE OPERATOR	: Mr. Watcharakan Pramakhate
SAMPLE CONDITION	: Normal	FILE CODE	: 221001_Soil_May
SAMPLE DESCRIPTION	: UW4 : พื้นที่ว่างใกล้ลานถังแห่งที่ 6 (สายการผลิต 2)		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	
				UW4	STANDARD ¹⁾
Acetone	mg/kg	5035 A / 8260 D	< 0.001	ND	≤ 1,000
Benzene	mg/kg	5035 A / 8260 D	< 0.00025	ND	≤ 15
Phenol	mg/kg	3550 C / 8270 E	< 0.025	ND	≤ 1,000

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE 3rd ED. 2020

Natsiri L.

(Miss Natsiri Lertterapipat)

Analyst

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Araya Tipparuk

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Technical Management Team

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3. ¹⁾ Notification of the Ministry of Industry, B.E.2559 (2016).



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SOIL ANALYSIS REPORT

CLIENT NAME	: PTT Phenol Company Limited (Phenol)	REQUEST SERVICE No. :	1088/64
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Hand Auger
SAMPLING DATE	: 15/05/2021	SAMPLING TIME	: 10.40-10.50
RECEIVED DATE	: 17/05/2021	ANALYTICAL DATE	: 18, 22-24/05/2021
REPORT DATE	: 25/05/2021	SITE OPERATOR	: Mr. Watcharakan Pramakhate
SAMPLE CONDITION	: Normal	FILE CODE	: 221001_Soil_May
SAMPLE DESCRIPTION	: UW5 : บริเวณส่วนการผลิตฟีนอล (สายการผลิต 2)		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				UW5	
Acetone	mg/kg	5035 A / 8260 D	< 0.001	ND	≤ 1,000
Benzene	mg/kg	5035 A / 8260 D	< 0.00025	ND	≤ 15
Phenol	mg/kg	3550 C / 8270 E	< 0.025	ND	≤ 1,000

REFERENCE: US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020

Natsiri L.

(Miss Natsiri Lertterapipat)

Analyst

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(Mrs. Araya Tipparuk)

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SOIL ANALYSIS REPORT

CLIENT NAME	: PTT Phenol Company Limited (Phenol)	REQUEST SERVICE No.	: 1088/64
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Hand Auger
SAMPLING DATE	: 13/05/2021	SAMPLING TIME	: 09.15-09.25
RECEIVED DATE	: 17/05/2021	ANALYTICAL DATE	: 18, 22-24/05/2021
REPORT DATE	: 25/05/2021	SITE OPERATOR	: Mr. Watcharakon Pramakhate
SAMPLE CONDITION	: Normal	FILE CODE	: 221001_Soil_May
SAMPLE DESCRIPTION	: UW6 : บริเวณถ่านถ้ำแห่งที่ 1 (สายการผลิต 1)		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				UW6	
Acetone	mg/kg	5035 A / 8260 D	< 0.001	ND	≤ 1,000
Benzene	mg/kg	5035 A / 8260 D	< 0.00025	ND	≤ 15
Phenol	mg/kg	3550 C / 8270 E	< 0.025	ND	≤ 1,000

REFERENCE: US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020

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SOIL ANALYSIS REPORT

CLIENT NAME	: PTT Phenol Company Limited (Phenol)	REQUEST SERVICE No. :	1088/64
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Hand Auger
SAMPLING DATE	: 13/05/2021	SAMPLING TIME	: 10.00-10.10
RECEIVED DATE	: 17/05/2021	ANALYTICAL DATE	: 18, 22-24/05/2021
REPORT DATE	: 25/05/2021	SITE OPERATOR	: Mr. Watcharakan Pramakhate
SAMPLE CONDITION	: Normal	FILE CODE	: 221001_Soil_May
SAMPLE DESCRIPTION	: UW7 : บริเวณหอหล่อเย็น(สายการผลิต 1) (ทำนน้ำ)		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				UW7	
Acetone	mg/kg	5035 A / 8260 D	< 0.001	ND	≤ 1,000
Benzene	mg/kg	5035 A / 8260 D	< 0.00025	ND	≤ 15
Phenol	mg/kg	3550 C / 8270 E	< 0.025	ND	≤ 1,000

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2020

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SOIL ANALYSIS REPORT

CLIENT NAME	: PTT Phenol Company Limited (Phenol)	REQUEST SERVICE No. :	1088/64
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Hand Auger
SAMPLING DATE	: 13/05/2021	SAMPLING TIME	: 14.00-14.10
RECEIVED DATE	: 17/05/2021	ANALYTICAL DATE	: 18, 22-24/05/2021
REPORT DATE	: 25/05/2021	SITE OPERATOR	: Mr. Watcharakan Pramakhate
SAMPLE CONDITION	: Normal	FILE CODE	: 221001_Soil_May
SAMPLE DESCRIPTION	: UW8 : บริเวณท่อเผา		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				UW8	
Acetone	mg/kg	5035 A / 8260 D	< 0.001	ND	≤ 1,000
Benzene	mg/kg	5035 A / 8260 D	< 0.00025	ND	≤ 15
Phenol	mg/kg	3550 C / 8270 E	< 0.025	ND	≤ 1,000

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 5th ED., 2020

Natsiri L.

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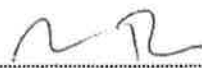
SOIL ANALYSIS REPORT

CLIENT NAME	: PTT Phenol Company Limited (Phenol)	REQUEST SERVICE No. :	1088/64
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Hand Auger
SAMPLING DATE	: 13/05/2021	SAMPLING TIME	: 10.40-10.50
RECEIVED DATE	: 17/05/2021	ANALYTICAL DATE	: 18, 22-24/05/2021
REPORT DATE	: 25/05/2021	SITE OPERATOR	: Mr. Watcharakan Pramakhate
SAMPLE CONDITION	: Normal	FILE CODE	: 221001_Soil_May
SAMPLE DESCRIPTION	: UW9 : บริเวณอาคารเก็บกากของเสีย (ท้ายน้ำ)		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				UW9	
Acetone	mg/kg	5035 A / 8260 D	< 0.001	ND	≤ 1,000
Benzene	mg/kg	5035 A / 8260 D	< 0.00025	ND	≤ 15
Phenol	mg/kg	3550 C / 8270 E	< 0.025	ND	≤ 1,000

REFERENCE : US EPA SW-846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE 3RD ED., 2020

Natsiri L.
(Miss Natsiri Lertterapipat)
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ภาคผนวก ง

ข้อมูลการตรวจเทียบเครื่องมือ
(Calibration Data Sheets)



High Volume TSP & PM-10 Calibration Data Sheet

Calibration Location : SECOT Co.,Ltd. Calibration Date : Jan 12, 2023
 Hi-Vol Pump No. : BH-015 Indicator No. : CM-01
 Amb. Temp (°C) : 27 Press (mmHg) : 760
 Calibration by : Mr.Nattachai C.

Plate	Indicate (X) (cm.)	True H ₂ O (in.)	Actual Flow (Y) (cfm)	XY	X ²	Remark
18	19.00	12.50	58.84	1,117.96	361.00	
13	15.80	9.90	52.68	832.34	249.64	
10	12.60	7.70	46.61	587.29	158.76	
7	8.60	4.90	37.44	321.98	73.96	
5	5.40	2.90	29.10	157.14	29.16	
Sum	61.40	37.90	224.67	3,016.71	872.52	

Calibrated by : Nattachai C. Approved by : Nattachai C.



High Volume TSP & PM-10 Calibration Data Sheet

Calibration Location : SECOT Co.,Ltd. Calibration Date : Jan 11, 2023
 Hi-Vol Pump No. : BH-013 Indicator No. : CM-01
 Amb. Temp (°C) : 27 Press (mmHg) : 760
 Calibration by : Mr.Nattachai C.

Plate	Indicate (X) (cm.)	True H ₂ O (in.)	Actual Flow (Y) (cfm)	XY	X ²	Remark
18	16.80	12.20	58.15	976.92	282.24	
13	14.20	9.40	51.36	729.31	201.64	
	11.20	7.40	45.72	512.06	125.44	
7	7.40	4.70	36.70	271.58	54.76	
5	4.20	2.80	28.62	120.20	17.64	
Sum	53.80	36.50	220.55	2,610.08	681.72	

Calibrated by : Nattachai C. Approved by : Nattachai C.



THAILAND INSTITUTE OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH (TISTR)

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

Request No.23-66/0270

MTC.No.23-66/0270-02

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 : 23 February 2023 Condition of measured item : Normal

Calibration date : 8 March 2023

Standard :

Standard	Certificate No.	Date due	Traceability
RTD Thermometer	PSL-T 643/65	1-Jun-24	TISTR
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

Mechanical Engineering Standards Laboratory

Ref. 2013266022300798002

Issued Date 13 March 2023

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

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FM.BLMTC.002 Rev.4

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THAILAND INSTITUTE OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH (TISTR)

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

Request No.23-66/0270

2/2

MTC.No.23-66/0270-02

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 (%)
20.138	19.883	24.930	1008.44	+1.28	1.17
51.152	50.908	24.920	1008.44	+0.48	1.02
101.04	100.71	24.897	1008.43	+0.33	1.06
200.25	199.64	24.904	1008.54	+0.31	1.01
401.00	396.85	24.837	1008.80	+1.05	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 end of calibration certificate.

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.BLMTC.002 Rev.4

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Fax. (66) 0 2579 8592
E-mail : sumalee@tistr.or.th



CONTROL UNIT CALIBRATION

(Metric units, mm)

Date 10 Jan 23

Barometric press, Pb

Initial	Final	Average
757	757	757

 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) 1.0079

Last Calibration Date 9 Dec 22

Orifice manometer setting, ΔH mm H2O	Ref. DGM Volume V _r Liters	DGM Volume V _m Liters	Temperature (°C)				Time @ 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	98.5	25	25	24	24.5	8.43	1.0203	40.4451
25.0	100.0	100.1	25	25	24	24.5	6.08	1.0028	42.0902
50.0	100.0	99.2	25	25	24	24.5	4.33	1.0095	42.7141
76.0	100.2	98.7	25	25	24	24.5	3.57	1.0141	43.8087
100.0	100.0	98.7	25	25	24	24.5	3.57	1.0097	44.6653
150.0	100.1	96.8	25	25	24	24.5	2.57	1.0256	44.8662

Average 1.0137 43.0983

Approved by : Ladawan W.



CONTROL UNIT CALIBRATION

(Metric units, mm)

Date 16 Jan 23

Barometric press, Pb

Initial	Final	Average
759	759	759

 mmHg

Dry Gas Meter Data

Console No. M50-06

Metering System ID

DGM Number 333249

DGM Model MST-C2-1

Calibrated by : Montri P.

Reference Dry Gas Meter Data

Serial No. 358794

Model S110

Correction factor (Yr) 1.0079

Last Calibration Date 9 Dec 22

Orifice manometer setting, ΔH mm H2O	Ref. DGM Volume V _r Liters	DGM Volume V _m Liters	Temperature (°C)				Time @ 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	100.1	100.9	25	25	24	24.5	8.60	0.9968	41.8649
25.0	100.0	100.4	25	25	24	24.5	6.13	0.9998	42.6722
50.0	100.1	100.6	25	25	24	24.5	4.53	0.9963	46.5503
76.0	99.9	100.4	25	25	24	24.5	3.75	0.9949	48.5425
100.0	100.0	99.3	25	25	24	24.5	3.75	1.0031	45.5096
150.0	100.2	98.7	25	25	24	24.5	2.58	1.0070	45.2316

Average 0.9997 45.0618

Approved by : Ladawan W.



PITOT TUBE CALIBRATION

Calibration Location: SECOT

Calibration Date : 06-01-2023

Calibrated duct No.: 1

Calibration Standard Pitot tube data

Pitot No. : Std-01

Coefficient (Cp) : 1

Type S Pitot No. : PS20-01

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	7.50	10.75	0.8353	-0.0033
2	7.50	10.50	0.8452	0.0066
3	7.50	10.75	0.8353	-0.0033

 $C_{P(A),avg}$ 0.8386

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	7.50	10.50	0.8452	0.0033
2	7.50	10.75	0.8353	-0.0066
3	7.50	10.50	0.8452	0.0033

 $C_{P(B),avg}$ 0.8419 $|CP(A) - CP(B)| = 0.0033$ $C_{P(Avg)} = 0.8402$

Approved by : Ladawan W.

*** 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 ***



PITOT TUBE CALIBRATION

Calibration Location: SECOT

Calibration Date : 06-01-2023

Calibrated duct No.: 1

Calibration Standard Pitot tube data

Pitot No. : Std-01

Coefficient (Cp) : 1

Type S Pitot No. : PS25-01

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	7.50	10.55	0.8431	0.0026
2	7.50	10.75	0.8353	-0.0053
3	7.50	10.55	0.8431	0.0026

 $C_{P(A),avg}$ 0.8405

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	7.50	10.50	0.8452	0.0033
2	7.50	10.75	0.8353	-0.0066
3	7.50	10.50	0.8452	0.0033

 $C_{P(B),avg}$ 0.8419 $|CP(A) - CP(B)| = 0.0013$ $C_{P(Avg)} = 0.8412$

Approved by : Ladawan W.

*** 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 ***



Request Service No. 098/66

Page 1 of 3

Calibration Certificate

Nomenclature : Brand : Mettler Toledo Type : Top-Loading Electronic Balance

Model : AG245 Serial No. : 1117293916 (198129-0)

Submitted by : Laboratory of SECOT CO., LTD.

Location of Calibration : BAL Room , 6th Floor, Secot Co., Ltd.

Calibration range : 0 – 200 g Scale division : 0.00001 g (41g)/ 0.0001 g (210g)

Calibration date : May 25, 2023

Reference Standard No. M220177, M2302167S, M2303005N

Traceable to : Metrological Center SCI ECO Services Company Limited.

Thai Calibration Services CO., LTD.

Ambient Condition : Temperature 25.70 – 25.90 °C

Humidity 50.70 – 51.20 % RH

Calibrated By : Sasipa Jaidee Approved By : Nanna Poowasanpetch

(Miss Sasipa Jaidee)

(Miss Narisa Poowasanpetch)

Testing Officer

Chief of Technical Management

Date : 25/05/2023

Date : 25/05/2023

Issued Date : May 26, 2023

Measurement Report

Request Service No. 098/66

Page 2 of 3

Description : Brand : Mettler Toledo

Type : Top-Loading Electronic Balance

Model : AG245

Serial No. : 1117293916 (198129-0)

Calibration range : 0 – 200 g

Scale division : 0.00001 g (41g)/ 0.0001 g (210g)

Calibration date : May 25, 2023

Ambient Condition : Temperature 25.70-25.90 °C Relative humidity 50.70-51.20 % RH

Measurement data :

1. Repeatability of Reading :

Load (g)	Standard Deviation of Reading (g)	Maximum Difference between Successive Reading (g)
50	0.000052	0.0001
100	0.000071	0.0002
150	0.000067	0.0002
200	0.000071	0.0002

2. Off-Center Loading :

A Mass of 50.0000 g was placed and moved to various position on the pan.

Unit : g

Center	Front	Left	Back	Right	Center	Maximum Difference
50.00040	50.00062	50.00078	50.00000	50.00010	50.00040	0.00038

Issued Date : May 26, 2023

3. Departure from Nominal Valve :

Reading (g)	Correction (g)	Uncertainty (+/- g)
0	0.000000	± 0.000008
0.5	-0.000017	± 0.000014
1	-0.000026	± 0.000018
10	-0.000099	± 0.000033
20	-0.000168	± 0.000046
40	-0.000339	± 0.000072
60	-0.00058	± 0.00011
80	-0.00059	± 0.00014
100	-0.00070	± 0.00016
120	-0.00069	± 0.00018
140	-0.00096	± 0.00020
160	-0.00082	± 0.00023
180	-0.00089	± 0.00024
200	-0.00118	± 0.00027

Calibrated by : Sasipa Jaidee

(Miss Sasipa Jaidee)

Testing Officer

Date : 25/05/2023

Approved By :

(Miss Narisa Poowasanpetch)

Chief of Technical Management

Date : 25/05/2023

Issued Date : May 26, 2023



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES
534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250
TEL. 0-2717-3000-27 FAX. 0-2719-9484



Cert.No.: 23CH4

Page.: 1 of 3

Certificate of Calibration

Equipment : pH Meter
Manufacturer : Hanna
Model : HI98190
Serial No. : 06470022101
ID No. : pH No.19
Condition As-Received: Used Item
Received Date : 03 January 2023
Calibration Date : 04 January 2023
Reference : 2301-0006DN-1
Submitted by : Secot Co.,Ltd.
239 Rimklongprapa Road,
Bangsue, Bangkok 10800
Ambient Temperature : (25 \pm 2.5) °C
Relative Humidity : (50 \pm 15) %
Calibration Procedure : In - house method :
- CP-CH5 by direct measurement with standard
voltage calibrator and direct measurement with
certified reference material (CRM)
- CP-CH8 by comparison with standard thermometer

Calibrated by : Warakorn Lernagatrakul

Approved by :

Malee Butkruea
Approved Signatory

(✓) Malee Butkruea
() Saithip Meangmai
() Warakorn Lernagatrakul

Issue Date : 10 January 2023

The Uncertainties are for a confidence probability of approximately 95%

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



Cert.No.: 23CH4
Page.: 2 of 3

Condition of this calibration result

1. Reference Standard Instrument :-

Instrument	Serial No.	ID No.	Cert. No.	Due Date
1) Ref. Standard Thermometer	4982054	110RC044	2211306	27 Oct 2023

This certification is traceable to the International System of Unit maintained at:-

- Traceable to National Institute of Metrology (Thailand), NIMT

2. Certified Reference Materials : The measurement results are traceable to SI through CPA chem Ltd.,
ANSI-ASQ National Accreditation Board, Accredited No. AR-1835

Buffer Solution	Manufacturer	Lot No.	Exp. date
pH 4.008	CPA chem	826588	09 July 2024
pH 6.987	CPA chem	823322	20 June 2023
pH 10.008	CPA chem	826590	09 July 2023

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

Calibration Results

Function : pH Measurement

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

Unit Under Calibration	Standard pH Buffer Solution	Actual pH Reading	Actual mV Reading (mV)	Uncertainty of pH measurement (±)	Coverage factor k
pH Electrode S/N.: 0920044N	4.008	4.010	157.9	0.0044	2.00
	6.987	6.990	-1.6	0.0086	2.00
	10.008	10.007	-163.7	0.0065	2.00

Remark - Can not connect the BNC because the plug does not match with the socket.

Malu.

a 1142465



Cert.No.: 23CH4
Page.: 3 of 3

Calibration Results

Function : Temperature Measurement

(*) Without adjustment

This equipment was connected with Temperature Probe;

- Model : HI12963
- Serial No. : 0920044N
Dimension of probe;
- Length : 105 mm.
- Diameter : 14 mm.
- Immersion Depth : 100 mm.

Calibration Point (°C)	Standard Temperature (°C)	UUC* Reading (°C)	Error (°C)	Uncertainty of measurement (± °C)	Coverage factor k
20.0	20.002	20.0	-0.002	0.13	2.00
25.0	25.003	25.0	-0.003	0.13	2.00
30.0	30.005	30.0	-0.005	0.13	2.00
35.0	35.002	35.0	-0.002	0.13	2.00

Remark : - UUC* = Unit Under Calibration

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

-000-

Malu.

a 1142464



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES
534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG, BANGKOK 10250
TEL. 0-2717-3000-24 FAX. 0-2719-9484



Certificate of Calibration

Certificate No. : 22H1690

Page : 1 of 2

Equipment : Digital Thermo-Hygrometer

Manufacturer : Dlgicon

Model : HT-776

Serial No. : Q858886

ID No. : 214400

Condition As-Received: Used Item

Received Date: 15 August 2022

Calibration Date: 17 August 2022
to 19 August 2022

Reference: 2208-0501DN

Submitted by: Secot Co., Ltd.

Ambient Temperature: (25 ± 3) °C

Relative Humidity: (50 ± 20) %

239 Rimklongprapa Road, Bangsue, Bangkok 10800

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

Condition of this result of calibration

1. Reference standards instruments :

Instrument	Model	Serial No.	Certificate No.	Due Date
1) Chilled-Mirror Hygrometer	Dew Master	41292	19848	03 Nov 2022
2) Handheld Thermometer With Sensor	1523	3240076	221249	02 Mar 2023

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

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

-National Institute of Standards and Technology (NIST) , The United States of America

-National Institute of Metrology Thailand (NIMT)

Calibrated by : Kraipon Onrat
Issue Date : 23 August 2022

Approved Signatory :

[✓] Chakrit Waewanjua
[] Pornthippa Tameyakul
[] Viporn Tantiyawutti

B 0295080



Cert No.: 22H1690

Page.: 2 of 2

This instrument was connected with humidity/temperature probe Serial No. Q858886.

Result of Calibration:-

Without Adjustment

Function:

Humidity measurement.

Reference Temperature (°C)	Standard Humidity (%R.H.)	UUC* Reading (%R.H.)	Error (%R.H.)	Uncertainty of Measurement (±%R.H.)
25.0	40.1	41.87	1.77	1.3
25.0	50.1	50.50	0.40	1.6
25.0	60.0	58.53	-1.47	1.6

Result of Calibration:-

Without Adjustment

Function:

Temperature measurement.

Standard Temperature (°C)	UUC* Reading (°C)	Error (°C)	Uncertainty of Measurement (±°C)
20.017	20.26	0.243	0.42
25.033	25.24	0.207	0.42
30.008	30.22	0.212	0.42

UUC* : Unit Under Calibration

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

-o0o-

[Signature]

a 1122647

Calibration Certificate

Certificate No.: 2203876-001-01
Client name: SECOT CO., LTD.
Address: 239 Rimklongprapa Road,
Bangsue, Bangsue, Bangkok 10800

Page 1 of 3

Equipment: CHAMBER (Hot Air Oven)

Manufacturer: BINDER

Model: ED 53

Serial No.: 01-27152

ID No.: N/A


Order No.: 2203876

Operation No.: 2203876-001

Date of Receipt: 1 August 2022

Date of Calibration: 1 August 2022

Calibrated by Mr.Yothin Charoensuk
Scientist

Approved by 
(Mr.Pheraphat Tuanjit) (for)
Manager, Division of Calibration Laboratory

Date of Issue: 3 August 2022

Responsible for the Technical Management Team

The uncertainties are for a confidence probability of approximately 95 %.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the National Food Institute.

F-CS-009 Revision: 01 Date: 20-04-65



Calibration Report

Certificate No.: 2203876-001-01
Equipment: CHAMBER (Hot Air Oven)
Model: ED 53 Serial No.: 01-27152
Resolution: 1 °C ID No.: N/A
Manufacturer: BINDER

Date of Calibration: 1 August 2022

Page 2 of 3

Location: Laboratory, SECOT CO., LTD.

Environment Condition:
Ambient Temperature (30 ± 1) °C
Relative Humidity (66 ± 5) %
Line Voltage (220 ± 5) Volt

Condition of this results of Calibration:

- This instrument was calibrated by Insert 9 standard thermometer into its chamber and calibration according to W-TE-014 Based on TLAS G-20-1/02-08 (E): Guidelines for Calibration and Checks of Temperature Controlled Enclosures.
- The temperature scale used was based on ITS - 90.
- All data show below were final values and the initial data may be obtained upon request.
- Reference Standard Instrument :


Instrument	Model	Serial No./ID No.	Certificate No.	Due Date	Through
Digital Thermometer with sensor	34972A	MY57003188	TE 650469-01	11 June 2023	NATIONAL FOOD INSTITUTE
	RTD	CH#101-109/ RTD#101-109			

- This certificate is traceable to International System of Units (SI Units).
- This certificate was certified only for the instrument we calibrated.
- This result of calibration was found accurate as shown on date and place of calibration only.
- Condition of Calibrated item : Good

UUC Description :

Time of Record 1 Hour 9 Minute At 104,110 and 180 °C
Fresh air Damper ☒ Open Position ☒
☒ Close Fan ☒
☒ Not Available

- Result of Calibration : ☒ Without adjustment ☐ After adjustment


3 Aug. 2022

F-CS-012 Revision: 01 Date: 20-04-65



Calibration Report

Certificate No.:	2203876-003-01		
Equipment:	Water Bath		
	Model: WB 29	Serial No.: 1698.0051	
	Resolution: 0.1 °C	ID No.:	N/A
	Manufacturer: MEMMERT		
Date of Calibration:	1 August 2022		

Page 2 of 3

Location: Laboratory, SECOT CO., LTD.

Environment Condition:

Ambient Temperature	(29 ± 1)	°C
Relative Humidity	(66 ± 5)	%
Line Voltage	(224 ± 1)	Volt

Condition of this results of Calibration:

1. This instrument was calibrated by insert 5 standard thermometer into its liquid bath and calibration according to W-TE-011 based on ASTM E715-80 (2016): Standard Specification for Gravity-Convection and Forced-Circulation Water Baths.
- The temperature scale used is ITS - 90.
 - All data show below were final values and the initial data may be obtained upon request.

2. Reference Standard Instrument :

Instrument	Model	Serial No./ID No.	Certificate No.	Due Date	Through
Digital Thermometer with sensor	34972A	MY57003188	TE 650469-01	11 June 2023	NATIONAL FOOD INSTITUTE
	RTD	RTD#301-305 / CH#301-305			

3. This certificate is traceable to International System of Units (SI Units).
4. This certificate was certified only for the instrument we calibrated.
5. This result of calibration was found accurate as shown on date and place of calibration only.
6. Condition of Calibrated item : Good

UUC Description:

Time of Record 1 Hour 9 Minute At 95.0 °C

7. Result of Calibration :	X	Without adjustment
		After adjustment

A. Grenzhaubert
3 Aug. 2022



Calibration Report

Certificate No.:	2203876-003-01	
Equipment:	Water Bath	
	Model: WB 29	Serial No.: I698.0051
	Resolution: 0.1 °C	ID No.: N/A
	Manufacturer: MEMMERT	
Date of Calibration:	1 August 2022	

Page 3 of 3

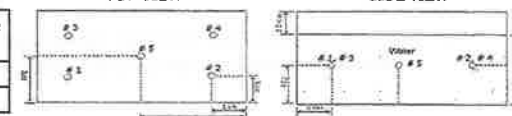
Calibration point: 95.0 °C

Calibration result:

Calibration Condition	Temperature (°C)	Relative Humidity (%)	Line Voltage (Volt)
Min	28.2	61	223.0
Max	29.7	71	225.0

TOP VIEW

SIDE VIEW



Sensor Installation Location

Table1 : Reporting of Temperature

Calibration Point (°C)	Measured Temperature (°C) @ Sensor No. (Sensor No.5 is REF)					Uncertainty ± (°C)
	# 1	# 2	# 3	# 4	# 5	
95.0	95.08	95.09	95.03	94.94	94.99	0.38

Table 2 : Reporting of Characterization Result

UUC* Setting (°C)	UUC* reading (°C)			Stability ± (°C)	Uniformity (°C)	Overall Variation (°C)
	MIN	MAX	Average			
95.0	94.9	95.1	95.0	0.25	0.10	0.69

Note The quoted uncertainty include " Stability " and " Loading effect (20% of Temp Uniformity)"

UUC* = Unit Under Calibration

Stability = One-half of the greatest maximum difference of measured temperatures at any one sensors, for at least half an hour after reaching steady state.

Uniformity = The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time.

Overall Variation = The difference of the maximum and minimum measured temperatures throughout observation time.

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

----- End -----



Calibration Certificate

Certificate No.: 2203876-002-01
Client name: SECOT CO., LTD.
Address: 239 Rimklongprapa Road,
Bangsue, Bangsue, Bangkok 10800

Page 1 of 3

Equipment: CHAMBER (Incubator)
Manufacturer: MEMMERT
Model: ICP 400
Serial No.: K406.0004
ID No.: N/A
Order No.: 2203876
Operation No.: 2203876-002
Date of Receipt: 1 August 2022
Date of Calibration: 1 August 2022

Calibrated by Mr.Yothin Charoensuk
Scientist

Approved by *P. Phaphat*
(Mr.Pheraphat Tuanjit) (for)
Manager, Division of Calibration Laboratory
Responsible for the Technical Management Team

Date of Issue: 3 August 2022

The uncertainties are for a confidence probability of approximately 95 %.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the National Food Institute.

FCS-009 Revision: 01 Date: 20-04-65



Calibration Report

Certificate No.: 2203876-002-01
Equipment: CHAMBER (Incubator)
Model: ICP 400 Serial No.: K406.0004
Resolution: 0.1 °C ID No.: N/A
Manufacturer: MEMMERT
Date of Calibration: 1 August 2022

Page 2 of 3

Location: Laboratory, SECOT CO., LTD.
Environment Condition: Ambient Temperature (29 ± 1) °C
Relative Humidity (66 ± 5) %
Line Voltage (220 ± 5) Volt

Condition of this results of Calibration:

- This instrument was calibrated by insert 9 standard thermometer into its chamber and calibration according to W-TE-014 Based on TLAS G-20-1/02-08 (E): Guidelines for Calibration and Checks of Temperature Controlled Enclosures.
- The temperature scale used was based on ITS - 90.
- All data show below were final values and the initial data may be obtained upon request.
- Reference Standard Instrument :

Instrument	Model	Serial No./ID No.	Certificate No.	Due Date	Through
Digital Thermometer with sensor	34972A	MY57003188	TE 650469-01	11 June 2023	NATIONAL FOOD INSTITUTE
	RTD	CH#201-209/ RTD#201-209			

- This certificate is traceable to International System of Units (SI Units).
- This certificate was certified only for the Instrument we calibrated.
- This result of calibration was found accurate as shown on date and place of calibration only.
- Condition of Calibrated item : Good

UUC Description :

Time of Record 1 Hour 9 Minute At 20.0 °C
Fresh air Damper - Open Position -
X Close Fan -
- Not Available

7. Result of Calibration : ☒ Without adjustment ☐ After adjustment

P. Phaphat
3 Aug. 2022

FCS-012 Revision: 01 Date: 20-04-65



Certificate No. : CAL-23-150

Page : 1 of 4

Calibration Report

Certificate No.: 2203876-002-01
Equipment: CHAMBER (Incubator)
Model: ICP 400 Serial No.: K406.0004
Resolution: 0.1 °C ID No.: N/A
Manufacturer: MEMMERT

Date of Calibration: 1 August 2022

Page 3 of 3

Calibration point: 20.0 °C

Calibration result:

Calibration Condition	Temperature (°C)	Relative Humidity (%)	Line Voltage (Volt)
MIN	27.6	61	215.0
MAX	29.5	71	225.0

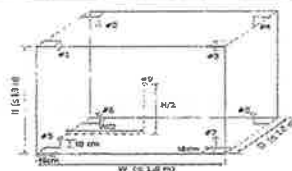


Table 1 : Reporting of Temperature

Calibration point (°C)	Measured Temperature (°C) @ Sensor No. (Sensor No.9 is REF)									Uncertainty ± (°C)
	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	
20.0	20.01	20.09	20.11	20.07	20.18	20.09	20.05	19.99	20.09	0.27

Table 2 : Reporting of Characterization Result

UUC* Setting (°C)	UUC* reading (°C)			Stability ± (°C)	Uniformity (°C)	Overall Variation (°C)
	MIN	MAX	Average			
20.0	20.0	20.0	20.0	0.10	0.10	0.37

Note The quoted uncertainty include " Stability " and " Loading effect (20% of Temp Uniformity) "

UUC* = Unit Under Calibration

Stability = One-half of the greatest maximum difference of measured temperatures at any one sensors, for at least half an hour after reaching steady state.

Uniformity = The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time.

Overall Variation = The difference of the maximum and minimum measured temperatures throughout observation time.

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

----- End -----

F-CS-012 Revision: 01 Date: 20-04-65



nfi

CERTIFICATE OF CALIBRATION

Equipment : Spectrophotometer
Manufacturer : Thermo Scientific
Model : Genesys 150 UV-VIS
Serial No. : 9A5Y332022
ID No. : N/A
Customer : Secot Company Limited
239 Rimklongprapa Road,
Bangsue, Bangkok 10800, Thailand
Location : Laboratory Room
Date of Receipt : 27 February 2023
Date of Calibration : 27 February 2023
Date of Issue : 8 March 2023
Ambient Temperature : (25±10) °C
Relative Humidity : (60±20) %
Condition As-Received : Used Item

Calibrated by

Anusit Boonmee

(Mr. Anusit Boonmee)

Calibration Engineer

Approved by

Jintana Sangthajaroenlap

(Ms. Jintana Sangthajaroenlap)

Calibration Manager

The reported expanded uncertainty of measurement was based on a combined standard uncertainty multiplied by a coverage factor k=2, 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 head of Calibration Laboratory.

Indicated values are valid for the state of the Spectrophotometer at the time of calibration only.



BECTHAI BANGKOK EQUIPMENT & CHEMICAL CO., LTD.
CALIBRATION LABORATORY

300 Phaholyothin Road, Phayathai, Bangkok 10400, Thailand Tel: +66 2615-2929 Fax: +66 2615-2350-1
E-mail: bkk@becthai.com Website: www.becthai.com



Certificate No. : CAL-23-150

Page : 2 of 4

CALIBRATION REPORT

Conditions of this result of calibration

1. Reference Standard Material :

Material	Model	Serial No.	Cert.No.	Due date
Holmium Glass Filter	RM-HG	12705	98236	12 Feb 24
Didymium Glass Filter	RM-DG	13498	98233	12 Feb 24
Neutral Density Filter	RM-1N2N3N	8323	98259	13 Feb 24
Potassium Dichromate Solution	RM-06	23429	98252	12 Feb 24

2. Traceability : This certification is traceable to the International System of Unit maintained at;

The Starna Scientific Ltd. Accredited Calibration Laboratory No. 0659.

3. Method of calibration :

The calibration procedure was carried out according to ASTM E275-08 (2022) and ASTM E925-09 (2014).

4. Result of calibration :

(✓) without adjustment () after adjustment

5. Equipment Specifications:

Spectral Bandwidth :	2	nm
Data Interval :	0.2	nm
Scan Speed :	Slow	nm/min



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Certificate No. : CAL-23-150

Page : 3 of 4

CALIBRATION REPORT

Wavelength Calibration

Certified Values of Reference Material (nm)	Nominal Value (nm)	UUC*Reading (nm)	Error (nm)	Uncertainty of Measurement (\pm nm)
241.74	241.74	241.955	0.215	0.16
637.98	637.98	637.751	-0.229	0.17
879.27	879.27	879.075	-0.195	0.16

Photometric Calibration for Visible

Wavelength (nm)	Certified Values of Reference Material (A)	UUC* Reading (A)	Error (A)	Uncertainty of Measurement (\pm A)
420.0	Zero	0.000	0.0000	0.0028
	0.5716	0.573	0.0014	0.0044
	0.7358	0.733	-0.0028	0.0040
	1.0713	1.073	0.0017	0.0039
440.0	Zero	0.000	0.0000	0.0028
	0.561	0.562	0.0010	0.0042
	0.718	0.715	-0.0030	0.0037
	1.0459	1.047	0.0011	0.0037
465.0	Zero	0.000	0.0000	0.0028
	0.5111	0.512	0.0009	0.0044
	0.6618	0.660	-0.0018	0.0035
	0.9635	0.965	0.0015	0.0034
546.1	Zero	0.000	0.0000	0.0028
	0.5222	0.523	0.0008	0.0036
	0.6687	0.667	-0.0017	0.0031
	0.9768	0.978	0.0012	0.0043
590.0	Zero	0.000	0.0000	0.0028
	0.5541	0.554	-0.0001	0.0035
	0.6975	0.695	-0.0025	0.0031
	1.0206	1.021	0.0004	0.0044
635.0	Zero	0.000	0.0000	0.0028
	0.5398	0.540	0.0002	0.0035
	0.6658	0.664	-0.0018	0.0033
	0.9741	0.974	-0.0001	0.0044

Remark : Each individual filter is measured against the empty filter holder (blank) used to zero the Spectrophotometer.

Note:

UUC* : Unit Under Calibration



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NSC-TIS-TIS 17025
CALIBRATION 0131

Certificate No. : CAL-23-150

Page : 4 of 4

CALIBRATION REPORT

Photometric Calibration for UV

Wavelength (nm)	Certified Values of Reference Material (A)	UUC* Reading (A)	Error (A)	Uncertainty of Measurement (\pm A)
235.0	Zero	0.000	0.0000	0.0050
	0.7345	0.735	0.0005	0.0075
257.0	Zero	0.000	0.0000	0.0050
	0.8498	0.849	-0.0008	0.0074
313.0	Zero	0.000	0.0000	0.0050
	0.2853	0.286	0.0007	0.0055
350.0	Zero	0.000	0.0000	0.0050
	0.6306	0.629	-0.0016	0.0063

Remark : The Potassium Dichromate Filled cells are measured against a Perchloric acid blank.

Note:

UUC* : Unit Under Calibration

- End of Report -

Agilent
CrossLab
From Insight to Outcome

Agilent CrossLab Start Up Services

Agilent 7890 Gas Chromatograph

Preventive Maintenance Checklist



Agilent Preventive Maintenance provides factory recommended service for your analytical instruments to assure reliable operation and the accuracy of your results.

Delivered by highly trained and certified service engineers using genuine Agilent parts and supplies, Agilent Preventive Maintenance provides everything you need to reduce unplanned downtime and keep your systems operating at their peak. This checklist will be completed at the end of the service and provided to you as a record of the preventive maintenance activities.

 **Agilent**

Introduction

Customer Information

- Customers should provide all necessary operating supplies upon request of the engineer.
- A customer representative should be available to the engineer while performing the preventive maintenance procedures.
- Any parts, not included in the Parts Lists section of this document, are not part of the recommended Preventive Maintenance service, nor are they included in the price of this service.
- If a system requires the use of extra or special procedures and/or parts for the maintenance service, then these must be ordered separately and charged as a repair, which may incur additional costs.

Important Customer Web Links

- For more information about **Agilent Technologies services**, please visit our website using the following URL: <http://www.agilent.com/en-us/products/crosslab-instrument-services/service-repair>
- The **Agilent Community** is an excellent place to get answers, collaborate with others about applications and Agilent products, and find in-depth documents and videos relevant to Agilent technologies. Visit <https://community.agilent.com/welcome>.
- To access **Agilent University**, visit <http://www.agilent.com/crosslab/university/> to learn about training options, which include online, classroom and onsite delivery. A training specialist can work directly with you to help determine your best options.
- A useful **Agilent Resource Center** web page is available, which includes short videos on maintenance, quick lists of consumables for new instruments, and other valuable information. Check out the Resource Page here: <https://www.agilent.com/en-us/agilentresources>.
- Need technical support, FAQs, supplies? – visit our **Support Home page** <http://www.agilent.com/search/support>.
- Videos about specific preparation requirements for your instrument can be found by searching the **Agilent YouTube channel** at <https://www.youtube.com/user/agilent>.
- 7890B Manuals** are also available on Agilent.com:
 - Safety
https://www.agilent.com/cs/library/usermanuals/public/7890B_Safety.pdf
 - Installation and First Startup
https://www.agilent.com/cs/library/usermanuals/Public/7890B_Installation.pdf
 - Operation Manual
https://www.agilent.com/cs/library/usermanuals/Public/7890B_Operation.pdf
 - Maintaining Your GC
https://www.agilent.com/cs/library/usermanuals/public/G3430-90052%207890B_Maintaining%20Guide.pdf

Service Engineer's Responsibilities

- Contact the customer and ensure that all necessary supplies are available before the preventive maintenance visit.
- Only select those pages that relate to the system or module being serviced.
- Complete empty fields with the relevant information.
- Complete the relevant checkboxes in the checklist using either a "X" or tick mark "✓".
- Check **"Section not applicable"** check boxes to indicate services/tasks not delivered, as appropriate.
- Complete the Preventive Maintenance service in the order of the tasks listed.
- Complete the Service Review section together with the customer.
- Complete the fields for page numbers at the foot of each selected page
- Complete the total number of pages field in the Service Completion section
- Ask the customer to sign the Service Completion section including the customer's and your signature.

Additional Instruction Notes

- Check for any active service notes for this unit. If there are any applicable "Safety" or "Modification Recommended" Service notes, plan to implement the changes on this unit before doing any qualification service.
- Do not implement firmware updates, unless you get approval from the customer and are sure that they are compatible with the instrument control software.

System Information

- ☐ Check this box if an instrument configuration report is attached instead of completing the table below.

Instrument System Name and ID	7890A GC System / GCMS
Instrument System Site and Location	SECOT Co., Ltd.

List System Component Product Numbers	List the Serial Numbers of each Component
1. G3440A	CN10750035
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

Preparation

- ☒ Discuss any specific issues with the customer before starting.
- ☒ Review the instrument logbook for recorded problems and comments.
- ☒ Save instrument control settings before starting the procedure.
- ☒ Perform a general inspection of the system for cleanliness.
- ☒ Check for proper installation of parts, assemblies, sensors etc.
- ☒ Check system for required installation of components, settings as defined by current Service Notes.
- ☒ Check for required firmware updates and verify with customers if they would like them installed.
- ☐ Before starting the following procedures, record the Detector Signal Output(s) in the results table. If the GC is turned OFF or in a service mode, comparing the detector outputs before and after the service is not possible.

Preventive Maintenance Procedure

Clean and inspect GC

- ☒ Unplug power cord from the power source.
- ☒ Open GC covers and vacuum/remove any dust/debris. Pay particular attention to cooling fans.
- ☒ Inspect internal connectors for proper contact and placement.
- ☒ Reconnect Power to the GC. Power the GC on and verify the power on self-test passed.
- ☒ Verify oven motor spins freely and turns on with the oven door closed; off when the door is opened.
- ☒ Verify operation of all other fans - the inlet and EPC cooling fans.
- ☒ Verify oven intake/outlet flap assembly is operating smoothly while heating and cooling the oven

Inlet and detector consumable replacement

- ☒ For the inlets installed, perform inlet maintenance as defined in the 7890 manual – "Maintaining Your GC" - for the inlet(s) installed.
- ☒ Replace the split vent trap cartridge filter on units with these inlets: Split/Splitless Capillary (SSL), Multi-Mode Inlet (MMI), Programmed Temperature Vaporizer (PTV), Volatiles Interface (VI).
- ☒ If the inlet system is used in Split Mode with viscous samples, inspect and clean the split vent tube on the inlet and flush or replace the tubing between the inlet and the split vent trap.
- ☐ If the GC includes a Flame Ionization Detector (FID), replace the jet. If the ignitor shows any buildup of sample or corrosion, replace the ignitor. Examine the FID collector and castle assemblies for contamination – clean as necessary.

Zero Sensors and Leak test

- ☒ Zero all pressure sensors per the procedure in the 7890 "Advanced User Guide".
- ☒ Perform inlet pressure decay test(s) as defined in the 7890 "Troubleshooting Manual".
If the PM is done in preparation for an Operational Qualification, then the pressure decay test defined within that protocol can be used for the PM.
- ☒ Record if test passed or failed in the results table.

ALS Maintenance

☒ Section NOT applicable

- ☐ Check all cabling and configuration settings between GC, tray, and injectors.
- ☐ Vacuum or remove any dust, especially around fans.
- ☐ Check operation of all fans.
- ☐ Check syringe for smooth plunger operation.
- ☐ Check for smooth operation of the needle support – clean if necessary

Restore Instrument

- ☒ Restore the normal operating conditions or customer method using the Data System.
- ☒ Purge the system with carrier flow for 15 minutes
- ☒ Bake out the system, then restore the normal operating conditions
- ☒ After equilibration, check and record the post PM detector signal output values. Results should be similar or lower than the detector outputs recorded prior to PM.
- ☒ Perform a chemical checkout. If this is a routine PM, inject the customer's sample using the ALS if applicable. This will act as a final checkout of both the ALS and the GC.

Note: If the PM Service is performed prior to a qualification service, then use the qualification procedure as a guide for final instrument set up and checkout.

Signature Page

Service Review

- ☒ Attach available reports/printouts of all tests to this documentation.
- ☒ Record the Preventive Maintenance service activity in the customer's records/logbook.
- ☒ Update/reset instrument maintenance counters as appropriate.
- ☒ Affix the PM sticker to the system or instrument logbook based on the customer's request.
- ☒ Complete the Service Engineer Comments section if there are additional comments.
- ☒ Review with the customer this service, parts replaced, and test results obtained.
- ☐ If the instrument firmware was updated, record the details of the change in the Service Engineer's Comments box or if necessary, in the customer's IQ records.
- ☐ Supply the customer with a copy of the Smart Alerts flyer.
- ☐ Describe Smart Alerts to the customer.
- ☐ Install Smart Alerts if requested.

7890 GC Test Results Table

Detector Signal Outputs	Before PM Service	After PM Service
Front detector output	N/A	N/A
Back detector output	N/A	N/A
AUX detector output	N/A	N/A
Pressure decay test	Expected test result	Actual test result
Front inlet pressure decay test	Pass	Pass
Back inlet pressure decay test	Pass	Pass

7890 Parts List Table

The following kits are recommended for capillary and purged packed inlets. If this is a general PM and the customer has a preferred set of consumables, you may use the customer's consumables.

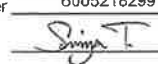
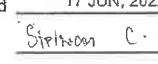
Part description	Part number	Product or models where used	Quantity consumed
SSL Capillary Inlet PM kit, Splitless	5188-6497	7890A/B	1
SSL Capillary Inlet PM kit, split	5188-6496	7890A/B	1
SSL Capillary Ultra Inert Inlet Gold Seal with Washer	5190-6144	7890A/B	N/A
SSL Capillary Ultra Inert Inlet Splitless Liner - Single taper with Glass Wool	5190-2293	7890A/B	N/A
SSL Capillary Ultra Inert Inlet Low Pressure Drop Split Liner - with Glass Wool	5190-2295	7890A/B	N/A
PP Inlet PM kit	5188-6498	7890A/B	N/A
Split vent trap PM kit, single cartridge (for MMI, PTV & VI)	5188-6495	7890A/B	N/A
MMI Cleaning Kit	G3510-60820	7890A/B	N/A
PTV Septumless Head Rebuild Kit	5182-9747	7890A/B	N/A
PTV Septumless Head Teflon Guide	5182-9748	7890A/B	N/A
Ignitor (glow plug) assembly with O-ring	19231-60680	7890A/B	N/A
FID Collector Rebuild/Cleaning Kit	G1531-67000	7890A/B	N/A
Standard .011-inch FID Jet for capillary FID base	G1531-80560	7890A/B	N/A
High Temperature .018-inch FID Jet for capillary FID base	G1531-80620	7890A/B	N/A
Standard .018-inch FID Jet for packed column with packed FID base	18710-20119	7890A/B	N/A
Standard .011-inch FID Jet for capillary column with packed/adaptable FID base	19244-80560	7890A/B	N/A
High Temperature .018-inch FID Jet for capillary column with packed/adaptable FID base	19244-80620	7890A/B	N/A
NPD Jet, universal fit, .011-inch ID	G1534-80580	7890A/B	N/A
NPD Jet, universal fit, .011-inch ID Extended tip	G1534-80590	7890A/B	N/A
SSL Capillary Ultra Inert Inlet Gold Seal with Washer	5190-6144	7890A/B	N/A
SSL Capillary Ultra Inert Inlet Splitless Liner - Single taper with Glass Wool	5190-2293	7890A/B	N/A
**FID Collector Replacement Kit, if needed	G1531-67001	7890A/B	N/A

Service Engineer Comments

If there are any specific points you wish to note as part of performing the service or other items of interest for the customer, please write include them in this box.

N/A

Service Completion

Service request number 6005218299 Date service completed 17 JUN, 2022
 Agilent signature  Customer signature 
 Total number of pages in this document 10

Do not include this section/page in the published, customer-facing PDF version.

This page is only relevant for Agilent source documents for document control purposes and is NOT intended for customer viewing. Refer to the SPIFPM checklist Authoring Guide for more information.

Document Control Logs

Revision Log

Revision	Date	Author	Reason for update
Revision of document	Date of issuance	Author of document	Author to describe main features/changes made for this specific revision
1.0 Draft	4-Mar-2011	Dave Park	Migrated the content of revision A.01.05 to the new Agilent template. Reviewed by subject matter expert, Dave Park.
1.1 Draft	20-Jan-2015	Dave Park	Added Split Vent trap to MMI, PTV and VE - also PTV and FID PM Parts
1.2 Draft	31-March-2015	Dave Park	Added Ultra Inert Gold Seal and Liner to SS Consumables
A.01.11	10-Dec-2015	Dave Park	Added step to perform maintenance on the Split Vent Tube and .018" FID Jet part numbers - Fixed broken web links
2.00	30-Dec-2020	Gary Boardman	Updated New Template and terminology change: Familiarization to Introduction. Create New Agile Document Number: D0007063

Approval Log

Revision	Approver	Title of approver
Add revision number	Add approver name here	Add approver's function or title here
A.01.06	Don Gage	Product support manager
A.01.09	Kai Meng	Product support manager
A.01.10	Suneetha Tippireddy	Product support manager
A.01.11	Suneetha Tippireddy	Product support manager
2.00	Josh Roark	GC Product Support Manager

Designated Evaluation Log

Revision	Designated Evaluator (DE)	Title of DE	DE Number
Add revision number	Add name	Add function or title	Add DE number here
2.00	Michael Zumwalt	CrossLab Start Up Services Application Consulting Lead	44166.759722222

Agilent CrossLab Start Up Services Agilent GCMS Preventive Maintenance Checklist



Agilent Preventive Maintenance provides factory recommended service for your analytical instruments to assure reliable operation and the accuracy of your results.

Delivered by highly trained and certified service engineers using genuine Agilent parts and supplies, Agilent Preventive Maintenance provides everything you need to reduce unplanned downtime and keep your systems operating at their peak. This checklist will be completed at the end of the service and provided to you as a record of the preventive maintenance activities.

Introduction

Select the appropriate PM to be done and then perform the checklist under that section

- ☐ Interim Preventive Maintenance 6 months
- ☒ Major Preventive Maintenance Yearly

This checklist covers the following model(s):

Type	Model
SQ	5973 Series MSD
SQ	5975 Series MSD
SQ	5977 Series MSD
TQ	7000 Series MS/MS
TQ	7010 Series MS/MS
QTOF	7200 Series QTOF
QTOF	7250 Series QTOF

Customer Information

- Customers should provide all necessary operating supplies upon request of the engineer.
- A customer representative should be available to the engineer while performing the preventive maintenance procedures. Customers are responsible for regular maintenance and are encouraged to observe the service representative.
- Any parts not included in the Parts Lists section of this document are not part of the recommended Preventive Maintenance service nor are they included in the price of this service.
- If a system requires the use of extra or special procedures and/or parts for the maintenance service, then these must be ordered separately and charged as a repair, which may incur additional costs.

Important Customer Web Links

- For more information about Agilent Technologies services, please visit our website using the following URL: <http://www.agilent.com/en-us/products/crosslab-instrument-services/service-repair>
- To access Agilent University, visit <http://www.agilent.com/crosslab/university/> to learn about training options, which include online, classroom and onsite delivery. A training specialist can work directly with you to help determine your best options.
- A useful Agilent Resource Center web page is available, which includes short videos on maintenance, quick lists of consumables for new instruments, and other valuable information. Check out the Resource Page here: <https://www.agilent.com/en-us/agilentresources>
- Need technical support, FAQs, supplies? – visit our Support Home page at <http://www.agilent.com/search/support>
- Get answers, Share insights. Build connections:
Join the Agilent Community at <https://community.agilent.com/welcome>

Service Engineer's Responsibilities

- Contact the customer and ensure that all necessary supplies are available before the preventive maintenance visit.
- Complete empty fields with the relevant information.
- Complete the relevant checkboxes in the checklist using either a "X" or tick mark "✓".
- Check "Section not applicable" check boxes to indicate services/tasks not delivered, as appropriate.
- Complete the Preventive Maintenance services in the most logical order relevant to the individual system service in the order of the tasks listed.
- Complete the Service Review section together with the customer.
- Ask the customer to sign the Service Completion section including the customer's and your signature.

Additional Instruction Notes

- Preventive maintenance is a factory recommended procedure designed to reduce the likelihood of electromechanical failures. Failure to perform preventive maintenance may reduce the long-term reliability of certain instruments and systems. **Two preventative maintenances (PMs) per year are recommended, the Major PM Service will be performed annually with an Interim PM performed 6 months after the Major PM.**

System Information

- ☐ Check this box if an instrument configuration report is attached instead of completing the table.

Instrument System Name and ID: 5975C MSD / GCMS-FID
Instrument System Site and Location: SECOT Co., Ltd.

List System Component Product Numbers	List the Serial Numbers of each Component
1. G3172A	US74838080
2.	
3.	
4.	
5.	
6.	
7.	
8.	

Preparation

- ☒ Discuss any specific issues with the customer before starting.
- ☒ Review the instrument logbook for recorded problems and comments.
- ☒ Save instrument control settings before starting the procedure.
- ☒ Perform a general inspection of the system for cleanliness.
- ☒ Check for proper installation of parts, assemblies, sensors etc.
- ☒ Check system for required installation of components and settings as defined by current Service Notes
- ☒ Check for firmware updates and verify with customers if they would like them installed. Firmware update(s) are strongly recommended.

Customer Responsibilities

Customers should ensure that all necessary operating supplies, consumables, and usage-dependent items such as gases, vials, syringes, calibrant solution and solvents required for successful preventive maintenance are available. A customer representative should be available while the preventive maintenance is being performed.

Important notice for customers

The customer should complete the following before the Support Provider arrives on site:

- ☒ Perform an autotune and retain the printed tune report just prior to the start of the PM to verify performance of the equipment.

Note: it is recommended to have the customer run the autotune and tune evaluation prior to the PM and then start the vent cycle so that the instrument will be ready for the service representative.

Definition of the Task/Recommended items within the document

Task		Recommended			
Yes	No	Interim	Major	As needed	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes selected means that the task was done or the part was required.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No selected means that the task was not done or the part was not required.
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Interim selected means that this task is recommended to be done at 6-month intervals.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Major selected means that this task is recommended to be done yearly; if the customer would like a service to be done at the 6-month interval then the service could be purchased.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	As needed selected means that the task was done or the part was used as needed. For example, there could be two types of filters that could be used and this was the one selected.

Preventive Maintenance Procedures

Yes/No	Interim/Major	Description
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Perform general inspection of system for cleanliness
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Discuss any problems the customer is having with the instrument
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Review customer maintenance records and exclude maintenance on recently serviced items
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Review the most recent autotune report. This will give a starting point for evaluating spectral peaks, baseline noise, peak shape, mass assignments and resolution.

Yes/No	Interim/Major	GCMS
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Record instrument model no.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Record instrument serial no.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Record Rough Vacuum
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Record Manifold Vacuum
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Type of Column installed

Yes/No	Interim/Major	System Checks
Yes/No	Interim/Major	Description
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Verify that calibration peaks were seen prior to starting the PM
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vent the instrument
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Inspect vacuum hoses, pump, exhaust tubing, and power cords for excessive wear.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Visually inspect calibrant levels – PFTBA PFDTD (if appl.), IRM (if appl.). Refill if available.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Look for any obvious external damage or problems.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Clean air intake(s). Cosmetic cover(s) may need to be removed.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Verify system line voltage meets instrument specifications: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Yes/No	Interim/Major	Wet Mechanical vacuum pumps
Yes/No	Interim/Major	Description
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Check for evidence of oil leakage. Check pump gasket for leakage.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Drain and replace mechanical pump oil.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Replace Oil Mist Filter if applicable.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Discuss with customer the need for more frequent oil changes if the oil is dirty.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Don't use mist filters with Chemical Ionization.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Perform anti-suckback valve test. Power on until side plate is held closed, power off and check that side plate holds closed. Visually confirm that no oil returns up vacuum hose.
Yes/No	Interim/Major	Dry Mechanical vacuum pumps - Diaphragm
Yes/No	Interim/Major	Description
<input type="checkbox"/>	<input type="checkbox"/>	Check for evidence of poor vacuum – Turbo power demand, poor manifold vacuum, etc.
<input type="checkbox"/>	<input type="checkbox"/>	Clear air flow paths of dust.
<input type="checkbox"/>	<input type="checkbox"/>	If vacuum is poor, then replace the diaphragm pump.
<input type="checkbox"/>	<input type="checkbox"/>	Perform anti-suckback valve test. Power on until side plate is held closed, power off and check that side plate holds closed.

Yes/No	Interim/Major	Dry Mechanical vacuum pumps - Scroll
Yes/No	Interim/Major	Description
<input type="checkbox"/>	<input type="checkbox"/>	Replace the tips seal on the IDP pump.
<input type="checkbox"/>	<input type="checkbox"/>	Check for evidence of poor vacuum – Turbo power demand, poor manifold vacuum, etc.
<input type="checkbox"/>	<input type="checkbox"/>	Replace the Exhaust Filter if required.
<input type="checkbox"/>	<input type="checkbox"/>	Discuss with customer the need for more frequent changes, if needed.
<input type="checkbox"/>	<input type="checkbox"/>	Inform customer that pump gas ballast should be installed all the time.
<input type="checkbox"/>	<input type="checkbox"/>	Perform anti-suckback valve test. Power on until side plate is held closed, power off and check that side plate holds closed.

Yes/No	Interim/Major	Cleaning System and Filters
Yes/No	Interim/Major	Description
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Fans
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Remove dust from fans and vent covers.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Verify fans are functional and that there is enough space around the instrument for proper cooling.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Source cleaning
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Open analyzer and remove the source.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Disassemble, Clean, Re-assemble source.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Re-install source and close analyzer.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Filters
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Replace RSMH-2 Helium gas filter – if applicable.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Replace RSMN-2 Nitrogen gas filter – if applicable.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Replace RSMHY-2 Hydrogen gas filter – if applicable.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	CP17988 – Gas Clean Carrier Gas Kit for 7890 for Nitrogen or Helium; Bracket, Mount, and Filter – if applicable.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	CP17974 – Gas Clean Filter Kit GC/MS 1/8"; Mount and Filter – if applicable.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	CP17973 – Gas Clean Filter; Replacement Filter – if applicable.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	5190-9071 – Methane Gas Filter – if applicable.

Guidance: If gas filter is replaced, write the change date on the filter using a permanent marker.

Yes/No	Interim/Major	System post-check
Yes/No	Interim/Major	Description
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Pump system back down. Wait until system stability has been achieved.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Verify system vacuum reading(s) via the gauge controller.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Leak Check
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Verify system in manual tune
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Compare against previous tune file report(s)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Change to Tune and verify that all temperatures, pressures, and gas flows reach method set points
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Check manually that you have calibration peaks.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	EI Autotune Performed

Guidance: If the PM Service is performed prior to a qualification service, then use the qualification procedure as a guide for final instrument setup and checkout.

Service Review

- ☒ Attach available reports/printouts of all tests to this documentation.
- ☒ Record the Preventive Maintenance service activity in the customer's records/logbook. Record the PM event in the Smart Alerts logbook, if applicable.
- ☒ Update/reset instrument maintenance counters as appropriate.
- ☒ Affix the PM sticker to the system or instrument logbook based on the customer's request.
- ☒ Complete the Service Engineer Comments section if there are additional comments.
- ☒ Review this service, parts replaced, and test results obtained with the customer.
- ☐ If the instrument firmware was updated, record the details of the change in the Service Engineer's Comment box. Systems in a compliant environment may need additional documentation.

Agilent Test Results Table

Test Description	Expected Test Result	Actual Test Result
Atune and Evaluation	Pass	Pass

Agilent Consumed Parts List Table

☐ Section not applicable

Part Description	Part Number	Product or Model# where used	Quantity consumed
Agilent Vacuum Fluid	5191-6851	Rough Pump	1

Signature Page

Service Engineer Comments (optional)

N/A

Service Completion

Service request number 6005218299 Date service completed 17 JUN, 2022

Agilent signature *Srinivas T.* Customer signature *Srinivas C.*

Total number of pages in this document 12

Parts – As needed as part of the PM

Common MS Filters and Seals – 5973/5975/5977/7000/7010/7200/7250 Series

Yes/No	Interim/Major/As needed	Supplies	Part number
<input type="checkbox"/>	<input type="checkbox"/>	Helium gas filter – if required	RMSH-2
<input type="checkbox"/>	<input type="checkbox"/>	Nitrogen gas filter – if required	RMSN-2
<input type="checkbox"/>	<input type="checkbox"/>	Big Universal Trap, 1/8" fittings, Hydrogen, if required	RMSHY-2
<input type="checkbox"/>	<input type="checkbox"/>	Gas Clean Carrier Gas Kit for 7890 for Nitrogen or Helium; Bracket, Mount and Filter – if required	CP17988
<input type="checkbox"/>	<input type="checkbox"/>	Gas Clean Filter Kit GC/MS 1/8 in (complete replacement kit) – if required	CP17974
<input type="checkbox"/>	<input type="checkbox"/>	Gas Clean GS/MS Filter – if required	CP17973
<input type="checkbox"/>	<input type="checkbox"/>	Chemical Ionization Gas Purifier (CI systems) – if required	S190-9071
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Agilent AVF Platinum, 1 quart	S191-5851

Gas filters need to be changed only if required

MS Maintenance Supplies for 5973/5975/5977 Series

Yes/No	Interim/Major/As needed	Supplies	Part number
<input type="checkbox"/>	<input type="checkbox"/>	Diffusion pump fluid (Diffusion Pump Models)	6040-0809 Qty 2
<input type="checkbox"/>	<input type="checkbox"/>	IDP-3 Tip Seal Replacement Kit (IDP-3 Dry Pump Models)	G7077-67018
<input type="checkbox"/>	<input type="checkbox"/>	IDP-3 Tip Seal Replacement Kit (no tools – CSD P/N)	S190-9561
<input type="checkbox"/>	<input type="checkbox"/>	IDP-3 Tip Seal Replacement Kit (no tools – VPD P/N)	IDP3TS
<input type="checkbox"/>	<input type="checkbox"/>	Filter element for IDP-3	REPLSLRFILTER2
<input type="checkbox"/>	<input type="checkbox"/>	DS42 Oil Mist Eliminator 3/4G & 3/8	SR03706556
<input type="checkbox"/>	<input type="checkbox"/>	Exhaust oil mist trap (thread) Edwards/Pfeiffer	G1099-80039

MS Maintenance Supplies for 7000/7010 Series

Yes/No	Interim/Major/As needed	Supplies	Part number
<input type="checkbox"/>	<input type="checkbox"/>	Nitrogen gas filter	RMSN-2
<input type="checkbox"/>	<input type="checkbox"/>	IDP-10 Tip Seal Replacement Kit (IDP-10 Dry Scroll Pump Models)	G7004-67023
<input type="checkbox"/>	<input type="checkbox"/>	IDP-10 Tip Seal Replacement Kit (no tools – VPD P/N)	X3807-67000
<input type="checkbox"/>	<input type="checkbox"/>	Oil Mist Filter RV5	G6600-80043
<input type="checkbox"/>	<input type="checkbox"/>	Filter element for the IDP-10	REPLSLRFILTER1

MS Maintenance Supplies for 7200/7250 Series

Yes/No	Interim/Major/As needed	Supplies	Part number
<input type="checkbox"/>	<input type="checkbox"/>	Nitrogen gas filter – if required	RMSN-2
<input type="checkbox"/>	<input type="checkbox"/>	RIS Probe Maintenance Kit (7200 Series only)	G7005-60170
<input type="checkbox"/>	<input type="checkbox"/>	DS202 Oil Mist Eliminator	SR03706800
<input type="checkbox"/>	<input type="checkbox"/>	IDP-15 Tip Seal Replacement Kit (IDP-15 Dry Pump Models)	S190-9613
<input type="checkbox"/>	<input type="checkbox"/>	IDP-15 Tip Seal Replacement Kit (no tools – VPD P/N)	X3815-67000
<input type="checkbox"/>	<input type="checkbox"/>	Filter element, for SH-110/SH-112/IDP-15 exhaust silencer	REPLSLRFILTER
<input type="checkbox"/>	<input type="checkbox"/>	DS 3/8 MAG. PLUG AND GASKET	SR03701824

MS Maintenance Supplies for JetClean

Yes/No	Interim/Major/As needed	Supplies	Part number
<input type="checkbox"/>	<input type="checkbox"/>		

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Big Universal Trap, 1/8" fittings, Hydrogen, if required	RMSHY-2
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Consumable Parts Reference – Purchasable by customer, not included as part of PM

Common MSD Maintenance Supplies 5973/5975/5977/7000/7010/7200/7250 Series

Yes/No	Interim/Major/As needed	Common Recommended Consumables Parts	Part number
<input checked="" type="checkbox"/>	<input type="checkbox"/>	EI High Temperature Filaments	G7005-60061 Qty 2
<input type="checkbox"/>	<input type="checkbox"/>	HES EI Filaments	G7002-60001
<input type="checkbox"/>	<input type="checkbox"/>	LE-EI Filaments	G3850-60021
<input type="checkbox"/>	<input type="checkbox"/>	CI High Temperature Filament – all MSDs	G7005-60072
<input type="checkbox"/>	<input type="checkbox"/>	PFTBA GCMS Tuning Standard calibrant	05971-60571
<input type="checkbox"/>	<input type="checkbox"/>	PFDTD calibrant, 1 mL	8500-8510
<input type="checkbox"/>	<input type="checkbox"/>	PFET, IRM calibrant for GC QTOF 0.5 mL	S190-0531

MSD Maintenance Supplies 5973/5975/5977 Series

Yes/No	Interim/Major/As needed	Supplies	Part number
<input type="checkbox"/>	<input type="checkbox"/>	CI Interface tip seal (tip and spring combo)	G1999-60412
<input type="checkbox"/>	<input type="checkbox"/>	CI Interface tip seal (tip only)	G3870-20542
<input type="checkbox"/>	<input type="checkbox"/>	CI Interface tip seal spring (spring only)	G1999-20023
<input type="checkbox"/>	<input type="checkbox"/>	Repeller insulator	G1099-20133 Qty 2
<input type="checkbox"/>	<input type="checkbox"/>	Lens insulator/holder (HES)	G7002-20074
<input type="checkbox"/>	<input type="checkbox"/>	Ring heater/sensor assembly (HES)	G7002-60043
<input type="checkbox"/>	<input type="checkbox"/>	Ceramic insulator for Extractor (HES)	G7002-20064
<input type="checkbox"/>	<input type="checkbox"/>	Transfer-Line Tip Cap, Threaded	G3870-20547
<input type="checkbox"/>	<input type="checkbox"/>	Transfer-Line Tip Base, Threaded	G3870-20548

MS Maintenance Supplies for 7000/7010 Series

Yes/No	Interim/Major/As needed	Supplies	Part number
<input type="checkbox"/>	<input type="checkbox"/>	CI Interface tip seal - 7000	G1999-60412
<input type="checkbox"/>	<input type="checkbox"/>	CI Interface tip seal - 7010	G7002-60412
<input type="checkbox"/>	<input type="checkbox"/>	CI Interface tip seal (tip only)	G3870-20542
<input type="checkbox"/>	<input type="checkbox"/>	CI Interface tip seal spring (spring only)	G1999-20023
<input type="checkbox"/>	<input type="checkbox"/>	Repeller insulator - 7000	G1099-20133 Qty 2
<input type="checkbox"/>	<input type="checkbox"/>	Lens insulator/holder (HES)	G7002-20074
<input type="checkbox"/>	<input type="checkbox"/>	Ring heater/sensor assembly (HES)	G7002-60043
<input type="checkbox"/>	<input type="checkbox"/>	Ceramic insulator for Extractor (HES)	G7002-20064
<input type="checkbox"/>	<input type="checkbox"/>	Transfer-Line Tip Cap, Threaded	G3870-20547
<input type="checkbox"/>	<input type="checkbox"/>	Transfer-Line Tip Base, Threaded	G3870-20548

MS Maintenance Supplies for 7200 Series

Yes/No	Interim/Major/As needed	Supplies	Part number
<input type="checkbox"/>	<input type="checkbox"/>	Extractor Lens Insulator	G7005-20133
<input type="checkbox"/>	<input type="checkbox"/>	Ion Focus Insulator	G7005-20442
<input type="checkbox"/>	<input type="checkbox"/>	Ring Heater/Sensor Assembly	G7005-60110
<input type="checkbox"/>	<input type="checkbox"/>	RIS Xfer Tip	G7005-20542
<input type="checkbox"/>	<input type="checkbox"/>	RIS Xfer Tip Spring	G7005-20024

MS Maintenance Supplies for 7250 Series

Yes/No	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Supplies	
Yes/No	Interim	Major/As needed	Description	Part number
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Lens insulator/holder (HES)	G7002-20074
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ring heater/sensor assembly (HES)	G7002-60043
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ceramic insulator for Extractor (HES)	G7002-20064
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Transfer-Line Tip Cap, Threaded	G3870-20547
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Transfer-Line Tip Base, Threaded	G3870-20548
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	EI Extractor Transfer Tip	G3870-20542
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	CI Tip Compression Spring	G1999-20023

MS Maintenance Supplies for Intuvo 9000 MS Systems

Yes/No	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Supplies	
Yes/No	Interim	Major/As needed	Description	Part number
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Swaged MS Tail - Packaged	G4590-60009
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Swaged MS Tail (HES) - Packaged	G4590-60109

Common MS Maintenance Supplies

Parts required				
Yes/No	Interim	Major/As needed	Description	Part number
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Abrasive paper, 30 um	5061-5896
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Alumina powder	393706201
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cloths, clean (pkg of 15)	05980-60051
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cloths, cleaning (pkg of 300)	9310-4828
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cotton swabs (pkg of 100)	5080-5400
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Gloves, clean, large	8650-0030
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Gloves, clean, small	8650-0029



Agilent CrossLab Start Up Services

Agilent 7890 Gas Chromatograph

Preventive Maintenance Checklist

Agilent Preventive Maintenance provides factory recommended service for your analytical instruments to assure reliable operation and the accuracy of your results.

Delivered by highly trained and certified service engineers using genuine Agilent parts and supplies, Agilent Preventive Maintenance provides everything you need to reduce unplanned downtime and keep your systems operating at their peak. This checklist will be completed at the end of the service and provided to you as a record of the preventive maintenance activities.



Agilent 7890 GC Preventive Maintenance Checklist



Introduction

Customer Information

- Customers should provide all necessary operating supplies upon request of the engineer.
- A customer representative should be available to the engineer while performing the preventive maintenance procedures.
- Any parts, not included in the Parts Lists section of this document, are not part of the recommended Preventive Maintenance service, nor are they included in the price of this service.
- If a system requires the use of extra or special procedures and/or parts for the maintenance service, then these must be ordered separately and charged as a repair, which may incur additional costs.

Important Customer Web Links

- For more information about **Agilent Technologies services**, please visit our website using the following URL: <http://www.agilent.com/en-us/products/crosslab-instrument-services/service-repair>
- **The Agilent Community** is an excellent place to get answers, collaborate with others about applications and Agilent products, and find in-depth documents and videos relevant to Agilent technologies. Visit <https://community.agilent.com/welcome>.
- To access **Agilent University**, visit <http://www.agilent.com/crosslab/university/> to learn about training options, which include online, classroom and onsite delivery. A training specialist can work directly with you to help determine your best options.
- A useful **Agilent Resource Center** web page is available, which includes short videos on maintenance, quick lists of consumables for new instruments, and other valuable information. Check out the Resource Page here: <https://www.agilent.com/en-us/agilentresources>.
- Need technical support, FAQs, supplies? – visit our **Support Home page** <http://www.agilent.com/search/support>.
- Videos about specific preparation requirements for your instrument can be found by searching the **Agilent YouTube** channel at <https://www.youtube.com/user/agilent>.
- **7890B Manuals** are also available on Agilent.com:
 - **Safety**
https://www.agilent.com/cs/library/usermanuals/public/7890B_Safety.pdf
 - **Installation and First Startup**
https://www.agilent.com/cs/library/usermanuals/public/7890B_Installation.pdf
 - **Operation Manual**
https://www.agilent.com/cs/library/usermanuals/public/7890B_Operation.pdf
 - **Maintaining Your GC**
https://www.agilent.com/cs/library/usermanuals/public/G3490-90652-207890B_Maintaining%20Guide.pdf

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Service Engineer's Responsibilities

- **Contact the customer** and ensure that all necessary supplies are available before the preventive maintenance visit.
- Only select those pages that relate to the system or module being serviced.
- Complete empty fields with the relevant information.
- Complete the relevant checkboxes in the checklist using either a "X" or tick mark "✓".
- Check "Section not applicable" check boxes to indicate services/tasks not delivered, as appropriate.
- Complete the Preventive Maintenance service in the order of the tasks listed.
- Complete the Service Review section together with the customer.
- Complete the fields for page numbers at the foot of each selected page
- Complete the total number of pages field in the Service Completion section
- *Ask the customer to sign the Service Completion section including the customer's and your signature.*

Additional Instruction Notes

- Check for any active service notes for this unit. If there are any applicable "Safety" or "Modification Recommended" Service notes, plan to implement the changes on this unit before doing any qualification service.
- **Do not implement firmware updates, unless you get approval from the customer and are sure that they are compatible with the instrument control software.**

System Information

- ☐ Check this box if an instrument configuration report is attached instead of completing the table below.

Instrument System Name and ID

CN13201093

Instrument System Site and Location

SECOT, Bangkok

List System Component Product Numbers

List the Serial Numbers of each Component

1.	G4440A	CN13201093
2.	G4513A	CN13360106
3.	G4514A	CN13270091
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Preparation

- ☒ Discuss any specific issues with the customer before starting.
- ☒ Review the instrument logbook for recorded problems and comments.
- ☒ Save instrument control settings before starting the procedure.
- ☒ Perform a general inspection of the system for cleanliness.
- ☒ Check for proper installation of parts, assemblies, sensors etc.
- ☒ Check system for required installation of components, settings as defined by current Service Notes.
- ☒ Check for required firmware updates and verify with customers if they would like them installed.
- ☒ Before starting the following procedures, record the Detector Signal Output(s) in the results table, if the GC is turned OFF or in a service mode, comparing the detector outputs before and after the service is not possible.

Preventive Maintenance Procedure

Clean and inspect GC

- ☒ Unplug power cord from the power source.
- ☒ Open GC covers and vacuum/remove any dust/debris. Pay particular attention to cooling fans.
- ☒ Inspect internal connectors for proper contact and placement.
- ☒ Reconnect Power to the GC. Power the GC on and verify the power on self-test passed.
- ☒ Verify oven motor spins freely and turns on with the oven door closed; off when the door is opened.
- ☒ Verify operation of all other fans - the inlet and EPC cooling fans.
- ☒ Verify oven intake/outlet flap assembly is operating smoothly while heating and cooling the oven

Inlet and detector consumable replacement

- ☒ For the inlets installed, perform inlet maintenance as defined in the 7890 manual – "Maintaining Your GC" – for the inlet(s) installed.
- ☒ Replace the split vent trap cartridge filter on units with these inlets: Split/Splitless Capillary (SSL), Multi-Mode Inlet (MMI), Programmed Temperature Vaporizer (PTV), Volatiles Interface (VI).
- ☒ If the inlet system is used in Split Mode with viscous samples, inspect and clean the split vent tube on the inlet and flush or replace the tubing between the inlet and the split vent trap.
- ☒ If the GC includes a Flame Ionization Detector (FID), replace the jet. If the ignitor shows any buildup of sample or corrosion, replace the ignitor. Examine the FID collector and castle assemblies for contamination – clean as necessary.

Zero Sensors and Leak test

- ☒ Zero all pressure sensors per the procedure in the 7890 "Advanced User Guide".
- ☒ Perform inlet pressure decay test(s) as defined in the 7890 "Troubleshooting Manual".
If the PM is done in preparation for an Operational Qualification, then the pressure decay test defined within that protocol can be used for the PM.
- ☒ Record if test passed or failed in the results table.

ALS Maintenance

- ☐ Section NOT applicable
- ☒ Check all cabling and configuration settings between GC, tray, and injectors.
- ☒ Vacuum or remove any dust, especially around fans.
- ☒ Check operation of all fans.
- ☒ Check syringe for smooth plunger operation.
- ☒ Check for smooth operation of the needle support -- clean if necessary

Restore Instrument

- ☒ Restore the normal operating conditions or customer method using the Browser interface or Data System.
- ☒ Purge the system with carrier flow for 15 minutes
- ☒ Bake out the system, then restore the normal operating conditions
- ☒ After equilibration, check and record the post PM detector signal output values.
Results should be similar or lower than the detector outputs recorded prior to PM.
- ☒ Perform a chemical checkout. If this is a routine PM, inject the customer's sample using the ALS if applicable. This will act as a final checkout of both the ALS and the GC.

Note: If the PM Service is performed prior to a qualification service, then use the qualification procedure as a guide for final instrument set up and checkout.

Signature Page

Service Review

- ☒ Attach available reports/printouts of all tests to this documentation.
- ☒ Record the Preventive Maintenance service activity in the customer's records/logbook.
- ☒ Update/reset instrument maintenance counters as appropriate.
- ☒ Affix the PM sticker to the system or instrument logbook based on the customer's request.
- ☒ Complete the Service Engineer Comments section if there are additional comments.
- ☒ Review with the customer this service, parts replaced, and test results obtained.
- ☐ If the instrument firmware was updated, record the details of the change in the Service Engineer's Comments box or if necessary, in the customer's IQ records.
- ☐ Supply the customer with a copy of the Smart Alerts flyer.
- ☐ Describe Smart Alerts to the customer.
- ☐ Install Smart Alerts if requested.

7890 GC Test Results Table

Detector Signal Outputs	Before PM Service	After PM Service
Front detector output	N/A	N/A
Back detector output		
AUX detector output		
Pressure decay test	Expected test result	Actual test result
Front inlet pressure decay test	Pass	Pass
Back inlet pressure decay test	Pass	N/A

7890 Parts List Table

The following kits are recommended for capillary and purged packed inlets. If this is a general PM and the customer has a preferred set of consumables, you may use the customer's consumables.

Part description	Part number	Product or model# where used	Quantity consumed
SSL Capillary Inlet PM kit, Splitless	5188-6497	7890A/B	1
SSL Capillary Inlet PM kit, split	5188-6496	7890A/B	1
SSL Capillary Ultra Inert Inlet Gold Seal with Washer	5190-6144	7890A/B	N/A
SSL Capillary Ultra Inert Inlet Splitless Liner - Single taper with Glass Wool	5190-2293	7890A/B	
SSL Capillary Ultra Inert Inlet Low Pressure Drop Split Liner - with Glass Wool	5190-2295	7890A/B	
PP Inlet PM kit	5188-6498	7890A/B	
Split vent trap PM kit, single cartridge (for MMI, PTV & V)	5188-6495	7890A/B	
MMI Cleaning Kit	G3510-60820	7890A/B	
PTV Septumless Head Rebuild Kit	5182-9747	7890A/B	
PTV Septumless Head Teflon Guide	5182-9748	7890A/B	
Ignitor (glow plug) assembly with O-ring	19231-60680	7890A/B	
FID Collector Rebuild/Cleaning Kit	G1531-67000	7890A/B	
Standard .011-inch FID Jet for capillary FID base	G1531-80560	7890A/B	
High Temperature .018-inch FID Jet for capillary FID base	G1531-80620	7890A/B	
Standard .018-inch FID Jet for packed column with packed FID base	18710-20119	7890A/B	
Standard .011-inch FID Jet for capillary column with packed/adaptable FID base	19244-80560	7890A/B	
High Temperature .018-inch FID Jet for capillary column with packed/adaptable FID base	19244-80620	7890A/B	
NPD Jet, universal fit, .011-inch ID	G1534-80580	7890A/B	
NPD Jet, universal fit, .011-inch ID Extended tip	G1534-80590	7890A/B	
SSL Capillary Ultra Inert Inlet Gold Seal with Washer	5190-6144	7890A/B	
SSL Capillary Ultra Inert Inlet Splitless Liner - Single taper with Glass Wool	5190-2293	7890A/B	
**FID Collector Replacement Kit, if needed	G1531-67001	7890A/B	

Service Engineer Comments

If there are any specific points you wish to note as part of performing the service or other items of interest for the customer, please write include them in this box.

Service Completion

Service request number 6005830903 Date service completed 22 Feb 2023
 Agilent signature [Signature] Customer signature [Signature]
 Total number of pages in this document 2

Agilent Preventive Maintenance Services

Agilent GCMS Preventive Maintenance

Agilent Preventive Maintenance provides factory recommended service for your analytical instruments to assure reliable operation and the accuracy of your results

Delivered by highly trained and certified service engineers using genuine Agilent parts and supplies, Agilent Preventive Maintenance provides what you need to reduce unplanned downtime and keep your systems operating at their peak performance.

This checklist is used as a guide for completing the preventive maintenance tasks. A signed copy of this checklist is provided for your records.

Introduction

This checklist covers the following model(s):

Type	Model
SQ	5973 Series MSD
SQ	5975 Series MSD
SQ	5977 Series MSD
TQ	7000 Series MS/MS
TQ	7010 Series MS/MS
QTOF	7200 Series QTOF
QTOF	7250 Series QTOF

Customer Information

- Customers should provide all necessary operating supplies upon request of the engineer.
- A customer representative should be available to the engineer while performing the preventive maintenance procedures. Customers are responsible for regular maintenance and are encouraged to observe the service representative.
- Any parts not included in the Parts Lists section of this document are not part of the recommended Preventive Maintenance service nor are they included in the price of this service.
- If a system requires the use of extra or special procedures and/or parts for the maintenance service, then these must be ordered separately and charged as a repair, which may incur additional costs.

Important Customer Web Links

- To access Agilent training and education, visit <http://www.agilent.com/chem/training> to learn about training options, which include online, classroom and onsite delivery. A training specialist can work directly with you to help determine your best options.

- To access the Agilent Resource Center web page, visit <https://www.agilent.com/en-us/agilentresources>. The following information topics are available:

- Sample Prep and Containment
- Chemical Standards
- Analysis
- Service and Support
- Application Workflows

- The Agilent Community is an excellent place to get answers, collaborate with others about applications and Agilent products, and find in-depth documents and videos relevant to Agilent technologies. Visit <https://community.agilent.com/welcome>
- Videos about specific preparation requirements for your instrument can be found by searching the Agilent YouTube channel at <https://www.youtube.com/user/agilent>
- Need to place a service call? Flexible Repair Options | Agilent

Service Engineer's Responsibilities

- Contact the customer and ensure that all necessary supplies are available before the preventive maintenance visit.
- Only select those pages that relate to the system or module being serviced.
- Complete empty fields with the relevant information.
- Complete the relevant checkboxes in the checklist using either a "X" or tick mark "✓".
- Check "Service not applicable" check boxes to indicate services/tasks not delivered, as appropriate.
- Complete the Preventive Maintenance services in the most logical order relevant to the individual system service in the order of the tasks listed.
- Complete the Service Review section together with the customer.
- Complete the fields for page numbers at the foot of each selected page
- Add relevant page numbers to selected pages and complete the total number of pages field in the Service Verification section
- Complete Signature Page and attach Signature Page to Service Order.

Additional Instruction Notes

- Preventive maintenance is a factory recommended procedure designed to reduce the likelihood of electromechanical failures. Failure to perform preventive maintenance may reduce the long-term reliability of certain instruments and systems. Two preventative maintenances (PMs) per year are recommended, the Major PM Service will be performed annually with an Interim PM performed 6 months after the Major PM.

Instrument Maintenance

Select the appropriate service to be performed.

- ☐ Interim Preventive Maintenance (when available, is typically 6 months or at the request of the customer)
- ☒ Major Preventive Maintenance (Yearly)
- ☐ Enhanced Preventive Maintenance (when available, is provided "As needed")

System Information

- ☐ Check this box if an instrument configuration report is attached instead of completing the table.

Instrument System Name and ID

Instrument System Site and Location

SECOT, Bangkok

List System Component Product Numbers List the Serial Numbers of each Component

List System Component Product Numbers	List the Serial Numbers of each Component
1. 63172A	U913343B01
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	

Preparation

- ☒ Discuss any specific issues with the customer before starting.
- ☒ Review the instrument logbook for recorded problems and comments.
- ☒ Save instrument control settings before starting the procedure.
- ☒ Perform a general inspection of the system for cleanliness.
- ☒ Check for proper installation of parts, assemblies, sensors etc.
- ☒ Check system for required installation of components and implementation of Service Notes
- ☒ Check for required firmware updates and verify with customers if they would like them installed. Firmware update(s) are strongly recommended.

Customer Responsibilities

Customers should ensure that all necessary operating supplies, consumables, and usage-dependent items such as gases, vials, syringes, calibrant solution and solvents required for successful preventive maintenance are available. A customer representative should be available while the preventive maintenance is being performed.

Important notice for customers

The customer should complete the following before the Support Provider arrives on site:

- ☐ Perform an autotune and retain the printed tune report just prior to the start of the PM to verify performance of the equipment.

Note: it is recommended to have the customer run the autotune and tune evaluation prior to the PM and then start the vent cycle so that the instrument will be ready for the service representative.

Definition of the Task/Recommended items within the document

Task		Recommended			
Yes	No	Interim	Major	As Needed	
<input checked="" type="checkbox"/>					Yes selected means that the task was done or the part was required.
	<input checked="" type="checkbox"/>				No selected means that the task was not done or the part was not required.
		<input checked="" type="checkbox"/>			Interim selected means that this task is recommended to be done at 6-month intervals.
			<input checked="" type="checkbox"/>		Major selected means that this task is recommended to be done yearly; if the customer would like a service to be done at the 6-month interval then the service could be purchased.
				<input checked="" type="checkbox"/>	As needed selected means that the task was done or the part was used as needed. For example, there could be two types of filters that could be used and this was the one selected.

Preventive Maintenance Procedures

☐ Service Not Applicable

Interim / Major Preventive Maintenance – GC/MS

Yes/No	Interim/Major	Description
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Perform general inspection of system for cleanliness.
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Discuss any problems the customer is having with the instrument.
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Review customer maintenance records and exclude maintenance on recently serviced items.
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Review the most recent autotune report. This will give a starting point for evaluating spectral peaks, baseline noise, peak shape, mass assignments and resolution.

Interim / Major Preventive Maintenance – System Checks

☐ Service Not Applicable

Yes/No	Interim/Major	Description
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Verify that calibration peaks were seen prior to starting the PM.
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Vent the instrument.
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Inspect vacuum hoses, pump, exhaust tubing, and power cords for excessive wear.
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Visually inspect calibrant levels – PFTBA PFDTD (if appl.), IRM (if appl.). Refill if available.
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Look for any obvious external damage or problems.
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Clean air intake(s). Cosmetic cover(s) may need to be removed.
<input type="checkbox"/>	<input type="checkbox"/>	Verify system line voltage meets instrument specifications: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	For HydroInert systems, verify customer is running hydrogen: Yes <input type="checkbox"/> No <input type="checkbox"/>

Interim / Major Preventive Maintenance – Wet Mechanical vacuum pumps

☐ Service Not Applicable

Yes/No	Interim/Major	Description
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Wet Mechanical vacuum pumps

<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Check for evidence of oil leakage. Check pump gasket for leakage.
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Drain and replace mechanical pump oil.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Replace Oil Mist Filter if applicable.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Discuss with customer the need for more frequent oil changes if the oil is dirty.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Don't use mist filters with Chemical Ionization.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Perform anti-suckback valve test. Power on until side plate is held closed, power off and check that side plate holds closed. Visually confirm that no oil returns up vacuum hose.

Interim / Major Preventive Maintenance – Dry Mechanical vacuum pumps – Diaphragm

☒ Service Not Applicable

Yes/No	Interim/Major	Description
<input type="checkbox"/>	<input type="checkbox"/>	Dry Mechanical vacuum pumps – Diaphragm
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Check for evidence of poor vacuum – Turbo power demand, poor manifold vacuum, etc.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Clear air flow paths of dust.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	If vacuum is poor, then replace the diaphragm pump.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Perform anti-suckback valve test. Power on until side plate is held closed, power off and check that side plate holds closed.

Interim / Major Preventive Maintenance – Dry Mechanical vacuum pumps – Scroll

☒ Service Not Applicable

Yes/No	Interim/Major	Description
<input type="checkbox"/>	<input type="checkbox"/>	Dry Mechanical vacuum pumps – Scroll
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Replace the tips seal on the IDP pump.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Check for evidence of poor vacuum – Turbo power demand, poor manifold vacuum, etc.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Replace the Exhaust Filter if required.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Discuss with customer the need for more frequent changes, if needed.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Inform customer that pump gas ballast should be installed all the time.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Perform anti-suckback valve test. Power on until side plate is held closed, power off and check that side plate holds closed.

Interim / Major Preventive Maintenance – Cleaning System and Filters

☐ Service Not Applicable

Cleaning System and Filters			
Yes/No	Interim/Major	Description	
		Fans	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Remove dust from fans and vent covers.	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Verify fans are functional and that there is enough space around the instrument for proper cooling.	
		Source cleaning (all sources except HydroInert)	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Open analyzer and remove the source.	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Disassemble, Clean, Re-assemble source.	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Re-install source and close analyzer.	
		HydroInert Source	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Source NOT to be abrasively cleaned. No cleaning required at PM. If a decrease in performance is observed, recommend to the customer that filaments, insulators (repeller and lens stack), extractor lens, and repeller lens may need to be replaced to restore performance. HydroInert source should not be run with helium carrier.	
		Filters	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Replace RMSH-2 Helium gas filter – if applicable.	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Replace RMSN-2 Nitrogen gas filter – if applicable.	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Replace RMSHY-2 Hydrogen gas filter – if applicable.	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		CP17988 – Gas Clean Carrier Gas Kit for 7890 for Nitrogen or Helium; Bracket, Mount, and Filter – if applicable.	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		CP17974 – Gas Clean Filter Kit GC/MS 1/8"; Mount and Filter – if applicable.	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		CP17973 – Gas Clean Filter; Replacement Filter – if applicable.	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		5190-9071 – Methane Gas Filter – if applicable.	

Interim / Major Preventive Maintenance – System Post Check

☐ Service Not Applicable

System post-check			
Yes/No	Interim/Major	Description	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pump system back down. Wait until system stability has been achieved.			
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Verify system vacuum reading(s) via the gauge controller.			
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Leak Check			
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Verify system in manual tune			
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Compare against previous tune file report(s)			
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Change to Tune and verify that all temperatures, pressures, and gas flows reach method set points			
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Check manually that you have calibration peaks.			
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Autotune Performed			

Guidance: If the PM Service is performed prior to a qualification service, then use the qualification procedure as a guide for final instrument setup and checkout.

Service Review

- ☒ Attach available reports/printouts of all tests to this documentation.
- ☒ Record the Preventive Maintenance service activity in the customer's records/logbook.
- ☒ Record the PM event in the Smart Alerts logbook, if applicable.
- ☒ Update/reset instrument maintenance counters as appropriate.
- ☒ Affix the PM sticker to the system or instrument logbook based on the customer's request.
- ☒ Complete the Service Engineer Comments section if there are additional comments.
- ☒ Review this service, parts replaced, and test results obtained with the customer.
- ☐ If the instrument firmware was updated, record the details of the change in the Service Engineer's Comments box. Systems in a compliant environment may need additional documentation.
- ☒ Complete Signature Page and attach Signature Page to Service Order.

Test Results

Test Description	Expected Test Result	Actual Test Result
------------------	----------------------	--------------------

Consumed PM Parts

Common MS Filters and Seals – 5973/5975/5977/7000/7010/7200/7250 Series

Part Description	Part Number	Interim	Major	As Needed
Helium gas filter – if required	RMSH-2		✓	✓
Nitrogen gas filter – if required	RMSN-2		✓	✓
Big Universal Trap; 1/8" fittings, Hydrogen, if required	RMSHY-2		✓	✓
Gas Clean Carrier Gas Kit for 7890 for Nitrogen or Helium; Bracket, Mount and Filter – if required	CP17988		✓	✓
Gas Clean Filter Kit GC/MS 1/8 in (complete replacement kit) – if required	CP17974		✓	✓
Gas Clean GS/MS Filter – if required	CP17973		✓	✓
Chemical Ionization Gas Purifier (CI systems) – if required	5190-9071		✓	✓
Agilent AvF Platinum, 1 quart	5191-5351	✓	✓	
Gas filters need to be changed only if required				

MS Maintenance Supplies for 5973/5975/5977 Series

Part Description	Part Number	Interim	Major	As Needed
Diffusion pump fluid (Diffusion Pump Models)	6040-0809 Qty 2	✓	✓	✓
IDP-3 Tip Seal Replacement Kit (IDP-3 Dry Pump Models)	G7077-67018	✓	✓	✓
IDP-3 Tip Seal Replacement Kit (no tools – CSD P/N)	5190-9561	✓	✓	✓
IDP-3 Tip Seal Replacement Kit (no tools – VPD P/N)	IDP3TS	✓	✓	✓
Filter element for IDP-3	REPLSLRFILTER 2	✓	✓	✓
DS42 Oil Mist Eliminator 3/4G & 3/8	SR03706556	✓	✓	✓
Exhaust oil mist trap (thread) Edwards/Pfeiffer	G1099-60039	✓	✓	✓
Repeller Insulator	G1099-20133			✓
Lens stack insulator	G3870-20530			✓
Lens insulator for Extractor (ring insulator)	G3870-20445			✓
HydroInert Extractor lens (2mm)	G7078-20909			✓
HydroInert Repeller	G7078-20902			✓

MS Maintenance Supplies for 7000/7010 Series

Part Description	Part Number	Interim	Major	As Needed
Nitrogen gas filter	RMSN-2		✓	✓
IDP-10 Tip Seal Replacement Kit (IDP-10 Dry Scroll Pump Models)	G7004-67023		✓	✓
IDP-10 Tip Seal Replacement Kit (no tools - VPD P/N)	X3807-67000		✓	✓
Oil Mist Filter RV5	G6600-80043		✓	✓
Filter element for the IDP-10	REPLSLR/FILTER 1		✓	✓
Repeller Insulator	G1099-20133			✓
Lens stack insulator	G3870-20530			✓
Lens insulator for Extractor (ring insulator)	G3870-20445			✓
Hydro inert Extractor lens (9mm)	G7078-20909			✓
Hydro inert Repeller	G7078-20902			✓

MS Maintenance Supplies for 7200/7250 Series

Part Description	Part Number	Interim	Major	As Needed
Nitrogen gas filter - if required	RMSN-2		✓	✓
RIS Probe Maintenance Kit (7200 Series only)	G7004-67023		✓	✓
DS202 Oil Mist Eliminator	X3807-67000		✓	✓
IDP-15 Tip Seal Replacement Kit (IDP-15 Dry Pump Models)	G6600-80043		✓	✓
IDP-15 Tip Seal Replacement Kit (no tools - VPD P/N)	REPLSLR/FILTER 1		✓	✓
Filter element for SH-110/SH-112/IDP-15 exhaust silencer	G1099-20133		✓	✓
DS 3/8 MAG. PLUG AND GASKET	G3870-20530		✓	✓

MS Maintenance Supplies for JetClean

Part Description	Part Number	Interim	Major	As Needed
Big Universal Trap, 1/8" fittings, Hydrogen, if required	RMSHY-2		✓	✓

Consumed Parts Reference
(Purchased by customer, not included as part of PM)

Common MSD Maintenance Supplies 5973/5975/5977/7000/7010/7200/7250 Series

Part Description	Part Number	Interim	Major	As Needed
El High Temperature Filaments	G7005-60061 Qty 2			✓
HES El Filaments	G7002-60001			✓
LE-El Filaments	G3850-60021			✓
Cl High Temperature Filament - all MSDs	G7005-60072			✓
PF72A GC/MS Tuning Standard calibrant	05971-60571			✓
PFDD calibrant, 1 mL	8500-8510			✓
PFET, IRM calibrant for GC QTOF 0.5 mL	5190-0531			✓

MSD Maintenance Supplies 5973/5975/5977 Series

Part Description	Part Number	Interim	Major	As Needed
Cl Interface tip seal (tip and spring combo)	G1999-60412			✓
Cl Interface tip seal (tip only)	G3870-20542			✓
Cl Interface tip seal spring (spring only)	G1999-20023			✓
Repeller insulator	G1099-20133 Qty 2			✓
Lens insulator/holder (HES)	G7002-20074			✓
Ring heater/sensor assembly (HES)	G7002-60043			✓
Ceramic insulator for Extractor (HES)	G7002-20064			✓
Transfer-Line Tip Cap, Threaded	G3870-20547			✓
Transfer-Line Tip Base, Threaded	G3870-20548			✓
Lens stack insulator	G3870-20530			✓
Lens insulator for Extractor (ring insulator)	G3870-20445			✓
Hydro inert Extractor lens (9mm)	G7078-20909			✓
Hydro inert Repeller	G7078-20902			✓

MS Maintenance Supplies for 7000/7010 Series

Part Description	Part Number	Interim	Major	As Needed
CI Interface tip seal - 7000	G1999-60412			✓
CI Interface tip seal - 7010	G7002-60412			✓
CI Interface tip seal (tip only)	G3870-20542			✓
CI Interface tip seal spring (spring only)	G1999-20023			✓
Repeller insulator - 7000	G1099-20133 Qty 2			✓
Lens insulator/holder (HES)	G7002-20074			✓
Ring heater/sensor assembly (HES)	G7002-60043			✓
Ceramic insulator for Extractor (HES)	G7002-20064			✓
Transfer-Line Tip Cap, Threaded	G3870-20547			✓
Transfer-Line Tip Base, Threaded	G3870-20548			✓
Lens stack insulator	G3870-20530			✓
Lens insulator for Extractor (ring insulator)	G3870-20445			✓
HydroInert Extractor lens (9mm)	G7079-20609			✓
HydroInert Repeller	G7079-20902			✓

MS Maintenance Supplies for 7200 Series

Part Description	Part Number	Interim	Major	As Needed
Extractor Lens Insulator	G7005-20133			✓
Ion Focus Insulator	G7005-20442			✓
Ring Heater/Sensor Assembly	G7005-60110			✓
RIS Xfer Tip	G7005-20542			✓
RIS Xfer Tip Spring	G7005-20024			✓

MS Maintenance Supplies for 7250 Series

Part Description	Part Number	Interim	Major	As Needed
Lens insulator/holder (HES)	G7002-20074			✓
Ring heater/sensor assembly (HES)	G7002-60043			✓
Ceramic insulator for Extractor (HES)	G7002-20064			✓
Transfer-Line Tip Cap, Threaded	G3870-20547			✓

Part Description	Part Number	Interim	Major	As Needed
Transfer-Line Tip Base, Threaded	G3870-20548			✓
EI Extractor Transfer Tip	G3870-20542			✓
CI Tip Compression Spring	G1999-20023			✓

MS Maintenance Supplies for Intuvo 9000 MS Series

Part Description	Part Number	Interim	Major	As Needed
Swaged MS Tail - Packaged	G4590-60009			✓
Swaged MS Tail (HES) - Packaged	G4590-60109			✓

Common MS Maintenance Supplies

Part Description	Part Number	Interim	Major	As Needed
Abrasive paper, 30 um	5061-5896			✓
Alumina powder	993706201			✓
Cloths, clean (pkg of 15)	05980-60051			✓
Cloths, cleaning (pkg of 300)	9310-4828			✓
Cotton swabs (pkg of 100)	5080-5400			✓
Gloves, clean, large	8650-0030			✓
Gloves, clean, small	8650-0029			✓

Signature Page

Service Engineer Comments (optional)

If there are any specific points you wish to note as part of performing the service review or other items of interest for the customer, please write in this box.

Service Verification

Service Request Number: 6005830493

Date of Service Completion: 22 Feb 2023

Service Engineer Name: SM N.

Customer Name:

Service Engineer Signature:

Total number of pages in this document:

Teledyne Tekmar ATOMX Purge and Trap Preventive Maintenance Checklist - Standard

Agilent Preventive Maintenance provides factory recommended service for your analytical systems to assure reliable operation and the accuracy of your results. Delivered by highly-trained and certified service engineers using genuine Agilent parts and supplies, Agilent Preventive Maintenance provides everything you need to reduce unplanned downtime and keep your systems operating at their peak.

For more information about Agilent Technologies services please visit our web site using the following URL <http://www.chem.agilent.com/en-us/products/services/pages/default.aspx>

Customer Information

- Customers should provide all necessary operating supplies upon request of the engineer.
- A customer representative should be available to the engineer while performing the preventive maintenance procedures.
- Any parts, not included in the Parts Lists section of this document, are not part of the recommended Preventive Maintenance service, nor are they included in the price of this service.
- If a system requires the use of additional or special procedures and/or parts for the instrument service, then these must be ordered separately and charged as a repair, which may incur additional costs.

Service Engineer's Responsibilities

- Only complete/printout pages that relate to the system or module being serviced.
- Complete empty fields with the relevant information.
- Complete the relevant checkboxes in the checklist using a "X" or tick mark "✓" in the checkbox.
- Complete Not Applicable check boxes to indicate services not delivered, as needed.
- Complete the PM service in the order of the tasks listed.
- Complete the Service Review section together with the customer.

System Information

Guidance

- ☐ Check this box if an instrument configuration report is attached instead of completing the table.

Instrument system name and ID	
Instrument system site and location	SECOT, Bangkok
List system component product numbers	List the serial numbers of each component
1. THR-ATOMX	1. 0913201002
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.
8.	8.
9.	9.
10.	10.

Preparation

- ☒ Discuss any specific issues with the customer prior to starting.
- ☒ Review the instrument logbook.
- ☒ Save instrument control settings before starting the procedure.
- ☒ Perform general inspection of system for cleanliness
- ☒ Check for proper installation of safety-related parts, assemblies, sensors etc
- ☒ Check for required firmware updates and verify with customers if they would like it installed.

Check External Supplies

- ☐ Section NOT Applicable
- ☒ Verify the gas source is supplying an input pressure of 50 - 100 psi to the ATOMX. If the customer is using a gas cylinder, verify the cylinder is at 500+ psi.
- ☒ Verify that the waste container has sufficient volume to contain the waste generated. Empty if necessary.
- ☒ Replace the DI water supply with fresh DI water.
 - ☐ Make sure the DI water supply is sufficient for sample analysis (1 Liter minimum)
- ☒ Make sure the methanol supply is sufficient for sample analysis.

Atomx Leak and Pressure Check

- ☐ Section NOT Applicable
- ☒ Scan through the sample log to verify that the purge pressures are staying consistent throughout the daily runs.
- ☒ Use the Teklink software to check the standard pressure.
- ☒ Run a leak check to ensure that the unit is leak tight.

Inspect ATOMX Hardware

- ☐ Section NOT Applicable
- ☒ Check the tray vial holes for foreign particles. Clean if necessary.
- ☒ Inspect the needle for particles or sample build up. Clean if necessary.
- ☒ Inspect the sparger glassware for damage and/or discoloration that could restrict flow or cause contamination. Replace if necessary.
- ☒ Inspect the drain tubing for clogging. Replace the drain line if necessary.
- ☒ Lubricate the ATOMX Carousel Drive. Refer to the diagram on page 6-25 of the ATOMX User Manual for lubrication points. Teledyne Tekmar recommends using DuPont Krytox lubrication.
- ☒ Lubricate the ATOMX Elevator. Refer to the diagram on page 6-32 of the ATOMX User Manual for lubrication points. Teledyne Tekmar recommends using DuPont Krytox lubrication.

Restore Instrument

Guidance

If the PM service is performed prior to a qualification service, then use the qualification procedure as a guide for final instrument set up and checkout.

**Teledyne Tekmar ATOMX Purge and Trap
Preventive Maintenance Checklist - Standard**



Service Review

- ☐ Attach available reports/printouts of all tests to this documentation.
- ☐ Record the PM service activity in the customer's instrument records/logbook
- ☐ Update/reset instrument maintenance counters as appropriate
- ☐ Affix the PM sticker to the system or instrument logbook based on the customer's request.
- ☐ Complete the Service Engineer Comments section below if there are additional comments
- ☐ Review the service and any test results with the customer.
- ☐ If the Instrument firmware was updated, record the details of the change in the Service Engineer's Comments box below or if necessary, in the customer's IQ records.

Product or Product Type Test Results Table

Test Description	Expected Test Result	Actual Test Result
Leak Test	Pass	Pass

Product or Product Type Parts List Table

Part Description	Part Number	Product or Model# where used	Quantity Consumed
Sparger Glassware	Ask the customer what size sparger glassware they are using; refer to the ATOMX parts list for part numbers.	TMR-ATOMX	1
Lubricant, Dupont Krytox	15-0293-000	TMR-ATOMX	1
Tubing, Drain, Self Retracting	15-0087-002	TMR-ATOMX	1

**Teledyne Tekmar ATOMX Purge and Trap
Preventive Maintenance Checklist - Standard**



Service Engineer Comments (optional)

If there are any specific points you wish to note as part of performing the service or other items of interest for the customer, please write in this box.

Other Important Customer Web Links

- ☐ How to get information on your product: Literature Library - <http://www.agilent.com/chem/library>
- ☐ Need to know more? - www.agilent.com/chem/education
- ☐ Need technical support, FAQs? - www.agilent.com/chem/techsupp
- ☐ Need supplies? - www.agilent.com/chem/supplies

Service Completion

Service request number 6005830893 Date service completed 22 Feb 2023

Agilent signature [Signature] Customer signature [Signature]

Number of pages in this document _____



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 Fax: +66 2324 0917



Certificate No.: CP20230033EA
Operation No.: CP2023010024

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: 10 January 2023
Calibrated Date: 13 January 2023
Issued Date: 16 January 2023
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) 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.



ELECTRICAL AND ELECTRONICS INSTITUTE
FOUNDATION FOR INDUSTRIAL DEVELOPMENT

Certificate No.: CP20230033EA

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-1020-22	14 June 2023
2) Waveform Generator	33511B	MY52302264	CK20220058EA	19 June 2023
3) Audio Analyzing DMM	2015-P	4079144	E1U221042	16 March 2023
4) Pressure humidity and Temperature Transmitter	PTU301	F0640002	CL1-P220024 CD20220165EA	17 March 2023 24 July 2023

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; NSC 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	94.24	0.24	±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



ELECTRICAL AND ELECTRONICS INSTITUTE
FOUNDATION FOR INDUSTRIAL DEVELOPMENT

Certificate No.: CP20230033EA

Calibration Report

3. Function : Total distortion + noise

Normal Sound Pressure level (dB)	Normal Frequency (Hz)	Measured value ^[4] (%)	Acceptance limit ^[5] (%)
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.
3. The coverage factor $k = 2.00$

-- End of Report --



ELECTRICAL AND ELECTRONICS INSTITUTE
FOUNDATION FOR INDUSTRIAL DEVELOPMENT
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Phraek Sa, Mueang Samut Prakan, Samut Prakan 10280
Tel: +66 2709 4860 Fax: +66 2324 0917



Certificate No.: CP20220368EA
Operation No.: CP2022120011

Certificate of Calibration

Equipment: Sound Calibrator
Manufacturer: Cirrus Research Plc
Model/Type: CR:515
Serial No.: 94296
ID No.:
Customer: SECOT Co.,Ltd.
Address: 239 Rimklongprapa Rd., Bangsue,
Bangkok 10800 Thailand
Received Date: 14 December 2022
Calibrated Date: 20 December 2022
Issued Date: 23 December 2022
Calibrated by: Ms. Juntaporn Kunhakom

Approved by: 
(Mr. Sittichai Swaksuriyawong)
Group Manager

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The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor (k) 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.: CP20220368EA

Calibration Report

Equipment: Sound Calibrator
Manufacturer: Cirrus Research Plc
Model/Type: CR:515
Serial No.: 94296
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-1020-22	14 June 2023
2) Waveform Generator	33511B	MY52302264	CK20220058EA	19 June 2023
3) Audio Analyzing DMM	2015-P	4079144	E1U221042	16 March 2023
4) Pressure humidity and Temperature Transmitter	PTU301	F0640002	CL1-P220024 CD20220165EA	17 March 2023 24 July 2023

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; NSC 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	94	93.90	-0.10	±0.25

2. Function : Frequency

Normal Sound	Specified Frequency	Measured value	Deviated value ^[2]	Acceptance limit ^[3]
Pressure level (dB)	(Hz)	(Hz)	(%)	(%)
94	1000	1000.3	0.0	±0.7

Certificate No.: CP20220368EA

Calibration Report

3. Function : Total distortion + noise

Normal	Normal	Measured value ^[4]	Acceptance limit ^[5]
Sound Pressure level (dB)	Frequency (Hz)	(%)	(%)
94	1000	0.9	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.

2. The coverage factor $k = 2.00$

- - End of Report - -

Sheet No. : NC-74-2023-023



SOUND LEVEL METER CALIBRATION

Calibration Location: SECOT

Calibration Date: Mar 31, 23

SOUND LEVEL CALIBRATOR

Brand	Model	Serial No.	Calibrated (dB)	Frequency (Hz)
RION	NC-74	34283648	94.0	1000

No.	Brand	Model	Serial No.	Microphone Serial No.	SLM Reading (dB)	dB Adjust
26	RION	NL-21	00187481	117664	94.3	-0.3

Calibrated by :

Approved by :

Preeda S.

NC-74-2023-023/Ca/25/04/2023

SECOT CO., LTD.
239 Rimklongprapa Rd, Bangsue, Bangkok, 10800, THAILAND
Tel: (662)959-3600 Fax: (662) 959-3535
E-Mail: envserv@secot.co.th

Sheet No. : CR-515-2023-038



SOUND LEVEL METER CALIBRATION

Calibration Location: SECOT

Calibration Date: Mar 31, 23

SOUND LEVEL CALIBRATOR

Brand	Model	Serial No.	Calibrated (dB)	Frequency (Hz)
Cirrus	CR:515	94296	94.0	1000

No.	Brand	Model	Serial No.	Effective Calibration Level (dB)	SLM Reading (dB)	Offset (dB)
13	Cirrus	CR161B	G301354	93.7	93.7	0.0
12	Cirrus	CR161B	G301345	93.7	93.7	0.0

Calibrated by :

Approved by :

Preeda S.

CR-515-2023-038/Ca/25/04/2023

SECOT CO., LTD.
239 Rimklongprapa Rd, Bangsue, Bangkok, 10800, THAILAND
Tel: (662)959-3600 Fax: (662) 959-3535
E-Mail: envserv@secot.co.th



SOUND LEVEL METER CALIBRATION

Calibration Location: SECOT

Calibration Date: Mar 31, 23

SOUND LEVEL CALIBRATOR

Brand	Model	Serial No.	Calibrated (dB)	Frequency (Hz)
RION	NC-74	34283648	94.0	1000

No.	Brand	Model	Serial No.	Microphone Serial No.	SLM Reading (dB)	dB Adjust
13	RION	NL-21	00521703	85215	94.0	0.0
56	RION	NL-21	00187511	117816	94.0	0.0
77	RION	NL-21	00487734	119006	94.0	0.0

Calibrated by :

Approved by :

Preeda S.



SOUND LEVEL METER CALIBRATION

Calibration Location: SECOT

Calibration Date: May 9, 23

SOUND LEVEL CALIBRATOR

Brand	Model	Serial No.	Calibrated (dB)	Frequency (Hz)
Cirrus	CR:515	94296	94.0	1000

No.	Brand	Model	Serial No.	Effective Calibration Level (dB)	SLM Reading (dB)	Offset (dB)
1	SCARLET	ST-21D	820722	93.7	93.7	0.0
3	SCARLET	ST-21D	820724	93.7	93.7	0.0

Calibrated by :

Approved by :

Suk Suthawan



NOISE DOSE METER CALIBRATION

Calibration Location: SECOT

Calibration Date: May 9, 23

ACOUSTIC CALIBRATOR

Brand	Model	Serial No.	Calibrated (dB)	Frequency (Hz)
CIRRUS	RC 110A	95168	114.00	1000

No.	Brand	Model	Serial No.	Reading (dB)	dB Adjust
1	Cirrus	CR110A	CB1052	114.2	-0.2
2	Cirrus	CR110A	CB1053	114.0	0.0
3	Cirrus	CR110A	CB1054	114.3	-0.3
4	Cirrus	CR110A	CB1055	114.3	-0.3
5	Cirrus	CR110A	CB1101	114.2	-0.2
6	Cirrus	CR110A	CB1102	114.0	0.0
7	Cirrus	CR110A	CB1103	114.2	-0.2
8	Cirrus	CR110A	CB1104	113.7	0.3

CERTIFICATE OF CALIBRATION

ISSUED BY Noisemeters

DATE OF ISSUE

16 March 2023

CERTIFICATE NUMBER 189327

Noisemeters
Acoustic House
Bridlington Road
Hunmanby
YO14 0PH
United Kingdom
www.noisemeters.com

Page 1 of 1

Test engineer:

Nigel Smith

Electronically signed:

doseBadge Reader

Instrument

Manufacturer: Cirrus Research plc
Model Number: RC:110A

Serial Number: 95168
Notes:

Calibration Procedure

The tests were carried out in accordance with the requirements of IEC 60942:2003 where applicable.

Date of Calibration: 16 March 2023

Functionality Results

Function	Result
Keypad	Pass
Battery Power	Pass
Display	Pass
Communication	Pass
2 way IR link	Pass
Clock	Pass

Calibration Results

	Level (dB)	Frequency (Hz)	Distortion (% THD + Noise)
Initial	113.90	999.3	0.61
Adjusted	114.00	999.2	0.61
Uncertainty	± 0.11	± 0.14	± 0.10
Tolerances	± 0.60	± 2.00	± 4.00

Environmental Conditions

Pressure: 99.27 kPa
Temperature: 23.3 °C
Humidity: 37.6 %

Notes

This certificate provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory. The results within this certificate relate only to the items calibrated. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a coverage probability of approximately 95%.

Calibrated by :

Approved by :

CERTIFICATE OF CALIBRATION

ISSUED BY **NoiseMeters**

DATE OF ISSUE **15 March 2023** CERTIFICATE NUMBER **189209**

NoiseMeters

NoiseMeters
Acoustic House
Bridlington Road
Hunmanby
YO14 0PH
United Kingdom
www.noisemeters.com

Page 1 of 2

Approved signatory
N.Smith
Electronically signed:



Dosimeter : IEC 61252-1993+A1:2000

Instrument information

Manufacturer: Cirrus Research plc Notes:
Model: CR:110A
Serial number: CB1052
Firmware version: 5.4

Test summary

Date of calibration: 15 March 2023

The calibration was performed respecting the requirements of ISO/IEC 17025:2017.

The dosimeter submitted for testing successfully completed the periodic tests of IEC 61252-1993+A1:2000.

The dosimeter submitted for testing conforms to the specifications in IEC 61252-1993+A1:2000.

Test equipment

Equipment	Manufacturer	Model	Serial number
Signal Generator	KEYSIGHT	33511B	MY59000875
Attenuator	Cirrus Research	ZE:952	93892
Environmental Monitor	Comet	T7510	16966334
doseBadge Reader	Cirrus Research plc	UNIDB4A	99336

Notes

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CERTIFICATE OF CALIBRATION

Certificate Number:

189209

Page 2 of 2

Environmental conditions

The following conditions were recorded at the time of the test:

Before	Pressure: 100.79 kPa	Temperature: 21.6 °C	Humidity: 38,8 %
After	Pressure: 100.80 kPa	Temperature: 21.8 °C	Humidity: 38.8 %

Test results summary

Test	Result
Absolute Acoustic Sensitivity	Complies
Linearity	Complies
Short Duration	Complies
Overload Latching	Complies
Frequency weighting	Complies

CERTIFICATE OF CALIBRATION

ISSUED BY **Noisemeters**

DATE OF ISSUE **14 March 2023** CERTIFICATE NUMBER **189140**

Noisemeters

Noisemeters
Acoustic House
Bridlington Road
Hunmanby
YO14 0PH
United Kingdom
www.noisemeters.com

Page 1 of 2

Approved signatory
N.Smith
Electronically signed:



Dosimeter : IEC 61252-1993+A1:2000

Instrument information

Manufacturer: Cirrus Research plc Notes:
Model: CR:110A
Serial number: CB1053
Firmware version: 5.4

Test summary

Date of calibration: 14 March 2023

The calibration was performed respecting the requirements of ISO/IEC 17025:2017.
The dosimeter submitted for testing successfully completed the periodic tests of IEC 61252-1993+A1:2000.

The dosimeter submitted for testing conforms to the specifications in IEC 61252-1993+A1:2000.

Test equipment

Equipment	Manufacturer	Model	Serial number
Signal Generator	KEYSIGHT	33511B	MY59000875
Attenuator	Cirrus Research	ZE:952	93892
Environmental Monitor	Comet	T7510	16966334
doseBadge Reader	Cirrus Research plc	UNIDB4A	99336

Notes

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CERTIFICATE OF CALIBRATION

Certificate Number:

189140

Page 2 of 2

Environmental conditions

The following conditions were recorded at the time of the test:

Before Pressure: 99,59 kPa Temperature: 21,8 °C Humidity: 40,3 %
After Pressure: 99,62 kPa Temperature: 21,9 °C Humidity: 40,0 %

Test results summary

Test	Result
Absolute Acoustic Sensitivity	Complies
Linearity	Complies
Short Duration	Complies
Overload Latching	Complies
Frequency weighting	Complies

CERTIFICATE OF CALIBRATION

ISSUED BY **Noisemeters**

DATE OF ISSUE **15 March 2023** CERTIFICATE NUMBER **189257**

NoiseMeters

NoiseMeters
Acoustic House
Bridlington Road
Hunmanby
YO14 0PH
United Kingdom
www.noisemeters.com

Page 1 of 2

Approved signatory
N.Smith
Electronically signed:



Dosimeter : IEC 61252-1993+A1:2000

Instrument information

Manufacturer: Cirrus Research plc
Model: CR:110A
Serial number: CB1054
Firmware version: 5.4

Notes:

Test summary

Date of calibration: 15 March 2023

The calibration was performed respecting the requirements of ISO/IEC 17025:2017.

The dosimeter submitted for testing successfully completed the periodic tests of IEC 61252-1993+A1:2000.

The dosimeter submitted for testing conforms to the specifications in IEC 61252-1993+A1:2000.

Test equipment

Equipment	Manufacturer	Model	Serial number
Signal Generator	KEYSIGHT	33511B	MY59000875
Attenuator	Cirrus Research	ZE:952	93892
Environmental Monitor	Comet	T7510	16966334
doseBadge Reader	Cirrus Research plc	UNIDB4A	99336

Notes

CERTIFICATE OF CALIBRATION

Certificate Number:

189257

Page 2 of 2

Environmental conditions

The following conditions were recorded at the time of the test:

Before	Pressure: 100.64 kPa	Temperature: 21.4 °C	Humidity: 39.5 %
After	Pressure: 100.62 kPa	Temperature: 20.7 °C	Humidity: 39.7 %

Test results summary

Test	Result
Absolute Acoustic Sensitivity	Complies
Linearity	Complies
Short Duration	Complies
Overload Latching	Complies
Frequency weighting	Complies

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CERTIFICATE OF CALIBRATION

ISSUED BY **Noisemeters**

DATE OF ISSUE **16 March 2023** CERTIFICATE NUMBER **189297**

Noisemeters

Noisemeters
Acoustic House
Bridlington Road
Hunmanby
YO14 0PH
United Kingdom
www.noisemeters.com

Page 1 of 2

Approved signatory
N. Smith
Electronically signed:



Dosimeter : IEC 61252-1993+A1:2000

Instrument information

Manufacturer: Cirrus Research plc Notes:
Model: CR:110A
Serial number: CB1055
Firmware version: 5.4

Test summary

Date of calibration: 16 March 2023

The calibration was performed respecting the requirements of ISO/IEC 17025:2017.

The dosimeter submitted for testing successfully completed the periodic tests of IEC 61252-1993+A1:2000.

The dosimeter submitted for testing conforms to the specifications in IEC 61252-1993+A1:2000.

Test equipment

Equipment	Manufacturer	Model	Serial number
Signal Generator	KEYSIGHT	33511B	MY59000875
Attenuator	Cirrus Research	ZE:952	93892
Environmental Monitor	Comet	T7510	16966334
doseBadge Reader	Cirrus Research plc	RC:110A	40088

Notes

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CERTIFICATE OF CALIBRATION

Certificate Number:

189297

Page 2 of 2

Environmental conditions

The following conditions were recorded at the time of the test:

Before Pressure: 99.48 kPa Temperature: 21.9 °C Humidity: 41.5 %
After Pressure: 99.48 kPa Temperature: 21.9 °C Humidity: 41.9 %

Test results summary

Test	Result
Absolute Acoustic Sensitivity	Complies
Linearity	Complies
Short Duration	Complies
Overload Latching	Complies
Frequency weighting	Complies

CERTIFICATE OF CALIBRATION

ISSUED BY **Noisemeters**

DATE OF ISSUE **15 March 2023** CERTIFICATE NUMBER **189184**

Noisemeters

Noisemeters
Acoustic House
Bridlington Road
Hunmanby
YO14 0PH
United Kingdom
www.noisemeters.com

Page 1 of 2

Approved signatory
N.Smith
Electronically signed:



Dosimeter : IEC 61252-1993+A1:2000

Instrument information

Manufacturer: Cirrus Research plc Notes:
Model: CR:110A
Serial number: CB1101
Firmware version: 5.4

Test summary

Date of calibration: 15 March 2023

The calibration was performed respecting the requirements of ISO/IEC 17025:2017.
The dosimeter submitted for testing successfully completed the periodic tests of IEC 61252-1993+A1:2000.

The dosimeter submitted for testing conforms to the specifications in IEC 61252-1993+A1:2000.

Test equipment

Equipment	Manufacturer	Model	Serial number
Signal Generator	KEYSIGHT	33511B	MY59000875
Attenuator	Cirrus Research	ZE:952	93892
Environmental Monitor	Comet	T7510	16966334
doseBadge Reader	Cirrus Research plc	UNIDB4A	99336

Notes

This certificate provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory. The results within this certificate relate only to the items calibrated. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a coverage probability of approximately 95%.

CERTIFICATE OF CALIBRATION

Certificate Number:

189184

Page 2 of 2

Environmental conditions

The following conditions were recorded at the time of the test:

Before Pressure: 100.76 kPa Temperature: 20.4 °C Humidity: 35.1 %
After Pressure: 100.77 kPa Temperature: 20.8 °C Humidity: 35.6 %

Test results summary

Test	Result
Absolute Acoustic Sensitivity	Complies
Linearity	Complies
Short Duration	Complies
Overload Latching	Complies
Frequency weighting	Complies

CERTIFICATE OF CALIBRATION

ISSUED BY **Noisemeters**

DATE OF ISSUE **14 March 2023** CERTIFICATE NUMBER **189182**

Noisemeters

Noisemeters
Acoustic House
Bridlington Road
Hunmanby
YO14 0PH
United Kingdom
www.noisemeters.com

Page 1 of 2

Approved signatory
N.Smith
Electronically signed:



Dosemeter : IEC 61252-1993+A1:2000

Instrument information

Manufacturer: **Cirrus Research plc** Notes:
Model: **CR:110A**
Serial number: **CB1102**
Firmware version: **5.4**

Test summary

Date of calibration: **14 March 2023**

The calibration was performed respecting the requirements of ISO/IEC 17025:2017.

The dosimeter submitted for testing successfully completed the periodic tests of IEC 61252-1993+A1:2000.

The dosimeter submitted for testing conforms to the specifications in IEC 61252-1993+A1:2000.

Test equipment

Equipment	Manufacturer	Model	Serial number
Signal Generator	KEYSIGHT	33511B	MY59000875
Attenuator	Cirrus Research	ZE:952	93892
Environmental Monitor	Comet	T7510	16966334
doseBadge Reader	Cirrus Research plc	UNIDB4A	99336

Notes

This certificate provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory. The results within this certificate relate only to the items calibrated. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a coverage probability of approximately 95%.

CERTIFICATE OF CALIBRATION

Certificate Number:
189182

Page 2 of 2

Environmental conditions

The following conditions were recorded at the time of the test:

Before Pressure: 99.86 kPa Temperature: 20.9 °C Humidity: 41.3 %
After Pressure: 99.87 kPa Temperature: 21.2 °C Humidity: 40.6 %

Test results summary

Test	Result
Absolute Acoustic Sensitivity	Complies
Linearity	Complies
Short Duration	Complies
Overload Latching	Complies
Frequency weighting	Complies

CERTIFICATE OF CALIBRATION

ISSUED BY **Noisemeters**

DATE OF ISSUE **15 March 2023** CERTIFICATE NUMBER **189187**

Noisemeters

Noisemeters
Acoustic House
Bridlington Road
Hunmanby
YO14 0PH
United Kingdom
www.noisemeters.com

Page 1 of 2

Approved signatory
N.Smith
Electronically signed:



Dosimeter : IEC 61252-1993+A1:2000

Instrument information

Manufacturer: Cirrus Research plc Notes:
Model: CR:110A
Serial number: CB1103
Firmware version: 5.4

Test summary

Date of calibration: 15 March 2023

The calibration was performed respecting the requirements of ISO/IEC 17025:2017.

The dosimeter submitted for testing successfully completed the periodic tests of IEC 61252-1993+A1:2000.

The dosimeter submitted for testing conforms to the specifications in IEC 61252-1993+A1:2000.

Test equipment

Equipment	Manufacturer	Model	Serial number
Signal Generator	KEYSIGHT	33511B	MY59000875
Attenuator	Cirrus Research	ZE:952	93892
Environmental Monitor	Comet	T7510	16966334
doseBadge Reader	Cirrus Research plc	UNIDB4A	99336

Notes

This certificate provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory. The results within this certificate relate only to the items calibrated. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a coverage probability of approximately 95%.

CERTIFICATE OF CALIBRATION

Certificate Number:

189187

Page 2 of 2

Environmental conditions

The following conditions were recorded at the time of the test:

Before	Pressure: 100.77 kPa	Temperature: 20.9 °C	Humidity: 36.1 %
After	Pressure: 100.78 kPa	Temperature: 21.1 °C	Humidity: 37.0 %

Test results summary

Test	Result
Absolute Acoustic Sensitivity	Complies
Linearity	Complies
Short Duration	Complies
Overload Latching	Complies
Frequency weighting	Complies

CERTIFICATE OF CALIBRATION

ISSUED BY Noisemeters

DATE OF ISSUE 15 March 2023 CERTIFICATE NUMBER 189219

NoiseMeters

NoiseMeters
Acoustic House
Bridlington Road
Hunmanby
YO14 0PH
United Kingdom
www.noisemeters.com

Page 1 of 2

Approved signatory
N.Smith
Electronically signed:



Dosimeter : IEC 61252-1993+A1:2000

Instrument information

Manufacturer: Cirrus Research plc Notes:
Model: CR:110A
Serial number: CB1104
Firmware version: 5.4

Test summary

Date of calibration: 15 March 2023

The calibration was performed respecting the requirements of ISO/IEC 17025:2017.

The dosimeter submitted for testing successfully completed the periodic tests of IEC 61252-1993+A1:2000.

The dosimeter submitted for testing conforms to the specifications in IEC 61252-1993+A1:2000.

Test equipment

Equipment	Manufacturer	Model	Serial number
Signal Generator	KEYSIGHT	33511B	MY59000875
Attenuator	Cirrus Research	ZE:952	93892
Environmental Monitor	Comet	T7510	16966334
doseBadge Reader	Cirrus Research plc	UNIDB4A	99336

Notes

This certificate provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory. The results within this certificate relate only to the items calibrated. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a coverage probability of approximately 95%.

CERTIFICATE OF CALIBRATION

Certificate Number:

189219

Page 2 of 2

Environmental conditions

The following conditions were recorded at the time of the test:

Before Pressure: 100.76 kPa Temperature: 21.9 °C Humidity: 39.7 %
After Pressure: 100.74 kPa Temperature: 22.0 °C Humidity: 40.1 %

Test results summary

Test	Result
Absolute Acoustic Sensitivity	Complies
Linearity	Complies
Short Duration	Complies
Overload Latching	Complies
Frequency weighting	Complies



Factory Calibration Certificate

Instrument information

Name **WET BULB GLOBE TEMPERATURE (WBGT) METER**
Series No **3522210173**
Type **JT2011-E2A**

Integrity check of instrument

Appearance ✓
Parts integrity ✓
Screen display or touch ✓
Instrument button ✓
Power supply ✓
battery ✓
Data storage and export ✓
Deviation degree of comparison test with
standard instrument ✓

Calibration Results

UUC Sensor	Standard Temperature (°C)	UUC Reading (°C)	Correction (°C)	Uncertainty (±°C)
WET	25.0	24.8	0.2	0.2
	30.0	29.8	0.2	0.2
	35.0	35.1	-0.1	0.2
	40.0	40.2	-0.2	0.2
	45.0	44.8	0.2	0.2
DRY	25.0	24.8	0.2	0.2
	30.0	29.8	0.2	0.2
	35.0	35.1	-0.1	0.2
	40.0	40.2	-0.2	0.2
	45.0	45.1	-0.1	0.2
GLOBE	25.0	24.9	0.1	0.2
	30.0	29.8	0.2	0.2
	35.0	35.2	-0.2	0.2
	40.0	40.1	-0.1	0.2
	45.0	44.9	0.1	0.2

Environmental conditions: temperature: 26 °C±2°C, relative humidity: 30% RH±10RH%

Reference Standard : Standard Mercury Thermometers, Manufacturer: BGRI, Model: STA, SN: 2-56,
Calibrated Date: 30 March 2021, Calibration Certificate No. : RA21H-AB1000009
This Certificate is traceable to NCMT North China, Certificate No.: RA20J-AK000073

Calibration Engineer: 

Date: 

ภาคผนวก จ

หนังสืออนุญาตขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
จากกรมโรงงานอุตสาหกรรม

คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน

วันที่ 7 เดือน เมษายน พ.ศ. 2566

ข้าพเจ้า () ผู้รับใบอนุญาตประกอบกิจการโรงงาน.....

(/) บริษัท/ห้างหุ้นส่วนจำกัด / บริษัท ชีคอท จำกัด.....

ตั้งอยู่ที่เลขที่ 239 หมู่ที่ - ตรอก/ซอย -

ถนน ร่มเกล้าฯ..... ตำบล/แขวง บางซื่อ.....

อำเภอ/เขต บางซื่อ..... จังหวัด กรุงเทพมหานคร..... รหัสไปรษณีย์ 10800.....

โทรศัพท์ 02-9593600 โทรสาร 02-9593535.....

ได้รับทราบระเบียบกรมโรงงานอุตสาหกรรมว่าด้วยการขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน พ.ศ. 2560 โดยตลอดแล้วและยินยอมปฏิบัติตามระเบียบฯทุกประการ และได้แนบเอกสารต่างๆ ตามรายการเอกสารประกอบการพิจารณา (แบบ ปอ.1-1) มาพร้อมนี้

รายการขอดำเนินการ

การดำเนินการ	รายละเอียด (รายการ)				
	น้ำเสีย/น้ำทิ้ง	น้ำใต้ดิน	อากาศเสีย	สิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว	ดิน
[] ขอขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน					
[/] ต่ออายุห้องปฏิบัติการวิเคราะห์เอกชน	46	123	27	34	122
[] เปลี่ยนแปลงสารมลพิษที่วิเคราะห์ (/) เพิ่มสารมลพิษ () ยกเลิกสารมลพิษ		2	1		2
[] เปลี่ยนแปลงบุคลากร (/) เพิ่มบุคลากร () ยกเลิกบุคลากร	จำนวน 16.....ราย (รายละเอียดตาม แบบ ปว.1) จำนวน.....ราย (รายละเอียดตาม แบบ ปว.1-1)				
[] ยกเลิกห้องปฏิบัติการวิเคราะห์เอกชน					
[] อื่นๆ โปรดระบุ.....					

จึงเรียนมาเพื่อโปรดพิจารณา

นาย.....

ผู้มีอำนาจลงนามแทนนิติบุคคล

7 เม.ย. 66

เวลา 14:05

ผู้จัดทำ

F-ED-LR-01-1/1 (ร.ร.ร.ร.)

ลงชื่อ.....

(นายขรรชัย เกรียงไกรทอง)

ผู้มีอำนาจลงนามแทนนิติบุคคล

ประทับตรา (ตัวพิมพ์)





ที่ อก ๐๓๑๐(๑)/ ๑๗๔ ๕

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๐๔ กุมภาพันธ์ ๒๕๖๕

เรื่อง เปลี่ยนแปลงบุคลากรของห้องปฏิบัติการวิเคราะห์

เรียน กรรมการผู้จัดการ บริษัท ซีคอฟ จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน
ลงวันที่ ๒๘ มกราคม ๒๕๖๕

ตามหนังสือที่อ้างถึง บริษัท ซีคอฟ จำกัด ห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๒๓๙
สถานที่ตั้งเลขที่ ๒๓๙ ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร ขอเปลี่ยนแปลง
บุคลากรของห้องปฏิบัติการวิเคราะห์ ความละเอียดแจ้งแล้ว นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว มีความเห็นดังนี้

๑. ให้ยกเลิกเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๔ ราย

- | | |
|--------------------------------------|----------------------------|
| ๑) นางสาวโชติมาศ ไทยเจริญ | ทะเบียนเลขที่ ว-๒๓๙-จ-๖๐๐๖ |
| ๒) นางสาวณัฐศิริ เลิศธีรพัฒน์ | ทะเบียนเลขที่ ว-๒๓๙-จ-๖๔๒๓ |
| ๓) นางสาวเกษวิรินทร์ ศิลศึก | ทะเบียนเลขที่ ว-๒๓๙-จ-๖๔๒๔ |
| ๔) นางสาวจิรนนท์ จิตุฑะศรี ปิยะธนากร | ทะเบียนเลขที่ ว-๒๓๙-จ-๗๒๓๒ |

๒. ให้เพิ่มผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๑ ราย

- | | |
|----------------------------|----------------------------|
| นางสาวณัฐศิริ เลิศธีรพัฒน์ | ทะเบียนเลขที่ ว-๒๓๙-จ-๐๐๐๑ |
|----------------------------|----------------------------|

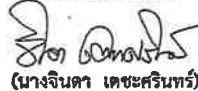
๓. ให้เพิ่มเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๒ ราย

- | | |
|-------------------------------------|----------------------------|
| ๑) นางสาวสุดาพร สุนทร | ทะเบียนเลขที่ ว-๒๓๙-จ-๐๐๐๑ |
| ๒) นางสาวสัญญาลักษณ์ อินทรประสิทธิ์ | ทะเบียนเลขที่ ว-๒๓๙-จ-๐๐๐๒ |

อนึ่ง หนังสือฉบับนี้จะหมดอายุพร้อมหนังสือต่ออายุรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
ที่ อก ๐๓๑๐(๑)/๑๔๘๐๔ ลงวันที่ ๒๑ ตุลาคม ๒๕๖๓ คือในวันที่ ๒ พฤษภาคม ๒๕๖๖ ทั้งนี้ สามารถยื่นคำ
ขอผ่านระบบอิเล็กทรอนิกส์ได้ที่หน้าเว็บไซต์กรมโรงงานอุตสาหกรรม ตาม QR Code ท้ายหนังสือฉบับนี้

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ


(นางจินดา เชษศรีจันทร์)

ผู้อำนวยการกองวิจัยและเฝ้าระวังมลพิษโรงงาน
ปฏิบัติการตามแผนอัตรากำลังกรมโรงงานอุตสาหกรรม



ยื่นคำขอผ่านระบบอิเล็กทรอนิกส์

กองวิจัยและเฝ้าระวังมลพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕

โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๙๔

ไปรษณีย์อิเล็กทรอนิกส์ saraban@diw.mail.go.th



ที่ อก ๐๓๑๐(๑)/ ๑๑ ๘ ๐ ๕

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ เขตราชเทวี
กรุงเทพมหานคร ๑๐๔๐๐

๒๑ ตุลาคม ๒๕๖๓

เรื่อง ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

เรียน กรรมการผู้จัดการ บริษัท ซีคอฟ จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน
ลงวันที่ ๒๔ มีนาคม ๒๕๖๓

สิ่งที่ส่งมาด้วย ๑. รายชื่อผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๑ แผ่น

๒. รายชื่อเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๑ แผ่น

๓. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๓๒ แผ่น

ตามหนังสือที่อ้างถึง บริษัท ซีคอฟ จำกัด ขอต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการ
วิเคราะห์เอกชน เลขทะเบียน ว-๒๓๙ สถานที่ตั้งเลขที่ ๒๓๙ ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ
กรุงเทพมหานคร ต่อกรมโรงงานอุตสาหกรรม นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้บริษัท ซีคอฟ จำกัด ต่ออายุหนังสือรับขึ้นทะเบียน
ห้องปฏิบัติการวิเคราะห์เอกชน โดยมีองค์ประกอบดังนี้

ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๑๐ ราย ตามสิ่งที่ส่งมาด้วย ๑

ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๓๑ ราย ตามสิ่งที่ส่งมาด้วย ๒

ค. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนไว้วิเคราะห์ในน้ำเสีย จำนวน ๔๖ รายการ น้ำได้ดิน
จำนวน ๑๒๓ รายการ อากาศเสีย จำนวน ๒๗ รายการ สิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว จำนวน ๓๔ รายการ
และดิน จำนวน ๑๒๒ รายการ รวมทั้งสิ้นจำนวน ๓๕๒ รายการ ตามสิ่งที่ส่งมาด้วย ๓

หนังสือฉบับนี้จะหมดอายุในวันที่ ๒ พฤษภาคม ๒๕๖๖ หากประสงค์จะต่ออายุหนังสือ
รับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ให้ยื่นคำขอต่ออายุพร้อมเอกสารประกอบคำขอต่อ
กรมโรงงานอุตสาหกรรมภายใน ๓๐ วัน ก่อนวันสิ้นสุดของหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
ซึ่งคำขอต่ออายุดังกล่าวขอรับได้ที่กรมโรงงานอุตสาหกรรม

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ


(นางจินดา เชษศรีจันทร์)

ผู้อำนวยการกองวิจัยและเฝ้าระวังมลพิษโรงงาน
ปฏิบัติการตามแผนอัตรากำลังกรมโรงงานอุตสาหกรรม

กองวิจัยและเฝ้าระวังมลพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๒๐๒ ๔๐๐๒ ๐ ๒๒๐๒ ๔๑๔๖

โทรสาร ๐ ๒๓๕๔ ๓๒๐๘ ๐ ๒๓๕๔ ๓๔๑๕

ภาคผนวก จ

ใบรับรองความสามารถห้องปฏิบัติการและขอบข่ายการรับรอง
ห้องปฏิบัติการทดสอบ ตามมาตรฐาน ISO/IEC 17025
จากสำนักงานมาตรฐานอุตสาหกรรม (สมอ.)



ใบรับรองเลขที่ 20T173/1151

ใบรับรองห้องปฏิบัติการ

อาศัยอำนาจตามความในพระราชบัญญัติการมาตรฐานแห่งชาติ พ.ศ. ๒๕๕๑

เลขาธิการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม

ออกใบรับรองฉบับนี้ให้

บริษัท ซีคोट จำกัด

มีห้องปฏิบัติการตั้งอยู่เลขที่

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร

ได้รับการรับรองความสามารถห้องปฏิบัติการทดสอบ

ตามมาตรฐานเลขที่ มอก. 17025-2561 (ISO/IEC 17025 : 2017)

ข้อกำหนดทั่วไปว่าด้วยความสามารถห้องปฏิบัติการทดสอบและสอบเทียบ

หมายเลขการรับรองที่ ทดสอบ ๐๓๙๔

โดยมีสาขาการรับรองตามรายละเอียดแนบท้ายใบรับรอง

ตั้งแต่วันที่ ๙ กันยายน พ.ศ. ๒๕๖๓

ถึง วันที่ ๘ กันยายน พ.ศ. ๒๕๖๖

ออกให้ ณ วันที่ ๒๓ กันยายน ๒๕๖๓

(นายวีระศักดิ์ รัตนกิจอนวัชร)

รองเลขาธิการ ปฏิบัติราชการแทน

เลขาธิการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม



กระทรวงอุตสาหกรรม สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม

รายละเอียดแนบท้ายใบรับรองห้องปฏิบัติการทดสอบ

ใบรับรองเลขที่ 20T173/1151

ชื่อห้องปฏิบัติการ

ที่อยู่

หมายเลขการรับรองที่

สถานภาพห้องปฏิบัติการ

ห้องปฏิบัติการทดสอบ บริษัท ซีคोट จำกัด

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร

ทดสอบ 0394

☒ ถาวร ☐ นอกสถานที่ ☐ ชั่วคราว ☐ เคลื่อนที่

สาขาการทดสอบ	รายการทดสอบ	วิธีทดสอบ
สาขาสิ่งแวดล้อม 1. น้ำและน้ำเสีย (water and wastewater)	- Arsenic 0.000 5 mg/l to 0.090 0 mg/l - Arsenic 0.05 mg/l to 4.50 mg/l - Barium 0.02 mg/l to 4.50 mg/l - Cadmium 0.01 mg/l to 4.50 mg/l - Chromium 0.01 mg/l to 4.50 mg/l - Copper 0.02 mg/l to 4.50 mg/l - Iron 0.05 mg/l to 9.00 mg/l - Lead 0.03 mg/l to 4.50 mg/l - Manganese 0.01 mg/l to 9.00 mg/l - Nickel 0.01 mg/l to 4.50 mg/l - Zinc 0.02 mg/l to 9.00 mg/l	- Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23 rd edition, 2017, Part 3030 F and Part 3114 C - Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23 rd edition, 2017, Part 3030 E and Part 3120 B

ฉบับที่ 1 ตั้งแต่วันที่ 9 กันยายน 2563

หน้า 1/5

กระทรวงอุตสาหกรรม สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม

รายละเอียดแนบท้ายใบรับรองห้องปฏิบัติการทดสอบ

ใบรับรองเลขที่ 20T173/1151

หมายเลขการรับรองที่ ทดสอบ 0394

สถานภาพห้องปฏิบัติการ ☒ ถาวร ☐ นอกสถานที่ ☐ชั่วคราว ☐เคลื่อนที่

สาขาการทดสอบ	รายการทดสอบ	วิธีทดสอบ
<p>สาขาส่งแวดล้อม</p> <p>1. น้ำและน้ำเสีย (ต่อ) (water and wastewater) (cont.)</p>	<p>- COD 100 mg/l to 4 000 mg/l</p>	<p>- Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd edition, 2017, Part 5220 D</p>
<p>2. คุณภาพอากาศ (air quality)</p> <p>2.1 บริเวณทำงาน (workplace)</p>	<p>- Total dust 0.10 mg/filter to 2.00 mg/filter</p> <p>- Respirable dust 0.10 mg/filter to 2.00 mg/filter</p> <p>- Benzene 1.10 µg/tube to 420 µg/tube</p> <p>- Toluene 1.10 µg/tube to 420 µg/tube</p> <p>- Total xylenes 2.20 µg/tube to 840 µg/tube</p> <p>• m,p-xylene 1.10 µg/tube to 420 µg/tube</p> <p>• o-xylene 1.10 µg/tube to 420 µg/tube</p>	<p>- NIOSH Manual of Analytical Methods (NMAM), method 0500, 4th edition, 15th August 1994 (Exclude Sampling)</p> <p>- NIOSH Manual of Analytical Method(NMAM), method 0600, 4th edition, 15th January 1998 (Exclude Sampling)</p> <p>- NIOSH Manual of Analytical Methods (NMAM) , method 1501, 4th edition, 15th March 2003 (Exclude Sampling)</p>

รายละเอียดแนบท้ายใบรับรองห้องปฏิบัติการทดสอบ

ใบรับรองเลขที่ 20T173/1151

หมายเลขการรับรองที่ ทดสอบ 0394

สถานภาพห้องปฏิบัติการ ☒ ถาวร ☐ นอกสถานที่ ☐ชั่วคราว ☐เคลื่อนที่

สาขาการทดสอบ	รายการทดสอบ	วิธีทดสอบ
<p>สาขาส่งแวดล้อม</p> <p>2. คุณภาพอากาศ (ต่อ) (air quality) (cont.)</p> <p>2.2 อากาศในปล่องระบาย อากาศ(stack)</p>	<p>- Sulfur dioxide 1.00 mg/l to 16 000 mg/l (solution)</p> <p>- Hydrogen fluoride 5 µg/sample to 400 µg/sample</p> <p>- Hydrogen chloride 5 µg/sample to 400 µg/sample</p>	<p>- US.EPA , Code of Federal Regulations, 40 CFR 60 appendix A, Method 6, July 2019 (Exclude Sampling)</p> <p>- In-house method : WI-7.2-1-22 based on US.EPA, Code of Federal Regulations, 40 CFR 60 appendix A Method 26, 2019 (Exclude Sampling)</p>
<p>2.3 บรรยากาศทั่วไป (ambient air)</p>	<p>- Volatile organic compounds (VOCs)</p> <ul style="list-style-type: none"> Chloroethene 0.05 µg/m³ to 51.00 µg/m³ 1,3 - butadiene 0.04 µg/m³ to 44.00 µg/m³ Bromomethane 0.08 µg/m³ to 77.00 µg/m³ Acrolein 0.05 µg/m³ to 45.00 µg/m³ Acrylonitrile 0.04 µg/m³ to 43.00 µg/m³ Dichloromethane 0.14 µg/m³ to 69.00 µg/m³ Carbon disulfide 0.06 µg/m³ to 62.00 µg/m³ Trichloromethane 0.20 µg/m³ to 97.00 µg/m³ 	<p>- In-house method :WI-7.2-1-24 based on US.EPA , Compendium Method TO - 15, EPA / 625 / R-96 / 010b, January 1999 (Include sampling)</p>

รายละเอียดแนบท้ายใบรับรองห้องปฏิบัติการทดสอบ

ใบรับรองเลขที่ 20T173/1151

หมายเลขการรับรองที่ ทดสอบ 0394

สถานภาพห้องปฏิบัติการ ☒ ถาวร ☐ นอกสถานที่ ☐ชั่วคราว ☐เคลื่อนที่

สาขาการทดสอบ	รายการทดสอบ	วิธีทดสอบ
<p>สาขาสิ่งแวดล้อม</p> <p>2. คุณภาพอากาศ (ต่อ)</p> <p>(air quality) (cont.)</p> <p>2.3 บรรยากาศทั่วไป (ต่อ)</p> <p>(ambient air) (cont.)</p>	<p>- Volatile organic compounds (VOCs) (cont.)</p> <ul style="list-style-type: none"> 1,2 - dichloroethane 0.08 $\mu\text{g}/\text{m}^3$ to 80.00 $\mu\text{g}/\text{m}^3$ Benzene 0.06 $\mu\text{g}/\text{m}^3$ to 63.00 $\mu\text{g}/\text{m}^3$ Carbon tetrachloride 0.25 $\mu\text{g}/\text{m}^3$ to 125 $\mu\text{g}/\text{m}^3$ Trichloroethylene 0.21 $\mu\text{g}/\text{m}^3$ to 107 $\mu\text{g}/\text{m}^3$ 1,2 - dichloropropane 0.18 $\mu\text{g}/\text{m}^3$ to 92.00 $\mu\text{g}/\text{m}^3$ Tetrachloroethylene 0.27 $\mu\text{g}/\text{m}^3$ to 135 $\mu\text{g}/\text{m}^3$ 1,2 - dibromoethane 0.31 $\mu\text{g}/\text{m}^3$ to 153 $\mu\text{g}/\text{m}^3$ 1,1,2,2 - tetrachloroethane 0.69 $\mu\text{g}/\text{m}^3$ to 137 $\mu\text{g}/\text{m}^3$ 	<p>- In-house method :WI-7.2-1-24 US.EPA , Compendium Method TO - 15, EPA / 625 / R-96 / 010b, January 1999 (Include sampling)</p>

รายละเอียดแนบท้ายใบรับรองห้องปฏิบัติการทดสอบ

ใบรับรองเลขที่ 20T173/1151

หมายเลขการรับรองที่ ทดสอบ 0394

สถานภาพห้องปฏิบัติการ ☒ ถาวร ☐ นอกสถานที่ ☐ชั่วคราว ☐เคลื่อนที่

สาขาการทดสอบ	รายการทดสอบ	วิธีทดสอบ
<p>สาขาสิ่งแวดล้อม</p> <p>2. คุณภาพอากาศ (ต่อ)</p> <p>(air quality) (cont.)</p> <p>2.3 บรรยากาศทั่วไป (ต่อ)</p> <p>(ambient air) (cont.)</p>	<p>- Volatile organic compounds (VOCs) (cont.)</p> <ul style="list-style-type: none"> Benzyl chloride 0.52 $\mu\text{g}/\text{m}^3$ to 103 $\mu\text{g}/\text{m}^3$ 1,4 - dichlorobenzene 0.24 $\mu\text{g}/\text{m}^3$ to 120 $\mu\text{g}/\text{m}^3$ 	<p>- In-house method :WI-7.2-1-24 US.EPA , Compendium Method TO - 15, EPA / 625 / R-96 / 010b, January 1999 (Include sampling)</p>

ออกให้ ณ วันที่ 13 กันยายน 2563



(นายวีระกิตติ์ วันทองวันชัย)
รองเลขาธิการ ปฏิบัติราชการแทน
เลขาธิการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม

ภาคผนวก ข

ใบอนุญาตเป็นนิติบุคคลผู้ให้บริการตรวจวัดและวิเคราะห์การทำงาน
จากกรมสวัสดิการและคุ้มครองแรงงาน



แบบ ก.ภ.บญ
นิติบุคคล

กรมสวัสดิการและคุ้มครองแรงงาน
ใบอนุญาต
เป็นนิติบุคคลผู้ให้บริการตรวจวัดระดับความเข้มข้นของสารเคมีอันตราย
ในบรรยากาศของสถานที่ทำงานและสถานที่เก็บรักษาสารเคมีอันตราย

ใบอนุญาตเลขที่ ๑๒๑๑-๐๓-๒๕๖๕-๐๑๔๙

อนุญาตให้ บริษัท ซีคอน จำกัด

เลขทะเบียนนิติบุคคล ๐๑๐๕๕๓๖๐๐๙๗๖

ตั้งอยู่ เลขที่ ๒๓๙ ถนนวิมลคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร

เป็นนิติบุคคลผู้ให้บริการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน ตามกฎกระทรวง
กำหนดมาตรฐานในการบริหาร จัดการ และดำเนินการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อม
ในการทำงานเกี่ยวกับสารเคมีอันตราย พ.ศ. ๒๕๕๖ ในการเป็นผู้ให้บริการตรวจวัดระดับความเข้มข้น
ของสารเคมีอันตรายในบรรยากาศของสถานที่ทำงานและสถานที่เก็บรักษาสารเคมีอันตราย ประกอบกับ
กฎกระทรวงการขึ้นทะเบียนและการอนุญาตให้บริการเพื่อส่งเสริมความปลอดภัย อาชีวอนามัย และสภาพแวดล้อม
ในการทำงาน พ.ศ. ๒๕๖๔ แห่งพระราชบัญญัติความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน
พ.ศ. ๒๕๕๔ โดยมีบุคลากร จำนวน ๑๔ ราย ดังรายชื่อแนบท้ายใบอนุญาตนี้

ทั้งนี้ ตั้งแต่วันที่ ๑๕ มิถุนายน พ.ศ. ๒๕๖๕ ถึงวันที่ ๑๓ มิถุนายน พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๑๕ มิถุนายน พ.ศ. ๒๕๖๕

(นายสมพงษ์ กวางแก้ว)

รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน

เลขทะเบียนควบคุม

๒-๑๑-๐๒๐๑-๐๔๙-๐๓-๖๕

(ลงนาม)

(นายทะเบียน)

(นายศักดิ์ศิลป์ ตูลาธร)

ผู้อำนวยการกองความปลอดภัยแรงงาน

รายชื่อบุคลากรแนบท้ายใบอนุญาต
เป็นนิติบุคคลผู้ให้บริการตรวจวัดระดับความเข้มข้นของสารเคมีอันตรายในบรรยากาศของสถานที่ทำงาน
และสถานที่เก็บรักษาสารเคมีอันตราย
ของบริษัท ซีคอท จำกัด
ใบอนุญาตเลขที่ ๐๒๐๑-๐๓-๒๕๖๕-๐๐๔๙

๑. นายชิตพล	สมประสงค์
๒. นายอนิวัฒน์	พิมพ์นา
๓. นายศิวนนท์	กุลวงษ์
๔. นายวัชรกานต์	ประมาคะเต
๕. นายธนโชติ	ช่างลือ
๖. นายกิตติพงศ์	ทะเกิงสุข
๗. นายจิรวัฒน์	โคตรคำหาญ
๘. นายสุภกิจ	ติงมุกา
๙. นางสาวธัญลักษณ์	โยธา
๑๐. นางสาวทิพย์สุดา	วรรณการ
๑๑. นางสาวสายธาร	ภูเขียว
๑๒. นายภาณุภูมิ	แทนไทย
๑๓. นายธนาวุฒิ	ดวนแสง
๑๔. นายรัตนชัย	ชอบทำกิจ

ทั้งนี้ ตั้งแต่วันที่ ๑๔ มิถุนายน พ.ศ. ๒๕๖๕ ถึงวันที่ ๑๓ มิถุนายน พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๑๔ มิถุนายน พ.ศ. ๒๕๖๕



(นายสมพจน์ กวางแก้ว)

รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน



แบบ ก.ภ.บุญ
นิติบุคคล

กรมสวัสดิการและคุ้มครองแรงงาน
ใบอนุญาต
เป็นนิติบุคคลผู้ให้บริการวิเคราะห์ระดับความเข้มข้นของสารเคมีอันตราย
ในบรรยากาศของสถานที่ทำงานและสถานที่เก็บรักษาสารเคมีอันตราย

ใบอนุญาตเลขที่ ๑๒๐๒-๐๓-๒๕๖๕-๐๑๓๔

อนุญาตให้ บริษัท ซีคอน จำกัด

เลขทะเบียนนิติบุคคล ๐๑๐๙๕๗๖๐๐๐๙๗๖

ตั้งอยู่ เลขที่ ๒๓๙ ถนนริมคลองประเวศ แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร

เป็นนิติบุคคลผู้ให้บริการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน ตามกฎกระทรวง
กำหนดมาตรฐานในการบริหาร จัดการ และดำเนินการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อม
ในการทำงานเกี่ยวกับสารเคมีอันตราย พ.ศ. ๒๕๕๖ ในการเป็นผู้ให้บริการวิเคราะห์ระดับความเข้มข้น
ของสารเคมีอันตรายในบรรยากาศของสถานที่ทำงานและสถานที่เก็บรักษาสารเคมีอันตราย ประกอบกับ
กฎกระทรวงการขึ้นทะเบียนและการอนุญาตให้บริการเพื่อส่งเสริมความปลอดภัย อาชีวอนามัย และสภาพแวดล้อม
ในการทำงาน พ.ศ. ๒๕๖๔ แห่งพระราชบัญญัติความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน
พ.ศ. ๒๕๕๔ โดยมีบุคลากร จำนวน ๑๔ ราย ดังรายชื่อแนบท้ายใบอนุญาตนี้

ทั้งนี้ ตั้งแต่วันที่ ๑๕ มิถุนายน พ.ศ. ๒๕๖๕ ถึงวันที่ ๑๓ มิถุนายน พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๑๕ มิถุนายน พ.ศ. ๒๕๖๕

(นายสมพงษ์ กวางแก้ว)

รองอธิบดี ปฏิบัติราชการแทน

อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน

เลขทะเบียนควบคุม

๒-๑๑-๐๒๐๒-๐๓๔-๐๑-๖๕

(ลงนาม)

(นายทะเบียน)

(นายศักดิ์ศิลป์ ตูลาธร)

ผู้อำนวยการกองความปลอดภัยแรงงาน

รายชื่อบุคลากรแนบท้ายใบอนุญาต
เป็นนิติบุคคลผู้ให้บริการวิเคราะห์ระดับความเข้มข้นของสารเคมีอันตรายในบรรยากาศของสถานที่ทำงาน
และสถานที่เก็บรักษาสารเคมีอันตราย
ของบริษัท ซีค่อท จำกัด
ใบอนุญาตเลขที่ ๐๒๐๒-๐๓-๒๕๖๕-๐๐๓๔

- | | |
|-----------------------|----------------|
| ๑. นางสาวนริสา | ภูวสรพีชญ์ |
| ๒. นางอารยา | ทิพย์รักษ์ |
| ๓. นางสาวศิริวรรณ | ฉิมสง่า |
| ๔. นางสาวสุรชาติพย์ | เทียนไธย |
| ๕. นางสาวพรนภา | บุตรธรรม |
| ๖. นางสาวธารณี | อาจปลิว |
| ๗. นางสาวกฤษณา | จันทุม |
| ๘. นางสาวพัชรา | สมานฉันท |
| ๙. นางสาวจณิสตา | ก๊วยอ่อน |
| ๑๐. นางสาวศศิภา | ใจดี |
| ๑๑. นางสาวจุฑารัตน์ | แจ่มเรือน |
| ๑๒. นางสาวณัฐศิริ | เลิศธีรพัฒน์ |
| ๑๓. นางสาวสัณณวลักษณ์ | อินทรประสิทธิ์ |
| ๑๔. นางสาวสุคาพร | สุนทร |

ทั้งนี้ ตั้งแต่วันที่ ๑๕ มิถุนายน พ.ศ. ๒๕๖๕ ถึงวันที่ ๑๓ มิถุนายน พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๑๕ มิถุนายน พ.ศ. ๒๕๖๕



(นายสมphon กวางแก้ว)

รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน



แบบ กภ.บญ
นิติบุคคล

กรมสวัสดิการและคุ้มครองแรงงาน

ใบอนุญาต

เป็นนิติบุคคลผู้ให้บริการตรวจวัดและวิเคราะห์สภาวะการทำงานเกี่ยวกับระดับแสงสว่าง

ใบอนุญาตเลขที่ ๑๔๐๒-๐๓-๒๕๖๕-๑๑๔๙

อนุญาตให้.....บริษัท ซีคอน จำกัด.....

เลขทะเบียนนิติบุคคล...๑๑๑๕๕๓๖๑๑๑๙๗๖.....

ตั้งอยู่ เลขที่ ๒๓๙ ถนนริมคลองมะลิ ๑ แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร.....

เป็นนิติบุคคลผู้ให้บริการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน ตามกฎกระทรวงกำหนดมาตรฐานในการบริหาร จัดการ และดำเนินการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงานเกี่ยวกับความร้อน แสงสว่าง และเสียง พ.ศ. ๒๕๕๙ ในการตรวจวัดและวิเคราะห์สภาวะการทำงานเกี่ยวกับระดับแสงสว่าง ประกอบกับกฎกระทรวงการขึ้นทะเบียนและการอนุญาตให้บริการเพื่อส่งเสริม ความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน พ.ศ. ๒๕๖๔ แห่งพระราชบัญญัติความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน พ.ศ. ๒๕๕๔ โดยมีบุคลากร จำนวน ๕ ราย ดังรายชื่อแนบท้ายใบอนุญาตนี้

ทั้งนี้ ตั้งแต่วันที่ ๑๗ มิถุนายน พ.ศ. ๒๕๖๕ ถึงวันที่ ๑๖ มิถุนายน พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๑๗ มิถุนายน พ.ศ. ๒๕๖๕

(นายสมพงษ์ กวางแก้ว)

รองอธิบดี ปฏิบัติราชการแทน

อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน

เลขทะเบียนควบคุม

๒-๑๑-๐๔๐๒-๐๔๔-๐๑-๖๔

(ลงนาม)..... (นายทะเบียน)

(นายศักดิ์ศิลป์ ทุลาธร)

ตำแหน่ง ผู้อำนวยการกองความปลอดภัยแรงงาน

รายชื่อบุคลากรแนบท้ายใบอนุญาต
เป็นนิติบุคคลผู้ให้บริการตรวจวัดและวิเคราะห์สภาวะการทำงานเกี่ยวกับระดับแสงสว่าง
ของบริษัท ซีคอท จำกัด

ใบอนุญาตเลขที่ ๐๔๐๒-๐๓-๒๕๖๕-๐๐๔๔

- | | |
|-------------------|---------------|
| ๑. นางสาวสุนันทา | ศิริวัฒนานนท์ |
| ๒. นางสาวกนิษฐา | เจริญเชื้อ |
| ๓. นางสาวปัทมวรรณ | สุวรรณโรจน์ |
| ๔. นางสาวอลิษา | คณิธรานนท์ |
| ๕. นางสาวชนิตา | หล้าสาย |

ทั้งนี้ ตั้งแต่วันที่ ๑๗ มิถุนายน พ.ศ. ๒๕๖๕ ถึงวันที่ ๑๖ มิถุนายน พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๑๗ มิถุนายน พ.ศ. ๒๕๖๕



(นายสมพจน์ กวางแก้ว)

รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน

รายชื่อบุคลากร (เพิ่มเติม)
แนบท้ายใบอนุญาตเป็นนิติบุคคลผู้ให้บริการตรวจวัดและวิเคราะห์สภาวะการทำงานเกี่ยวกับระดับแสงสว่าง
ของบริษัท ซีคอท จำกัด

ใบอนุญาตเลขที่ ๐๔๐๒-๐๓-๒๕๖๕-๐๐๔๔

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|-------------------|-------------|
| ๑. นางสาวศลิษา | อินริย์ |
| ๒. นางสาวกรรียาณี | อาแว |
| ๓. นางสาววิระยา | ปัจฉิมบุรณ์ |

ทั้งนี้ ตั้งแต่วันที่ ๑๓ มกราคม พ.ศ. ๒๕๖๖ ถึงวันที่ ๑๖ มิถุนายน พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๑๓ มกราคม พ.ศ. ๒๕๖๖



(นายสมพจน์ กวางแก้ว)

รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน



ใบอนุญาต

ใบอนุญาตเลขที่ ๐๔๐๑-๐๓-๒๕๖๕-๐๐๔๘

อนุญาตให้.....บริษัท ซีคอน จำกัด

เลขทะเบียนนิติบุคคล ๐๑๐๕๕๓๖๐๐๐๘๗๖

ตั้งอยู่ เลขที่ ๒๓๙ ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร

เป็นนิติบุคคลผู้ให้บริการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน ตามกฎกระทรวง กำหนดมาตรฐานในการบริหาร จัดการ และดำเนินการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงานเกี่ยวกับความร้อน แสงสว่าง และเสียง พ.ศ. ๒๕๕๕ ในการตรวจวัดและวิเคราะห์สภาวะการทำงาน เกี่ยวกับระดับความร้อน ประกอบกับกฎกระทรวงการขึ้นทะเบียนและออกอนุญาตให้บริการเพื่อส่งเสริม ความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน พ.ศ. ๒๕๖๔ แห่งพระราชบัญญัติความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน พ.ศ. ๒๕๕๔ โดยมีบุคลากร จำนวน ๕ ราย ดังรายชื่อแนบท้าย ใบอนุญาตนี้

ทั้งนี้ ตั้งแต่วันที่ ๑๓ มิถุนายน พ.ศ. ๒๕๖๕ ถึงวันที่ ๑๖ มิถุนายน พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๑๗ มิถุนายน พ.ศ. ๒๕๖๕

Sept

(นายสมพงษ์ กวางแก้ว)
รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน

เลขทะเบียนควบคุม

୧-୧୧-୦୫-୦୫-୦୫-୦୫

(ลงนาม).....(นายทะนุเกียรติ)

(นายกัณฑ์ศิลา ตูลาธร)

ตำแหน่ง ผู้อำนวยการกองความปลอดภัยแรงงาน

รายชื่อบุคลากรแนบท้ายใบอนุญาต
เป็นนิติบุคคลผู้ให้บริการตรวจวัดและวิเคราะห์สภาพการทำงานเกี่ยวกับระดับความร้อน

ของบริษัท ชีคอฟ จำกัด

ใบอนุญาตเลขที่ ๐๔๐๑-๐๓-๒๕๖๕-๐๐๔๘

- | | |
|-------------------|----------------|
| ๑. นางสาวสุนันทา | ศิริพัฒน์นันท์ |
| ๒. นางสาวกนิษฐา | เจริญเชื้อ |
| ๓. นางสาวปัทมวรรณ | สุวรรณวิโรจน์ |
| ๔. นางสาวอลิษา | คณิธรานนท์ |
| ๕. นางสาวชนิตา | หล้าสาย |

ทั้งนี้ ตั้งแต่วันที่ ๑๗ มิถุนายน พ.ศ. ๒๕๖๕ ถึงวันที่ ๑๖ มิถุนายน พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๑๗ มิถุนายน พ.ศ. ๒๕๖๕



(นายสมพงษ์ กวางแก้ว)

รองอธิบดี ปฏิบัติราชการแทน

อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน

รายชื่อบุคลากร (เพิ่มเติม)
แนบท้ายใบอนุญาตเป็นนิติบุคคลผู้ให้บริการตรวจวัดและวิเคราะห์สภาพการทำงานเกี่ยวกับระดับความร้อน

ของบริษัท ชีคอฟ จำกัด

ใบอนุญาตเลขที่ ๐๔๐๑-๐๓-๒๕๖๕-๐๐๔๘

- | | |
|--------------------|--------------|
| ๑. นางสาวศลิษา | อินริย์ |
| ๒. นางสาวมากริยาณี | ชาแว |
| ๓. นางสาววิระยา | ปัจฉิมบุญรณ์ |

ทั้งนี้ ตั้งแต่วันที่ ๑๗ มกราคม พ.ศ. ๒๕๖๖ ถึงวันที่ ๑๖ มิถุนายน พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๑๗ มกราคม พ.ศ. ๒๕๖๖



(นายสมพงษ์ กวางแก้ว)

รองอธิบดี ปฏิบัติราชการแทน

อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน



แบบ กภ.บญ
นิติบุคคล

กรมสวัสดิการและคุ้มครองแรงงาน
ใบอนุญาต
เป็นนิติบุคคลผู้ให้บริการตรวจวัดและวิเคราะห์สภาวะการทำงานเกี่ยวกับระดับเสียง

ใบอนุญาตเลขที่ ๑๕๑๓-๑๓-๒๕๖๕-๑๑๔๘

อนุญาตให้ บริษัท ซีคอบท จำกัด

เลขทะเบียนนิติบุคคล ๐๑๑๕๕๓๖๐๑๑๑๙๗๖
ตั้งอยู่ เลขที่ ๒๓๙ ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร
เป็นนิติบุคคลผู้ให้บริการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน ตามกฎกระทรวงกำหนด
มาตรฐานในการบริหาร จัดการ และดำเนินการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน
เกี่ยวกับความร้อน แสงสว่าง และเสียง พ.ศ. ๒๕๕๙ ในการตรวจวัดและวิเคราะห์สภาวะการทำงานเกี่ยวกับระดับเสียง
ประกอบกับกฎกระทรวงการขึ้นทะเบียนและการอนุญาตให้บริการเพื่อส่งเสริม ความปลอดภัย อาชีวอนามัย
และสภาพแวดล้อมในการทำงาน พ.ศ. ๒๕๖๔ แห่งพระราชบัญญัติความปลอดภัย อาชีวอนามัย และสภาพแวดล้อม
ในการทำงาน พ.ศ. ๒๕๕๔ โดยมีบุคลากร จำนวน ๕ ราย ดังรายชื่อแนบท้ายใบอนุญาตนี้

ทั้งนี้ ตั้งแต่วันที่ ๑๗ มิถุนายน พ.ศ. ๒๕๖๕ ถึงวันที่ ๑๖ มิถุนายน พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๑๗ มิถุนายน พ.ศ. ๒๕๖๕

(นายสมพจน์ กวางแก้ว)
รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน

เลขทะเบียนควบคุม

ข-๑๓-๐๔๐๓-๐๔๘-๐๑-๖๕

(ลงนาม)

(นายทะเบียน)

(นายศักดิ์ศิลป์ ตูลาธร)

ตำแหน่ง ผู้อำนวยการกองความปลอดภัยแรงงาน

รายชื่อบุคลากรแนบท้ายใบอนุญาต
เป็นนิติบุคคลผู้ให้บริการตรวจวัดและวิเคราะห์สภาวะการทำงานเกี่ยวกับระดับเสียง

ของบริษัท ซีคอท จำกัด

ใบอนุญาตเลขที่ ๐๔๐๓-๐๓-๒๕๖๕-๐๐๔๘

- | | |
|-------------------|----------------|
| ๑. นางสาวสุนันหา | ศิริพัฒน์นันท์ |
| ๒. นางสาวกนิษฐา | เจริญเชื้อ |
| ๓. นางสาวปัทมวรรณ | สุวรรณวิโรจน์ |
| ๔. นางสาวอลิษา | คณิธรานนท์ |
| ๕. นางสาวชนิตา | หล้าสาย |

ทั้งนี้ ตั้งแต่วันที่ ๑๗ มิถุนายน พ.ศ. ๒๕๖๕ ถึงวันที่ ๑๖ มิถุนายน พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๑๗ มิถุนายน พ.ศ. ๒๕๖๕



(นายสมพจน์ กวางแก้ว)

รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน

รายชื่อบุคลากร (เพิ่มเติม)
แนบท้ายใบอนุญาตเป็นนิติบุคคลผู้ให้บริการตรวจวัดและวิเคราะห์สภาวะการทำงานเกี่ยวกับระดับเสียง

ของบริษัท ซีคอท จำกัด

ใบอนุญาตเลขที่ ๐๔๐๓-๐๓-๒๕๖๕-๐๐๔๘

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|-------------------|-------------|
| ๑. นางสาวศลิษา | อินริย์ |
| ๒. นางสาวมาเรียณี | ฮาแว |
| ๓. นางสาววิระยา | ปัจฉิมบุรณ์ |

ทั้งนี้ ตั้งแต่วันที่ ๑๗ มกราคม พ.ศ. ๒๕๖๖ ถึงวันที่ ๑๖ มิถุนายน พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๑๗ มกราคม พ.ศ. ๒๕๖๖



(นายสมพจน์ กวางแก้ว)

รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน