

ภาคผนวก ค

ผลการตรวจวัดคุณภาพสิ่งแวดล้อม

ภาคผนวก ค-1

ใบรับรองผลการตรวจวัดคุณภาพอากาศในบรรยากาศ



Analysis / Test Report

Client : THAI MMA Co., Ltd.

271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location :

Lot ID: 2515840

Date Received : Mar 31, 2025

Date Reported : Apr 02, 2025

Report Number: 3244983-1

Page 1 of 1

Sample Description Air Quality
Location SCG site 3
Parameter Nitrogen dioxide (ppb)
Measurement Date Mar 24, 2025 - Mar 30, 2025
Measurement by Santi Chaichana

Time	2515840-1 Mar 24, 2025	2515840-2 Mar 25, 2025	2515840-3 Mar 26, 2025	2515840-4 Mar 27, 2025	2515840-5 Mar 28, 2025	2515840-6 Mar 29, 2025	2515840-7 Mar 30, 2025
09:00 AM - 10:00 AM	14.3	24.4	9.1	6.6	14.9	10.7	15.1
10:00 AM - 11:00 AM	2.3	25.1	7.6	7.9	24.2	21.9	18.5
11:00 AM - 12:00 PM	24.5	24.7	9.2	10.3	27.5	25.8	12.1
12:00 PM - 01:00 PM	30.7	14.5	7.2	9.8	28.2	20.8	13.0
01:00 PM - 02:00 PM	19.8	15.7	8.1	6.0	15.2	17.6	5.6
02:00 PM - 03:00 PM	11.7	15.5	7.4	8.3	29.9	12.0	12.0
03:00 PM - 04:00 PM	7.2	22.4	15.5	7.3	35.1	24.3	9.0
04:00 PM - 05:00 PM	16.4	16.2	11.6	12.5	21.5	18.2	8.8
05:00 PM - 06:00 PM	12.1	15.5	14.2	2.6	15.6	12.0	14.8
06:00 PM - 07:00 PM	7.5	4.0	12.5	6.7	22.5	20.4	13.6
07:00 PM - 08:00 PM	16.2	5.9	5.6	3.5	12.7	16.9	13.4
08:00 PM - 09:00 PM	22.8	5.8	6.8	3.0	7.7	10.1	12.8
09:00 PM - 10:00 PM	11.1	3.7	8.8	3.9	5.5	9.0	11.0
10:00 PM - 11:00 PM	7.4	2.6	7.7	2.7	3.3	3.2	10.6
11:00 PM - 12:00 AM	8.9	7.1	5.8	1.1	5.8	2.1	13.6
12:00 AM - 01:00 AM	6.7	7.9	9.3	2.8	11.0	1.9	13.5
01:00 AM - 02:00 AM	6.4	3.2	7.3	7.2	6.6	2.8	13.4
02:00 AM - 03:00 AM	6.7	6.0	7.7	9.4	8.2	4.3	14.4
03:00 AM - 04:00 AM	8.0	3.8	10.2	8.5	2.5	3.4	14.5
04:00 AM - 05:00 AM	9.2	4.1	8.3	5.5	5.6	4.0	13.2
05:00 AM - 06:00 AM	7.6	6.9	7.6	3.4	2.6	3.0	12.7
06:00 AM - 07:00 AM	12.0	7.3	9.4	7.8	5.7	5.1	12.1
07:00 AM - 08:00 AM	12.7	4.9	7.1	9.5	6.7	11.0	12.9
08:00 AM - 09:00 AM	15.2	8.7	6.8	19.9	5.2	15.8	15.2
Average (24 hrs)	12.4	10.7	8.8	6.9	13.5	11.5	12.7
1hr - Maximum	30.7	25.1	15.5	19.9	35.1	25.8	18.5
Standard 1hr	170 ppb (320 ug/m3)						
Standard 24 hrs	-						
Standard	: Notification of the National Environment Board No. 33, 2009 (B.E. 2552).						
Reference Method	: US EPAMethod Part 50 App. F (Chemiluminescence)						

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Approved by

Saranya C.

Saranya Chalermthamrong
Scientist (4)

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Analysis / Test Report

Client : THAI MMA Co., Ltd.

271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location :

Lot ID: 2515840

Date Received : Mar 31, 2025

Date Reported : Apr 02, 2025

Report Number: 3271915-1

Page 1 of 1

Sample Description Air Quality
Location วัดหนองแฟบ
Parameter Nitrogen dioxide (ppb)
Measurement Date Mar 24, 2025 - Mar 30, 2025
Measurement by Santi Chaichana

Time	2515840-8 Mar 24, 2025	2515840-9 Mar 25, 2025	2515840-10 Mar 26, 2025	2515840-11 Mar 27, 2025	2515840-12 Mar 28, 2025	2515840-13 Mar 29, 2025	2515840-14 Mar 30, 2025
10:00 AM - 11:00 AM	19.2	8.8	5.4	5.8	9.6	4.4	4.7
11:00 AM - 12:00 PM	10.0	5.8	3.0	4.6	4.5	3.3	2.8
12:00 PM - 01:00 PM	4.5	3.1	2.1	3.6	2.6	2.8	1.1
01:00 PM - 02:00 PM	3.9	1.8	5.1	5.4	1.9	3.4	2.4
02:00 PM - 03:00 PM	3.5	2.6	5.3	5.0	3.5	3.8	9.3
03:00 PM - 04:00 PM	2.7	3.1	3.4	3.1	3.7	3.1	6.1
04:00 PM - 05:00 PM	2.3	3.8	3.2	2.4	2.8	2.8	4.8
05:00 PM - 06:00 PM	2.5	4.6	3.2	2.8	3.7	2.7	3.6
06:00 PM - 07:00 PM	4.5	4.8	4.2	3.9	2.6	2.7	4.4
07:00 PM - 08:00 PM	15.7	3.6	1.6	2.1	3.1	2.1	4.6
08:00 PM - 09:00 PM	3.8	3.2	2.5	2.6	4.3	2.6	5.3
09:00 PM - 10:00 PM	4.5	3.4	3.5	3.8	6.0	3.4	4.6
10:00 PM - 11:00 PM	3.7	2.8	2.9	2.9	5.5	3.5	5.0
11:00 PM - 12:00 AM	3.0	1.7	2.0	1.9	3.0	2.0	4.0
12:00 AM - 01:00 AM	1.9	1.3	1.3	0.9	1.7	1.5	3.4
01:00 AM - 02:00 AM	1.7	1.4	0.8	0.7	1.0	0.6	2.0
02:00 AM - 03:00 AM	0.7	0.2	0.4	0.4	0.8	0.5	2.7
03:00 AM - 04:00 AM	0.9	0.7	0.7	0.7	0.9	0.3	2.9
04:00 AM - 05:00 AM	0.7	0.5	0.4	0.2	0.7	0.2	2.5
05:00 AM - 06:00 AM	1.1	0.4	0.3	0.2	0.8	0.3	2.9
06:00 AM - 07:00 AM	0.3	0.3	0.7	0.3	0.7	0.7	5.0
07:00 AM - 08:00 AM	1.1	0.4	0.8	0.2	1.4	0.4	10.4
08:00 AM - 09:00 AM	1.4	0.4	1.1	0.5	0.6	1.0	8.7
09:00 AM - 10:00 AM	3.9	2.0	2.2	2.0	2.5	0.5	6.7
Average (24 hrs)	4.1	2.5	2.3	2.3	2.8	2.0	4.6
1hr - Maximum	19.2	8.8	5.4	5.8	9.6	4.4	10.4
Standard 1hr	170 ppb (320 ug/m3)						
Standard 24 hrs	-						

Standard : Notification of the National Environment Board No. 33, 2009 (B.E. 2552).

Reference Method : US EPAMethod Part 50 App. F (Chemiluminescence)

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Approved by

Saranya C.

Saranya Chalermthamrong
Scientist (4)

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Analysis / Test Report

Client : THAI MMA Co., Ltd.

271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location :

Lot ID: 2515840

Date Received : Mar 31, 2025

Date Reported : Apr 02, 2025

Report Number: 3273599-1

Page 1 of 1

Sample Description Air Quality
Location รร.บ้านนาบตาพุด
Parameter Nitrogen dioxide (ppb)
Measurement Date Mar 24, 2025 - Mar 30, 2025
Measurement by Santi Chaichana

Time	2515840-15 Mar 24, 2025	2515840-16 Mar 25, 2025	2515840-17 Mar 26, 2025	2515840-18 Mar 27, 2025	2515840-19 Mar 28, 2025	2515840-20 Mar 29, 2025	2515840-21 Mar 30, 2025
10:00 AM - 11:00 AM	24.8	5.3	6.6	7.6	13.9	8.2	14.4
11:00 AM - 12:00 PM	18.6	14.8	10.1	13.5	23.7	14.7	7.9
12:00 PM - 01:00 PM	11.4	17.4	9.7	17.6	22.7	16.0	9.5
01:00 PM - 02:00 PM	19.5	17.2	8.9	15.6	19.1	9.5	8.5
02:00 PM - 03:00 PM	10.0	15.2	14.7	7.0	13.2	8.3	9.4
03:00 PM - 04:00 PM	9.6	7.0	17.2	5.2	11.5	20.0	12.7
04:00 PM - 05:00 PM	9.6	5.5	12.2	4.9	24.7	22.9	9.6
05:00 PM - 06:00 PM	10.0	5.5	9.4	5.2	23.8	16.0	10.1
06:00 PM - 07:00 PM	10.1	6.7	8.5	8.0	17.1	13.8	12.3
07:00 PM - 08:00 PM	8.4	8.1	8.0	7.0	11.0	12.9	9.2
08:00 PM - 09:00 PM	6.5	5.8	5.8	5.9	10.7	12.6	7.1
09:00 PM - 10:00 PM	9.6	5.0	5.7	3.8	10.2	6.1	5.2
10:00 PM - 11:00 PM	12.6	3.2	4.5	2.9	7.8	4.3	5.2
11:00 PM - 12:00 AM	10.4	2.6	2.9	2.3	4.6	3.9	7.1
12:00 AM - 01:00 AM	11.7	2.3	1.9	1.7	4.3	3.5	7.0
01:00 AM - 02:00 AM	11.8	1.6	1.6	1.7	4.0	2.3	7.0
02:00 AM - 03:00 AM	14.3	1.6	1.8	1.2	4.1	1.7	6.7
03:00 AM - 04:00 AM	11.6	1.8	1.6	1.2	3.5	2.0	6.6
04:00 AM - 05:00 AM	8.0	2.6	2.9	2.8	3.6	2.2	6.6
05:00 AM - 06:00 AM	12.2	4.3	3.8	3.8	5.6	3.0	7.0
06:00 AM - 07:00 AM	13.0	8.8	7.0	8.8	8.7	6.2	6.4
07:00 AM - 08:00 AM	22.2	9.4	7.3	11.3	10.6	12.0	7.1
08:00 AM - 09:00 AM	17.9	8.8	6.2	16.8	7.0	12.5	8.3
09:00 AM - 10:00 AM	13.4	10.2	8.3	12.1	6.8	13.1	9.2
Average (24 hrs)	12.8	7.1	6.9	7.0	11.3	9.5	8.3
1hr - Maximum	24.8	17.4	17.2	17.6	24.7	22.9	14.4
Standard 1hr	170 ppb (320 ug/m3)						
Standard 24 hrs	-						

Standard : Notification of the National Environment Board No. 33, 2009 (B.E. 2552).

Reference Method : US EPA Method Part 50 App. F (Chemiluminescence)

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Approved by

Saranya C.

Saranya Chalermthamrong
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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515842

Date Received : Mar 31, 2025
Date Reported : Apr 08, 2025
Report Number : 3239016-1

Page 1 of 21

Sample Number 2515842-1
Sampled Date Mar 24, 2025
Sample Description Air Quality
Location SCG site 3
Date Analysis Commenced Apr 01, 2025
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one 10-L air sampling bag
Barometric Pressure 756 mmHg
Atmospheric Temperature 30.8 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	24/03/25 - 25/03/25	ppm	-	1.0	5.6	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	24/03/25 - 25/03/25	mg/m3	-	0.002	0.077	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008	NEB No.24	Rayong

Guideline :

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

Sampled By : Santi Chaichana

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.
- Sampling is not included in scope of accreditation 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. The report shall not be reproduced except in full without the written approval of the laboratory.

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515842

Date Received : Mar 31, 2025
Date Reported : Apr 08, 2025
Report Number : 3239016-1

Page 2 of 21

Sample Number 2515842-2
Sampled Date Mar 25, 2025
Sample Description Air Quality
Location SCG site 3
Date Analysis Commenced Apr 01, 2025
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one 10-L air sampling bag
Barometric Pressure 756 mmHg
Atmospheric Temperature 31.2 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	25/03/25 - 26/03/25	ppm	-	1.0	4.4	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	25/03/25 - 26/03/25	mg/m3	-	0.002	0.079	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008	NEB No.24	Rayong

Guideline :

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

Sampled By : Santi Chaichana

Remark :

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Approved by

Thanita K.

Thanita Kulsuriwong
Scientist (4)

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515842

Date Received : Mar 31, 2025
Date Reported : Apr 08, 2025
Report Number : 3239016-1

Page 3 of 21

Sample Number 2515842-3
Sampled Date Mar 26, 2025
Sample Description Air Quality
Location SCG site 3
Date Analysis Commenced Apr 01, 2025
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one 10-L air sampling bag
Barometric Pressure 756 mmHg
Atmospheric Temperature 30.9 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	26/03/25 - 27/03/25	ppm	-	1.0	6.2	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	26/03/25 - 27/03/25	mg/m3	-	0.002	0.079	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008	NEB No.24	Rayong

Guideline :

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

Sampled By : Santi Chaichana

Remark :

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Approved by

Thanita K.

Thanita Kulsuriwong
Scientist (4)

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515842

Date Received : Mar 31, 2025
Date Reported : Apr 08, 2025
Report Number : 3239016-1

Page 4 of 21

Sample Number 2515842-4
Sampled Date Mar 27, 2025
Sample Description Air Quality
Location SCG site 3
Date Analysis Commenced Apr 01, 2025
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one 10-L air sampling bag
Barometric Pressure 756 mmHg
Atmospheric Temperature 30.5 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	27/03/25 - 28/03/25	ppm	-	1.0	5.3	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	27/03/25 - 28/03/25	mg/m3	-	0.002	0.077	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008	NEB No.24	Rayong

Guideline :

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

Sampled By : Santi Chaichana

Remark :

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Approved by

Thanita K.

Thanita Kulsuriwong
Scientist (4)

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515842

Date Received : Mar 31, 2025
Date Reported : Apr 08, 2025
Report Number : 3239016-1

Page 5 of 21

Sample Number 2515842-5
Sampled Date Mar 28, 2025
Sample Description Air Quality
Location SCG site 3
Date Analysis Commenced Apr 01, 2025
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one 10-L air sampling bag
Barometric Pressure 756 mmHg
Atmospheric Temperature 31.4 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	28/03/25 - 29/03/25	ppm	-	1.0	5.1	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	28/03/25 - 29/03/25	mg/m3	-	0.002	0.074	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008	NEB No.24	Rayong

Guideline :

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

Sampled By : Santi Chaichana

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515842

Date Received : Mar 31, 2025
Date Reported : Apr 08, 2025
Report Number : 3239016-1

Page 6 of 21

Sample Number 2515842-6
Sampled Date Mar 29, 2025
Sample Description Air Quality
Location SCG site 3
Date Analysis Commenced Apr 01, 2025
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one 10-L air sampling bag
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 Hydrocarbon as Methane *	29/03/25 - 30/03/25	ppm	-	1.0	3.8	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	29/03/25 - 30/03/25	mg/m3	-	0.002	0.064	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008	NEB No.24	Rayong

Guideline :

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

Sampled By : Santi Chaichana

Remark :

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Approved by

Thanita K.

Thanita Kulsuriwong
Scientist (4)

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515842

Date Received : Mar 31, 2025
Date Reported : Apr 08, 2025
Report Number : 3239016-1

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Sample Number 2515842-7
Sampled Date Mar 30, 2025
Sample Description Air Quality
Location SCG site 3
Date Analysis Commenced Apr 01, 2025
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one 10-L air sampling bag
Barometric Pressure 756 mmHg
Atmospheric Temperature 30.1 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	30/03/25 - 31/03/25	ppm	-	1.0	6.4	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	30/03/25 - 31/03/25	mg/m3	-	0.002	0.052	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008	NEB No.24	Rayong

Guideline :

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Sampled By : Santi Chaichana

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271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515842

Date Received : Mar 31, 2025
Date Reported : Apr 08, 2025
Report Number : 3239016-1

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Sample Number 2515842-8
Sampled Date Mar 24, 2025
Sample Description Air Quality
Location รัตนองพ
Date Analysis Commenced Apr 01, 2025
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one 10-L air sampling bag
Barometric Pressure 756 mmHg
Atmospheric Temperature 30.8 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	24/03/25 - 25/03/25	ppm	-	1.0	4.3	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	24/03/25 - 25/03/25	mg/m3	-	0.002	0.079	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008	NEB No.24	Rayong

Guideline :

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Sampled By : Santi Chaichana

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P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515842

Date Received : Mar 31, 2025
Date Reported : Apr 08, 2025
Report Number : 3239016-1

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Sample Number 2515842-9
Sampled Date Mar 25, 2025
Sample Description Air Quality
Location วัดหนองแฟบ
Date Analysis Commenced Apr 01, 2025
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one 10-L air sampling bag
Barometric Pressure 756 mmHg
Atmospheric Temperature 31.2 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	25/03/25 - 26/03/25	ppm	-	1.0	5.1	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	25/03/25 - 26/03/25	mg/m3	-	0.002	0.085	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008	NEB No.24	Rayong

Guideline :

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P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515842

Date Received : Mar 31, 2025
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Sample Number 2515842-10
Sampled Date Mar 26, 2025
Sample Description Air Quality
Location วัดหนองแฟบ
Date Analysis Commenced Apr 01, 2025
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one 10-L air sampling bag
Barometric Pressure 756 mmHg
Atmospheric Temperature 30.9 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	26/03/25 - 27/03/25	ppm	-	1.0	3.7	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	26/03/25 - 27/03/25	mg/m3	-	0.002	0.089	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008	NEB No.24	Rayong

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P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515842

Date Received : Mar 31, 2025
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Sample Number 2515842-11
Sampled Date Mar 27, 2025
Sample Description Air Quality
Location รัตนองพ
Date Analysis Commenced Apr 01, 2025
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one 10-L air sampling bag
Barometric Pressure 756 mmHg
Atmospheric Temperature 30.5 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	27/03/25 - 28/03/25	ppm	-	1.0	5.5	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	27/03/25 - 28/03/25	mg/m3	-	0.002	0.079	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008	NEB No.24	Rayong

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Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515842

Date Received : Mar 31, 2025
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Sample Number 2515842-12
Sampled Date Mar 28, 2025
Sample Description Air Quality
Location รัตนองพ
Date Analysis Commenced Apr 01, 2025
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one 10-L air sampling bag
Barometric Pressure 756 mmHg
Atmospheric Temperature 31.4 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	28/03/25 - 29/03/25	ppm	-	1.0	4.7	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	28/03/25 - 29/03/25	mg/m3	-	0.002	0.070	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008	NEB No.24	Rayong

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Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515842

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Sample Number 2515842-13
Sampled Date Mar 29, 2025
Sample Description Air Quality
Location รัตนองพ
Date Analysis Commenced Apr 01, 2025
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one 10-L air sampling bag
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 Hydrocarbon as Methane *	29/03/25 - 30/03/25	ppm	-	1.0	5.4	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	29/03/25 - 30/03/25	mg/m3	-	0.002	0.050	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008	NEB No.24	Rayong

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Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515842

Date Received : Mar 31, 2025
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Sample Number 2515842-14
Sampled Date Mar 30, 2025
Sample Description Air Quality
Location รัตนองพ
Date Analysis Commenced Apr 01, 2025
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one 10-L air sampling bag
Barometric Pressure 756 mmHg
Atmospheric Temperature 30.1 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	30/03/25 - 31/03/25	ppm	-	1.0	4.7	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	30/03/25 - 31/03/25	mg/m3	-	0.002	0.052	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008	NEB No.24	Rayong

Guideline :

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Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515842

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Sample Number 2515842-15
Sampled Date Mar 24, 2025
Sample Description Air Quality
Location รร.บ้านมาบตาพุด
Date Analysis Commenced Apr 01, 2025
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one 10-L air sampling bag
Barometric Pressure 756 mmHg
Atmospheric Temperature 30.8 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	24/03/25 - 25/03/25	ppm	-	1.0	4.2	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	24/03/25 - 25/03/25	mg/m3	-	0.002	0.072	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008	NEB No.24	Rayong

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P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515842

Date Received : Mar 31, 2025
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Report Number : 3239016-1

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Sample Number 2515842-16
Sampled Date Mar 25, 2025
Sample Description Air Quality
Location รร.บ้านมาบตาพุด
Date Analysis Commenced Apr 01, 2025
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one 10-L air sampling bag
Barometric Pressure 756 mmHg
Atmospheric Temperature 31.2 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	25/03/25 - 26/03/25	ppm	-	1.0	4.2	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	25/03/25 - 26/03/25	mg/m3	-	0.002	0.062	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008	NEB No.24	Rayong

Guideline :

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P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515842

Date Received : Mar 31, 2025
Date Reported : Apr 08, 2025
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Sample Number 2515842-17
Sampled Date Mar 26, 2025
Sample Description Air Quality
Location รร.บ้านมาบตาพุด
Date Analysis Commenced Apr 01, 2025
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one 10-L air sampling bag
Barometric Pressure 756 mmHg
Atmospheric Temperature 30.9 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	26/03/25 - 27/03/25	ppm	-	1.0	5.4	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	26/03/25 - 27/03/25	mg/m3	-	0.002	0.063	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008	NEB No.24	Rayong

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P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515842

Date Received : Mar 31, 2025
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Report Number : 3239016-1

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Sample Number 2515842-18
Sampled Date Mar 27, 2025
Sample Description Air Quality
Location รร.บ้านมาบตาพุด
Date Analysis Commenced Apr 01, 2025
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one 10-L air sampling bag
Barometric Pressure 756 mmHg
Atmospheric Temperature 30.5 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	27/03/25 - 28/03/25	ppm	-	1.0	3.9	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	27/03/25 - 28/03/25	mg/m3	-	0.002	0.058	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008	NEB No.24	Rayong

Guideline :

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

Sampled By : Santi Chaichana

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Approved by

Thanita K.

Thanita Kulsuriwong
Scientist (4)

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515842

Date Received : Mar 31, 2025
Date Reported : Apr 08, 2025
Report Number : 3239016-1

Page 19 of 21

Sample Number 2515842-19
Sampled Date Mar 28, 2025
Sample Description Air Quality
Location รร.บ้านมาบตาพุด
Date Analysis Commenced Apr 01, 2025
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one 10-L air sampling bag
Barometric Pressure 756 mmHg
Atmospheric Temperature 31.4 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	28/03/25 - 29/03/25	ppm	-	1.0	4.3	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	28/03/25 - 29/03/25	mg/m3	-	0.002	0.051	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008	NEB No.24	Rayong

Guideline :

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

Sampled By : Santi Chaichana

Remark :

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Approved by

Thanita K.

Thanita Kulsuriwong
Scientist (4)

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No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515842

Date Received : Mar 31, 2025
Date Reported : Apr 08, 2025
Report Number : 3239016-1

Page 20 of 21

Sample Number 2515842-20
Sampled Date Mar 29, 2025
Sample Description Air Quality
Location รร.บ้านมาบตาพุด
Date Analysis Commenced Apr 01, 2025
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one 10-L air sampling bag
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 Hydrocarbon as Methane *	29/03/25 - 30/03/25	ppm	-	1.0	4.0	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	29/03/25 - 30/03/25	mg/m3	-	0.002	0.053	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008	NEB No.24	Rayong

Guideline :

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

Sampled By : Santi Chaichana

Remark :

- LOD : Limit of Detection
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Approved by

Thanita K.

Thanita Kulsuriwong
Scientist (4)

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515842

Date Received : Mar 31, 2025
Date Reported : Apr 08, 2025
Report Number : 3239016-1

Page 21 of 21

Sample Number 2515842-21
Sampled Date Mar 30, 2025
Sample Description Air Quality
Location รร.บ้านมาบตาพุด
Date Analysis Commenced Apr 01, 2025
Condition of Sample Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one 10-L air sampling bag
Barometric Pressure 756 mmHg
Atmospheric Temperature 30.1 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	30/03/25 - 31/03/25	ppm	-	1.0	4.5	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	30/03/25 - 31/03/25	mg/m3	-	0.002	0.046	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008	NEB No.24	Rayong

Guideline :

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

Sampled By : Santi Chaichana

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Approved by

Thanita K.

Thanita Kulsuriwong
Scientist (4)

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

Lot ID: 2515843
Date Received : Mar 31, 2025
Date Reported : Apr 07, 2025
Report Number : 3239008-1

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location :

Page 1 of 2

Sample Number 2515843-1 to 7
Parameter Wind Speed / Wind Direction
Location รร บ้านนาบตาพุด
Sampling Date Mar 24 - Mar 31, 2025
Sampling by Santi Chaichana

Time	Mar 24 - Mar 25, 2025			Mar 25 - Mar 26, 2025			Mar 26 - Mar 27, 2025			Mar 27 - Mar 28, 2025			Mar 28 - Mar 29, 2025			Mar 29 - Mar 30, 2025			Mar 30 - Mar 31, 2025		
	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	1.4	204.0	SSW	3.9	203.0	SSW	3.4	129.0	SE	1.7	202.0	SSW	0.3	83.0	E	1.6	238.0	WSW	0.3	331.0	NNW
11:00 AM - 12:00 PM	0.5	53.0	NE	2.2	180.0	S	1.6	185.0	S	1.4	178.0	S	1.8	261.0	W	0.5	271.0	W	0.3	195.0	SSW
12:00 PM - 01:00 PM	2.7	220.0	SW	1.2	302.0	WNW	1.9	143.0	SE	1.8	213.0	SSW	2.6	190.0	S	2.4	182.0	S	1.1	211.0	SSW
01:00 PM - 02:00 PM	1.6	195.0	SSW	2.5	198.0	SSW	1.0	94.0	E	2.8	202.0	SSW	0.6	266.0	W	1.1	175.0	S	0.7	223.0	SW
02:00 PM - 03:00 PM	1.0	195.0	SSW	2.7	199.0	SSW	1.7	214.0	SW	0.5	215.0	SW	1.2	216.0	SW	1.0	225.0	SW	1.2	189.0	S
03:00 PM - 04:00 PM	1.3	232.0	SW	0.7	242.0	WSW	1.0	197.0	SSW	1.1	183.0	S	0.3	258.0	WSW	3.0	200.0	SSW	1.1	266.0	W
04:00 PM - 05:00 PM	1.3	271.0	W	1.2	195.0	SSW	1.4	190.0	S	1.0	196.0	SSW	0.4	210.0	SSW	1.9	185.0	S	0.9	201.0	SSW
05:00 PM - 06:00 PM	0.5	225.0	SW	0.4	230.0	SW	1.9	198.0	SSW	0.5	308.0	NW	0.8	203.0	SSW	0.5	214.0	SW	0.9	230.0	SW
06:00 PM - 07:00 PM	0.3	225.0	SW	0.3	204.0	SSW	1.1	228.0	SW	0.3	182.0	S	0.3	79.0	E	0.5	211.0	SSW	0.3	210.0	SSW
07:00 PM - 08:00 PM	1.1	217.0	SW	1.0	193.0	SSW	0.9	209.0	SSW	0.9	203.0	SSW	0.3	212.0	SSW	0.3	215.0	SW	0.3	30.0	NNE
08:00 PM - 09:00 PM	0.9	204.0	SSW	1.7	198.0	SSW	1.3	187.0	S	0.5	156.0	SSE	0.5	220.0	SW	0.6	177.0	S	0.8	20.0	NNE
09:00 PM - 10:00 PM	0.3	216.0	SW	0.3	188.0	S	0.4	157.0	SSE	0.7	187.0	S	0.6	180.0	S	0.3	210.0	SSW	1.2	9.0	N
10:00 PM - 11:00 PM	1.0	219.0	SW	0.3	225.0	SW	0.4	203.0	SSW	0.4	243.0	WSW	0.4	182.0	S	1.0	217.0	SW	0.5	359.0	N
11:00 PM - 12:00 AM	0.3	167.0	SSE	0.3	232.0	SW	1.3	186.0	S	0.8	216.0	SW	0.3	185.0	S	0.6	187.0	S	0.0	-	-
12:00 AM - 01:00 AM	1.1	207.0	SSW	0.3	226.0	SW	0.9	275.0	W	1.0	169.0	S	0.7	169.0	S	0.3	259.0	W	0.4	10.0	N
01:00 AM - 02:00 AM	0.6	191.0	S	0.4	185.0	S	0.3	215.0	SW	0.6	178.0	S	0.3	135.0	SE	1.3	193.0	SSW	0.5	359.0	N
02:00 AM - 03:00 AM	0.3	152.0	SSE	0.8	203.0	SSW	1.2	181.0	S	0.3	213.0	SSW	0.3	213.0	SSW	0.5	202.0	SSW	0.3	359.0	N
03:00 AM - 04:00 AM	0.3	204.0	SSW	0.3	196.0	SSW	0.3	216.0	SW	1.2	176.0	S	0.3	213.0	SSW	0.7	195.0	SSW	0.3	10.0	N
04:00 AM - 05:00 AM	0.4	143.0	SE	0.3	212.0	SSW	0.5	172.0	S	0.8	221.0	SW	0.8	177.0	S	0.4	200.0	SSW	0.3	8.0	N
05:00 AM - 06:00 AM	0.4	210.0	SSW	0.5	224.0	SW	1.1	193.0	SSW	1.0	238.0	WSW	0.3	267.0	W	1.3	240.0	WSW	0.3	359.0	N
06:00 AM - 07:00 AM	0.6	202.0	SSW	1.9	218.0	SW	1.6	156.0	SSE	1.6	166.0	SSE	0.7	249.0	WSW	0.3	217.0	SW	2.0	21.0	NNE
07:00 AM - 08:00 AM	0.5	0.0	N	1.1	162.0	SSE	1.3	79.0	E	1.6	199.0	SSW	0.3	232.0	SW	0.6	248.0	WSW	1.4	13.0	NNE
08:00 AM - 09:00 AM	0.3	268.0	W	0.4	301.0	WNW	3.4	125.0	SE	0.9	223.0	SW	0.4	245.0	WSW	1.9	171.0	S	0.9	28.0	NNE
09:00 AM - 10:00 AM	0.8	248.0	WSW	0.8	279.0	W	0.7	215.0	SW	0.9	209.0	SSW	1.4	191.0	S	1.2	187.0	S	0.3	39.0	NE

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Approved by

Sarayuth Jittrantont
Assistant General Manager



Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

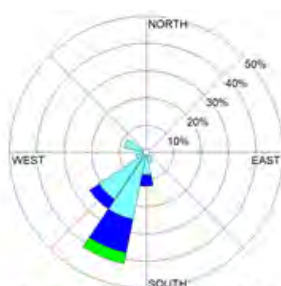
Lot ID: 2515843
Date Received : Mar 31, 2025
Date Reported : Apr 07, 2025
Report Number : 3239008-1

Page 2 of 2

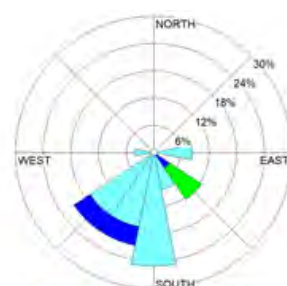
Wind Rose



Date : Mar 24-25, 2025



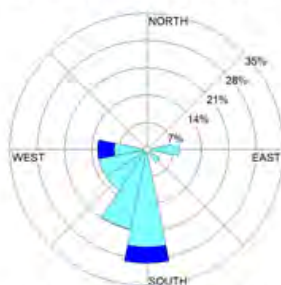
Date : Mar 25-26, 2025



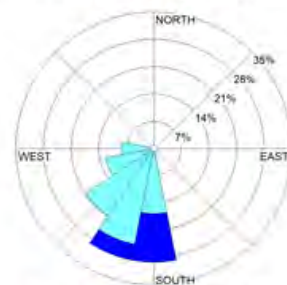
Date : Mar 26-27, 2025



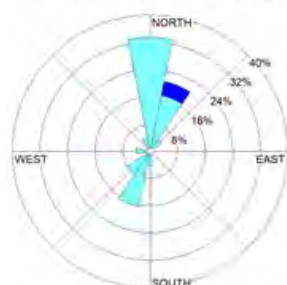
Date : Mar 27-28, 2025



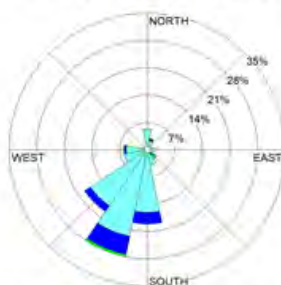
Date : Mar 28-29, 2025



Date : Mar 29-30, 2025



Date : Mar 30-31, 2025



Date : Mar 24-31, 2025

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		11.31
0.3-1.7		86.31
Calms		0.60

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Sarayuth Jitranont
Assistant General Manager

ภาคผนวก ค-2

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2515862
Date Received : Mar 28, 2025
Date Reported : Apr 02, 2025
Report Number : 3270985-1

Page 1 of 1

Sample Number 2515862-1
Sample Description Emission from Stationary Source
Location ปล่อง Z-6210
Measurement Date Mar 28, 2025

Stack Description

Ambient Temperature	31.2 °C	Diameter	1.75 m	Oxygen	5.22 %
Ambient Pressure	754.4 mmHg	Shape	Circle	Carbon dioxide	8.22 %
Type of Process	Combustion	Stack Temperature	124 °C	Gas Velocity	16.37 m/s
Type of Fuel	Waste Liquid	Moisture	20.55 %	Flow Rate	83810 Nm ³ /hr

Run No.	Sampling Time	Oxygen (%)	Carbon Dioxide (%)	Oxides of Nitrogen (ppm)	
				at Actual O ₂	At 7% O ₂
1	10:45 AM - 11:05 AM	5.24	8.19	14.90	13.22
2	11:06 AM - 11:26 AM	5.21	8.23	15.28	13.54
3	11:27 AM - 11:47 AM	5.22	8.23	15.00	13.29
Average (ppm)		5.22	8.22	15.06	13.35
Guideline ^{1/} (ppm)				-	42.4
Guideline ^{2/} (ppm)				-	200
Result (mg/Nm ³)				28.34	25.12
Emission Rate at Actual O ₂ (g/s)				0.6597	
Guideline ^{1/} (g/s)				2.743	
Method				US EPA Method 7E	

Sampled By : Sathapron Thakarw
Guideline : ^{1/}Environmental Impact Assessment Report of THAI MMA Co., Ltd.
^{2/}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)

Technical Management

Wichan Choonharat
Manager
ทะเบียนเลขที่ ว-204-ค-0006

Approved by

Sarayuth Jittrantont
Assistant General Manager
ทะเบียนเลขที่ ว-204-ค-0003

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515864
Date Received : Mar 27, 2025
Date Reported : Apr 02, 2025
Report Number : 3239031-1

Page 1 of 1

Sample Number 2515864-1
Sample Description Emission from Stationary Source
Location ปล่อง 2Z-6210
Measurement Date Mar 27, 2025

Stack Description

Ambient Temperature	31 °C	Diameter	1.56 m	Oxygen	5.74 %
Ambient Pressure	753.4 mmHg	Shape	Circle	Carbon dioxide	8.12 %
Type of Process	Combustion	Stack Temperature	111 °C	Gas Velocity	20.98 m/s
Type of Fuel	Waste Liquid	Moisture	30.54 %	Flow Rate	77071 Nm ³ /hr

Run No.	Sampling Time	Oxygen (%)	Carbon Dioxide (%)	Oxides of Nitrogen (ppm)	
				at Actual O ₂	At 7% O ₂
1	10:30 AM - 10:50 AM	5.75	8.12	8.18	7.51
2	10:51 AM - 11:11 AM	5.76	8.10	8.87	8.14
3	11:12 AM - 11:32 AM	5.71	8.13	8.99	8.22
Average (ppm)		5.74	8.12	8.68	7.96
Guideline ^{1/} (ppm)				-	19.9
Guideline ^{2/} (ppm)				-	200
Result (mg/Nm ³)				16.33	14.97
Emission Rate at Actual O ₂ (g/s)				0.3495	
Guideline ^{1/} (g/s)				1.3500	
Method				US EPA Method 7E	

Sampled By : Sathapron Thakarw
Guideline : ^{1/}Environmental Impact Assessment Report of THAI MMA Co., Ltd.
^{2/}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)

Technical Management

Wichan Choonharat
Manager
ทะเบียนเลขที่ ว-204-ค-0006

Approved by

Sarayuth Jittrantont
Assistant General Manager
ทะเบียนเลขที่ ว-204-ค-0003

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location :

Lot ID: 2515866

Date Received : Mar 28, 2025

Date Reported : Apr 04, 2025

Report Number: 3239035-1

Page 1 of 2

Sample Number	2515866-1
Sampled Date	Mar 28, 2025
Sample Description	Emission from Stationary Source
Location	ปล่อง Z-6210
Date Analysis Commenced	Mar 29, 2025
Condition of Sample	Extracted into one filter paper placed in plastic petri dish, one plastic bottle, one amber plastic bottle and three sorbent tubes, refrigerated

Stack Description

Ambient Pressure	754	mmHg	Diameter	1.75	m	Oxygen	5.2	%
Ambient Temperature	31.2	°C	Shape	Circle		Carbon Dioxide	8.2	%
Type of Process	Combustion		Stack Temperature	124	°C	Gas Velocity	16.4	m/s
Type of Fuel	Waste Liquid		Moisture	20.49	%	Flow Rate (Actual O2)	83961	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result at 7 % O ₂	Result at 5.2 % O ₂	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing										
Total Suspended Particulate	10:45 AM - 11:45 AM	mg/m3	-	0.5	<0.5	<0.5	320	127.7	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-0029

Approved by

D. Changchon.

Dej Changchon

Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location :

Lot ID: 2515866

Date Received : Mar 28, 2025

Date Reported : Apr 04, 2025

Report Number: 3239035-1

Page 2 of 2

Sample Number	2515866-1
Sampled Date	Mar 28, 2025
Sample Description	Emission from Stationary Source
Location	ปล่อง Z-6210
Date Analysis Commenced	Mar 29, 2025
Condition of Sample	Extracted into one filter paper placed in plastic petri dish, one plastic bottle, one amber plastic bottle and three sorbent tubes, refrigerated

Stack Description

Ambient Pressure	754	mmHg	Diameter	1.75	m	Oxygen	5.2	%
Ambient Temperature	31.2	°C	Shape	Circle		Carbon Dioxide	8.2	%
Type of Process	Combustion		Stack Temperature	124	°C	Gas Velocity	16.4	m/s
Type of Fuel	Waste Liquid		Moisture	20.49	%	Flow Rate (Actual O2)	83961	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Suspended Particulate *	10:45 AM - 11:45 AM	g/s	-	-	<0.011	-	4.2	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.

Sampling By : Tinnakorn Kulchart ทะเบียนเลขที่ ว-323-จ-0062 , Kitsanapon Panyawong ทะเบียนเลขที่ ว-204-จ-0186

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)
ทะเบียนเลขที่ ว-323-จ-0029

Approved by

D. Changchon.

Dej Changchon
Senior Manager
ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515866

Date Received : Mar 28, 2025
Date Reported : Apr 18, 2025
Report Number: 3239035-2

Page 1 of 2

Sample Number	2515866-1
Sampled Date	Mar 28, 2025
Sample Description	Emission from Stationary Source
Location	ปล่อง Z-6210
Date Analysis Commenced	Mar 29, 2025
Condition of Sample	Extracted into one filter paper placed in plastic petri dish, one plastic bottle, one amber plastic bottle and three sorbent tubes, refrigerated

Stack Description

Ambient Pressure	754	mmHg	Diameter	1.75	m	Oxygen	5.2	%
Ambient Temperature	31.2	°C	Shape	Circle		Carbon Dioxide	8.2	%
Type of Process	Combustion		Stack Temperature	124	°C	Gas Velocity	16.4	m/s
Type of Fuel	Waste Liquid		Moisture	20.49	%	Flow Rate (Actual O2)	83961	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result at 7 %O ₂	Result at 5.2 % O ₂	Method	Testing Location
Air Testing								
Acrylic Acid	11:00 AM - 11:15 AM	ppm	-	1.0	<1.0	<1.0	Based on OSHA, ID 28	Bangkok
Methanol	11:00 AM - 11:15 AM	ppm	-	1.00	<1.00	<1.00	United States Environmental Protection Agency, EPA Method 18	Bangkok
Methyl Methacrylate	11:15 AM - 11:30 AM	ppm	-	0.3	<0.3	<0.3	United States Environmental Protection Agency, EPA Method 18	Bangkok
Toluene	11:15 AM - 11:30 AM	ppm	-	0.3	<0.3	<0.3	United States Environmental Protection Agency, EPA Method 18	Bangkok

Approved by

Tanyatorn Mongkonjirawut
Supervisor

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Analysis / Test Report

Client : THAI MMA Co., Ltd.

271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location :

Lot ID: 2515866

Date Received : Mar 28, 2025

Date Reported : Apr 18, 2025

Report Number: 3239035-2

Page 2 of 2

Sample Number	2515866-1
Sampled Date	Mar 28, 2025
Sample Description	Emission from Stationary Source
Location	ปล่อง Z-6210
Date Analysis Commenced	Mar 29, 2025
Condition of Sample	Extracted into one filter paper placed in plastic petri dish, one plastic bottle, one amber plastic bottle and three sorbent tubes, refrigerated

Stack Description

Ambient Pressure	754	mmHg	Diameter	1.75	m	Oxygen	5.2	%
Ambient Temperature	31.2	°C	Shape	Circle		Carbon Dioxide	8.2	%
Type of Process	Combustion		Stack Temperature	124	°C	Gas Velocity	16.4	m/s
Type of Fuel	Waste Liquid		Moisture	20.49	%	Flow Rate (Actual O2)	83961	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Method	Testing Location
Air Testing							
Acrylic Acid	11:00 AM - 11:15 AM	g/s	-	-	<0.02	Calculated	Bangkok
Methanol	11:00 AM - 11:15 AM	g/s	-	-	<0.03	Calculated	Bangkok
Methyl Methacrylate	11:15 AM - 11:30 AM	g/s	-	-	<0.03	Calculated	Bangkok
Toluene	11:15 AM - 11:30 AM	g/s	-	-	<0.03	Calculated	Bangkok

Sampling By : Tinnakorn Kulchart , Kitsanapon Panyawong

Remark :

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

Approved by

Tanyatorn Mongkonjirawut
Supervisor

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515886

Date Received : Mar 27, 2025
Date Reported : Apr 04, 2025
Report Number: 3255666-1

Page 1 of 2

Sample Number	2515886-1
Sampled Date	Mar 27, 2025
Sample Description	Emission from Stationary Source
Location	ปล่อง 2Z-6210
Date Analysis Commenced	Mar 28, 2025
Condition of Sample	Extracted into one filter paper placed in plastic petri dish, one plastic bottle, one amber plastic bottle and three sorbent tubes, refrigerated

Stack Description

Ambient Pressure	753	mmHg	Diameter	1.56	m	Oxygen	5.7	%
Ambient Temperature	31.0	°C	Shape	Circle		Carbon Dioxide	8.1	%
Type of Process	Combustion		Stack Temperature	111	°C	Gas Velocity	21.0	m/s
Type of Fuel	Waste Liquid		Moisture	30.50	%	Flow Rate (Actual O2)	77204	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result		Guideline (1)	Guideline (2)	Method	Testing Location
					at 7 %O ₂	at 5.7 % O ₂				
Air Testing										
Total Suspended Particulate	10:30 AM - 11:18 AM	mg/m3	-	0.5	1.9	2.08	320	127.7	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-0029

Approved by

D. Changchon.

Dej Changchon
Senior Manager
ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location :

Lot ID: 2515886

Date Received : Mar 27, 2025

Date Reported : Apr 04, 2025

Report Number: 3255666-1

Page 2 of 2

Sample Number	2515886-1
Sampled Date	Mar 27, 2025
Sample Description	Emission from Stationary Source
Location	ปล่อง 2Z-6210
Date Analysis Commenced	Mar 28, 2025
Condition of Sample	Extracted into one filter paper placed in plastic petri dish, one plastic bottle, one amber plastic bottle and three sorbent tubes, refrigerated

Stack Description

Ambient Pressure	753	mmHg	Diameter	1.56	m	Oxygen	5.7	%
Ambient Temperature	31.0	°C	Shape	Circle		Carbon Dioxide	8.1	%
Type of Process	Combustion		Stack Temperature	111	°C	Gas Velocity	21.0	m/s
Type of Fuel	Waste Liquid		Moisture	30.50	%	Flow Rate (Actual O2)	77204	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Guideline (1)	Guideline (2)	Method	Testing Location
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Air Testing

Total Suspended Particulate *	10:30 AM - 11:18 AM	g/s	-	-	0.03	-	4.2	Calculated	Rayong
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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.

Sampling By : Tinnakorn Kulchart ทะเบียนเลขที่ ว-323-จ-0062 , Kitsanapon Panyawong ทะเบียนเลขที่ ว-204-จ-0186

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)
ทะเบียนเลขที่ ว-323-จ-0029

Approved by

D. Changchon.

Dej Changchon
Senior Manager
ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515886

Date Received : Mar 27, 2025
Date Reported : Apr 17, 2025
Report Number: 3255666-2

Page 1 of 2

Sample Number	2515886-1
Sampled Date	Mar 27, 2025
Sample Description	Emission from Stationary Source
Location	ปล่อง 2Z-6210
Date Analysis Commenced	Mar 29, 2025
Condition of Sample	Extracted into one filter paper placed in plastic petri dish, one plastic bottle, one amber plastic bottle and three sorbent tubes, refrigerated

Stack Description

Ambient Pressure	753	mmHg	Diameter	1.56	m	Oxygen	5.7	%
Ambient Temperature	31.0	°C	Shape	Circle		Carbon Dioxide	8.1	%
Type of Process	Combustion		Stack Temperature	111	°C	Gas Velocity	21.0	m/s
Type of Fuel	Waste Liquid		Moisture	30.50	%	Flow Rate (Actual O2)	77204	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result		Method	Testing Location
					at 7 %O ₂	at 5.7 % O ₂		
Air Testing								
Acrylic Acid	10:50 AM - 11:05 AM	ppm	-	1.0	<1.0	<1.0	Based on OSHA, ID 28	Bangkok
Methanol	10:30 AM - 10:45 AM	ppm	-	1.00	<1.00	<1.00	United States Environmental Protection Agency, EPA Method 18	Bangkok
Methyl Methacrylate	10:50 AM - 11:05 AM	ppm	-	0.3	<0.3	<0.3	United States Environmental Protection Agency, EPA Method 18	Bangkok
Toluene	10:30 AM - 10:45 AM	ppm	-	0.3	<0.3	<0.3	United States Environmental Protection Agency, EPA Method 18	Bangkok

Approved by

Tanyatom Mongkonjirawut
Supervisor

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515886

Date Received : Mar 27, 2025
Date Reported : Apr 17, 2025
Report Number: 3255666-2

Page 2 of 2

Sample Number	2515886-1
Sampled Date	Mar 27, 2025
Sample Description	Emission from Stationary Source
Location	ปล่อง 2Z-6210
Date Analysis Commenced	Mar 29, 2025
Condition of Sample	Extracted into one filter paper placed in plastic petri dish, one plastic bottle, one amber plastic bottle and three sorbent tubes, refrigerated

Stack Description

Ambient Pressure	753	mmHg	Diameter	1.56	m	Oxygen	5.7	%
Ambient Temperature	31.0	°C	Shape	Circle		Carbon Dioxide	8.1	%
Type of Process	Combustion		Stack Temperature	111	°C	Gas Velocity	21.0	m/s
Type of Fuel	Waste Liquid		Moisture	30.50	%	Flow Rate (Actual O2)	77204	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Method	Testing Location
Air Testing							
Acrylic Acid	10:50 AM - 11:05 AM	g/s	-	-	<0.02	Calculated	Bangkok
Methanol	10:30 AM - 10:45 AM	g/s	-	-	<0.03	Calculated	Bangkok
Methyl Methacrylate	10:50 AM - 11:05 AM	g/s	-	-	<0.03	Calculated	Bangkok
Toluene	10:30 AM - 10:45 AM	g/s	-	-	<0.02	Calculated	Bangkok

Sampling By : Tinnakorn Kulchart , Kitsanapon Panyawong

Remark :

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

Approved by

Tanyatom Mongkonjirawut
Supervisor

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O :
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2515856
Date Received : Mar 28, 2025
Date Reported : Apr 02, 2025
Report Number : 3239023-1

Page 1 of 2

Sample Number 2515856-1
Sampled Date Mar 28, 2025
Sample Description Emission from Stationary Source
Location ปล่อง Z-6210
Parameter NOx

Relative Accuracy Test Audit Report

Run No.	Date	Time		Raw Data at Actual O2		Corrected Value at 7% O2		Difference
		Start	Stop	CEMs (ppm)	RM (ppm)	CEMs (ppm)	RM (ppm)	
1	28 Mar 25	10:45	11:05	13.75	14.90	12.15	13.22	1.08
2	28 Mar 25	11:06	11:26	14.01	15.28	12.36	13.54	1.18
3	28 Mar 25	11:27	11:47	13.48	15.00	11.89	13.29	1.40
4	28 Mar 25	11:48	12:08	13.37	15.08	11.78	13.35	1.57
5	28 Mar 25	12:09	12:29	13.09	14.98	11.53	13.30	1.77
6	28 Mar 25	12:30	12:50	12.78	14.83	11.26	13.13	1.86
7	28 Mar 25	12:51	13:11	12.52	14.76	11.06	13.10	2.04
8	28 Mar 25	13:12	13:32	12.17	14.28	10.76	12.67	1.91
9	28 Mar 25	13:33	13:53	11.98	14.04	10.59	12.47	1.88
10*	28 Mar 25	13:54	14:14	11.55	13.88	10.19	12.29	2.10
11*	28 Mar 25	14:15	14:35	11.81	14.32	10.43	12.67	2.25
12*	28 Mar 25	14:36	14:56	11.72	14.43	10.35	12.77	2.43
Average						11.49	13.12	1.63
Confidence Coefficient (CC)								0.26
Relative Accuracy (Compared with Emission Standard : 42.4 ppm) (%)								4.48
Relative Accuracy Criteria ^{1/} (Compared with Emission Standard)								≤ 10%

Reference Method : US EPA Method 7E

Remark: * Sample with * is a rejected data

^{1/} Relative Accuracy Criteria of NOx is refer to 40 CFR Part 60 Appendix B : Performance Specification Test 2 (PS-2) compared with Emission Standard 42.4 ppm at 7%O2
RA Result is within Criteria

Technical Management


Wichan Choonharat
Manager
ทะเบียนเลขที่ ว-204-ค-0006

Approved by


Sarayuth Jitranont
Assistant General Manager
ทะเบียนเลขที่ ว-204-ค-0003

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O :
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2515856
Date Received : Mar 28, 2025
Date Reported : Apr 02, 2025
Report Number : 3239023-1

Page 2 of 2

Sample Number : 2515856-1
Sampled Date : Mar 28, 2025
Sample Description : Emission from Stationary Source
Location : ปล่อง Z-6210
Parameter : O2

Relative Accuracy Test Audit Report

Run No.	Date	Time		Raw Data at Actual		Difference
		Start	Stop	CEMs (%)	RM (%)	
1	28 Mar 25	10:45	11:05	5.17	5.24	0.07
2	28 Mar 25	11:06	11:26	5.14	5.21	0.07
3*	28 Mar 25	11:27	11:47	5.14	5.22	0.08
4	28 Mar 25	11:48	12:08	5.13	5.20	0.08
5*	28 Mar 25	12:09	12:29	5.12	5.24	0.13
6	28 Mar 25	12:30	12:50	5.13	5.19	0.07
7*	28 Mar 25	12:51	13:11	5.15	5.24	0.08
8	28 Mar 25	13:12	13:32	5.18	5.23	0.05
9	28 Mar 25	13:33	13:53	5.17	5.24	0.07
10	28 Mar 25	13:54	14:14	5.15	5.20	0.05
11	28 Mar 25	14:15	14:35	5.15	5.20	0.05
12	28 Mar 25	14:36	14:56	5.16	5.19	0.03
Average				5.15	5.21	0.06
Confidence Coefficient (CC)						-
Relative Accuracy (Compared in Actual) (%)						0.06
Relative Accuracy Criteria ^{1/} (%)						≤ 1%

Reference Method : US EPA Method 3A

Remark: * Sample with * is a rejected data

^{1/} Relative Accuracy Criteria of O2 is refer to 40 CFR Part 60 Appendix B : Performance Specification Test 3 (PS-3)

RA Result is within Criteria

Sampled By : Sathapron Thakarw

Technical Management



Wichan Choonharat
Manager

ทะเบียนเลขที่ ว-204-ค-0006

Approved by



Sarayuth Jittrantont
Assistant General Manager

ทะเบียนเลขที่ ว-204-ค-0003

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2515860

Date Received : Mar 27, 2025

Date Reported : Apr 02, 2025

Report Number : 3239024-1

Page 1 of 2

Sample Number : 2515860-1
Sampled Date : Mar 27, 2025
Sample Description : Emission from Stationary Source
Location : ปล่อง 2Z-6210
Parameter : NOx

Relative Accuracy Test Audit Report

Run No.	Date	Time		Raw Data at Actual O2		Corrected Value at 7% O2		Difference
		Start	Stop	CEMs (ppm)	RM (ppm)	CEMs (ppm)	RM (ppm)	
1	27 Mar 25	10:30	10:50	8.41	8.18	7.61	7.51	-0.10
2	27 Mar 25	10:51	11:11	8.69	8.87	7.86	8.14	0.28
3	27 Mar 25	11:12	11:32	8.93	8.99	8.04	8.22	0.18
4	27 Mar 25	11:33	11:53	8.85	9.04	7.97	8.30	0.32
5	27 Mar 25	11:54	12:14	8.93	9.24	8.04	8.48	0.43
6	27 Mar 25	12:15	12:35	8.87	9.14	7.99	8.36	0.37
7*	27 Mar 25	12:36	12:56	9.73	10.28	8.77	9.44	0.66
8	27 Mar 25	12:57	13:17	9.97	10.31	8.98	9.43	0.45
9	27 Mar 25	13:18	13:38	9.75	10.13	8.79	9.29	0.50
10*	27 Mar 25	13:39	13:59	9.39	9.96	8.45	9.08	0.63
11*	27 Mar 25	14:00	14:20	9.24	9.98	8.31	9.14	0.84
12	27 Mar 25	14:21	14:41	9.29	9.76	8.37	8.94	0.56
Average						8.18	8.52	0.33
Confidence Coefficient (CC)								0.15
Relative Accuracy (Compared with Emission Standard : 19.9 ppm) (%)								2.45
Relative Accuracy Criteria ^{1/} (Compared with Emission Standard)								≤ 10%

Reference Method : US EPA Method 7E

Remark: * Sample with * is a rejected data

^{1/} Relative Accuracy Criteria of NOx is refer to 40 CFR Part 60 Appendix B : Performance Specification Test 2 (PS-2) compared with Emission Standard 19.9 ppm at 7%O2
RA Result is within Criteria

Technical Management



Wichan Choonharat
Manager

ทะเบียนเลขที่ ว-204-ค-0006

Approved by



Sarayuth Jitranont
Assistant General Manager

ทะเบียนเลขที่ ว-204-ค-0003

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2515860
Date Received : Mar 27, 2025
Date Reported : Apr 02, 2025
Report Number : 3239024-1

Page 2 of 2

Sample Number : 2515860-1
Sampled Date : Mar 27, 2025
Sample Description : Emission from Stationary Source
Location : ปล่อง 2Z-6210
Parameter : O2

Relative Accuracy Test Audit Report

Run No.	Date	Time		Raw Data at Actual		Difference
		Start	Stop	CEMs (%)	RM (%)	
1	27 Mar 25	10:30	10:50	5.53	5.75	0.21
2	27 Mar 25	10:51	11:11	5.52	5.76	0.24
3	27 Mar 25	11:12	11:32	5.47	5.71	0.25
4*	27 Mar 25	11:33	11:53	5.47	5.75	0.27
5*	27 Mar 25	11:54	12:14	5.47	5.75	0.28
6	27 Mar 25	12:15	12:35	5.46	5.70	0.24
7	27 Mar 25	12:36	12:56	5.48	5.75	0.27
8	27 Mar 25	12:57	13:17	5.47	5.70	0.24
9	27 Mar 25	13:18	13:38	5.48	5.75	0.27
10	27 Mar 25	13:39	13:59	5.46	5.66	0.20
11*	27 Mar 25	14:00	14:20	5.43	5.72	0.29
12	27 Mar 25	14:21	14:41	5.47	5.72	0.25
Average				5.48	5.72	0.24
Confidence Coefficient (CC)						-
Relative Accuracy (Compared in Actual) (%)						0.24
Relative Accuracy Criteria ^{1/} (%)						≤ 1%

Reference Method : US EPA Method 3A

Remark: * Sample with * is a rejected data

^{1/} Relative Accuracy Criteria of O2 is refer to 40 CFR Part 60 Appendix B : Performance Specification Test 3 (PS-3)

RA Result is within Criteria

Sampled By : Sathapron Thakarw

Technical Management



Wichan Choonharat
Manager

ทะเบียนเลขที่ ว-204-ค-0006

Approved by



Sarayuth Jitranont
Assistant General Manager

ทะเบียนเลขที่ ว-204-ค-0003

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ภาคผนวก ค-3

ใบรับรองผลการตรวจวัดคุณภาพน้ำ



Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O :
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 24141899

Date Received : Jan 10, 2025

Date Reported : Jan 17, 2025

Report Number : 3216025-1

Page 1 of 1

Sample Number 24141899-1
Sampled Date Jan 10, 2025 9:40 AM
Sample Description Wastewater
Location Equalization (T-9610)
Date Analysis Commenced Jan 10, 2025
Condition of Sample Drawn into one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	600	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	1187	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	6	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.9	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	32.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	3580	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	85	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

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

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Chumon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O :

Project Name : Environmental Monitoring

Project Location : MMA Site 3

Lot ID: 24141899

Date Received : Jan 10, 2025

Date Reported : Jan 17, 2025

Report Number : 3216025-2

Page 1 of 1

Sample Number	24141899-1
Sampled Date	Jan 10, 2025 9:40 AM
Sample Description	Wastewater
Location	Equalization (T-9610)
Date Analysis Commenced	Jan 13, 2025
Condition of Sample	Drawn into one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Sulfate	mg/L	0.6	2	663	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Sampling By : Wanlop Hunchainaow

Remark :

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

Approved by

Photchana S.

Photchana Seeda
Scientist (4)

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O :
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 24141899

Date Received : Jan 10, 2025
Date Reported : Jan 17, 2025
Report Number : 3216026-1

Page 1 of 1

Sample Number	24141899-2
Sampled Date	Jan 10, 2025 9:35 AM
Sample Description	Wastewater
Location	Drainage before Check Basin (T-9640)
Date Analysis Commenced	Jan 10, 2025
Condition of Sample	Drawn into one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	75	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	30.4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1400	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	1.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	6	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

Remark :

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Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Chumon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O :

Project Name : Environmental Monitoring

Project Location : MMA Site 3

Lot ID: 24141899

Date Received : Jan 10, 2025

Date Reported : Jan 17, 2025

Report Number : 3216026-2

Page 1 of 1

Sample Number	24141899-2
Sampled Date	Jan 10, 2025 9:35 AM
Sample Description	Wastewater
Location	Drainage before Check Basin (T-9640)
Date Analysis Commenced	Jan 13, 2025
Condition of Sample	Drawn into one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Sulfate	mg/L	0.6	2	367	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Sampling By : Wanlop Hunchainaow

Remark :

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Approved by

Photchana S.

Photchana Seeda
Scientist (4)

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P/O :

Project Name : Environmental Monitoring

Project Location : MMA Site 3

TESTING

No.0042

Lot ID: 24141899

Date Received : Jan 10, 2025

Date Reported : Jan 17, 2025

Report Number : 3216027-1

Page 1 of 2

Sample Number	24141899-3
Sampled Date	Jan 10, 2025 9:30 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (T-9650)
Date Analysis Commenced	Jan 10, 2025
Condition of Sample	Drawn into 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	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	59	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	29.4	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1144	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	1.4	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	12	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

Technical Management

Photchana S.

Photchana Seeda

Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Changchon.

Dej Changchon

Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O :

Project Name : Environmental Monitoring

Project Location: MMA Site 3

TESTING

No.0042

Lot ID: 24141899

Date Received : Jan 10, 2025

Date Reported : Jan 17, 2025

Report Number : 3216027-1

Page 2 of 2

Remark :

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Technical Management

Photchana S.

Photchana Seeda

Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Changchon.

Dej Changchon

Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O :

Project Name : Environmental Monitoring

Project Location: MMA Site 3

Lot ID: 24141899

Date Received : Jan 10, 2025

Date Reported : Jan 17, 2025

Report Number : 3216027-2

Page 1 of 1

Sample Number	24141899-3
Sampled Date	Jan 10, 2025 9:30 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (T-9650)
Date Analysis Commenced	Jan 13, 2025
Condition of Sample	Drawn into 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	327	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Wanlop Hunchainaow

Remark :

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Approved by

Photchana S.

Photchana Seeda
Scientist (4)

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O :
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 24141899

Date Received : Jan 10, 2025
Date Reported : Jan 17, 2025
Report Number : 3216028-1

Page 1 of 1

Sample Number	24141899-4
Sampled Date	Jan 10, 2025 10:20 AM
Sample Description	Wastewater
Location	Equalization (2T-9610)
Date Analysis Commenced	Jan 10, 2025
Condition of Sample	Drawn into one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	817	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	1614	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	9.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	32.9	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	2150	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	172	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

Remark :

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Chumon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O :
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 24141899

Date Received : Jan 10, 2025
Date Reported : Jan 17, 2025
Report Number : 3216028-2

Page 1 of 1

Sample Number	24141899-4					
Sampled Date	Jan 10, 2025 10:20 AM					
Sample Description	Wastewater					
Location	Equalization (2T-9610)					
Date Analysis Commenced	Jan 13, 2025					
Condition of Sample	Drawn into one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Sulfate	mg/L	0.6	2	488	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Sampling By : Wanlop Hunchainaow

Remark :

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

Approved by

Photchana S.

Photchana Seeda
Scientist (4)

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O :
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 24141899
Date Received : Jan 10, 2025
Date Reported : Jan 17, 2025
Report Number : 3216029-1

Page 1 of 1

Sample Number	24141899-5
Sampled Date	Jan 10, 2025 10:05 AM
Sample Description	Wastewater
Location	Drainage before Check Basin (2T-9640)
Date Analysis Commenced	Jan 10, 2025
Condition of Sample	Drawn into one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	60	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	29.8	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1220	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	1.7	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	18	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

Remark :

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Chamon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O :

Project Name : Environmental Monitoring

Project Location : MMA Site 3

Lot ID: 24141899

Date Received : Jan 10, 2025

Date Reported : Jan 17, 2025

Report Number : 3216029-2

Page 1 of 1

Sample Number	24141899-5
Sampled Date	Jan 10, 2025 10:05 AM
Sample Description	Wastewater
Location	Drainage before Check Basin (2T-9640)
Date Analysis Commenced	Jan 13, 2025
Condition of Sample	Drawn into one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Sulfate	mg/L	0.6	2	403	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Sampling By : Wanlop Hunchainaow

Remark :

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Photchana Seeda
Scientist (4)

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O :

Project Name : Environmental Monitoring

Project Location : MMA Site 3

TESTING

No.0042

Lot ID: 24141899

Date Received : Jan 10, 2025

Date Reported : Jan 17, 2025

Report Number : 3216030-1

Page 1 of 2

Sample Number	24141899-6
Sampled Date	Jan 10, 2025 10:10 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (2T-9650)
Date Analysis Commenced	Jan 10, 2025
Condition of Sample	Drawn into 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	6.2	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	66	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	29.8	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1300	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	2.0	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	32	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

Technical Management

Photchana S.

Photchana Seeda

Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Changchon.

Dej Changchon

Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O :

Project Name : Environmental Monitoring

Project Location: MMA Site 3

TESTING

No.0042

Lot ID: 24141899

Date Received : Jan 10, 2025

Date Reported : Jan 17, 2025

Report Number : 3216030-1

Page 2 of 2

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Technical Management

Photchana S.

Photchana Seeda

Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Changchon.

Dej Changchon

Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Client : THAI MMA Co., Ltd.
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P/O :

Project Name : Environmental Monitoring

Project Location: MMA Site 3

Lot ID: 24141899

Date Received : Jan 10, 2025

Date Reported : Jan 17, 2025

Report Number : 3216030-2

Page 1 of 1

Sample Number	24141899-6
Sampled Date	Jan 10, 2025 10:10 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (2T-9650)
Date Analysis Commenced	Jan 13, 2025
Condition of Sample	Drawn into 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	444	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO ₄ (E)	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Wanlop Hunchainaow

Remark :

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Client : THAI MMA Co., Ltd.
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P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 24141906
Date Received : Jan 10, 2025
Date Reported : Jul 14, 2025
Report Number : 3201946-1 Rev. No.1

Page 1 of 2

Sample Number 24141906-1
Sampled Date Jan 10, 2025 9:45 AM
Sample Description Wastewater
Location บริเวณขาออกจากกระบวนการบำบัดน้ำเสียโรงงาน MMA1
Date Analysis Commenced Jan 10, 2025
Condition of Sample data sheet

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Residual Chlorine - as ClO ₂	mg/L	-	0.01	0.35	In-house method based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (G)	Rayong

Note : This Analysis test report is reissued to supersede report No.3201946-1, Date Reported : Jan 14, 2025 due to revise analytical information.

Sampling By : Wanlop Hunchainaow

Remark :

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Analysis / Test Report

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P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 24141906
Date Received : Jan 10, 2025
Date Reported : Jul 14, 2025
Report Number : 3201946-1 Rev. No.1

Page 2 of 2

Sample Number 24141906-2
Sampled Date Jan 10, 2025 10:25 AM
Sample Description Wastewater
Location บริเวณขากอกจากระบบน้ำหล่อเย็นก่อนเข้าระบบบำบัดน้ำเสียโรงงาน MMA2
Date Analysis Commenced Jan 10, 2025
Condition of Sample data sheet

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Residual Chlorine - as ClO ₂	mg/L	-	0.01	0.15	In-house method based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (G)	Rayong

Note : This Analysis test report is reissued to supersede report No.3201946-1, Date Reported : Jan 14, 2025 due to revise analytical information.

Sampling By : Wanlop Hunchainaow

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 253459

Date Received : Feb 14, 2025
Date Reported : Feb 21, 2025
Report Number : 3240269-1

Page 1 of 1

Sample Number : 253459-1
Sampled Date : Feb 14, 2025 10:02 AM
Sample Description : Wastewater
Location : Equalization (T-9610)
Date Analysis Commenced : Feb 14, 2025
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	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	1109	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	2316	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.9	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	33.9	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	5220	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	43	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Suphanat Sakulkittimasak ทะเบียนเลขที่ ว-323-จ-0021

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Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Chamon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 253459

Date Received : Feb 14, 2025

Date Reported : Feb 21, 2025

Report Number : 3240269-2

Page 1 of 1

Sample Number	253459-1
Sampled Date	Feb 14, 2025 10:02 AM
Sample Description	Wastewater
Location	Equalization (T-9610)
Date Analysis Commenced	Feb 18, 2025
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	Method	Testing Location
Water Testing						
Sulfate	mg/L	0.6	2	382	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Sampling By : Suphanat Sakulkittimasak

Remark :

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Approved by

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 253459

Date Received : Feb 14, 2025
Date Reported : Feb 21, 2025
Report Number : 3240270-1

Page 1 of 1

Sample Number : 253459-2
Sampled Date : Feb 14, 2025 9:57 AM
Sample Description : Wastewater
Location : Drainage before Check Basin (T-9640)
Date Analysis Commenced : Feb 14, 2025
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	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	82	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	33.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1960	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	1.6	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Suphanat Sakulkittimasak ทะเบียนเลขที่ ว-323-จ-0021

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Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Chumon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 253459

Date Received : Feb 14, 2025

Date Reported : Feb 21, 2025

Report Number : 3240270-2

Page 1 of 1

Sample Number 253459-2
Sampled Date Feb 14, 2025 9:57 AM
Sample Description Wastewater
Location Drainage before Check Basin (T-9640)
Date Analysis Commenced Feb 18, 2025
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	Method	Testing Location
Water Testing						
Sulfate	mg/L	0.6	2	391	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Sampling By : Suphanat Sakulkittimasak

Remark :

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Photchana Seeda
Scientist (4)

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 253459
Date Received : Feb 14, 2025
Date Reported : Feb 21, 2025
Report Number : 3240271-1

Page 1 of 2

Sample Number	253459-3
Sampled Date	Feb 14, 2025 9:50 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (T-9650)
Date Analysis Commenced	Feb 14, 2025
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	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	63	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	32.8	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1500	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	1.3	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Suphanat Sakulkittimasak ทะเบียนเลขที่ ว-323-จ-0021

Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Changchon

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

TESTING
No.0042
Lot ID: 253459
Date Received : Feb 14, 2025
Date Reported : Feb 21, 2025
Report Number : 3240271-1

Page 2 of 2

Remark :

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

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Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location: MMA Site 3

Lot ID: 253459

Date Received : Feb 14, 2025
Date Reported : Feb 21, 2025
Report Number : 3240271-2

Page 1 of 1

Sample Number	253459-3
Sampled Date	Feb 14, 2025 9:50 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (T-9650)
Date Analysis Commenced	Feb 18, 2025
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	337	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Suphanat Sakulkittimasak

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Approved by

Photchana S.

Photchana Seeda
Scientist (4)

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TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 253459

Date Received : Feb 14, 2025
Date Reported : Feb 21, 2025
Report Number : 3240272-1

Page 1 of 1

Sample Number	253459-4
Sampled Date	Feb 14, 2025 10:34 AM
Sample Description	Wastewater
Location	Equalization (2T-9610)
Date Analysis Commenced	Feb 14, 2025
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	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	717	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	1315	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	9.8	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	33.9	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	2760	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	74	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Suphanat Sakulkittimasak ทะเบียนเลขที่ ว-323-จ-0021

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Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Chumon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

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271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 253459

Date Received : Feb 14, 2025

Date Reported : Feb 21, 2025

Report Number : 3240272-2

Page 1 of 1

Sample Number	253459-4
Sampled Date	Feb 14, 2025 10:34 AM
Sample Description	Wastewater
Location	Equalization (2T-9610)
Date Analysis Commenced	Feb 18, 2025
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	Method	Testing Location
Water Testing						
Sulfate	mg/L	0.6	2	436	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Sampling By : Suphanat Sakulkittimasak

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 253459

Date Received : Feb 14, 2025
Date Reported : Feb 21, 2025
Report Number : 3240273-1

Page 1 of 1

Sample Number	253459-5
Sampled Date	Feb 14, 2025 10:30 AM
Sample Description	Wastewater
Location	Drainage before Check Basin (2T-9640)
Date Analysis Commenced	Feb 14, 2025
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	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	53	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	32.9	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1450	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	1.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	6	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Suphanat Sakulkittimasak ทะเบียนเลขที่ ว-323-จ-0021

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Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Chamon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 253459

Date Received : Feb 14, 2025

Date Reported : Feb 21, 2025

Report Number : 3240273-2

Page 1 of 1

Sample Number 253459-5
Sampled Date Feb 14, 2025 10:30 AM
Sample Description Wastewater
Location Drainage before Check Basin (2T-9640)
Date Analysis Commenced Feb 18, 2025
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	Method	Testing Location
Water Testing						
Sulfate	mg/L	0.6	2	367	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Sampling By : Suphanat Sakulkittimasak

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Photchana Seeda
Scientist (4)

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TESTING
No.0042

Client : THAI MMA Co., Ltd.
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P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 253459

Date Received : Feb 14, 2025

Date Reported : Feb 21, 2025

Report Number : 3240274-1

Page 1 of 2

Sample Number	253459-6
Sampled Date	Feb 14, 2025 10:27 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (2T-9650)
Date Analysis Commenced	Feb 14, 2025
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	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	60	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	32.4	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1310	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	1.4	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Suphanat Sakulkittimasak ทะเบียนเลขที่ ว-323-จ-0021

Technical Management

Photchana S.

Photchana Seeda

Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Changchon

Dej Changchon

Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

TESTING
No.0042
Lot ID: 253459
Date Received : Feb 14, 2025
Date Reported : Feb 21, 2025
Report Number : 3240274-1

Page 2 of 2

Remark :

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Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

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Senior Manager

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Analysis / Test Report

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271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 253459

Date Received : Feb 14, 2025
Date Reported : Feb 21, 2025
Report Number : 3240274-2

Page 1 of 1

Sample Number	253459-6						
Sampled Date	Feb 14, 2025 10:27 AM						
Sample Description	Wastewater						
Location	Effluent from the Check Basin (2T-9650)						
Date Analysis Commenced	Feb 18, 2025						
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	318	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Suphanat Sakulkittimasak

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Approved by

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Scientist (4)

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P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 253463

Date Received : Feb 14, 2025
Date Reported : Jul 15, 2025
Report Number : 3211454-1 Rev. No.1

Page 1 of 2

Sample Number 253463-1
Sampled Date Feb 14, 2025 10:09 AM
Sample Description Wastewater
Location บริเวณขากอกจากระบบน้ำหล่อเย็นก่อนเข้าระบบบำบัดน้ำเสียโรงงาน MMA1
Date Analysis Commenced Feb 14, 2025
Condition of Sample data sheet

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Residual Chlorine - as ClO ₂	mg/L	-	0.01	0.03	In-house method based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (G)	Rayong

Note : This Analysis test report is reissued to supersede report No.3211454-1, Date Reported : Feb 18, 2025 due to revise analytical information.

Sampling By : Suphanat Sakulkittimasak

Remark :

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

Approved by

Photchana S

Photchana Seeda
Scientist (4)

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271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 253463

Date Received : Feb 14, 2025
Date Reported : Jul 15, 2025
Report Number : 3211454-1 Rev. No.1

Page 2 of 2

Sample Number 253463-2
Sampled Date Feb 14, 2025 10:39 AM
Sample Description Wastewater
Location บริเวณขากอกจากระบบน้ำหล่อเย็นก่อนเข้าระบบบำบัดน้ำเสียโรงงาน MMA2
Date Analysis Commenced Feb 14, 2025
Condition of Sample data sheet

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Residual Chlorine - as ClO ₂	mg/L	-	0.01	<0.01	In-house method based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (G)	Rayong

Note : This Analysis test report is reissued to supersede report No.3211454-1, Date Reported : Feb 18, 2025 due to revise analytical information.

Sampling By : Suphanat Sakulkittimasak

Remark :

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Approved by

Photchana S

Photchana Seeda
Scientist (4)

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2515899

Date Received : Mar 07, 2025
Date Reported : Mar 14, 2025
Report Number : 3258648-1

Page 1 of 1

Sample Number	2515899-1
Sampled Date	Mar 07, 2025 10:14 AM
Sample Description	Wastewater
Location	Equalization (T-9610)
Date Analysis Commenced	Mar 07, 2025
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	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	804	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	1272	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	9.7	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	39.7	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	2150	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	26	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

Remark :

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Chumon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2515899

Date Received : Mar 07, 2025

Date Reported : Mar 14, 2025

Report Number : 3258648-2

Page 1 of 1

Sample Number	2515899-1
Sampled Date	Mar 07, 2025 10:14 AM
Sample Description	Wastewater
Location	Equalization (T-9610)
Date Analysis Commenced	Mar 10, 2025
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	Method	Testing Location
Water Testing						
Sulfate	mg/L	0.6	2	311	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Sampling By : Wanlop Hunchainaow

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2515899

Date Received : Mar 07, 2025
Date Reported : Mar 14, 2025
Report Number : 3258649-1

Page 1 of 1

Sample Number	2515899-2
Sampled Date	Mar 07, 2025 10:09 AM
Sample Description	Wastewater
Location	Drainage before Check Basin (T-9640)
Date Analysis Commenced	Mar 07, 2025
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	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	107	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.6	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	36.1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1790	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	2.8	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Chumon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2515899

Date Received : Mar 07, 2025

Date Reported : Mar 14, 2025

Report Number : 3258649-2

Page 1 of 1

Sample Number : 2515899-2
Sampled Date : Mar 07, 2025 10:09 AM
Sample Description : Wastewater
Location : Drainage before Check Basin (T-9640)
Date Analysis Commenced : Mar 10, 2025
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	Method	Testing Location
Water Testing						
Sulfate	mg/L	0.6	2	445	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Sampling By : Wanlop Hunchainaow

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271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

TESTING
No.0042
Lot ID: 2515899
Date Received : Mar 07, 2025
Date Reported : Mar 14, 2025
Report Number : 3258650-1

Page 1 of 2

Sample Number	2515899-3
Sampled Date	Mar 07, 2025 10:07 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (T-9650)
Date Analysis Commenced	Mar 07, 2025
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	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	73	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	35.4	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1590	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	2.5	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Changchon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

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271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

TESTING
No.0042
Lot ID: 2515899
Date Received : Mar 07, 2025
Date Reported : Mar 14, 2025
Report Number : 3258650-1

Page 2 of 2

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Technical Management

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Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

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Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

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271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location: MMA Site 3

Lot ID: 2515899

Date Received : Mar 07, 2025
Date Reported : Mar 14, 2025
Report Number : 3258650-2

Page 1 of 1

Sample Number	2515899-3						
Sampled Date	Mar 07, 2025 10:07 AM						
Sample Description	Wastewater						
Location	Effluent from the Check Basin (T-9650)						
Date Analysis Commenced	Mar 10, 2025						
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	390	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Wanlop Hunchainaow

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TESTING
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P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2515899

Date Received : Mar 07, 2025
Date Reported : Mar 14, 2025
Report Number : 3258651-1

Page 1 of 1

Sample Number	2515899-4
Sampled Date	Mar 07, 2025 9:49 AM
Sample Description	Wastewater
Location	Equalization (2T-9610)
Date Analysis Commenced	Mar 07, 2025
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	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	495	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	1474	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	9.6	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	35.2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	2700	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	241	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

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Technical Management

Photchana S.

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Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

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Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2515899

Date Received : Mar 07, 2025

Date Reported : Mar 14, 2025

Report Number : 3258651-2

Page 1 of 1

Sample Number	2515899-4
Sampled Date	Mar 07, 2025 9:49 AM
Sample Description	Wastewater
Location	Equalization (2T-9610)
Date Analysis Commenced	Mar 10, 2025
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	Method	Testing Location
Water Testing						
Sulfate	mg/L	0.6	2	550	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Sampling By : Wanlop Hunchainaow

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
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P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2515899

Date Received : Mar 07, 2025
Date Reported : Mar 14, 2025
Report Number : 3258652-1

Page 1 of 1

Sample Number : 2515899-5
Sampled Date : Mar 07, 2025 9:41 AM
Sample Description : Wastewater
Location : Drainage before Check Basin (2T-9640)
Date Analysis Commenced : Mar 07, 2025
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	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	65	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.6	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	34.8	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1370	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	2.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

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Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Chumon.

Dej Changchon
Senior Manager

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2515899

Date Received : Mar 07, 2025

Date Reported : Mar 14, 2025

Report Number : 3258652-2

Page 1 of 1

Sample Number : 2515899-5
Sampled Date : Mar 07, 2025 9:41 AM
Sample Description : Wastewater
Location : Drainage before Check Basin (2T-9640)
Date Analysis Commenced : Mar 10, 2025
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	Method	Testing Location
Water Testing						
Sulfate	mg/L	0.6	2	393	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Sampling By : Wanlop Hunchainaow

Remark :

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Approved by

Photchana S.

Photchana Seeda
Scientist (4)

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

TESTING
No.0042
Lot ID: 2515899
Date Received : Mar 07, 2025
Date Reported : Mar 14, 2025
Report Number : 3258653-1

Page 1 of 2

Sample Number	2515899-6
Sampled Date	Mar 07, 2025 9:45 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (2T-9650)
Date Analysis Commenced	Mar 07, 2025
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	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	67	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	34.8	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1330	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	1.9	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	11	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Changchon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

TESTING
No.0042
Lot ID: 2515899
Date Received : Mar 07, 2025
Date Reported : Mar 14, 2025
Report Number : 3258653-1

Page 2 of 2

Remark :

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Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Changchon

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2515899

Date Received : Mar 07, 2025
Date Reported : Mar 14, 2025
Report Number : 3258653-2

Page 1 of 1

Sample Number	2515899-6						
Sampled Date	Mar 07, 2025 9:45 AM						
Sample Description	Wastewater						
Location	Effluent from the Check Basin (2T-9650)						
Date Analysis Commenced	Mar 10, 2025						
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	339	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Wanlop Hunchainaow

Remark :

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Approved by

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515904

Date Received : Mar 07, 2025
Date Reported : Jul 15, 2025
Report Number : 3239065-1 Rev. No.1

Page 1 of 2

Sample Number 2515904-1
Sampled Date Mar 07, 2025 10:19 AM
Sample Description Wastewater
Location บริเวณขาออกจากกระบวนการบำบัดน้ำเสียก่อนเข้าระบบบำบัดน้ำเสียโรงงาน MMA1
Date Analysis Commenced Mar 07, 2025
Condition of Sample data sheet

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Residual Chlorine - as ClO ₂	mg/L	-	0.01	0.23	In-house method based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (G)	Rayong

Note : This Analysis test report is reissued to supersede report No.3239065-1, Date Reported : Mar 11, 2025 due to revise analytical information.

Sampling By : Wanlop Hunchainaow

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Client : THAI MMA Co., Ltd.
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P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515904

Date Received : Mar 07, 2025
Date Reported : Jul 15, 2025
Report Number : 3239065-1 Rev. No.1

Page 2 of 2

Sample Number 2515904-2
Sampled Date Mar 07, 2025 9:53 AM
Sample Description Wastewater
Location บริเวณขาออกจากกระบวนการบำบัดน้ำเสียก่อนเข้าระบบบำบัดน้ำเสียโรงงาน MMA2
Date Analysis Commenced Mar 07, 2025
Condition of Sample data sheet

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Residual Chlorine - as ClO ₂	mg/L	-	0.01	0.10	In-house method based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (G)	Rayong

Note : This Analysis test report is reissued to supersede report No.3239065-1, Date Reported : Mar 11, 2025 due to revise analytical information.

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2522174

Date Received : Apr 11, 2025
Date Reported : Apr 22, 2025
Report Number : 3287408-1

Page 1 of 1

Sample Number	2522174-1
Sampled Date	Apr 11, 2025 10:05 AM
Sample Description	Wastewater
Location	Equalization (T-9610)
Date Analysis Commenced	Apr 11, 2025
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	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	437	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	906	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	9.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	33.9	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1900	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	11	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

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Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Chumon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2522174

Date Received : Apr 11, 2025
Date Reported : Apr 22, 2025
Report Number : 3287408-2

Page 1 of 1

Sample Number	2522174-1					
Sampled Date	Apr 11, 2025 10:05 AM					
Sample Description	Wastewater					
Location	Equalization (T-9610)					
Date Analysis Commenced	Apr 12, 2025					
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	Method	Testing Location
Water Testing						
Sulfate	mg/L	0.6	2	382	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Sampling By : Wanlop Hunchainaow

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2522174

Date Received : Apr 11, 2025
Date Reported : Apr 22, 2025
Report Number : 3287409-1

Page 1 of 1

Sample Number	2522174-2
Sampled Date	Apr 11, 2025 9:45 AM
Sample Description	Wastewater
Location	Drainage before Check Basin (T-9640)
Date Analysis Commenced	Apr 11, 2025
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	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	107	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	33.8	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1370	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	3.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

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Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Chumon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2522174

Date Received : Apr 11, 2025

Date Reported : Apr 22, 2025

Report Number : 3287409-2

Page 1 of 1

Sample Number	2522174-2
Sampled Date	Apr 11, 2025 9:45 AM
Sample Description	Wastewater
Location	Drainage before Check Basin (T-9640)
Date Analysis Commenced	Apr 12, 2025
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	Method	Testing Location
Water Testing						
Sulfate	mg/L	0.6	2	499	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Sampling By : Wanlop Hunchainaow

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Analysis / Test Report

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271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

TESTING
No.0042
Lot ID: 2522174
Date Received : Apr 11, 2025
Date Reported : Apr 22, 2025
Report Number : 3287410-1

Page 1 of 2

Sample Number	2522174-3
Sampled Date	Apr 11, 2025 9:55 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (T-9650)
Date Analysis Commenced	Apr 11, 2025
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	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	48	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	34.1	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1220	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	1.9	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	7	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Changchon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

TESTING
No.0042
Lot ID: 2522174
Date Received : Apr 11, 2025
Date Reported : Apr 22, 2025
Report Number : 3287410-1

Page 2 of 2

Remark :

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location: MMA Site 3

Lot ID: 2522174

Date Received : Apr 11, 2025
Date Reported : Apr 22, 2025
Report Number : 3287410-2

Page 1 of 1

Sample Number	2522174-3						
Sampled Date	Apr 11, 2025 9:55 AM						
Sample Description	Wastewater						
Location	Effluent from the Check Basin (T-9650)						
Date Analysis Commenced	Apr 12, 2025						
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	395	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).
Sampling By : Wanlop Hunchainaow

Remark :

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

Approved by

Photchana S.

Photchana Seeda
Scientist (4)

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2522174

Date Received : Apr 11, 2025
Date Reported : Apr 22, 2025
Report Number : 3287411-1

Page 1 of 1

Sample Number	2522174-4
Sampled Date	Apr 11, 2025 10:45 AM
Sample Description	Wastewater
Location	Equalization (2T-9610)
Date Analysis Commenced	Apr 11, 2025
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	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	876	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	1704	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	9.7	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	33.8	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	2560	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	173	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

Remark :

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Chumon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2522174

Date Received : Apr 11, 2025
Date Reported : Apr 22, 2025
Report Number : 3287411-2

Page 1 of 1

Sample Number	2522174-4
Sampled Date	Apr 11, 2025 10:45 AM
Sample Description	Wastewater
Location	Equalization (2T-9610)
Date Analysis Commenced	Apr 12, 2025
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	Method	Testing Location
Water Testing						
Sulfate	mg/L	0.6	2	433	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Sampling By : Wanlop Hunchainaow

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2522174

Date Received : Apr 11, 2025
Date Reported : Apr 22, 2025
Report Number : 3287412-1

Page 1 of 1

Sample Number	2522174-5
Sampled Date	Apr 11, 2025 10:25 AM
Sample Description	Wastewater
Location	Drainage before Check Basin (2T-9640)
Date Analysis Commenced	Apr 11, 2025
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	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	74	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	34.3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1430	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	2.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Chumon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2522174

Date Received : Apr 11, 2025

Date Reported : Apr 22, 2025

Report Number : 3287412-2

Page 1 of 1

Sample Number : 2522174-5
Sampled Date : Apr 11, 2025 10:25 AM
Sample Description : Wastewater
Location : Drainage before Check Basin (2T-9640)
Date Analysis Commenced : Apr 12, 2025
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	Method	Testing Location
Water Testing						
Sulfate	mg/L	0.6	2	431	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Sampling By : Wanlop Hunchainaow

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Analysis / Test Report

TESTING

No.0042

Lot ID: 2522174

Date Received : Apr 11, 2025

Date Reported : Apr 22, 2025

Report Number : 3287413-1

Client : THAI MMA Co., Ltd.

271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location : MMA Site 3

Page 1 of 2

Sample Number	2522174-6						
Sampled Date	Apr 11, 2025 10:35 AM						
Sample Description	Wastewater						
Location	Effluent from the Check Basin (2T-9650)						
Date Analysis Commenced	Apr 11, 2025						
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	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	55	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	33.4	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1190	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	1.9	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	9	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

Technical Management

Photchana S.

Photchana Seeda

Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Changchon.

Dej Changchon

Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

TESTING
No.0042
Lot ID: 2522174
Date Received : Apr 11, 2025
Date Reported : Apr 22, 2025
Report Number : 3287413-1

Page 2 of 2

Remark :

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Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Changchon

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2522174

Date Received : Apr 11, 2025
Date Reported : Apr 22, 2025
Report Number : 3287413-2

Page 1 of 1

Sample Number	2522174-6
Sampled Date	Apr 11, 2025 10:35 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (2T-9650)
Date Analysis Commenced	Apr 12, 2025
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	393	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Wanlop Hunchainaow

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Scientist (4)

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2522176

Date Received : Apr 11, 2025
Date Reported : Jul 15, 2025
Report Number : 3251507-1 Rev. No.1

Page 1 of 2

Sample Number 2522176-1
Sampled Date Apr 11, 2025 10:50 AM
Sample Description Wastewater
Location บริเวณขาออกจากกระบวนการบำบัดน้ำเสียก่อนเข้าระบบบำบัดน้ำเสียโรงงาน MMA1
Date Analysis Commenced Apr 11, 2025
Condition of Sample data sheet

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Residual Chlorine - as ClO ₂	mg/L	-	0.01	0.19	In-house method based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (G)	Rayong

Note : This Analysis test report is reissued to supersede report No.3251507-1, Date Reported : Apr 18, 2025 due to revise analytical information.

Sampling By : Wanlop Hunchainaow

Remark :

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Approved by

Photchana S

Photchana Seeda
Scientist (4)

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Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2522176

Date Received : Apr 11, 2025
Date Reported : Jul 15, 2025
Report Number : 3251507-1 Rev. No.1

Page 2 of 2

Sample Number 2522176-2
Sampled Date Apr 11, 2025 10:10 AM
Sample Description Wastewater
Location บริเวณขาออกจากกระบวนการบำบัดน้ำเสียก่อนเข้าระบบบำบัดน้ำเสียโรงงาน MMA2
Date Analysis Commenced Apr 11, 2025
Condition of Sample data sheet

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Residual Chlorine - as ClO ₂	mg/L	-	0.01	0.07	In-house method based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (G)	Rayong

Note : This Analysis test report is reissued to supersede report No.3251507-1, Date Reported : Apr 18, 2025 due to revise analytical information.

Sampling By : Wanlop Hunchainaow

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2537362

Date Received : May 09, 2025
Date Reported : May 17, 2025
Report Number : 3308607-1

Page 1 of 1

Sample Number 2537362-1
Sampled Date May 09, 2025 10:45 AM
Sample Description Wastewater
Location Equalization (T-9610)
Date Analysis Commenced May 09, 2025
Condition of Sample Contained in one glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	903	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	1861	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	9.6	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	36.9	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	3020	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	32	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

Remark :

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Chumon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2537362

Date Received : May 09, 2025

Date Reported : May 17, 2025

Report Number : 3308607-2

Page 1 of 1

Sample Number : 2537362-1
Sampled Date : May 09, 2025 10:45 AM
Sample Description : Wastewater
Location : Equalization (T-9610)
Date Analysis Commenced : May 10, 2025
Condition of Sample : Contained in one glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Sulfate	mg/L	0.6	2	512	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Sampling By : Wanlop Hunchainaow

Remark :

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

Approved by

Photchana S.

Photchana Seeda
Scientist (4)

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2537362

Date Received : May 09, 2025
Date Reported : May 17, 2025
Report Number : 3308608-1

Page 1 of 1

Sample Number 2537362-2
Sampled Date May 09, 2025 10:40 AM
Sample Description Wastewater
Location Drainage before Check Basin (T-9640)
Date Analysis Commenced May 09, 2025
Condition of Sample Contained in one glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	121	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	35.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1840	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	3.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	6	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

Remark :

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Chumon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2537362

Date Received : May 09, 2025

Date Reported : May 17, 2025

Report Number : 3308608-2

Page 1 of 1

Sample Number : 2537362-2
Sampled Date : May 09, 2025 10:40 AM
Sample Description : Wastewater
Location : Drainage before Check Basin (T-9640)
Date Analysis Commenced : May 10, 2025
Condition of Sample : Contained in one glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Sulfate	mg/L	0.6	2	412	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Sampling By : Wanlop Hunchainaow

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Analysis / Test Report

TESTING

No.0042

Lot ID: 2537362

Date Received : May 09, 2025

Date Reported : May 17, 2025

Report Number : 3308609-1

Client : THAI MMA Co., Ltd.

271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location : MMA Site 3

Page 1 of 2

Sample Number	2537362-3
Sampled Date	May 09, 2025 10:35 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (T-9650)
Date Analysis Commenced	May 09, 2025
Condition of Sample	Contained in one 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	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	65	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	35.8	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1470	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	1.9	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	11	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

Technical Management

Photchana S.

Photchana Seeda

Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Changchon.

Dej Changchon

Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

TESTING
No.0042
Lot ID: 2537362
Date Received : May 09, 2025
Date Reported : May 17, 2025
Report Number : 3308609-1

Page 2 of 2

Remark :

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Changchon

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2537362

Date Received : May 09, 2025

Date Reported : May 17, 2025

Report Number : 3308609-2

Page 1 of 1

Sample Number	2537362-3
Sampled Date	May 09, 2025 10:35 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (T-9650)
Date Analysis Commenced	May 10, 2025
Condition of Sample	Contained in one 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	375	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Wanlop Hunchainaow

Remark :

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Approved by

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Photchana Seeda
Scientist (4)

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2537362

Date Received : May 09, 2025
Date Reported : May 17, 2025
Report Number : 3308610-1

Page 1 of 1

Sample Number : 2537362-4
Sampled Date : May 09, 2025 11:10 AM
Sample Description : Wastewater
Location : Equalization (2T-9610)
Date Analysis Commenced : May 09, 2025
Condition of Sample : Contained in one glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	693	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	1506	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	9.7	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	36.1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	2740	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	115	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

Remark :

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Chumon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2537362

Date Received : May 09, 2025

Date Reported : May 17, 2025

Report Number : 3308610-2

Page 1 of 1

Sample Number 2537362-4
Sampled Date May 09, 2025 11:10 AM
Sample Description Wastewater
Location Equalization (2T-9610)
Date Analysis Commenced May 10, 2025
Condition of Sample Contained in one glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Sulfate	mg/L	0.6	2	587	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Sampling By : Wanlop Hunchainaow

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2537362

Date Received : May 09, 2025
Date Reported : May 17, 2025
Report Number : 3308611-1

Page 1 of 1

Sample Number 2537362-5
Sampled Date May 09, 2025 11:00 AM
Sample Description Wastewater
Location Drainage before Check Basin (2T-9640)
Date Analysis Commenced May 09, 2025
Condition of Sample Contained in one glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	69	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	35.2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1510	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	2.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	16	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Chumon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2537362

Date Received : May 09, 2025

Date Reported : May 17, 2025

Report Number : 3308611-2

Page 1 of 1

Sample Number 2537362-5
Sampled Date May 09, 2025 11:00 AM
Sample Description Wastewater
Location Drainage before Check Basin (2T-9640)
Date Analysis Commenced May 10, 2025
Condition of Sample Contained in one glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Sulfate	mg/L	0.6	2	477	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Sampling By : Wanlop Hunchainaow

Remark :

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Analysis / Test Report

TESTING

No.0042

Lot ID: 2537362

Date Received : May 09, 2025

Date Reported : May 17, 2025

Report Number : 3308612-1

Client : THAI MMA Co., Ltd.

271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location : MMA Site 3

Page 1 of 2

Sample Number	2537362-6
Sampled Date	May 09, 2025 11:05 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (2T-9650)
Date Analysis Commenced	May 09, 2025
Condition of Sample	Contained in one 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	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	62	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	35.2	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1310	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	1.9	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	12	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

Technical Management

Photchana S.

Photchana Seeda

Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Changchon

Dej Changchon

Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location : MMA Site 3

TESTING

No.0042

Lot ID: 2537362

Date Received : May 09, 2025

Date Reported : May 17, 2025

Report Number : 3308612-1

Page 2 of 2

Remark :

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management

Photchana S.

Photchana Seeda

Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Changchon

Dej Changchon

Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2537362

Date Received : May 09, 2025
Date Reported : May 17, 2025
Report Number : 3308612-2

Page 1 of 1

Sample Number : 2537362-6
Sampled Date : May 09, 2025 11:05 AM
Sample Description : Wastewater
Location : Effluent from the Check Basin (2T-9650)
Date Analysis Commenced : May 10, 2025
Condition of Sample : Contained in one 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	466	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Wanlop Hunchainaow

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2537366

Date Received : May 09, 2025
Date Reported : Jul 15, 2025
Report Number : 3287498-1 Rev. No.1

Page 1 of 2

Sample Number 2537366-1
Sampled Date May 09, 2025 10:50 AM
Sample Description Wastewater
Location บริเวณขาออกจากระบบน้ำหล่อเย็นก่อนเข้าระบบบำบัดน้ำเสียโรงงาน MMA1
Date Analysis Commenced May 09, 2025
Condition of Sample data sheet

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Residual Chlorine - as ClO ₂	mg/L	-	0.01	0.17	In-house method based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (G)	Rayong

Note : This Analysis test report is reissued to supersede report No.3287498-1, Date Reported : May 14, 2025 due to revise analytical information.

Sampling By : Wanlop Hunchainaow

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Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2537366

Date Received : May 09, 2025
Date Reported : Jul 15, 2025
Report Number : 3287498-1 Rev. No.1

Page 2 of 2

Sample Number 2537366-2
Sampled Date May 09, 2025 11:15 AM
Sample Description Wastewater
Location บริเวณขากอกจากระบบน้ำหล่อเย็นก่อนเข้าระบบบำบัดน้ำเสียโรงงาน MMA2
Date Analysis Commenced May 09, 2025
Condition of Sample data sheet

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Residual Chlorine - as ClO ₂	mg/L	-	0.01	0.19	In-house method based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (G)	Rayong

Note : This Analysis test report is reissued to supersede report No.3287498-1, Date Reported : May 14, 2025 due to revise analytical information.

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2542686

Date Received : Jun 06, 2025
Date Reported : Jun 13, 2025
Report Number : 3333913-1

Page 1 of 1

Sample Number	2542686-1
Sampled Date	Jun 06, 2025 10:00 AM
Sample Description	Wastewater
Location	Equalization (T-9610)
Date Analysis Commenced	Jun 06, 2025
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	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	553	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	1175	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	9.9	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	38.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	2550	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	13	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

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Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Chumon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2542686

Date Received : Jun 06, 2025

Date Reported : Jun 13, 2025

Report Number : 3333913-2

Page 1 of 1

Sample Number	2542686-1
Sampled Date	Jun 06, 2025 10:00 AM
Sample Description	Wastewater
Location	Equalization (T-9610)
Date Analysis Commenced	Jun 09, 2025
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	Method	Testing Location
Water Testing						
Sulfate	mg/L	0.6	2	657	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Sampling By : Wanlop Hunchainaow

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2542686

Date Received : Jun 06, 2025
Date Reported : Jun 13, 2025
Report Number : 3333914-1

Page 1 of 1

Sample Number	2542686-2
Sampled Date	Jun 06, 2025 9:55 AM
Sample Description	Wastewater
Location	Drainage before Check Basin (T-9640)
Date Analysis Commenced	Jun 06, 2025
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	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	70	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	35.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1280	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	1.7	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

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Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Chumon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2542686

Date Received : Jun 06, 2025
Date Reported : Jun 13, 2025
Report Number : 3333914-2

Page 1 of 1

Sample Number	2542686-2					
Sampled Date	Jun 06, 2025 9:55 AM					
Sample Description	Wastewater					
Location	Drainage before Check Basin (T-9640)					
Date Analysis Commenced	Jun 09, 2025					
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	Method	Testing Location
Water Testing						
Sulfate	mg/L	0.6	2	411	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Sampling By : Wanlop Hunchainaow

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271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

TESTING
No.0042
Lot ID: 2542686
Date Received : Jun 06, 2025
Date Reported : Jun 13, 2025
Report Number : 3333915-1

Page 1 of 2

Sample Number	2542686-3
Sampled Date	Jun 06, 2025 9:30 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (T-9650)
Date Analysis Commenced	Jun 06, 2025
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	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	51	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	33.9	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	936	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	2.8	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	7	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Changchon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location: MMA Site 3

TESTING

No.0042

Lot ID: 2542686

Date Received : Jun 06, 2025

Date Reported : Jun 13, 2025

Report Number : 3333915-1

Page 2 of 2

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location: MMA Site 3

Lot ID: 2542686

Date Received : Jun 06, 2025
Date Reported : Jun 13, 2025
Report Number : 3333915-2

Page 1 of 1

Sample Number	2542686-3						
Sampled Date	Jun 06, 2025 9:30 AM						
Sample Description	Wastewater						
Location	Effluent from the Check Basin (T-9650)						
Date Analysis Commenced	Jun 09, 2025						
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	322	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Wanlop Hunchainaow

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2542686

Date Received : Jun 06, 2025
Date Reported : Jun 13, 2025
Report Number : 3333916-1

Page 1 of 1

Sample Number	2542686-4
Sampled Date	Jun 06, 2025 10:30 AM
Sample Description	Wastewater
Location	Equalization (2T-9610)
Date Analysis Commenced	Jun 06, 2025
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	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	644	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	1222	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	9.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	36.3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	2700	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	58	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

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ทะเบียนเลขที่ ว-323-จ-0028

Approved by

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Senior Manager

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2542686

Date Received : Jun 06, 2025

Date Reported : Jun 13, 2025

Report Number : 3333916-2

Page 1 of 1

Sample Number	2542686-4
Sampled Date	Jun 06, 2025 10:30 AM
Sample Description	Wastewater
Location	Equalization (2T-9610)
Date Analysis Commenced	Jun 09, 2025
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	Method	Testing Location
Water Testing						
Sulfate	mg/L	0.6	2	683	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Sampling By : Wanlop Hunchainaow

Remark :

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

Approved by

Photchana S.

Photchana Seeda
Scientist (4)

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2542686

Date Received : Jun 06, 2025
Date Reported : Jun 13, 2025
Report Number : 3333917-1

Page 1 of 1

Sample Number	2542686-5
Sampled Date	Jun 06, 2025 10:20 AM
Sample Description	Wastewater
Location	Drainage before Check Basin (2T-9640)
Date Analysis Commenced	Jun 06, 2025
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	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	2.1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	52	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	34.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1550	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	1.1	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	15	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

Remark :

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

Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Chumman.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2542686

Date Received : Jun 06, 2025
Date Reported : Jun 13, 2025
Report Number : 3333917-2

Page 1 of 1

Sample Number : 2542686-5
Sampled Date : Jun 06, 2025 10:20 AM
Sample Description : Wastewater
Location : Drainage before Check Basin (2T-9640)
Date Analysis Commenced : Jun 09, 2025
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	Method	Testing Location
Water Testing						
Sulfate	mg/L	0.6	2	491	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Sampling By : Wanlop Hunchainaow

Remark :

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Approved by

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Photchana Seeda
Scientist (4)

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Analysis / Test Report

TESTING

No.0042

Lot ID: 2542686

Date Received : Jun 06, 2025

Date Reported : Jun 13, 2025

Report Number : 3333918-1

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Page 1 of 2

Sample Number	2542686-6
Sampled Date	Jun 06, 2025 10:25 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (2T-9650)
Date Analysis Commenced	Jun 06, 2025
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	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	60	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5520 B	Rayong
pH at 25 degree C		-	-	8.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	33.7	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1510	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	2.3	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	21	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038

Technical Management

Photchana S.

Photchana Seeda

Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Changchon.

Dej Changchon

Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

TESTING
No.0042
Lot ID: 2542686
Date Received : Jun 06, 2025
Date Reported : Jun 13, 2025
Report Number : 3333918-1

Page 2 of 2

Remark :

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Changchon

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2542686

Date Received : Jun 06, 2025
Date Reported : Jun 13, 2025
Report Number : 3333918-2

Page 1 of 1

Sample Number	2542686-6
Sampled Date	Jun 06, 2025 10:25 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (2T-9650)
Date Analysis Commenced	Jun 09, 2025
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	473	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO4 (E)	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Wanlop Hunchainaow

Remark :

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Approved by

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Photchana Seeda
Scientist (4)

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P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2542688

Date Received : Jun 06, 2025
Date Reported : Jul 15, 2025
Report Number : 3299319-1 Rev. No.1

Page 1 of 2

Sample Number 2542688-1
Sampled Date Jun 06, 2025 10:10 AM
Sample Description Wastewater
Location บริเวณขาออกจากระบบน้ำหล่อเย็นก่อนเข้าระบบบำบัดน้ำเสียโรงงาน MMA1
Date Analysis Commenced Jun 06, 2025
Condition of Sample data sheet

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Residual Chlorine - as ClO ₂	mg/L	-	0.01	0.18	In-house method based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (G)	Rayong

Note : This Analysis test report is reissued to supersede report No.3299319-1, Date Reported : Jun 10, 2025 due to revise analytical information.

Sampling By : Wanlop Hunchainaow

Remark :

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Approved by

Photchana S

Photchana Seeda
Scientist (4)

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2542688

Date Received : Jun 06, 2025
Date Reported : Jul 15, 2025
Report Number : 3299319-1 Rev. No.1

Page 2 of 2

Sample Number 2542688-2
Sampled Date Jun 06, 2025 10:34 AM
Sample Description Wastewater
Location บริเวณขาออกจากกระบวนน้ำหล่อเย็นก่อนเข้าระบบบำบัดน้ำเสียโรงงาน MMA2
Date Analysis Commenced Jun 06, 2025
Condition of Sample data sheet

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Residual Chlorine - as ClO ₂	mg/L	-	0.01	0.14	In-house method based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (G)	Rayong

Note : This Analysis test report is reissued to supersede report No.3299319-1, Date Reported : Jun 10, 2025 due to revise analytical information.

Sampling By : Wanlop Hunchainaow

Remark :

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

Approved by

Photchana S

Photchana Seeda
Scientist (4)

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ภาคผนวก ค-4

ใบรับรองผลการตรวจวัดระดับเสียงโดยทั่วไป



Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515852
Date Received : Mar 31, 2025
Date Reported : Apr 03, 2025
Report Number: 3274637-1

Page 1 of 1

Sample Number 2515852-1
Parameter Noise (Leq 24 hrs.)
Location SCG site 3
Measurement Date Mar 24 - Mar 25, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122578

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	55.0	79.6	51.9
10:00 AM - 11:00 AM	59.2	77.0	53.4
11:00 AM - 12:00 PM	56.4	78.5	53.4
12:00 PM - 01:00 PM	56.8	75.5	54.5
01:00 PM - 02:00 PM	57.2	76.3	54.6
02:00 PM - 03:00 PM	66.2	79.7	55.8
03:00 PM - 04:00 PM	57.2	76.7	54.6
04:00 PM - 05:00 PM	57.2	75.1	54.9
05:00 PM - 06:00 PM	67.4	77.7	54.9
06:00 PM - 07:00 PM	62.2	78.7	54.4
07:00 PM - 08:00 PM	56.6	69.1	54.5
08:00 PM - 09:00 PM	64.5	74.9	54.9
09:00 PM - 10:00 PM	56.2	69.8	54.9
10:00 PM - 11:00 PM	63.4	72.3	54.8
11:00 PM - 12:00 AM	62.7	73.5	54.5
12:00 AM - 01:00 AM	63.8	72.6	54.9
01:00 AM - 02:00 AM	55.7	65.5	54.4
02:00 AM - 03:00 AM	55.8	66.0	54.7
03:00 AM - 04:00 AM	55.7	72.1	54.6
04:00 AM - 05:00 AM	55.5	66.8	54.7
05:00 AM - 06:00 AM	67.8	79.2	55.0
06:00 AM - 07:00 AM	56.3	75.7	53.7
07:00 AM - 08:00 AM	57.0	76.9	53.7
08:00 AM - 09:00 AM	56.6	78.4	53.1

Leq Average 24 hrs. (dB(A)) 61.5
Lmax (dB(A)) 79.7
L90 (dB(A)) 54.6
Ldn (dB(A)) 68.3
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

Chontichak

Chonticha Subongkoch
Scientist (3)

Approved by

Supot S

Supot Salamteh
Section Head

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location :

Lot ID: 2515852

Date Received : Mar 31, 2025

Date Reported : Apr 03, 2025

Report Number: 3274638-1

Page 1 of 1

Sample Number 2515852-2
Parameter Noise (Leq 24 hrs.)
Location SCG site 3
Measurement Date Mar 25 - Mar 26, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122578

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	55.7	76.2	53.3
10:00 AM - 11:00 AM	54.7	69.6	53.3
11:00 AM - 12:00 PM	66.4	77.2	53.4
12:00 PM - 01:00 PM	64.0	75.5	54.3
01:00 PM - 02:00 PM	58.0	89.1	53.3
02:00 PM - 03:00 PM	56.3	87.6	52.9
03:00 PM - 04:00 PM	57.2	79.4	53.3
04:00 PM - 05:00 PM	55.8	79.1	53.4
05:00 PM - 06:00 PM	66.6	80.7	53.5
06:00 PM - 07:00 PM	60.7	78.0	53.6
07:00 PM - 08:00 PM	60.0	79.9	53.9
08:00 PM - 09:00 PM	55.5	74.6	54.2
09:00 PM - 10:00 PM	63.5	73.9	54.0
10:00 PM - 11:00 PM	62.9	73.9	54.8
11:00 PM - 12:00 AM	55.5	72.5	53.7
12:00 AM - 01:00 AM	64.6	74.6	54.6
01:00 AM - 02:00 AM	56.8	73.3	54.9
02:00 AM - 03:00 AM	64.9	72.4	55.3
03:00 AM - 04:00 AM	55.6	62.9	54.9
04:00 AM - 05:00 AM	55.5	69.1	54.7
05:00 AM - 06:00 AM	67.4	77.7	55.2
06:00 AM - 07:00 AM	57.3	81.1	55.2
07:00 AM - 08:00 AM	57.9	76.0	55.0
08:00 AM - 09:00 AM	57.3	74.9	54.5

Leq Average 24 hrs. (dB(A)) 61.7
Lmax (dB(A)) 89.1
L90 (dB(A)) 54.0
Ldn (dB(A)) 68.6

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

Chontichak

Chonticha Subongkoch
Scientist (3)

Approved by

Supot S

Supot Salamteh
Section Head

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515852

Date Received : Mar 31, 2025
Date Reported : Apr 03, 2025
Report Number: 3274639-1

Page 1 of 1

Sample Number 2515852-3
Parameter Noise (Leq 24 hrs.)
Location SCG site 3
Measurement Date Mar 26 - Mar 27, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122578

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	56.1	80.2	54.2
10:00 AM - 11:00 AM	56.9	76.6	54.0
11:00 AM - 12:00 PM	60.0	74.8	54.2
12:00 PM - 01:00 PM	68.6	78.3	54.8
01:00 PM - 02:00 PM	56.1	75.6	53.3
02:00 PM - 03:00 PM	56.1	76.3	53.5
03:00 PM - 04:00 PM	56.8	74.0	54.1
04:00 PM - 05:00 PM	56.7	76.2	53.9
05:00 PM - 06:00 PM	66.9	76.9	53.4
06:00 PM - 07:00 PM	64.8	79.2	53.9
07:00 PM - 08:00 PM	67.9	80.0	55.0
08:00 PM - 09:00 PM	66.1	74.6	55.2
09:00 PM - 10:00 PM	61.2	71.8	54.7
10:00 PM - 11:00 PM	64.8	72.4	55.4
11:00 PM - 12:00 AM	65.0	75.0	54.6
12:00 AM - 01:00 AM	66.6	75.1	55.1
01:00 AM - 02:00 AM	60.0	73.8	55.1
02:00 AM - 03:00 AM	67.2	75.9	56.0
03:00 AM - 04:00 AM	55.4	64.1	54.7
04:00 AM - 05:00 AM	55.8	79.4	54.8
05:00 AM - 06:00 AM	62.2	71.9	48.4
06:00 AM - 07:00 AM	56.7	75.4	54.6
07:00 AM - 08:00 AM	56.9	78.2	54.4
08:00 AM - 09:00 AM	57.1	75.7	54.8

Leq Average 24 hrs. (dB(A)) 63.3
Lmax (dB(A)) 80.2
L90 (dB(A)) 54.6
Ldn (dB(A)) 69.8
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

Chontichak

Chonticha Subongkoch
Scientist (3)

Approved by

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Section Head

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515852
Date Received : Mar 31, 2025
Date Reported : Apr 03, 2025
Report Number: 3274640-1

Page 1 of 1

Sample Number 2515852-4
Parameter Noise (Leq 24 hrs.)
Location SCG site 3
Measurement Date Mar 27 - Mar 28, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122578

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	57.2	79.1	54.9
10:00 AM - 11:00 AM	57.8	75.7	54.7
11:00 AM - 12:00 PM	58.7	74.6	54.6
12:00 PM - 01:00 PM	59.1	77.6	54.0
01:00 PM - 02:00 PM	62.4	75.7	54.8
02:00 PM - 03:00 PM	57.2	78.3	55.1
03:00 PM - 04:00 PM	58.5	73.9	54.3
04:00 PM - 05:00 PM	57.6	75.2	54.1
05:00 PM - 06:00 PM	56.0	76.3	53.5
06:00 PM - 07:00 PM	68.0	76.7	53.6
07:00 PM - 08:00 PM	56.5	76.3	54.0
08:00 PM - 09:00 PM	60.9	70.0	55.0
09:00 PM - 10:00 PM	61.2	71.0	54.2
10:00 PM - 11:00 PM	65.1	74.2	54.1
11:00 PM - 12:00 AM	55.4	72.7	54.2
12:00 AM - 01:00 AM	66.2	74.4	55.3
01:00 AM - 02:00 AM	64.5	74.7	55.2
02:00 AM - 03:00 AM	55.7	69.5	54.7
03:00 AM - 04:00 AM	56.8	71.5	55.6
04:00 AM - 05:00 AM	56.7	62.5	55.4
05:00 AM - 06:00 AM	69.9	80.6	55.2
06:00 AM - 07:00 AM	57.4	81.8	55.4
07:00 AM - 08:00 AM	58.0	81.4	54.9
08:00 AM - 09:00 AM	57.6	78.4	54.7

Leq Average 24 hrs. (dB(A)) 62.1
Lmax (dB(A)) 81.8
L90 (dB(A)) 54.7
Ldn (dB(A)) 70.0

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

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Supot Salamteh
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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515852
Date Received : Mar 31, 2025
Date Reported : Apr 03, 2025
Report Number: 3274641-1

Page 1 of 1

Sample Number 2515852-5
Parameter Noise (Leq 24 hrs.)
Location SCG site 3
Measurement Date Mar 28 - Mar 29, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122578

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	56.5	72.3	54.5
10:00 AM - 11:00 AM	57.2	77.3	54.4
11:00 AM - 12:00 PM	56.9	75.2	53.8
12:00 PM - 01:00 PM	60.0	76.7	53.0
01:00 PM - 02:00 PM	55.7	72.2	53.0
02:00 PM - 03:00 PM	56.6	77.6	53.2
03:00 PM - 04:00 PM	56.1	77.2	53.6
04:00 PM - 05:00 PM	56.7	76.3	53.9
05:00 PM - 06:00 PM	57.6	79.1	54.2
06:00 PM - 07:00 PM	66.7	76.0	54.1
07:00 PM - 08:00 PM	56.0	76.3	53.5
08:00 PM - 09:00 PM	63.1	73.7	54.1
09:00 PM - 10:00 PM	56.0	75.7	54.4
10:00 PM - 11:00 PM	63.2	72.4	54.4
11:00 PM - 12:00 AM	55.7	72.1	55.0
12:00 AM - 01:00 AM	60.5	73.5	55.1
01:00 AM - 02:00 AM	63.2	73.9	54.8
02:00 AM - 03:00 AM	54.6	72.2	53.9
03:00 AM - 04:00 AM	54.5	63.1	53.8
04:00 AM - 05:00 AM	54.3	64.2	53.6
05:00 AM - 06:00 AM	67.0	74.5	54.4
06:00 AM - 07:00 AM	55.8	76.5	54.0
07:00 AM - 08:00 AM	56.5	76.0	53.4
08:00 AM - 09:00 AM	56.6	87.0	52.6

Leq Average 24 hrs. (dB(A)) 60.2
Lmax (dB(A)) 87.0
L90 (dB(A)) 53.9
Ldn (dB(A)) 67.4

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

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515852
Date Received : Mar 31, 2025
Date Reported : Apr 03, 2025
Report Number: 3274642-1

Page 1 of 1

Sample Number 2515852-6
Parameter Noise (Leq 24 hrs.)
Location SCG site 3
Measurement Date Mar 29 - Mar 30, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122578

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	55.9	76.6	52.3
10:00 AM - 11:00 AM	54.9	78.0	53.0
11:00 AM - 12:00 PM	56.3	83.4	53.1
12:00 PM - 01:00 PM	54.7	74.8	52.1
01:00 PM - 02:00 PM	55.4	73.7	52.1
02:00 PM - 03:00 PM	56.4	77.8	53.3
03:00 PM - 04:00 PM	56.5	80.2	53.5
04:00 PM - 05:00 PM	56.4	75.5	53.6
05:00 PM - 06:00 PM	56.2	86.0	54.0
06:00 PM - 07:00 PM	67.2	76.8	54.2
07:00 PM - 08:00 PM	57.1	75.3	54.7
08:00 PM - 09:00 PM	62.1	71.1	53.8
09:00 PM - 10:00 PM	54.3	66.2	53.4
10:00 PM - 11:00 PM	62.7	71.6	53.7
11:00 PM - 12:00 AM	56.7	69.5	53.5
12:00 AM - 01:00 AM	62.9	71.4	53.9
01:00 AM - 02:00 AM	54.7	72.1	53.8
02:00 AM - 03:00 AM	63.6	71.6	54.0
03:00 AM - 04:00 AM	54.1	64.6	53.6
04:00 AM - 05:00 AM	54.2	63.9	53.7
05:00 AM - 06:00 AM	67.3	75.9	54.2
06:00 AM - 07:00 AM	56.3	74.2	54.6
07:00 AM - 08:00 AM	56.5	79.1	54.5
08:00 AM - 09:00 AM	57.2	83.6	54.6

Leq Average 24 hrs. (dB(A)) 60.2
Lmax (dB(A)) 86.0
L90 (dB(A)) 53.7
Ldn (dB(A)) 67.8

Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
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Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515852
Date Received : Mar 31, 2025
Date Reported : Apr 03, 2025
Report Number: 3274643-1

Page 1 of 1

Sample Number 2515852-7
Parameter Noise (Leq 24 hrs.)
Location SCG site 3
Measurement Date Mar 30 - Mar 31, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122578

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	55.9	75.4	54.2
10:00 AM - 11:00 AM	57.2	72.2	54.7
11:00 AM - 12:00 PM	57.4	76.5	53.4
12:00 PM - 01:00 PM	58.1	79.2	53.8
01:00 PM - 02:00 PM	55.8	74.0	54.7
02:00 PM - 03:00 PM	56.4	74.2	54.9
03:00 PM - 04:00 PM	56.6	73.9	54.9
04:00 PM - 05:00 PM	61.4	72.6	54.9
05:00 PM - 06:00 PM	56.5	75.4	55.2
06:00 PM - 07:00 PM	67.2	74.7	54.6
07:00 PM - 08:00 PM	55.4	73.1	53.6
08:00 PM - 09:00 PM	60.0	78.1	53.5
09:00 PM - 10:00 PM	57.6	67.4	54.1
10:00 PM - 11:00 PM	62.9	70.7	54.1
11:00 PM - 12:00 AM	56.5	75.8	53.7
12:00 AM - 01:00 AM	54.6	73.8	53.6
01:00 AM - 02:00 AM	54.3	68.8	53.6
02:00 AM - 03:00 AM	64.6	72.2	53.7
03:00 AM - 04:00 AM	54.5	64.5	53.5
04:00 AM - 05:00 AM	54.4	71.8	53.8
05:00 AM - 06:00 AM	65.9	77.4	53.9
06:00 AM - 07:00 AM	56.0	81.6	53.9
07:00 AM - 08:00 AM	56.6	78.4	53.2
08:00 AM - 09:00 AM	55.6	73.4	52.9

Leq Average 24 hrs. (dB(A)) 60.0
Lmax (dB(A)) 81.6
L90 (dB(A)) 53.8
Ldn (dB(A)) 67.0
Standard (dB(A)) 70

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
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Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Chontichak

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515852
Date Received : Mar 31, 2025
Date Reported : Apr 03, 2025
Report Number: 3274644-1

Page 1 of 1

Sample Number 2515852-8
Parameter Noise (Leq 24 hrs.)
Location วัดหนองแฟบ
Measurement Date Mar 24 - Mar 25, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122567

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	51.8	75.0	46.2
01:00 PM - 02:00 PM	52.3	77.3	46.1
02:00 PM - 03:00 PM	57.0	89.9	48.2
03:00 PM - 04:00 PM	56.1	78.8	48.5
04:00 PM - 05:00 PM	52.2	70.8	46.3
05:00 PM - 06:00 PM	49.3	74.1	43.2
06:00 PM - 07:00 PM	53.9	65.7	45.2
07:00 PM - 08:00 PM	50.0	75.5	46.3
08:00 PM - 09:00 PM	49.6	67.3	46.0
09:00 PM - 10:00 PM	50.1	65.7	43.6
10:00 PM - 11:00 PM	45.5	65.9	43.4
11:00 PM - 12:00 AM	51.7	65.2	43.1
12:00 AM - 01:00 AM	45.4	63.9	41.9
01:00 AM - 02:00 AM	43.8	57.9	42.6
02:00 AM - 03:00 AM	42.7	55.9	41.7
03:00 AM - 04:00 AM	46.3	71.9	42.0
04:00 AM - 05:00 AM	46.4	66.2	42.6
05:00 AM - 06:00 AM	57.3	68.4	43.1
06:00 AM - 07:00 AM	53.3	74.1	47.1
07:00 AM - 08:00 AM	54.3	84.5	47.0
08:00 AM - 09:00 AM	54.5	88.6	45.7
09:00 AM - 10:00 AM	53.4	85.6	44.8
10:00 AM - 11:00 AM	53.6	88.9	44.8
11:00 AM - 12:00 PM	50.5	68.7	45.4

Leq Average 24 hrs. (dB(A)) 52.5
Lmax (dB(A)) 89.9
L90 (dB(A)) 44.8
Ldn (dB(A)) 57.7

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

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Chonticha Subongkoch
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Supot Salamteh
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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515852
Date Received : Mar 31, 2025
Date Reported : Apr 03, 2025
Report Number: 3274645-1

Page 1 of 1

Sample Number 2515852-9
Parameter Noise (Leq 24 hrs.)
Location วัดหนองแฟบ
Measurement Date Mar 25 - Mar 26, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122567

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	49.1	68.5	44.0
01:00 PM - 02:00 PM	61.9	96.8	44.6
02:00 PM - 03:00 PM	52.5	81.8	45.1
03:00 PM - 04:00 PM	61.3	83.8	46.5
04:00 PM - 05:00 PM	54.3	84.2	46.7
05:00 PM - 06:00 PM	51.6	76.5	46.7
06:00 PM - 07:00 PM	58.0	69.0	46.2
07:00 PM - 08:00 PM	49.7	70.8	45.8
08:00 PM - 09:00 PM	49.5	67.8	45.9
09:00 PM - 10:00 PM	48.2	66.1	45.9
10:00 PM - 11:00 PM	47.6	66.9	45.5
11:00 PM - 12:00 AM	53.9	66.0	44.0
12:00 AM - 01:00 AM	47.5	62.9	44.9
01:00 AM - 02:00 AM	45.7	61.0	43.7
02:00 AM - 03:00 AM	44.5	55.2	43.1
03:00 AM - 04:00 AM	46.0	64.5	43.3
04:00 AM - 05:00 AM	48.0	66.9	43.4
05:00 AM - 06:00 AM	58.0	71.5	44.8
06:00 AM - 07:00 AM	53.4	70.7	47.2
07:00 AM - 08:00 AM	54.1	72.5	48.3
08:00 AM - 09:00 AM	51.6	70.5	46.6
09:00 AM - 10:00 AM	54.2	86.1	45.9
10:00 AM - 11:00 AM	50.9	67.2	45.8
11:00 AM - 12:00 PM	50.8	68.6	46.5

Leq Average 24 hrs. (dB(A)) 54.5
Lmax (dB(A)) 96.8
L90 (dB(A)) 45.8
Ldn (dB(A)) 59.0

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

Chontichak

Chonticha Subongkoch
Scientist (3)

Approved by

Supot S

Supot Salamteh
Section Head



Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515852
Date Received : Mar 31, 2025
Date Reported : Apr 03, 2025
Report Number: 3274646-1

Page 1 of 1

Sample Number 2515852-10
Parameter Noise (Leq 24 hrs.)
Location วัดหนองแฟบ
Measurement Date Mar 26 - Mar 27, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122567

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	50.0	73.3	45.4
01:00 PM - 02:00 PM	51.8	73.5	45.0
02:00 PM - 03:00 PM	51.1	77.5	45.4
03:00 PM - 04:00 PM	53.3	77.4	46.4
04:00 PM - 05:00 PM	64.5	103.0	46.6
05:00 PM - 06:00 PM	50.1	67.5	45.3
06:00 PM - 07:00 PM	57.1	66.6	47.2
07:00 PM - 08:00 PM	50.3	67.5	45.7
08:00 PM - 09:00 PM	47.4	64.0	44.5
09:00 PM - 10:00 PM	46.4	62.0	43.9
10:00 PM - 11:00 PM	51.9	62.7	44.0
11:00 PM - 12:00 AM	45.6	63.7	43.9
12:00 AM - 01:00 AM	45.5	66.8	43.8
01:00 AM - 02:00 AM	45.1	67.2	43.6
02:00 AM - 03:00 AM	44.9	59.2	43.7
03:00 AM - 04:00 AM	44.9	67.0	43.3
04:00 AM - 05:00 AM	45.4	62.0	43.3
05:00 AM - 06:00 AM	58.2	71.5	44.2
06:00 AM - 07:00 AM	54.1	81.5	47.8
07:00 AM - 08:00 AM	52.8	68.1	47.4
08:00 AM - 09:00 AM	51.5	68.5	46.5
09:00 AM - 10:00 AM	50.7	75.9	45.6
10:00 AM - 11:00 AM	50.6	74.0	46.2
11:00 AM - 12:00 PM	51.4	76.0	46.9

Leq Average 24 hrs. (dB(A)) 54.1
Lmax (dB(A)) 103.0
L90 (dB(A)) 45.3
Ldn (dB(A)) 58.7

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

Chontichak

Chonticha Subongkoch
Scientist (3)

Approved by

Supot S

Supot Salamteh
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Life Sciences

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515852

Date Received : Mar 31, 2025
Date Reported : Apr 03, 2025
Report Number: 3274647-1

Page 1 of 1

Sample Number 2515852-11
Parameter Noise (Leq 24 hrs.)
Location วัดหนองแฟบ
Measurement Date Mar 27 - Mar 28, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122567

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	50.1	66.3	45.7
01:00 PM - 02:00 PM	50.4	75.3	45.5
02:00 PM - 03:00 PM	51.0	71.1	45.6
03:00 PM - 04:00 PM	52.9	70.1	46.2
04:00 PM - 05:00 PM	55.9	77.8	47.1
05:00 PM - 06:00 PM	58.7	69.7	53.1
06:00 PM - 07:00 PM	56.5	69.2	46.6
07:00 PM - 08:00 PM	49.6	68.3	46.1
08:00 PM - 09:00 PM	50.2	65.8	45.6
09:00 PM - 10:00 PM	51.0	64.5	45.7
10:00 PM - 11:00 PM	47.9	66.6	46.0
11:00 PM - 12:00 AM	48.3	69.0	45.5
12:00 AM - 01:00 AM	46.1	65.6	44.0
01:00 AM - 02:00 AM	49.5	89.5	43.6
02:00 AM - 03:00 AM	45.9	70.5	44.6
03:00 AM - 04:00 AM	46.7	63.3	44.4
04:00 AM - 05:00 AM	46.4	61.1	43.1
05:00 AM - 06:00 AM	57.1	68.1	44.9
06:00 AM - 07:00 AM	57.7	75.7	52.7
07:00 AM - 08:00 AM	56.5	77.0	47.5
08:00 AM - 09:00 AM	52.4	72.2	46.1
09:00 AM - 10:00 AM	51.3	74.8	46.8
10:00 AM - 11:00 AM	52.8	78.9	46.2
11:00 AM - 12:00 PM	49.3	68.6	44.7

Leq Average 24 hrs. (dB(A)) 53.1
Lmax (dB(A)) 89.5
L90 (dB(A)) 45.7
Ldn (dB(A)) 58.8

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

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Chonticha Subongkoch
Scientist (3)

Approved by

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Supot Salamteh
Section Head

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515852
Date Received : Mar 31, 2025
Date Reported : Apr 03, 2025
Report Number: 3274648-1

Page 1 of 1

Sample Number 2515852-12
Parameter Noise (Leq 24 hrs.)
Location วัดหนองแฟบ
Measurement Date Mar 28 - Mar 29, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122567

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	57.0	83.1	45.7
01:00 PM - 02:00 PM	51.2	82.2	44.8
02:00 PM - 03:00 PM	48.1	68.1	43.2
03:00 PM - 04:00 PM	52.2	76.6	43.8
04:00 PM - 05:00 PM	53.6	76.0	45.3
05:00 PM - 06:00 PM	50.7	72.9	44.3
06:00 PM - 07:00 PM	58.7	68.0	44.9
07:00 PM - 08:00 PM	49.2	69.8	45.2
08:00 PM - 09:00 PM	49.0	64.8	46.6
09:00 PM - 10:00 PM	48.9	63.6	46.8
10:00 PM - 11:00 PM	48.8	63.7	44.4
11:00 PM - 12:00 AM	46.5	62.7	44.0
12:00 AM - 01:00 AM	46.4	70.0	43.2
01:00 AM - 02:00 AM	46.2	66.3	43.3
02:00 AM - 03:00 AM	45.3	64.8	43.7
03:00 AM - 04:00 AM	45.0	60.9	43.5
04:00 AM - 05:00 AM	45.6	64.9	43.6
05:00 AM - 06:00 AM	55.6	65.8	43.8
06:00 AM - 07:00 AM	53.7	73.9	46.9
07:00 AM - 08:00 AM	52.4	73.7	46.4
08:00 AM - 09:00 AM	56.1	89.2	45.2
09:00 AM - 10:00 AM	51.2	78.1	44.6
10:00 AM - 11:00 AM	49.2	66.3	44.3
11:00 AM - 12:00 PM	49.5	69.6	44.7

Leq Average 24 hrs. (dB(A)) 52.2
Lmax (dB(A)) 89.2
L90 (dB(A)) 44.4
Ldn (dB(A)) 57.0

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

Chontichak

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Approved by

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Supot Salamteh
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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location :

Lot ID: 2515852

Date Received : Mar 31, 2025

Date Reported : Apr 03, 2025

Report Number: 3274649-1

Page 1 of 1

Sample Number 2515852-13
Parameter Noise (Leq 24 hrs.)
Location วัดหนองแฟบ
Measurement Date Mar 29 - Mar 30, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122567

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	48.6	69.7	43.7
01:00 PM - 02:00 PM	48.5	65.5	44.2
02:00 PM - 03:00 PM	49.8	69.7	43.9
03:00 PM - 04:00 PM	53.3	68.4	46.7
04:00 PM - 05:00 PM	51.1	69.9	44.3
05:00 PM - 06:00 PM	51.7	71.5	44.2
06:00 PM - 07:00 PM	57.1	72.5	45.2
07:00 PM - 08:00 PM	47.6	68.3	43.4
08:00 PM - 09:00 PM	49.6	76.3	43.7
09:00 PM - 10:00 PM	46.0	63.5	43.5
10:00 PM - 11:00 PM	47.5	66.1	45.1
11:00 PM - 12:00 AM	45.8	59.3	44.1
12:00 AM - 01:00 AM	48.4	62.3	44.0
01:00 AM - 02:00 AM	45.4	58.4	44.2
02:00 AM - 03:00 AM	46.0	64.8	43.7
03:00 AM - 04:00 AM	49.4	65.7	43.6
04:00 AM - 05:00 AM	53.0	69.2	44.2
05:00 AM - 06:00 AM	51.6	67.7	45.3
06:00 AM - 07:00 AM	52.1	70.1	46.5
07:00 AM - 08:00 AM	51.3	70.8	44.3
08:00 AM - 09:00 AM	48.9	69.4	43.7
09:00 AM - 10:00 AM	49.9	68.9	44.3
10:00 AM - 11:00 AM	52.5	71.1	44.9
11:00 AM - 12:00 PM	58.1	79.9	46.0

Leq Average 24 hrs. (dB(A)) 51.5
Lmax (dB(A)) 79.9
L90 (dB(A)) 44.2
Ldn (dB(A)) 56.6

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

Chontichak

Chonticha Subongkoch
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Supot Salamteh
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Analysis / Test Report



TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location :

Lot ID: 2515852

Date Received : Mar 31, 2025

Date Reported : Apr 03, 2025

Report Number: 3274650-1

Page 1 of 1

Sample Number 2515852-14
Parameter Noise (Leq 24 hrs.)
Location วัดหนองแฟบ
Measurement Date Mar 30 - Mar 31, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122567

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	50.4	75.6	44.3
01:00 PM - 02:00 PM	49.9	75.2	43.7
02:00 PM - 03:00 PM	49.9	72.8	43.7
03:00 PM - 04:00 PM	48.1	69.5	42.6
04:00 PM - 05:00 PM	51.0	76.1	43.9
05:00 PM - 06:00 PM	53.8	71.5	43.6
06:00 PM - 07:00 PM	58.0	69.3	44.6
07:00 PM - 08:00 PM	48.0	71.1	43.9
08:00 PM - 09:00 PM	46.2	64.1	43.4
09:00 PM - 10:00 PM	48.1	65.9	43.6
10:00 PM - 11:00 PM	47.4	67.3	44.1
11:00 PM - 12:00 AM	45.5	60.0	44.0
12:00 AM - 01:00 AM	46.2	64.7	44.4
01:00 AM - 02:00 AM	44.8	60.7	43.2
02:00 AM - 03:00 AM	45.5	65.4	43.6
03:00 AM - 04:00 AM	44.7	61.6	42.6
04:00 AM - 05:00 AM	50.2	67.5	42.7
05:00 AM - 06:00 AM	58.9	71.7	46.4
06:00 AM - 07:00 AM	54.6	74.6	49.8
07:00 AM - 08:00 AM	54.8	68.9	51.2
08:00 AM - 09:00 AM	53.7	76.4	50.4
09:00 AM - 10:00 AM	53.0	78.3	49.9
10:00 AM - 11:00 AM	52.3	70.9	44.7
11:00 AM - 12:00 PM	57.9	79.7	45.8

Leq Average 24 hrs. (dB(A)) 52.7
Lmax (dB(A)) 79.7
L90 (dB(A)) 43.9
Ldn (dB(A)) 58.5

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

Chontichak

Chonticha Subongkoch
Scientist (3)

Approved by

Supot S

Supot Salamteh
Section Head



Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515852
Date Received : Mar 31, 2025
Date Reported : Apr 03, 2025
Report Number: 3274651-1

Page 1 of 1

Sample Number 2515852-15
Parameter Noise (Leq 24 hrs.)
Location โรงเรียนบ้านมาบตาพุด
Measurement Date Mar 24 - Mar 25, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122579

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	59.1	83.3	52.5
02:00 PM - 03:00 PM	62.9	75.2	60.6
03:00 PM - 04:00 PM	57.2	75.3	52.2
04:00 PM - 05:00 PM	55.7	71.9	52.1
05:00 PM - 06:00 PM	52.0	66.1	49.1
06:00 PM - 07:00 PM	52.1	64.9	49.5
07:00 PM - 08:00 PM	51.4	66.8	49.1
08:00 PM - 09:00 PM	50.5	63.3	48.2
09:00 PM - 10:00 PM	50.2	65.3	48.0
10:00 PM - 11:00 PM	49.1	58.7	47.1
11:00 PM - 12:00 AM	48.6	61.4	46.4
12:00 AM - 01:00 AM	48.6	67.4	46.4
01:00 AM - 02:00 AM	48.1	60.2	46.3
02:00 AM - 03:00 AM	47.3	61.0	45.0
03:00 AM - 04:00 AM	47.2	63.6	45.1
04:00 AM - 05:00 AM	53.2	72.5	45.8
05:00 AM - 06:00 AM	53.6	66.3	49.3
06:00 AM - 07:00 AM	63.3	74.5	55.8
07:00 AM - 08:00 AM	66.6	78.1	62.9
08:00 AM - 09:00 AM	52.4	67.3	50.1
09:00 AM - 10:00 AM	53.9	66.8	50.3
10:00 AM - 11:00 AM	66.7	77.7	63.3
11:00 AM - 12:00 PM	64.8	78.8	53.3
12:00 PM - 01:00 PM	54.9	64.6	51.9

Leq Average 24 hrs. (dB(A)) 59.3
Lmax (dB(A)) 83.3
L90 (dB(A)) 49.3
Ldn (dB(A)) 62.9

Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Chontichak

Chonticha Subongkoch
Scientist (3)

Approved by

Supot S

Supot Salamteh
Section Head



Analysis / Test Report



TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515852

Date Received : Mar 31, 2025
Date Reported : Apr 03, 2025
Report Number: 3274652-1

Page 1 of 1

Sample Number 2515852-16
Parameter Noise (Leq 24 hrs.)
Location โรงเรียนบ้านมาบตาพุด
Measurement Date Mar 25 - Mar 26, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122579

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	59.3	72.9	54.3
02:00 PM - 03:00 PM	63.2	73.6	60.3
03:00 PM - 04:00 PM	58.9	70.7	52.9
04:00 PM - 05:00 PM	55.7	69.3	51.7
05:00 PM - 06:00 PM	53.1	68.8	48.9
06:00 PM - 07:00 PM	51.6	69.0	48.5
07:00 PM - 08:00 PM	51.6	63.6	48.9
08:00 PM - 09:00 PM	51.0	66.5	48.8
09:00 PM - 10:00 PM	51.0	67.2	48.0
10:00 PM - 11:00 PM	50.7	66.1	48.1
11:00 PM - 12:00 AM	50.2	64.2	48.0
12:00 AM - 01:00 AM	48.1	61.2	45.7
01:00 AM - 02:00 AM	47.1	64.4	45.2
02:00 AM - 03:00 AM	46.9	60.9	45.1
03:00 AM - 04:00 AM	47.2	60.2	45.1
04:00 AM - 05:00 AM	52.6	70.6	45.7
05:00 AM - 06:00 AM	54.8	71.4	50.0
06:00 AM - 07:00 AM	67.7	98.6	54.4
07:00 AM - 08:00 AM	67.7	84.6	52.4
08:00 AM - 09:00 AM	61.1	72.9	53.1
09:00 AM - 10:00 AM	55.0	69.3	52.0
10:00 AM - 11:00 AM	66.6	90.4	59.6
11:00 AM - 12:00 PM	67.1	88.2	57.6
12:00 PM - 01:00 PM	57.5	64.8	55.4

Leq Average 24 hrs. (dB(A)) 60.9
Lmax (dB(A)) 98.6
L90 (dB(A)) 48.9
Ldn (dB(A)) 65.8

Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Chontichak

Chonticha Subongkoch
Scientist (3)

Approved by

Supot S

Supot Salamteh
Section Head



Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location :

Lot ID: 2515852

Date Received : Mar 31, 2025

Date Reported : Apr 03, 2025

Report Number: 3274653-1

Page 1 of 1

Sample Number 2515852-17
Parameter Noise (Leq 24 hrs.)
Location โรงเรียนบ้านมาบตาพุด
Measurement Date Mar 26 - Mar 27, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122579

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	56.6	68.2	54.2
02:00 PM - 03:00 PM	62.9	78.8	58.4
03:00 PM - 04:00 PM	58.8	73.5	53.8
04:00 PM - 05:00 PM	58.1	74.6	53.1
05:00 PM - 06:00 PM	56.3	71.4	50.7
06:00 PM - 07:00 PM	52.4	67.9	48.9
07:00 PM - 08:00 PM	51.6	63.2	48.8
08:00 PM - 09:00 PM	51.4	66.0	48.9
09:00 PM - 10:00 PM	51.9	67.2	49.2
10:00 PM - 11:00 PM	51.0	67.5	47.7
11:00 PM - 12:00 AM	50.5	67.9	46.7
12:00 AM - 01:00 AM	48.2	65.6	45.8
01:00 AM - 02:00 AM	48.1	59.9	45.3
02:00 AM - 03:00 AM	46.3	55.1	44.8
03:00 AM - 04:00 AM	46.6	55.3	45.0
04:00 AM - 05:00 AM	48.2	59.6	45.5
05:00 AM - 06:00 AM	54.2	67.6	48.5
06:00 AM - 07:00 AM	59.4	74.1	54.7
07:00 AM - 08:00 AM	63.7	77.1	56.2
08:00 AM - 09:00 AM	56.5	70.3	53.5
09:00 AM - 10:00 AM	56.2	70.5	52.3
10:00 AM - 11:00 AM	61.6	67.8	59.2
11:00 AM - 12:00 PM	65.2	76.7	61.5
12:00 PM - 01:00 PM	60.3	75.7	54.8

Leq Average 24 hrs. (dB(A)) 58.1
Lmax (dB(A)) 78.8
L90 (dB(A)) 49.2
Ldn (dB(A)) 61.0

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

Chontichak

Chonticha Subongkoch
Scientist (3)

Approved by

Supot S

Supot Salamteh
Section Head

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Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515852
Date Received : Mar 31, 2025
Date Reported : Apr 03, 2025
Report Number: 3274654-1

Page 1 of 1

Sample Number 2515852-18
Parameter Noise (Leq 24 hrs.)
Location โรงเรียนบ้านมาบตาพุด
Measurement Date Mar 27 - Mar 28, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122579

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	56.0	67.1	53.5
02:00 PM - 03:00 PM	56.4	68.1	54.0
03:00 PM - 04:00 PM	58.4	74.2	55.2
04:00 PM - 05:00 PM	57.6	75.9	53.1
05:00 PM - 06:00 PM	57.2	76.0	52.5
06:00 PM - 07:00 PM	53.5	69.4	49.4
07:00 PM - 08:00 PM	52.5	69.1	49.3
08:00 PM - 09:00 PM	52.9	68.1	49.5
09:00 PM - 10:00 PM	52.6	63.3	50.7
10:00 PM - 11:00 PM	52.3	66.9	50.1
11:00 PM - 12:00 AM	52.4	63.9	50.3
12:00 AM - 01:00 AM	51.0	66.2	46.9
01:00 AM - 02:00 AM	48.7	67.1	45.6
02:00 AM - 03:00 AM	47.7	59.9	45.6
03:00 AM - 04:00 AM	47.5	61.6	45.5
04:00 AM - 05:00 AM	47.0	56.3	45.3
05:00 AM - 06:00 AM	48.2	55.2	45.9
06:00 AM - 07:00 AM	53.2	64.6	49.4
07:00 AM - 08:00 AM	56.5	71.4	52.2
08:00 AM - 09:00 AM	68.1	84.6	52.4
09:00 AM - 10:00 AM	55.3	66.7	51.9
10:00 AM - 11:00 AM	52.7	65.1	50.5
11:00 AM - 12:00 PM	58.7	78.1	53.6
12:00 PM - 01:00 PM	55.5	74.6	51.7

Leq Average 24 hrs. (dB(A)) 57.3
Lmax (dB(A)) 84.6
L90 (dB(A)) 50.3
Ldn (dB(A)) 59.6

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

Chontichak

Chonticha Subongkoch
Scientist (3)

Approved by

Supot S

Supot Salamteh
Section Head



Analysis / Test Report



TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location :

Lot ID: 2515852

Date Received : Mar 31, 2025

Date Reported : Apr 03, 2025

Report Number: 3274655-1

Page 1 of 1

Sample Number : 2515852-19
Parameter : Noise (Leq 24 hrs.)
Location : โรงเรียนบ้านมาบตาพุด
Measurement Date : Mar 28 - Mar 29, 2025
Measurement by : Santi Chaichana
Sound Level meter : Serial No. 1122579

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	53.8	63.8	51.1
02:00 PM - 03:00 PM	53.7	64.7	51.4
03:00 PM - 04:00 PM	55.5	73.5	52.7
04:00 PM - 05:00 PM	55.1	69.1	52.2
05:00 PM - 06:00 PM	54.5	70.2	51.4
06:00 PM - 07:00 PM	52.3	64.0	48.8
07:00 PM - 08:00 PM	51.4	68.6	49.0
08:00 PM - 09:00 PM	52.0	69.9	49.2
09:00 PM - 10:00 PM	50.7	63.3	48.5
10:00 PM - 11:00 PM	51.5	69.5	48.7
11:00 PM - 12:00 AM	50.9	64.4	48.5
12:00 AM - 01:00 AM	49.4	64.2	46.3
01:00 AM - 02:00 AM	48.4	60.4	45.8
02:00 AM - 03:00 AM	47.7	61.9	45.3
03:00 AM - 04:00 AM	47.5	58.4	45.4
04:00 AM - 05:00 AM	48.9	62.5	46.3
05:00 AM - 06:00 AM	47.8	57.7	45.5
06:00 AM - 07:00 AM	52.3	72.0	47.1
07:00 AM - 08:00 AM	52.8	65.0	49.7
08:00 AM - 09:00 AM	52.4	67.3	48.8
09:00 AM - 10:00 AM	51.1	61.7	48.2
10:00 AM - 11:00 AM	51.6	66.7	49.2
11:00 AM - 12:00 PM	52.2	68.2	49.4
12:00 PM - 01:00 PM	50.7	63.6	47.8

Leq Average 24 hrs. (dB(A)) : 52.0
Lmax (dB(A)) : 73.5
L90 (dB(A)) : 48.7
Ldn (dB(A)) : 56.8

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

Chontichak

Chonticha Subongkoch
Scientist (3)

Approved by

Supot S

Supot Salamteh
Section Head



Analysis / Test Report



TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location :

Lot ID: 2515852

Date Received : Mar 31, 2025

Date Reported : Apr 03, 2025

Report Number: 3274656-1

Page 1 of 1

Sample Number : 2515852-20
Parameter : Noise (Leq 24 hrs.)
Location : โรงเรียนบ้านมาบตาพุด
Measurement Date : Mar 29 - Mar 30, 2025
Measurement by : Santi Chaichana
Sound Level meter : Serial No. 1122579

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	51.9	69.2	49.0
02:00 PM - 03:00 PM	51.1	68.5	48.3
03:00 PM - 04:00 PM	51.2	65.2	48.5
04:00 PM - 05:00 PM	51.4	70.3	48.4
05:00 PM - 06:00 PM	52.6	70.1	49.4
06:00 PM - 07:00 PM	52.5	67.3	50.0
07:00 PM - 08:00 PM	52.5	66.2	50.3
08:00 PM - 09:00 PM	52.4	67.7	50.0
09:00 PM - 10:00 PM	52.3	62.5	50.4
10:00 PM - 11:00 PM	52.2	61.8	50.1
11:00 PM - 12:00 AM	51.8	68.9	49.3
12:00 AM - 01:00 AM	50.3	64.5	46.6
01:00 AM - 02:00 AM	48.7	67.8	45.9
02:00 AM - 03:00 AM	49.3	66.6	46.0
03:00 AM - 04:00 AM	49.2	65.2	46.4
04:00 AM - 05:00 AM	48.1	63.1	45.9
05:00 AM - 06:00 AM	48.6	62.0	46.4
06:00 AM - 07:00 AM	51.7	67.7	47.7
07:00 AM - 08:00 AM	53.9	67.4	49.4
08:00 AM - 09:00 AM	59.0	76.3	49.6
09:00 AM - 10:00 AM	51.7	63.3	49.1
10:00 AM - 11:00 AM	52.6	62.3	50.2
11:00 AM - 12:00 PM	69.4	81.9	51.3
12:00 PM - 01:00 PM	54.4	69.8	50.8

Leq Average 24 hrs. (dB(A)) : 57.3
Lmax (dB(A)) : 81.9
L90 (dB(A)) : 49.1
Ldn (dB(A)) : 59.5

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

Chontichak

Chonticha Subongkoch
Scientist (3)

Approved by

Supot S

Supot Salamteh
Section Head



Analysis / Test Report

TESTING
No.0042

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2515852
Date Received : Mar 31, 2025
Date Reported : Apr 03, 2025
Report Number: 3274657-1

Page 1 of 1

Sample Number 2515852-21
Parameter Noise (Leq 24 hrs.)
Location โรงเรียนบ้านมาบตาพุด
Measurement Date Mar 30 - Mar 31, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122579

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	66.3	83.2	51.0
02:00 PM - 03:00 PM	52.7	63.7	50.1
03:00 PM - 04:00 PM	52.1	63.0	49.6
04:00 PM - 05:00 PM	52.4	65.6	49.6
05:00 PM - 06:00 PM	53.2	65.8	50.5
06:00 PM - 07:00 PM	53.4	70.2	50.4
07:00 PM - 08:00 PM	52.7	64.5	50.5
08:00 PM - 09:00 PM	52.2	65.6	49.7
09:00 PM - 10:00 PM	51.7	61.4	49.2
10:00 PM - 11:00 PM	51.5	62.0	49.0
11:00 PM - 12:00 AM	50.1	62.3	48.1
12:00 AM - 01:00 AM	49.9	62.5	47.3
01:00 AM - 02:00 AM	50.3	61.0	47.0
02:00 AM - 03:00 AM	51.6	57.9	47.4
03:00 AM - 04:00 AM	50.9	56.5	47.7
04:00 AM - 05:00 AM	49.5	58.6	47.1
05:00 AM - 06:00 AM	49.3	65.1	47.2
06:00 AM - 07:00 AM	52.7	64.9	49.4
07:00 AM - 08:00 AM	55.7	68.1	51.9
08:00 AM - 09:00 AM	55.7	69.7	52.6
09:00 AM - 10:00 AM	53.6	65.8	50.8
10:00 AM - 11:00 AM	55.2	76.2	49.2
11:00 AM - 12:00 PM	55.8	67.0	51.0
12:00 PM - 01:00 PM	56.6	67.2	51.9

Leq Average 24 hrs. (dB(A)) 55.7
Lmax (dB(A)) 83.2
L90 (dB(A)) 49.6
Ldn (dB(A)) 58.9

Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Chontichak

Chonticha Subongkoch
Scientist (3)

Approved by

Supot S

Supot Salamteh
Section Head

ภาคผนวก ค-5

ใบรับรองผลการตรวจวัดระดับเสียงในสถานประกอบการ



Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 253467

Date Received : Feb 10, 2025
Date Reported : Feb 14, 2025
Report Number: 3235283-1

Page 1 of 1

Sample Number 253467-1
Parameter Noise (Leq 12 hrs.)
Location MMA 1 บริเวณ Reactor Unit 2000
Measurement Date Feb 07, 2025
Measurement by Amnat Wongsakhen

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	81.8	83.0	81.5
09:00 AM - 10:00 AM	81.6	82.9	81.4
10:00 AM - 11:00 AM	81.5	82.8	81.3
11:00 AM - 12:00 PM	81.4	82.4	81.3
12:00 PM - 01:00 PM	81.4	82.0	81.2
01:00 PM - 02:00 PM	81.3	82.7	81.2
02:00 PM - 03:00 PM	81.4	82.2	81.3
03:00 PM - 04:00 PM	81.5	84.6	81.3
04:00 PM - 05:00 PM	81.7	86.5	81.4
05:00 PM - 06:00 PM	81.5	82.3	81.3
06:00 PM - 07:00 PM	81.6	82.9	81.4
07:00 PM - 08:00 PM	81.7	82.5	81.5

Leq Average 12 hrs. (dB(A)) 81.5
Lmax (dB(A)) 86.5
Standard (dB(A)) 87
Reference Method : ISO1996-1 and 1996-2
Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย
ในการประกอบกิจการโรงงานเกี่ยวกับสภาวะแวดล้อมในการทำงาน พ.ศ.๒๕๔๖

Technical Management

Chontichak

Chonticha Subongkoch
Scientist (3)

Approved by

Supot S

Supot Salamteh
Section Head

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O :

Project Name : Environmental Monitoring

Project Location :

Lot ID: 2518726

Date Received : Mar 05, 2025

Date Reported : Mar 08, 2025

Report Number: 3253297-1

Page 1 of 1

Sample Number 2518726-1
Parameter Noise (Leq 12 hrs.)
Location MMA 1 บริเวณ Unit 3100A/B
Measurement Date Mar 03, 2025
Measurement by Tinnakorn Kumpasee

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:30 AM - 09:30 AM	83.4	84.1	83.4
09:30 AM - 10:30 AM	83.2	84.1	83.3
10:30 AM - 11:30 AM	83.3	84.1	83.3
11:30 AM - 12:30 PM	83.3	83.9	83.3
12:30 PM - 01:30 PM	83.4	84.0	83.4
01:30 PM - 02:30 PM	83.2	83.9	83.2
02:30 PM - 03:30 PM	83.3	83.8	83.3
03:30 PM - 04:30 PM	83.2	84.1	83.2
04:30 PM - 05:30 PM	83.2	84.1	83.3
05:30 PM - 06:30 PM	83.3	84.1	83.3
06:30 PM - 07:30 PM	83.3	83.9	83.3
07:30 PM - 08:30 PM	83.4	84.0	83.4

Leq Average 12 hrs. (dB(A))

83.3

Lmax (dB(A))

84.1

Standard (dB(A))

87

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

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 253467

Date Received : Feb 10, 2025
Date Reported : Feb 14, 2025
Report Number: 3235285-1

Page 1 of 1

Sample Number 253467-3
Parameter Noise (Leq 12 hrs.)
Location MMA 1 บริเวณนอกอาคาร Compressor
Measurement Date Feb 07, 2025
Measurement by Amnat Wongsakhen

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	82.9	84.8	82.4
09:00 AM - 10:00 AM	83.3	84.9	82.9
10:00 AM - 11:00 AM	83.3	84.9	83.0
11:00 AM - 12:00 PM	83.5	86.1	83.1
12:00 PM - 01:00 PM	83.5	86.7	83.1
01:00 PM - 02:00 PM	83.6	85.0	83.3
02:00 PM - 03:00 PM	83.9	85.1	83.6
03:00 PM - 04:00 PM	84.0	85.8	83.7
04:00 PM - 05:00 PM	84.4	87.7	84.0
05:00 PM - 06:00 PM	84.3	85.3	84.0
06:00 PM - 07:00 PM	84.5	85.7	84.2
07:00 PM - 08:00 PM	85.0	86.3	84.7

Leq Average 12 hrs. (dB(A)) 83.9
Lmax (dB(A)) 87.7
Standard (dB(A)) 87
Reference Method : ISO1996-1 and 1996-2
Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย
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Technical Management

Chontichak

Chonticha Subongkoch
Scientist (3)

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271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 253467

Date Received : Feb 10, 2025
Date Reported : Feb 14, 2025
Report Number: 3235286-1

Page 1 of 1

Sample Number 253467-4
Parameter Noise (Leq 12 hrs.)
Location MMA 1 บริเวณ Steam Header
Measurement Date Feb 07, 2025
Measurement by Amnat Wongsakhen

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	81.8	83.0	81.5
09:00 AM - 10:00 AM	81.6	82.9	81.4
10:00 AM - 11:00 AM	81.5	82.8	81.3
11:00 AM - 12:00 PM	81.4	82.4	81.3
12:00 PM - 01:00 PM	81.4	82.0	81.2
01:00 PM - 02:00 PM	81.3	82.7	81.2
02:00 PM - 03:00 PM	81.4	82.2	81.3
03:00 PM - 04:00 PM	81.5	84.6	81.3
04:00 PM - 05:00 PM	81.7	86.5	81.4
05:00 PM - 06:00 PM	81.5	82.3	81.3
06:00 PM - 07:00 PM	81.6	82.9	81.4
07:00 PM - 08:00 PM	81.7	82.5	81.5
Leq Average 12 hrs. (dB(A))	81.5		
Lmax (dB(A))		86.5	
Standard (dB(A))	87	140	
Reference Method : ISO1996-1 and 1996-2			
Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย ในการประกอบกิจการโรงงานเกี่ยวกับสภาวะแวดล้อมในการทำงาน พ.ศ.๒๕๔๖			

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271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 253467

Date Received : Feb 10, 2025
Date Reported : Feb 14, 2025
Report Number: 3235287-1

Page 1 of 1

Sample Number 253467-5
Parameter Noise (Leq 12 hrs.)
Location MMA 1 ชั้น 1 ใกล้บริเวณ Reboiler Pump ของ BMA#1 Unit
Measurement Date Feb 07, 2025
Measurement by Amnat Wongsakhen

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	75.5	82.5	73.8
09:00 AM - 10:00 AM	75.0	84.3	72.6
10:00 AM - 11:00 AM	76.7	81.4	75.7
11:00 AM - 12:00 PM	76.7	80.9	75.7
12:00 PM - 01:00 PM	76.9	79.7	75.9
01:00 PM - 02:00 PM	77.0	83.6	75.8
02:00 PM - 03:00 PM	76.5	78.5	75.3
03:00 PM - 04:00 PM	74.9	78.9	73.0
04:00 PM - 05:00 PM	72.6	80.2	71.8
05:00 PM - 06:00 PM	71.7	79.6	71.3
06:00 PM - 07:00 PM	71.5	79.5	70.9
07:00 PM - 08:00 PM	71.8	79.1	71.0

Leq Average 12 hrs. (dB(A))

75.2

Lmax (dB(A))

84.3

Standard (dB(A))

87

140

Reference Method : ISO1996-1 and 1996-2

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย

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Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 253467

Date Received : Feb 10, 2025
Date Reported : Feb 14, 2025
Report Number: 3235288-1

Page 1 of 1

Sample Number 253467-6
Parameter Noise (Leq 12 hrs.)
Location MMA 1 ชั้น 1 ใกล้บริเวณ Reboiler Pump ของ BMA#2 Unit
Measurement Date Feb 07, 2025
Measurement by Amnat Wongsakhen

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	75.0	83.9	72.3
09:00 AM - 10:00 AM	73.1	79.7	72.0
10:00 AM - 11:00 AM	73.7	77.0	73.2
11:00 AM - 12:00 PM	73.8	77.6	73.3
12:00 PM - 01:00 PM	73.8	77.5	73.4
01:00 PM - 02:00 PM	74.1	79.7	73.6
02:00 PM - 03:00 PM	74.2	76.8	73.8
03:00 PM - 04:00 PM	73.9	80.6	73.3
04:00 PM - 05:00 PM	73.6	75.9	73.1
05:00 PM - 06:00 PM	73.5	76.2	73.2
06:00 PM - 07:00 PM	73.4	76.4	73.0
07:00 PM - 08:00 PM	73.6	78.2	73.0

Leq Average 12 hrs. (dB(A)) 73.8
Lmax (dB(A)) 83.9
Standard (dB(A)) 87
Reference Method : ISO1996-1 and 1996-2
Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย
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P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 253467

Date Received : Feb 10, 2025
Date Reported : Feb 14, 2025
Report Number: 3235289-1

Page 1 of 1

Sample Number 253467-7
Parameter Noise (Leq 12 hrs.)
Location MMA 2 บริเวณ Reactor Unit 2000
Measurement Date Feb 07, 2025
Measurement by Amnat Wongsakhen

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	83.2	85.0	82.8
09:00 AM - 10:00 AM	83.0	84.0	82.6
10:00 AM - 11:00 AM	82.9	83.9	82.6
11:00 AM - 12:00 PM	82.9	84.0	82.6
12:00 PM - 01:00 PM	83.0	83.9	82.6
01:00 PM - 02:00 PM	83.0	83.9	82.7
02:00 PM - 03:00 PM	83.1	84.1	82.8
03:00 PM - 04:00 PM	83.2	84.2	82.8
04:00 PM - 05:00 PM	83.4	84.4	83.0
05:00 PM - 06:00 PM	83.6	84.5	83.3
06:00 PM - 07:00 PM	83.3	84.3	82.9
07:00 PM - 08:00 PM	82.9	84.0	82.6

Leq Average 12 hrs. (dB(A)) 83.1
Lmax (dB(A)) 85.0
Standard (dB(A)) 87
Reference Method : ISO1996-1 and 1996-2
Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย
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P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 253467

Date Received : Feb 10, 2025
Date Reported : Feb 14, 2025
Report Number: 3235290-1

Page 1 of 1

Sample Number 253467-8
Parameter Noise (Leq 12 hrs.)
Location MMA 2 บริเวณ Unit 3100A/B
Measurement Date Feb 07, 2025
Measurement by Amnat Wongsakhen

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	82.5	93.5	80.2
09:00 AM - 10:00 AM	82.1	92.8	80.2
10:00 AM - 11:00 AM	81.9	92.1	80.1
11:00 AM - 12:00 PM	82.0	91.9	80.1
12:00 PM - 01:00 PM	82.0	91.7	80.0
01:00 PM - 02:00 PM	81.9	91.0	80.0
02:00 PM - 03:00 PM	81.9	91.1	80.0
03:00 PM - 04:00 PM	82.0	91.6	80.1
04:00 PM - 05:00 PM	82.0	92.0	80.1
05:00 PM - 06:00 PM	82.3	91.8	80.3
06:00 PM - 07:00 PM	82.3	92.0	80.3
07:00 PM - 08:00 PM	82.3	91.9	80.4

Leq Average 12 hrs. (dB(A)) 82.1
Lmax (dB(A)) 93.5
Standard (dB(A)) 87
Reference Method : ISO1996-1 and 1996-2
Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย
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P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 253467

Date Received : Feb 10, 2025
Date Reported : Feb 14, 2025
Report Number: 3235291-1

Page 1 of 1

Sample Number 253467-9
Parameter Noise (Leq 12 hrs.)
Location MMA 2 บริเวณอาคาร Compressor
Measurement Date Feb 07, 2025
Measurement by Amnat Wongsakhen

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	82.7	89.0	81.6
09:00 AM - 10:00 AM	81.9	84.1	81.4
10:00 AM - 11:00 AM	82.0	84.9	81.4
11:00 AM - 12:00 PM	82.2	84.6	81.5
12:00 PM - 01:00 PM	81.9	84.9	81.3
01:00 PM - 02:00 PM	81.8	84.8	81.2
02:00 PM - 03:00 PM	81.9	85.1	81.3
03:00 PM - 04:00 PM	81.8	83.4	81.3
04:00 PM - 05:00 PM	82.0	84.3	81.4
05:00 PM - 06:00 PM	82.0	83.5	81.5
06:00 PM - 07:00 PM	82.0	84.8	81.5
07:00 PM - 08:00 PM	81.8	87.7	81.3

Leq Average 12 hrs. (dB(A)) 82.0
Lmax (dB(A)) 89.0
Standard (dB(A)) 87
Reference Method : ISO1996-1 and 1996-2
Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย
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Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O :

Project Name : Environmental Monitoring

Project Location :

Lot ID: 2518726

Date Received : Mar 05, 2025

Date Reported : Mar 08, 2025

Report Number: 3253298-1

Page 1 of 1

Sample Number 2518726-2
Parameter Noise (Leq 12 hrs.)
Location MMA 2 บริเวณ Steam Header
Measurement Date Mar 03, 2025
Measurement by Tinnakorn Kumpasee

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:30 AM - 09:30 AM	83.6	88.0	83.5
09:30 AM - 10:30 AM	83.5	84.4	83.5
10:30 AM - 11:30 AM	83.5	84.4	83.5
11:30 AM - 12:30 PM	83.4	84.3	83.4
12:30 PM - 01:30 PM	83.5	86.4	83.5
01:30 PM - 02:30 PM	83.6	85.3	83.6
02:30 PM - 03:30 PM	83.9	85.8	83.9
03:30 PM - 04:30 PM	84.1	87.0	84.2
04:30 PM - 05:30 PM	83.4	84.3	83.4
05:30 PM - 06:30 PM	83.5	86.4	83.5
06:30 PM - 07:30 PM	83.6	85.3	83.6
07:30 PM - 08:30 PM	83.9	85.8	83.9

Leq Average 12 hrs. (dB(A))

83.6

Lmax (dB(A))

88.0

Standard (dB(A))

87

140

Reference Method : ISO1996-1 and 1996-2

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย

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Thanita Kulsuriwong
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P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 253467

Date Received : Feb 10, 2025
Date Reported : Feb 14, 2025
Report Number: 3235293-1

Page 1 of 1

Sample Number 253467-11
Parameter Noise (Leq 12 hrs.)
Location MMA 2 ในอาคาร Ware House
Measurement Date Feb 07, 2025
Measurement by Amnat Wongsakhen

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	81.7	83.5	81.2
09:00 AM - 10:00 AM	81.5	83.0	81.1
10:00 AM - 11:00 AM	81.7	83.6	81.3
11:00 AM - 12:00 PM	81.6	83.4	81.2
12:00 PM - 01:00 PM	81.6	83.1	81.2
01:00 PM - 02:00 PM	81.4	83.4	81.0
02:00 PM - 03:00 PM	81.5	83.4	81.2
03:00 PM - 04:00 PM	81.7	83.5	81.2
04:00 PM - 05:00 PM	81.7	83.5	81.3
05:00 PM - 06:00 PM	81.8	83.2	81.4
06:00 PM - 07:00 PM	81.9	83.4	81.5
07:00 PM - 08:00 PM	81.7	83.2	81.2
Leq Average 12 hrs. (dB(A))	81.7		
Lmax (dB(A))		83.6	
Standard (dB(A))	87	140	
Reference Method : ISO1996-1 and 1996-2			
Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย ในการประกอบกิจการโรงงานเกี่ยวกับสภาวะแวดล้อมในการทำงาน พ.ศ.๒๕๔๖			

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ภาคผนวก ค-6

ใบรับรองผลการตรวจวัดระดับเสียงที่พนักงานได้รับเฉลี่ยตลอดเวลาทำงาน (TWA)



Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O :

Project Name : Environmental Monitoring

Project Location : MMA Site 3

Lot ID: 2524814

Date Received : Mar 18, 2025

Date Reported : Mar 19, 2025

Report Number : 3258222-1

Page 1 of 1

Sample Number 2524814-1
Sampled Date Mar 17, 2025
Sample Description Noise Dose (12 hrs.)
Location Field #1000 M1
Personal Sampling คุณณัฐวัฒน์ พรหมจันทร์
Date Analysis Commenced Mar 19, 2025

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Noise Dose (12 hrs.) (Calculated from Lavg)	07:30 AM - 07:30 PM	%	-	1	3.3	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
Noise Dose (8 hrs.)	07:30 AM - 07:30 PM	%	-	1	3.1	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (12 hrs.) (Calculated from Lavg)	07:30 AM - 07:30 PM	dB(A)	-	-	68.2	83*	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (8 hrs.)	07:30 AM - 07:30 PM	dB(A)	-	-	69.9	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong

Guideline :

- MOL : 1. Notification of Department Labour Protection and Welfare on the Criteria and Procedures for Measurement and Analysis of Working Conditions in relation to Heat, Light or Noise Levels, including Duration and Types of Business that must perform (B.E. 2561)
2. Notification of Department of Labour Protection and Welfare on the Standard of Time Weighted Average (TWA) Noise Level (B.E. 2561)
* MOL: Recommended guideline limit for 12 working hours should not be over 83 dB(A)

Sampled By : Tinnakorn Kumpasee

Remark :

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

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

Approved by

Supot Salamteh
Section Head



Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 253478

Date Received : Feb 10, 2025
Date Reported : Feb 14, 2025
Report Number : 3211482-1

Page 2 of 8

Sample Number 253478-2
Sampled Date Feb 07, 2025
Sample Description Noise Dose
Location Field #2-3000 M1
Personal Sampling คุณสรพวัฒน์ พึ่งสุริยะ
Date Analysis Commenced Feb 11, 2025

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Noise Dose (12 hrs.) (Calculated from Lavg)	07:00 AM - 07:00 PM	%	-	1	91.2	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
Noise Dose (8 hrs.)	07:00 AM - 07:00 PM	%	-	1	85.1	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (12 hrs.) (Calculated from Lavg)	07:00 AM - 07:00 PM	dB(A)	-	-	82.6	83*	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (8 hrs.)	07:00 AM - 07:00 PM	dB(A)	-	-	84.3	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong

Guideline :

MOL : 1. Notification of Department Labour Protection and Welfare on the Criteria and Procedures for Measurement and Analysis of Working Conditions in relation to Heat, Light or Noise Levels, including Duration and Types of Business that must perform (B.E. 2561)
2. Notification of Department of Labour Protection and Welfare on the Standard of Time Weighted Average (TWA) Noise Level (B.E. 2561)
* MOL: Recommended guideline limit for 12 working hours should not be over 83 dB(A)

Sampled By : Amnat Wongsakhen

Remark :

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

Approved by

Supot Salamteh
Section Head

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 253478

Date Received : Feb 10, 2025
Date Reported : Feb 14, 2025
Report Number : 3211482-1

Page 3 of 8

Sample Number 253478-3
Sampled Date Feb 07, 2025
Sample Description Noise Dose
Location Field #4,5000 M1
Personal Sampling คุณอนุชา ไชยกันทะ
Date Analysis Commenced Feb 11, 2025

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Noise Dose (12 hrs.) (Calculated from Lavg)	07:00 AM - 07:00 PM	%	-	1	43.6	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
Noise Dose (8 hrs.)	07:00 AM - 07:00 PM	%	-	1	40.7	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (12 hrs.) (Calculated from Lavg)	07:00 AM - 07:00 PM	dB(A)	-	-	79.4	83*	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (8 hrs.)	07:00 AM - 07:00 PM	dB(A)	-	-	81.1	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong

Guideline :

MOL : 1. Notification of Department Labour Protection and Welfare on the Criteria and Procedures for Measurement and Analysis of Working Conditions in relation to Heat, Light or Noise Levels, including Duration and Types of Business that must perform (B.E. 2561)
2. Notification of Department of Labour Protection and Welfare on the Standard of Time Weighted Average (TWA) Noise Level (B.E. 2561)
* MOL: Recommended guideline limit for 12 working hours should not be over 83 dB(A)

Sampled By : Amnat Wongsakhen

Remark :

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

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O :

Project Name : Environmental Monitoring

Project Location :

Lot ID: 2518728

Date Received : Mar 05, 2025

Date Reported : Mar 06, 2025

Report Number : 3244131-1

Page 2 of 3

Sample Number 2518728-2
Sampled Date Mar 03, 2025
Sample Description Noise Dose
Location Field #1000 M2
Personal Sampling คุณบารมี ทวีคุณ
Date Analysis Commenced Mar 05, 2025

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Noise Dose (12 hrs.) (Calculated from Lavg)	07:40 AM - 07:40 PM	%	-	1	6.8	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
Noise Dose (8 hrs.)	07:40 AM - 07:40 PM	%	-	1	6.3	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (12 hrs.) (Calculated from Lavg)	07:40 AM - 07:40 PM	dB(A)	-	-	71.3	83*	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (8 hrs.)	07:40 AM - 07:40 PM	dB(A)	-	-	73.0	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong

Guideline :

MOL : 1. Notification of Department Labour Protection and Welfare on the Criteria and Procedures for Measurement and Analysis of Working Conditions in relation to Heat, Light or Noise Levels, including Duration and Types of Business that must perform (B.E. 2561)
2. Notification of Department of Labour Protection and Welfare on the Standard of Time Weighted Average (TWA) Noise Level (B.E. 2561)
* MOL: Recommended guideline limit for 12 working hours should not be over 83 dB(A)

Sampled By : Tinnakorn Kumpasee

Remark :

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

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O :

Project Name : Environmental Monitoring

Project Location :

Lot ID: 2518728

Date Received : Mar 05, 2025

Date Reported : Mar 06, 2025

Report Number : 3244131-1

Page 3 of 3

Sample Number 2518728-3
Sampled Date Mar 03, 2025
Sample Description Noise Dose
Location Field #2-3000 M2
Personal Sampling คุณอนุทิน ศรีอ่อน
Date Analysis Commenced Mar 05, 2025

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Noise Dose (12 hrs.) (Calculated from Lavg)	07:40 AM - 07:40 PM	%	-	1	60.3	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
Noise Dose (8 hrs.)	07:40 AM - 07:40 PM	%	-	1	56.2	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (12 hrs.) (Calculated from Lavg)	07:40 AM - 07:40 PM	dB(A)	-	-	80.8	83*	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (8 hrs.)	07:40 AM - 07:40 PM	dB(A)	-	-	82.5	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong

Guideline :

MOL : 1. Notification of Department Labour Protection and Welfare on the Criteria and Procedures for Measurement and Analysis of Working Conditions in relation to Heat, Light or Noise Levels, including Duration and Types of Business that must perform (B.E. 2561)
2. Notification of Department of Labour Protection and Welfare on the Standard of Time Weighted Average (TWA) Noise Level (B.E. 2561)
* MOL: Recommended guideline limit for 12 working hours should not be over 83 dB(A)

Sampled By : Tinnakorn Kumpasee

Remark :

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 253478

Date Received : Feb 10, 2025
Date Reported : Feb 14, 2025
Report Number : 3211482-1

Page 6 of 8

Sample Number 253478-6
Sampled Date Feb 07, 2025
Sample Description Noise Dose
Location Field #4,5000 M2
Personal Sampling คุณอาทิตย์ ทรายราช
Date Analysis Commenced Feb 11, 2025

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Noise Dose (12 hrs.) (Calculated from Lavg)	07:00 AM - 07:00 PM	%	-	1	22.9	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
Noise Dose (8 hrs.)	07:00 AM - 07:00 PM	%	-	1	21.4	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (12 hrs.) (Calculated from Lavg)	07:00 AM - 07:00 PM	dB(A)	-	-	76.6	83*	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (8 hrs.)	07:00 AM - 07:00 PM	dB(A)	-	-	78.3	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong

Guideline :

MOL : 1. Notification of Department Labour Protection and Welfare on the Criteria and Procedures for Measurement and Analysis of Working Conditions in relation to Heat, Light or Noise Levels, including Duration and Types of Business that must perform (B.E. 2561)
2. Notification of Department of Labour Protection and Welfare on the Standard of Time Weighted Average (TWA) Noise Level (B.E. 2561)
* MOL: Recommended guideline limit for 12 working hours should not be over 83 dB(A)

Sampled By : Amnat Wongsakhen

Remark :

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

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Supot Salamteh
Section Head

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P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 253478

Date Received : Feb 10, 2025
Date Reported : Feb 14, 2025
Report Number : 3211482-1

Page 7 of 8

Sample Number 253478-7
Sampled Date Feb 07, 2025
Sample Description Noise Dose
Location MAA 1-2 (M2)
Personal Sampling คุณโยธิน ดุพิลา
Date Analysis Commenced Feb 11, 2025

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Noise Dose (12 hrs.) (Calculated from Lavg)	07:00 AM - 07:00 PM	%	-	1	22.9	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
Noise Dose (8 hrs.)	07:00 AM - 07:00 PM	%	-	1	21.4	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (12 hrs.) (Calculated from Lavg)	07:00 AM - 07:00 PM	dB(A)	-	-	76.6	83*	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (8 hrs.)	07:00 AM - 07:00 PM	dB(A)	-	-	78.3	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong

Guideline :

MOL : 1. Notification of Department Labour Protection and Welfare on the Criteria and Procedures for Measurement and Analysis of Working Conditions in relation to Heat, Light or Noise Levels, including Duration and Types of Business that must perform (B.E. 2561)
2. Notification of Department of Labour Protection and Welfare on the Standard of Time Weighted Average (TWA) Noise Level (B.E. 2561)
* MOL: Recommended guideline limit for 12 working hours should not be over 83 dB(A)

Sampled By : Amnat Wongsakhen

Remark :

- LOD : Limit of Detection
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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 253478

Date Received : Feb 10, 2025
Date Reported : Feb 14, 2025
Report Number : 3211482-1

Page 8 of 8

Sample Number 253478-8
Sampled Date Feb 07, 2025
Sample Description Noise Dose
Location BMA 1-2 (M1)
Personal Sampling คุณจักรกฤษณ์ โกสสิทธิ์
Date Analysis Commenced Feb 11, 2025

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Noise Dose (12 hrs.) (Calculated from Lavg)	07:00 AM - 07:00 PM	%	-	1	19.0	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
Noise Dose (8 hrs.)	07:00 AM - 07:00 PM	%	-	1	17.8	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (12 hrs.) (Calculated from Lavg)	07:00 AM - 07:00 PM	dB(A)	-	-	75.8	83*	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (8 hrs.)	07:00 AM - 07:00 PM	dB(A)	-	-	77.5	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong

Guideline :

MOL : 1. Notification of Department Labour Protection and Welfare on the Criteria and Procedures for Measurement and Analysis of Working Conditions in relation to Heat, Light or Noise Levels, including Duration and Types of Business that must perform (B.E. 2561)
2. Notification of Department of Labour Protection and Welfare on the Standard of Time Weighted Average (TWA) Noise Level (B.E. 2561)
* MOL: Recommended guideline limit for 12 working hours should not be over 83 dB(A)

Sampled By : Amnat Wongsakhen

Remark :

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

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Supot Salamteh
Section Head

ภาคผนวก ค-7

ใบรับรองผลการตรวจวัดเส้นระดับเสียง (Noise Contour Map)

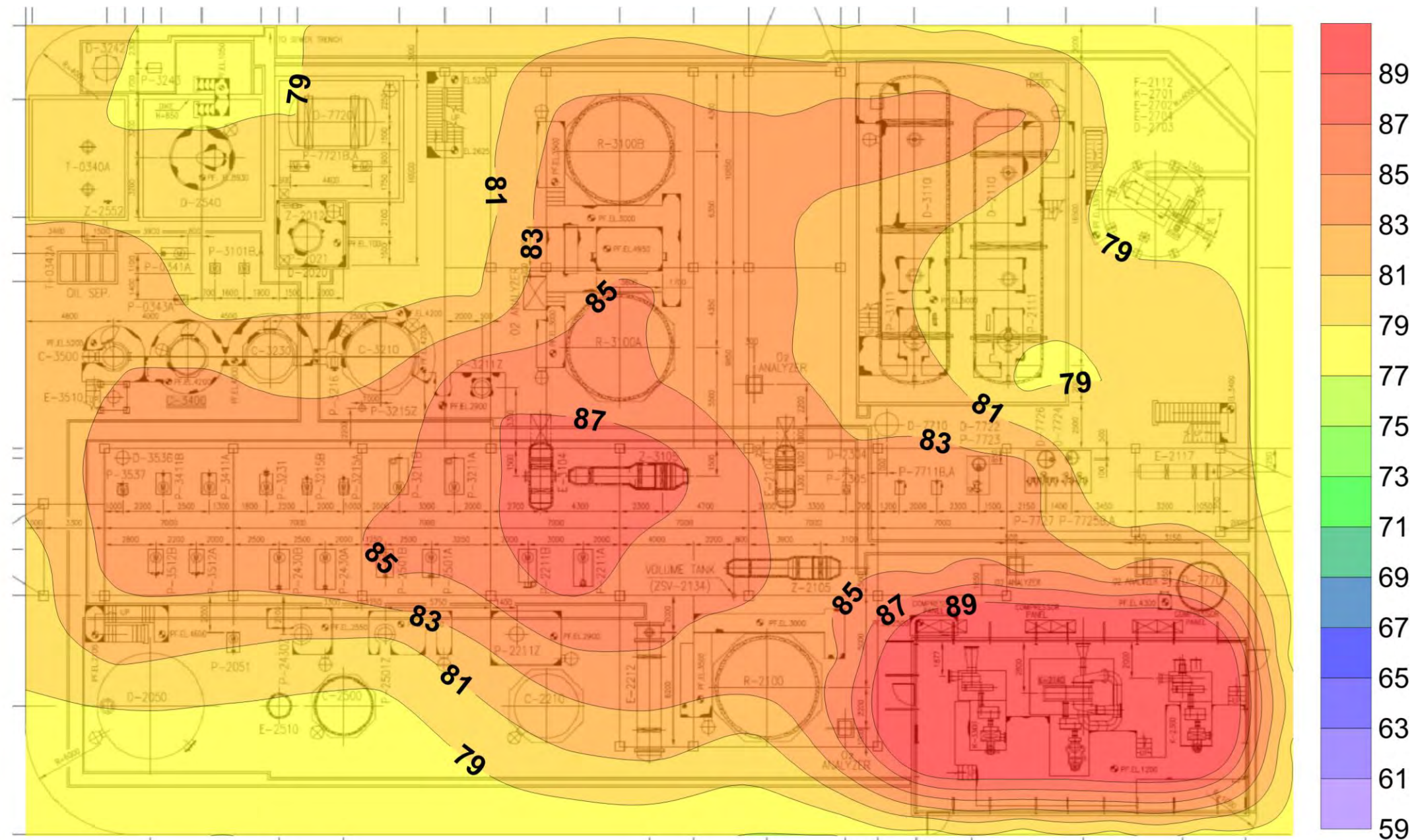
Noise Contour Map

THAI MMA Co., Ltd.

Reference Number : Lot 2432084-1

Measurement Date : Apr 29, 2024

#2000-#3000 Oxidation Unit M1 FL.1



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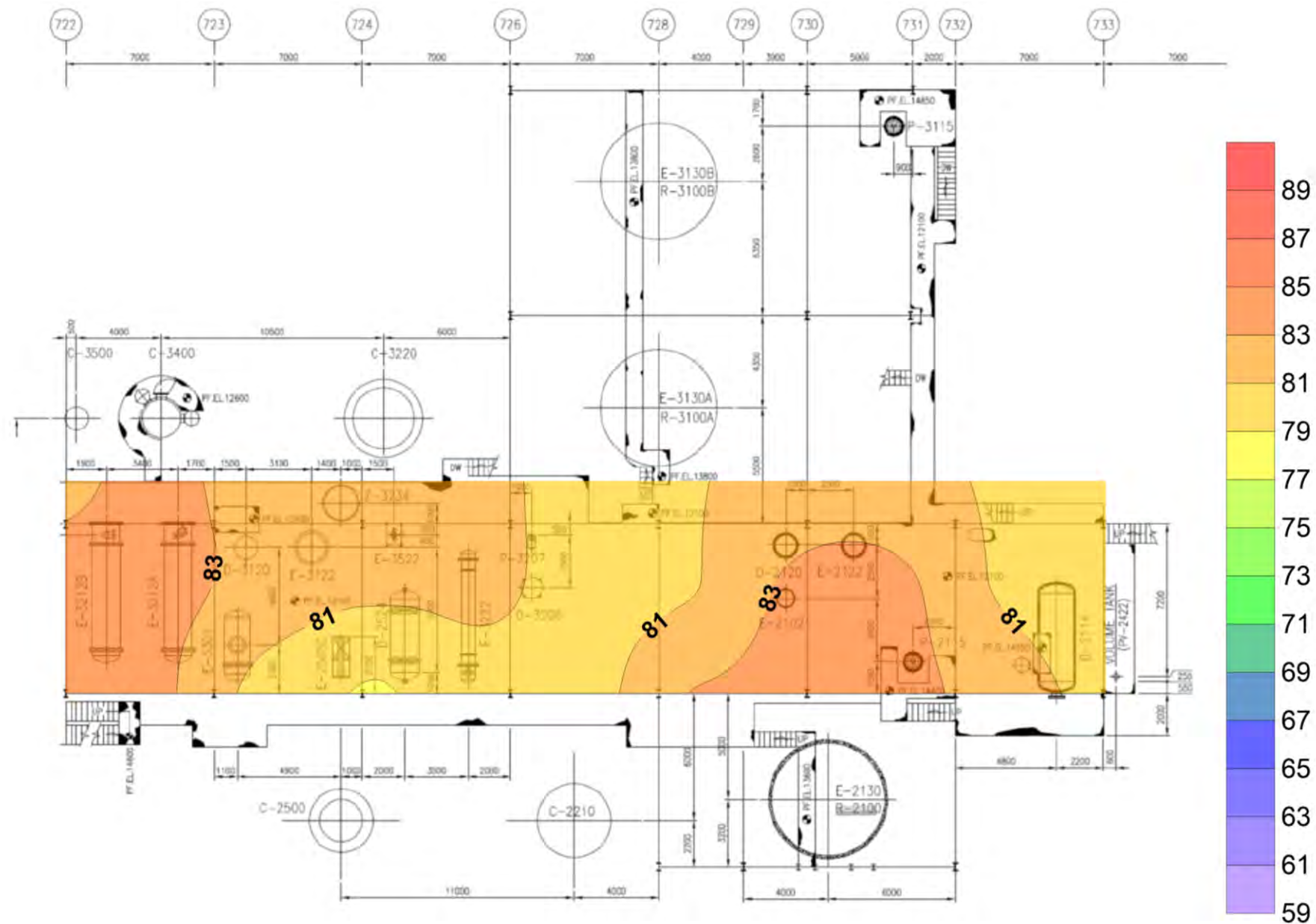
Noise Contour Map

THAI MMA Co., Ltd.

#2000-#3000 Oxidation Unit M1 FL.3

Reference Number : Lot 2432084-1

Measurement Date : Apr 29, 2024



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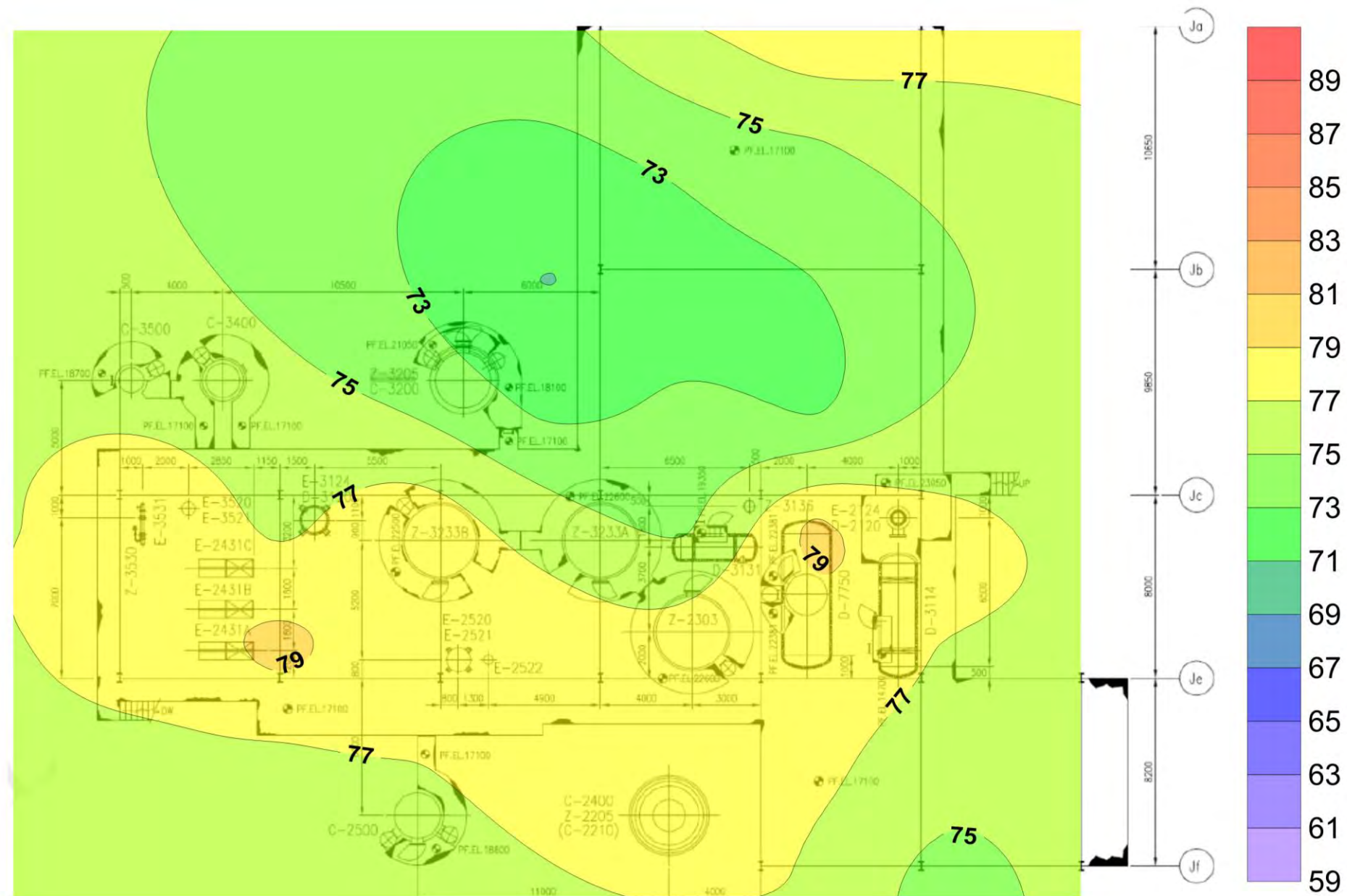
Noise Contour Map

THAI MMA Co., Ltd.

#2000-#3000 Oxidation Unit M1 FL.4

Reference Number : Lot 2432084-1

Measurement Date : Apr 29, 2024



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Measurement Date : Apr 29, 2024

#4000-#5000 MMA Recovery, Esterification Inhibitor Unit M1 FL.1





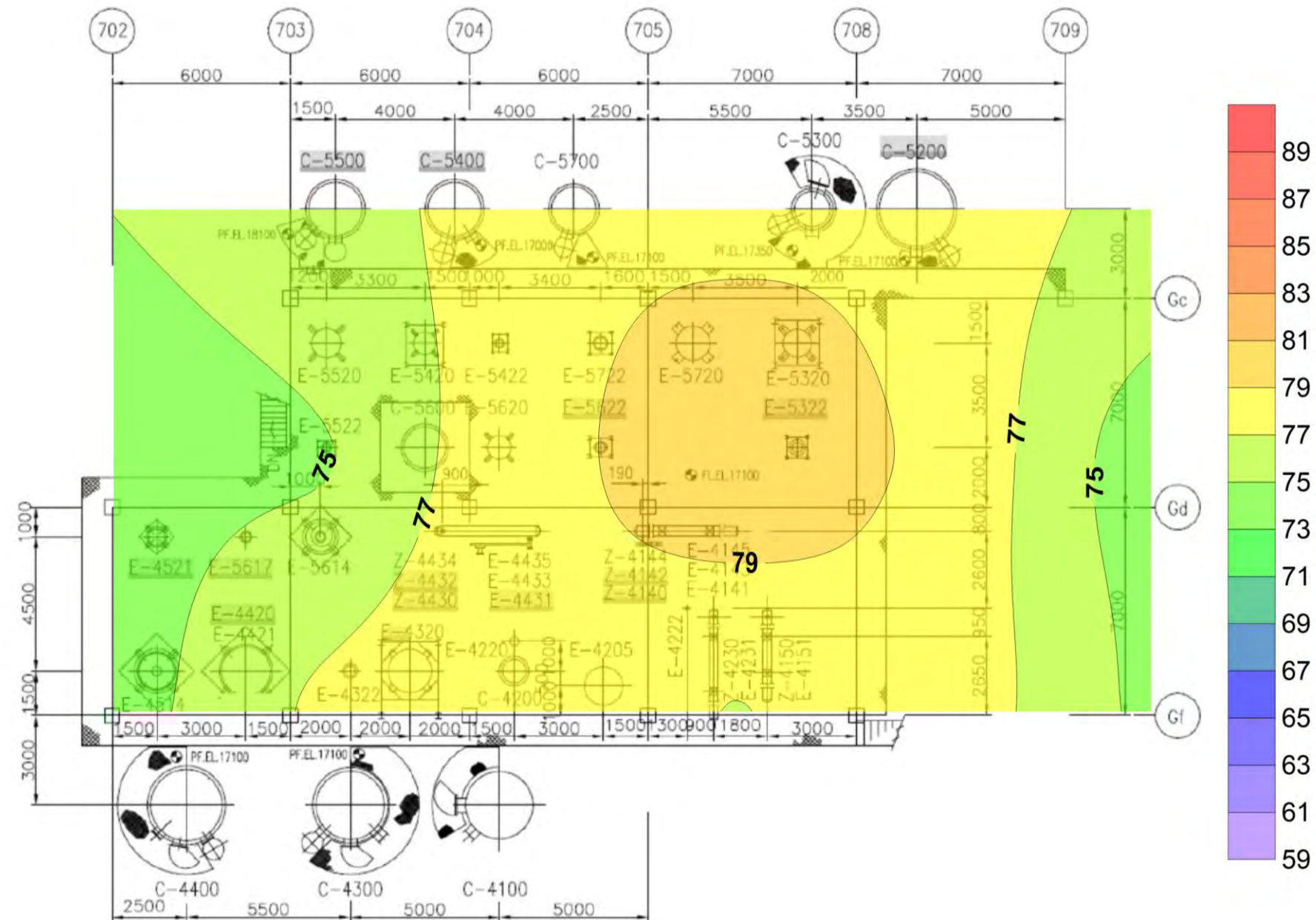
Noise Contour Map

THAI MMA Co., Ltd.

Reference Number : Lot 2432084-1

Measurement Date : Apr 29, 2024

#4000-#5000 MMA Recovery, Esterification Inhibitor Unit M1 FL.4



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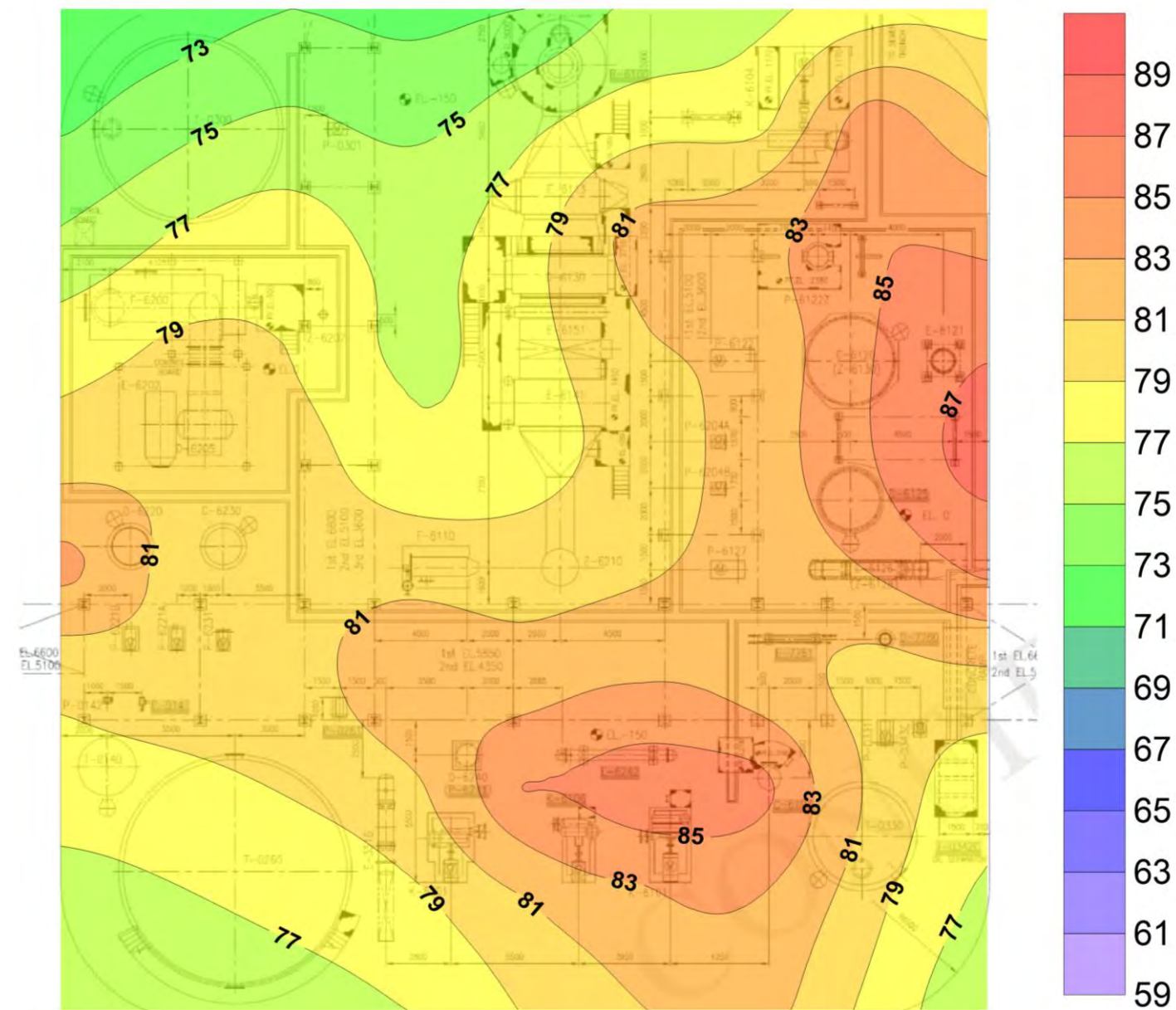
Noise Contour Map

THAI MMA Co., Ltd.

#6000 Waste and Disposal M1

Reference Number : Lot 2432084-1

Measurement Date : Apr 29, 2024



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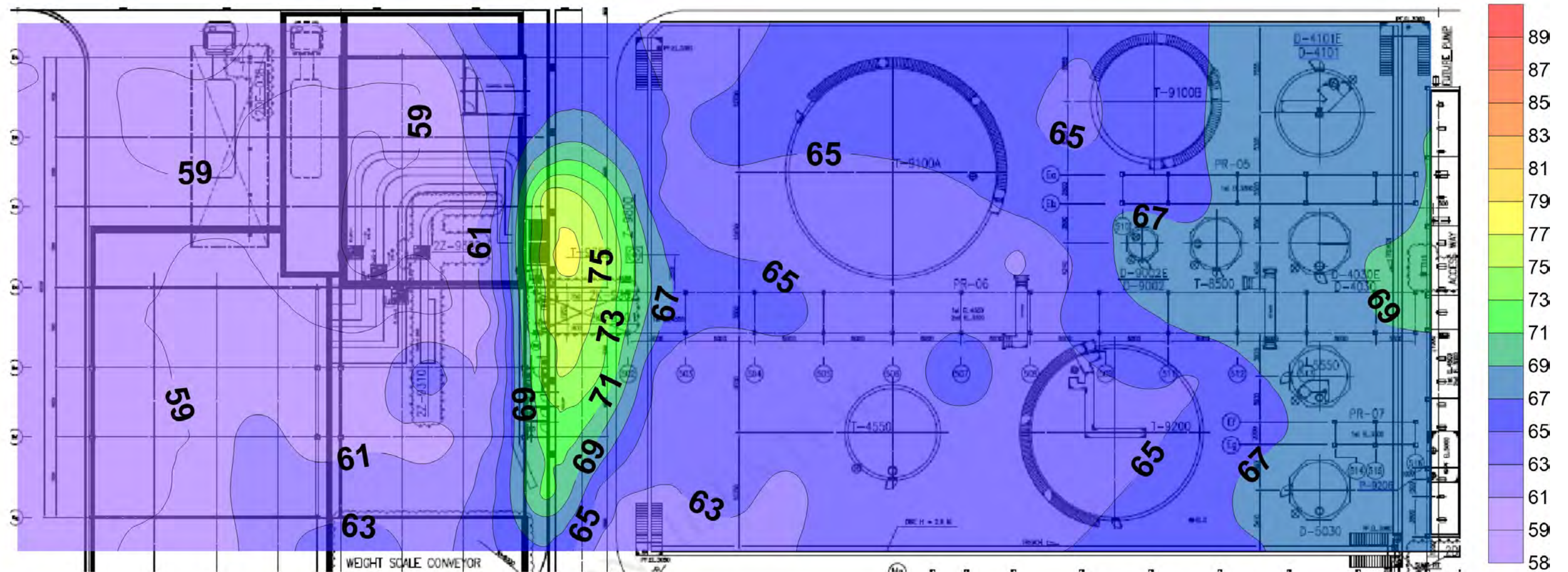
Noise Contour Map

THAI MMA Co., Ltd.

Tank and Product Loading

Reference Number : Lot 2432084-1

Measurement Date : Apr 29, 2024



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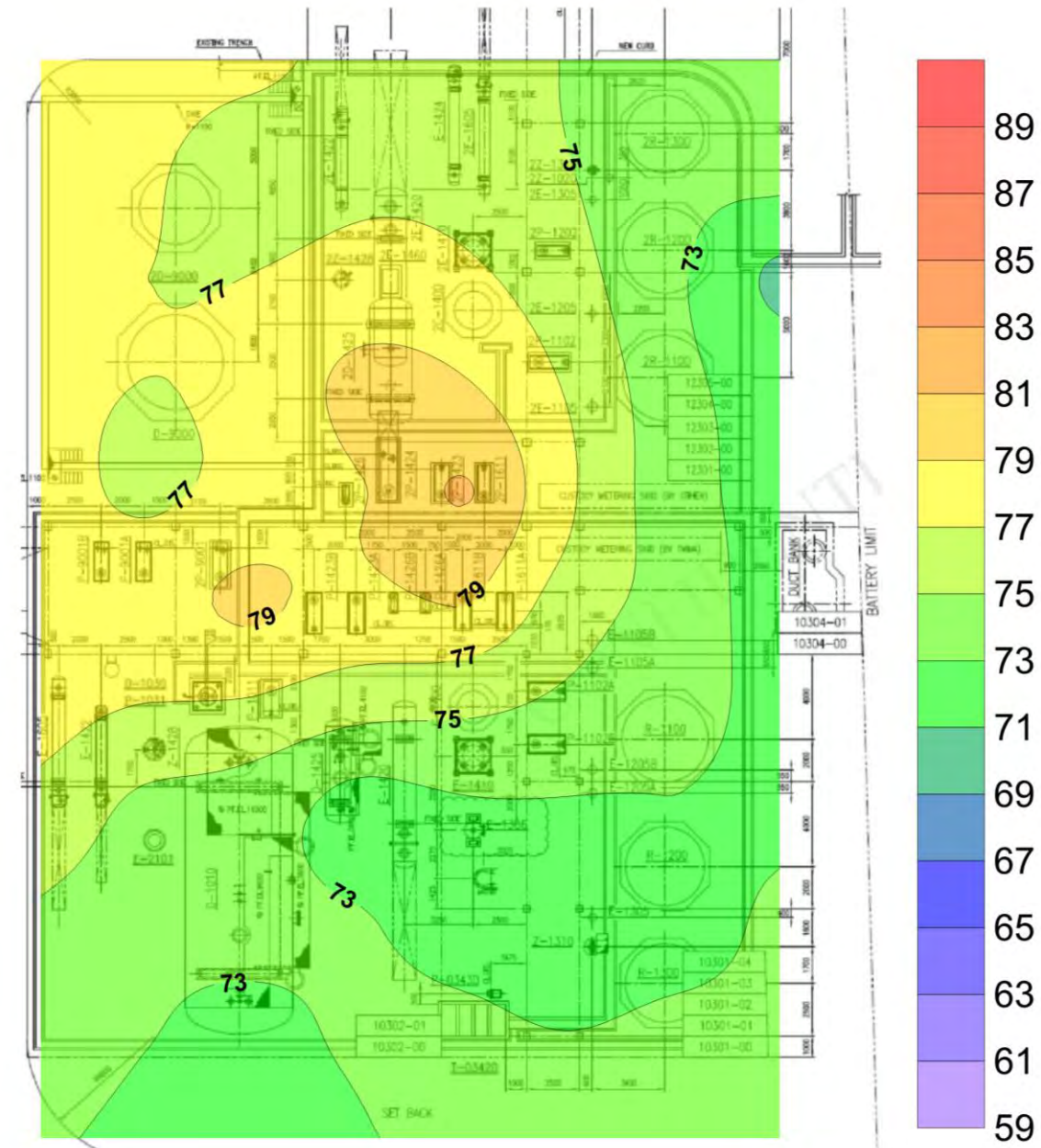
Noise Contour Map

THAI MMA Co., Ltd.

TBA M1 #1000 Unit

Reference Number : Lot 2432084-1

Measurement Date : Apr 29, 2024



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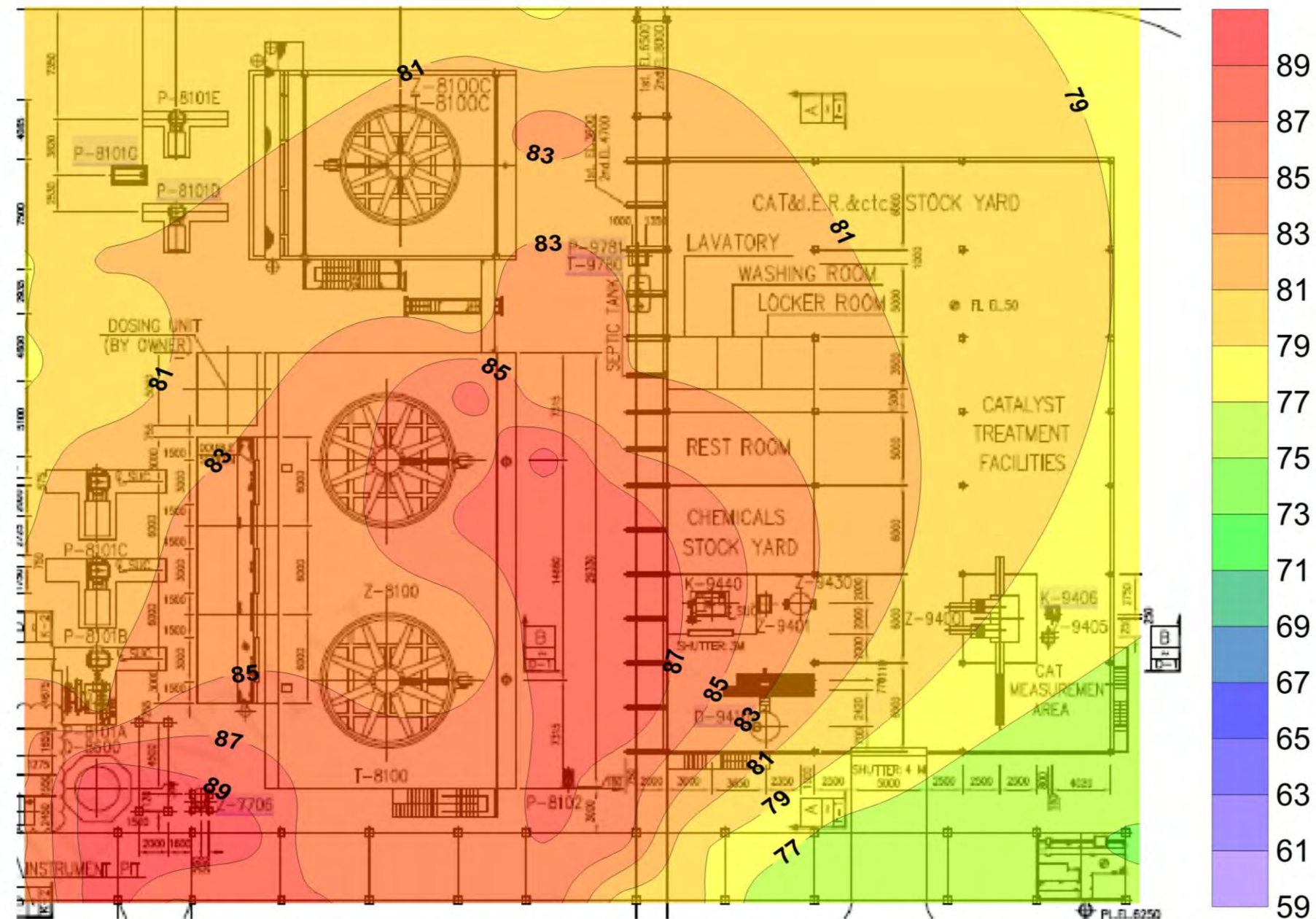
Noise Contour Map

THAI MMA Co., Ltd.

UT1 Cooling Tower M1

Reference Number : Lot 2432084-1

Measurement Date : Apr 29, 2024



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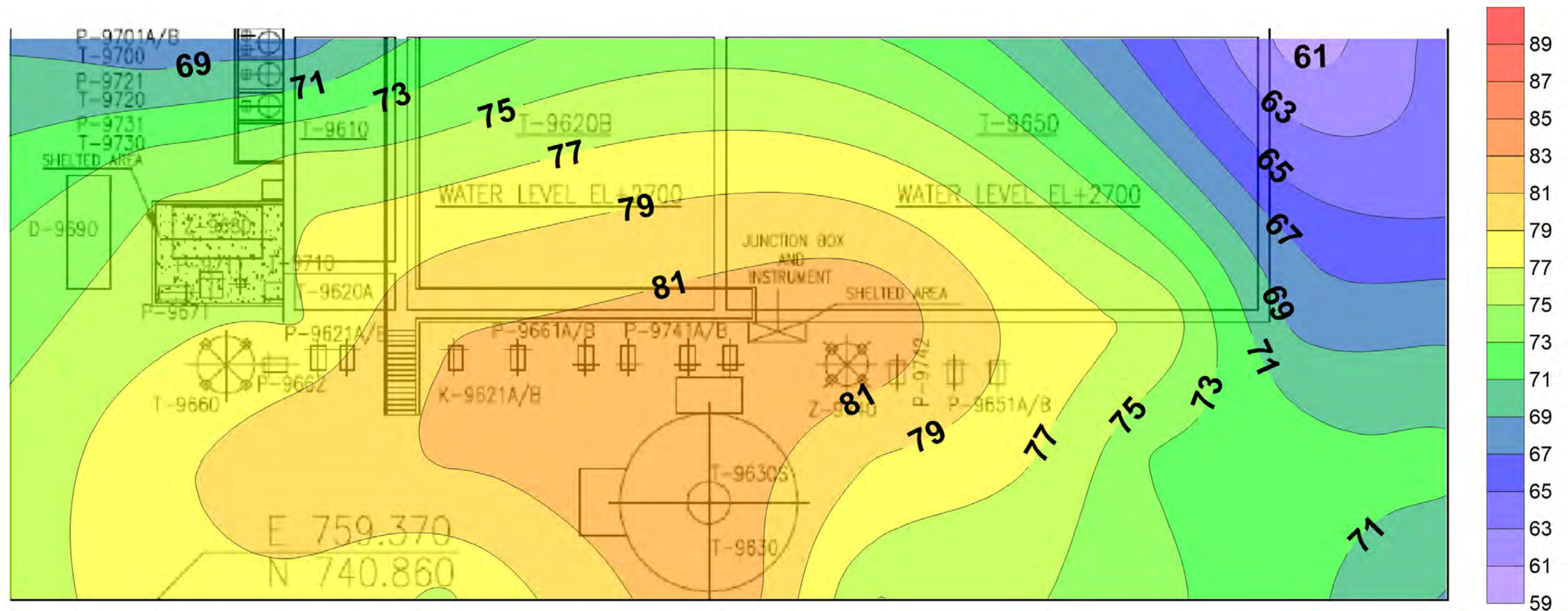
Noise Contour Map

THAI MMA Co., Ltd.

UT1 Waste Water M1

Reference Number : Lot 2432084-1

Measurement Date : Apr 29, 2024



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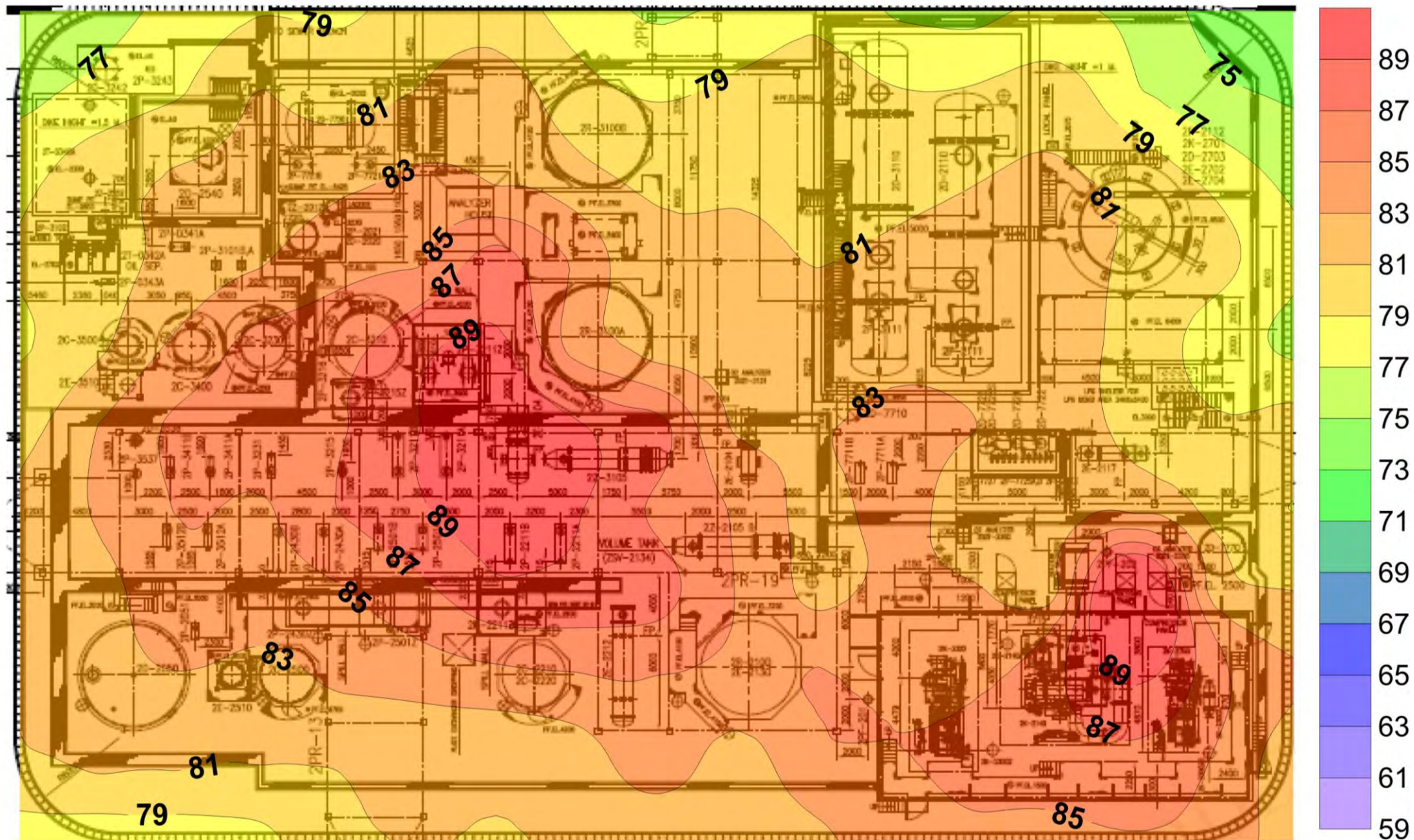
Noise Contour Map

THAI MMA Co., Ltd.

Reference Number : Lot 2432088-1

Measurement Date : Apr 30, 2024

#2000-#3000 Oxidation Unit M2 FL.1



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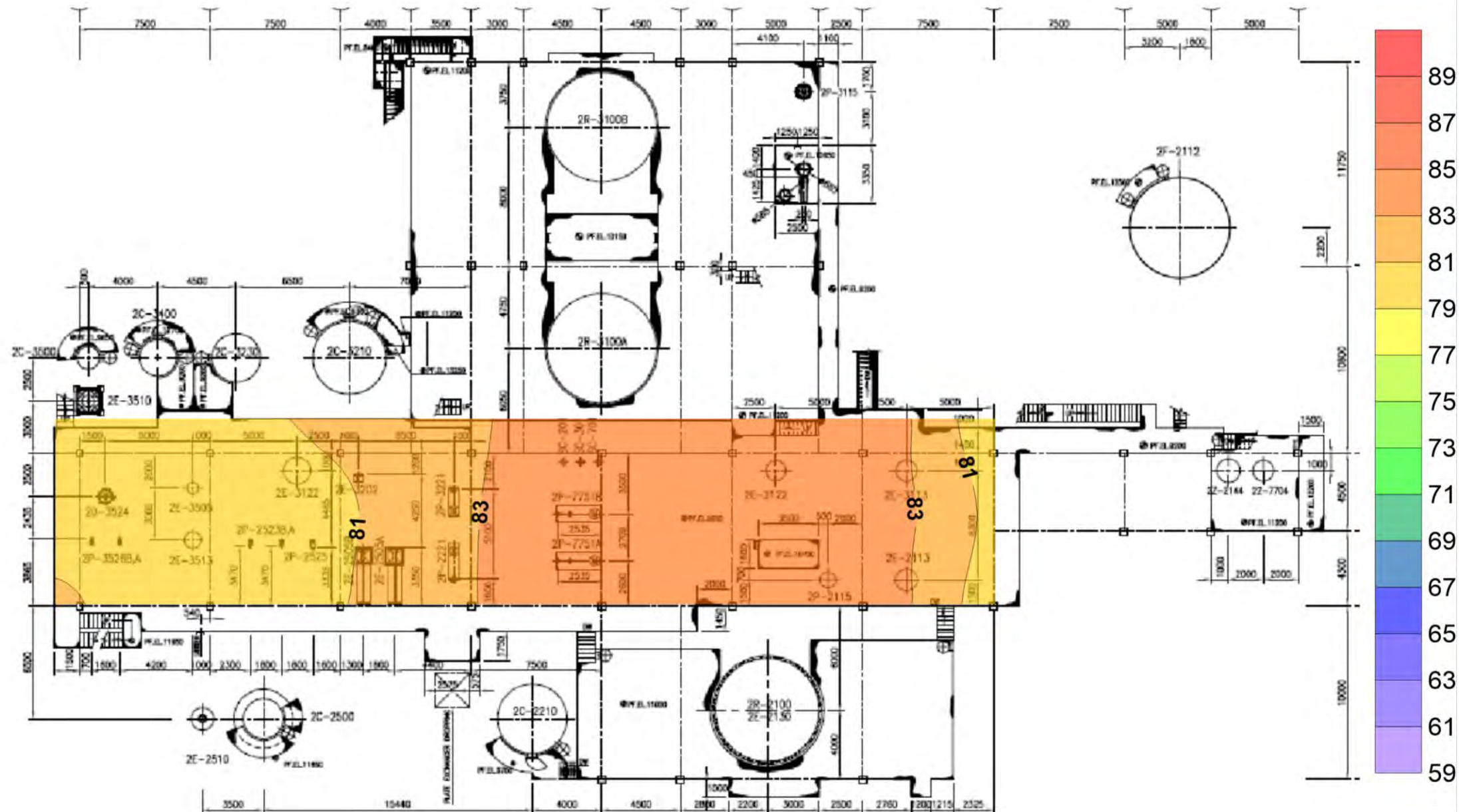
Noise Contour Map

THAI MMA Co., Ltd.

Reference Number : Lot 2432088-1

Measurement Date : Apr 30, 2024

#2000-#3000 Oxidation Unit M2 FL.2



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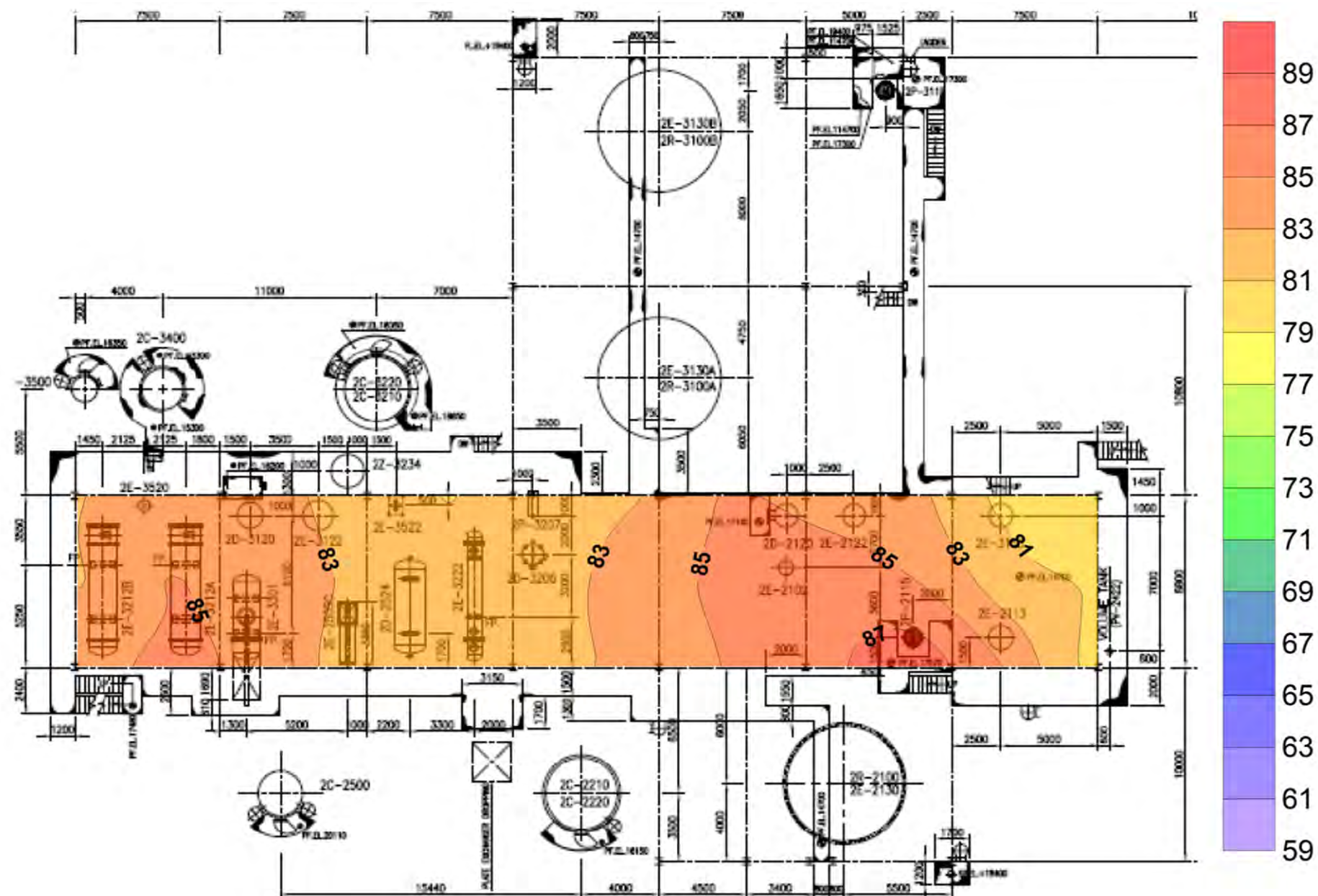
Noise Contour Map

THAI MMA Co., Ltd.

Reference Number : Lot 2432088-1

Measurement Date : Apr 30, 2024

#2000-#3000 Oxidation Unit M2 FL.3



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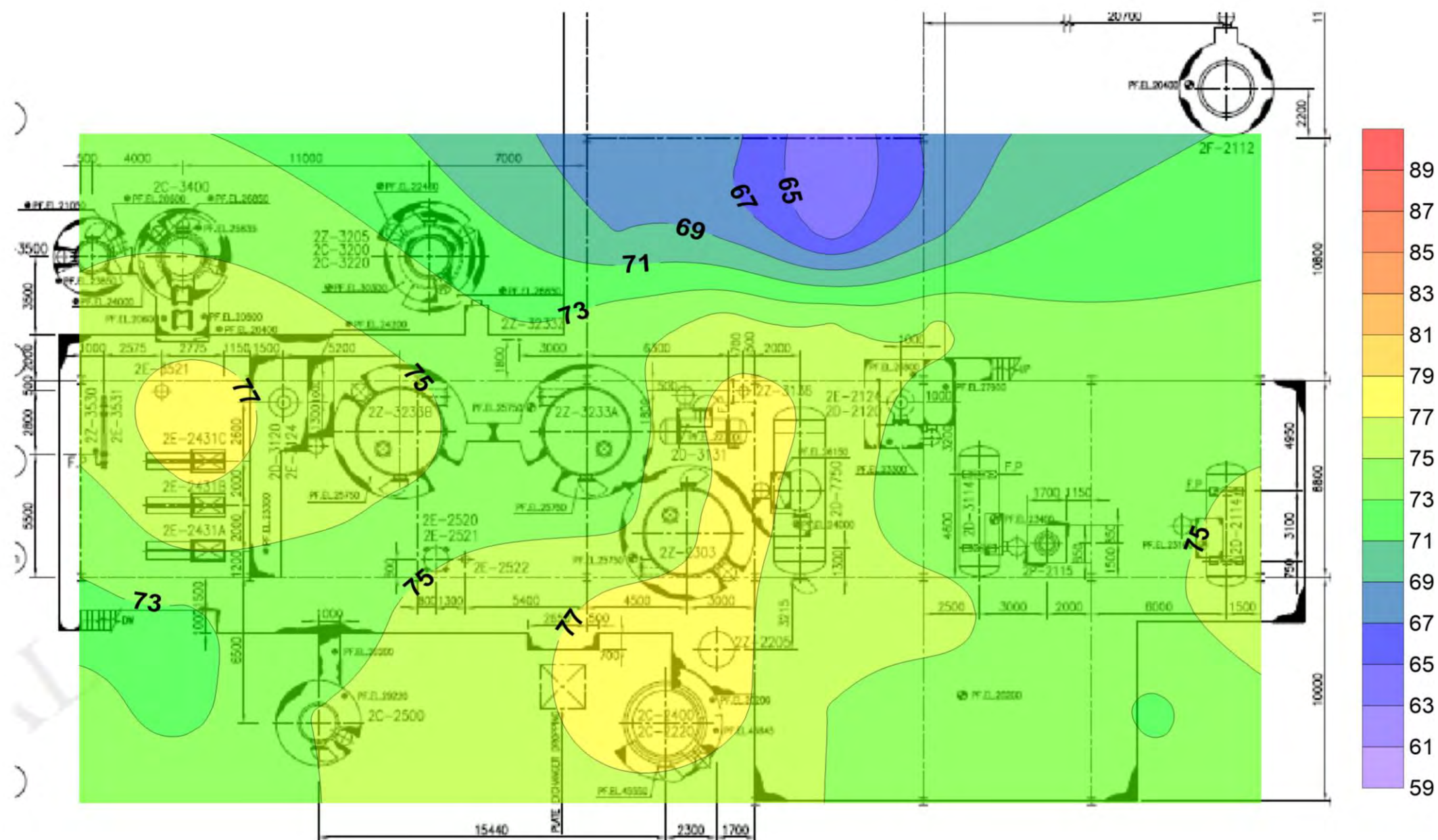
Noise Contour Map

THAI MMA Co., Ltd.

Reference Number : Lot 2432088-1

Measurement Date : Apr 30, 2024

#2000-#3000 Oxidation Unit M2 FL.4



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ALS LABORATORY GROUP (THAILAND) CO., LTD. Part of the ALS Group



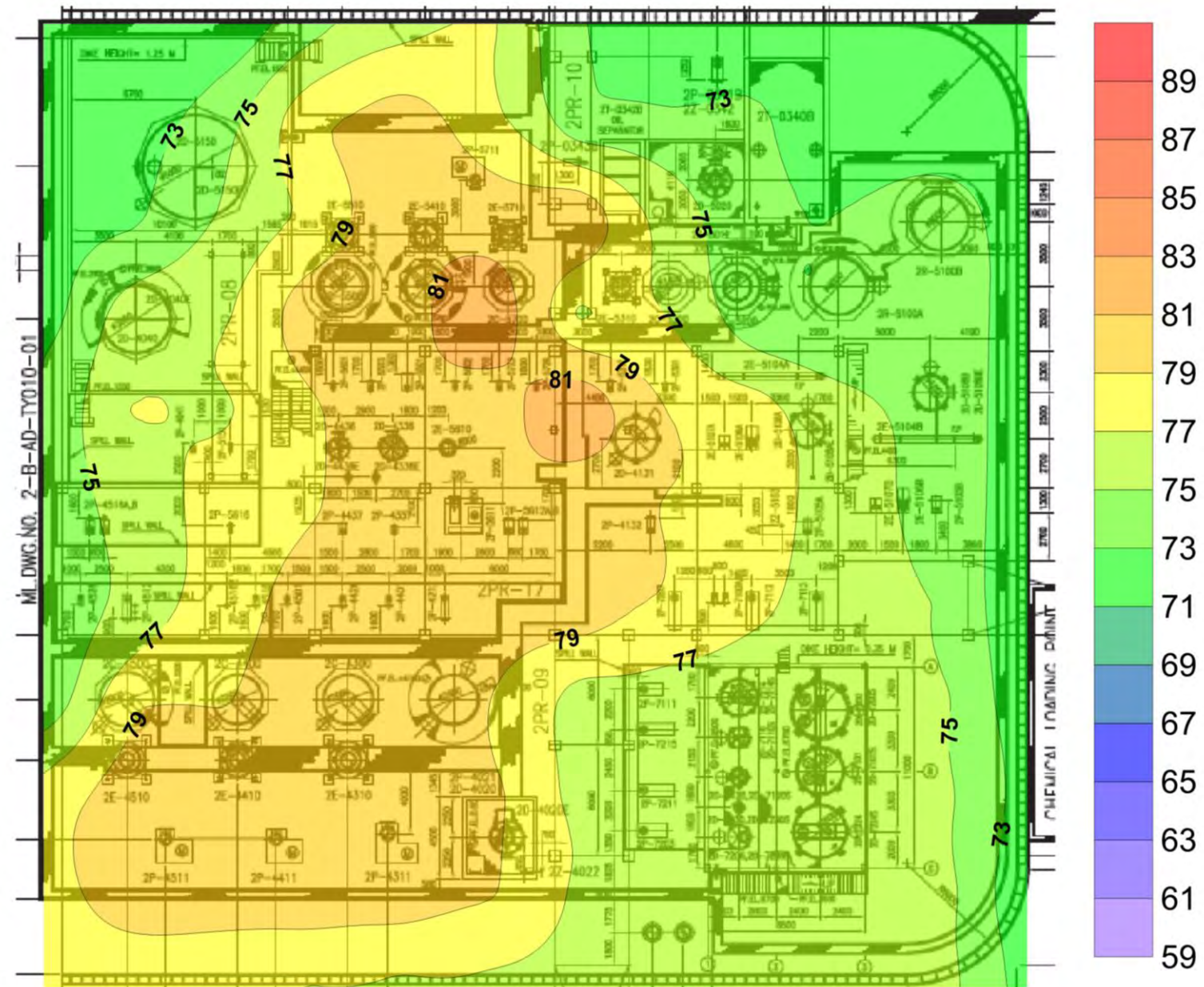
Noise Contour Map

THAI MMA Co., Ltd.

Reference Number : Lot 2432088-1

Measurement Date : Apr 30, 2024

#4000-#5000 MMA Recovery, Esterification Inhibitor Unit M2 FL.1



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. Part of the ALS Group



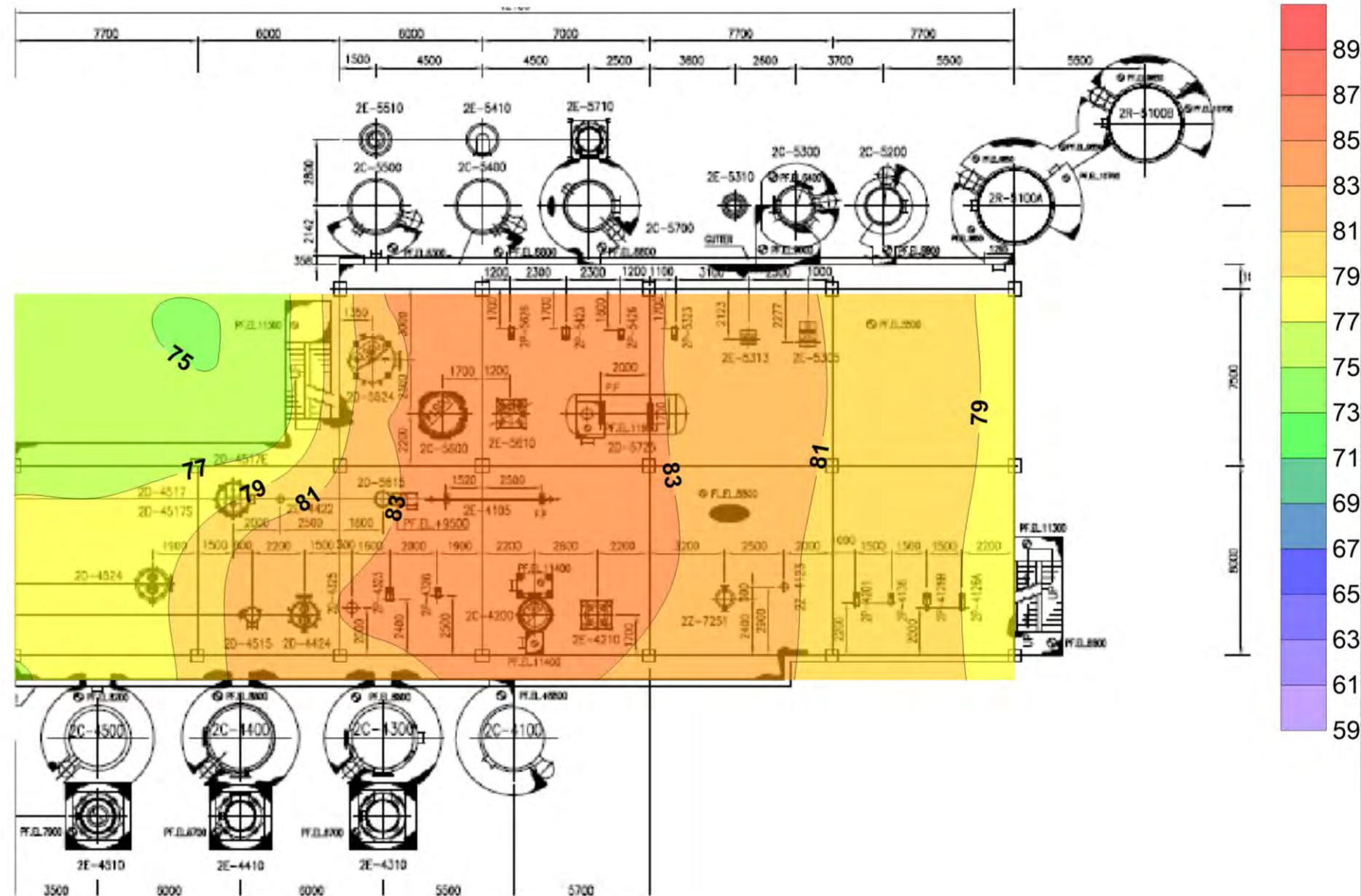
Noise Contour Map

THAI MMA Co., Ltd.

Reference Number : Lot 2432088-1

Measurement Date : Apr 30, 2024

#4000-#5000 MMA Recovery, Esterification Inhibitor Unit M2 FL.2



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. Part of the ALS Group



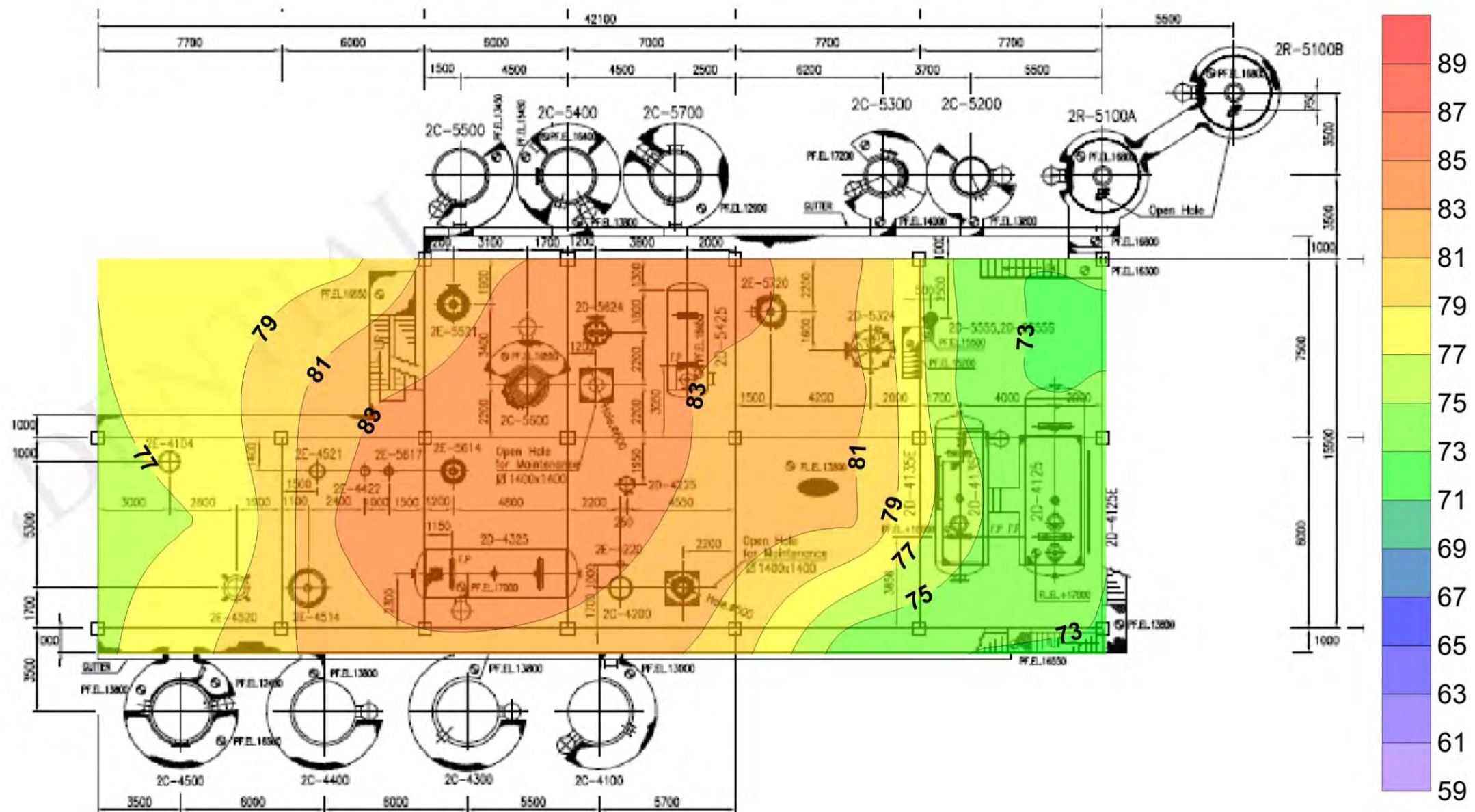
Noise Contour Map

THAI MMA Co., Ltd.

Reference Number : Lot 2432088-1

Measurement Date : Apr 30, 2024

#4000-#5000 MMA Recovery, Esterification Inhibitor Unit M2 FL.3



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. Part of the ALS Group



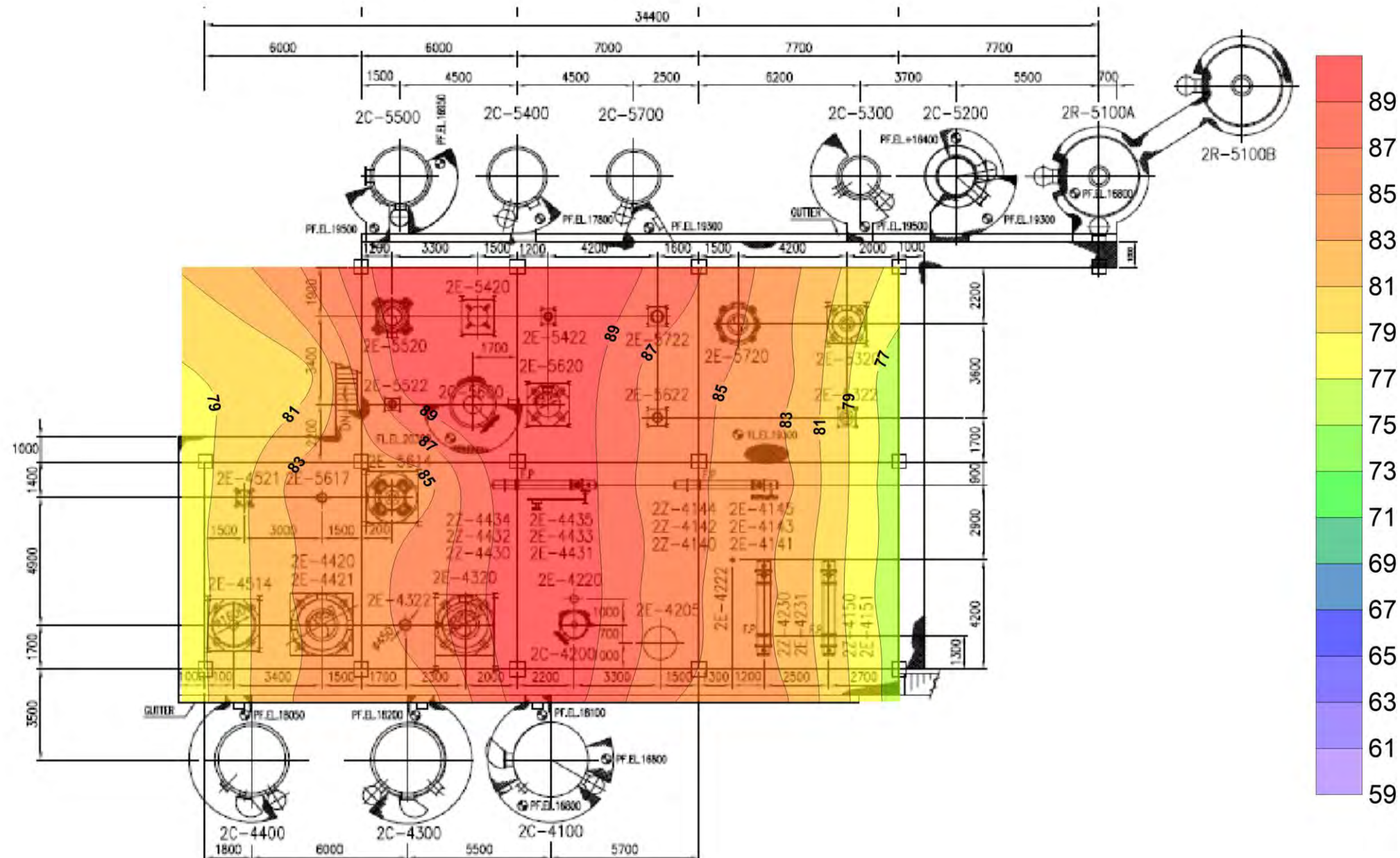
Noise Contour Map

THAI MMA Co., Ltd.

Reference Number : Lot 2432088-1

Measurement Date : Apr 30, 2024

#4000-#5000 MMA Recovery, Esterification Inhibitor Unit M2 FL.4



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. Part of the ALS Group



Measurement Date : Apr 30, 2024

#6000 Waste and Disposal M2





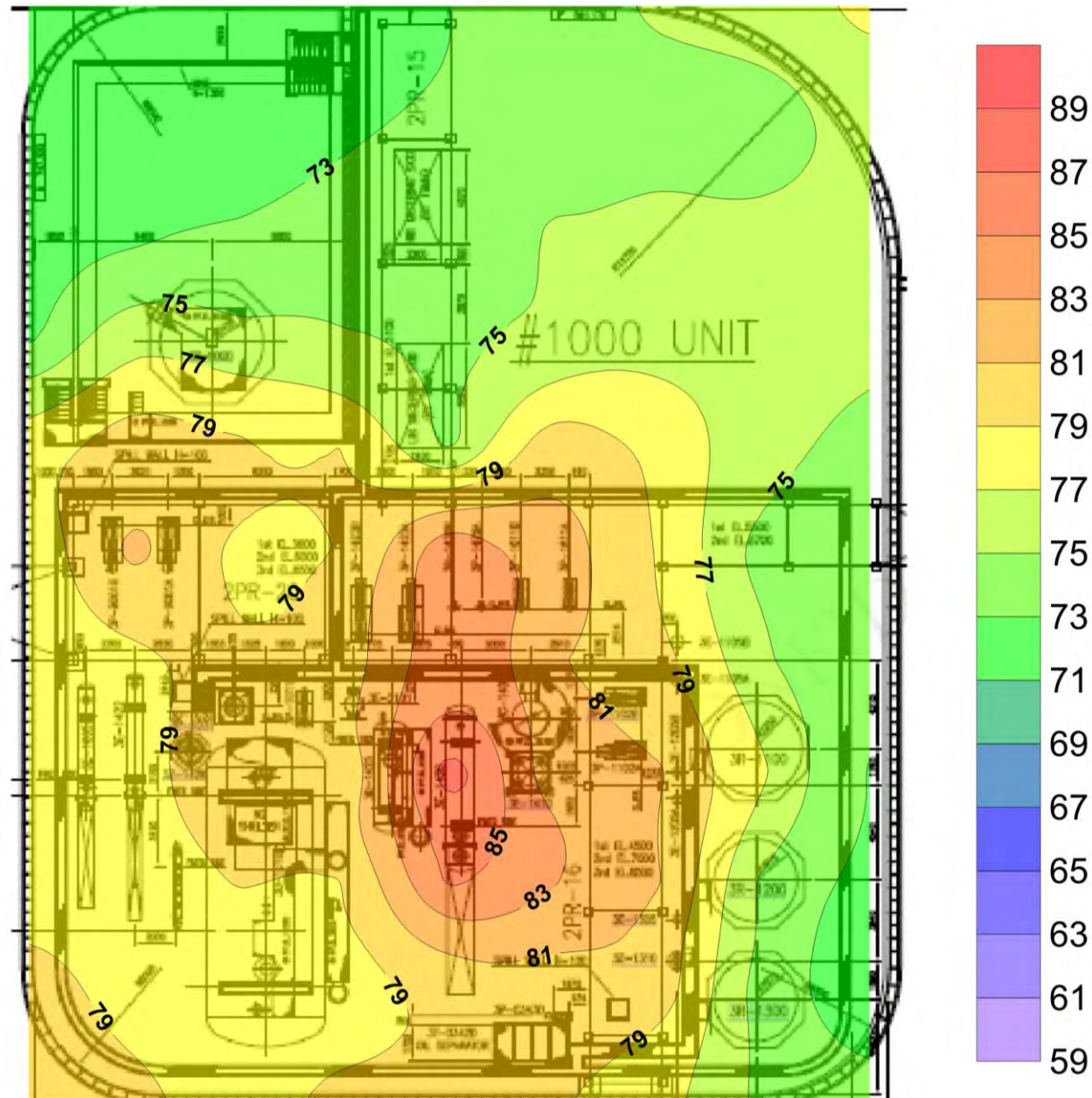
Noise Contour Map

THAI MMA Co., Ltd.

TBA M2 #1000 Unit

Reference Number : Lot 2432088-1

Measurement Date : Apr 30, 2024



ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250, Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197
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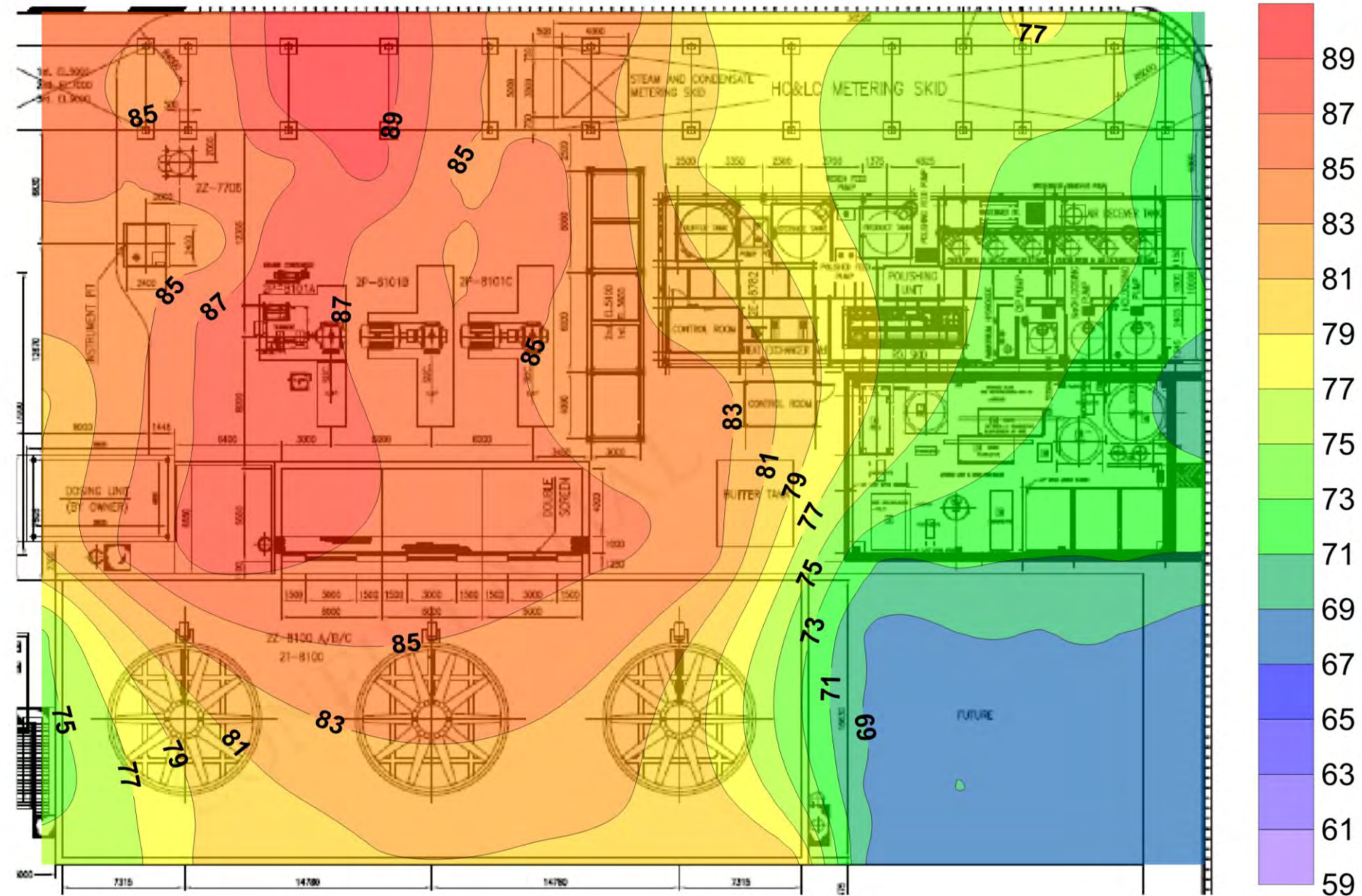
Noise Contour Map

THAI MMA Co., Ltd.

UT1 Cooling Tower M2

Reference Number : Lot 2432088-1

Measurement Date : Apr 30, 2024



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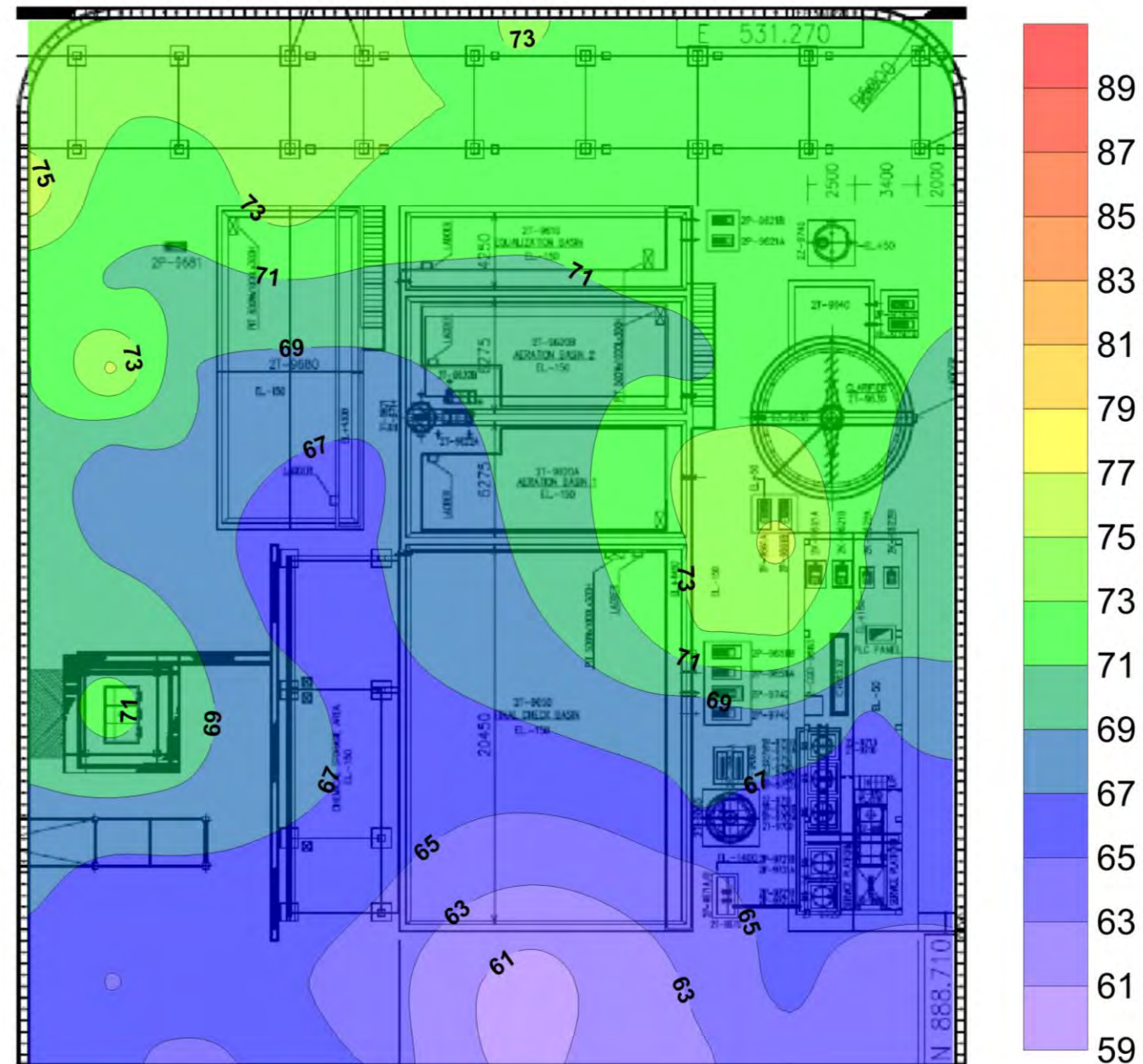
Noise Contour Map

THAI MMA Co., Ltd.

UT1 Waste Water M2

Reference Number : Lot 2432088-1

Measurement Date : Apr 30, 2024



ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250, Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197
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ภาคผนวก ค-8

ใบรับรองผลการตรวจวัดคุณภาพอากาศในสถานประกอบการ



Analysis / Test Report

TESTING
No.0009

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 253465

Date Received : Feb 10, 2025
Date Reported : Feb 19, 2025
Report Number : 3211469-1

Page 1 of 5

Sample Number 253465-1
Sampled Date Feb 07, 2025
Sample Description Air Quality
Location Production Loading
Date Analysis Commenced Feb 11, 2025
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 Hydrocarbon as Methane *	10:00 AM - 12:00 PM	ppm	-	1.0	3.9	No Standard	Total Hydrocarbon Analyzer	-	Rayong

Guideline :

Sampled By : Amnat Wongsakhen

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.

Approved by

Orawan R.

Orawan Rakyong
Scientist (3)

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Analysis / Test Report

TESTING
No.0009

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 253465

Date Received : Feb 10, 2025
Date Reported : Feb 19, 2025
Report Number : 3211469-1

Page 2 of 5

Sample Number 253465-2
Sampled Date Feb 07, 2025
Sample Description Air Quality
Location โรงงาน MMA 1 @ 4/5000
Date Analysis Commenced Feb 11, 2025
Condition of Sample Drawn into three sorbent tubes, refrigerated
Barometric Pressure 757 mmHg
Atmospheric Temperature 32.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Methanol *	10:00 AM - 12:00 PM	ppm	-	0.10	<0.10	200	NIOSH (1994), 2000	ACGIH	Bangkok
Methyl Methacrylate *	10:00 AM - 12:00 PM	ppm	-	0.5	<0.5	100	NIOSH (1994), 2537	MOL	Bangkok
Toluene	10:00 AM - 12:00 PM	ppm	-	0.05	<0.05	200	In - house method : STM 04-032 based on NIOSH Manual of Analytical Methods, 4th ed., NMAM, method 1501, issue 3, 2003 (Include sampling)	MOL	Bangkok

Guideline :

ACGIH : The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (2024).

MOL : Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)

Sampled By : Amnat Wongsakhen

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Approved by

Orawan R.

Orawan Rakyong
Scientist (3)

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Analysis / Test Report

TESTING
No.0009

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 253465

Date Received : Feb 10, 2025
Date Reported : Feb 19, 2025
Report Number : 3211469-1

Page 3 of 5

Sample Number 253465-3
Sampled Date Feb 07, 2025
Sample Description Air Quality
Location โรงงาน MMA 2 @ 4/5000
Date Analysis Commenced Feb 11, 2025
Condition of Sample Drawn into three sorbent tubes, refrigerated
Barometric Pressure 757 mmHg
Atmospheric Temperature 32.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Methanol *	10:00 AM - 12:00 PM	ppm	-	0.10	<0.10	200	NIOSH (1994), 2000	ACGIH	Bangkok
Methyl Methacrylate *	10:00 AM - 12:00 PM	ppm	-	0.5	<0.5	100	NIOSH (1994), 2537	MOL	Bangkok
Toluene	10:00 AM - 12:00 PM	ppm	-	0.05	<0.05	200	In - house method : STM 04-032 based on NIOSH Manual of Analytical Methods, 4th ed., NMAM, method 1501, issue 3, 2003 (Include sampling)	MOL	Bangkok

Guideline :

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Approved by

Orawan R.

Orawan Rakyong
Scientist (3)

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Analysis / Test Report

TESTING
No.0009

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 253465

Date Received : Feb 10, 2025
Date Reported : Feb 19, 2025
Report Number : 3211469-1

Page 4 of 5

Sample Number 253465-4
Sampled Date Feb 07, 2025
Sample Description Air Quality
Location โรงงาน MMA 1 @ 2/3000
Date Analysis Commenced Feb 11, 2025
Condition of Sample Drawn into one sorbent tube, refrigerated
Barometric Pressure 757 mmHg
Atmospheric Temperature 32.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Acrylic acid *	10:00 AM - 12:00 PM	ppm	-	0.10	<0.10	2	Based on OSHA, 28	MOL	Bangkok

Guideline :

MOL : Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)

Sampled By : Amnat Wongsakhen

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Scientist (3)

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Analysis / Test Report

TESTING
No.0009

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 253465

Date Received : Feb 10, 2025
Date Reported : Feb 19, 2025
Report Number : 3211469-1

Page 5 of 5

Sample Number 253465-5
Sampled Date Feb 07, 2025
Sample Description Air Quality
Location โรงงาน MMA 2 @ 2/3000
Date Analysis Commenced Feb 11, 2025
Condition of Sample Drawn into one sorbent tube, refrigerated
Barometric Pressure 757 mmHg
Atmospheric Temperature 32.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Acrylic acid *	10:00 AM - 12:00 PM	ppm	-	0.10	<0.10	2	Based on OSHA, 28	MOL	Bangkok

Guideline :

MOL : Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)

Sampled By : Amnat Wongsakhen

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- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.

Approved by

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Orawan Rakyong
Scientist (3)

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Analysis / Test Report

TESTING
No.0009

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2537357

Date Received : May 09, 2025
Date Reported : May 20, 2025
Report Number : 3287492-1

Page 1 of 5

Sample Number 2537357-1
Sampled Date May 09, 2025
Sample Description Air Quality
Location Production Loading
Date Analysis Commenced May 13, 2025
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 Hydrocarbon as Methane *	09:30 AM - 11:30 AM	ppm	-	1.0	5.0	No Standard	Total Hydrocarbon Analyzer	-	Rayong

Guideline :

Sampled By : Norranon Tathongkham

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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Orawan Rakyong
Scientist (3)

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Analysis / Test Report

TESTING
No.0009

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2537357

Date Received : May 09, 2025
Date Reported : May 20, 2025
Report Number : 3287492-1

Page 2 of 5

Sample Number 2537357-2
Sampled Date May 09, 2025
Sample Description Air Quality
Location โรงงาน MMA 1 @ 4/5000
Date Analysis Commenced May 13, 2025
Condition of Sample Drawn into three sorbent tubes, refrigerated
Barometric Pressure 753 mmHg
Atmospheric Temperature 32.3 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Methanol *	09:40 AM - 11:40 AM	ppm	-	0.10	<0.10	200	NIOSH (1994), 2000	ACGIH	Bangkok
Methyl Methacrylate *	09:40 AM - 11:40 AM	ppm	-	0.5	<0.5	100	NIOSH (1994), 2537	MOL	Bangkok
Toluene	09:40 AM - 11:40 AM	ppm	-	0.05	<0.05	200	In - house method : STM 04-032 based on NIOSH Manual of Analytical Methods, 4th ed., NMAM, method 1501, issue 3, 2003 (Include sampling)	MOL	Bangkok

Guideline :

ACGIH : The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (2024).

MOL : Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)

Sampled By : Norranon Tathongkham

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Approved by

Orawan R.

Orawan Rakyong
Scientist (3)

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Analysis / Test Report

TESTING
No.0009

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2537357

Date Received : May 09, 2025
Date Reported : May 20, 2025
Report Number : 3287492-1

Page 3 of 5

Sample Number 2537357-3
Sampled Date May 09, 2025
Sample Description Air Quality
Location โรงงาน MMA 2 @ 4/5000
Date Analysis Commenced May 13, 2025
Condition of Sample Drawn into three sorbent tubes, refrigerated
Barometric Pressure 753 mmHg
Atmospheric Temperature 32.3 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Methanol *	09:45 AM - 11:45 AM	ppm	-	0.10	<0.10	200	NIOSH (1994), 2000	ACGIH	Bangkok
Methyl Methacrylate *	09:45 AM - 11:45 AM	ppm	-	0.5	<0.5	100	NIOSH (1994), 2537	MOL	Bangkok
Toluene	09:45 AM - 11:45 AM	ppm	-	0.05	<0.05	200	In - house method : STM 04-032 based on NIOSH Manual of Analytical Methods, 4th ed., NMAM, method 1501, issue 3, 2003 (Include sampling)	MOL	Bangkok

Guideline :

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Sampled By : Norranon Tathongkham

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Approved by

Orawan R.

Orawan Rakyong
Scientist (3)

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Analysis / Test Report

TESTING
No.0009

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2537357

Date Received : May 09, 2025
Date Reported : May 20, 2025
Report Number : 3287492-1

Page 4 of 5

Sample Number 2537357-4
Sampled Date May 09, 2025
Sample Description Air Quality
Location โรงงาน MMA 1 @ 2/3000
Date Analysis Commenced May 10, 2025
Condition of Sample Drawn into one sorbent tube, refrigerated
Barometric Pressure 753 mmHg
Atmospheric Temperature 32.3 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Acrylic acid *	09:45 AM - 11:45 AM	ppm	-	0.10	<0.10	2	Based on OSHA, 28	MOL	Bangkok

Guideline :

MOL : Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)

Sampled By : Norranon Tathongkham

Remark :

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

Approved by

Orawan R.

Orawan Rakyong
Scientist (3)

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Analysis / Test Report

TESTING
No.0009

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2537357

Date Received : May 09, 2025
Date Reported : May 20, 2025
Report Number : 3287492-1

Page 5 of 5

Sample Number 2537357-5
Sampled Date May 09, 2025
Sample Description Air Quality
Location โรงงาน MMA 2 @ 2/3000
Date Analysis Commenced May 10, 2025
Condition of Sample Drawn into one sorbent tube, refrigerated
Barometric Pressure 753 mmHg
Atmospheric Temperature 32.3 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Acrylic acid *	09:45 AM - 11:45 AM	ppm	-	0.10	<0.10	2	Based on OSHA, 28	MOL	Bangkok

Guideline :

MOL : Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)

Sampled By : Norranon Tathongkham

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Approved by

Orawan R.

Orawan Rakyong
Scientist (3)

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ภาคผนวก ค-9

ใบรับรองผลการตรวจวิเคราะห์น้ำใต้ดิน



Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2542679

Date Received : Jun 16, 2025
Date Reported : Jun 27, 2025
Report Number : 3346601-1

Page 1 of 1

Sample Number	2542679-1						
Sampled Date	Jun 16, 2025 10:08 AM						
Sample Description	Groundwater						
Location	WM#01 บริเวณอาคาร Product Loading						
Date Analysis Commenced	Jun 16, 2025						
Condition of Sample	Contained in four glass vials, two amber glass bottles and two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
pH at 25 degree C		-	-	6.5	6.5-9.2 (I)	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong

Guideline : Notification of the Ministry of Industry B.E. 2559 (2016) on Soil and Groundwater Contamination Criteria, Monitoring of Soil and Groundwater Quality, Report Submission and Report Preparation of Soil and Groundwater Quality, and Proposal Report of Soil and Groundwater Controlling and Reduction Measures

(I): ในกรณีที่มีการปนเปื้อนของกรดหรือด่างให้เปรียบเทียบผลวิเคราะห์ค่าพีเอชจากจุดเก็บตัวอย่างบ่อน้ำที่ใช้ในการติดตามตรวจสอบการปนเปื้อนกับผลวิเคราะห์จากจุดเก็บตัวอย่างบ่อน้ำที่ใช้เป็นบ่ออ้างอิงบนทิศทางการไหลของน้ำใต้ดินในพื้นที่ โดยค่าพีเอชที่เปลี่ยนแปลงจะต้องไม่เกินหนึ่งระดับ และไม่อยู่นอกช่วงค่าเกณฑ์อนุโลมสูงสุดของมาตรฐานคุณภาพน้ำบาดาลที่ไขบริโภคือ 6.5-9.2

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038 , Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-จ-0002

Remark :

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

Technical Management

Photchana S.

Photchana Seeda
Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Changchon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

TESTING
No.0009

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location :

Lot ID: 2542679

Date Received : Jun 16, 2025

Date Reported : Jun 27, 2025

Report Number : 3346601-2

Page 1 of 2

Sample Number	2542679-1
Sampled Date	Jun 16, 2025 10:08 AM
Sample Description	Groundwater
Location	WM#01 บริเวณอาคาร Product Loading
Date Analysis Commenced	Jun 17, 2025
Condition of Sample	Contained in four glass vials, two amber glass bottles and two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Zinc	mg/L	0.003	0.005	0.01	10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B, 3030 F	Bangkok
Organic Compounds							
Butanol *	mg/L	-	10	<10	240	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 6200 B	Bangkok
Methanol *	mg/L	-	0.01	<0.01	60	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 6200 B	Bangkok
Petroleum Hydrocarbons							
TPH C>8-C16 *	mg/L	-	0.05	<0.05	1.7	United States Environmental Protection Agency, EPA Method 3510 C and 8015 C	Bangkok
TPH C5-C8 *	mg/L	-	0.01	<0.01	1.4	United States Environmental Protection Agency, EPA Method 5030 B and 8260 D	Bangkok
Volatile Organics Compounds							
Acetone *	mg/L	0.001	0.01	Not Detected	230	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 6200 B	Bangkok
Toluene	mg/L	0.00004	0.0005	Not Detected	5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 6200 B	Bangkok

Guideline : Notification of the Ministry of Industry B.E. 2559 (2016) on Soil and Groundwater Contamination Criteria, Monitoring of Soil and Groundwater Quality, Report Submission and Report Preparation of Soil and Groundwater Quality, and Proposal Report of Soil and Groundwater Controlling and Reduction Measures

Note : TPH C5-C8 : Sum of n-Pentane, n-Hexane, n-Heptane and n-Octane
TPH C>8-C16 : Sum of n-Nonane, n-Decane, n-Undecane, n-Dodecane, n-Tridecane, n-Tetradecane, n-Pentadecane and n-Hexadecane
Integration mode: Peak to Peak

Technical Management

Savitree N.

Savitree Noisangiam

Manager

ทะเบียนเลขที่ ว-204-จ-0007

Approved by

Kanokkorn Anek

Kanokkorn Anek

Assistant General Manager

ทะเบียนเลขที่ ว-204-ค-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.



Analysis / Test Report

TESTING
No.0009

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location :

Lot ID: 2542679

Date Received : Jun 16, 2025

Date Reported : Jun 27, 2025

Report Number : 3346601-2

Page 2 of 2

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038 , Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-จ-0002

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management

Savitree N.

Savitree Noisangiam
Manager

ทะเบียนเลขที่ ว-204-จ-0007

Approved by

Kanokkorn Anek

Kanokkorn Anek
Assistant General Manager
ทะเบียนเลขที่ ว-204-ค-0004

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2542679

Date Received : Jun 16, 2025

Date Reported : Jun 27, 2025

Report Number : 3346602-1

Page 1 of 1

Sample Number	2542679-2
Sampled Date	Jun 16, 2025 10:57 AM
Sample Description	Groundwater
Location	WM#02 บริเวณ Unit#1000 ติดกับรั้ว ROC
Date Analysis Commenced	Jun 16, 2025
Condition of Sample	Contained in four glass vials, two amber glass bottles and two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
pH at 25 degree C		-	-	6.7	6.5-9.2 (I)	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong

Guideline : Notification of the Ministry of Industry B.E. 2559 (2016) on Soil and Groundwater Contamination Criteria, Monitoring of Soil and Groundwater Quality, Report Submission and Report Preparation of Soil and Groundwater Quality, and Proposal Report of Soil and Groundwater Controlling and Reduction Measures

(I): ในกรณีที่มีการปนเปื้อนของกรดหรือด่างให้เปรียบเทียบผลวิเคราะห์ค่าพีเอชจากจุดเก็บตัวอย่างบ่อน้ำที่ใช้ในการติดตามตรวจสอบการปนเปื้อนกับผลวิเคราะห์จากจุดเก็บตัวอย่างบ่อน้ำที่ใช้เป็นบ่ออ้างอิงบนทิศทางการไหลของน้ำใต้ดินในพื้นที่ โดยค่าพีเอชที่เปลี่ยนแปลงจะต้องไม่เกินหนึ่งระดับ และไม่อยู่นอกช่วงค่าเกณฑ์อนุโลมสูงสุดของมาตรฐานคุณภาพน้ำบาดาลที่ไขบริโภคือ 6.5-9.2

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038 , Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-จ-0002

Remark :

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

Technical Management

Photchana S.

Photchana Seeda

Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Changchon.

Dej Changchon

Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

TESTING

No.0009

Lot ID: 2542679

Date Received : Jun 16, 2025

Date Reported : Jun 27, 2025

Report Number : 3346602-2

Client : THAI MMA Co., Ltd.

271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location :

Page 1 of 2

Sample Number	2542679-2
Sampled Date	Jun 16, 2025 10:57 AM
Sample Description	Groundwater
Location	WM#02 บริเวณ Unit#1000 ติดกับรั้ว ROC
Date Analysis Commenced	Jun 17, 2025
Condition of Sample	Contained in four glass vials, two amber glass bottles and two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Zinc	mg/L	0.003	0.005	0.02	10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Organic Compounds							
Butanol *	mg/L	-	10	<10	240	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 6200 B	Bangkok
Methanol *	mg/L	-	0.01	<0.01	60	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 6200 B	Bangkok
Petroleum Hydrocarbons							
TPH C>8-C16 *	mg/L	-	0.05	<0.05	1.7	United States Environmental Protection Agency, EPA Method 3510 C and 8015 C	Bangkok
TPH C5-C8 *	mg/L	-	0.01	<0.01	1.4	United States Environmental Protection Agency, EPA Method 5030 B and 8260 D	Bangkok
Volatile Organics Compounds							
Acetone *	mg/L	0.001	0.01	Not Detected	230	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 6200 B	Bangkok
Toluene	mg/L	0.00004	0.0005	Not Detected	5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 6200 B	Bangkok

Guideline : Notification of the Ministry of Industry B.E. 2559 (2016) on Soil and Groundwater Contamination Criteria, Monitoring of Soil and Groundwater Quality, Report Submission and Report Preparation of Soil and Groundwater Quality, and Proposal Report of Soil and Groundwater Controlling and Reduction Measures

Note : TPH C5-C8 : Sum of n-Pentane, n-Hexane, n-Heptane and n-Octane

TPH C>8-C16 : Sum of n-Nonane, n-Decane, n-Undecane, n-Dodecane, n-Tridecane, n-Tetradecane, n-Pentadecane and n-Hexadecane

Integration mode: Peak to Peak

Technical Management

Savitree N.

Savitree Noisangiam
Manager

ทะเบียนเลขที่ ว-204-จ-0007

Approved by

Kanokkorn Anek

Kanokkorn Anek
Assistant General Manager
ทะเบียนเลขที่ ว-204-ค-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.



Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

TESTING
No.0009
Lot ID: 2542679
Date Received : Jun 16, 2025
Date Reported : Jun 27, 2025
Report Number : 3346602-2

Page 2 of 2

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038 , Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-จ-0002

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management

Savitree N.

Savitree Noisangiam
Manager

ทะเบียนเลขที่ ว-204-จ-0007

Approved by

Kanokkorn Anek

Kanokkorn Anek
Assistant General Manager
ทะเบียนเลขที่ ว-204-ค-0004

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2542679

Date Received : Jun 16, 2025

Date Reported : Jun 27, 2025

Report Number : 3346603-1

Page 1 of 1

Sample Number	2542679-3						
Sampled Date	Jun 16, 2025 12:06 PM						
Sample Description	Groundwater						
Location	WM#03 บริเวณหน้าอาคารเทคนิค						
Date Analysis Commenced	Jun 16, 2025						
Condition of Sample	Contained in four glass vials, two amber glass bottles and two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
pH at 25 degree C		-	-	5.0	6.5-9.2 (I)	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong

Guideline : Notification of the Ministry of Industry B.E. 2559 (2016) on Soil and Groundwater Contamination Criteria, Monitoring of Soil and Groundwater Quality, Report Submission and Report Preparation of Soil and Groundwater Quality, and Proposal Report of Soil and Groundwater Controlling and Reduction Measures

(I): ในกรณีที่มีการปนเปื้อนของกรดหรือด่างให้เปรียบเทียบผลวิเคราะห์ค่าพีเอชจากจุดเก็บตัวอย่างบ่อน้ำที่ใช้ในการติดตามตรวจสอบการปนเปื้อนกับผลวิเคราะห์จากจุดเก็บตัวอย่างบ่อน้ำที่ใช้เป็นบ่ออ้างอิงบนทิศทางการไหลของน้ำใต้ดินในพื้นที่ โดยค่าพีเอชที่เปลี่ยนแปลงจะต้องไม่เกินหนึ่งระดับ และไม่อยู่นอกช่วงค่าเกณฑ์อนุโลมสูงสุดของมาตรฐานคุณภาพน้ำบาดาลที่ไขบริโภคือ 6.5-9.2

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038 , Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-จ-0002

Remark :

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

Technical Management

Photchana S.

Photchana Seeda

Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Changchon.

Dej Changchon

Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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Analysis / Test Report

TESTING

No.0009

Lot ID: 2542679

Date Received : Jun 16, 2025

Date Reported : Jun 27, 2025

Report Number : 3346603-2

Client : THAI MMA Co., Ltd.

271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location :

Page 1 of 2

Sample Number	2542679-3
Sampled Date	Jun 16, 2025 12:06 PM
Sample Description	Groundwater
Location	WM#03 บริเวณหน้าอาคารเทคนิค
Date Analysis Commenced	Jun 17, 2025
Condition of Sample	Contained in four glass vials, two amber glass bottles and two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Zinc	mg/L	0.003	0.005	0.009	10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B,3030 F	Bangkok
Organic Compounds							
Butanol *	mg/L	-	10	<10	240	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 6200 B	Bangkok
Methanol *	mg/L	-	0.01	<0.01	60	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 6200 B	Bangkok
Petroleum Hydrocarbons							
TPH C>8-C16 *	mg/L	-	0.05	<0.05	1.7	United States Environmental Protection Agency, EPA Method 3510 C and 8015 C	Bangkok
TPH C5-C8 *	mg/L	-	0.01	<0.01	1.4	United States Environmental Protection Agency, EPA Method 5030 B and 8260 D	Bangkok
Volatile Organics Compounds							
Acetone *	mg/L	0.001	0.01	Not Detected	230	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 6200 B	Bangkok
Toluene	mg/L	0.00004	0.0005	Not Detected	5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 6200 B	Bangkok

Guideline : Notification of the Ministry of Industry B.E. 2559 (2016) on Soil and Groundwater Contamination Criteria, Monitoring of Soil and Groundwater Quality, Report Submission and Report Preparation of Soil and Groundwater Quality, and Proposal Report of Soil and Groundwater Controlling and Reduction Measures

Note : TPH C5-C8 : Sum of n-Pentane, n-Hexane, n-Heptane and n-Octane

TPH C>8-C16 : Sum of n-Nonane, n-Decane, n-Undecane, n-Dodecane, n-Tridecane, n-Tetradecane, n-Pentadecane and n-Hexadecane
Integration mode: Peak to Peak

Technical Management

Savitree N.

Savitree Noisangiam
Manager

ทะเบียนเลขที่ ว-204-จ-0007

Approved by

Kanokkorn Anek

Kanokkorn Anek
Assistant General Manager

ทะเบียนเลขที่ ว-204-ค-0004

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Analysis / Test Report

TESTING
No.0009

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location :

Lot ID: 2542679

Date Received : Jun 16, 2025

Date Reported : Jun 27, 2025

Report Number : 3346603-2

Page 2 of 2

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038 , Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-จ-0002

Remark :

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- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management

Savitree N.

Savitree Noisangiam
Manager

ทะเบียนเลขที่ ว-204-จ-0007

Approved by

Kanokkorn Anek

Kanokkorn Anek
Assistant General Manager
ทะเบียนเลขที่ ว-204-ค-0004

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2542679

Date Received : Jun 16, 2025

Date Reported : Jun 27, 2025

Report Number : 3346604-1

Page 1 of 1

Sample Number	2542679-4
Sampled Date	Jun 16, 2025 11:26 AM
Sample Description	Groundwater
Location	WM#04 บริเวณ Unit#1000 ติดกับรั้ว ROC
Date Analysis Commenced	Jun 16, 2025
Condition of Sample	Contained in four glass vials, two amber glass bottles and two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
pH at 25 degree C		-	-	7.0	6.5-9.2 (I)	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong

Guideline : Notification of the Ministry of Industry B.E. 2559 (2016) on Soil and Groundwater Contamination Criteria, Monitoring of Soil and Groundwater Quality, Report Submission and Report Preparation of Soil and Groundwater Quality, and Proposal Report of Soil and Groundwater Controlling and Reduction Measures

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038 , Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-จ-0002

Remark :

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

Technical Management

Photchana S.

Photchana Seeda

Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Chumson.

Dej Changchon

Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.

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Analysis / Test Report

TESTING
No.0009

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location :

Lot ID: 2542679

Date Received : Jun 16, 2025

Date Reported : Jun 27, 2025

Report Number : 3346604-2

Page 1 of 2

Sample Number	2542679-4
Sampled Date	Jun 16, 2025 11:26 AM
Sample Description	Groundwater
Location	WM#04 บริเวณ Unit#1000 ติดกับรั้ว ROC
Date Analysis Commenced	Jun 17, 2025
Condition of Sample	Contained in four glass vials, two amber glass bottles and two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Zinc	mg/L	0.003	0.005	0.006	10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 3125 B, 3030 F	Bangkok
Organic Compounds							
Butanol *	mg/L	-	10	<10	240	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 6200 B	Bangkok
Methanol *	mg/L	-	0.01	<0.01	60	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 6200 B	Bangkok
Petroleum Hydrocarbons							
TPH C>8-C16 *	mg/L	-	0.05	<0.05	1.7	United States Environmental Protection Agency, EPA Method 3510 C and 8015 C	Bangkok
TPH C5-C8 *	mg/L	-	0.01	<0.01	1.4	United States Environmental Protection Agency, EPA Method 5030 B and 8260 D	Bangkok
Volatile Organics Compounds							
Acetone *	mg/L	0.001	0.01	Not Detected	230	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 6200 B	Bangkok
Toluene	mg/L	0.00004	0.0005	Not Detected	5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 6200 B	Bangkok

Guideline : Notification of the Ministry of Industry B.E. 2559 (2016) on Soil and Groundwater Contamination Criteria, Monitoring of Soil and Groundwater Quality, Report Submission and Report Preparation of Soil and Groundwater Quality, and Proposal Report of Soil and Groundwater Controlling and Reduction Measures

Note : TPH C5-C8 : Sum of n-Pentane, n-Hexane, n-Heptane and n-Octane
TPH C>8-C16 : Sum of n-Nonane, n-Decane, n-Undecane, n-Dodecane, n-Tridecane, n-Tetradecane, n-Pentadecane and n-Hexadecane
Integration mode: Peak to Peak

Technical Management

Savitree N.

Savitree Noisangiam
Manager

ทะเบียนเลขที่ ว-204-จ-0007

Approved by

Kanokkorn Anek

Kanokkorn Anek
Assistant General Manager
ทะเบียนเลขที่ ว-204-ค-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.



Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

TESTING
No.0009
Lot ID: 2542679
Date Received : Jun 16, 2025
Date Reported : Jun 27, 2025
Report Number : 3346604-2

Page 2 of 2

Sampling By : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-0038 , Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-จ-0002

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.
- Sampling is not included in scope of accreditation ISO/IEC 17025

Technical Management

Savitree N.

Savitree Noisangiam
Manager

ทะเบียนเลขที่ ว-204-จ-0007

Approved by

Kanokkorn Anek

Kanokkorn Anek
Assistant General Manager
ทะเบียนเลขที่ ว-204-ค-0004

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ภาคผนวก ค-10

ใบรับรองผลการตรวจวิเคราะห์ดิน



Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2542676

Date Received : Jun 16, 2025
Date Reported : Jun 24, 2025
Report Number : 3343683-1

Page 1 of 1

Sample Number 2542676-1
Sampled Date Jun 16, 2025 9:55 AM
Sample Description Soil
Location WM#01 บริเวณอาคาร Product Loading
Date Analysis Commenced Jun 17, 2025
Condition of Sample Packed in one plastic bag and one glass bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Zinc	mg/kg	-	1.00	41.8	1000	United States Environmental Protection Agency, EPA Method 3050 B and 6010 D	Bangkok
Organic Compounds							
Butanol	mg/kg	-	20	<20	1000	United States Environmental Protection Agency, EPA Method 5021 A and 8260 D	Bangkok
Methanol	mg/kg	-	10	<10	1000	United States Environmental Protection Agency, EPA Method 5021 A and 8260 D	Bangkok
Petroleum Hydrocarbons							
TPH C>8-C16	mg/kg	-	0.5	<0.5	25	United States Environmental Protection Agency, EPA Method 3541 and 8015 C	Bangkok
TPH C5-C8	mg/kg	-	0.5	<0.5	25	United States Environmental Protection Agency, EPA Method 5035 and 8260 D	Bangkok
Volatile Organics Compounds							
Acetone	mg/kg	-	0.2	<0.2	1000	United States Environmental Protection Agency, EPA Method 5035 and 8260 D	Bangkok
Toluene	mg/kg	-	0.05	<0.05	520	United States Environmental Protection Agency, EPA Method 5035 and 8260 D	Bangkok

Guideline : Notification of the Ministry of Industry B.E. 2559 (2016) on Soil and Groundwater Contamination Criteria, Monitoring of Soil and Groundwater Quality, Report Submission and Report Preparation of Soil and Groundwater Quality, and Proposal Report of Soil and Groundwater Controlling and Reduction Measures

Note :
1. Analysis Results expressed on dry basis
2. TPH C5-C8: Sum of n-Pentane, n-Hexane, n-Heptane and n-Octane
TPH C>8-C16: Sum of n-Nonane, n-Decane, n-Undecane, n-Dodecane, n-Tridecane, n-Tetradecane, n-Pentadecane and n-Hexadecane
Integration mode: Peak to Peak

Sampling By : Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-จ-0002

Remark :

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

Technical Management

Savitree N.

Savitree Noisangiam
Manager

ทะเบียนเลขที่ ว-204-จ-0007

Approved by

Kanokkorn Anek

Kanokkorn Anek
Assistant General Manager
ทะเบียนเลขที่ ว-204-ค-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.



Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2542676

Date Received : Jun 16, 2025
Date Reported : Jun 24, 2025
Report Number : 3343683-2

Page 1 of 1

Sample Number	2542676-1						
Sampled Date	Jun 16, 2025 9:55 AM						
Sample Description	Soil						
Location	WM#01 บริเวณอาคาร Product Loading						
Date Analysis Commenced	Jun 17, 2025						
Condition of Sample	Packed in one plastic bag and one glass bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Physical Parameters							
Moisture	%	-	0.1	9.5	No Standard	In-house method based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 G	Bangkok
Soil Testing							
pH aqueous phase 50% (w/v)		-	-	6.3	No Standard	United States Environmental Protection Agency, EPA Method 9045 D	Bangkok

Guideline : Notification of the Ministry of Industry B.E. 2559 (2016) on Soil and Groundwater Contamination Criteria, Monitoring of Soil and Groundwater Quality, Report Submission and Report Preparation of Soil and Groundwater Quality, and Proposal Report of Soil and Groundwater Controlling and Reduction Measures

Sampling By : Pattarapol Sawangjaitam

Remark :

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

Approved by

Siriluk P.

Siriluk Bunnak
Section Head

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.



Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2542676

Date Received : Jun 16, 2025
Date Reported : Jun 24, 2025
Report Number : 3343684-1

Page 1 of 1

Sample Number	2542676-2
Sampled Date	Jun 16, 2025 10:48 AM
Sample Description	Soil
Location	WM#02 บริเวณ Unit#1000 ติดกับรั้ว ROC
Date Analysis Commenced	Jun 17, 2025
Condition of Sample	Packed in one plastic bag and one glass bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Zinc	mg/kg	-	1.00	33.9	1000	United States Environmental Protection Agency, EPA Method 3050 B and 6010 D	Bangkok
Organic Compounds							
Butanol	mg/kg	-	20	<20	1000	United States Environmental Protection Agency, EPA Method 5021 A and 8260 D	Bangkok
Methanol	mg/kg	-	10	<10	1000	United States Environmental Protection Agency, EPA Method 5021 A and 8260 D	Bangkok
Petroleum Hydrocarbons							
TPH C>8-C16	mg/kg	-	0.5	<0.5	25	United States Environmental Protection Agency, EPA Method 3541 and 8015 C	Bangkok
TPH C5-C8	mg/kg	-	0.5	<0.5	25	United States Environmental Protection Agency, EPA Method 5035 and 8260 D	Bangkok
Volatile Organics Compounds							
Acetone	mg/kg	-	0.2	<0.2	1000	United States Environmental Protection Agency, EPA Method 5035 and 8260 D	Bangkok
Toluene	mg/kg	-	0.05	<0.05	520	United States Environmental Protection Agency, EPA Method 5035 and 8260 D	Bangkok

Guideline : Notification of the Ministry of Industry B.E. 2559 (2016) on Soil and Groundwater Contamination Criteria, Monitoring of Soil and Groundwater Quality, Report Submission and Report Preparation of Soil and Groundwater Quality, and Proposal Report of Soil and Groundwater Controlling and Reduction Measures

Note :
1. Analysis Results expressed on dry basis
2. TPH C5-C8: Sum of n-Pentane, n-Hexane, n-Heptane and n-Octane
TPH C>8-C16: Sum of n-Nonane, n-Decane, n-Undecane, n-Dodecane, n-Tridecane, n-Tetradecane, n-Pentadecane and n-Hexadecane
Integration mode: Peak to Peak

Sampling By : Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-จ-0002

Remark :

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

Technical Management

Savitree N.

Savitree Noisangiam
Manager

ทะเบียนเลขที่ ว-204-จ-0007

Approved by

Kanokkorn Anek

Kanokkorn Anek
Assistant General Manager
ทะเบียนเลขที่ ว-204-ค-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.



Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2542676

Date Received : Jun 16, 2025

Date Reported : Jun 24, 2025

Report Number : 3343684-2

Page 1 of 1

Sample Number	2542676-2
Sampled Date	Jun 16, 2025 10:48 AM
Sample Description	Soil
Location	WM#02 บริเวณ Unit#1000 ติดกับรั้ว ROC
Date Analysis Commenced	Jun 17, 2025
Condition of Sample	Packed in one plastic bag and one glass bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Physical Parameters							
Moisture	%	-	0.1	11.0	No Standard	In-house method based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 G	Bangkok
Soil Testing							
pH aqueous phase 50% (w/v)		-	-	7.9	No Standard	United States Environmental Protection Agency, EPA Method 9045 D	Bangkok

Guideline : Notification of the Ministry of Industry B.E. 2559 (2016) on Soil and Groundwater Contamination Criteria, Monitoring of Soil and Groundwater Quality, Report Submission and Report Preparation of Soil and Groundwater Quality, and Proposal Report of Soil and Groundwater Controlling and Reduction Measures

Sampling By : Pattarapol Sawangjaitam

Remark :

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

Approved by

Siriluk P.

Siriluk Bunnak
Section Head

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2542676

Date Received : Jun 16, 2025
Date Reported : Jun 24, 2025
Report Number : 3343685-1

Page 1 of 1

Sample Number 2542676-3
Sampled Date Jun 16, 2025 12:05 PM
Sample Description Soil
Location WM#03 บริเวณหน้าอาคารเทคนิค
Date Analysis Commenced Jun 17, 2025
Condition of Sample Packed in one plastic bag and one glass bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Zinc	mg/kg	-	1.00	46.5	1000	United States Environmental Protection Agency, EPA Method 3050 B and 6010 D	Bangkok
Organic Compounds							
Butanol	mg/kg	-	20	<20	1000	United States Environmental Protection Agency, EPA Method 5021 A and 8260 D	Bangkok
Methanol	mg/kg	-	10	<10	1000	United States Environmental Protection Agency, EPA Method 5021 A and 8260 D	Bangkok
Petroleum Hydrocarbons							
TPH C>8-C16	mg/kg	-	0.5	<0.5	25	United States Environmental Protection Agency, EPA Method 3541 and 8015 C	Bangkok
TPH C5-C8	mg/kg	-	0.5	<0.5	25	United States Environmental Protection Agency, EPA Method 5035 and 8260 D	Bangkok
Volatile Organics Compounds							
Acetone	mg/kg	-	0.2	<0.2	1000	United States Environmental Protection Agency, EPA Method 5035 and 8260 D	Bangkok
Toluene	mg/kg	-	0.05	<0.05	520	United States Environmental Protection Agency, EPA Method 5035 and 8260 D	Bangkok

Guideline : Notification of the Ministry of Industry B.E. 2559 (2016) on Soil and Groundwater Contamination Criteria, Monitoring of Soil and Groundwater Quality, Report Submission and Report Preparation of Soil and Groundwater Quality, and Proposal Report of Soil and Groundwater Controlling and Reduction Measures

Note :
1. Analysis Results expressed on dry basis
2. TPH C5-C8: Sum of n-Pentane, n-Hexane, n-Heptane and n-Octane
TPH C>8-C16: Sum of n-Nonane, n-Decane, n-Undecane, n-Dodecane, n-Tridecane, n-Tetradecane, n-Pentadecane and n-Hexadecane
Integration mode: Peak to Peak

Sampling By : Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-จ-0002

Remark :

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

Technical Management

Savitree N.

Savitree Noisangiam
Manager

ทะเบียนเลขที่ ว-204-จ-0007

Approved by

Kanokkorn Anek

Kanokkorn Anek
Assistant General Manager
ทะเบียนเลขที่ ว-204-ค-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.



Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location :

Lot ID: 2542676

Date Received : Jun 16, 2025

Date Reported : Jun 24, 2025

Report Number : 3343685-2

Page 1 of 1

Sample Number	2542676-3						
Sampled Date	Jun 16, 2025 12:05 PM						
Sample Description	Soil						
Location	WM#03 บริเวณหน้าอาคารเทคนิค						
Date Analysis Commenced	Jun 17, 2025						
Condition of Sample	Packed in one plastic bag and one glass bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Physical Parameters							
Moisture	%	-	0.1	8.7	No Standard	In-house method based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 G	Bangkok
Soil Testing							
pH aqueous phase 50% (w/v)		-	-	8.2	No Standard	United States Environmental Protection Agency, EPA Method 9045 D	Bangkok

Guideline : Notification of the Ministry of Industry B.E. 2559 (2016) on Soil and Groundwater Contamination Criteria, Monitoring of Soil and Groundwater Quality, Report Submission and Report Preparation of Soil and Groundwater Quality, and Proposal Report of Soil and Groundwater Controlling and Reduction Measures

Note :

1. Analysis Results expressed on dry basis
2. TPH C5-C8: Sum of n-Pentane, n-Hexane, n-Heptane and n-Octane
TPH C>8-C16: Sum of n-Nonane, n-Decane, n-Undecane, n-Dodecane, n-Tridecane, n-Tetradecane, n-Pentadecane and n-Hexadecane
Integration mode: Peak to Peak

Sampling By : Pattarapol Sawangjaitam

Remark :

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

Approved by

Siriluk P.

Siriluk Bunnak
Section Head

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Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2542676

Date Received : Jun 16, 2025

Date Reported : Jun 24, 2025

Report Number : 3343686-1

Page 1 of 1

Sample Number	2542676-4
Sampled Date	Jun 16, 2025 11:23 AM
Sample Description	Soil
Location	WM#04 บริเวณ Unit#1000 ติดกับรั้ว ROC
Date Analysis Commenced	Jun 17, 2025
Condition of Sample	Packed in one plastic bag and one glass bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Zinc	mg/kg	-	1.00	324	1000	United States Environmental Protection Agency, EPA Method 3050 B and 6010 D	Bangkok
Organic Compounds							
Butanol	mg/kg	-	20	<20	1000	United States Environmental Protection Agency, EPA Method 5021 A and 8260 D	Bangkok
Methanol	mg/kg	-	10	<10	1000	United States Environmental Protection Agency, EPA Method 5021 A and 8260 D	Bangkok
Petroleum Hydrocarbons							
TPH C>8-C16	mg/kg	-	0.5	<0.5	25	United States Environmental Protection Agency, EPA Method 3541 and 8015 C	Bangkok
TPH C5-C8	mg/kg	-	0.5	<0.5	25	United States Environmental Protection Agency, EPA Method 5035 and 8260 D	Bangkok
Volatile Organics Compounds							
Acetone	mg/kg	-	0.2	<0.2	1000	United States Environmental Protection Agency, EPA Method 5035 and 8260 D	Bangkok
Toluene	mg/kg	-	0.05	<0.05	520	United States Environmental Protection Agency, EPA Method 5035 and 8260 D	Bangkok

Guideline : Notification of the Ministry of Industry B.E. 2559 (2016) on Soil and Groundwater Contamination Criteria, Monitoring of Soil and Groundwater Quality, Report Submission and Report Preparation of Soil and Groundwater Quality, and Proposal Report of Soil and Groundwater Controlling and Reduction Measures

Note :

1. Analysis Results expressed on dry basis
2. TPH C5-C8: Sum of n-Pentane, n-Hexane, n-Heptane and n-Octane

TPH C>8-C16: Sum of n-Nonane, n-Decane, n-Undecane, n-Dodecane, n-Tridecane, n-Tetradecane, n-Pentadecane and n-Hexadecane

Integration mode: Peak to Peak

Sampling By : Pattarapol Sawangjaitam ทะเบียนเลขที่ ว-204-จ-0002

Remark :

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

Technical Management

Savitree N.

Savitree Noisangiam
Manager

ทะเบียนเลขที่ ว-204-จ-0007

Approved by

Kanokkorn Anek

Kanokkorn Anek
Assistant General Manager
ทะเบียนเลขที่ ว-204-ค-0004

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.



Analysis / Test Report

Client : THAI MMA Co., Ltd.
271, Sukhumvit Road, T. Map Ta Phut, A. Muang, Rayong Thailand 21150
P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2542676

Date Received : Jun 16, 2025

Date Reported : Jun 24, 2025

Report Number : 3343686-2

Page 1 of 1

Sample Number	2542676-4						
Sampled Date	Jun 16, 2025 11:23 AM						
Sample Description	Soil						
Location	WM#04 บริเวณ Unit#1000 ติดกับรั้ว ROC						
Date Analysis Commenced	Jun 17, 2025						
Condition of Sample	Packed in one plastic bag and one glass bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Physical Parameters							
Moisture	%	-	0.1	8.2	No Standard	In-house method based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 G	Bangkok
Soil Testing							
pH aqueous phase 50% (w/v)		-	-	8.6	No Standard	United States Environmental Protection Agency, EPA Method 9045 D	Bangkok

Guideline : Notification of the Ministry of Industry B.E. 2559 (2016) on Soil and Groundwater Contamination Criteria, Monitoring of Soil and Groundwater Quality, Report Submission and Report Preparation of Soil and Groundwater Quality, and Proposal Report of Soil and Groundwater Controlling and Reduction Measures

Note :
1. Analysis Results expressed on dry basis
2. TPH C5-C8: Sum of n-Pentane, n-Hexane, n-Heptane and n-Octane
TPH C>8-C16: Sum of n-Nonane, n-Decane, n-Undecane, n-Dodecane, n-Tridecane, n-Tetradecane, n-Pentadecane and n-Hexadecane
Integration mode: Peak to Peak

Sampling By : Pattarapol Sawangjaitam

Remark :

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

Approved by

Siriluk P.

Siriluk Bunnak
Section Head

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. The report shall not be reproduced except in full without the written approval of the laboratory.