

ภาคผนวก ค

ใบรับรองผลการวิเคราะห์

คุณภาพอากาศในบรรยากาศ



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 23123516
Date Received :Nov 14, 2023
Date Reported :Nov 22, 2023
Report Number :2814577-1

Page 1 of 2

Sample Number : 23123516-1 to 7
Parameter : Wind Speed / Wind Direction
Location : ม.บ้านนา (GPS 47P 0735654, 1409164)
Sampling Date : Nov 06 - Nov 13, 2023
Sampling by : Mongkon Phalathip

Time	Nov 06 - Nov 07, 2023			Nov 07 - Nov 08, 2023			Nov 08 - Nov 09, 2023			Nov 09 - Nov 10, 2023			Nov 10 - Nov 11, 2023			Nov 11 - Nov 12, 2023			Nov 12 - Nov 13, 2023		
	WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)	
10:00 AM - 11:00 AM	0.2	-	-	1.0	9.0	N	1.0	164.0	SSE	2.3	120.0	ESE	2.8	140.0	SE	0.2	-	-	0.0	-	-
11:00 AM - 12:00 PM	0.1	-	-	0.9	46.0	NE	1.2	18.0	NNE	1.5	74.0	ENE	0.8	198.0	SSW	1.2	148.0	SSE	1.2	126.0	SE
12:00 PM - 01:00 PM	0.6	145.0	SE	0.3	185.0	S	0.0	-	-	2.7	105.0	ESE	0.0	-	-	1.6	23.0	NNE	1.1	158.0	SSE
01:00 PM - 02:00 PM	2.1	280.0	W	0.2	-	-	0.6	13.0	NNE	0.3	206.0	SSW	2.1	207.0	SSW	1.7	74.0	ENE	1.2	116.0	ESE
02:00 PM - 03:00 PM	0.5	256.0	WSW	0.1	-	-	0.7	241.0	WSW	0.2	-	-	3.3	149.0	SSE	2.6	149.0	SSE	1.6	180.0	S
03:00 PM - 04:00 PM	0.0	-	-	0.2	-	-	5.3	113.0	ESE	0.1	-	-	3.7	206.0	SSW	1.1	135.0	SE	1.2	116.0	ESE
04:00 PM - 05:00 PM	1.1	310.0	NW	0.3	68.0	ENE	1.2	2.0	N	0.1	-	-	0.0	-	-	0.0	-	-	0.5	120.0	ESE
05:00 PM - 06:00 PM	0.2	-	-	0.2	-	-	0.3	5.0	N	0.2	-	-	0.8	18.0	NNE	0.9	273.0	W	0.9	132.0	SE
06:00 PM - 07:00 PM	0.1	-	-	0.1	-	-	0.2	-	-	0.6	5.0	N	0.3	14.0	NNE	1.0	265.0	W	1.3	255.0	WSW
07:00 PM - 08:00 PM	0.6	353.0	N	0.1	-	-	0.4	44.0	NE	0.2	-	-	1.2	99.0	E	1.3	357.0	N	0.3	356.0	N
08:00 PM - 09:00 PM	0.2	-	-	1.2	68.0	ENE	0.5	45.0	NE	0.5	85.0	E	0.3	40.0	NE	0.2	-	-	0.6	121.0	ESE
09:00 PM - 10:00 PM	0.4	105.0	ESE	1.0	92.0	E	0.4	115.0	ESE	0.3	92.0	E	0.1	-	-	2.0	41.0	NE	0.2	-	-
10:00 PM - 11:00 PM	0.2	-	-	0.6	118.0	ESE	0.3	103.0	ESE	0.1	-	-	0.2	-	-	0.1	-	-	0.1	-	-
11:00 PM - 12:00 AM	0.3	26.0	NNE	0.8	111.0	ESE	0.2	-	-	0.2	-	-	0.1	-	-	0.2	-	-	1.0	90.0	E
12:00 AM - 01:00 AM	0.1	-	-	0.5	111.0	ESE	0.3	103.0	ESE	0.3	87.0	E	0.3	46.0	NE	0.6	96.0	E	0.3	37.0	NE
01:00 AM - 02:00 AM	1.0	152.0	SSE	0.1	-	-	0.2	-	-	0.2	-	-	0.2	-	-	0.1	-	-	0.2	-	-
02:00 AM - 03:00 AM	0.5	51.0	NE	0.3	111.0	ESE	0.2	-	-	0.1	-	-	0.1	-	-	0.3	63.0	ENE	0.3	345.0	NNW
03:00 AM - 04:00 AM	0.3	6.0	N	0.2	-	-	0.3	103.0	ESE	0.1	-	-	0.2	-	-	0.1	-	-	0.1	-	-
04:00 AM - 05:00 AM	0.2	-	-	0.2	-	-	0.2	-	-	0.2	-	-	0.7	47.0	NE	0.8	97.0	E	0.2	-	-
05:00 AM - 06:00 AM	0.1	-	-	0.6	2.0	N	2.3	359.0	N	0.3	102.0	ESE	1.0	141.0	SE	0.0	-	-	0.2	-	-
06:00 AM - 07:00 AM	0.3	103.0	ESE	0.3	78.0	ENE	0.1	-	-	0.2	-	-	0.3	343.0	NNW	0.7	8.0	N	0.6	285.0	WNW
07:00 AM - 08:00 AM	0.1	-	-	0.3	50.0	NE	0.2	-	-	0.0	-	-	0.2	-	-	1.6	91.0	E	1.2	35.0	NE
08:00 AM - 09:00 AM	0.1	-	-	0.2	-	-	0.1	-	-	0.1	-	-	0.1	-	-	1.0	133.0	SE	1.0	156.0	SSE
09:00 AM - 10:00 AM	0.5	349.0	N	0.1	-	-	0.2	-	-	0.2	-	-	0.9	85.0	E	0.7	353.0	N	0.9	231.0	SW

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

Sarayuth Jitranont
Assistant General Manager



Analysis / Test Report

Client : THAI MMA Co., Ltd.

88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location : CCS Site 7

Lot ID: 23123516

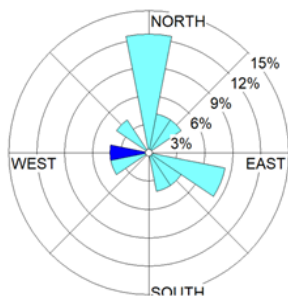
Date Received :Nov 14, 2023

Date Reported :Nov 22, 2023

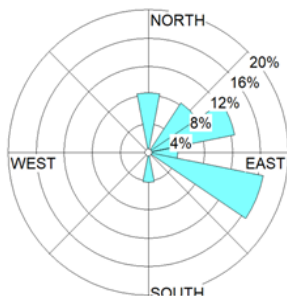
Report Number :2814577-1

Page 2 of 2

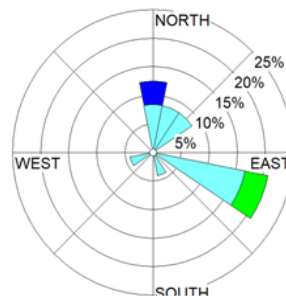
Wind Rose



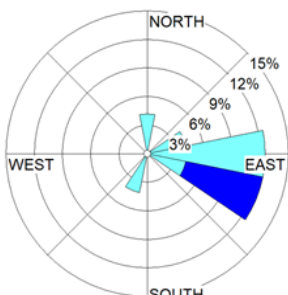
Date : Nov 06-07, 2023



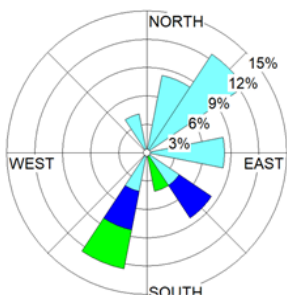
Date : Nov 07-08, 2023



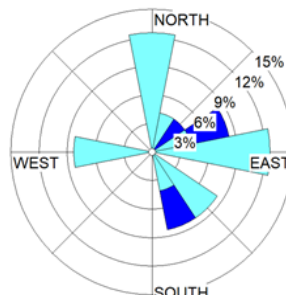
Date : Nov 08-09, 2023



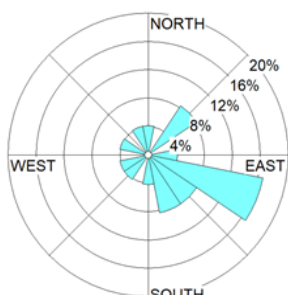
Date : Nov 09-10, 2023



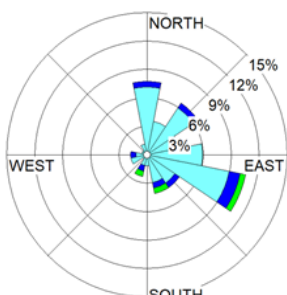
Date : Nov 10-11, 2023



Date : Nov 11-12, 2023



Date : Nov 12-13, 2023



Date : Nov 06-13, 2023

WS(m/s)	%
≥ 10.0	0.00
8.0-10.0	0.00
5.5-8.0	0.00
3.3-5.5	1.79
1.7-3.3	5.36
0.3-1.7	49.41
Calms	43.45

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

Sarayuth Jittrantont
Assistant General Manager



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 23123517
Date Received :Nov 14, 2023
Date Reported :Nov 22, 2023
Report Number :2814578-1

Page 1 of 2

Sample Number : 23123517-1 to 7
Parameter : Wind Speed / Wind Direction
Location : บ้านนาเกลือ (GPS 47P 0734576, 1408568)
Sampling Date : Nov 06 - Nov 13, 2023
Sampling by : Mongkon Phalathip

Time	Nov 06 - Nov 07, 2023			Nov 07 - Nov 08, 2023			Nov 08 - Nov 09, 2023			Nov 09 - Nov 10, 2023			Nov 10 - Nov 11, 2023			Nov 11 - Nov 12, 2023			Nov 12 - Nov 13, 2023		
	WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)	
09:00 AM - 10:00 AM	2.4	291.0	WNW	1.3	296.0	WNW	0.5	12.0	NNE	0.3	22.0	NNE	0.5	46.0	NE	0.6	32.0	NNE	0.1	-	-
10:00 AM - 11:00 AM	1.7	271.0	W	1.1	271.0	W	1.3	23.0	NNE	1.0	359.0	N	0.6	5.0	N	0.5	359.0	N	0.2	-	-
11:00 AM - 12:00 PM	2.6	299.0	WNW	2.3	299.0	WNW	1.1	48.0	NE	0.6	267.0	W	0.7	111.0	ESE	0.1	-	-	1.2	26.0	NNE
12:00 PM - 01:00 PM	1.2	301.0	WNW	2.1	57.0	ENE	1.4	359.0	N	1.0	296.0	WNW	1.4	296.0	WNW	0.2	-	-	0.9	205.0	SSW
01:00 PM - 02:00 PM	0.9	46.0	NE	0.9	36.0	NE	2.3	16.0	NNE	1.2	271.0	W	0.7	276.0	W	0.4	281.0	W	1.0	195.0	SSW
02:00 PM - 03:00 PM	1.2	4.0	N	1.8	10.0	N	2.4	195.0	SSW	0.3	299.0	WNW	1.6	304.0	NW	1.6	309.0	NW	0.5	342.0	NNW
03:00 PM - 04:00 PM	0.0	-	-	0.6	37.0	NE	1.3	185.0	S	0.2	-	-	0.9	306.0	NW	1.4	67.0	ENE	0.6	348.0	NNW
04:00 PM - 05:00 PM	0.6	16.0	NNE	0.0	-	-	1.5	359.0	N	0.3	36.0	NE	0.9	51.0	NE	1.0	46.0	NE	0.1	-	-
05:00 PM - 06:00 PM	0.0	-	-	0.6	36.0	NE	2.1	338.0	NNW	0.0	-	-	1.0	9.0	N	2.0	20.0	NNE	0.1	-	-
06:00 PM - 07:00 PM	1.0	13.0	NNE	0.0	-	-	0.0	-	-	0.1	-	-	0.0	-	-	0.9	47.0	NE	0.3	31.0	NNE
07:00 PM - 08:00 PM	0.0	-	-	0.8	16.0	NNE	1.0	40.0	NE	0.3	44.0	NE	0.6	21.0	NNE	0.3	54.0	NE	0.2	-	-
08:00 PM - 09:00 PM	0.0	-	-	0.0	-	-	0.0	-	-	0.1	-	-	0.5	45.0	NE	0.9	46.0	NE	0.6	41.0	NE
09:00 PM - 10:00 PM	0.9	54.0	NE	0.0	-	-	0.0	-	-	0.1	-	-	0.1	-	-	0.3	13.0	NNE	0.4	0.0	N
10:00 PM - 11:00 PM	2.8	33.0	NNE	0.0	-	-	0.0	-	-	0.2	-	-	0.3	73.0	ENE	0.8	26.0	NNE	0.1	-	-
11:00 PM - 12:00 AM	0.7	330.0	NNW	0.0	-	-	0.0	-	-	0.3	29.0	NNE	0.2	-	-	0.3	39.0	NE	0.0	-	-
12:00 AM - 01:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	0.6	59.0	ENE	1.2	64.0	ENE	0.1	-	-	0.2	-	-
01:00 AM - 02:00 AM	1.1	19.0	NNE	0.0	-	-	0.0	-	-	0.9	19.0	NNE	1.2	43.0	NE	0.2	-	-	0.0	-	-
02:00 AM - 03:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	0.0	-	-	0.9	340.0	NNW	0.0	-	-	0.1	-	-
03:00 AM - 04:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	0.0	-	-	0.4	65.0	ENE	0.3	22.0	NNE	0.0	-	-
04:00 AM - 05:00 AM	1.0	3.0	N	0.5	12.0	NNE	0.1	-	-	0.5	29.0	NNE	1.0	29.0	NNE	0.1	-	-	0.3	4.0	N
05:00 AM - 06:00 AM	1.3	46.0	NE	1.3	23.0	NNE	0.2	-	-	0.2	-	-	0.3	33.0	NNE	0.1	-	-	0.2	-	-
06:00 AM - 07:00 AM	0.7	22.0	NNE	1.4	26.0	NNE	0.3	39.0	NE	0.0	-	-	0.1	-	-	0.2	-	-	0.1	-	-
07:00 AM - 08:00 AM	0.5	359.0	N	1.1	29.0	NNE	0.2	-	-	0.4	21.0	NNE	0.3	13.0	NNE	0.0	-	-	1.0	40.0	NE
08:00 AM - 09:00 AM	0.8	267.0	W	0.9	25.0	NNE	0.1	-	-	1.3	24.0	NNE	1.0	56.0	NE	0.3	33.0	NNE	1.6	13.0	NNE

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

Sarayuth Jitranont
Assistant General Manager



Analysis / Test Report

Client : THAI MMA Co., Ltd.

88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location : CCS Site 7

Lot ID: 23123517

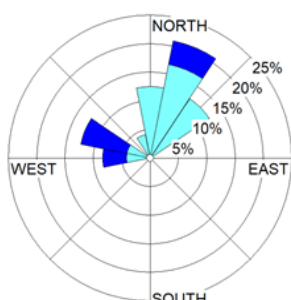
Date Received :Nov 14, 2023

Date Reported :Nov 22, 2023

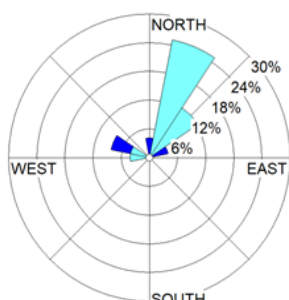
Report Number :2814578-1

Page 2 of 2

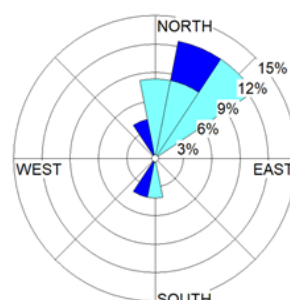
Wind Rose



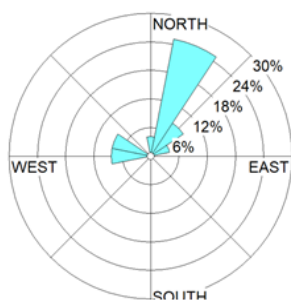
Date : Nov 06-07, 2023



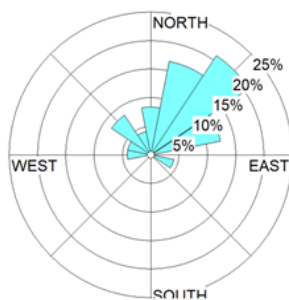
Date : Nov 07-08, 2023



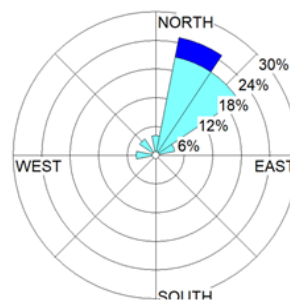
Date : Nov 08-09, 2023



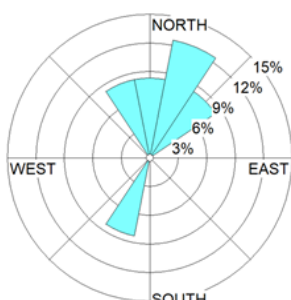
Date : Nov 09-10, 2023



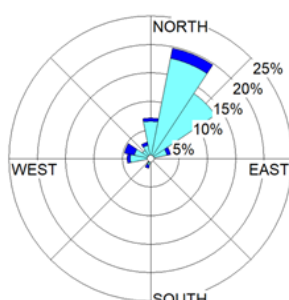
Date : Nov 10-11, 2023



Date : Nov 11-12, 2023



Date : Nov 12-13, 2023



Date : Nov 06-13, 2023

	WS(m/s)	%
	≥ 10.0	0.00
	8.0-10.0	0.00
	5.5-8.0	0.00
	3.3-5.5	0.00
	1.7-3.3	6.55
	0.3-1.7	54.17
	Calms	39.28

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

Sarayuth Jittrantont
Assistant General Manager



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 23123519
Date Received :Nov 14, 2023
Date Reported :Nov 22, 2023
Report Number :2814580-1

Page 1 of 2

Sample Number : 23123519-1 to 7
Parameter : Wind Speed / Wind Direction
Location : บ้านเนินพยอม (GPS 47P 0736407, 1410977)
Sampling Date : Nov 06 - Nov 13, 2023
Sampling by : Mongkon Phalathip

Time	Nov 06 - Nov 07, 2023			Nov 07 - Nov 08, 2023			Nov 08 - Nov 09, 2023			Nov 09 - Nov 10, 2023			Nov 10 - Nov 11, 2023			Nov 11 - Nov 12, 2023			Nov 12 - Nov 13, 2023		
	WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)	
11:00 AM - 12:00 PM	1.2	314.0	NW	0.1	-	-	0.2	-	-	0.6	117.0	ESE	0.2	-	-	0.3	209.0	SSW	1.0	139.0	SE
12:00 PM - 01:00 PM	0.4	290.0	WNW	0.2	-	-	1.0	194.0	SSW	0.7	204.0	SSW	0.3	127.0	SE	0.2	-	-	0.5	145.0	SE
01:00 PM - 02:00 PM	1.3	195.0	SSW	0.3	137.0	SE	0.8	140.0	SE	0.3	184.0	S	0.4	250.0	WSW	1.2	118.0	ESE	0.9	231.0	SW
02:00 PM - 03:00 PM	0.5	227.0	SW	1.8	27.0	NNE	1.1	36.0	NE	0.7	131.0	SE	1.1	242.0	WSW	0.3	197.0	SSW	0.6	145.0	SE
03:00 PM - 04:00 PM	0.6	68.0	ENE	0.6	128.0	SE	2.0	32.0	NNE	0.9	139.0	SE	0.4	188.0	S	0.1	-	-	0.7	223.0	SW
04:00 PM - 05:00 PM	0.9	94.0	E	1.5	114.0	ESE	2.1	81.0	E	0.0	-	-	1.3	203.0	SSW	1.3	105.0	ESE	0.2	-	-
05:00 PM - 06:00 PM	0.3	135.0	SE	0.3	88.0	E	1.0	108.0	ESE	0.6	18.0	NNE	0.6	149.0	SSE	1.1	86.0	E	0.3	38.0	NE
06:00 PM - 07:00 PM	0.3	77.0	ENE	0.3	125.0	SE	1.2	212.0	SSW	0.0	-	-	0.6	113.0	ESE	0.7	218.0	SW	1.0	213.0	SSW
07:00 PM - 08:00 PM	0.3	236.0	SW	0.3	186.0	S	1.8	43.0	NE	0.3	249.0	WSW	0.7	78.0	ENE	1.7	53.0	NE	1.6	216.0	SW
08:00 PM - 09:00 PM	0.7	199.0	SSW	0.3	17.0	NNE	0.2	-	-	1.0	30.0	NNE	1.3	81.0	E	0.6	93.0	E	0.0	-	-
09:00 PM - 10:00 PM	0.3	100.0	E	0.5	113.0	ESE	0.7	94.0	E	0.0	-	-	0.3	173.0	S	0.0	-	-	0.3	216.0	SW
10:00 PM - 11:00 PM	0.4	79.0	E	0.1	-	-	0.1	-	-	1.2	80.0	E	0.2	-	-	0.6	17.0	NNE	0.3	191.0	S
11:00 PM - 12:00 AM	0.6	2.0	N	0.1	-	-	0.3	228.0	SW	0.3	244.0	WSW	0.6	210.0	SSW	0.0	-	-	0.1	-	-
12:00 AM - 01:00 AM	0.5	209.0	SSW	0.2	-	-	0.2	-	-	0.2	-	-	0.0	-	-	0.3	137.0	SE	0.3	48.0	NE
01:00 AM - 02:00 AM	0.4	142.0	SE	0.5	136.0	SE	0.1	-	-	0.2	-	-	0.2	-	-	0.0	-	-	0.2	-	-
02:00 AM - 03:00 AM	0.2	-	-	0.3	42.0	NE	0.3	125.0	SE	0.1	-	-	0.3	222.0	SW	0.2	-	-	0.3	25.0	NNE
03:00 AM - 04:00 AM	0.8	147.0	SSE	0.2	-	-	0.2	-	-	0.2	-	-	0.1	-	-	0.3	62.0	ENE	0.2	-	-
04:00 AM - 05:00 AM	0.2	-	-	0.3	0.0	N	0.2	-	-	0.3	152.0	SSE	0.3	187.0	S	0.2	-	-	0.2	-	-
05:00 AM - 06:00 AM	0.3	195.0	SSW	0.2	-	-	0.3	229.0	SW	1.0	9.0	N	0.1	-	-	0.3	110.0	ESE	0.1	-	-
06:00 AM - 07:00 AM	0.7	153.0	SSE	0.3	203.0	SSW	0.6	227.0	SW	0.8	24.0	NNE	0.7	240.0	WSW	1.0	79.0	E	0.0	-	-
07:00 AM - 08:00 AM	1.0	117.0	ESE	1.0	26.0	NNE	0.3	252.0	WSW	0.6	37.0	NE	0.0	-	-	0.3	15.0	NNE	0.1	-	-
08:00 AM - 09:00 AM	0.4	38.0	NE	1.1	191.0	S	2.3	66.0	ENE	0.9	120.0	ESE	1.1	8.0	N	0.6	137.0	SE	0.3	138.0	SE
09:00 AM - 10:00 AM	1.2	191.0	S	0.8	44.0	NE	2.0	112.0	ESE	0.1	-	-	0.0	-	-	0.5	214.0	SW	0.7	139.0	SE
10:00 AM - 11:00 AM	0.5	84.0	E	0.6	45.0	NE	2.1	115.0	ESE	1.0	254.0	WSW	0.7	132.0	SE	0.0	-	-	1.3	200.0	SSW

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

Sarayuth Jitranont
Assistant General Manager



Analysis / Test Report

Client : THAI MMA Co., Ltd.

88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location : CCS Site 7

Lot ID: 23123519

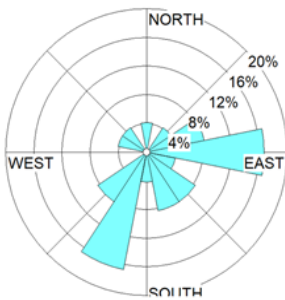
Date Received :Nov 14, 2023

Date Reported :Nov 22, 2023

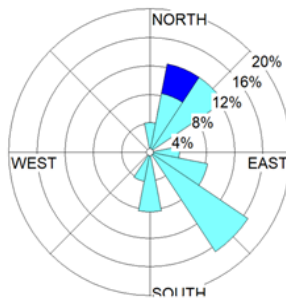
Report Number :2814580-1

Page 2 of 2

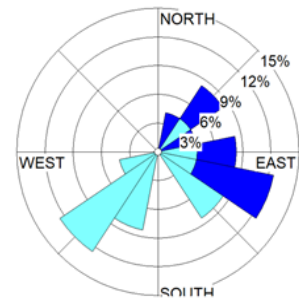
Wind Rose



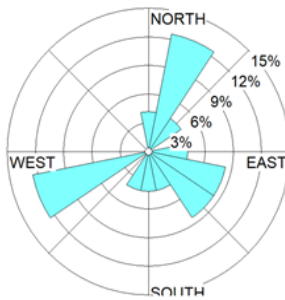
Date : Nov 06-07, 2023



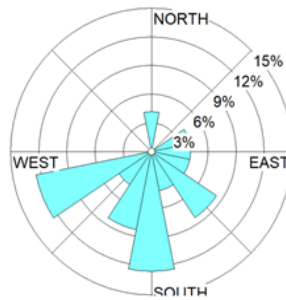
Date : Nov 07-08, 2023



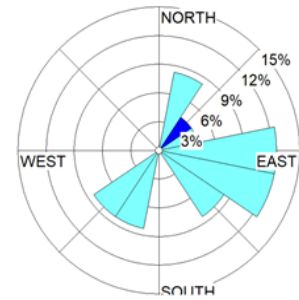
Date : Nov 08-09, 2023



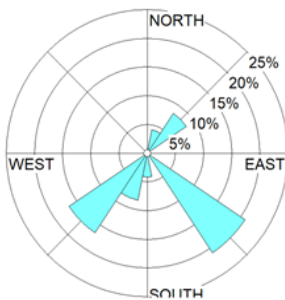
Date : Nov 09-10, 2023



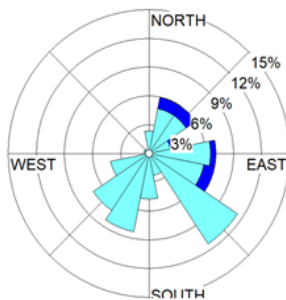
Date : Nov 10-11, 2023



Date : Nov 11-12, 2023



Date : Nov 12-13, 2023



Date : Nov 06-13, 2023

WS(m/s)	%
≥ 10.0	0.00
8.0-10.0	0.00
5.5-8.0	0.00
3.3-5.5	0.00
1.7-3.3	4.76
0.3-1.7	66.07
Calms	29.17

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

Sarayuth Jitranont
Assistant General Manager



Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 23123521

Date Received : Nov 14, 2023

Date Reported : Nov 20, 2023

Report Number: 2814581-1

Page 1 of 1

Sample Description	Air Quality
Location	นงนพ (GPS 47P 0735654, 1409164)
Date Analysis Commenced	Nov 15, 2023
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag

Sample Number	Sampled Date	Total Suspended Particulate (mg/m3)	Particulate Matter (PM-10) (mg/m3)	Barometric Pressure (mm Hg)	Atmospheric Temperature (°C)
23123521-1	Nov 06 - Nov 07, 2023	0.050	0.036	758	28
23123521-2	Nov 07 - Nov 08, 2023	0.043	0.023	758	30
23123521-3	Nov 08 - Nov 09, 2023	0.041	0.034	758	31
23123521-4	Nov 09 - Nov 10, 2023	0.042	0.020	758	29
23123521-5	Nov 10 - Nov 11, 2023	0.046	0.016	758	30
23123521-6	Nov 11 - Nov 12, 2023	0.044	0.039	758	30
23123521-7	Nov 12 - Nov 13, 2023	0.041	0.027	758	30
Guideline		0.33	0.12	-	-

Reference Method

Total Suspended Particulate : US EPA 40 CFR Part 50 Appendix B

Particulate Matter (PM-10) : US EPA 40 CFR Part 50 Appendix J

Guideline : Notification of the National Environmental Board. No.24, 2004 (B.E.2547) dated September 22, 2004

Sampled By : Mongkon Phalathip

Remark :

- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Approved by

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 23123524

Date Received : Nov 14, 2023
Date Reported : Nov 20, 2023
Report Number: 2814584-1

Page 1 of 1

Sample Description Air Quality
Location ๔๕๖๗๘๙ (GPS 47P 0734576, 1408568)
Date Analysis Commenced Nov 16, 2023
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag

Sample Number	Sampled Date	Total Suspended Particulate (mg/m3)	Particulate Matter (PM-10) (mg/m3)	Barometric Pressure (mm Hg)	Atmospheric Temperature (°C)
23123524-1	Nov 06 - Nov 07, 2023	0.071	0.036	758	28
23123524-2	Nov 07 - Nov 08, 2023	0.053	0.027	758	30
23123524-3	Nov 08 - Nov 09, 2023	0.033	0.027	758	31
23123524-4	Nov 09 - Nov 10, 2023	0.031	0.026	758	30
23123524-5	Nov 10 - Nov 11, 2023	0.031	0.030	758	29
23123524-6	Nov 11 - Nov 12, 2023	0.045	0.025	758	30
23123524-7	Nov 12 - Nov 13, 2023	0.035	0.026	758	30
Guideline		0.33	0.12	-	-

Reference Method

Total Suspended Particulate : US EPA 40 CFR Part 50 Appendix B
Particulate Matter (PM-10) : US EPA 40 CFR Part 50 Appendix J

Guideline : Notification of the National Environmental Board. No.24, 2004 (B.E.2547) dated September 22, 2004

Sampled By : Mongkon Phalathip

Remark :

- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Approved by

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location : CCS Site 7

Lot ID: 23123526

Date Received : Nov 14, 2023

Date Reported : Nov 20, 2023

Report Number: 2814586-1

Page 1 of 1

Sample Description	Air Quality
Location	บ้านเนินพยอม (GPS 47P 0736407, 1410977)
Date Analysis Commenced	Nov 16, 2023
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag

Sample Number	Sampled Date	Total Suspended Particulate (mg/m3)	Particulate Matter (PM-10) (mg/m3)	Barometric Pressure (mm Hg)	Atmospheric Temperature (°C)
23123526-1	Nov 06 - Nov 07, 2023	0.060	0.030	758	28
23123526-2	Nov 07 - Nov 08, 2023	0.050	0.028	758	30
23123526-3	Nov 08 - Nov 09, 2023	0.056	0.030	758	31
23123526-4	Nov 09 - Nov 10, 2023	0.066	0.034	758	30
23123526-5	Nov 10 - Nov 11, 2023	0.053	0.031	758	29
23123526-6	Nov 11 - Nov 12, 2023	0.058	0.039	758	30
23123526-7	Nov 12 - Nov 13, 2023	0.052	0.036	758	30
Guideline		0.33	0.12	-	-

Reference Method

Total Suspended Particulate : US EPA 40 CFR Part 50 Appendix B

Particulate Matter (PM-10) : US EPA 40 CFR Part 50 Appendix J

Guideline : Notification of the National Environmental Board. No.24, 2004 (B.E.2547) dated September 22, 2004

Sampled By : Mongkon Phalathip

Remark :

- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Approved by

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

คุณภาพอากาศจากปล่องระบายอากาศ



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 2384928

Date Received : Nov 07, 2023
Date Reported : Nov 14, 2023
Report Number: 2723831-1

Page 1 of 1

Sample Number 2384928-1
Sampled Date Nov 07, 2023
Sample Description Emission from Stationary Source
Location ปล่อง Carbon Absorber
Date Analysis Commenced Nov 08, 2023
Condition of Sample Extracted into one 10-L air sampling bag

Stack Description

Ambient Pressure	756	mmHg	Diameter	0.15	m	Oxygen	20.9	%
Ambient Temperature	32.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	30.0	°C	Gas Velocity	9.8	m/s
Type of Fuel	-		Moisture	5.29	%	Flow Rate (Actual O2)	577	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Air Testing							
Total VOCs as Propane	10:25 AM - 10:35 AM	ppm	-	1.0	21.0	United States Environmental Protection Agency, EPA Method 25A	Bangkok

Sampled By : Thitipong Buadaeng

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.

Orawan Rakyong
Scientist (3)

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.



Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 23123532

Date Received : Nov 07, 2023
Date Reported : Nov 15, 2023
Report Number: 2814590-1

Page 1 of 2

Sample Number 23123532-1
Sampled Date Nov 07, 2023
Sample Description Emission from Stationary Source
Location Turbulence dust collector
Date Analysis Commenced Nov 08, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish and one plastic bottle

Stack Description

Ambient Pressure	756	mmHg	Diameter	0.80	m	Oxygen	20.9	%
Ambient Temperature	32.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	36.0	°C	Gas Velocity	9.2	m/s
Type of Fuel	-		Moisture	2.99	%	Flow Rate (Actual O2)	15467	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Suspended Particulate	09:50 AM - 10:32 AM	mg/m3	-	0.5	<0.5	400	60	United States Environmental Protection Agency, EPA Method 5	Rayong

Guideline : Guideline(1) : Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of THAI MMA Co., Ltd.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)
ทะเบียนเลขที่ ว-323-จ-9447

Approved by

D. Changchon.

Dej Changchon
Senior Manager
ทะเบียนเลขที่ ว-323-ค-9442

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory.
ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 23123532

Date Received : Nov 07, 2023
Date Reported : Nov 15, 2023
Report Number: 2814590-1

Page 2 of 2

Sample Number 23123532-1
Sampled Date Nov 07, 2023
Sample Description Emission from Stationary Source
Location Turbulence dust collector
Date Analysis Commenced Nov 08, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish and one plastic bottle

Stack Description

Ambient Pressure	756	mmHg	Diameter	0.80	m	Oxygen	20.9	%
Ambient Temperature	32.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	36.0	°C	Gas Velocity	9.2	m/s
Type of Fuel	-		Moisture	2.99	%	Flow Rate (Actual O2)	15467	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Suspended Particulate *	09:50 AM - 10:32 AM	g/s	-	-	<0.002	-	0.22	Calculated	Rayong

Guideline : Guideline(1) : Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of THAI MMA Co., Ltd.

Sampled By : Sathapron Thakarw

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)
ทะเบียนเลขที่ ว-323-จ-9447

Approved by

D. Changchon.

Dej Changchon
Senior Manager
ทะเบียนเลขที่ ว-323-ค-9442

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory.
ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 23123533
Date Received : Nov 07, 2023
Date Reported : Nov 23, 2023
Report Number: 2814592-1

Page 1 of 2

Sample Number 23123533-1
Sampled Date Nov 07, 2023
Sample Description Emission from Stationary Source
Location Main Stack
Date Analysis Commenced Nov 08, 2023
Condition of Sample Extracted into two sorbent tubes, refrigerated

Stack Description

Ambient Pressure	756	mmHg	Diameter	1.60 x 1.60	m	Oxygen	20.9	%
Ambient Temperature	32.0	°C	Shape	Square		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	30.0	°C	Gas Velocity	3.8	m/s
Type of Fuel	-		Moisture	5.29	%	Flow Rate (Actual O2)	32759	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Testing Location
Air Testing								
Butyl acrylate	10:00 AM - 10:15 AM	mg/m3	-	1.0	<1.0	39	United States Environmental Protection Agency, EPA Method 18	Bangkok
Methyl Methacrylate	10:00 AM - 10:15 AM	mg/m3	-	1.0	36.4	520	United States Environmental Protection Agency, EPA Method 18	Bangkok

Approved by

Orawan R.

Orawan Rakyong
Scientist (3)

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 23123533
Date Received : Nov 07, 2023
Date Reported : Nov 23, 2023
Report Number: 2814592-1

Page 2 of 2

Sample Number 23123533-1
Sampled Date Nov 07, 2023
Sample Description Emission from Stationary Source
Location Main Stack
Date Analysis Commenced Nov 08, 2023
Condition of Sample Extracted into two sorbent tubes, refrigerated

Stack Description

Ambient Pressure	756	mmHg	Diameter	1.60 x 1.60	m	Oxygen	20.9	%
Ambient Temperature	32.0	°C	Shape	Square		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	30.0	°C	Gas Velocity	3.8	m/s
Type of Fuel	-		Moisture	5.29	%	Flow Rate (Actual O2)	32759	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Guideline Limit	Method	Testing Location
Air Testing								
Butyl acrylate	10:00 AM - 10:15 AM	g/s	-	-	<0.01	0.13	Calculated	Bangkok
Methyl Methacrylate	10:00 AM - 10:15 AM	g/s	-	-	0.33	1.73	Calculated	Bangkok

Guideline : Environmental Impact Assessment Report of THAI MMA Co., Ltd.

Sampled By : Thitipong Buadaeng

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.

Orawan Rakyong
Scientist (3)

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

คุณภาพน้ำ



Analysis / Test Report

TESTING

No.0042

Lot ID: 2370568

Date Received : Jul 07, 2023

Date Reported : Jul 14, 2023

Report Number : 2688765-1

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Page 1 of 1

Sample Number	2370568-1
Sampled Date	Jul 07, 2023 1:45 PM
Sample Description	Wastewater
Location	บ่อสุดท้าย Cesspool
Date Analysis Commenced	Jul 07, 2023
Condition of Sample	Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	20.9	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	111	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *		-	-	7.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	34.2	≤45	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	240	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	24	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ๖-323-จ-9457

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

N. Banongkit

Narumon Banchongkit
Supervisor

ทะเบียนเลขที่ ๖-323-จ-9445

Approved by

D. Changchon

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ๖-323-ค-9442

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location : CCS Site 7

Lot ID: 2370568

Date Received : Jul 07, 2023

Date Reported : Jul 14, 2023

Report Number : 2688765-2

Page 1 of 1

Sample Number	2370568-1						
Sampled Date	Jul 07, 2023 1:45 PM						
Sample Description	Wastewater						
Location	บ่อสุดท้าย Cesspool						
Date Analysis Commenced	Jul 11, 2023						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Sulfate	mg/L	0.6	2	117	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-SO4 (E)	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampling By : Wanlop Hunchainaow

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

TESTING

No.0042

Lot ID: 2384931

Date Received : Aug 11, 2023

Date Reported : Aug 19, 2023

Report Number : 2723834-1

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location : CCS Site 7

Page 1 of 1

Sample Number	2384931-1
Sampled Date	Aug 11, 2023 1:50 PM
Sample Description	Wastewater
Location	บ่อสุดท้าย Cesspool
Date Analysis Commenced	Aug 11, 2023
Condition of Sample	Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	3.3	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *		-	-	7.0	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	35.2	≤45	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	274	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	10	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ๖-323-๖-9457

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

N. Banongkit

Narumon Banchongkit
Supervisor

ทะเบียนเลขที่ ๖-323-๖-9445

Approved by

D. Changchon

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ๖-323-๖-9442

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location : CCS Site 7

Lot ID: 2384931

Date Received : Aug 11, 2023

Date Reported : Aug 19, 2023

Report Number : 2723834-2

Page 1 of 1

Sample Number	2384931-1						
Sampled Date	Aug 11, 2023 1:50 PM						
Sample Description	Wastewater						
Location	บ่อสุดท้าย Cesspool						
Date Analysis Commenced	Aug 16, 2023						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Sulfate	mg/L	0.6	2	87.3	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-SO4 (E)	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampling By : Wanlop Hunchainaow

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

TESTING

No.0042

Lot ID: 2396041

Date Received : Sep 08, 2023

Date Reported : Sep 15, 2023

Report Number : 2747180-1

Client : THAI MMA Co., Ltd.

88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location : CCS Site 7

Page 1 of 1

Sample Number	2396041-1						
Sampled Date	Sep 08, 2023 1:45 PM						
Sample Description	Wastewater						
Location	บ่อสุดท้าย Cesspool						
Date Analysis Commenced	Sep 08, 2023						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	35.2	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	91	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	4	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *		-	-	7.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	34.3	≤45	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	328	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	11	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ๖-323-๖-9457

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

N. Banongkit

Narumon Banchongkit
Supervisor

ทะเบียนเลขที่ ๖-323-๖-9445

Approved by

D. Changchon

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ๖-323-๖-9442

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location : CCS Site 7

Lot ID: 2396041

Date Received : Sep 08, 2023

Date Reported : Sep 15, 2023

Report Number : 2747180-2

Page 1 of 1

Sample Number	2396041-1
Sampled Date	Sep 08, 2023 1:45 PM
Sample Description	Wastewater
Location	บ่อสุดท้าย Cesspool
Date Analysis Commenced	Sep 11, 2023
Condition of Sample	Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Sulfate	mg/L	0.6	2	91.3	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-SO4 (E)	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampling By : Wanlop Hunchainaow

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

TESTING
No.0042
Lot ID: 23111039
Date Received : Oct 06, 2023
Date Reported : Oct 13, 2023
Report Number : 2785662-1

Page 1 of 1

Sample Number	23111039-1						
Sampled Date	Oct 06, 2023 2:00 PM						
Sample Description	Wastewater						
Location	บ่อสุดท้าย Cesspool						
Date Analysis Commenced	Oct 06, 2023						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	31.5	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	83	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *		-	-	6.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	32.9	≤45	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	356	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	12	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ๖-323-๖-9457

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

N. Banongkit

Narumon Banchongkit
Supervisor
ทะเบียนเลขที่ ๖-323-๖-9445

Approved by

D. Changchon

Dej Changchon
Senior Manager
ทะเบียนเลขที่ ๖-323-๖-9442

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location: CCS Site 7

Lot ID: 23111039

Date Received : Oct 06, 2023

Date Reported : Oct 13, 2023

Report Number : 2785662-2

Page 1 of 1

Sample Number	23111039-1						
Sampled Date	Oct 06, 2023 2:00 PM						
Sample Description	Wastewater						
Location	บ่อสุดท้าย Cesspool						
Date Analysis Commenced	Oct 07, 2023						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Sulfate	mg/L	0.6	2	97.5	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-SO4 (E)	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampling By : Wanlop Hunchainaow

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

TESTING
No.0042
Lot ID: 23123546
Date Received : Nov 10, 2023
Date Reported : Nov 17, 2023
Report Number : 2814606-1

Page 1 of 1

Sample Number	23123546-1						
Sampled Date	Nov 10, 2023 1:50 PM						
Sample Description	Wastewater						
Location	บ่อสุดท้าย Cesspool						
Date Analysis Commenced	Nov 10, 2023						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	40.9	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	120	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *		-	-	6.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	33.5	≤45	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	332	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	15	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ๖-323-จ-9457

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

N. Banongkit

Narumon Banchongkit
Supervisor
ทะเบียนเลขที่ ๖-323-จ-9445

Approved by

D. Changchon

Dej Changchon
Senior Manager
ทะเบียนเลขที่ ๖-323-ค-9442

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory.
ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location: CCS Site 7

Lot ID: 23123546

Date Received : Nov 10, 2023

Date Reported : Nov 17, 2023

Report Number : 2814606-2

Page 1 of 1

Sample Number	23123546-1						
Sampled Date	Nov 10, 2023 1:50 PM						
Sample Description	Wastewater						
Location	บ่อสุดท้าย Cesspool						
Date Analysis Commenced	Nov 15, 2023						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Sulfate	mg/L	0.6	2	106	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-SO ₄ (E)	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampling By : Wanlop Hunchainaow

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

TESTING
No.0042
Lot ID: 23129660
Date Received : Dec 08, 2023
Date Reported : Dec 15, 2023
Report Number : 2827016-1

Page 1 of 1

Sample Number : 23129660-1
Sampled Date : Dec 08, 2023 2:19 PM
Sample Description : Wastewater
Location : บ่อสุดท้าย Cesspool
Date Analysis Commenced : Dec 08, 2023
Condition of Sample : Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	19.3	≤500	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	55	≤750	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	≤10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *		-	-	7.0	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	33.8	≤45	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	314	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	9	≤200	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampling By : Paramet Sattayakun ทะเบียนเลขที่ ว-323-จ-9476

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

N. Banongkit

Narumon Banchongkit
Supervisor
ทะเบียนเลขที่ ว-323-จ-9445

Approved by

D. Changchon

Dej Changchon
Senior Manager
ทะเบียนเลขที่ ว-323-ค-9442

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory.
ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location: CCS Site 7

Lot ID: 23129660

Date Received : Dec 08, 2023
Date Reported : Dec 15, 2023
Report Number : 2827016-2

Page 1 of 1

Sample Number	23129660-1						
Sampled Date	Dec 08, 2023 2:19 PM						
Sample Description	Wastewater						
Location	บ่อสุดท้าย Cesspool						
Date Analysis Commenced	Dec 09, 2023						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Sulfate	mg/L	0.6	2	196	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-SO4 (E)	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampling By : Paramet Sattayakun ทะเบียนเลขที่ ว-323-จ-9476

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Technical Management

N. Banongkit

Narumon Banchongkit
Supervisor
ทะเบียนเลขที่ ว-323-จ-9445

Approved by

D. Changchon

Dej Changchon
Senior Manager
ทะเบียนเลขที่ ว-323-ค-9442

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory.
ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

ระดับเสียง



Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 23123529
Date Received : Nov 14, 2023
Date Reported : Nov 17, 2023
Report Number: 2839173-1

Page 1 of 1

Sample Number 23123529-1
Parameter Noise (Leq 24 hrs.)
Location บ้านบน (GPS 47P 0735627, 1409178)
Measurement Date Nov 06 - Nov 07, 2023
Measurement by Mongkon Phalathip
Sound Level meter Serial No. 597169

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	61.0	75.4	59.1
11:00 AM - 12:00 PM	60.2	78.2	58.9
12:00 PM - 01:00 PM	60.7	78.5	59.4
01:00 PM - 02:00 PM	59.8	73.3	59.2
02:00 PM - 03:00 PM	60.4	76.1	59.2
03:00 PM - 04:00 PM	62.0	78.5	59.4
04:00 PM - 05:00 PM	61.1	86.6	59.8
05:00 PM - 06:00 PM	63.0	89.7	59.9
06:00 PM - 07:00 PM	60.7	82.5	59.8
07:00 PM - 08:00 PM	61.5	73.2	60.3
08:00 PM - 09:00 PM	62.6	73.1	60.4
09:00 PM - 10:00 PM	58.9	68.4	51.3
10:00 PM - 11:00 PM	57.6	72.1	48.9
11:00 PM - 12:00 AM	57.4	67.4	49.7
12:00 AM - 01:00 AM	51.7	73.8	47.9
01:00 AM - 02:00 AM	53.6	68.7	50.4
02:00 AM - 03:00 AM	57.0	68.2	51.4
03:00 AM - 04:00 AM	58.2	68.4	48.6
04:00 AM - 05:00 AM	52.8	65.7	48.0
05:00 AM - 06:00 AM	49.8	69.1	46.8
06:00 AM - 07:00 AM	51.6	64.6	47.9
07:00 AM - 08:00 AM	54.4	75.7	51.4
08:00 AM - 09:00 AM	55.6	70.8	50.1
09:00 AM - 10:00 AM	61.3	81.5	58.6

Leq Average 24 hrs. (dB(A)) 59.4
Lmax (dB(A)) 89.7
L90 (dB(A)) 51.4
Ldn (dB(A)) 63.1
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 23123529

Date Received : Nov 14, 2023
Date Reported : Nov 17, 2023
Report Number: 2839174-1

Page 1 of 1

Sample Number 23123529-2
Parameter Noise (Leq 24 hrs.)
Location บ้านบน (GPS 47P 0735627, 1409178)
Measurement Date Nov 07 - Nov 08, 2023
Measurement by Mongkon Phalathip
Sound Level meter Serial No. 597169

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	61.4	78.0	60.0
11:00 AM - 12:00 PM	61.0	79.0	59.8
12:00 PM - 01:00 PM	62.0	85.8	60.3
01:00 PM - 02:00 PM	61.2	72.1	60.1
02:00 PM - 03:00 PM	61.2	81.0	59.7
03:00 PM - 04:00 PM	62.0	83.0	59.9
04:00 PM - 05:00 PM	61.2	88.3	59.7
05:00 PM - 06:00 PM	62.2	90.5	58.9
06:00 PM - 07:00 PM	62.5	89.4	59.3
07:00 PM - 08:00 PM	60.9	70.0	59.0
08:00 PM - 09:00 PM	62.8	72.6	59.4
09:00 PM - 10:00 PM	60.4	70.6	54.5
10:00 PM - 11:00 PM	56.8	69.8	53.0
11:00 PM - 12:00 AM	57.7	66.0	53.7
12:00 AM - 01:00 AM	59.2	68.9	50.0
01:00 AM - 02:00 AM	59.5	67.9	50.4
02:00 AM - 03:00 AM	51.4	62.4	49.2
03:00 AM - 04:00 AM	59.1	66.1	50.2
04:00 AM - 05:00 AM	55.6	66.3	49.0
05:00 AM - 06:00 AM	54.2	64.5	49.4
06:00 AM - 07:00 AM	52.2	67.9	49.5
07:00 AM - 08:00 AM	54.3	77.4	51.4
08:00 AM - 09:00 AM	55.3	71.3	49.9
09:00 AM - 10:00 AM	60.0	82.4	56.3

Leq Average 24 hrs. (dB(A)) 59.9
Lmax (dB(A)) 90.5
L90 (dB(A)) 54.5
Ldn (dB(A)) 64.3
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 23123529

Date Received : Nov 14, 2023
Date Reported : Nov 17, 2023
Report Number: 2839175-1

Page 1 of 1

Sample Number 23123529-3
Parameter Noise (Leq 24 hrs.)
Location บ้านบน (GPS 47P 0735627, 1409178)
Measurement Date Nov 08 - Nov 09, 2023
Measurement by Mongkon Phalathip
Sound Level meter Serial No. 597169

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	61.3	76.5	57.0
11:00 AM - 12:00 PM	62.1	88.0	60.0
12:00 PM - 01:00 PM	63.0	91.7	60.7
01:00 PM - 02:00 PM	61.5	67.3	60.2
02:00 PM - 03:00 PM	61.8	78.1	60.8
03:00 PM - 04:00 PM	67.8	93.6	60.9
04:00 PM - 05:00 PM	67.3	101.5	59.6
05:00 PM - 06:00 PM	62.4	77.7	61.0
06:00 PM - 07:00 PM	62.4	82.8	60.5
07:00 PM - 08:00 PM	61.2	71.1	60.2
08:00 PM - 09:00 PM	63.4	70.7	60.8
09:00 PM - 10:00 PM	65.7	72.9	54.9
10:00 PM - 11:00 PM	60.3	70.3	50.0
11:00 PM - 12:00 AM	62.4	71.6	50.1
12:00 AM - 01:00 AM	62.1	68.9	56.9
01:00 AM - 02:00 AM	58.1	73.9	49.1
02:00 AM - 03:00 AM	57.2	65.2	48.8
03:00 AM - 04:00 AM	51.4	64.5	48.3
04:00 AM - 05:00 AM	51.9	69.6	49.1
05:00 AM - 06:00 AM	54.0	90.2	48.4
06:00 AM - 07:00 AM	56.1	74.5	50.0
07:00 AM - 08:00 AM	54.2	70.6	51.6
08:00 AM - 09:00 AM	56.7	73.3	51.5
09:00 AM - 10:00 AM	61.7	77.2	59.9

Leq Average 24 hrs. (dB(A)) 62.1
Lmax (dB(A)) 101.5
L90 (dB(A)) 56.9
Ldn (dB(A)) 66.1
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 23123531
Date Received : Nov 14, 2023
Date Reported : Nov 17, 2023
Report Number: 2839170-1

Page 1 of 1

Sample Number 23123531-1
Parameter Noise (Leq 24 hrs.)
Location บ้านนาบยา (GPS 47P 0734596, 1408522)
Measurement Date Nov 06 - Nov 07, 2023
Measurement by Mongkon Phalathip
Sound Level meter Serial No. 597167

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	64.2	81.0	59.5
10:00 AM - 11:00 AM	63.0	82.9	58.6
11:00 AM - 12:00 PM	62.7	80.9	58.1
12:00 PM - 01:00 PM	63.0	86.6	59.2
01:00 PM - 02:00 PM	63.1	78.8	58.9
02:00 PM - 03:00 PM	64.8	82.2	60.1
03:00 PM - 04:00 PM	65.4	85.2	61.1
04:00 PM - 05:00 PM	67.3	85.5	62.4
05:00 PM - 06:00 PM	66.4	81.5	62.9
06:00 PM - 07:00 PM	66.1	85.0	62.1
07:00 PM - 08:00 PM	65.7	81.8	62.5
08:00 PM - 09:00 PM	65.8	82.6	61.7
09:00 PM - 10:00 PM	65.0	82.7	61.3
10:00 PM - 11:00 PM	63.4	79.9	60.9
11:00 PM - 12:00 AM	63.8	79.9	60.3
12:00 AM - 01:00 AM	61.9	81.6	58.5
01:00 AM - 02:00 AM	61.2	79.2	58.2
02:00 AM - 03:00 AM	61.0	80.1	57.7
03:00 AM - 04:00 AM	60.7	74.9	58.4
04:00 AM - 05:00 AM	60.7	75.0	58.7
05:00 AM - 06:00 AM	62.5	78.9	60.0
06:00 AM - 07:00 AM	64.6	77.3	60.7
07:00 AM - 08:00 AM	68.0	80.9	64.1
08:00 AM - 09:00 AM	65.4	81.7	61.0

Leq Average 24 hrs. (dB(A)) 64.5
Lmax (dB(A)) 86.6
L90 (dB(A)) 60.1
Ldn (dB(A)) 69.4
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 23123531

Date Received : Nov 14, 2023
Date Reported : Nov 17, 2023
Report Number: 2839171-1

Page 1 of 1

Sample Number 23123531-2
Parameter Noise (Leq 24 hrs.)
Location บ้านนาบะ (GPS 47P 0734596, 1408522)
Measurement Date Nov 07 - Nov 08, 2023
Measurement by Mongkon Phalathip
Sound Level meter Serial No. 597167

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	63.3	78.7	58.8
10:00 AM - 11:00 AM	62.7	85.5	58.2
11:00 AM - 12:00 PM	62.9	81.0	58.4
12:00 PM - 01:00 PM	64.7	83.4	60.4
01:00 PM - 02:00 PM	66.5	91.8	62.1
02:00 PM - 03:00 PM	65.2	80.3	60.4
03:00 PM - 04:00 PM	67.0	94.3	61.4
04:00 PM - 05:00 PM	65.2	79.2	62.4
05:00 PM - 06:00 PM	67.1	96.7	63.2
06:00 PM - 07:00 PM	68.0	80.4	63.7
07:00 PM - 08:00 PM	66.0	79.9	62.9
08:00 PM - 09:00 PM	65.1	79.3	62.1
09:00 PM - 10:00 PM	64.0	79.5	60.7
10:00 PM - 11:00 PM	63.6	79.9	60.5
11:00 PM - 12:00 AM	61.7	77.7	58.9
12:00 AM - 01:00 AM	61.4	79.0	58.1
01:00 AM - 02:00 AM	60.2	77.4	57.6
02:00 AM - 03:00 AM	59.7	75.1	57.6
03:00 AM - 04:00 AM	63.3	76.2	57.4
04:00 AM - 05:00 AM	62.6	83.6	57.6
05:00 AM - 06:00 AM	61.9	79.0	58.0
06:00 AM - 07:00 AM	66.2	89.7	60.7
07:00 AM - 08:00 AM	68.0	95.4	64.0
08:00 AM - 09:00 AM	65.7	80.6	61.2

Leq Average 24 hrs. (dB(A)) 64.8
Lmax (dB(A)) 96.7
L90 (dB(A)) 60.4
Ldn (dB(A)) 69.7
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 23123531
Date Received : Nov 14, 2023
Date Reported : Nov 17, 2023
Report Number: 2839172-1

Page 1 of 1

Sample Number 23123531-3
Parameter Noise (Leq 24 hrs.)
Location บ้านนาบะ (GPS 47P 0734596, 1408522)
Measurement Date Nov 08 - Nov 09, 2023
Measurement by Mongkon Phalathip
Sound Level meter Serial No. 597167

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	63.9	86.7	58.3
10:00 AM - 11:00 AM	62.8	82.5	57.7
11:00 AM - 12:00 PM	61.9	77.9	57.2
12:00 PM - 01:00 PM	62.7	77.8	58.0
01:00 PM - 02:00 PM	63.2	81.0	58.3
02:00 PM - 03:00 PM	63.1	84.4	58.7
03:00 PM - 04:00 PM	62.5	78.8	58.6
04:00 PM - 05:00 PM	65.4	80.7	62.1
05:00 PM - 06:00 PM	67.4	81.1	64.4
06:00 PM - 07:00 PM	66.7	83.1	63.7
07:00 PM - 08:00 PM	65.1	77.9	62.2
08:00 PM - 09:00 PM	64.3	81.7	60.8
09:00 PM - 10:00 PM	62.9	79.1	58.9
10:00 PM - 11:00 PM	63.1	77.0	60.0
11:00 PM - 12:00 AM	61.4	75.9	58.9
12:00 AM - 01:00 AM	61.0	77.3	58.3
01:00 AM - 02:00 AM	60.0	74.9	57.8
02:00 AM - 03:00 AM	60.4	82.2	57.7
03:00 AM - 04:00 AM	59.7	79.1	57.2
04:00 AM - 05:00 AM	59.2	73.8	56.6
05:00 AM - 06:00 AM	59.8	77.2	56.4
06:00 AM - 07:00 AM	62.5	83.4	58.8
07:00 AM - 08:00 AM	64.9	80.5	61.2
08:00 AM - 09:00 AM	64.5	81.2	60.5

Leq Average 24 hrs. (dB(A)) 63.4
Lmax (dB(A)) 86.7
L90 (dB(A)) 58.6
Ldn (dB(A)) 68.1
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

คุณภาพอากาศภายในสถานประกอบการ



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 2384929

Date Received : Aug 08, 2023
Date Reported : Aug 12, 2023
Report Number : 2723832-1

Page 1 of 4

Sample Number 2384929-1
Sampled Date Aug 08, 2023
Sample Description Air Quality
Location ไส้ระเหยออกจากถังซีลน้ำ (Water Seal)
Date Analysis Commenced Aug 09, 2023
Condition of Sample Drawn into one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total VOC	09:00 AM - 09:20 AM	ppm	-	0.10	2.2	500	Total VOC Analyzer	MOI	Bangkok

Guideline :

MOI : ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดหลักเกณฑ์ และวิธีการปฏิบัติในการตรวจสอบ และควบคุมการรั่วซึมของสารอินทรีย์ระเหยง่ายจากอุปกรณ์
ในโรงการอุตสาหกรรม พ.ศ. 2555

Sampled By : Tinnakorn Kulchart

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.

Orawan Rakyong
Scientist (3)

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 2384929

Date Received : Aug 08, 2023
Date Reported : Aug 12, 2023
Report Number : 2723832-1

Page 2 of 4

Sample Number : 2384929-2
Sampled Date : Aug 08, 2023
Sample Description : Air Quality
Location : ไอระเหยที่ออกจากขั้นตอนการนำสารที่ได้จากการทำให้บริสุทธิ์ถ่ายลงถังขนาด 200 ลิตร
Date Analysis Commenced : Aug 09, 2023
Condition of Sample : Drawn into one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total VOC	09:00 AM - 09:20 AM	ppm	-	0.10	2.0	500	Total VOC Analyzer	MOI	Bangkok

Guideline :

MOI : ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดหลักเกณฑ์ และวิธีการปฏิบัติในการตรวจสอบ และควบคุมการรั่วซึมของสารอินทรีย์ระเหยง่ายจากอุปกรณ์
ในโรงการอุตสาหกรรม พ.ศ. 2555

Sampled By : Tinnakorn Kulchart

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.

Orawan Rakyong
Scientist (3)

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 2384929

Date Received : Aug 08, 2023
Date Reported : Aug 12, 2023
Report Number : 2723832-1

Page 3 of 4

Sample Number 2384929-3
Sampled Date Aug 08, 2023
Sample Description Air Quality
Location ไธโรเหยจากการถ่ายของเสียที่ไม่สามารถนำกลับมาใช้ได้เกิดจากกระบวนการลงสู่ถังขนาด 200 ลิตร
Date Analysis Commenced Aug 09, 2023
Condition of Sample Drawn into one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total VOC	09:00 AM - 09:20 AM	ppm	-	0.10	0.5	500	Total VOC Analyzer	MOI	Bangkok

Guideline :

MOI : ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดหลักเกณฑ์ และวิธีการปฏิบัติในการตรวจสอบ และควบคุมการรั่วซึมของสารอินทรีย์ระเหยง่ายจากอุปกรณ์
ในโรงการอุตสาหกรรม พ.ศ. 2555

Sampled By : Tinnakorn Kulchart

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.

Orawan Rakyong
Scientist (3)

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 2384929

Date Received : Aug 08, 2023
Date Reported : Aug 12, 2023
Report Number : 2723832-1

Page 4 of 4

Sample Number 2384929-4
Sampled Date Aug 08, 2023
Sample Description Air Quality
Location ไธระเหยชาออกจาก Carbon Absorber
Date Analysis Commenced Aug 09, 2023
Condition of Sample Drawn into one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total VOC	09:00 AM - 09:20 AM	ppm	-	0.10	8.2	500	Total VOC Analyzer	MOI	Bangkok

Guideline :

MOI : ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดหลักเกณฑ์ และวิธีการปฏิบัติในการตรวจสอบ และควบคุมการรั่วซึมของสารอินทรีย์ระเหยง่ายจากอุปกรณ์
ในโรงการอุตสาหกรรม พ.ศ. 2555

Sampled By : Tinnakorn Kulchart

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.

Orawan Rakyong
Scientist (3)

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 2384930

Date Received : Aug 08, 2023
Date Reported : Aug 15, 2023
Report Number : 2723833-1

Page 1 of 1

Sample Number : 2384930-1
Sampled Date : Aug 08, 2023
Sample Description : Air Quality
Location : Cutter Zone
Date Analysis Commenced : Aug 10, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette
Barometric Pressure : 757 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Dust	09:00 AM - 11:00 AM	mg/m3	-	0.15	<0.15	15	Based on NIOSH (1994), 0500	OSHA	Rayong

Guideline :

OSHA : Occupational Safety and Health Administration

Sampled By : Tinnakorn Kulchart

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 23123540

Date Received : Nov 03, 2023

Date Reported : Nov 09, 2023

Report Number : 2814599-1

Page 1 of 4

Sample Number : 23123540-1
Sampled Date : Nov 03, 2023
Sample Description : Air Quality
Location : ไอระเหยออกจากถังซีลน้ำ (Water Seal)
Date Analysis Commenced : Nov 06, 2023
Condition of Sample : Drawn into one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total VOC	09:00 AM - 09:20 AM	ppm	-	0.10	0.6	500	Total VOC Analyzer	MOI	Bangkok

Guideline :

MOI : ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดหลักเกณฑ์ และวิธีการปฏิบัติในการตรวจสอบ และควบคุมการรั่วซึมของสารอินทรีย์ระเหยง่ายจากอุปกรณ์
ในโรงการอุตสาหกรรม พ.ศ. 2555

Sampled By : Tinnakorn Kulchart

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.

Orawan Rakyong
Scientist (3)

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 23123540

Date Received : Nov 03, 2023
Date Reported : Nov 09, 2023
Report Number : 2814599-1

Page 2 of 4

Sample Number 23123540-2
Sampled Date Nov 03, 2023
Sample Description Air Quality
Location ไอระเหยที่ออกจากขั้นตอนการนำสารที่ได้จากการทำให้บริสุทธิ์ถ่ายลงถังขนาด 200 ลิตร
Date Analysis Commenced Nov 06, 2023
Condition of Sample Drawn into one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total VOC	09:15 AM - 09:35 AM	ppm	-	0.10	1.5	500	Total VOC Analyzer	MOI	Bangkok

Guideline :

MOI : ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดหลักเกณฑ์ และวิธีการปฏิบัติในการตรวจสอบ และควบคุมการรั่วซึมของสารอินทรีย์ระเหยง่ายจากอุปกรณ์
ในโรงการอุตสาหกรรม พ.ศ. 2555

Sampled By : Tinnakorn Kulchart

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.

Orawan Rakyong
Scientist (3)

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 23123540

Date Received : Nov 03, 2023
Date Reported : Nov 09, 2023
Report Number : 2814599-1

Page 3 of 4

Sample Number : 23123540-3
Sampled Date : Nov 03, 2023
Sample Description : Air Quality
Location : ไอระเหยจากการถ่ายของเสียที่ไม่สามารถนำกลับมาใช้ได้เกิดจากกระบวนการลงสู่ถังขนาด 200 ลิตร
Date Analysis Commenced : Nov 06, 2023
Condition of Sample : Drawn into one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total VOC	09:10 AM - 09:30 AM	ppm	-	0.10	<0.1	500	Total VOC Analyzer	MOI	Bangkok

Guideline :

MOI : ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดหลักเกณฑ์ และวิธีการปฏิบัติในการตรวจสอบ และควบคุมการรั่วซึมของสารอินทรีย์ระเหยง่ายจากอุปกรณ์
ในโรงการอุตสาหกรรม พ.ศ. 2555

Sampled By : Tinnakorn Kulchart

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.

Orawan Rakyong
Scientist (3)

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 23123540

Date Received : Nov 03, 2023
Date Reported : Nov 09, 2023
Report Number : 2814599-1

Page 4 of 4

Sample Number : 23123540-4
Sampled Date : Nov 03, 2023
Sample Description : Air Quality
Location : ไธระเหยชาออกจาก Carbon Absorber
Date Analysis Commenced : Nov 06, 2023
Condition of Sample : Drawn into one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total VOC	09:20 AM - 09:40 AM	ppm	-	0.10	1.5	500	Total VOC Analyzer	MOI	Bangkok

Guideline :

MOI : ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดหลักเกณฑ์ และวิธีการปฏิบัติในการตรวจสอบ และควบคุมการรั่วซึมของสารอินทรีย์ระเหยง่ายจากอุปกรณ์
ในโรงการอุตสาหกรรม พ.ศ. 2555

Sampled By : Tinnakorn Kulchart

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.

Orawan Rakyong
Scientist (3)

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 23123542

Date Received : Nov 03, 2023

Date Reported : Nov 09, 2023

Report Number : 2814602-1

Page 1 of 1

Sample Number 23123542-1
Sampled Date Nov 03, 2023
Sample Description Air Quality
Location Cutter Zone
Date Analysis Commenced Nov 03, 2023
Condition of Sample Drawn into one filter paper placed in plastic cassette
Barometric Pressure 756 mmHg
Atmospheric Temperature 32.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Dust	08:45 AM - 10:45 AM	mg/m3	-	0.15	<0.15	15	Based on NIOSH (1994), OSHA 0500		Rayong

Guideline :

OSHA : Occupational Safety and Health Administration

Sampled By : Santi Chaichana

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Thanita K.

Thanita Kulsuriwong
Scientist (4)

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

ระดับเสียงภายในสถานประกอบการ



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 23123544

Date Received : Nov 03, 2023
Date Reported : Nov 08, 2023
Report Number: 2829690-1

Page 1 of 1

Sample Number 23123544-1
Parameter Noise (Leq 8 hrs.)
Location บริเวณ Process 300
Measurement Date Nov 03, 2023
Measurement by Santi Chaichana

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:31 AM - 09:31 AM	83.5	87.7	83.0
09:31 AM - 10:31 AM	83.9	90.7	83.4
10:31 AM - 11:31 AM	83.8	86.3	83.3
11:31 AM - 12:31 PM	83.7	86.3	83.1
12:31 PM - 01:31 PM	83.5	86.1	83.0
01:31 PM - 02:31 PM	83.3	85.8	82.9
02:31 PM - 03:31 PM	83.3	85.8	82.9
03:31 PM - 04:31 PM	83.6	94.9	83.1

Leq Average 8 hrs. (dB(A))

83.6

Lmax (dB(A))

94.9

Standard (dB(A))

90

140

Reference Method : ISO1996-1 and 1996-2

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย
ในการประกอบกิจการโรงงานเกี่ยวกับสภาวะแวดล้อมในการทำงาน พ.ศ.๒๕๔๖

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : THAI MMA Co., Ltd.
88/6, 3191 Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : CCS Site 7

Lot ID: 23123544

Date Received : Nov 03, 2023
Date Reported : Nov 08, 2023
Report Number: 2829691-1

Page 1 of 1

Sample Number 23123544-2
Parameter Noise (Leq 8 hrs.)
Location บริเวณ Packing
Measurement Date Nov 03, 2023
Measurement by Santi Chaichana

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:34 AM - 09:34 AM	67.8	81.1	55.6
09:34 AM - 10:34 AM	70.4	81.4	68.0
10:34 AM - 11:34 AM	69.3	78.9	67.9
11:34 AM - 12:34 PM	68.8	78.7	67.7
12:34 PM - 01:34 PM	69.1	79.3	67.7
01:34 PM - 02:34 PM	70.8	78.9	68.2
02:34 PM - 03:34 PM	68.1	72.3	67.5
03:34 PM - 04:34 PM	69.2	81.0	67.6

Leq Average 8 hrs. (dB(A))

69.3

Lmax (dB(A))

81.4

Standard (dB(A))

90

140

Reference Method : ISO1996-1 and 1996-2

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย
ในการประกอบกิจการโรงงานเกี่ยวกับสภาวะแวดล้อมในการทำงาน พ.ศ.๒๕๔๖

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER