

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: 2575490

Date Received : Sep 16, 2025

Date Reported : Sep 22, 2025

Report Number: 3412013-1

Page 1 of 1

Sample Description Air Quality
Location SCG site 3
Parameter Nitrogen dioxide (ppb)
Measurement Date Sep 08, 2025 - Sep 14, 2025
Measurement by Santi Chaichana

Time	2575490-1 Sep 08, 2025	2575490-2 Sep 09, 2025	2575490-3 Sep 10, 2025	2575490-4 Sep 11, 2025	2575490-5 Sep 12, 2025	2575490-6 Sep 13, 2025	2575490-7 Sep 14, 2025
11:00 AM - 12:00 PM	3.3	2.5	2.3	2.5	2.7	2.8	2.5
12:00 PM - 01:00 PM	2.9	2.5	2.4	2.5	2.6	2.9	3.0
01:00 PM - 02:00 PM	3.0	3.0	2.8	3.0	2.9	3.0	3.3
02:00 PM - 03:00 PM	3.0	2.8	2.6	3.1	2.6	2.9	3.0
03:00 PM - 04:00 PM	2.8	2.6	2.7	3.3	2.4	2.6	2.6
04:00 PM - 05:00 PM	2.9	2.6	2.9	3.4	2.4	2.7	3.4
05:00 PM - 06:00 PM	2.9	2.8	2.8	3.1	2.5	2.6	2.7
06:00 PM - 07:00 PM	2.9	3.1	2.7	3.4	2.5	2.7	2.5
07:00 PM - 08:00 PM	2.9	2.6	2.6	2.6	2.4	2.7	2.6
08:00 PM - 09:00 PM	2.8	2.4	2.3	2.3	2.3	3.1	3.0
09:00 PM - 10:00 PM	2.6	3.3	2.4	2.3	2.7	3.0	2.6
10:00 PM - 11:00 PM	2.5	2.6	2.2	2.4	2.4	2.9	2.4
11:00 PM - 12:00 AM	2.6	2.2	2.3	2.3	2.3	2.8	2.7
12:00 AM - 01:00 AM	3.1	2.3	2.3	2.8	2.5	2.8	2.8
01:00 AM - 02:00 AM	2.7	2.3	2.9	3.3	2.3	2.7	2.9
02:00 AM - 03:00 AM	2.9	2.2	3.1	2.4	2.2	2.4	3.5
03:00 AM - 04:00 AM	2.5	2.4	3.2	2.1	2.1	2.2	3.5
04:00 AM - 05:00 AM	2.6	2.2	2.8	2.2	2.1	2.2	3.0
05:00 AM - 06:00 AM	2.9	2.8	3.0	2.2	2.2	2.5	2.9
06:00 AM - 07:00 AM	2.7	2.6	2.8	2.3	2.1	2.2	3.0
07:00 AM - 08:00 AM	2.6	2.5	2.7	2.4	2.2	2.4	4.9
08:00 AM - 09:00 AM	2.8	2.7	3.7	2.5	2.2	2.8	3.9
09:00 AM - 10:00 AM	2.7	2.7	2.8	2.5	2.2	2.9	4.1
10:00 AM - 11:00 AM	2.6	2.6	2.8	2.6	2.3	2.4	3.5
Average (24 hrs)	2.8	2.6	2.7	2.7	2.4	2.7	3.1
1hr - Maximum	3.3	3.3	3.7	3.4	2.9	3.1	4.9
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 : U.S. Environmental Protection Agency 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
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: 2575490

Date Received : Sep 16, 2025

Date Reported : Sep 22, 2025

Report Number: 3412014-1

Page 1 of 1

Sample Description Air Quality
Location วัดหนองแฟบ
Parameter Nitrogen dioxide (ppb)
Measurement Date Sep 08, 2025 - Sep 14, 2025
Measurement by Santi Chaichana

Time	2575490-8 Sep 08, 2025	2575490-9 Sep 09, 2025	2575490-10 Sep 10, 2025	2575490-11 Sep 11, 2025	2575490-12 Sep 12, 2025	2575490-13 Sep 13, 2025	2575490-14 Sep 14, 2025
12:00 PM - 01:00 PM	2.1	1.8	1.9	1.9	2.0	1.9	1.8
01:00 PM - 02:00 PM	2.4	1.7	1.8	1.8	1.9	1.8	1.8
02:00 PM - 03:00 PM	3.6	1.9	1.8	2.0	2.0	2.1	1.8
03:00 PM - 04:00 PM	2.7	1.9	2.2	2.0	2.0	2.2	2.7
04:00 PM - 05:00 PM	2.5	2.1	2.9	2.2	2.6	2.6	5.3
05:00 PM - 06:00 PM	2.4	2.3	2.5	2.5	2.9	2.7	4.7
06:00 PM - 07:00 PM	2.7	2.3	2.3	2.7	2.8	7.1	5.5
07:00 PM - 08:00 PM	2.9	1.9	2.0	2.3	3.3	7.0	3.0
08:00 PM - 09:00 PM	2.0	1.8	1.7	2.1	2.4	6.1	1.8
09:00 PM - 10:00 PM	2.2	1.7	1.7	2.0	2.8	5.2	1.7
10:00 PM - 11:00 PM	1.9	1.8	1.7	2.1	2.6	5.6	1.6
11:00 PM - 12:00 AM	1.7	1.9	1.7	1.8	3.0	5.2	2.0
12:00 AM - 01:00 AM	1.7	1.7	1.6	1.7	2.7	2.9	1.8
01:00 AM - 02:00 AM	1.7	1.7	1.6	1.7	2.5	2.1	3.2
02:00 AM - 03:00 AM	1.6	1.6	1.6	1.6	2.2	1.9	5.8
03:00 AM - 04:00 AM	1.7	1.8	2.1	1.7	2.2	2.1	4.4
04:00 AM - 05:00 AM	1.9	1.9	2.6	1.8	2.8	2.3	4.1
05:00 AM - 06:00 AM	1.8	2.0	2.7	2.4	3.1	2.2	4.0
06:00 AM - 07:00 AM	2.5	2.8	3.0	3.3	4.0	2.4	4.1
07:00 AM - 08:00 AM	2.2	2.5	2.6	2.7	3.5	1.8	4.1
08:00 AM - 09:00 AM	2.0	1.9	2.5	3.6	2.4	2.1	3.3
09:00 AM - 10:00 AM	1.8	1.7	2.1	1.8	1.9	2.0	2.8
10:00 AM - 11:00 AM	1.8	1.8	1.9	1.7	1.9	2.0	3.0
11:00 AM - 12:00 PM	2.0	1.8	1.9	1.8	1.8	2.4	2.7
Average (24 hrs)	2.2	1.9	2.1	2.1	2.5	3.2	3.2
1hr - Maximum	3.6	2.8	3.0	3.6	4.0	7.1	5.8
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 : U.S. Environmental Protection Agency Method 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: 2575490

Date Received : Sep 16, 2025

Date Reported : Sep 22, 2025

Report Number: 3412015-1

Page 1 of 1

Sample Description Air Quality
Location รร.บ้านนาบตาพุด
Parameter Nitrogen dioxide (ppb)
Measurement Date Sep 08, 2025 - Sep 14, 2025
Measurement by Santi Chaichana

Time	2575490-15 Sep 08, 2025	2575490-16 Sep 09, 2025	2575490-17 Sep 10, 2025	2575490-18 Sep 11, 2025	2575490-19 Sep 12, 2025	2575490-20 Sep 13, 2025	2575490-21 Sep 14, 2025
10:00 AM - 11:00 AM	11.9	6.0	7.0	9.6	10.8	2.9	11.6
11:00 AM - 12:00 PM	9.8	7.3	4.5	11.5	5.8	3.1	14.3
12:00 PM - 01:00 PM	5.2	7.2	6.9	10.8	12.5	4.1	10.8
01:00 PM - 02:00 PM	4.4	7.0	5.2	12.1	14.0	11.6	17.0
02:00 PM - 03:00 PM	3.0	7.3	7.8	11.2	15.5	8.4	16.2
03:00 PM - 04:00 PM	3.1	5.4	7.6	11.5	16.0	12.9	13.9
04:00 PM - 05:00 PM	4.8	6.6	10.5	12.6	9.8	9.5	7.2
05:00 PM - 06:00 PM	6.1	4.5	8.8	12.4	12.4	11.4	11.1
06:00 PM - 07:00 PM	7.2	11.1	10.3	10.2	13.5	8.5	11.0
07:00 PM - 08:00 PM	7.2	10.3	9.4	8.9	12.5	12.4	15.5
08:00 PM - 09:00 PM	6.5	10.9	7.2	7.1	12.4	14.1	9.9
09:00 PM - 10:00 PM	6.1	9.0	5.6	6.1	10.1	12.8	8.1
10:00 PM - 11:00 PM	5.3	7.4	4.1	4.9	10.1	6.6	7.6
11:00 PM - 12:00 AM	5.1	9.2	3.5	4.8	8.3	6.9	4.0
12:00 AM - 01:00 AM	3.0	8.9	3.4	3.8	9.4	5.3	4.2
01:00 AM - 02:00 AM	2.5	6.6	6.7	2.7	9.2	3.5	2.1
02:00 AM - 03:00 AM	4.0	6.1	10.8	3.1	9.6	3.5	3.4
03:00 AM - 04:00 AM	3.7	8.7	12.4	4.3	8.6	4.4	5.7
04:00 AM - 05:00 AM	4.6	8.4	4.1	4.9	8.6	6.4	6.5
05:00 AM - 06:00 AM	4.6	10.0	6.8	6.1	7.4	5.3	6.8
06:00 AM - 07:00 AM	6.3	11.0	5.2	5.4	7.4	5.9	9.1
07:00 AM - 08:00 AM	10.8	9.5	6.9	7.0	4.7	11.8	6.5
08:00 AM - 09:00 AM	8.2	10.0	8.2	8.0	6.4	9.3	5.3
09:00 AM - 10:00 AM	7.3	8.2	11.2	8.3	5.5	10.8	4.0
Average (24 hrs)	5.9	8.2	7.3	7.8	10.0	8.0	8.8
1hr - Maximum	11.9	11.1	12.4	12.6	16.0	14.1	17.0
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 : U.S. Environmental Protection Agency 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
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: 2575497

Date Received : Sep 16, 2025
Date Reported : Sep 23, 2025
Report Number : 3380621-1

Page 1 of 21

Sample Number : 2575497-1
Sampled Date : Sep 08, 2025
Sample Description : Air Quality
Location : SCG site 3
Date Analysis Commenced : Sep 17, 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 : 758 mmHg
Atmospheric Temperature : 29.6 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	08/09/25 - 09/09/25	ppm	-	1.0	5.5	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	08/09/25 - 09/09/25	mg/m3	-	0.002	0.013	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008 (Include sampling)	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.

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: 2575497

Date Received : Sep 16, 2025
Date Reported : Sep 23, 2025
Report Number : 3380621-1

Page 2 of 21

Sample Number : 2575497-2
Sampled Date : Sep 09, 2025
Sample Description : Air Quality
Location : SCG site 3
Date Analysis Commenced : Sep 17, 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 : 758 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 *	09/09/25 - 10/09/25	ppm	-	1.0	2.5	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	09/09/25 - 10/09/25	mg/m3	-	0.002	0.013	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008 (Include sampling)	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

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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: 2575497

Date Received : Sep 16, 2025
Date Reported : Sep 23, 2025
Report Number : 3380621-1

Page 3 of 21

Sample Number 2575497-3
Sampled Date Sep 10, 2025
Sample Description Air Quality
Location SCG site 3
Date Analysis Commenced Sep 17, 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 758 mmHg
Atmospheric Temperature 30.4 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	10/09/25 - 11/09/25	ppm	-	1.0	2.6	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	10/09/25 - 11/09/25	mg/m3	-	0.002	0.029	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008 (Include sampling)	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: 2575497

Date Received : Sep 16, 2025
Date Reported : Sep 23, 2025
Report Number : 3380621-1

Page 4 of 21

Sample Number 2575497-4
Sampled Date Sep 11, 2025
Sample Description Air Quality
Location SCG site 3
Date Analysis Commenced Sep 17, 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 758 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 *	11/09/25 - 12/09/25	ppm	-	1.0	2.6	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	11/09/25 - 12/09/25	mg/m3	-	0.002	0.027	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008 (Include sampling)	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

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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: 2575497

Date Received : Sep 16, 2025
Date Reported : Sep 23, 2025
Report Number : 3380621-1

Page 5 of 21

Sample Number 2575497-5
Sampled Date Sep 12, 2025
Sample Description Air Quality
Location SCG site 3
Date Analysis Commenced Sep 17, 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 758 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 *	12/09/25 - 13/09/25	ppm	-	1.0	2.5	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	12/09/25 - 13/09/25	mg/m3	-	0.002	0.036	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008 (Include sampling)	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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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: 2575497

Date Received : Sep 16, 2025
Date Reported : Sep 23, 2025
Report Number : 3380621-1

Page 6 of 21

Sample Number 2575497-6
Sampled Date Sep 13, 2025
Sample Description Air Quality
Location SCG site 3
Date Analysis Commenced Sep 17, 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 758 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 *	13/09/25 - 14/09/25	ppm	-	1.0	2.6	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	13/09/25 - 14/09/25	mg/m3	-	0.002	0.034	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008 (Include sampling)	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

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Approved by

Thanita K.

Thanita Kulsuriwong
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 :

Lot ID: 2575497

Date Received : Sep 16, 2025
Date Reported : Sep 23, 2025
Report Number : 3380621-1

Page 7 of 21

Sample Number 2575497-7
Sampled Date Sep 14, 2025
Sample Description Air Quality
Location SCG site 3
Date Analysis Commenced Sep 17, 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 758 mmHg
Atmospheric Temperature 30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	14/09/25 - 15/09/25	ppm	-	1.0	2.6	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	14/09/25 - 15/09/25	mg/m3	-	0.002	0.029	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008 (Include sampling)	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

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

Lot ID: 2575497

Date Received : Sep 16, 2025
Date Reported : Sep 23, 2025
Report Number : 3380621-1

Page 8 of 21

Sample Number 2575497-8
Sampled Date Sep 08, 2025
Sample Description Air Quality
Location วัดหนองแฟบ
Date Analysis Commenced Sep 17, 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 758 mmHg
Atmospheric Temperature 29.6 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	08/09/25 - 09/09/25	ppm	-	1.0	2.5	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	08/09/25 - 09/09/25	mg/m3	-	0.002	0.017	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008 (Include sampling)	NEB No.24	Rayong

Guideline :

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Project Name : Environmental Monitoring
Project Location :

Lot ID: 2575497

Date Received : Sep 16, 2025
Date Reported : Sep 23, 2025
Report Number : 3380621-1

Page 9 of 21

Sample Number 2575497-9
Sampled Date Sep 09, 2025
Sample Description Air Quality
Location วัดหนองแฟบ
Date Analysis Commenced Sep 17, 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 758 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 *	09/09/25 - 10/09/25	ppm	-	1.0	2.5	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	09/09/25 - 10/09/25	mg/m3	-	0.002	0.014	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008 (Include sampling)	NEB No.24	Rayong

Guideline :

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Project Name : Environmental Monitoring
Project Location :

Lot ID: 2575497

Date Received : Sep 16, 2025
Date Reported : Sep 23, 2025
Report Number : 3380621-1

Page 10 of 21

Sample Number 2575497-10
Sampled Date Sep 10, 2025
Sample Description Air Quality
Location วัดหนองแฟบ
Date Analysis Commenced Sep 17, 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 758 mmHg
Atmospheric Temperature 30.4 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	10/09/25 - 11/09/25	ppm	-	1.0	2.6	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	10/09/25 - 11/09/25	mg/m3	-	0.002	0.016	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008 (Include sampling)	NEB No.24	Rayong

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Project Location :

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Date Reported : Sep 23, 2025
Report Number : 3380621-1

Page 11 of 21

Sample Number 2575497-11
Sampled Date Sep 11, 2025
Sample Description Air Quality
Location วัดหนองแฟบ
Date Analysis Commenced Sep 17, 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 758 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 *	11/09/25 - 12/09/25	ppm	-	1.0	2.6	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	11/09/25 - 12/09/25	mg/m3	-	0.002	0.017	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008 (Include sampling)	NEB No.24	Rayong

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Project Location :

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Date Received : Sep 16, 2025
Date Reported : Sep 23, 2025
Report Number : 3380621-1

Page 12 of 21

Sample Number 2575497-12
Sampled Date Sep 12, 2025
Sample Description Air Quality
Location วัดหนองแฟบ
Date Analysis Commenced Sep 17, 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 758 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 *	12/09/25 - 13/09/25	ppm	-	1.0	2.5	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	12/09/25 - 13/09/25	mg/m3	-	0.002	0.023	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008 (Include sampling)	NEB No.24	Rayong

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Project Location :

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Date Reported : Sep 23, 2025
Report Number : 3380621-1

Page 13 of 21

Sample Number 2575497-13
Sampled Date Sep 13, 2025
Sample Description Air Quality
Location วัดหนองแฟบ
Date Analysis Commenced Sep 17, 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 758 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 *	13/09/25 - 14/09/25	ppm	-	1.0	3.8	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	13/09/25 - 14/09/25	mg/m3	-	0.002	0.026	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008 (Include sampling)	NEB No.24	Rayong

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Project Location :

Lot ID: 2575497

Date Received : Sep 16, 2025
Date Reported : Sep 23, 2025
Report Number : 3380621-1

Page 14 of 21

Sample Number 2575497-14
Sampled Date Sep 14, 2025
Sample Description Air Quality
Location วัดหนองแฟบ
Date Analysis Commenced Sep 17, 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 758 mmHg
Atmospheric Temperature 30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	14/09/25 - 15/09/25	ppm	-	1.0	2.5	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	14/09/25 - 15/09/25	mg/m3	-	0.002	0.017	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008 (Include sampling)	NEB No.24	Rayong

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Project Location :

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Date Received : Sep 16, 2025
Date Reported : Sep 23, 2025
Report Number : 3380621-1

Page 15 of 21

Sample Number 2575497-15
Sampled Date Sep 08, 2025
Sample Description Air Quality
Location รร.บ้านมาบตาพุด
Date Analysis Commenced Sep 17, 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 758 mmHg
Atmospheric Temperature 29.6 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	08/09/25 - 09/09/25	ppm	-	1.0	2.5	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	08/09/25 - 09/09/25	mg/m3	-	0.002	0.023	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008 (Include sampling)	NEB No.24	Rayong

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Project Name : Environmental Monitoring
Project Location :

Lot ID: 2575497

Date Received : Sep 16, 2025
Date Reported : Sep 23, 2025
Report Number : 3380621-1

Page 16 of 21

Sample Number 2575497-16
Sampled Date Sep 09, 2025
Sample Description Air Quality
Location รร.บ้านมาบตาพุด
Date Analysis Commenced Sep 17, 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 758 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 *	09/09/25 - 10/09/25	ppm	-	1.0	2.5	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	09/09/25 - 10/09/25	mg/m3	-	0.002	0.022	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008 (Include sampling)	NEB No.24	Rayong

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Project Name : Environmental Monitoring
Project Location :

Lot ID: 2575497

Date Received : Sep 16, 2025
Date Reported : Sep 23, 2025
Report Number : 3380621-1

Page 17 of 21

Sample Number : 2575497-17
Sampled Date : Sep 10, 2025
Sample Description : Air Quality
Location : รร.บ้านมาบตาพุด
Date Analysis Commenced : Sep 17, 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 : 758 mmHg
Atmospheric Temperature : 30.4 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	10/09/25 - 11/09/25	ppm	-	1.0	2.6	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	10/09/25 - 11/09/25	mg/m3	-	0.002	0.029	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008 (Include sampling)	NEB No.24	Rayong

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Project Location :

Lot ID: 2575497

Date Received : Sep 16, 2025
Date Reported : Sep 23, 2025
Report Number : 3380621-1

Page 18 of 21

Sample Number 2575497-18
Sampled Date Sep 11, 2025
Sample Description Air Quality
Location รร.บ้านมาบตาพุด
Date Analysis Commenced Sep 17, 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 758 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 *	11/09/25 - 12/09/25	ppm	-	1.0	2.7	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	11/09/25 - 12/09/25	mg/m3	-	0.002	0.033	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008 (Include sampling)	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.

Approved by

Thanita K.

Thanita Kulsuriwong
Scientist (4)

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Life Sciences

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RIGHT SOLUTIONS RIGHT PARTNER



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: 2575497

Date Received : Sep 16, 2025
Date Reported : Sep 23, 2025
Report Number : 3380621-1

Page 19 of 21

Sample Number : 2575497-19
Sampled Date : Sep 12, 2025
Sample Description : Air Quality
Location : รร.บ้านมาบตาพุด
Date Analysis Commenced : Sep 17, 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 : 758 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 *	12/09/25 - 13/09/25	ppm	-	1.0	2.5	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	12/09/25 - 13/09/25	mg/m3	-	0.002	0.035	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008 (Include sampling)	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.

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: 2575497

Date Received : Sep 16, 2025
Date Reported : Sep 23, 2025
Report Number : 3380621-1

Page 20 of 21

Sample Number 2575497-20
Sampled Date Sep 13, 2025
Sample Description Air Quality
Location รร.บ้านมาบตาพุด
Date Analysis Commenced Sep 17, 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 758 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 *	13/09/25 - 14/09/25	ppm	-	1.0	2.7	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	13/09/25 - 14/09/25	mg/m3	-	0.002	0.032	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008 (Include sampling)	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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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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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: 2575497

Date Received : Sep 16, 2025
Date Reported : Sep 23, 2025
Report Number : 3380621-1

Page 21 of 21

Sample Number 2575497-21
Sampled Date Sep 14, 2025
Sample Description Air Quality
Location รร.บ้านมาบตาพุด
Date Analysis Commenced Sep 17, 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 758 mmHg
Atmospheric Temperature 30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Total Hydrocarbon as Methane *	14/09/25 - 15/09/25	ppm	-	1.0	2.6	No Standard	Total Hydrocarbon Analyzer (FID)	-	Rayong
Total Suspended Particulate	14/09/25 - 15/09/25	mg/m3	-	0.002	0.025	0.33	United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008 (Include sampling)	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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- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.

Approved by

Thanita K.

Thanita Kulsuriwong
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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: 2575690
Date Received : Sep 16, 2025
Date Reported : Sep 23, 2025
Report Number : 3380946-1

P/O : PMM-23-13

Project Name : Environmental Monitoring

Project Location :

Page 1 of 2

Sample Number 2575690-1 to 7
Parameter Wind Speed / Wind Direction
Location รร บ้านนาบตาพุด
Sampling Date Sep 08 - Sep 15, 2025
Sampling by Santi Chaichana

Time	Sep 08 - Sep 09, 2025			Sep 09 - Sep 10, 2025			Sep 10 - Sep 11, 2025			Sep 11 - Sep 12, 2025			Sep 12 - Sep 13, 2025			Sep 13 - Sep 14, 2025			Sep 14 - Sep 15, 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	2.8	101.0	E	1.0	240.0	WSW	1.2	136.0	SE	1.2	334.0	NNW	1.1	186.0	S	0.8	284.0	WNW	2.1	178.0	S
11:00 AM - 12:00 PM	5.8	117.0	ESE	1.2	219.0	SW	0.6	3.0	N	2.0	295.0	WNW	1.5	241.0	WSW	2.3	217.0	SW	1.0	257.0	WSW
12:00 PM - 01:00 PM	2.8	166.0	SSE	2.0	233.0	SW	0.8	358.0	N	0.6	294.0	WNW	2.1	228.0	SW	0.8	270.0	W	0.6	232.0	SW
01:00 PM - 02:00 PM	3.2	135.0	SE	1.0	206.0	SSW	1.0	1.0	N	1.6	338.0	NNW	0.8	264.0	W	0.9	260.0	W	1.2	218.0	SW
02:00 PM - 03:00 PM	3.9	196.0	SSW	0.9	221.0	SW	0.5	12.0	NNE	0.6	116.0	ESE	0.6	227.0	SW	1.5	311.0	NW	1.0	31.0	NNE
03:00 PM - 04:00 PM	1.3	153.0	SSE	1.0	242.0	WSW	0.8	12.0	NNE	0.5	0.0	N	0.0	-	-	1.8	252.0	WSW	1.0	70.0	ENE
04:00 PM - 05:00 PM	1.9	190.0	S	1.2	222.0	SW	0.0	-	-	0.8	5.0	N	0.4	175.0	S	0.0	-	-	2.7	61.0	ENE
05:00 PM - 06:00 PM	0.7	192.0	SSW	0.6	237.0	WSW	1.0	290.0	WNW	0.7	0.0	N	0.1	-	-	0.0	-	-	1.0	67.0	ENE
06:00 PM - 07:00 PM	0.8	15.0	NNE	0.2	-	-	0.1	-	-	0.9	4.0	N	0.8	60.0	ENE	1.3	62.0	ENE	1.1	85.0	E
07:00 PM - 08:00 PM	1.2	320.0	NW	0.3	197.0	SSW	1.2	9.0	N	1.5	226.0	SW	0.3	23.0	NNE	0.3	62.0	ENE	0.3	117.0	ESE
08:00 PM - 09:00 PM	0.8	39.0	NE	0.4	285.0	WNW	0.8	266.0	W	2.2	254.0	WSW	0.3	38.0	NE	0.0	-	-	0.6	195.0	SSW
09:00 PM - 10:00 PM	1.2	38.0	NE	0.2	-	-	0.1	-	-	1.4	188.0	S	1.0	1.0	N	0.0	-	-	0.2	-	-
10:00 PM - 11:00 PM	0.0	-	-	0.8	265.0	W	0.2	-	-	1.6	188.0	S	1.3	22.0	NNE	0.5	17.0	NNE	0.5	74.0	ENE
11:00 PM - 12:00 AM	0.0	-	-	1.8	269.0	W	0.6	175.0	S	1.1	204.0	SSW	0.2	-	-	0.4	22.0	NNE	0.3	67.0	ENE
12:00 AM - 01:00 AM	2.7	150.0	SSE	1.2	206.0	SSW	0.2	-	-	0.9	221.0	SW	0.4	47.0	NE	0.7	220.0	SW	0.2	-	-
01:00 AM - 02:00 AM	0.2	-	-	1.4	196.0	SSW	0.6	208.0	SSW	2.6	198.0	SSW	0.0	-	-	0.3	226.0	SW	0.5	82.0	E
02:00 AM - 03:00 AM	0.3	191.0	S	0.5	202.0	SSW	0.2	-	-	1.7	188.0	S	0.2	-	-	0.3	77.0	ENE	0.1	-	-
03:00 AM - 04:00 AM	0.6	199.0	SSW	1.1	237.0	WSW	0.7	279.0	W	0.5	200.0	SSW	0.0	-	-	0.1	-	-	0.2	-	-
04:00 AM - 05:00 AM	0.5	178.0	S	1.4	223.0	SW	1.3	173.0	S	0.6	194.0	SSW	0.7	68.0	ENE	0.0	-	-	0.3	71.0	ENE
05:00 AM - 06:00 AM	0.5	165.0	SSE	0.3	261.0	W	2.2	163.0	SSE	0.2	-	-	0.5	62.0	ENE	0.8	69.0	ENE	0.4	20.0	NNE
06:00 AM - 07:00 AM	0.9	271.0	W	1.6	267.0	W	1.0	184.0	S	1.0	201.0	SSW	0.0	-	-	1.4	239.0	WSW	1.0	64.0	ENE
07:00 AM - 08:00 AM	0.8	171.0	S	0.7	272.0	W	2.2	207.0	SSW	1.1	222.0	SW	1.0	210.0	SSW	2.0	302.0	WNW	1.2	24.0	NNE
08:00 AM - 09:00 AM	1.6	164.0	SSE	3.8	273.0	W	2.6	139.0	SE	1.3	198.0	SSW	1.7	228.0	SW	0.0	-	-	1.0	279.0	W
09:00 AM - 10:00 AM	1.1	189.0	S	1.4	136.0	SE	1.5	296.0	WNW	0.5	216.0	SW	0.8	233.0	SW	1.6	200.0	SSW	1.6	126.0	SE

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Approved by

Sarayuth Jittranont
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 :

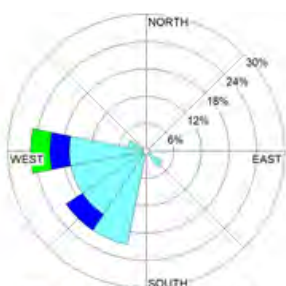
Lot ID: 2575690
Date Received : Sep 16, 2025
Date Reported : Sep 23, 2025
Report Number : 3380946-1

Page 2 of 2

Wind Rose



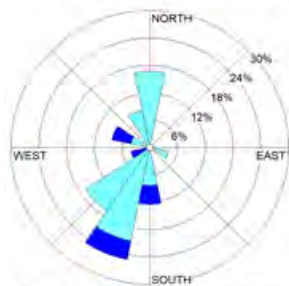
Date : Sep 08-09, 2025



Date : Sep 09-10, 2025



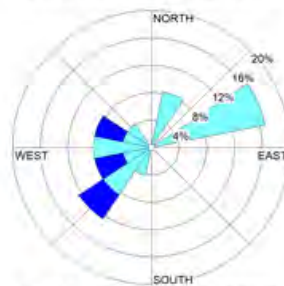
Date : Sep 10-11, 2025



Date : Sep 11-12, 2025



Date : Sep 12-13, 2025



Date : Sep 13-14, 2025



Date : Sep 14-15, 2025



Date : Sep 08-15, 2025

WS (m/s)	%
≥ 10.0	0.00
8.0-10.0	0.00
5.5-8.0	0.60
3.3-5.5	1.19
1.7-3.3	12.50
0.3-1.7	67.86
Calms	17.86

Location : รร บ้านมาบตาพุด

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Approved by

Sarayuth Jittrantont
Assistant General Manager

ภาคผนวก ค-2

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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: 2575696

Date Received : Sep 15, 2025
Date Reported : Sep 27, 2025
Report Number: 3380951-1

Page 1 of 2

Sample Number 2575696-1
Sampled Date Sep 13, 2025
Sample Description Emission from Stationary Source
Location ปล่อง Z-6210
Date Analysis Commenced Sep 17, 2025
Condition of Sample Extracted into one filter paper placed in plastic petri dish, one plastic bottle and four sorbent tubes, refrigerated

Stack Description

Ambient Pressure	757	mmHg	Diameter	1.75	m	Oxygen	6.8	%
Ambient Temperature	31.0	°C	Shape	Circle		Carbon Dioxide	7.5	%
Type of Process	Combustion		Stack Temperature	119	°C	Gas Velocity	16.1	m/s
Type of Fuel	Waste Liquid		Moisture	18.80	%	Flow Rate (Actual O2)	85384	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result		Guideline (1)	Guideline (2)	Method	Testing Location
					at 7 %O ₂	at 6.8 % O ₂				
Air Testing										
Total Suspended Particulate	11:00 AM - 12:00 PM	mg/m3	-	0.5	4.8	4.87	320	127.7	U.S. Environmental Protection Agency 40 CFR method 5, Appendix A, December 7, 2020 (Include sampling)	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. Chamon.

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: 2575696

Date Received : Sep 15, 2025
Date Reported : Sep 27, 2025
Report Number: 3380951-1

Page 2 of 2

Sample Number 2575696-1
Sampled Date Sep 13, 2025
Sample Description Emission from Stationary Source
Location ปล่อง Z-6210
Date Analysis Commenced Sep 17, 2025
Condition of Sample Extracted into one filter paper placed in plastic petri dish, one plastic bottle and four sorbent tubes, refrigerated

Stack Description

Ambient Pressure	757	mmHg	Diameter	1.75	m	Oxygen	6.8	%
Ambient Temperature	31.0	°C	Shape	Circle		Carbon Dioxide	7.5	%
Type of Process	Combustion		Stack Temperature	119	°C	Gas Velocity	16.1	m/s
Type of Fuel	Waste Liquid		Moisture	18.80	%	Flow Rate (Actual O2)	85384	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Suspended Particulate *	11:00 AM - 12:00 PM	g/s	-	-	0.115	-	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 : Sittipan Sanachiw ทะเบียนเลขที่ ว-323-จ-0009 , Sirichock Pongprasom ทะเบียนเลขที่ ว-204-จ-0004

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.

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: 2575696
Date Received : Sep 15, 2025
Date Reported : Sep 26, 2025
Report Number: 3380951-2

Page 1 of 2

Sample Number 2575696-1
Sampled Date Sep 13, 2025
Sample Description Emission from Stationary Source
Location ปล่อง Z-6210
Date Analysis Commenced Sep 16, 2025
Condition of Sample Extracted into one filter paper placed in plastic petri dish, one plastic bottle and four sorbent tubes, refrigerated

Stack Description

Ambient Pressure	757	mmHg	Diameter	1.75	m	Oxygen	6.8	%
Ambient Temperature	31.0	°C	Shape	Circle		Carbon Dioxide	7.5	%
Type of Process	Combustion		Stack Temperature	119	°C	Gas Velocity	16.1	m/s
Type of Fuel	Waste Liquid		Moisture	18.80	%	Flow Rate (Actual O2)	85384	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result		Method	Testing Location
					at 7 %O ₂	at 6.8 % O ₂		
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	U.S. Environmental Protection Agency, EPA Method 18	Bangkok
Methyl Methacrylate	11:20 AM - 11:35 AM	ppm	-	0.3	<0.3	<0.3	U.S. Environmental Protection Agency, EPA Method 18	Bangkok
Toluene	11:20 AM - 11:35 AM	ppm	-	0.3	<0.3	<0.3	U.S. Environmental Protection Agency, EPA Method 18	Bangkok

Approved by

Tanyatorn Mongkonjirawut
Supervisor

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: 2575696
Date Received : Sep 15, 2025
Date Reported : Sep 26, 2025
Report Number: 3380951-2

Page 2 of 2

Sample Number 2575696-1
Sampled Date Sep 13, 2025
Sample Description Emission from Stationary Source
Location ปล่อง Z-6210
Date Analysis Commenced Sep 16, 2025
Condition of Sample Extracted into one filter paper placed in plastic petri dish, one plastic bottle and four sorbent tubes, refrigerated

Stack Description

Ambient Pressure	757	mmHg	Diameter	1.75	m	Oxygen	6.8	%
Ambient Temperature	31.0	°C	Shape	Circle		Carbon Dioxide	7.5	%
Type of Process	Combustion		Stack Temperature	119	°C	Gas Velocity	16.1	m/s
Type of Fuel	Waste Liquid		Moisture	18.80	%	Flow Rate (Actual O2)	85384	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	11:20 AM - 11:35 AM	g/s	-	-	<0.03	Calculated	Bangkok
Toluene	11:20 AM - 11:35 AM	g/s	-	-	<0.03	Calculated	Bangkok

Sampling By : Sittipan Sanachiw , Sirichock Pongprasom

Remark :

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

Approved by

Tanyatorn Mongkonjirawut
Supervisor

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.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: 2575701

Date Received : Sep 15, 2025

Date Reported : Sep 27, 2025

Report Number: 3380960-1

Page 1 of 2

Sample Number 2575701-1
Sampled Date Sep 13, 2025
Sample Description Emission from Stationary Source
Location ปล่อง 2Z-6210
Date Analysis Commenced Sep 17, 2025
Condition of Sample Extracted into one filter paper placed in plastic petri dish, one plastic bottle and four sorbent tubes, refrigerated

Stack Description

Ambient Pressure	757	mmHg	Diameter	1.56	m	Oxygen	6.7	%
Ambient Temperature	31.0	°C	Shape	Circle		Carbon Dioxide	7.5	%
Type of Process	Combustion		Stack Temperature	110	°C	Gas Velocity	25.2	m/s
Type of Fuel	Waste Liquid		Moisture	28.90	%	Flow Rate (Actual O2)	95322	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result		Guideline (1)	Guideline (2)	Method	Testing Location
					at 7 %O ₂	at 6.7 % O ₂				
Air Testing										
Total Suspended Particulate	03:10 PM - 04:04 PM	mg/m3	-	0.5	5.8	5.93	320	127.7	U.S. Environmental Protection Agency 40 CFR method 5, Appendix A, December 7, 2020 (Include sampling)	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. Chamon.

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: 2575701

Date Received : Sep 15, 2025

Date Reported : Sep 27, 2025

Report Number: 3380960-1

Page 2 of 2

Sample Number	2575701-1
Sampled Date	Sep 13, 2025
Sample Description	Emission from Stationary Source
Location	ปล่อง 2Z-6210
Date Analysis Commenced	Sep 17, 2025
Condition of Sample	Extracted into one filter paper placed in plastic petri dish, one plastic bottle and four sorbent tubes, refrigerated

Stack Description

Ambient Pressure	757	mmHg	Diameter	1.56	m	Oxygen	6.7	%
Ambient Temperature	31.0	°C	Shape	Circle		Carbon Dioxide	7.5	%
Type of Process	Combustion		Stack Temperature	110	°C	Gas Velocity	25.2	m/s
Type of Fuel	Waste Liquid		Moisture	28.90	%	Flow Rate (Actual O2)	95322	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 *	03:10 PM - 04:04 PM	g/s	-	-	0.157	-	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 : Sittipan Sanachiw ทะเบียนเลขที่ ว-323-จ-0009 , Sirichock Pongprasom ทะเบียนเลขที่ ว-204-จ-0004

Remark :

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

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)
ทะเบียนเลขที่ ว-323-จ-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: 2575701

Date Received : Sep 15, 2025
Date Reported : Sep 26, 2025
Report Number: 3380960-2

Page 1 of 2

Sample Number 2575701-1
Sampled Date Sep 13, 2025
Sample Description Emission from Stationary Source
Location แปลง 22-6210
Date Analysis Commenced Sep 16, 2025
Condition of Sample Extracted into one filter paper placed in plastic petri dish, one plastic bottle and four sorbent tubes, refrigerated

Stack Description

Ambient Pressure	757	mmHg	Diameter	1.56	m	Oxygen	6.7	%
Ambient Temperature	31.0	°C	Shape	Circle		Carbon Dioxide	7.5	%
Type of Process	Combustion		Stack Temperature	110	°C	Gas Velocity	25.2	m/s
Type of Fuel	Waste Liquid		Moisture	28.90	%	Flow Rate (Actual O2)	95322	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result		Method	Testing Location
					at 7 %O ₂	at 6.7 % O ₂		
Air Testing								
Acrylic Acid	03:10 PM - 03:25 PM	ppm	-	1.0	<1.0	<1.0	Based on OSHA, ID 28	Bangkok
Methanol	03:10 PM - 03:25 PM	ppm	-	1.00	<1.00	<1.00	U.S. Environmental Protection Agency, EPA Method 18	Bangkok
Methyl Methacrylate	03:30 PM - 03:45 PM	ppm	-	0.3	<0.3	<0.3	U.S. Environmental Protection Agency, EPA Method 18	Bangkok
Toluene	03:30 PM - 03:45 PM	ppm	-	0.3	<0.3	<0.3	U.S. 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: 2575701

Date Received : Sep 15, 2025
Date Reported : Sep 26, 2025
Report Number: 3380960-2

Page 2 of 2

Sample Number	2575701-1
Sampled Date	Sep 13, 2025
Sample Description	Emission from Stationary Source
Location	ปล่อง 2Z-6210
Date Analysis Commenced	Sep 16, 2025
Condition of Sample	Extracted into one filter paper placed in plastic petri dish, one plastic bottle and four sorbent tubes, refrigerated

Stack Description

Ambient Pressure	757	mmHg	Diameter	1.56	m	Oxygen	6.7	%
Ambient Temperature	31.0	°C	Shape	Circle		Carbon Dioxide	7.5	%
Type of Process	Combustion		Stack Temperature	110	°C	Gas Velocity	25.2	m/s
Type of Fuel	Waste Liquid		Moisture	28.90	%	Flow Rate (Actual O2)	95322	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Method	Testing Location
Air Testing							
Acrylic Acid	03:10 PM - 03:25 PM	g/s	-	-	<0.03	Calculated	Bangkok
Methanol	03:10 PM - 03:25 PM	g/s	-	-	<0.03	Calculated	Bangkok
Methyl Methacrylate	03:30 PM - 03:45 PM	g/s	-	-	<0.03	Calculated	Bangkok
Toluene	03:30 PM - 03:45 PM	g/s	-	-	<0.03	Calculated	Bangkok

Sampling By : Sittipan Sanachiw , Sirichock Pongprasom

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

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: 2575699
Date Received : Sep 15, 2025
Date Reported : Sep 18, 2025
Report Number : 3380954-1

Page 1 of 1

Sample Number : 2575699-1
Sample Description : Emission from Stationary Source
Location : ปล่อง Z-6210
Measurement Date : Sep 13, 2025

Stack Description

Ambient Temperature	31 °C	Diameter	1.75 m	Oxygen	6.84 %
Ambient Pressure	757.2 mmHg	Shape	Circle	Carbon dioxide	7.49 %
Type of Process	Combustion	Stack Temperature	119 °C	Gas Velocity	16.04 m/s
Type of Fuel	Waste Liquid	Moisture	18.86 %	Flow Rate	85225 Nm ³ /hr

Run No.	Sampling Time	Oxygen (%)	Carbon Dioxide (%)	Oxides of Nitrogen (ppm)	
				at Actual O ₂	At 7% O ₂
1	10:55 AM - 11:15 AM	6.70	7.57	17.55	17.18
2	11:16 AM - 11:36 AM	6.89	7.46	17.08	16.94
3	11:37 AM - 11:57 AM	6.94	7.43	16.58	16.51
Average (ppm)		6.84	7.49	17.07	16.88
Guideline ^{1/} (ppm)				-	42.4
Guideline ^{2/} (ppm)				-	200
Result (mg/Nm ³)				32.11	31.75
Emission Rate at Actual O ₂ (g/s)				0.7601	
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 Jittranont
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: 2575700
Date Received : Sep 15, 2025
Date Reported : Sep 18, 2025
Report Number : 3380957-1

Page 1 of 1

Sample Number 2575700-1
Sample Description Emission from Stationary Source
Location ปล่อง 2Z-6210
Measurement Date Sep 13, 2025

Stack Description

Ambient Temperature	31 °C	Diameter	1.56 m	Oxygen	6.67 %
Ambient Pressure	757.2 mmHg	Shape	Circle	Carbon dioxide	7.54 %
Type of Process	Combustion	Stack Temperature	110 °C	Gas Velocity	25.15 m/s
Type of Fuel	Waste Liquid	Moisture	28.97 %	Flow Rate	95117 Nm3/hr

Run No.	Sampling Time	Oxygen (%)	Carbon Dioxide (%)	Oxides of Nitrogen (ppm)	
				at Actual O ₂	At 7% O ₂
1	03:05 PM - 03:25 PM	6.64	7.55	11.28	10.99
2	03:26 PM - 03:46 PM	6.68	7.54	11.57	11.30
3	03:47 PM - 04:07 PM	6.69	7.53	11.35	11.10
Average (ppm)		6.67	7.54	11.40	11.13
Guideline ^{1/} (ppm)				-	19.9
Guideline ^{2/} (ppm)				-	200
Result (mg/Nm ³)				21.44	20.95
Emission Rate at Actual O ₂ (g/s)				0.5666	
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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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 : PMM-23-13
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 2553271

Date Received : Jul 04, 2025
Date Reported : Jul 11, 2025
Report Number : 3358168-1

Page 1 of 1

Sample Number	2553271-4
Sampled Date	Jul 04, 2025 10:55 AM
Sample Description	Wastewater
Location	Equalization (2T-9610)
Date Analysis Commenced	Jul 04, 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	515	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	1095	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		-	-	7.6	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	35.8	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	2200	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	121	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.
- 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: 2553271

Date Received : Jul 04, 2025
Date Reported : Jul 11, 2025
Report Number : 3358168-2

Page 1 of 1

Sample Number	2553271-4
Sampled Date	Jul 04, 2025 10:55 AM
Sample Description	Wastewater
Location	Equalization (2T-9610)
Date Analysis Commenced	Jul 04, 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	709	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

PhotchanaS

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: 2553271

Date Received : Jul 04, 2025
Date Reported : Jul 11, 2025
Report Number : 3358169-1

Page 1 of 1

Sample Number	2553271-5
Sampled Date	Jul 04, 2025 11:10 AM
Sample Description	Wastewater
Location	Drainage before Check Basin (2T-9640)
Date Analysis Commenced	Jul 04, 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	46	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		-	-	7.7	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	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	1.5	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	8	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.
- 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: 2553271

Date Received : Jul 04, 2025
Date Reported : Jul 11, 2025
Report Number : 3358169-2

Page 1 of 1

Sample Number : 2553271-5
Sampled Date : Jul 04, 2025 11:10 AM
Sample Description : Wastewater
Location : Drainage before Check Basin (2T-9640)
Date Analysis Commenced : Jul 04, 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	419	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: 2553271

Date Received : Jul 04, 2025

Date Reported : Jul 11, 2025

Report Number : 3358170-1

Page 1 of 2

Sample Number	2553271-6
Sampled Date	Jul 04, 2025 10:50 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (2T-9650)
Date Analysis Commenced	Jul 04, 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	10.1	≤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	54	≤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		-	-	7.9	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	-	-	33.8	≤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	1230	≤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	1.1	≤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. Chanson

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: 2553271
Date Received : Jul 04, 2025
Date Reported : Jul 11, 2025
Report Number : 3358170-1

Page 2 of 2

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

Technical Management

Photchanas

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: 2553271

Date Received : Jul 04, 2025
Date Reported : Jul 11, 2025
Report Number : 3358170-2

Page 1 of 1

Sample Number	2553271-6
Sampled Date	Jul 04, 2025 10:50 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (2T-9650)
Date Analysis Commenced	Jul 05, 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	444	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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Approved by

PhotchanaS

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: 2553271

Date Received : Jul 04, 2025
Date Reported : Jul 11, 2025
Report Number : 3358165-1

Page 1 of 1

Sample Number	2553271-1
Sampled Date	Jul 04, 2025 10:15 AM
Sample Description	Wastewater
Location	Equalization (T-9610)
Date Analysis Commenced	Jul 04, 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	431	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	991	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	-	-	36.5	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	1980	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	24	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: 2553271

Date Received : Jul 04, 2025
Date Reported : Jul 11, 2025
Report Number : 3358165-2

Page 1 of 1

Sample Number	2553271-1
Sampled Date	Jul 04, 2025 10:15 AM
Sample Description	Wastewater
Location	Equalization (T-9610)
Date Analysis Commenced	Jul 04, 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

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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: 2553271

Date Received : Jul 04, 2025
Date Reported : Jul 11, 2025
Report Number : 3358166-1

Page 1 of 1

Sample Number	2553271-2
Sampled Date	Jul 04, 2025 10:10 AM
Sample Description	Wastewater
Location	Drainage before Check Basin (T-9640)
Date Analysis Commenced	Jul 04, 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	235	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		-	-	8.2	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	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	1350	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	6.5	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	88	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. Chamon

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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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: 2553271

Date Received : Jul 04, 2025
Date Reported : Jul 11, 2025
Report Number : 3358166-2

Page 1 of 1

Sample Number : 2553271-2
Sampled Date : Jul 04, 2025 10:10 AM
Sample Description : Wastewater
Location : Drainage before Check Basin (T-9640)
Date Analysis Commenced : Jul 04, 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	408	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: 2553271

Date Received : Jul 04, 2025

Date Reported : Jul 11, 2025

Report Number : 3358167-1

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	2553271-3
Sampled Date	Jul 04, 2025 10:00 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (T-9650)
Date Analysis Commenced	Jul 04, 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	74	≤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	-	-	35.0	≤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	3.7	≤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	22	≤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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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: 2553271
Date Received : Jul 04, 2025
Date Reported : Jul 11, 2025
Report Number : 3358167-1

Page 2 of 2

Remark :

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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
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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: 2553271

Date Received : Jul 04, 2025
Date Reported : Jul 11, 2025
Report Number : 3358167-2

Page 1 of 1

Sample Number	2553271-3						
Sampled Date	Jul 04, 2025 10:00 AM						
Sample Description	Wastewater						
Location	Effluent from the Check Basin (T-9650)						
Date Analysis Commenced	Jul 04, 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	706	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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P/O : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2553272

Date Received : Jul 04, 2025
Date Reported : Jul 15, 2025
Report Number : 3322190-1 Rev. No.1

Page 1 of 2

Sample Number 2553272-1
Sampled Date Jul 04, 2025 10:25 AM
Sample Description Wastewater
Location บริเวณขาออกจากกระบวนการบำบัดน้ำเสียก่อนเข้าระบบบำบัดน้ำเสียโรงงาน MMA1
Date Analysis Commenced Jul 04, 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	0.21	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.3322190-1, Date Reported : Jul 08, 2025 due to revise analytical information.

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

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: 2553272

Date Received : Jul 04, 2025
Date Reported : Jul 15, 2025
Report Number : 3322190-1 Rev. No.1

Page 2 of 2

Sample Number 2553272-2
Sampled Date Jul 04, 2025 10:40 AM
Sample Description Wastewater
Location บริเวณขาออกจากระบบน้ำหล่อเย็นก่อนเข้าระบบบำบัดน้ำเสียโรงงาน MMA2
Date Analysis Commenced Jul 04, 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	0.25	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.3322190-1, Date Reported : Jul 08, 2025 due to revise analytical information.

Sampling By : Wanlop Hunchainaow

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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: 2563639

Date Received : Aug 08, 2025
Date Reported : Aug 16, 2025
Report Number : 3384379-1

Page 1 of 1

Sample Number	2563639-4
Sampled Date	Aug 08, 2025 11:30 AM
Sample Description	Wastewater
Location	Equalization (2T-9610)
Date Analysis Commenced	Aug 08, 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	1077	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	1548	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5220 D	Rayong
Oil & Grease	mg/L	-	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		-	-	6.7	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	33.1	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	1228	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	284	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

Jitsupa P.

Jitsupa Pratuangsuk
Scientist (2)
ทะเบียนเลขที่ ว-323-จ-0004

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: 2563639

Date Received : Aug 08, 2025
Date Reported : Aug 16, 2025
Report Number : 3384379-2

Page 1 of 1

Sample Number	2563639-4
Sampled Date	Aug 08, 2025 11:30 AM
Sample Description	Wastewater
Location	Equalization (2T-9610)
Date Analysis Commenced	Aug 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	122	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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Jitsupa Pratuangsuk
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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: 2563639

Date Received : Aug 08, 2025
Date Reported : Aug 16, 2025
Report Number : 3384380-1

Page 1 of 1

Sample Number : 2563639-5
Sampled Date : Aug 08, 2025 11:00 AM
Sample Description : Wastewater
Location : Drainage before Check Basin (2T-9640)
Date Analysis Commenced : Aug 08, 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	33	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		-	-	8.0	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	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	856	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	<1.0	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	12	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

Jitsupa P.

Jitsupa Pratuangsuk
Scientist (2)

ทะเบียนเลขที่ ว-323-จ-0004

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: 2563639

Date Received : Aug 08, 2025
Date Reported : Aug 16, 2025
Report Number : 3384380-2

Page 1 of 1

Sample Number : 2563639-5
Sampled Date : Aug 08, 2025 11:00 AM
Sample Description : Wastewater
Location : Drainage before Check Basin (2T-9640)
Date Analysis Commenced : Aug 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	232	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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Jitsupa Pratuangsuk
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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: 2563639
Date Received : Aug 08, 2025
Date Reported : Aug 16, 2025
Report Number : 3384381-1

Page 1 of 2

Sample Number	2563639-6
Sampled Date	Aug 08, 2025 11:20 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (2T-9650)
Date Analysis Commenced	Aug 08, 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	43	≤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	-	-	32.0	≤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	880	≤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	34	≤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

Jitsupa P.

Jitsupa Pratuangsuk
Scientist (2)
ทะเบียนเลขที่ ว-323-จ-0004

Approved by

D. Chumson.

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: 2563639
Date Received : Aug 08, 2025
Date Reported : Aug 16, 2025
Report Number : 3384381-1

Page 2 of 2

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Technical Management

Jitsupa P.

Jitsupa Pratuangsuk
Scientist (2)
ทะเบียนเลขที่ ว-323-จ-0004

Approved by

D. Changchon

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

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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: 2563639

Date Received : Aug 08, 2025
Date Reported : Aug 16, 2025
Report Number : 3384381-2

Page 1 of 1

Sample Number	2563639-6						
Sampled Date	Aug 08, 2025 11:20 AM						
Sample Description	Wastewater						
Location	Effluent from the Check Basin (2T-9650)						
Date Analysis Commenced	Aug 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	251	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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Approved by

Jitsupa P.

Jitsupa Pratuangsuk
Scientist (2)

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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: 2563639

Date Received : Aug 08, 2025
Date Reported : Aug 16, 2025
Report Number : 3384376-1

Page 1 of 1

Sample Number	2563639-1
Sampled Date	Aug 08, 2025 10:35 AM
Sample Description	Wastewater
Location	Equalization (T-9610)
Date Analysis Commenced	Aug 08, 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	298	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	2885	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	-	-	35.4	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	1520	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	810	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

Jitsupa P.

Jitsupa Pratuangsuk
Scientist (2)
ทะเบียนเลขที่ ว-323-จ-0004

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: 2563639

Date Received : Aug 08, 2025
Date Reported : Aug 16, 2025
Report Number : 3384376-2

Page 1 of 1

Sample Number	2563639-1					
Sampled Date	Aug 08, 2025 10:35 AM					
Sample Description	Wastewater					
Location	Equalization (T-9610)					
Date Analysis Commenced	Aug 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	615	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

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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: 2563639

Date Received : Aug 08, 2025
Date Reported : Aug 16, 2025
Report Number : 3384377-1

Page 1 of 1

Sample Number	2563639-2
Sampled Date	Aug 08, 2025 10:25 AM
Sample Description	Wastewater
Location	Drainage before Check Basin (T-9640)
Date Analysis Commenced	Aug 08, 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	64	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	-	-	33.9	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	1570	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	2.2	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	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

Jitsupa P.

Jitsupa Pratuangsuk
Scientist (2)
ทะเบียนเลขที่ ว-323-จ-0004

Approved by

D. Chamon.

Dej Changchon
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: 2563639

Date Received : Aug 08, 2025
Date Reported : Aug 16, 2025
Report Number : 3384377-2

Page 1 of 1

Sample Number 2563639-2
Sampled Date Aug 08, 2025 10:25 AM
Sample Description Wastewater
Location Drainage before Check Basin (T-9640)
Date Analysis Commenced Aug 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	583	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

Jitsupa P.

Jitsupa Pratuangsuk
Scientist (2)

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Analysis / Test Report

TESTING

No.0042

Lot ID: 2563639

Date Received : Aug 08, 2025

Date Reported : Aug 16, 2025

Report Number : 3384378-1

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	2563639-3
Sampled Date	Aug 08, 2025 10:15 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (T-9650)
Date Analysis Commenced	Aug 08, 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	53	≤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	-	-	33.6	≤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	1450	≤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	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

Jitsupa P.

Jitsupa Pratuangsuk
Scientist (2)

ทะเบียนเลขที่ ว-323-จ-0004

Approved by

D. Chumson.

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: 2563639
Date Received : Aug 08, 2025
Date Reported : Aug 16, 2025
Report Number : 3384378-1

Page 2 of 2

Remark :

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

Technical Management

Jitsupa P.

Jitsupa Pratuangsuk
Scientist (2)
ทะเบียนเลขที่ ว-323-จ-0004

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: 2563639

Date Received : Aug 08, 2025
Date Reported : Aug 16, 2025
Report Number : 3384378-2

Page 1 of 1

Sample Number	2563639-3						
Sampled Date	Aug 08, 2025 10:15 AM						
Sample Description	Wastewater						
Location	Effluent from the Check Basin (T-9650)						
Date Analysis Commenced	Aug 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	433	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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Approved by

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

Lot ID: 2563642

Date Received : Aug 08, 2025
Date Reported : Aug 13, 2025
Report Number : 3350300-1

Page 1 of 2

Sample Number 2563642-1
Sampled Date Aug 08, 2025 10:10 AM
Sample Description Wastewater
Location บริเวณขาออกจากกระบวนการบำบัดน้ำเสียก่อนเข้าระบบบำบัดน้ำเสียโรงงาน MMA1
Date Analysis Commenced Aug 08, 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	0.27	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

Sampling By : Wanlop Hunchainaow

Remark :

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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: 2563642

Date Received : Aug 08, 2025
Date Reported : Aug 13, 2025
Report Number : 3350300-1

Page 2 of 2

Sample Number 2563642-2
Sampled Date Aug 08, 2025 11:10 AM
Sample Description Wastewater
Location บริเวณขากอกจากระบบน้ำหล่อเย็นก่อนเข้าระบบบำบัดน้ำเสียโรงงาน MMA2
Date Analysis Commenced Aug 08, 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	0.21	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

Sampling By : Wanlop Hunchainaow

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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: 2575715

Date Received : Sep 05, 2025
Date Reported : Sep 12, 2025
Report Number : 3405894-1

Page 1 of 1

Sample Number	2575715-4
Sampled Date	Sep 05, 2025 10:00 AM
Sample Description	Wastewater
Location	Equalization (2T-9610)
Date Analysis Commenced	Sep 05, 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	1728	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		-	-	9.3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	35.6	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	2630	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	199	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

Jitsupa P.

Jitsupa Pratuangsuk
Scientist (2)
ทะเบียนเลขที่ ว-323-จ-0004

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: 2575715

Date Received : Sep 05, 2025
Date Reported : Sep 12, 2025
Report Number : 3405894-2

Page 1 of 1

Sample Number : 2575715-4
Sampled Date : Sep 05, 2025 10:00 AM
Sample Description : Wastewater
Location : Equalization (2T-9610)
Date Analysis Commenced : Sep 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						
Sulfate	mg/L	0.6	2	559	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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Approved by

Jitsupa P.

Jitsupa Pratuangsuk
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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: 2575715

Date Received : Sep 05, 2025
Date Reported : Sep 12, 2025
Report Number : 3405895-1

Page 1 of 1

Sample Number	2575715-5
Sampled Date	Sep 05, 2025 9:50 AM
Sample Description	Wastewater
Location	Drainage before Check Basin (2T-9640)
Date Analysis Commenced	Sep 05, 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	23.4	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	-	-	33.3	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	1580	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	2.7	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	20	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

Jitsupa P.

Jitsupa Pratuangsuk
Scientist (2)

ทะเบียนเลขที่ ว-323-จ-0004

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: 2575715

Date Received : Sep 05, 2025
Date Reported : Sep 12, 2025
Report Number : 3405895-2

Page 1 of 1

Sample Number : 2575715-5
Sampled Date : Sep 05, 2025 9:50 AM
Sample Description : Wastewater
Location : Drainage before Check Basin (2T-9640)
Date Analysis Commenced : Sep 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						
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

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Jitsupa Pratuangsuk
Scientist (2)

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Analysis / Test Report

TESTING

No.0042

Lot ID: 2575715

Date Received : Sep 05, 2025

Date Reported : Sep 12, 2025

Report Number : 3405896-1

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	2575715-6
Sampled Date	Sep 05, 2025 9:54 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (2T-9650)
Date Analysis Commenced	Sep 05, 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	14.3	≤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		-	-	8.3	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	1370	≤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	2.1	≤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	18	≤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

Jitsupa P.

Jitsupa Pratuangsuk
Scientist (2)

ทะเบียนเลขที่ ว-323-จ-0004

Approved by

D. Changchon.

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-0001

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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: 2575715
Date Received : Sep 05, 2025
Date Reported : Sep 12, 2025
Report Number : 3405896-1

Page 2 of 2

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Technical Management

Jitsupa P.

Jitsupa Pratuangsuk
Scientist (2)
ทะเบียนเลขที่ ว-323-จ-0004

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

Lot ID: 2575715

Date Received : Sep 05, 2025
Date Reported : Sep 12, 2025
Report Number : 3405896-2

Page 1 of 1

Sample Number	2575715-6
Sampled Date	Sep 05, 2025 9:54 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (2T-9650)
Date Analysis Commenced	Sep 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							
Sulfate	mg/L	0.6	2	542	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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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

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Approved by

Jitsupa P.

Jitsupa Pratuangsuk
Scientist (2)

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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: 2575715

Date Received : Sep 05, 2025
Date Reported : Sep 12, 2025
Report Number : 3405891-1

Page 1 of 1

Sample Number	2575715-1
Sampled Date	Sep 05, 2025 10:21 AM
Sample Description	Wastewater
Location	Equalization (T-9610)
Date Analysis Commenced	Sep 05, 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	216	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	927	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	-	-	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	2210	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	17	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

Jitsupa P.

Jitsupa Pratuangsuk
Scientist (2)
ทะเบียนเลขที่ ว-323-จ-0004

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: 2575715

Date Received : Sep 05, 2025
Date Reported : Sep 12, 2025
Report Number : 3405891-2

Page 1 of 1

Sample Number 2575715-1
Sampled Date Sep 05, 2025 10:21 AM
Sample Description Wastewater
Location Equalization (T-9610)
Date Analysis Commenced Sep 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						
Sulfate	mg/L	0.6	2	235	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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Approved by

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Jitsupa Pratuangsuk
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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: 2575715

Date Received : Sep 05, 2025
Date Reported : Sep 12, 2025
Report Number : 3405892-1

Page 1 of 1

Sample Number	2575715-2
Sampled Date	Sep 05, 2025 10:18 AM
Sample Description	Wastewater
Location	Drainage before Check Basin (T-9640)
Date Analysis Commenced	Sep 05, 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	83	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	-	-	33.6	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	1480	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	8	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

Jitsupa P.

Jitsupa Pratuangsuk
Scientist (2)
ทะเบียนเลขที่ ว-323-จ-0004

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: 2575715

Date Received : Sep 05, 2025
Date Reported : Sep 12, 2025
Report Number : 3405892-2

Page 1 of 1

Sample Number	2575715-2					
Sampled Date	Sep 05, 2025 10:18 AM					
Sample Description	Wastewater					
Location	Drainage before Check Basin (T-9640)					
Date Analysis Commenced	Sep 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						
Sulfate	mg/L	0.6	2	325	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: 2575715

Date Received : Sep 05, 2025

Date Reported : Sep 12, 2025

Report Number : 3405893-1

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	2575715-3						
Sampled Date	Sep 05, 2025 10:15 AM						
Sample Description	Wastewater						
Location	Effluent from the Check Basin (T-9650)						
Date Analysis Commenced	Sep 05, 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	46	≤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	-	-	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	1100	≤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	1.8	≤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	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

Jitsupa P.

Jitsupa Pratuangsuk
Scientist (2)

ทะเบียนเลขที่ ว-323-จ-0004

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: 2575715
Date Received : Sep 05, 2025
Date Reported : Sep 12, 2025
Report Number : 3405893-1

Page 2 of 2

Remark :

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

Technical Management

Jitsupa P.

Jitsupa Pratuangsuk
Scientist (2)
ทะเบียนเลขที่ ว-323-จ-0004

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: 2575715

Date Received : Sep 05, 2025
Date Reported : Sep 12, 2025
Report Number : 3405893-2

Page 1 of 1

Sample Number	2575715-3
Sampled Date	Sep 05, 2025 10:15 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (T-9650)
Date Analysis Commenced	Sep 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							
Sulfate	mg/L	0.6	2	257	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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Approved by

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Jitsupa Pratuangsuk
Scientist (2)

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

Lot ID: 2575722

Date Received : Sep 05, 2025
Date Reported : Sep 10, 2025
Report Number : 3380981-1

Page 1 of 2

Sample Number 2575722-1
Sampled Date Sep 05, 2025 10:25 AM
Sample Description Wastewater
Location บริเวณขากอกจากระบบน้ำหล่อเย็นก่อนเข้าระบบบำบัดน้ำเสียโรงงาน MMA1
Date Analysis Commenced Sep 05, 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	0.16	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

Sampling By : Wanlop Hunchainaow

Remark :

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Approved by

Photchana S

Photchana Seeda
Scientist (4)

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

Lot ID: 2575722

Date Received : Sep 05, 2025
Date Reported : Sep 10, 2025
Report Number : 3380981-1

Page 2 of 2

Sample Number 2575722-2
Sampled Date Sep 05, 2025 10:02 AM
Sample Description Wastewater
Location บริเวณขาออกจากกระบวนน้ำหล่อเย็นก่อนเข้าระบบบำบัดน้ำเสียโรงงาน MMA2
Date Analysis Commenced Sep 05, 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

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

Lot ID: 2583220

Date Received : Oct 10, 2025
Date Reported : Oct 18, 2025
Report Number : 3430473-1

Page 1 of 1

Sample Number	2583220-4
Sampled Date	Oct 10, 2025 10:00 AM
Sample Description	Wastewater
Location	Equalization (2T-9610)
Date Analysis Commenced	Oct 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						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	842	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	1347	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	-	-	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	2380	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	398	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: 2583220

Date Received : Oct 10, 2025

Date Reported : Oct 18, 2025

Report Number : 3430473-2

Page 1 of 1

Sample Number : 2583220-4
Sampled Date : Oct 10, 2025 10:00 AM
Sample Description : Wastewater
Location : Equalization (2T-9610)
Date Analysis Commenced : Oct 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	625	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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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: 2583220

Date Received : Oct 10, 2025
Date Reported : Oct 18, 2025
Report Number : 3430474-1

Page 1 of 1

Sample Number	2583220-5
Sampled Date	Oct 10, 2025 9:58 AM
Sample Description	Wastewater
Location	Drainage before Check Basin (2T-9640)
Date Analysis Commenced	Oct 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						
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	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	-	-	33.6	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	3.1	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	41	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: 2583220

Date Received : Oct 10, 2025

Date Reported : Oct 18, 2025

Report Number : 3430474-2

Page 1 of 1

Sample Number 2583220-5
Sampled Date Oct 10, 2025 9:58 AM
Sample Description Wastewater
Location Drainage before Check Basin (2T-9640)
Date Analysis Commenced Oct 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	461	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: 2583220

Date Received : Oct 10, 2025

Date Reported : Oct 18, 2025

Report Number : 3430475-1

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	2583220-6
Sampled Date	Oct 10, 2025 9:52 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (2T-9650)
Date Analysis Commenced	Oct 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							
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	45	≤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	-	-	34.1	≤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	1360	≤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	1.8	≤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	26	≤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: 2583220
Date Received : Oct 10, 2025
Date Reported : Oct 18, 2025
Report Number : 3430475-1

Page 2 of 2

Remark :

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Technical Management

Photchanas

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: 2583220

Date Received : Oct 10, 2025
Date Reported : Oct 18, 2025
Report Number : 3430475-2

Page 1 of 1

Sample Number	2583220-6						
Sampled Date	Oct 10, 2025 9:52 AM						
Sample Description	Wastewater						
Location	Effluent from the Check Basin (2T-9650)						
Date Analysis Commenced	Oct 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	235	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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Approved by

PhotchanaS

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: 2583220

Date Received : Oct 10, 2025
Date Reported : Oct 18, 2025
Report Number : 3430470-1

Page 1 of 1

Sample Number	2583220-1
Sampled Date	Oct 10, 2025 10:33 AM
Sample Description	Wastewater
Location	Equalization (T-9610)
Date Analysis Commenced	Oct 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						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	202	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	531	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		-	-	10.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	34.9	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	784	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	21	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: 2583220

Date Received : Oct 10, 2025

Date Reported : Oct 18, 2025

Report Number : 3430470-2

Page 1 of 1

Sample Number	2583220-1
Sampled Date	Oct 10, 2025 10:33 AM
Sample Description	Wastewater
Location	Equalization (T-9610)
Date Analysis Commenced	Oct 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	61.1	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: 2583220

Date Received : Oct 10, 2025
Date Reported : Oct 18, 2025
Report Number : 3430471-1

Page 1 of 1

Sample Number	2583220-2
Sampled Date	Oct 10, 2025 10:26 AM
Sample Description	Wastewater
Location	Drainage before Check Basin (T-9640)
Date Analysis Commenced	Oct 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						
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	66	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	-	-	34.4	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	496	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	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	8	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: 2583220

Date Received : Oct 10, 2025

Date Reported : Oct 18, 2025

Report Number : 3430471-2

Page 1 of 1

Sample Number 2583220-2
Sampled Date Oct 10, 2025 10:26 AM
Sample Description Wastewater
Location Drainage before Check Basin (T-9640)
Date Analysis Commenced Oct 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	54.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO ₄ (E)	Rayong

Sampling By : Wanlop Hunchainaow

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Analysis / Test Report

TESTING

No.0042

Lot ID: 2583220

Date Received : Oct 10, 2025

Date Reported : Oct 18, 2025

Report Number : 3430472-1

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	2583220-3
Sampled Date	Oct 10, 2025 10:24 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (T-9650)
Date Analysis Commenced	Oct 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							
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	26	≤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		-	-	8.0	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	-	-	32.1	≤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	464	≤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	<1.0	≤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	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: 2583220
Date Received : Oct 10, 2025
Date Reported : Oct 18, 2025
Report Number : 3430472-1

Page 2 of 2

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

Technical Management

Photchanas

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: 2583220

Date Received : Oct 10, 2025
Date Reported : Oct 18, 2025
Report Number : 3430472-2

Page 1 of 1

Sample Number	2583220-3						
Sampled Date	Oct 10, 2025 10:24 AM						
Sample Description	Wastewater						
Location	Effluent from the Check Basin (T-9650)						
Date Analysis Commenced	Oct 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	80.0	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 :

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

Approved by

PhotchanaS

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: 2583222

Date Received : Oct 10, 2025
Date Reported : Oct 15, 2025
Report Number : 3397023-1

Page 1 of 2

Sample Number 2583222-1
Sampled Date Oct 10, 2025 10:35 AM
Sample Description Wastewater
Location บริเวณขาออกจากระบบน้ำหล่อเย็นก่อนเข้าระบบบำบัดน้ำเสียโรงงาน MMA1
Date Analysis Commenced Oct 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	0.18	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

Sampling By : Wanlop Hunchainaow

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: 2583222

Date Received : Oct 10, 2025
Date Reported : Oct 15, 2025
Report Number : 3397023-1

Page 2 of 2

Sample Number 2583222-2
Sampled Date Oct 10, 2025 10:04 AM
Sample Description Wastewater
Location บริเวณขาออกจากกระบวนน้ำหล่อเย็นก่อนเข้าระบบบำบัดน้ำเสียโรงงาน MMA2
Date Analysis Commenced Oct 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	0.33	In-house method based on Standard Methods Rayong for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-Cl (G)	

Sampling By : Wanlop Hunchainaow

Remark :

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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: 2590808

Date Received : Nov 06, 2025
Date Reported : Nov 28, 2025
Report Number : 3460815-1

Page 1 of 1

Sample Number	2590808-4
Sampled Date	Nov 06, 2025 9:53 AM
Sample Description	Wastewater
Location	Equalization (2T-9610)
Date Analysis Commenced	Nov 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						
COD	mg/L	1.5	25	1121	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	-	-	35.7	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	2330	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	247	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Note : This Analysis test report is reissued to supersede report No.3450050-1, Date Reported : Nov 13, 2025 due to revise analytical information.

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

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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: 2590808

Date Received : Nov 06, 2025
Date Reported : Nov 28, 2025
Report Number : 3460815-2

Page 1 of 1

Sample Number	2590808-4
Sampled Date	Nov 06, 2025 9:53 AM
Sample Description	Wastewater
Location	Equalization (2T-9610)
Date Analysis Commenced	Nov 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						
Sulfate	mg/L	0.6	2	666	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO ₄ (E)	Rayong

Note : This Analysis test report is reissued to supersede report No.3450050-1, Date Reported : Nov 13, 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 :
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 25102748

Date Received : Nov 20, 2025
Date Reported : Nov 27, 2025
Report Number : 3459721-1

Page 1 of 1

Sample Number 25102748-4
Sampled Date Nov 20, 2025 2:25 PM
Sample Description Wastewater
Location Equalization (2T-9610)
Date Analysis Commenced Nov 21, 2025
Condition of Sample Contained in one plastic bottle, 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	585	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	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

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Scientist (4)
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Approved by

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Dej Changchon
Senior Manager
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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: 2590808

Date Received : Nov 06, 2025
Date Reported : Nov 28, 2025
Report Number : 3460816-1

Page 1 of 1

Sample Number	2590808-5
Sampled Date	Nov 06, 2025 10:00 AM
Sample Description	Wastewater
Location	Drainage before Check Basin (2T-9640)
Date Analysis Commenced	Nov 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						
COD	mg/L	1.5	25	58	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	-	-	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	1580	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	<1.0	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	26	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Note : This Analysis test report is reissued to supersede report No.3450051-1, Date Reported : Nov 13, 2025 due to revise analytical information.

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: 2590808

Date Received : Nov 06, 2025
Date Reported : Nov 28, 2025
Report Number : 3460816-2

Page 1 of 1

Sample Number 2590808-5
Sampled Date Nov 06, 2025 10:00 AM
Sample Description Wastewater
Location Drainage before Check Basin (2T-9640)
Date Analysis Commenced Nov 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						
Sulfate	mg/L	0.6	2	497	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO ₄ (E)	Rayong

Note : This Analysis test report is reissued to supersede report No.3450051-1, Date Reported : Nov 13, 2025 due to revise analytical information.

Sampling By : Wanlop Hunchainaow

Remark :

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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: 25102748

Date Received : Nov 20, 2025
Date Reported : Nov 27, 2025
Report Number : 3459722-1

Page 1 of 1

Sample Number 25102748-5
Sampled Date Nov 20, 2025 2:30 PM
Sample Description Wastewater
Location Drainage before Check Basin (2T-9640)
Date Analysis Commenced Nov 21, 2025
Condition of Sample Contained in one plastic bottle, 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

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

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Technical Management

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Analysis / Test Report

TESTING

No.0042

Lot ID: 2590808

Date Received : Nov 06, 2025

Date Reported : Nov 28, 2025

Report Number : 3460817-1

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	2590808-6
Sampled Date	Nov 06, 2025 9:48 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (2T-9650)
Date Analysis Commenced	Nov 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							
COD	mg/L	1.5	25	61	≤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	1380	≤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	49	≤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).

Note : This Analysis test report is reissued to supersede report No.3450052-1, Date Reported : Nov 13, 2025 due to revise analytical information.

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

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Technical Management

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Scientist (4)

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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

TESTING
No.0042
Lot ID: 2590808
Date Received : Nov 06, 2025
Date Reported : Nov 28, 2025
Report Number : 3460817-1

Page 2 of 2

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Technical Management

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Photchana Seeda
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ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Johnson

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: 2590808

Date Received : Nov 06, 2025

Date Reported : Nov 28, 2025

Report Number : 3460817-2

Page 1 of 1

Sample Number	2590808-6						
Sampled Date	Nov 06, 2025 9:48 AM						
Sample Description	Wastewater						
Location	Effluent from the Check Basin (2T-9650)						
Date Analysis Commenced	Nov 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							
Sulfate	mg/L	0.6	2	492	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).

Note : This Analysis test report is reissued to supersede report No.3450052-1, Date Reported : Nov 13, 2025 due to revise analytical information.

Sampling By : Wanlop Hunchainaow

Remark :

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Approved by

PhotchanaS

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: 25102748

Date Received : Nov 20, 2025

Date Reported : Nov 27, 2025

Report Number : 3459723-1

Page 1 of 1

Sample Number 25102748-6
Sampled Date Nov 20, 2025 2:20 PM
Sample Description Wastewater
Location Effluent from the Check Basin (2T-9650)
Date Analysis Commenced Nov 21, 2025
Condition of Sample Contained in one plastic bottle, 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

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

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

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.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: 2590808

Date Received : Nov 06, 2025
Date Reported : Nov 28, 2025
Report Number : 3460812-1

Page 1 of 1

Sample Number	2590808-1
Sampled Date	Nov 06, 2025 10:24 AM
Sample Description	Wastewater
Location	Equalization (T-9610)
Date Analysis Commenced	Nov 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						
COD	mg/L	1.5	25	503	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		-	-	9.4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	38.5	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	2240	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	36	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Note : This Analysis test report is reissued to supersede report No.3450047-1, Date Reported : Nov 13, 2025 due to revise analytical information.

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

Remark :

- LOD : Limit of Detection
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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. 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: 2590808

Date Received : Nov 06, 2025
Date Reported : Nov 28, 2025
Report Number : 3460812-2

Page 1 of 1

Sample Number	2590808-1
Sampled Date	Nov 06, 2025 10:24 AM
Sample Description	Wastewater
Location	Equalization (T-9610)
Date Analysis Commenced	Nov 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						
Sulfate	mg/L	0.6	2	588	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO ₄ (E)	Rayong

Note : This Analysis test report is reissued to supersede report No.3450047-1, Date Reported : Nov 13, 2025 due to revise analytical information.

Sampling By : Wanlop Hunchainaow

Remark :

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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: 25102748

Date Received : Nov 20, 2025
Date Reported : Nov 26, 2025
Report Number : 3459718-1

Page 1 of 1

Sample Number 25102748-1
Sampled Date Nov 20, 2025 1:50 PM
Sample Description Wastewater
Location Equalization (T-9610)
Date Analysis Commenced Nov 21, 2025
Condition of Sample Contained in one plastic bottle, 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	120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 5210 B, part 4500 - O G	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

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Scientist (4)

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Approved by

D. Changchon

Dej Changchon
Senior Manager

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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: 2590808

Date Received : Nov 06, 2025
Date Reported : Nov 28, 2025
Report Number : 3460813-1

Page 1 of 1

Sample Number	2590808-2
Sampled Date	Nov 06, 2025 10:19 AM
Sample Description	Wastewater
Location	Drainage before Check Basin (T-9640)
Date Analysis Commenced	Nov 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						
COD	mg/L	1.5	25	122	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	-	-	32.4	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	2090	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	19	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 2540 D	Rayong

Note : This Analysis test report is reissued to supersede report No.3450048-1, Date Reported : Nov 13, 2025 due to revise analytical information.

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

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

Lot ID: 2590808

Date Received : Nov 06, 2025
Date Reported : Nov 28, 2025
Report Number : 3460813-2

Page 1 of 1

Sample Number	2590808-2
Sampled Date	Nov 06, 2025 10:19 AM
Sample Description	Wastewater
Location	Drainage before Check Basin (T-9640)
Date Analysis Commenced	Nov 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						
Sulfate	mg/L	0.6	2	587	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 24th ed., 2023, part 4500-SO ₄ (E)	Rayong

Note : This Analysis test report is reissued to supersede report No.3450048-1, Date Reported : Nov 13, 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 :
Project Name : Environmental Monitoring
Project Location : MMA Site 3

Lot ID: 25102748

Date Received : Nov 20, 2025
Date Reported : Nov 27, 2025
Report Number : 3459719-1

Page 1 of 1

Sample Number 25102748-2
Sampled Date Nov 20, 2025 2:00 PM
Sample Description Wastewater
Location Drainage before Check Basin (T-9640)
Date Analysis Commenced Nov 21, 2025
Condition of Sample Contained in one plastic bottle, 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

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

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Approved by

D. Changchon

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Senior Manager
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TESTING

No.0042

Lot ID: 2590808

Date Received : Nov 06, 2025

Date Reported : Nov 28, 2025

Report Number : 3460814-1

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	2590808-3
Sampled Date	Nov 06, 2025 10:15 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (T-9650)
Date Analysis Commenced	Nov 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							
COD	mg/L	1.5	25	<25	≤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	-	-	32.2	≤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	1280	≤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	1.5	≤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	10	≤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).

Note : This Analysis test report is reissued to supersede report No.3450049-1, Date Reported : Nov 13, 2025 due to revise analytical information.

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

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Technical Management

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Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Chumson

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: 2590808
Date Received : Nov 06, 2025
Date Reported : Nov 28, 2025
Report Number : 3460814-1

Page 2 of 2

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Technical Management

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Photchana Seeda
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Approved by

D. Johnson

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: 2590808

Date Received : Nov 06, 2025

Date Reported : Nov 28, 2025

Report Number : 3460814-2

Page 1 of 1

Sample Number	2590808-3						
Sampled Date	Nov 06, 2025 10:15 AM						
Sample Description	Wastewater						
Location	Effluent from the Check Basin (T-9650)						
Date Analysis Commenced	Nov 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							
Sulfate	mg/L	0.6	2	366	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).

Note : This Analysis test report is reissued to supersede report No.3450049-1, Date Reported : Nov 13, 2025 due to revise analytical information.

Sampling By : Wanlop Hunchainaow

Remark :

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Approved by

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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 :

Project Name : Environmental Monitoring

Project Location : MMA Site 3

TESTING

No.0042

Lot ID: 25102748

Date Received : Nov 20, 2025

Date Reported : Nov 27, 2025

Report Number : 3459720-1

Page 1 of 1

Sample Number 25102748-3
Sampled Date Nov 20, 2025 2:10 PM
Sample Description Wastewater
Location Effluent from the Check Basin (T-9650)
Date Analysis Commenced Nov 21, 2025
Condition of Sample Contained in one plastic bottle, 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

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

Remark :

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

Technical Management

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Photchana Seeda

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Approved by

D. Changchon

Dej Changchon

Senior Manager

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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: 2590807

Date Received : Nov 06, 2025
Date Reported : Nov 08, 2025
Report Number : 3415533-1

Page 1 of 2

Sample Number 2590807-1
Sampled Date Nov 06, 2025 10:27 AM
Sample Description Wastewater
Location บริเวณขาออกจากระบบน้ำหล่อเย็นก่อนเข้าระบบบำบัดน้ำเสียโรงงาน MMA1
Date Analysis Commenced Nov 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	0.15	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

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

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: 2590807

Date Received : Nov 06, 2025
Date Reported : Nov 08, 2025
Report Number : 3415533-1

Page 2 of 2

Sample Number 2590807-2
Sampled Date Nov 06, 2025 9:57 AM
Sample Description Wastewater
Location บริเวณขาออกจากกระบวนน้ำหล่อเย็นก่อนเข้าระบบบำบัดน้ำเสียโรงงาน MMA2
Date Analysis Commenced Nov 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	0.42	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

Sampling By : Wanlop Hunchainaow

Remark :
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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: 25102017

Date Received : Dec 04, 2025

Date Reported : Dec 13, 2025

Report Number : 3470849-1

Page 1 of 1

Sample Number : 25102017-4
Sampled Date : Dec 04, 2025 10:16 AM
Sample Description : Wastewater
Location : Equalization (2T-9610)
Date Analysis Commenced : Dec 04, 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	916	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	1541	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	-	-	35.5	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	2220	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	217	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. Chumma

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: 25102017

Date Received : Dec 04, 2025

Date Reported : Dec 13, 2025

Report Number : 3470849-2

Page 1 of 1

Sample Number : 25102017-4
Sampled Date : Dec 04, 2025 10:16 AM
Sample Description : Wastewater
Location : Equalization (2T-9610)
Date Analysis Commenced : Dec 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						
Sulfate	mg/L	0.6	2	389	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: 25102017

Date Received : Dec 04, 2025
Date Reported : Dec 13, 2025
Report Number : 3470850-1

Page 1 of 1

Sample Number : 25102017-5
Sampled Date : Dec 04, 2025 10:07 AM
Sample Description : Wastewater
Location : Drainage before Check Basin (2T-9640)
Date Analysis Commenced : Dec 04, 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	77	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	-	-	31.4	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	1640	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	4.6	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	33	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: 25102017

Date Received : Dec 04, 2025

Date Reported : Dec 13, 2025

Report Number : 3470850-2

Page 1 of 1

Sample Number : 25102017-5
Sampled Date : Dec 04, 2025 10:07 AM
Sample Description : Wastewater
Location : Drainage before Check Basin (2T-9640)
Date Analysis Commenced : Dec 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						
Sulfate	mg/L	0.6	2	424	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: 25102017
Date Received : Dec 04, 2025
Date Reported : Dec 13, 2025
Report Number : 3470851-1

Page 1 of 2

Sample Number 25102017-6
Sampled Date Dec 04, 2025 10:11 AM
Sample Description Wastewater
Location Effluent from the Check Basin (2T-9650)
Date Analysis Commenced Dec 04, 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	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	-	-	30.8	≤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	1610	≤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	4.2	≤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	37	≤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. Chanson

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: 25102017

Date Received : Dec 04, 2025

Date Reported : Dec 13, 2025

Report Number : 3470851-1

Page 2 of 2

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

Technical Management

Photchanas

Photchana Seeda

Scientist (4)

ทะเบียนเลขที่ ว-323-จ-0028

Approved by

D. Johnson

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: 25102017

Date Received : Dec 04, 2025
Date Reported : Dec 13, 2025
Report Number : 3470851-2

Page 1 of 1

Sample Number	25102017-6
Sampled Date	Dec 04, 2025 10:11 AM
Sample Description	Wastewater
Location	Effluent from the Check Basin (2T-9650)
Date Analysis Commenced	Dec 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							
Sulfate	mg/L	0.6	2	418	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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Approved by

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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: 25102017

Date Received : Dec 04, 2025
Date Reported : Dec 13, 2025
Report Number : 3470846-1

Page 1 of 1

Sample Number 25102017-1
Sampled Date Dec 04, 2025 9:55 AM
Sample Description Wastewater
Location Equalization (T-9610)
Date Analysis Commenced Dec 04, 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	74.4	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	653	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	-	-	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	2190	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	31	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. Chumma

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: 25102017

Date Received : Dec 04, 2025

Date Reported : Dec 13, 2025

Report Number : 3470846-2

Page 1 of 1

Sample Number : 25102017-1
Sampled Date : Dec 04, 2025 9:55 AM
Sample Description : Wastewater
Location : Equalization (T-9610)
Date Analysis Commenced : Dec 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						
Sulfate	mg/L	0.6	2	611	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

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: 25102017

Date Received : Dec 04, 2025
Date Reported : Dec 13, 2025
Report Number : 3470847-1

Page 1 of 1

Sample Number : 25102017-2
Sampled Date : Dec 04, 2025 9:51 AM
Sample Description : Wastewater
Location : Drainage before Check Basin (T-9640)
Date Analysis Commenced : Dec 04, 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	146	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	-	-	31.4	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	1460	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	12	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.
- 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

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

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: 25102017

Date Received : Dec 04, 2025

Date Reported : Dec 13, 2025

Report Number : 3470847-2

Page 1 of 1

Sample Number : 25102017-2
Sampled Date : Dec 04, 2025 9:51 AM
Sample Description : Wastewater
Location : Drainage before Check Basin (T-9640)
Date Analysis Commenced : Dec 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						
Sulfate	mg/L	0.6	2	133	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

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: 25102017
Date Received : Dec 04, 2025
Date Reported : Dec 13, 2025
Report Number : 3470848-1

Page 1 of 2

Sample Number 25102017-3
Sampled Date Dec 04, 2025 9:47 AM
Sample Description Wastewater
Location Effluent from the Check Basin (T-9650)
Date Analysis Commenced Dec 04, 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	61	≤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	-	-	31.2	≤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	928	≤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	3.2	≤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	8	≤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. Chanson

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: 25102017
Date Received : Dec 04, 2025
Date Reported : Dec 13, 2025
Report Number : 3470848-1

Page 2 of 2

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

Technical Management

Photchanas

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: 25102017

Date Received : Dec 04, 2025
Date Reported : Dec 13, 2025
Report Number : 3470848-2

Page 1 of 1

Sample Number 25102017-3
Sampled Date Dec 04, 2025 9:47 AM
Sample Description Wastewater
Location Effluent from the Check Basin (T-9650)
Date Analysis Commenced Dec 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							
Sulfate	mg/L	0.6	2	165	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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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

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

Lot ID: 25102021

Date Received : Dec 04, 2025
Date Reported : Dec 09, 2025
Report Number : 3443264-1

Page 1 of 2

Sample Number 25102021-1
Sampled Date Dec 04, 2025 9:58 AM
Sample Description Wastewater
Location บริเวณขาออกจากกระบวนน้ำหล่อเย็นก่อนเข้าระบบบำบัดน้ำเสียโรงงาน MMA1
Date Analysis Commenced Dec 04, 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	0.09	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

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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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: 25102021

Date Received : Dec 04, 2025
Date Reported : Dec 09, 2025
Report Number : 3443264-1

Page 2 of 2

Sample Number 25102021-2
Sampled Date Dec 04, 2025 10:18 AM
Sample Description Wastewater
Location บริเวณขากอกจากระบบน้ำหล่อเย็นก่อนเข้าระบบบำบัดน้ำเสียโรงงาน MMA2
Date Analysis Commenced Dec 04, 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

Sampling By : Wanlop Hunchainaow

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

Approved by

Photchana S

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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: 2575691

Date Received : Sep 16, 2025
Date Reported : Sep 22, 2025
Report Number: 3411898-1

Page 1 of 1

Sample Number 2575691-1
Parameter Noise (Leq 24 hrs.)
Location SCG site 3
Measurement Date Sep 08 - Sep 09, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122607

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	59.3	86.1	53.3
12:00 PM - 01:00 PM	55.0	75.0	52.6
01:00 PM - 02:00 PM	67.4	89.0	59.4
02:00 PM - 03:00 PM	58.9	85.6	54.2
03:00 PM - 04:00 PM	56.9	74.9	53.9
04:00 PM - 05:00 PM	57.3	80.1	54.9
05:00 PM - 06:00 PM	56.8	75.8	54.7
06:00 PM - 07:00 PM	59.9	80.1	56.3
07:00 PM - 08:00 PM	57.4	70.7	55.6
08:00 PM - 09:00 PM	55.7	70.9	54.2
09:00 PM - 10:00 PM	55.7	71.9	54.3
10:00 PM - 11:00 PM	55.3	66.9	54.2
11:00 PM - 12:00 AM	56.2	79.8	55.1
12:00 AM - 01:00 AM	57.5	72.6	54.7
01:00 AM - 02:00 AM	56.1	65.1	55.2
02:00 AM - 03:00 AM	56.0	65.3	55.3
03:00 AM - 04:00 AM	56.1	67.5	55.3
04:00 AM - 05:00 AM	58.5	74.9	55.1
05:00 AM - 06:00 AM	56.7	66.9	55.1
06:00 AM - 07:00 AM	59.8	78.1	54.3
07:00 AM - 08:00 AM	65.1	95.9	59.9
08:00 AM - 09:00 AM	61.1	81.5	59.1
09:00 AM - 10:00 AM	60.5	97.8	55.5
10:00 AM - 11:00 AM	60.7	79.2	56.1

Leq Average 24 hrs. (dB(A)) 59.8
Lmax (dB(A)) 97.8
L90 (dB(A)) 55.1
Ldn (dB(A)) 64.3

Standard (dB(A)) 70 115

Reference Method : ISO 1996-1 : 2016

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: 2575691

Date Received : Sep 16, 2025
Date Reported : Sep 22, 2025
Report Number: 3411899-1

Page 1 of 1

Sample Number 2575691-2
Parameter Noise (Leq 24 hrs.)
Location SCG site 3
Measurement Date Sep 09 - Sep 10, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122607

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	56.6	79.4	54.4
12:00 PM - 01:00 PM	55.9	72.5	54.0
01:00 PM - 02:00 PM	57.2	85.4	54.7
02:00 PM - 03:00 PM	56.5	73.6	54.2
03:00 PM - 04:00 PM	56.4	77.4	54.5
04:00 PM - 05:00 PM	57.3	78.0	55.4
05:00 PM - 06:00 PM	58.0	75.2	55.9
06:00 PM - 07:00 PM	58.6	76.7	57.0
07:00 PM - 08:00 PM	57.5	67.7	56.6
08:00 PM - 09:00 PM	57.1	65.7	56.1
09:00 PM - 10:00 PM	56.6	71.2	55.7
10:00 PM - 11:00 PM	56.5	72.4	55.5
11:00 PM - 12:00 AM	56.3	63.8	55.6
12:00 AM - 01:00 AM	55.8	67.8	55.1
01:00 AM - 02:00 AM	56.1	64.7	55.3
02:00 AM - 03:00 AM	55.9	62.1	55.2
03:00 AM - 04:00 AM	55.8	65.5	55.0
04:00 AM - 05:00 AM	56.0	71.1	55.2
05:00 AM - 06:00 AM	56.0	67.6	55.0
06:00 AM - 07:00 AM	56.8	76.0	55.1
07:00 AM - 08:00 AM	56.3	70.5	54.5
08:00 AM - 09:00 AM	57.1	80.6	54.6
09:00 AM - 10:00 AM	55.4	82.0	53.2
10:00 AM - 11:00 AM	55.5	76.1	53.0

Leq Average 24 hrs. (dB(A)) 56.6
Lmax (dB(A)) 85.4
L90 (dB(A)) 55.1
Ldn (dB(A)) 62.7
Standard (dB(A)) 70 115

Reference Method : ISO 1996-1 : 2016

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: 2575691

Date Received : Sep 16, 2025

Date Reported : Sep 22, 2025

Report Number: 3411900-1

Page 1 of 1

Sample Number 2575691-3
Parameter Noise (Leq 24 hrs.)
Location SCG site 3
Measurement Date Sep 10 - Sep 11, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122607

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	55.7	75.6	52.9
12:00 PM - 01:00 PM	55.8	72.4	53.0
01:00 PM - 02:00 PM	56.2	77.3	53.5
02:00 PM - 03:00 PM	55.9	79.1	53.4
03:00 PM - 04:00 PM	55.8	77.1	53.1
04:00 PM - 05:00 PM	55.6	78.7	53.3
05:00 PM - 06:00 PM	56.8	79.7	54.1
06:00 PM - 07:00 PM	57.2	84.2	55.0
07:00 PM - 08:00 PM	55.6	71.1	54.3
08:00 PM - 09:00 PM	55.8	74.4	54.5
09:00 PM - 10:00 PM	56.0	75.9	54.4
10:00 PM - 11:00 PM	55.0	69.8	54.2
11:00 PM - 12:00 AM	55.4	63.5	54.6
12:00 AM - 01:00 AM	55.6	64.9	54.8
01:00 AM - 02:00 AM	55.7	68.2	54.8
02:00 AM - 03:00 AM	55.8	66.7	55.1
03:00 AM - 04:00 AM	55.1	62.6	54.3
04:00 AM - 05:00 AM	54.5	71.2	53.5
05:00 AM - 06:00 AM	53.8	66.4	53.1
06:00 AM - 07:00 AM	55.8	73.2	53.0
07:00 AM - 08:00 AM	55.6	76.4	52.7
08:00 AM - 09:00 AM	58.3	79.3	53.2
09:00 AM - 10:00 AM	59.6	77.1	54.0
10:00 AM - 11:00 AM	63.0	93.4	53.4

Leq Average 24 hrs. (dB(A)) 56.8
Lmax (dB(A)) 93.4
L90 (dB(A)) 53.5
Ldn (dB(A)) 62.0

Standard (dB(A)) 70 115

Reference Method : ISO 1996-1 : 2016

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: 2575691

Date Received : Sep 16, 2025
Date Reported : Sep 22, 2025
Report Number: 3411901-1

Page 1 of 1

Sample Number 2575691-4
Parameter Noise (Leq 24 hrs.)
Location SCG site 3
Measurement Date Sep 11 - Sep 12, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122607

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	57.2	85.8	52.5
12:00 PM - 01:00 PM	59.6	88.7	52.5
01:00 PM - 02:00 PM	58.1	79.7	53.0
02:00 PM - 03:00 PM	55.5	75.3	52.3
03:00 PM - 04:00 PM	54.8	75.5	52.8
04:00 PM - 05:00 PM	54.7	72.0	53.0
05:00 PM - 06:00 PM	56.3	77.9	53.8
06:00 PM - 07:00 PM	57.5	85.9	54.1
07:00 PM - 08:00 PM	55.1	66.7	53.8
08:00 PM - 09:00 PM	55.1	69.8	54.0
09:00 PM - 10:00 PM	55.1	67.6	54.0
10:00 PM - 11:00 PM	54.4	69.2	53.4
11:00 PM - 12:00 AM	55.0	70.5	54.1
12:00 AM - 01:00 AM	55.0	66.2	54.4
01:00 AM - 02:00 AM	55.0	68.6	54.3
02:00 AM - 03:00 AM	55.0	62.3	54.3
03:00 AM - 04:00 AM	54.5	63.5	53.5
04:00 AM - 05:00 AM	54.1	65.4	53.4
05:00 AM - 06:00 AM	54.4	67.0	53.5
06:00 AM - 07:00 AM	56.0	81.2	53.1
07:00 AM - 08:00 AM	57.9	78.2	54.3
08:00 AM - 09:00 AM	57.9	77.8	54.5
09:00 AM - 10:00 AM	57.2	72.2	54.9
10:00 AM - 11:00 AM	56.2	78.4	54.0

Leq Average 24 hrs. (dB(A)) 56.2
Lmax (dB(A)) 88.7
L90 (dB(A)) 53.8
Ldn (dB(A)) 61.6

Standard (dB(A)) 70 115

Reference Method : ISO 1996-1 : 2016

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)

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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: 2575691

Date Received : Sep 16, 2025

Date Reported : Sep 22, 2025

Report Number: 3411902-1

Page 1 of 1

Sample Number 2575691-5
Parameter Noise (Leq 24 hrs.)
Location SCG site 3
Measurement Date Sep 12 - Sep 13, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122607

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	56.6	81.7	53.4
12:00 PM - 01:00 PM	54.7	73.2	52.5
01:00 PM - 02:00 PM	56.6	76.2	53.5
02:00 PM - 03:00 PM	55.4	80.6	52.6
03:00 PM - 04:00 PM	55.5	77.8	52.9
04:00 PM - 05:00 PM	55.7	75.6	53.1
05:00 PM - 06:00 PM	55.7	75.4	53.6
06:00 PM - 07:00 PM	56.9	72.7	54.1
07:00 PM - 08:00 PM	55.8	74.8	53.6
08:00 PM - 09:00 PM	54.6	66.2	53.4
09:00 PM - 10:00 PM	54.5	66.2	53.7
10:00 PM - 11:00 PM	54.3	63.2	53.6
11:00 PM - 12:00 AM	54.8	67.3	54.0
12:00 AM - 01:00 AM	54.2	61.7	53.3
01:00 AM - 02:00 AM	53.7	65.4	53.0
02:00 AM - 03:00 AM	53.5	59.9	53.0
03:00 AM - 04:00 AM	53.6	70.3	53.1
04:00 AM - 05:00 AM	53.4	70.1	52.7
05:00 AM - 06:00 AM	53.3	62.0	52.7
06:00 AM - 07:00 AM	53.9	71.2	53.0
07:00 AM - 08:00 AM	55.9	75.6	53.1
08:00 AM - 09:00 AM	57.5	76.4	53.0
09:00 AM - 10:00 AM	57.3	87.0	53.4
10:00 AM - 11:00 AM	55.8	73.4	51.7

Leq Average 24 hrs. (dB(A)) 55.3
Lmax (dB(A)) 87.0
L90 (dB(A)) 53.1
Ldn (dB(A)) 60.7

Standard (dB(A)) 70 115

Reference Method : ISO 1996-1 : 2016

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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Scientist (3)

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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: 2575691

Date Received : Sep 16, 2025
Date Reported : Sep 22, 2025
Report Number: 3411903-1

Page 1 of 1

Sample Number 2575691-6
Parameter Noise (Leq 24 hrs.)
Location SCG site 3
Measurement Date Sep 13 - Sep 14, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122607

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	55.7	82.0	51.8
12:00 PM - 01:00 PM	53.2	78.6	51.3
01:00 PM - 02:00 PM	53.8	76.0	51.4
02:00 PM - 03:00 PM	53.9	73.5	51.8
03:00 PM - 04:00 PM	55.0	72.6	52.6
04:00 PM - 05:00 PM	56.8	75.5	53.4
05:00 PM - 06:00 PM	54.9	71.7	52.5
06:00 PM - 07:00 PM	55.5	79.1	52.7
07:00 PM - 08:00 PM	55.5	75.3	53.3
08:00 PM - 09:00 PM	55.1	64.5	54.1
09:00 PM - 10:00 PM	54.9	64.8	54.1
10:00 PM - 11:00 PM	58.2	72.0	54.1
11:00 PM - 12:00 AM	58.0	78.6	56.2
12:00 AM - 01:00 AM	55.5	76.9	54.3
01:00 AM - 02:00 AM	54.3	71.2	53.3
02:00 AM - 03:00 AM	53.6	69.4	52.7
03:00 AM - 04:00 AM	52.9	62.9	52.4
04:00 AM - 05:00 AM	53.2	62.4	52.7
05:00 AM - 06:00 AM	53.0	75.1	52.3
06:00 AM - 07:00 AM	52.8	65.5	52.0
07:00 AM - 08:00 AM	56.3	62.5	55.6
08:00 AM - 09:00 AM	59.8	81.2	55.2
09:00 AM - 10:00 AM	55.2	71.6	53.4
10:00 AM - 11:00 AM	55.0	77.2	52.2

Leq Average 24 hrs. (dB(A)) 55.5
Lmax (dB(A)) 82.0
L90 (dB(A)) 52.7
Ldn (dB(A)) 61.6

Standard (dB(A)) 70 115

Reference Method : ISO 1996-1 : 2016

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: 2575691

Date Received : Sep 16, 2025
Date Reported : Sep 22, 2025
Report Number: 3411904-1

Page 1 of 1

Sample Number 2575691-7
Parameter Noise (Leq 24 hrs.)
Location SCG site 3
Measurement Date Sep 14 - Sep 15, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122607

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	57.2	77.6	53.7
12:00 PM - 01:00 PM	54.4	66.1	53.5
01:00 PM - 02:00 PM	53.7	69.6	52.5
02:00 PM - 03:00 PM	51.9	67.5	51.1
03:00 PM - 04:00 PM	52.5	66.0	51.6
04:00 PM - 05:00 PM	52.9	70.4	52.1
05:00 PM - 06:00 PM	53.4	72.9	52.7
06:00 PM - 07:00 PM	54.7	65.2	53.3
07:00 PM - 08:00 PM	55.6	68.5	54.4
08:00 PM - 09:00 PM	56.1	75.8	54.6
09:00 PM - 10:00 PM	55.9	72.7	54.8
10:00 PM - 11:00 PM	55.4	71.3	54.5
11:00 PM - 12:00 AM	55.4	73.6	53.8
12:00 AM - 01:00 AM	54.3	65.3	53.7
01:00 AM - 02:00 AM	60.5	74.3	54.2
02:00 AM - 03:00 AM	55.7	74.4	54.4
03:00 AM - 04:00 AM	54.5	74.1	53.4
04:00 AM - 05:00 AM	53.5	65.4	52.8
05:00 AM - 06:00 AM	52.9	62.4	52.2
06:00 AM - 07:00 AM	53.3	67.9	52.4
07:00 AM - 08:00 AM	55.4	62.7	54.7
08:00 AM - 09:00 AM	54.9	63.9	53.9
09:00 AM - 10:00 AM	54.5	65.8	53.8
10:00 AM - 11:00 AM	54.8	67.4	53.9

Leq Average 24 hrs. (dB(A)) 55.1
Lmax (dB(A)) 77.6
L90 (dB(A)) 53.7
Ldn (dB(A)) 62.0
Standard (dB(A)) 70 115

Reference Method : ISO 1996-1 : 2016

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: 2575691

Date Received : Sep 16, 2025
Date Reported : Sep 22, 2025
Report Number: 3411905-1

Page 1 of 1

Sample Number 2575691-8
Parameter Noise (Leq 24 hrs.)
Location วัดหนองแฟบ
Measurement Date Sep 08 - Sep 09, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122579

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	56.2	81.0	49.7
01:00 PM - 02:00 PM	70.0	91.5	58.2
02:00 PM - 03:00 PM	58.6	81.3	51.7
03:00 PM - 04:00 PM	53.2	68.8	48.1
04:00 PM - 05:00 PM	59.8	83.6	46.7
05:00 PM - 06:00 PM	53.3	73.0	44.8
06:00 PM - 07:00 PM	59.7	83.6	46.0
07:00 PM - 08:00 PM	51.7	77.8	46.3
08:00 PM - 09:00 PM	50.4	62.1	48.2
09:00 PM - 10:00 PM	52.3	63.0	50.0
10:00 PM - 11:00 PM	50.0	79.5	46.9
11:00 PM - 12:00 AM	48.6	73.6	45.3
12:00 AM - 01:00 AM	47.4	57.7	44.4
01:00 AM - 02:00 AM	54.0	63.1	44.6
02:00 AM - 03:00 AM	52.9	62.2	44.0
03:00 AM - 04:00 AM	52.1	71.9	43.2
04:00 AM - 05:00 AM	48.5	64.9	43.7
05:00 AM - 06:00 AM	51.9	77.4	45.1
06:00 AM - 07:00 AM	69.0	86.1	51.8
07:00 AM - 08:00 AM	67.3	85.8	61.3
08:00 AM - 09:00 AM	56.6	81.7	53.4
09:00 AM - 10:00 AM	55.1	77.1	48.2
10:00 AM - 11:00 AM	63.4	85.2	51.1
11:00 AM - 12:00 PM	55.7	80.9	49.4

Leq Average 24 hrs. (dB(A)) 61.2
Lmax (dB(A)) 91.5
L90 (dB(A)) 46.9
Ldn (dB(A)) 66.7

Standard (dB(A))

70

115

Reference Method : ISO 1996-1 : 2016

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: 2575691

Date Received : Sep 16, 2025
Date Reported : Sep 22, 2025
Report Number: 3411906-1

Page 1 of 1

Sample Number 2575691-9
Parameter Noise (Leq 24 hrs.)
Location วัดหนองแฟบ
Measurement Date Sep 09 - Sep 10, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122579

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	51.5	70.8	46.7
01:00 PM - 02:00 PM	60.3	78.4	52.4
02:00 PM - 03:00 PM	52.3	74.1	48.1
03:00 PM - 04:00 PM	51.1	66.9	47.4
04:00 PM - 05:00 PM	60.2	85.6	48.4
05:00 PM - 06:00 PM	51.4	74.5	44.7
06:00 PM - 07:00 PM	47.9	63.7	43.5
07:00 PM - 08:00 PM	50.0	74.7	45.1
08:00 PM - 09:00 PM	48.2	63.4	45.9
09:00 PM - 10:00 PM	47.3	68.1	44.9
10:00 PM - 11:00 PM	47.5	69.8	44.4
11:00 PM - 12:00 AM	48.5	82.7	44.8
12:00 AM - 01:00 AM	46.4	60.6	43.7
01:00 AM - 02:00 AM	46.8	58.8	42.9
02:00 AM - 03:00 AM	50.3	59.8	42.8
03:00 AM - 04:00 AM	51.1	68.8	42.6
04:00 AM - 05:00 AM	51.8	60.2	43.2
05:00 AM - 06:00 AM	54.3	81.0	42.5
06:00 AM - 07:00 AM	55.2	74.5	48.3
07:00 AM - 08:00 AM	57.6	82.8	46.3
08:00 AM - 09:00 AM	53.3	74.9	46.1
09:00 AM - 10:00 AM	55.8	75.8	46.9
10:00 AM - 11:00 AM	53.1	76.5	46.5
11:00 AM - 12:00 PM	54.9	75.1	47.8

Leq Average 24 hrs. (dB(A)) 53.9
Lmax (dB(A)) 85.6
L90 (dB(A)) 45.1
Ldn (dB(A)) 58.4

Standard (dB(A)) 70 115

Reference Method : ISO 1996-1 : 2016

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
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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: 2575691

Date Received : Sep 16, 2025
Date Reported : Sep 22, 2025
Report Number: 3411907-1

Page 1 of 1

Sample Number 2575691-10
Parameter Noise (Leq 24 hrs.)
Location วัดหนองแฟบ
Measurement Date Sep 10 - Sep 11, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122579

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	57.9	77.1	46.8
01:00 PM - 02:00 PM	54.2	76.9	45.8
02:00 PM - 03:00 PM	52.1	74.8	45.7
03:00 PM - 04:00 PM	50.2	73.3	45.2
04:00 PM - 05:00 PM	51.0	77.9	45.7
05:00 PM - 06:00 PM	48.9	71.0	44.2
06:00 PM - 07:00 PM	50.9	75.4	44.7
07:00 PM - 08:00 PM	48.3	67.9	46.1
08:00 PM - 09:00 PM	47.8	67.2	44.7
09:00 PM - 10:00 PM	48.0	66.3	45.3
10:00 PM - 11:00 PM	47.5	66.9	45.3
11:00 PM - 12:00 AM	48.4	68.1	45.8
12:00 AM - 01:00 AM	44.7	65.9	42.7
01:00 AM - 02:00 AM	44.8	64.9	42.7
02:00 AM - 03:00 AM	45.0	70.3	43.1
03:00 AM - 04:00 AM	46.8	67.7	42.1
04:00 AM - 05:00 AM	45.7	65.1	43.7
05:00 AM - 06:00 AM	56.5	79.2	44.4
06:00 AM - 07:00 AM	54.6	71.8	47.7
07:00 AM - 08:00 AM	55.4	77.4	46.8
08:00 AM - 09:00 AM	52.5	72.2	44.9
09:00 AM - 10:00 AM	50.7	75.1	43.6
10:00 AM - 11:00 AM	53.1	71.7	45.1
11:00 AM - 12:00 PM	53.4	72.8	46.5

Leq Average 24 hrs. (dB(A)) 52.0
Lmax (dB(A)) 79.2
L90 (dB(A)) 45.1
Ldn (dB(A)) 57.4
Standard (dB(A)) 70 115

Reference Method : ISO 1996-1 : 2016

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: 2575691

Date Received : Sep 16, 2025
Date Reported : Sep 22, 2025
Report Number: 3411908-1

Page 1 of 1

Sample Number 2575691-11
Parameter Noise (Leq 24 hrs.)
Location วัดหนองแฟบ
Measurement Date Sep 11 - Sep 12, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122579

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	53.3	76.3	45.9
01:00 PM - 02:00 PM	53.6	76.9	45.5
02:00 PM - 03:00 PM	48.7	66.8	44.4
03:00 PM - 04:00 PM	48.7	66.4	44.1
04:00 PM - 05:00 PM	58.8	84.7	45.4
05:00 PM - 06:00 PM	49.1	68.3	43.8
06:00 PM - 07:00 PM	49.0	65.7	44.9
07:00 PM - 08:00 PM	49.7	74.4	45.5
08:00 PM - 09:00 PM	49.5	74.5	45.3
09:00 PM - 10:00 PM	46.6	65.3	44.9
10:00 PM - 11:00 PM	45.8	62.2	44.4
11:00 PM - 12:00 AM	47.5	69.2	43.2
12:00 AM - 01:00 AM	44.5	61.6	42.7
01:00 AM - 02:00 AM	44.8	64.6	42.5
02:00 AM - 03:00 AM	44.8	68.7	43.0
03:00 AM - 04:00 AM	45.8	68.5	42.6
04:00 AM - 05:00 AM	43.7	59.7	41.8
05:00 AM - 06:00 AM	53.0	80.1	42.9
06:00 AM - 07:00 AM	54.0	75.5	47.2
07:00 AM - 08:00 AM	67.0	86.7	60.8
08:00 AM - 09:00 AM	63.8	85.4	56.3
09:00 AM - 10:00 AM	54.3	79.5	46.1
10:00 AM - 11:00 AM	55.6	73.6	45.9
11:00 AM - 12:00 PM	53.6	83.3	46.2

Leq Average 24 hrs. (dB(A)) 56.5
Lmax (dB(A)) 86.7
L90 (dB(A)) 44.9
Ldn (dB(A)) 58.5
Standard (dB(A)) 70 115

Reference Method : ISO 1996-1 : 2016

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

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Technical Management

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Chonticha Subongkoch
Scientist (3)

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: 2575691

Date Received : Sep 16, 2025
Date Reported : Sep 22, 2025
Report Number: 3411909-1

Page 1 of 1

Sample Number 2575691-12
Parameter Noise (Leq 24 hrs.)
Location วัดหนองแฟบ
Measurement Date Sep 12 - Sep 13, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122579

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	55.4	89.5	45.5
01:00 PM - 02:00 PM	50.5	67.6	44.4
02:00 PM - 03:00 PM	50.0	71.6	43.8
03:00 PM - 04:00 PM	49.6	74.1	44.1
04:00 PM - 05:00 PM	56.2	81.8	44.8
05:00 PM - 06:00 PM	51.3	76.3	45.0
06:00 PM - 07:00 PM	50.6	75.1	44.4
07:00 PM - 08:00 PM	50.5	72.9	47.3
08:00 PM - 09:00 PM	50.6	75.8	46.7
09:00 PM - 10:00 PM	48.5	64.3	45.3
10:00 PM - 11:00 PM	47.1	64.6	44.5
11:00 PM - 12:00 AM	46.5	64.0	43.8
12:00 AM - 01:00 AM	47.8	68.1	44.7
01:00 AM - 02:00 AM	47.1	67.7	44.9
02:00 AM - 03:00 AM	50.2	62.2	44.8
03:00 AM - 04:00 AM	52.3	69.6	44.2
04:00 AM - 05:00 AM	56.0	62.2	46.0
05:00 AM - 06:00 AM	57.1	81.8	47.7
06:00 AM - 07:00 AM	56.3	78.7	49.7
07:00 AM - 08:00 AM	55.5	73.1	48.0
08:00 AM - 09:00 AM	57.0	74.9	46.7
09:00 AM - 10:00 AM	52.8	74.3	45.8
10:00 AM - 11:00 AM	53.1	77.4	45.0
11:00 AM - 12:00 PM	54.5	86.8	46.5

Leq Average 24 hrs. (dB(A)) 53.2
Lmax (dB(A)) 89.5
L90 (dB(A)) 45.0
Ldn (dB(A)) 59.5

Standard (dB(A)) 70 115

Reference Method : ISO 1996-1 : 2016

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: 2575691

Date Received : Sep 16, 2025
Date Reported : Sep 22, 2025
Report Number: 3411910-1

Page 1 of 1

Sample Number 2575691-13
Parameter Noise (Leq 24 hrs.)
Location วัดหนองแฟบ
Measurement Date Sep 13 - Sep 14, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122579

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	51.3	70.9	45.7
01:00 PM - 02:00 PM	54.2	72.0	45.1
02:00 PM - 03:00 PM	49.6	82.5	44.4
03:00 PM - 04:00 PM	49.1	70.2	43.8
04:00 PM - 05:00 PM	56.2	82.7	43.9
05:00 PM - 06:00 PM	48.9	67.4	44.2
06:00 PM - 07:00 PM	51.4	69.8	48.0
07:00 PM - 08:00 PM	50.2	67.6	47.8
08:00 PM - 09:00 PM	50.7	73.2	47.8
09:00 PM - 10:00 PM	51.8	72.9	47.8
10:00 PM - 11:00 PM	56.7	81.6	49.9
11:00 PM - 12:00 AM	58.4	84.2	55.7
12:00 AM - 01:00 AM	56.7	84.1	51.9
01:00 AM - 02:00 AM	49.5	63.8	46.3
02:00 AM - 03:00 AM	46.5	58.1	44.5
03:00 AM - 04:00 AM	49.4	69.5	44.8
04:00 AM - 05:00 AM	53.5	62.2	43.9
05:00 AM - 06:00 AM	54.8	78.1	43.6
06:00 AM - 07:00 AM	56.4	75.9	47.5
07:00 AM - 08:00 AM	67.7	89.0	50.8
08:00 AM - 09:00 AM	65.4	89.3	59.2
09:00 AM - 10:00 AM	60.6	89.8	51.0
10:00 AM - 11:00 AM	62.2	87.7	51.5
11:00 AM - 12:00 PM	59.4	87.8	50.6

Leq Average 24 hrs. (dB(A)) 58.6
Lmax (dB(A)) 89.8
L90 (dB(A)) 47.5
Ldn (dB(A)) 62.5

Standard (dB(A)) 70 115

Reference Method : ISO 1996-1 : 2016

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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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: 2575691

Date Received : Sep 16, 2025
Date Reported : Sep 22, 2025
Report Number: 3411911-1

Page 1 of 1

Sample Number 2575691-14
Parameter Noise (Leq 24 hrs.)
Location วัดหนองแฟบ
Measurement Date Sep 14 - Sep 15, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122579

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	53.3	76.4	44.6
01:00 PM - 02:00 PM	50.6	76.3	44.0
02:00 PM - 03:00 PM	52.8	71.3	44.8
03:00 PM - 04:00 PM	50.9	72.8	45.3
04:00 PM - 05:00 PM	55.2	71.2	46.0
05:00 PM - 06:00 PM	60.7	85.2	50.1
06:00 PM - 07:00 PM	51.7	71.4	49.1
07:00 PM - 08:00 PM	52.9	68.1	51.1
08:00 PM - 09:00 PM	52.5	70.7	49.9
09:00 PM - 10:00 PM	50.9	63.1	48.1
10:00 PM - 11:00 PM	51.6	67.5	49.4
11:00 PM - 12:00 AM	51.6	64.7	48.8
12:00 AM - 01:00 AM	50.7	62.4	47.5
01:00 AM - 02:00 AM	57.6	73.9	53.0
02:00 AM - 03:00 AM	64.1	75.6	56.6
03:00 AM - 04:00 AM	61.4	75.8	58.0
04:00 AM - 05:00 AM	57.7	63.3	48.6
05:00 AM - 06:00 AM	58.4	76.6	49.3
06:00 AM - 07:00 AM	59.1	74.9	53.0
07:00 AM - 08:00 AM	58.6	73.8	49.1
08:00 AM - 09:00 AM	56.1	87.4	47.0
09:00 AM - 10:00 AM	53.2	70.2	46.0
10:00 AM - 11:00 AM	55.2	76.0	47.1
11:00 AM - 12:00 PM	53.0	71.3	46.9

Leq Average 24 hrs. (dB(A)) 56.9
Lmax (dB(A)) 87.4
L90 (dB(A)) 48.6
Ldn (dB(A)) 64.9

Standard (dB(A))

70

115

Reference Method : ISO 1996-1 : 2016

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: 2575691

Date Received : Sep 16, 2025
Date Reported : Sep 22, 2025
Report Number: 3411912-1

Page 1 of 1

Sample Number 2575691-15
Parameter Noise (Leq 24 hrs.)
Location โรงเรียนบ้านมาบตาพุด
Measurement Date Sep 08 - Sep 09, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122578

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	57.7	75.7	48.0
11:00 AM - 12:00 PM	55.7	85.4	48.3
12:00 PM - 01:00 PM	57.5	91.6	47.6
01:00 PM - 02:00 PM	52.6	69.7	46.5
02:00 PM - 03:00 PM	52.1	73.7	45.9
03:00 PM - 04:00 PM	51.7	76.2	46.2
04:00 PM - 05:00 PM	58.3	83.9	46.9
05:00 PM - 06:00 PM	53.4	78.4	47.1
06:00 PM - 07:00 PM	52.7	77.2	46.5
07:00 PM - 08:00 PM	52.6	75.0	49.4
08:00 PM - 09:00 PM	52.7	77.9	48.8
09:00 PM - 10:00 PM	50.6	66.4	47.4
10:00 PM - 11:00 PM	49.2	66.7	46.6
11:00 PM - 12:00 AM	48.6	66.1	45.9
12:00 AM - 01:00 AM	49.9	70.2	46.8
01:00 AM - 02:00 AM	49.2	69.8	47.0
02:00 AM - 03:00 AM	52.3	64.3	46.9
03:00 AM - 04:00 AM	54.4	71.7	46.3
04:00 AM - 05:00 AM	58.1	64.3	48.1
05:00 AM - 06:00 AM	59.2	83.9	49.8
06:00 AM - 07:00 AM	58.4	80.8	51.8
07:00 AM - 08:00 AM	57.6	75.2	50.1
08:00 AM - 09:00 AM	59.1	77.0	48.8
09:00 AM - 10:00 AM	54.9	76.4	47.9

Leq Average 24 hrs. (dB(A)) 55.4
Lmax (dB(A)) 91.6
L90 (dB(A)) 47.1
Ldn (dB(A)) 61.6
Standard (dB(A)) 70 115

Reference Method : ISO 1996-1 : 2016

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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Scientist (3)

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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: 2575691

Date Received : Sep 16, 2025

Date Reported : Sep 22, 2025

Report Number: 3411913-1

Page 1 of 1

Sample Number 2575691-16
Parameter Noise (Leq 24 hrs.)
Location โรงเรียนบ้านมาบตาพุด
Measurement Date Sep 09 - Sep 10, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122578

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	55.2	79.5	47.1
11:00 AM - 12:00 PM	56.6	88.9	48.6
12:00 PM - 01:00 PM	53.4	73.0	47.8
01:00 PM - 02:00 PM	56.3	74.1	47.2
02:00 PM - 03:00 PM	51.7	84.6	46.5
03:00 PM - 04:00 PM	51.2	72.3	45.9
04:00 PM - 05:00 PM	58.3	84.8	46.0
05:00 PM - 06:00 PM	51.0	69.5	46.3
06:00 PM - 07:00 PM	53.5	71.9	50.1
07:00 PM - 08:00 PM	52.3	69.7	49.9
08:00 PM - 09:00 PM	52.8	75.3	49.9
09:00 PM - 10:00 PM	53.9	75.0	49.9
10:00 PM - 11:00 PM	58.8	83.7	52.0
11:00 PM - 12:00 AM	60.5	86.3	57.8
12:00 AM - 01:00 AM	58.8	86.2	54.0
01:00 AM - 02:00 AM	51.6	65.9	48.4
02:00 AM - 03:00 AM	48.6	60.2	46.6
03:00 AM - 04:00 AM	51.5	71.6	46.9
04:00 AM - 05:00 AM	55.6	64.3	46.0
05:00 AM - 06:00 AM	56.9	80.2	45.7
06:00 AM - 07:00 AM	58.5	78.0	49.6
07:00 AM - 08:00 AM	69.8	91.1	52.9
08:00 AM - 09:00 AM	67.5	91.4	61.3
09:00 AM - 10:00 AM	62.7	91.9	53.1

Leq Average 24 hrs. (dB(A)) 60.2
Lmax (dB(A)) 91.9
L90 (dB(A)) 48.4
Ldn (dB(A)) 64.4

Standard (dB(A))

70

115

Reference Method : ISO 1996-1 : 2016

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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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: 2575691

Date Received : Sep 16, 2025
Date Reported : Sep 22, 2025
Report Number: 3411914-1

Page 1 of 1

Sample Number 2575691-17
Parameter Noise (Leq 24 hrs.)
Location โรงเรียนบ้านมาบตาพุด
Measurement Date Sep 10 - Sep 11, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122578

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	64.3	89.8	53.6
11:00 AM - 12:00 PM	61.5	89.9	52.7
12:00 PM - 01:00 PM	55.4	78.5	46.7
01:00 PM - 02:00 PM	52.7	78.4	46.1
02:00 PM - 03:00 PM	54.9	73.4	46.9
03:00 PM - 04:00 PM	53.0	74.9	47.4
04:00 PM - 05:00 PM	57.3	73.3	48.1
05:00 PM - 06:00 PM	62.8	87.3	52.2
06:00 PM - 07:00 PM	53.8	73.5	51.2
07:00 PM - 08:00 PM	55.0	70.2	53.2
08:00 PM - 09:00 PM	54.6	72.8	52.0
09:00 PM - 10:00 PM	53.0	65.2	50.2
10:00 PM - 11:00 PM	53.7	69.6	51.5
11:00 PM - 12:00 AM	53.7	66.8	50.9
12:00 AM - 01:00 AM	52.8	64.5	49.6
01:00 AM - 02:00 AM	59.7	76.0	55.1
02:00 AM - 03:00 AM	66.2	77.7	58.7
03:00 AM - 04:00 AM	63.5	77.9	60.1
04:00 AM - 05:00 AM	59.8	65.4	50.7
05:00 AM - 06:00 AM	60.5	78.7	51.4
06:00 AM - 07:00 AM	61.2	77.0	55.1
07:00 AM - 08:00 AM	60.7	75.9	51.2
08:00 AM - 09:00 AM	58.2	89.5	49.1
09:00 AM - 10:00 AM	55.3	72.3	48.1

Leq Average 24 hrs. (dB(A)) 59.7
Lmax (dB(A)) 89.9
L90 (dB(A)) 51.2
Ldn (dB(A)) 67.2

Standard (dB(A)) 70 115

Reference Method : ISO 1996-1 : 2016

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: 2575691

Date Received : Sep 16, 2025

Date Reported : Sep 22, 2025

Report Number: 3411915-1

Page 1 of 1

Sample Number : 2575691-18
Parameter : Noise (Leq 24 hrs.)
Location : โรงเรียนบ้านมาบตาพุด
Measurement Date : Sep 11 - Sep 12, 2025
Measurement by : Santi Chaichana
Sound Level meter : Serial No. 1122578

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	57.3	78.1	49.2
11:00 AM - 12:00 PM	55.1	73.4	49.0
12:00 PM - 01:00 PM	57.6	82.4	51.1
01:00 PM - 02:00 PM	63.8	85.4	56.3
02:00 PM - 03:00 PM	60.0	82.7	53.1
03:00 PM - 04:00 PM	54.6	70.2	49.5
04:00 PM - 05:00 PM	61.2	85.0	48.1
05:00 PM - 06:00 PM	54.7	74.4	46.2
06:00 PM - 07:00 PM	61.1	85.0	47.4
07:00 PM - 08:00 PM	53.1	79.2	47.7
08:00 PM - 09:00 PM	51.8	63.5	49.6
09:00 PM - 10:00 PM	53.7	64.4	51.4
10:00 PM - 11:00 PM	51.4	80.9	48.3
11:00 PM - 12:00 AM	50.0	75.0	46.7
12:00 AM - 01:00 AM	48.8	59.1	45.8
01:00 AM - 02:00 AM	55.4	64.5	46.0
02:00 AM - 03:00 AM	54.3	63.6	45.4
03:00 AM - 04:00 AM	53.5	73.3	44.6
04:00 AM - 05:00 AM	49.9	66.3	45.1
05:00 AM - 06:00 AM	53.3	78.8	46.5
06:00 AM - 07:00 AM	65.4	89.3	59.2
07:00 AM - 08:00 AM	68.7	87.2	62.7
08:00 AM - 09:00 AM	58.0	83.1	54.8
09:00 AM - 10:00 AM	56.5	78.5	49.6

Leq Average 24 hrs. (dB(A)) : 59.6
Lmax (dB(A)) : 89.3
L90 (dB(A)) : 48.3
Ldn (dB(A)) : 64.4

Standard (dB(A)) : 70 115

Reference Method : ISO 1996-1 : 2016

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: 2575691

Date Received : Sep 16, 2025
Date Reported : Sep 22, 2025
Report Number: 3411916-1

Page 1 of 1

Sample Number 2575691-19
Parameter Noise (Leq 24 hrs.)
Location โรงเรียนบ้านมาบตาพุด
Measurement Date Sep 12 - Sep 13, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122578

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	64.8	86.6	52.5
11:00 AM - 12:00 PM	57.1	82.3	50.8
12:00 PM - 01:00 PM	52.9	72.2	48.1
01:00 PM - 02:00 PM	61.7	79.8	53.8
02:00 PM - 03:00 PM	53.7	75.5	49.5
03:00 PM - 04:00 PM	52.5	68.3	48.8
04:00 PM - 05:00 PM	61.6	87.0	49.8
05:00 PM - 06:00 PM	52.8	75.9	46.1
06:00 PM - 07:00 PM	49.3	65.1	44.9
07:00 PM - 08:00 PM	51.4	76.1	46.5
08:00 PM - 09:00 PM	49.6	64.8	47.3
09:00 PM - 10:00 PM	48.7	69.5	46.3
10:00 PM - 11:00 PM	48.9	71.2	45.8
11:00 PM - 12:00 AM	49.9	84.1	46.2
12:00 AM - 01:00 AM	47.8	62.0	45.1
01:00 AM - 02:00 AM	48.2	60.2	44.3
02:00 AM - 03:00 AM	51.7	61.2	44.2
03:00 AM - 04:00 AM	52.5	70.2	44.0
04:00 AM - 05:00 AM	53.2	61.6	44.6
05:00 AM - 06:00 AM	56.4	83.1	44.6
06:00 AM - 07:00 AM	57.3	76.6	50.4
07:00 AM - 08:00 AM	59.7	84.9	48.4
08:00 AM - 09:00 AM	55.4	77.0	48.2
09:00 AM - 10:00 AM	57.9	77.9	49.0

Leq Average 24 hrs. (dB(A)) 56.7
Lmax (dB(A)) 87.0
L90 (dB(A)) 46.5
Ldn (dB(A)) 60.6
Standard (dB(A)) 70 115

Reference Method : ISO 1996-1 : 2016

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: 2575691

Date Received : Sep 16, 2025
Date Reported : Sep 22, 2025
Report Number: 3411917-1

Page 1 of 1

Sample Number 2575691-20
Parameter Noise (Leq 24 hrs.)
Location โรงเรียนบ้านมาบตาพุด
Measurement Date Sep 13 - Sep 14, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122578

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	55.2	78.6	48.6
11:00 AM - 12:00 PM	57.0	77.2	49.9
12:00 PM - 01:00 PM	60.0	79.2	48.9
01:00 PM - 02:00 PM	56.3	79.0	47.9
02:00 PM - 03:00 PM	54.2	76.9	47.8
03:00 PM - 04:00 PM	52.3	75.4	47.3
04:00 PM - 05:00 PM	53.1	80.0	47.8
05:00 PM - 06:00 PM	51.0	73.1	46.3
06:00 PM - 07:00 PM	53.0	77.5	46.8
07:00 PM - 08:00 PM	50.4	70.0	48.2
08:00 PM - 09:00 PM	49.9	69.3	46.8
09:00 PM - 10:00 PM	50.1	68.4	47.4
10:00 PM - 11:00 PM	49.6	69.0	47.4
11:00 PM - 12:00 AM	50.5	70.2	47.9
12:00 AM - 01:00 AM	46.8	68.0	44.8
01:00 AM - 02:00 AM	46.9	67.0	44.8
02:00 AM - 03:00 AM	47.1	72.4	45.2
03:00 AM - 04:00 AM	48.9	69.8	44.2
04:00 AM - 05:00 AM	47.8	67.2	45.8
05:00 AM - 06:00 AM	58.6	81.3	46.5
06:00 AM - 07:00 AM	56.7	73.9	49.8
07:00 AM - 08:00 AM	57.5	79.5	48.9
08:00 AM - 09:00 AM	54.6	74.3	47.0
09:00 AM - 10:00 AM	52.8	77.2	45.7

Leq Average 24 hrs. (dB(A)) 54.2
Lmax (dB(A)) 81.3
L90 (dB(A)) 47.3
Ldn (dB(A)) 59.5

Standard (dB(A)) 70 115

Reference Method : ISO 1996-1 : 2016

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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Scientist (3)

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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: 2575691

Date Received : Sep 16, 2025
Date Reported : Sep 22, 2025
Report Number: 3411918-1

Page 1 of 1

Sample Number 2575691-21
Parameter Noise (Leq 24 hrs.)
Location โรงเรียนบ้านมาบตาพุด
Measurement Date Sep 14 - Sep 15, 2025
Measurement by Santi Chaichana
Sound Level meter Serial No. 1122578

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	55.2	73.8	47.2
11:00 AM - 12:00 PM	55.5	74.9	48.6
12:00 PM - 01:00 PM	55.4	78.4	48.0
01:00 PM - 02:00 PM	55.7	79.0	47.6
02:00 PM - 03:00 PM	50.8	68.9	46.5
03:00 PM - 04:00 PM	50.8	68.5	46.2
04:00 PM - 05:00 PM	60.9	86.8	47.5
05:00 PM - 06:00 PM	51.2	70.4	45.9
06:00 PM - 07:00 PM	51.1	67.8	47.0
07:00 PM - 08:00 PM	51.8	76.5	47.6
08:00 PM - 09:00 PM	51.6	76.6	47.4
09:00 PM - 10:00 PM	48.7	67.4	47.0
10:00 PM - 11:00 PM	47.9	64.3	46.5
11:00 PM - 12:00 AM	49.6	71.3	45.3
12:00 AM - 01:00 AM	46.6	63.7	44.8
01:00 AM - 02:00 AM	46.9	66.7	44.6
02:00 AM - 03:00 AM	46.9	70.8	45.1
03:00 AM - 04:00 AM	47.9	70.6	44.7
04:00 AM - 05:00 AM	45.8	61.8	43.9
05:00 AM - 06:00 AM	55.1	82.2	45.0
06:00 AM - 07:00 AM	56.1	77.6	49.3
07:00 AM - 08:00 AM	69.1	88.8	62.9
08:00 AM - 09:00 AM	65.9	87.5	58.4
09:00 AM - 10:00 AM	56.4	81.6	48.2

Leq Average 24 hrs. (dB(A)) 58.5
Lmax (dB(A)) 88.8
L90 (dB(A)) 47.0
Ldn (dB(A)) 60.5

Standard (dB(A)) 70 115

Reference Method : ISO 1996-1 : 2016

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

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: 2563635

Date Received : Aug 29, 2025
Date Reported : Sep 04, 2025
Report Number: 3398824-1

Page 1 of 1

Sample Number 2563635-1
Parameter Noise (Leq 12 hrs.)
Location MMA 1 บริเวณ Reactor Unit 2000
Measurement Date Aug 29, 2025
Measurement by Amnat Wongsakhen

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	80.2	80.7	80.0
09:00 AM - 10:00 AM	79.9	86.4	79.7
10:00 AM - 11:00 AM	79.7	80.2	79.6
11:00 AM - 12:00 PM	79.8	80.3	79.7
12:00 PM - 01:00 PM	79.6	80.1	79.4
01:00 PM - 02:00 PM	79.5	80.1	79.4
02:00 PM - 03:00 PM	79.9	87.8	79.6
03:00 PM - 04:00 PM	79.9	80.5	79.7
04:00 PM - 05:00 PM	80.3	81.6	80.1
05:00 PM - 06:00 PM	79.6	86.1	79.4
06:00 PM - 07:00 PM	80.1	80.7	80.0
07:00 PM - 08:00 PM	79.3	79.8	79.1

Leq Average 12 hrs. (dB(A)) 79.8
Lmax (dB(A)) 87.8
Standard (dB(A)) 87
Reference Method : ISO 1996-1 : 2016
Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย
ในการประกอบกิจการโรงงานเกี่ยวกับสภาวะแวดล้อมในการทำงาน พ.ศ.๒๕๕๖

Technical Management

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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: 2563635

Date Received : Aug 29, 2025
Date Reported : Sep 04, 2025
Report Number: 3398825-1

Page 1 of 1

Sample Number 2563635-2
Parameter Noise (Leq 12 hrs.)
Location MMA 1 บริเวณ Unit 3100A/B
Measurement Date Aug 29, 2025
Measurement by Amnat Wongsakhen

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	84.5	85.1	84.4
09:00 AM - 10:00 AM	84.1	84.9	83.9
10:00 AM - 11:00 AM	84.9	86.0	84.7
11:00 AM - 12:00 PM	84.9	88.1	84.7
12:00 PM - 01:00 PM	84.9	85.4	84.7
01:00 PM - 02:00 PM	84.8	87.5	84.7
02:00 PM - 03:00 PM	84.8	85.4	84.7
03:00 PM - 04:00 PM	84.8	87.3	84.6
04:00 PM - 05:00 PM	85.0	85.8	84.8
05:00 PM - 06:00 PM	85.2	87.2	85.0
06:00 PM - 07:00 PM	85.4	85.9	85.2
07:00 PM - 08:00 PM	85.6	86.2	85.5
Leq Average 12 hrs. (dB(A))	84.9		
Lmax (dB(A))		88.1	
Standard (dB(A))	87	140	
Reference Method : ISO 1996-1 : 2016			
Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย ในการประกอบกิจการโรงงานเกี่ยวกับสภาวะแวดล้อมในการทำงาน พ.ศ.๒๕๕๖			

Technical Management

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Chonticha Subongkoch
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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: 2563635

Date Received : Aug 29, 2025
Date Reported : Sep 04, 2025
Report Number: 3398826-1

Page 1 of 1

Sample Number 2563635-3
Parameter Noise (Leq 12 hrs.)
Location MMA 1 บริเวณนอกอาคาร Compressor
Measurement Date Aug 29, 2025
Measurement by Amnat Wongsakhen

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	78.6	79.5	78.3
09:00 AM - 10:00 AM	78.8	87.3	78.5
10:00 AM - 11:00 AM	78.6	79.4	78.4
11:00 AM - 12:00 PM	78.2	79.1	77.8
12:00 PM - 01:00 PM	78.0	78.9	77.7
01:00 PM - 02:00 PM	78.0	79.2	77.7
02:00 PM - 03:00 PM	78.7	83.5	78.4
03:00 PM - 04:00 PM	78.8	79.7	78.5
04:00 PM - 05:00 PM	78.9	80.0	78.5
05:00 PM - 06:00 PM	78.9	83.7	78.6
06:00 PM - 07:00 PM	79.2	80.0	79.0
07:00 PM - 08:00 PM	79.0	79.8	78.8

Leq Average 12 hrs. (dB(A)) 78.7
Lmax (dB(A)) 87.3
Standard (dB(A)) 87
Reference Method : ISO 1996-1 : 2016
Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย
ในการประกอบกิจการโรงงานเกี่ยวกับสภาวะแวดล้อมในการทำงาน พ.ศ.๒๕๕๖

Technical Management

Chontichak

Chonticha Subongkoch
Scientist (3)

Approved by

Supot S

Supot Salamteh
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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: 2585503

Date Received : Sep 16, 2025

Date Reported : Sep 22, 2025

Report Number: 3412017-1

Page 1 of 1

Sample Number 2585503-1
Parameter Noise (Leq. 12 hrs.)
Location MMA 1 บริเวณ Steam Header
Measurement Date Sep 15, 2025
Measurement by Nantawat Sarin

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	85.1	89.7	84.7
11:00 AM - 12:00 PM	84.7	85.7	84.4
12:00 PM - 01:00 PM	84.6	86.0	84.2
01:00 PM - 02:00 PM	85.4	86.2	85.1
02:00 PM - 03:00 PM	85.2	86.8	84.6
03:00 PM - 04:00 PM	84.6	87.6	84.1
04:00 PM - 05:00 PM	84.4	85.3	84.1
05:00 PM - 06:00 PM	84.7	85.8	84.4
06:00 PM - 07:00 PM	84.7	86.1	84.3
07:00 PM - 08:00 PM	85.0	86.6	84.4
08:00 PM - 09:00 PM	84.9	89.5	84.5
09:00 PM - 10:00 PM	84.6	85.6	84.3

Leq Average 12 hrs. (dB(A))

84.8

Lmax (dB(A))

89.7

Standard (dB(A))

87

140

Reference Method : ISO 1996-1 : 2016

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย

ในการประกอบกิจการโรงงานเกี่ยวกับสภาวะแวดล้อมในการทำงาน พ.ศ.๒๕๔๖

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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: 2563635

Date Received : Aug 29, 2025
Date Reported : Sep 04, 2025
Report Number: 3398828-1

Page 1 of 1

Sample Number 2563635-5
Parameter Noise (Leq 12 hrs.)
Location MMA 1 ชั้น 1 ใกล้บริเวณ Reboiler Pump ของ BMA#1 Unit
Measurement Date Aug 29, 2025
Measurement by Amnat Wongsakhen

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	76.2	81.6	75.3
09:00 AM - 10:00 AM	76.7	88.4	75.6
10:00 AM - 11:00 AM	76.0	85.7	75.1
11:00 AM - 12:00 PM	75.6	85.0	74.7
12:00 PM - 01:00 PM	75.3	80.7	74.4
01:00 PM - 02:00 PM	75.3	82.4	74.3
02:00 PM - 03:00 PM	75.3	77.7	74.5
03:00 PM - 04:00 PM	75.4	86.9	74.6
04:00 PM - 05:00 PM	76.1	87.8	75.0
05:00 PM - 06:00 PM	76.4	80.5	75.3
06:00 PM - 07:00 PM	76.1	81.5	75.2
07:00 PM - 08:00 PM	76.7	88.4	75.6
Leq Average 12 hrs. (dB(A))	76.0		
Lmax (dB(A))		88.4	
Standard (dB(A))	87	140	
Reference Method : ISO 1996-1 : 2016			
Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย ในการประกอบกิจการโรงงานเกี่ยวกับสภาวะแวดล้อมในการทำงาน พ.ศ.๒๕๕๖			

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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: 2563635

Date Received : Aug 29, 2025
Date Reported : Sep 04, 2025
Report Number: 3398829-1

Page 1 of 1

Sample Number 2563635-6
Parameter Noise (Leq 12 hrs.)
Location MMA 1 ชั้น 1 ใกล้บริเวณ Reboiler Pump ของ BMA#2 Unit
Measurement Date Aug 29, 2025
Measurement by Amnat Wongsakhen

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	74.3	78.9	73.9
09:00 AM - 10:00 AM	73.8	76.9	73.5
10:00 AM - 11:00 AM	73.7	87.8	73.3
11:00 AM - 12:00 PM	73.5	77.1	73.1
12:00 PM - 01:00 PM	73.4	78.5	73.0
01:00 PM - 02:00 PM	73.8	77.9	73.3
02:00 PM - 03:00 PM	73.7	78.3	73.3
03:00 PM - 04:00 PM	73.7	81.0	73.2
04:00 PM - 05:00 PM	73.3	76.4	73.0
05:00 PM - 06:00 PM	73.8	77.6	73.2
06:00 PM - 07:00 PM	74.3	77.9	73.9
07:00 PM - 08:00 PM	73.5	78.1	73.1

Leq Average 12 hrs. (dB(A))

73.7

Lmax (dB(A))

87.8

Standard (dB(A))

87

140

Reference Method : ISO 1996-1 : 2016

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย
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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: 2563635

Date Received : Aug 29, 2025
Date Reported : Sep 04, 2025
Report Number: 3398830-1

Page 1 of 1

Sample Number 2563635-7
Parameter Noise (Leq 12 hrs.)
Location MMA 2 บริเวณ Reactor Unit 2000
Measurement Date Aug 29, 2025
Measurement by Amnat Wongsakhen

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	83.8	84.6	83.4
09:00 AM - 10:00 AM	84.2	87.4	83.7
10:00 AM - 11:00 AM	84.5	86.6	84.1
11:00 AM - 12:00 PM	84.4	85.2	84.0
12:00 PM - 01:00 PM	84.1	85.1	83.5
01:00 PM - 02:00 PM	83.8	84.6	83.3
02:00 PM - 03:00 PM	84.0	84.9	83.5
03:00 PM - 04:00 PM	84.3	85.1	83.8
04:00 PM - 05:00 PM	84.5	87.7	84.0
05:00 PM - 06:00 PM	84.1	84.9	83.6
06:00 PM - 07:00 PM	84.0	84.8	83.6
07:00 PM - 08:00 PM	84.4	85.2	83.9

Leq Average 12 hrs. (dB(A)) 84.2
Lmax (dB(A)) 87.7
Standard (dB(A)) 87 140
Reference Method : ISO 1996-1 : 2016
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: 2563635

Date Received : Aug 29, 2025
Date Reported : Sep 04, 2025
Report Number: 3398831-1

Page 1 of 1

Sample Number 2563635-8
Parameter Noise (Leq 12 hrs.)
Location MMA 2 บริเวณ Unit 3100A/B
Measurement Date Aug 29, 2025
Measurement by Amnat Wongsakhen

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	82.9	86.8	82.4
09:00 AM - 10:00 AM	82.1	86.1	81.6
10:00 AM - 11:00 AM	82.8	86.9	82.3
11:00 AM - 12:00 PM	82.7	86.4	82.2
12:00 PM - 01:00 PM	82.6	86.5	82.1
01:00 PM - 02:00 PM	82.6	86.9	82.1
02:00 PM - 03:00 PM	82.7	86.7	82.2
03:00 PM - 04:00 PM	82.6	86.9	82.1
04:00 PM - 05:00 PM	82.7	86.5	82.2
05:00 PM - 06:00 PM	82.3	86.6	81.8
06:00 PM - 07:00 PM	81.9	86.0	81.4
07:00 PM - 08:00 PM	82.4	86.4	81.9
Leq Average 12 hrs. (dB(A))	82.5		
Lmax (dB(A))		86.9	
Standard (dB(A))	87	140	
Reference Method : ISO 1996-1 : 2016			
Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย ในการประกอบกิจการโรงงานเกี่ยวกับสภาวะแวดล้อมในการทำงาน พ.ศ.๒๕๕๖			

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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: 2563635

Date Received : Aug 29, 2025
Date Reported : Sep 04, 2025
Report Number: 3398832-1

Page 1 of 1

Sample Number 2563635-9
Parameter Noise (Leq 12 hrs.)
Location MMA 2 บริเวณอาคาร Compressor
Measurement Date Aug 29, 2025
Measurement by Amnat Wongsakhen

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	82.0	86.2	81.2
09:00 AM - 10:00 AM	81.5	85.9	80.9
10:00 AM - 11:00 AM	81.9	86.1	81.1
11:00 AM - 12:00 PM	81.5	86.6	80.8
12:00 PM - 01:00 PM	81.4	85.6	80.6
01:00 PM - 02:00 PM	81.3	85.9	80.6
02:00 PM - 03:00 PM	81.2	85.6	80.6
03:00 PM - 04:00 PM	81.6	85.8	81.0
04:00 PM - 05:00 PM	81.9	86.5	81.3
05:00 PM - 06:00 PM	81.6	86.2	80.9
06:00 PM - 07:00 PM	81.2	86.3	80.5
07:00 PM - 08:00 PM	80.6	85.0	80.0
Leq Average 12 hrs. (dB(A))	81.5		
Lmax (dB(A))		86.6	
Standard (dB(A))	87	140	
Reference Method : ISO 1996-1 : 2016			
Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย ในการประกอบกิจการโรงงานเกี่ยวกับสภาวะแวดล้อมในการทำงาน พ.ศ.๒๕๕๖			

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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: 2585503

Date Received : Sep 16, 2025

Date Reported : Sep 22, 2025

Report Number: 3412018-1

Page 1 of 1

Sample Number 2585503-2
Parameter Noise (Leq. 12 hrs.)
Location MMA 2 บริเวณ Steam Header
Measurement Date Sep 15, 2025
Measurement by Nantawat Sarin

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:57 AM - 10:57 AM	85.1	95.2	83.7
10:57 AM - 11:57 AM	84.7	86.4	83.5
11:57 AM - 12:57 PM	84.7	86.3	83.3
12:57 PM - 01:57 PM	84.7	86.4	83.4
01:57 PM - 02:57 PM	84.6	86.3	83.4
02:57 PM - 03:57 PM	84.5	86.0	83.4
03:57 PM - 04:57 PM	84.7	86.2	83.5
04:57 PM - 05:57 PM	84.9	86.5	83.7
05:57 PM - 06:57 PM	84.7	86.4	83.5
06:57 PM - 07:57 PM	84.8	86.5	83.6
07:57 PM - 08:57 PM	84.9	95.0	83.5
08:57 PM - 09:57 PM	84.7	94.8	83.3
Leq Average 12 hrs. (dB(A))	84.8		
Lmax (dB(A))		95.2	
Standard (dB(A))	87	140	
Reference Method : ISO 1996-1 : 2016			
Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย ในการประกอบกิจการโรงงานเกี่ยวกับสภาวะแวดล้อมในการทำงาน พ.ศ.๒๕๕๖			

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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: 2563635

Date Received : Aug 29, 2025
Date Reported : Sep 04, 2025
Report Number: 3398834-1

Page 1 of 1

Sample Number 2563635-11
Parameter Noise (Leq 12 hrs.)
Location MMA 2 ในอาคาร Ware House
Measurement Date Aug 29, 2025
Measurement by Amnat Wongsakhen

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	81.5	83.1	81.2
09:00 AM - 10:00 AM	80.6	82.0	80.4
10:00 AM - 11:00 AM	81.1	82.8	80.8
11:00 AM - 12:00 PM	81.0	82.5	80.7
12:00 PM - 01:00 PM	80.9	82.5	80.6
01:00 PM - 02:00 PM	80.9	83.4	80.5
02:00 PM - 03:00 PM	80.9	82.4	80.6
03:00 PM - 04:00 PM	81.1	82.5	80.9
04:00 PM - 05:00 PM	81.2	82.6	81.0
05:00 PM - 06:00 PM	81.5	83.0	81.2
06:00 PM - 07:00 PM	80.5	82.0	80.2
07:00 PM - 08:00 PM	80.1	81.6	79.8
Leq Average 12 hrs. (dB(A))	81.0		
Lmax (dB(A))		83.4	
Standard (dB(A))	87	140	
Reference Method : ISO 1996-1 : 2016			
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 : PMM-23-13
Project Name : Environmental Monitoring
Project Location :

Lot ID: 2563636

Date Received : Aug 29, 2025
Date Reported : Sep 03, 2025
Report Number : 3350289-1

Page 1 of 8

Sample Number 2563636-1
Sampled Date Aug 29, 2025
Sample Description Noise Dose
Location Field #1000 M1
Personal Sampling คุณกิตติกร เพชรชัย
Date Analysis Commenced Sep 02, 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)	07:03 AM - 07:03 PM	%	-	1	31.6	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
Noise Dose (8 hrs.)	07:03 AM - 07:03 PM	%	-	1	29.5	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (12 hrs.) (Calculated from Lavg)	07:03 AM - 07:03 PM	dB(A)	-	-	78.0	83*	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (8 hrs.)	07:03 AM - 07:03 PM	dB(A)	-	-	79.7	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)

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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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: 2563636

Date Received : Aug 29, 2025
Date Reported : Sep 03, 2025
Report Number : 3350289-1

Page 2 of 8

Sample Number 2563636-2
Sampled Date Aug 29, 2025
Sample Description Noise Dose
Location Field #2-3000 M1
Personal Sampling คุณจตุพร ช่มป่า
Date Analysis Commenced Sep 02, 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)	07:03 AM - 07:03 PM	%	-	1	23.4	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
Noise Dose (8 hrs.)	07:03 AM - 07:03 PM	%	-	1	21.9	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (12 hrs.) (Calculated from Lavg)	07:03 AM - 07:03 PM	dB(A)	-	-	76.7	83*	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (8 hrs.)	07:03 AM - 07:03 PM	dB(A)	-	-	78.4	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

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: 2563636

Date Received : Aug 29, 2025
Date Reported : Sep 03, 2025
Report Number : 3350289-1

Page 3 of 8

Sample Number 2563636-3
Sampled Date Aug 29, 2025
Sample Description Noise Dose
Location Field #4,5000 M1
Personal Sampling คุณอนุชา ไชยกันทะ
Date Analysis Commenced Sep 02, 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)	07:03 AM - 07:03 PM	%	-	1	11.8	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
Noise Dose (8 hrs.)	07:03 AM - 07:03 PM	%	-	1	11.2	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (12 hrs.) (Calculated from Lavg)	07:03 AM - 07:03 PM	dB(A)	-	-	73.7	83*	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (8 hrs.)	07:03 AM - 07:03 PM	dB(A)	-	-	75.5	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)

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: 2563636

Date Received : Aug 29, 2025
Date Reported : Sep 03, 2025
Report Number : 3350289-1

Page 4 of 8

Sample Number 2563636-4
Sampled Date Aug 29, 2025
Sample Description Noise Dose
Location Field #1000 M2
Personal Sampling คุณนพพร เทมเวช
Date Analysis Commenced Sep 02, 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)	07:03 AM - 07:03 PM	%	-	1	63.1	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
Noise Dose (8 hrs.)	07:03 AM - 07:03 PM	%	-	1	58.9	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (12 hrs.) (Calculated from Lavg)	07:03 AM - 07:03 PM	dB(A)	-	-	81.0	83*	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (8 hrs.)	07:03 AM - 07:03 PM	dB(A)	-	-	82.7	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: 2563636

Date Received : Aug 29, 2025
Date Reported : Sep 03, 2025
Report Number : 3350289-1

Page 5 of 8

Sample Number 2563636-5
Sampled Date Aug 29, 2025
Sample Description Noise Dose
Location Field #2-3000 M2
Personal Sampling คุณโรจน์วี วงศ์เครือศรี
Date Analysis Commenced Sep 02, 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)	07:03 AM - 07:03 PM	%	-	1	52.5	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
Noise Dose (8 hrs.)	07:03 AM - 07:03 PM	%	-	1	41.7	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (12 hrs.) (Calculated from Lavg)	07:03 AM - 07:03 PM	dB(A)	-	-	80.2	83*	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (8 hrs.)	07:03 AM - 07:03 PM	dB(A)	-	-	81.2	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: 2563636

Date Received : Aug 29, 2025
Date Reported : Sep 03, 2025
Report Number : 3350289-1

Page 6 of 8

Sample Number 2563636-6
Sampled Date Aug 29, 2025
Sample Description Noise Dose
Location Field #4,5000 M2
Personal Sampling คุณเบญจพล ทองจั่น
Date Analysis Commenced Sep 02, 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)	07:03 AM - 07:03 PM	%	-	1	42.7	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
Noise Dose (8 hrs.)	07:03 AM - 07:03 PM	%	-	1	40.7	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (12 hrs.) (Calculated from Lavg)	07:03 AM - 07:03 PM	dB(A)	-	-	79.3	83*	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (8 hrs.)	07:03 AM - 07:03 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)

Approved by

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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: 2563636

Date Received : Aug 29, 2025
Date Reported : Sep 03, 2025
Report Number : 3350289-1

Page 7 of 8

Sample Number 2563636-7
Sampled Date Aug 29, 2025
Sample Description Noise Dose
Location MAA 1-2 (M2)
Personal Sampling คุณอาทิตย์ ทรายราช
Date Analysis Commenced Sep 02, 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)	07:03 AM - 07:03 PM	%	-	1	13.5	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
Noise Dose (8 hrs.)	07:03 AM - 07:03 PM	%	-	1	12.9	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (12 hrs.) (Calculated from Lavg)	07:03 AM - 07:03 PM	dB(A)	-	-	74.3	83*	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (8 hrs.)	07:03 AM - 07:03 PM	dB(A)	-	-	76.1	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
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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: 2563636

Date Received : Aug 29, 2025
Date Reported : Sep 03, 2025
Report Number : 3350289-1

Page 8 of 8

Sample Number 2563636-8
Sampled Date Aug 29, 2025
Sample Description Noise Dose
Location BMA 1-2 (M1)
Personal Sampling คุณจักรกฤษณ์ โกสสิทธิ์
Date Analysis Commenced Sep 02, 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)	07:03 AM - 07:03 PM	%	-	1	20.0	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
Noise Dose (8 hrs.)	07:03 AM - 07:03 PM	%	-	1	19.5	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (12 hrs.) (Calculated from Lavg)	07:03 AM - 07:03 PM	dB(A)	-	-	76.0	83*	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (8 hrs.)	07:03 AM - 07:03 PM	dB(A)	-	-	77.9	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)
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* 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

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ภาคผนวก ค-7

ใบรับรองผลการตรวจวัดเส้นระดับเสียง (Noise Contour Map)



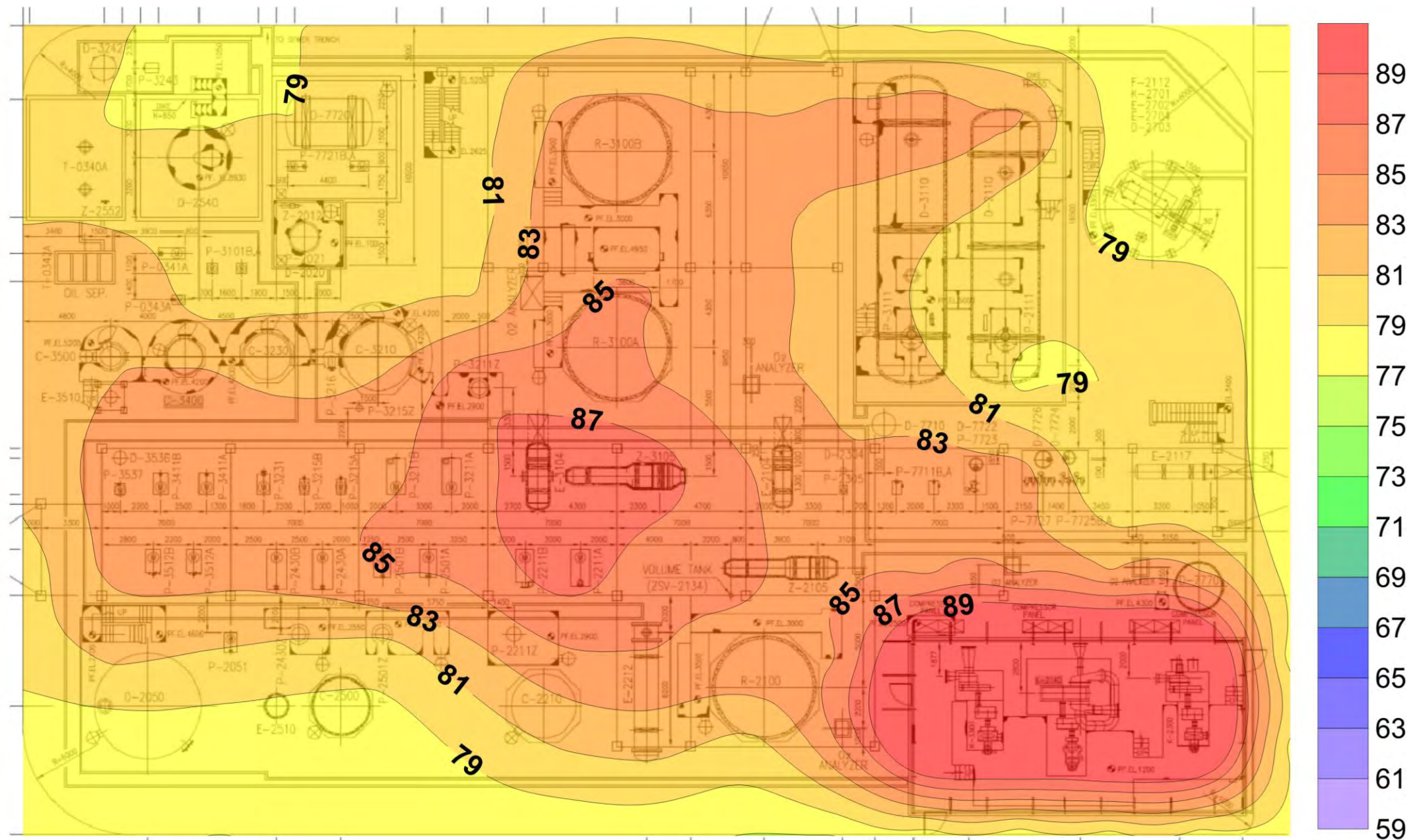
Noise Contour Map

THAI MMA Co., Ltd.

Reference Number : Lot 2432084-1

Measurement Date : Apr 29, 2024

#2000-#3000 Oxidation Unit M1 FL.1



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



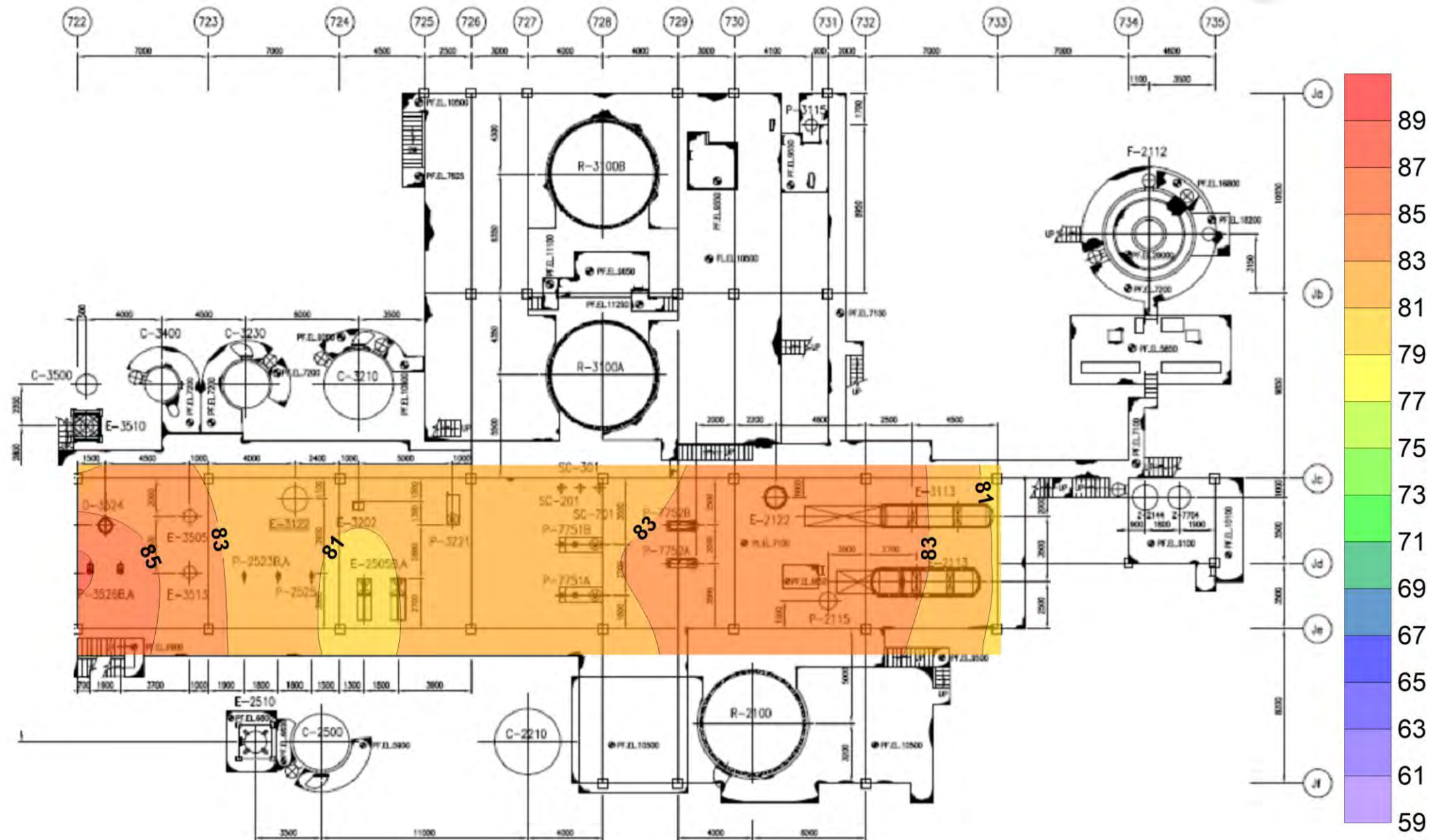
Noise Contour Map

THAI MMA Co., Ltd.

Reference Number : Lot 2432084-1

Measurement Date : Apr 29, 2024

#2000-#3000 Oxidation Unit M1 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
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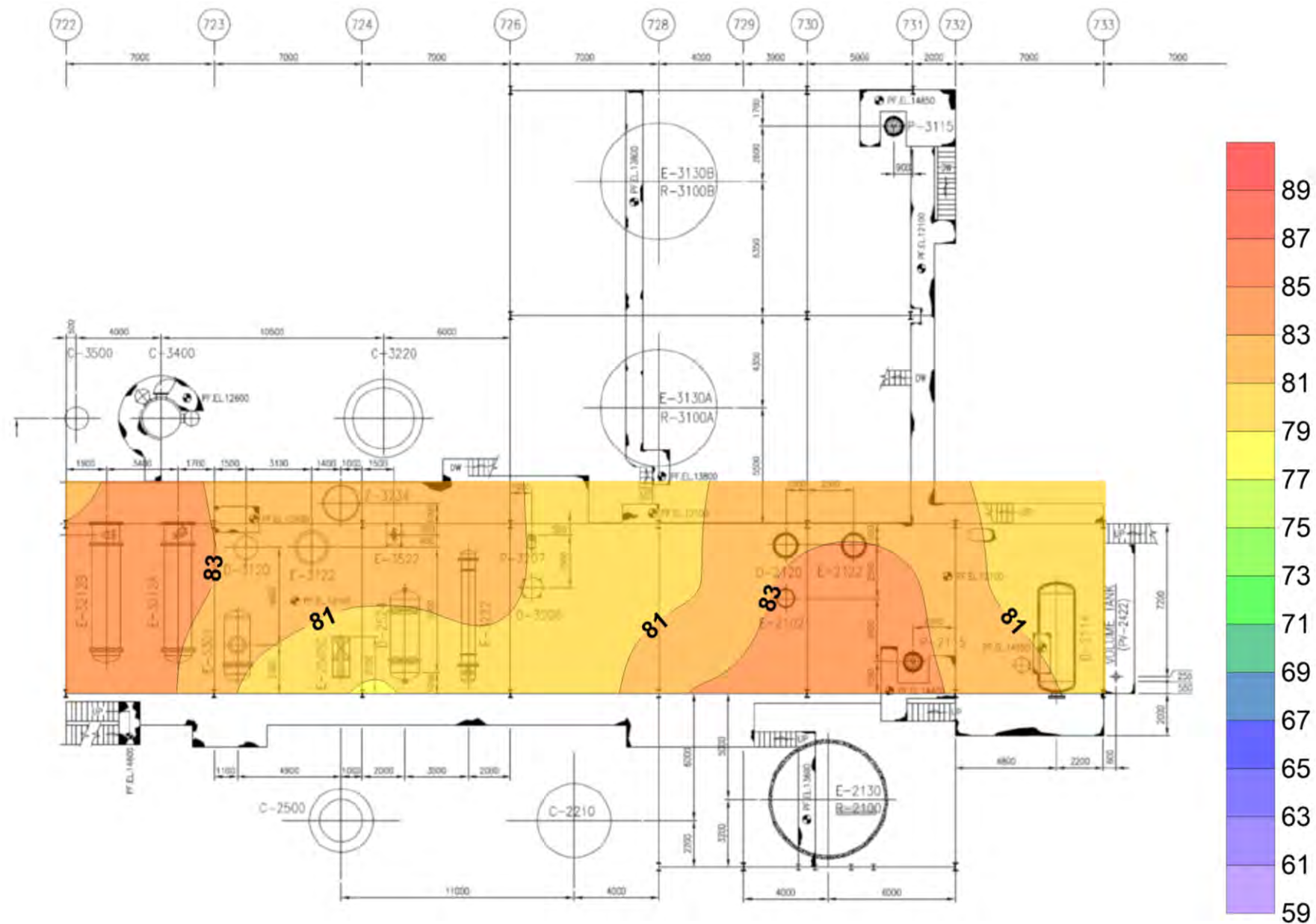
Noise Contour Map

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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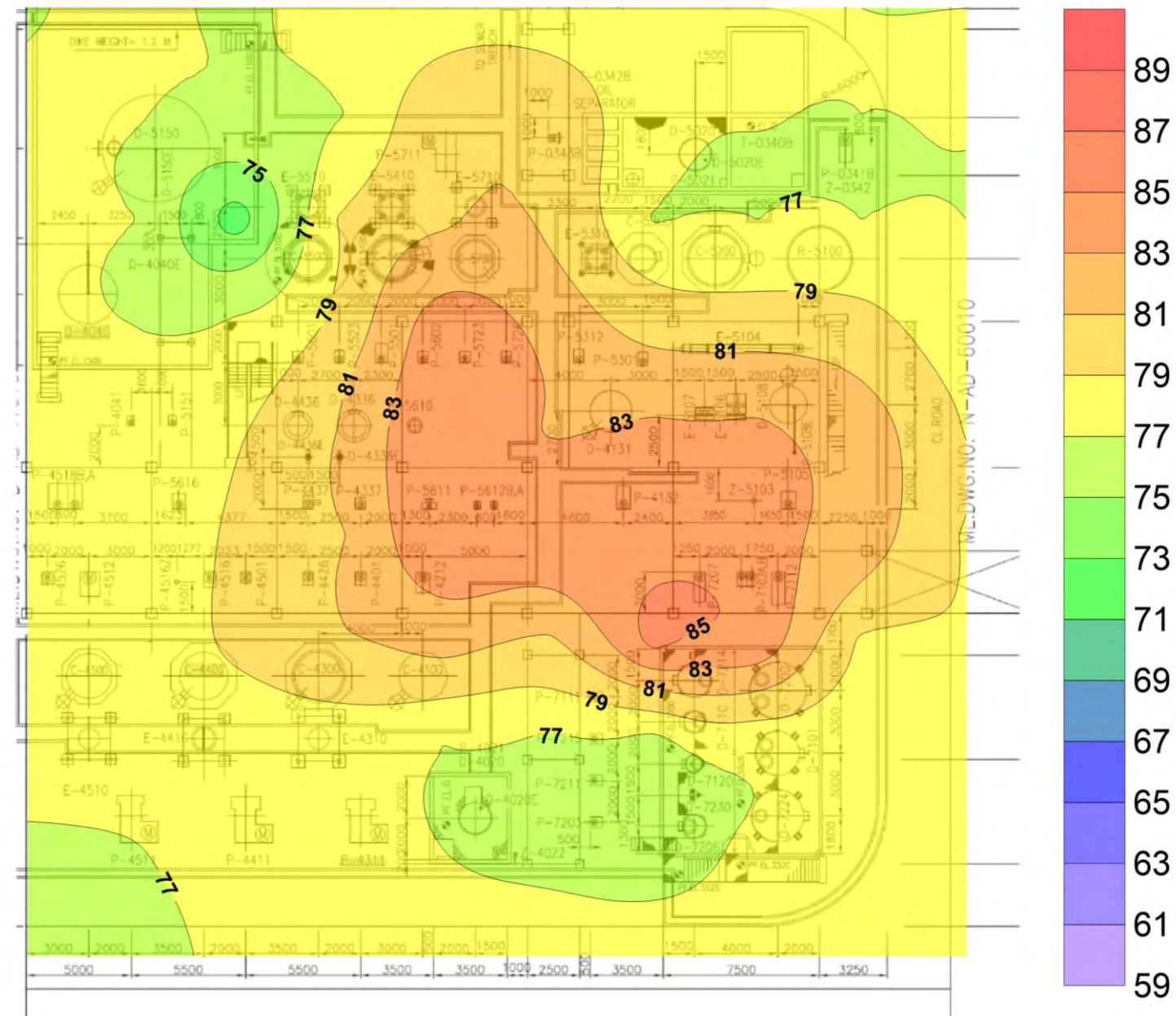
Noise Contour Map

THAI MMA Co., Ltd.

Reference Number : Lot 2432084-1

Measurement Date : Apr 29, 2024

#4000-#5000 MMA Recovery, Esterification Inhibitor Unit M1 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
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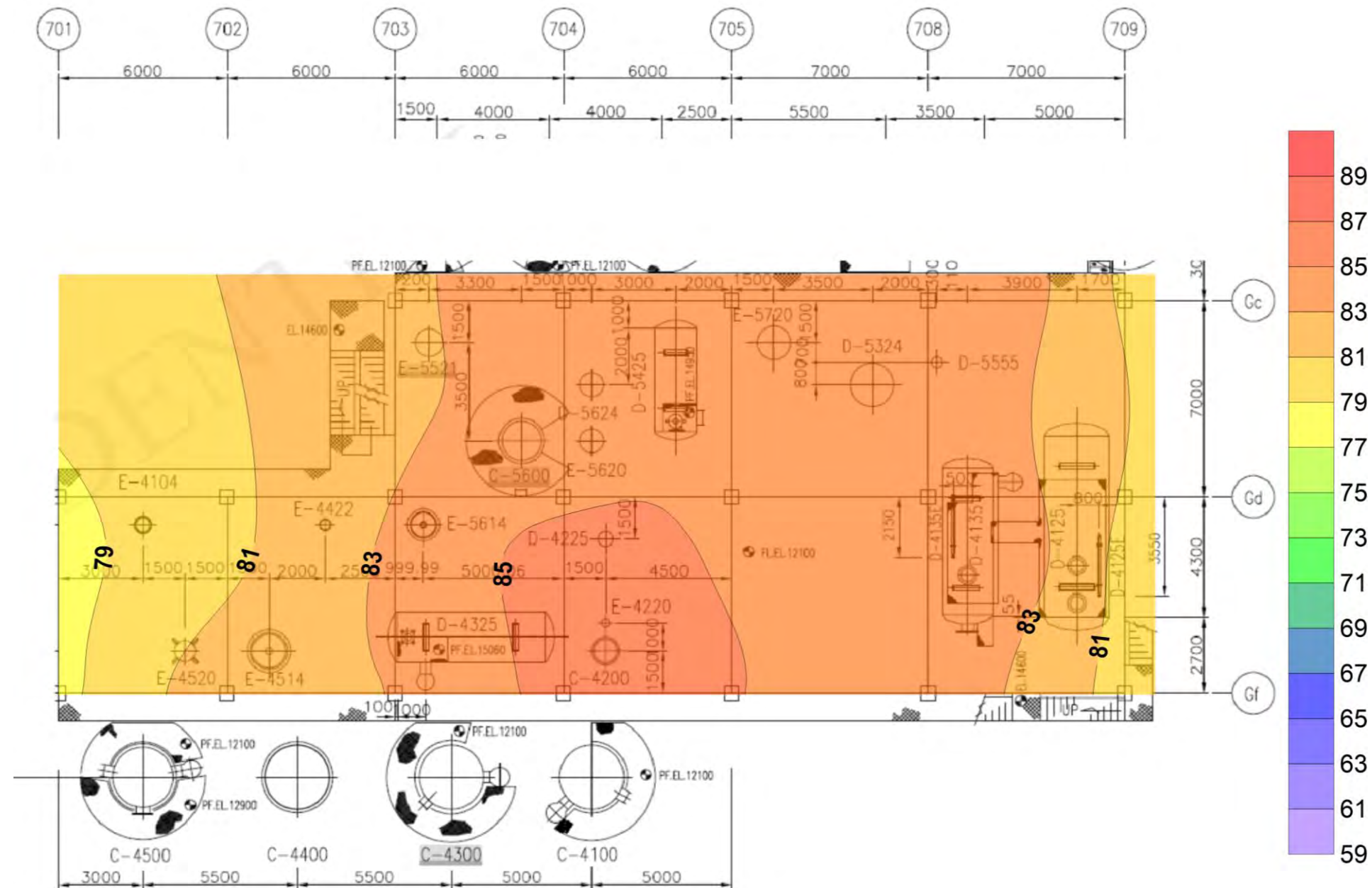
Noise Contour Map

THAI MMA Co., Ltd.

Reference Number : Lot 2432084-1

Measurement Date : Apr 29, 2024

#4000-#5000 MMA Recovery, Esterification Inhibitor Unit M1 FL.3



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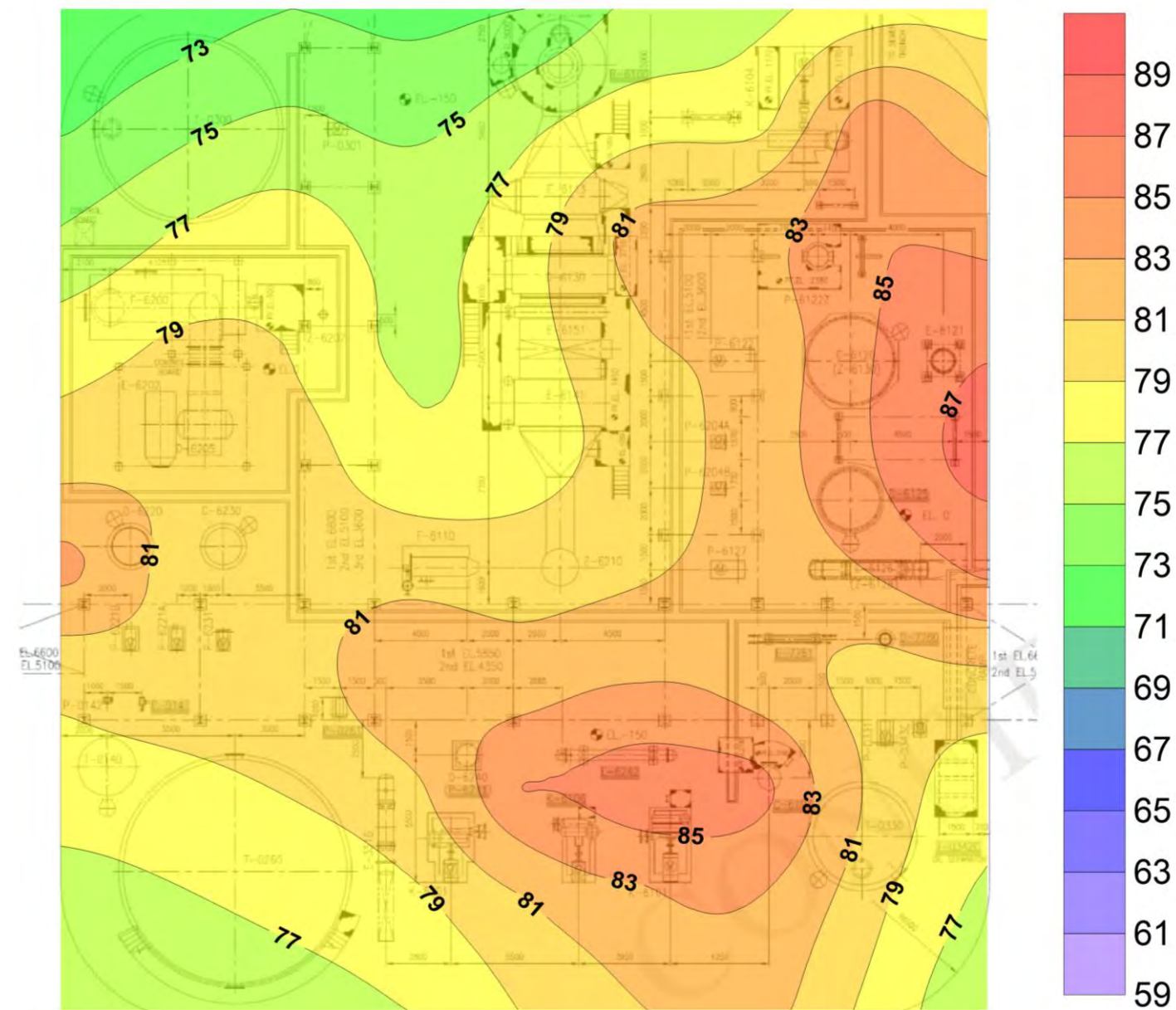
Noise Contour Map

THAI MMA Co., Ltd.

#6000 Waste and Disposal M1

Reference Number : Lot 2432084-1

Measurement Date : Apr 29, 2024



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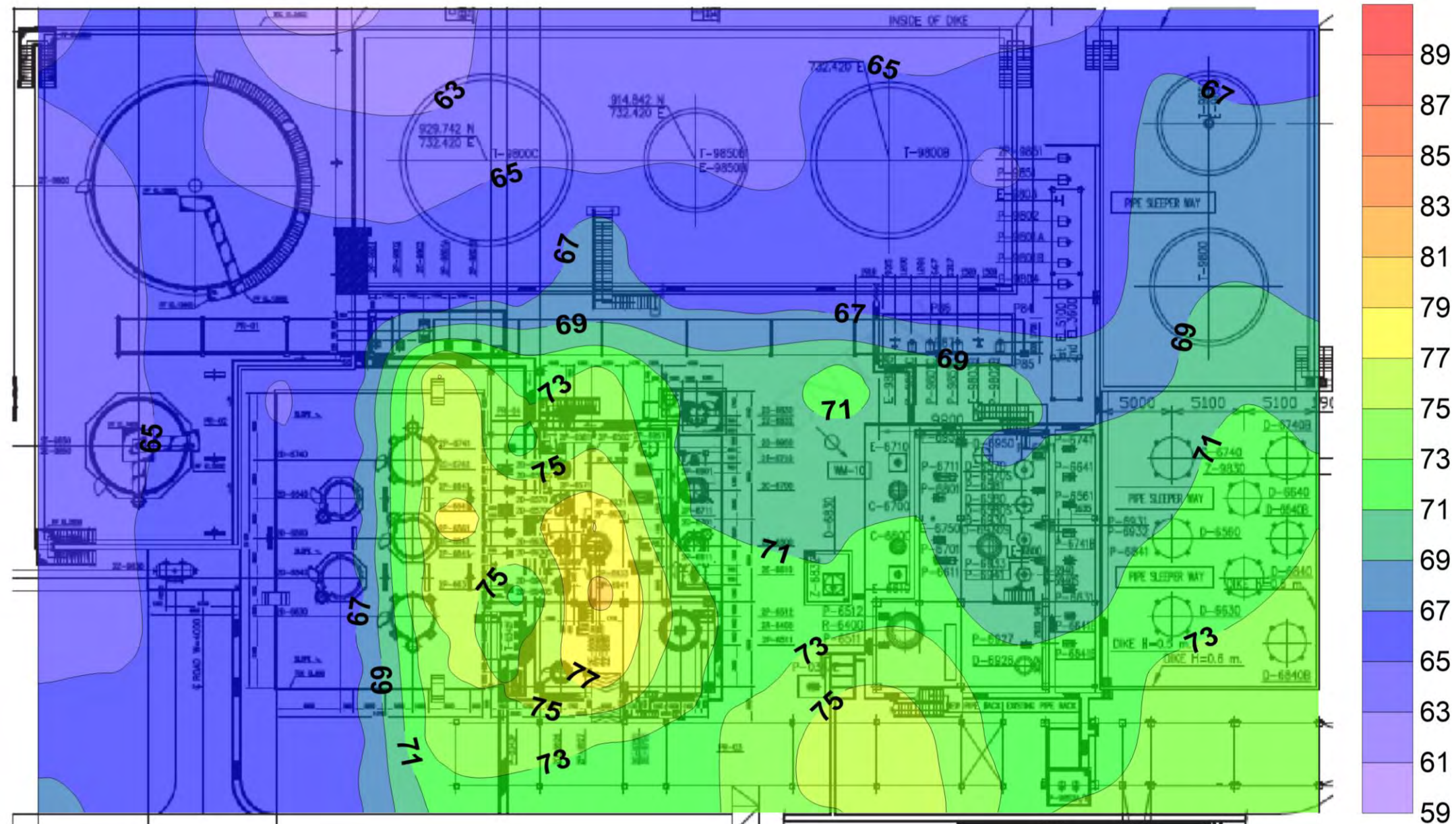
Noise Contour Map

THAI MMA Co., Ltd.

BMA#1,2 Unit M1

Reference Number : Lot 2432084-1

Measurement Date : Apr 29, 2024



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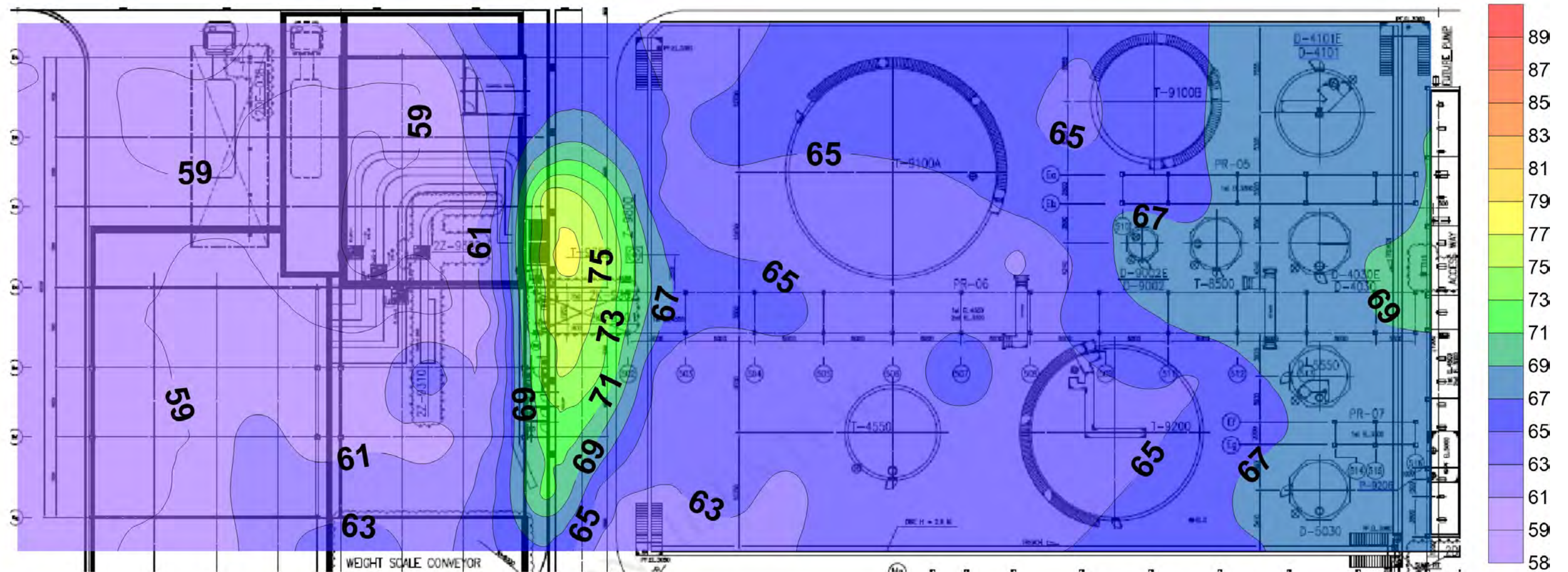
Noise Contour Map

THAI MMA Co., Ltd.

Tank and Product Loading

Reference Number : Lot 2432084-1

Measurement Date : Apr 29, 2024



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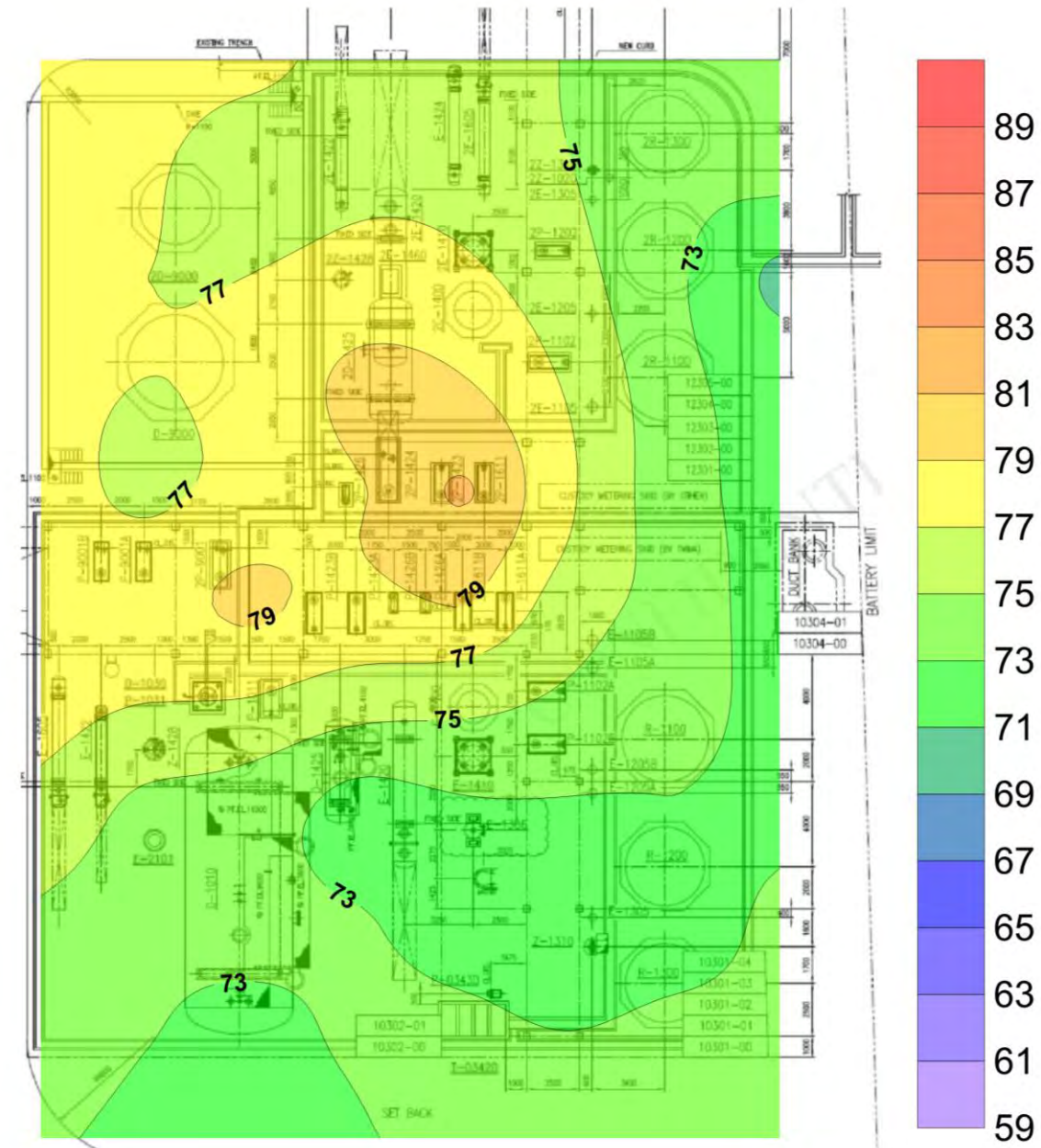
Noise Contour Map

THAI MMA Co., Ltd.

TBA M1 #1000 Unit

Reference Number : Lot 2432084-1

Measurement Date : Apr 29, 2024



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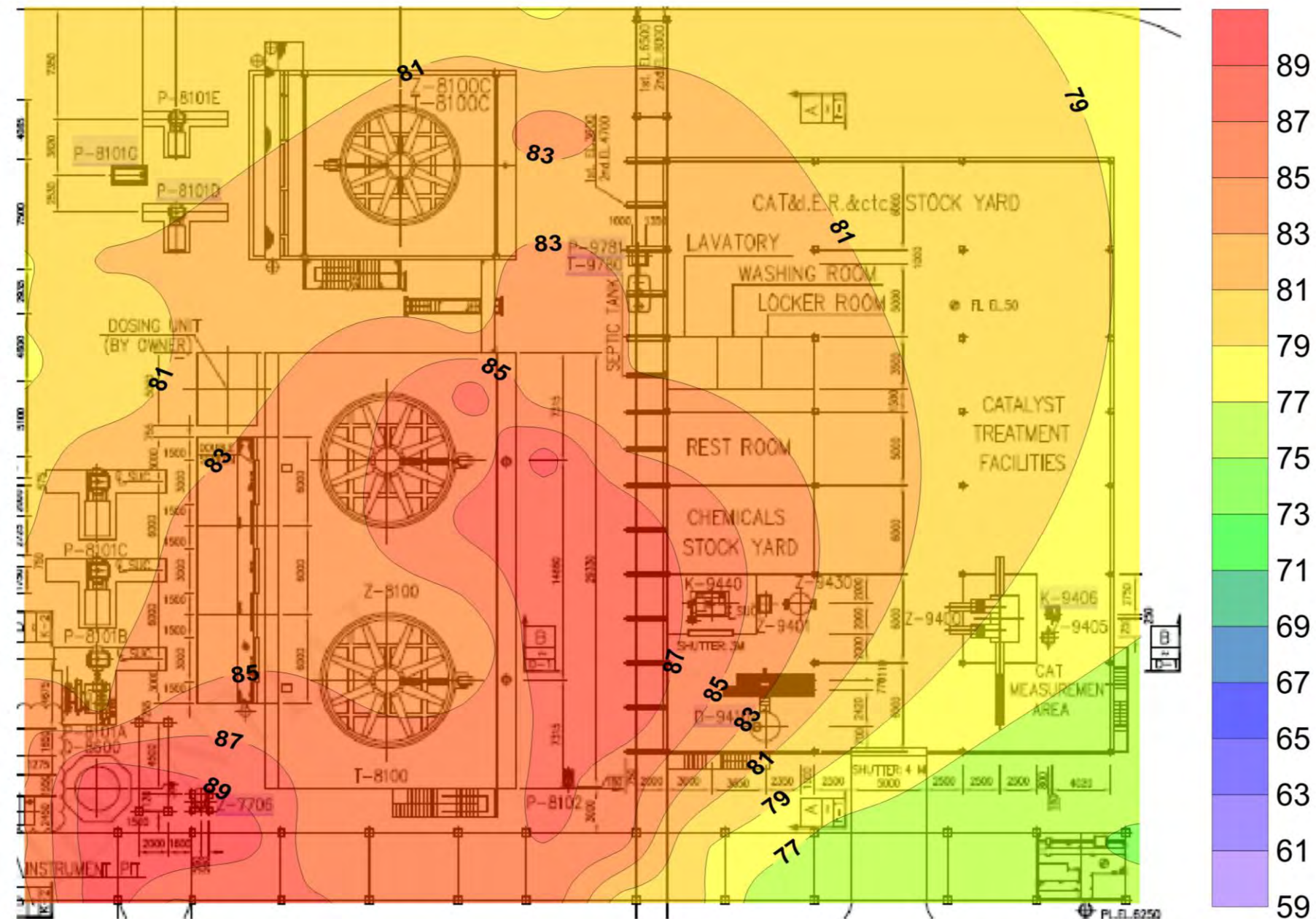
Noise Contour Map

THAI MMA Co., Ltd.

UT1 Cooling Tower M1

Reference Number : Lot 2432084-1

Measurement Date : Apr 29, 2024



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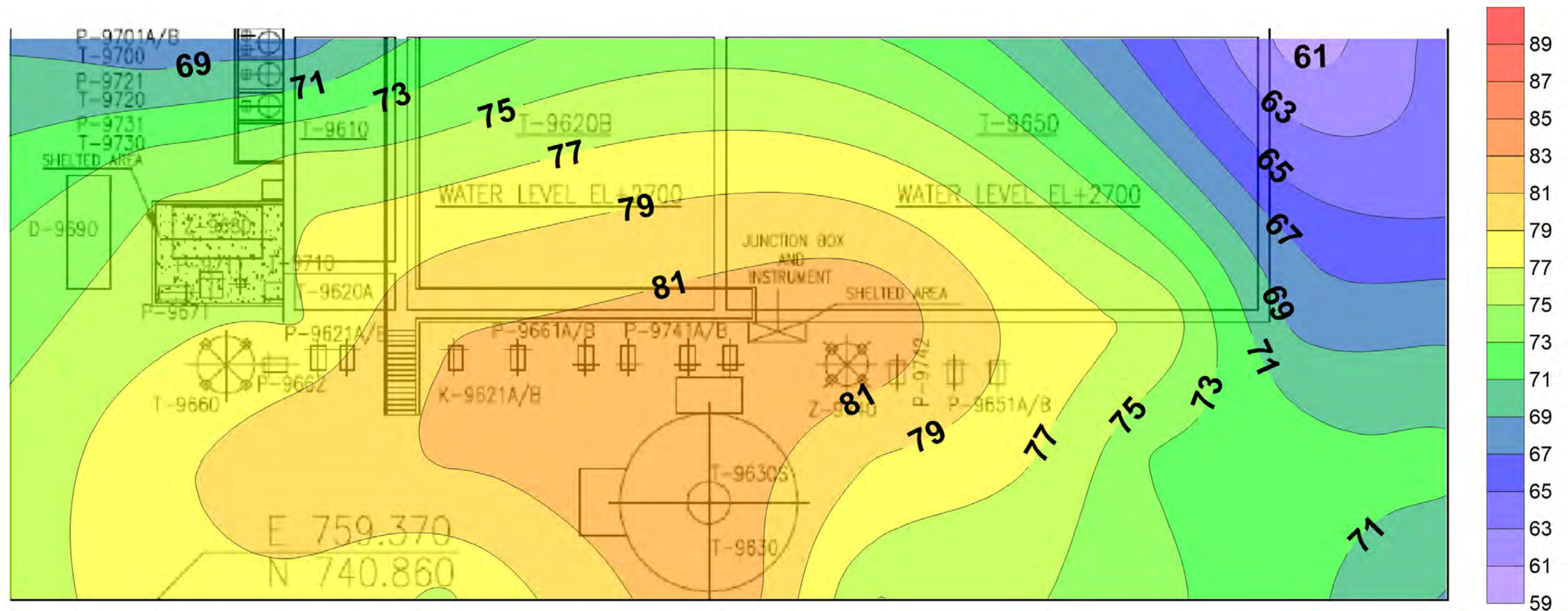
Noise Contour Map

THAI MMA Co., Ltd.

UT1 Waste Water M1

Reference Number : Lot 2432084-1

Measurement Date : Apr 29, 2024



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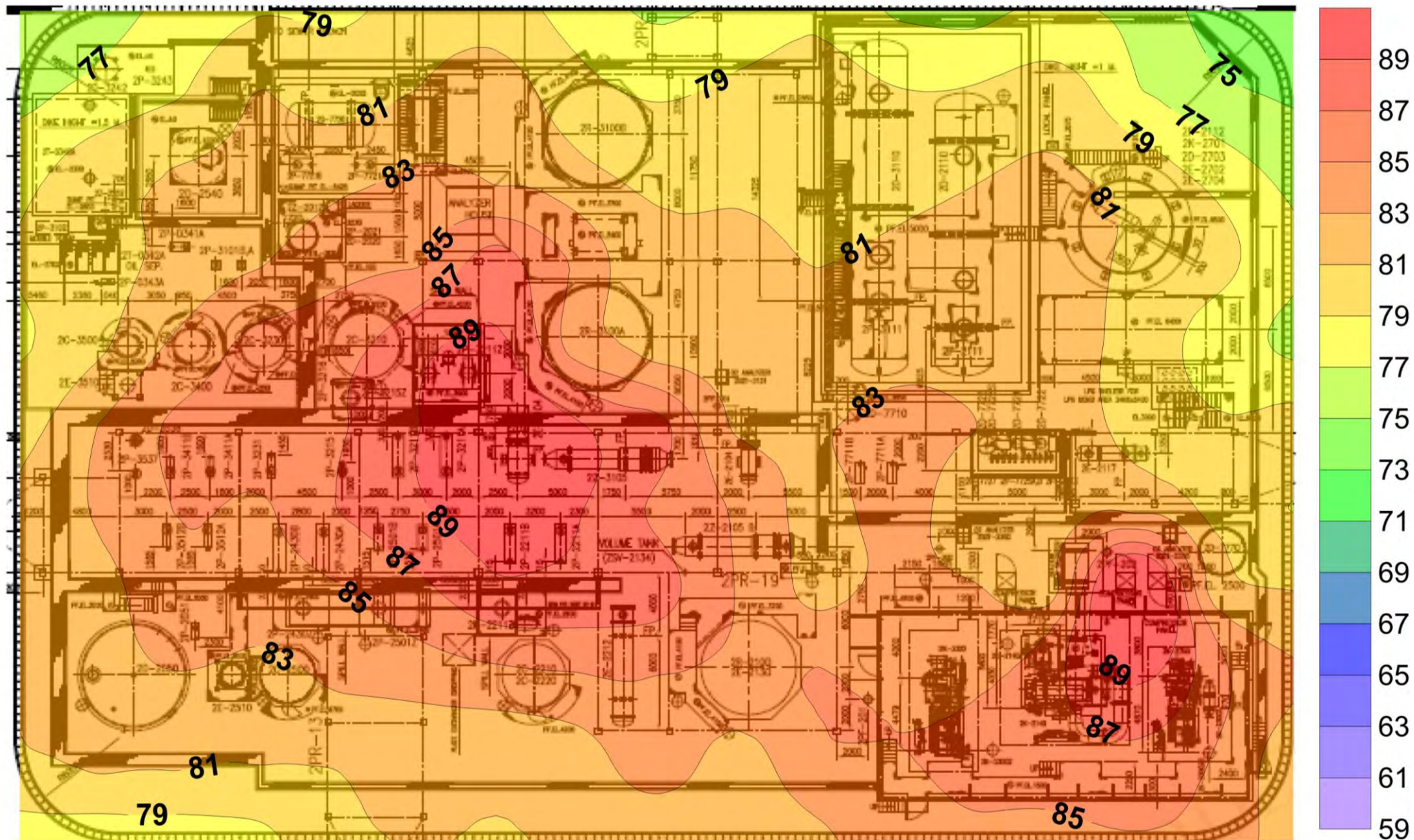
Noise Contour Map

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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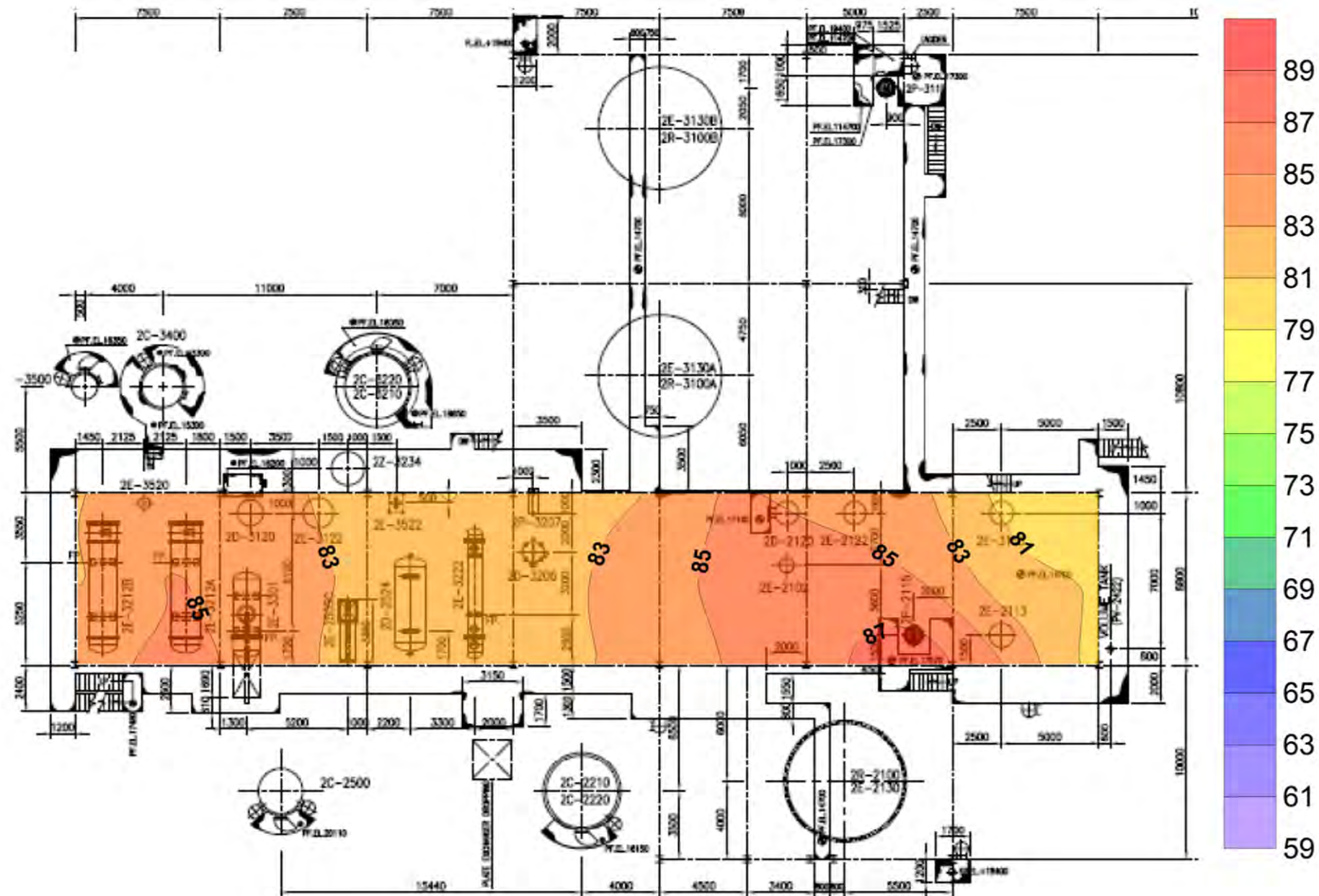
Noise Contour Map

THAI MMA Co., Ltd.

#2000-#3000 Oxidation Unit M2 FL.3

Reference Number : Lot 2432088-1

Measurement Date : Apr 30, 2024



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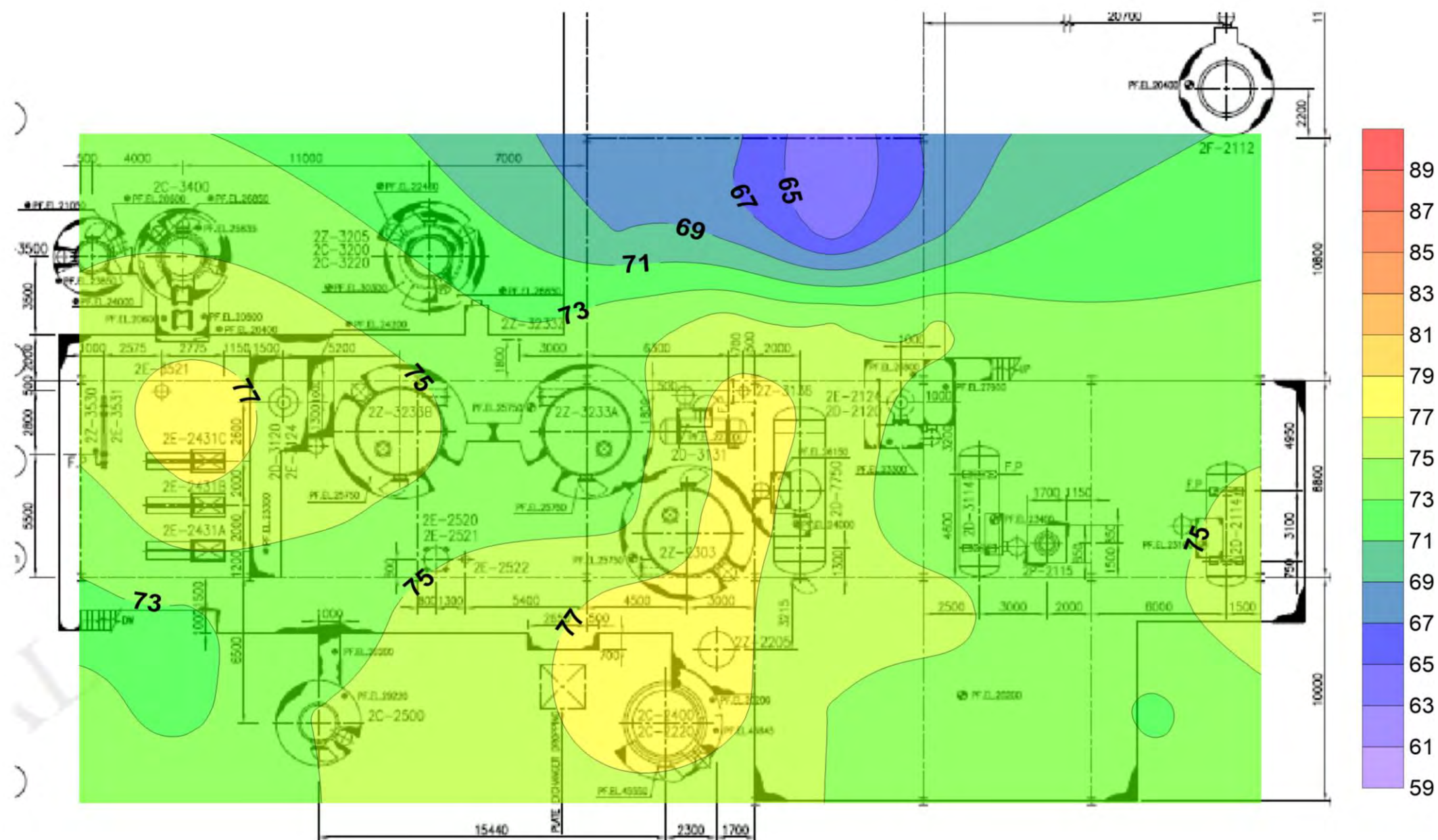
Noise Contour Map

THAI MMA Co., Ltd.

Reference Number : Lot 2432088-1

Measurement Date : Apr 30, 2024

#2000-#3000 Oxidation Unit M2 FL.4



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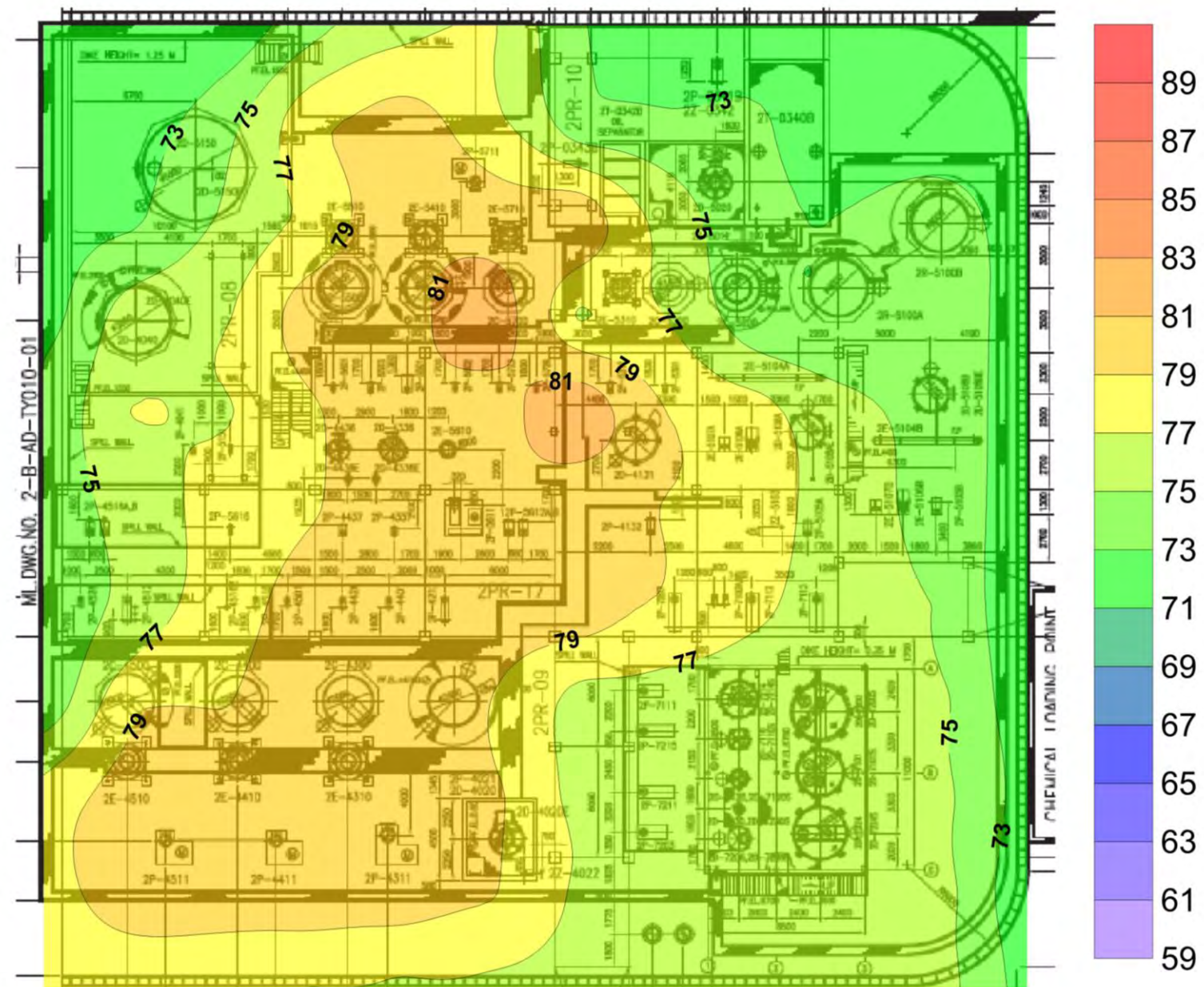
Noise Contour Map

THAI MMA Co., Ltd.

Reference Number : Lot 2432088-1

Measurement Date : Apr 30, 2024

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



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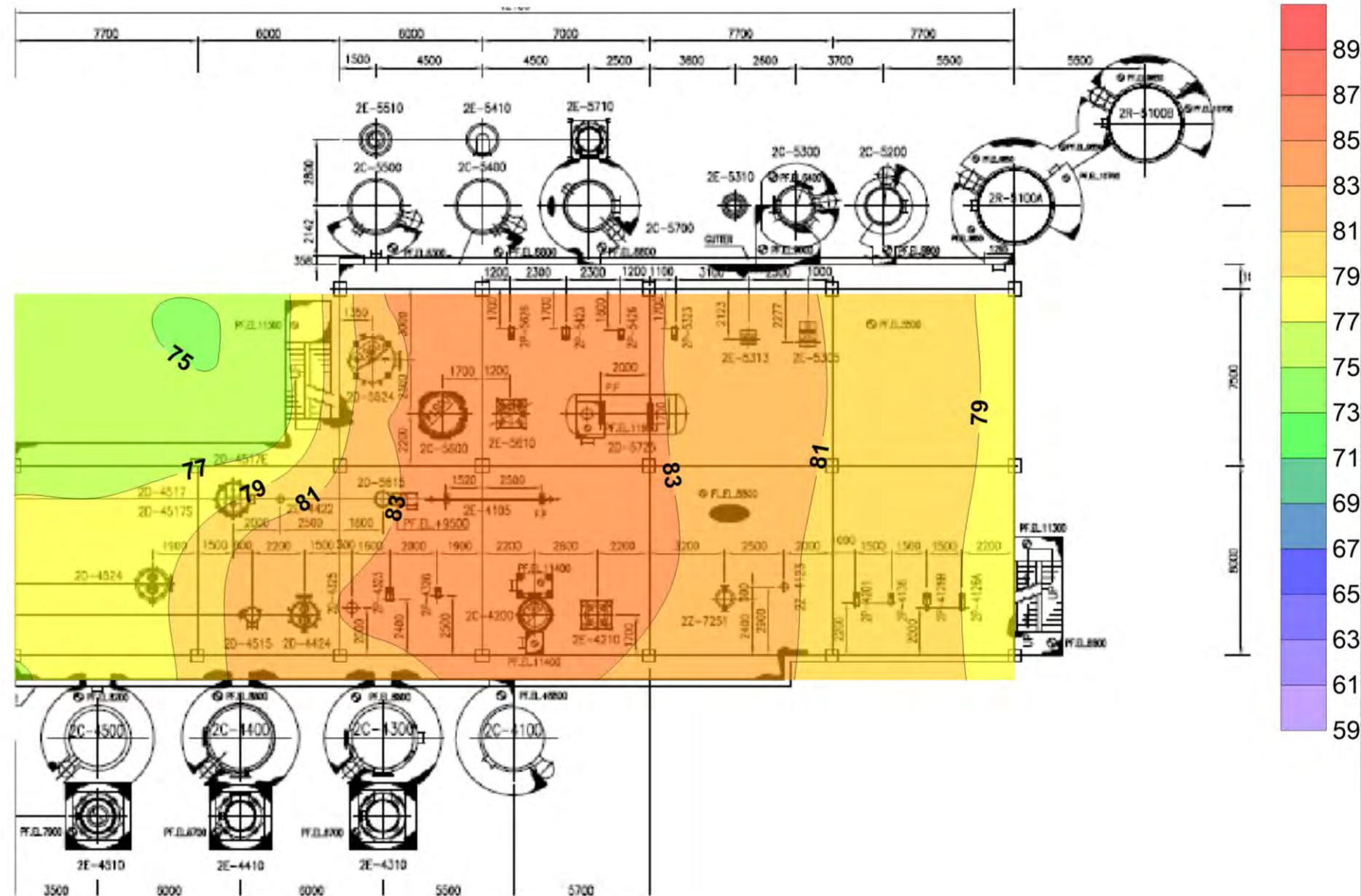
Noise Contour Map

THAI MMA Co., Ltd.

Reference Number : Lot 2432088-1

Measurement Date : Apr 30, 2024

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



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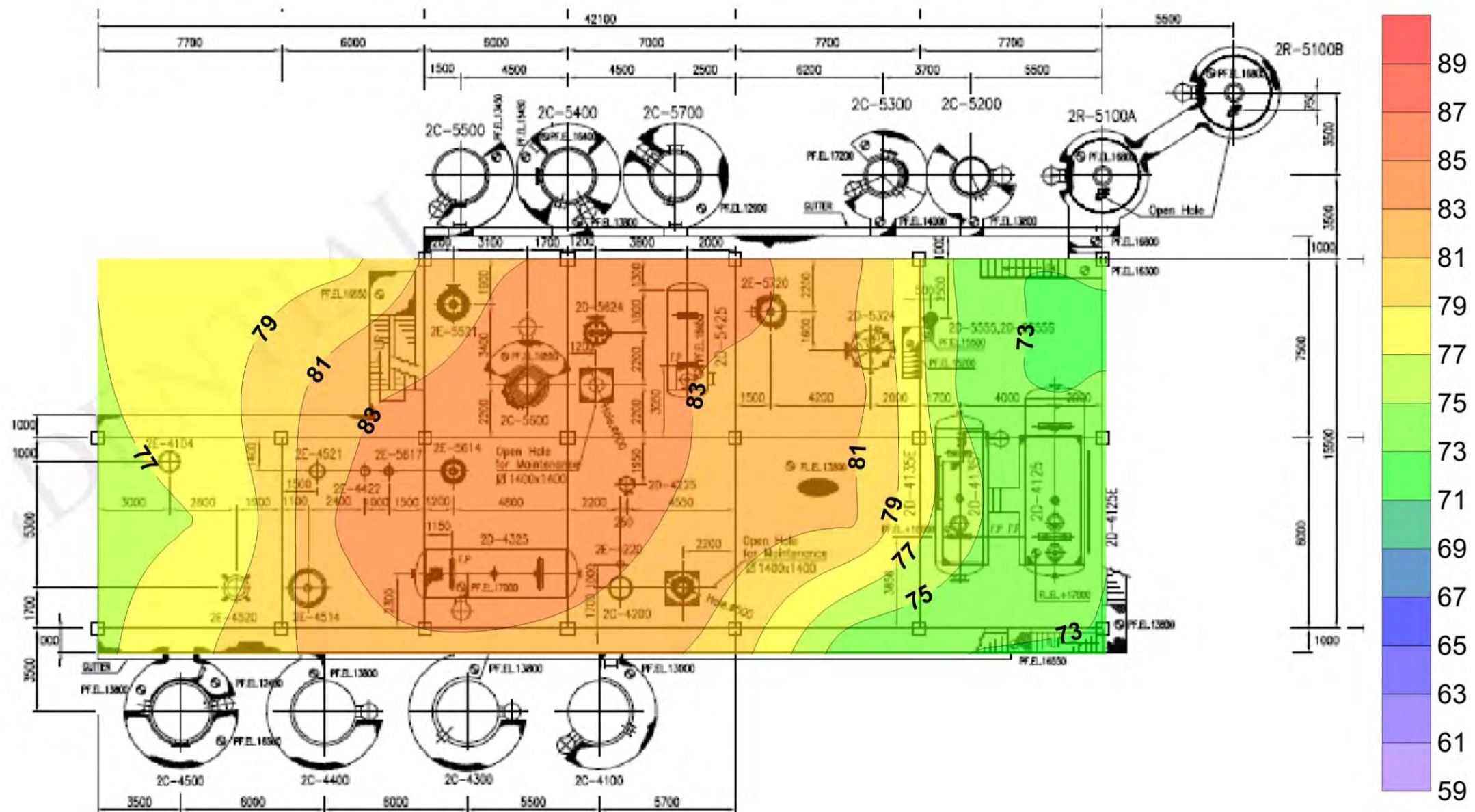
Noise Contour Map

THAI MMA Co., Ltd.

Reference Number : Lot 2432088-1

Measurement Date : Apr 30, 2024

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



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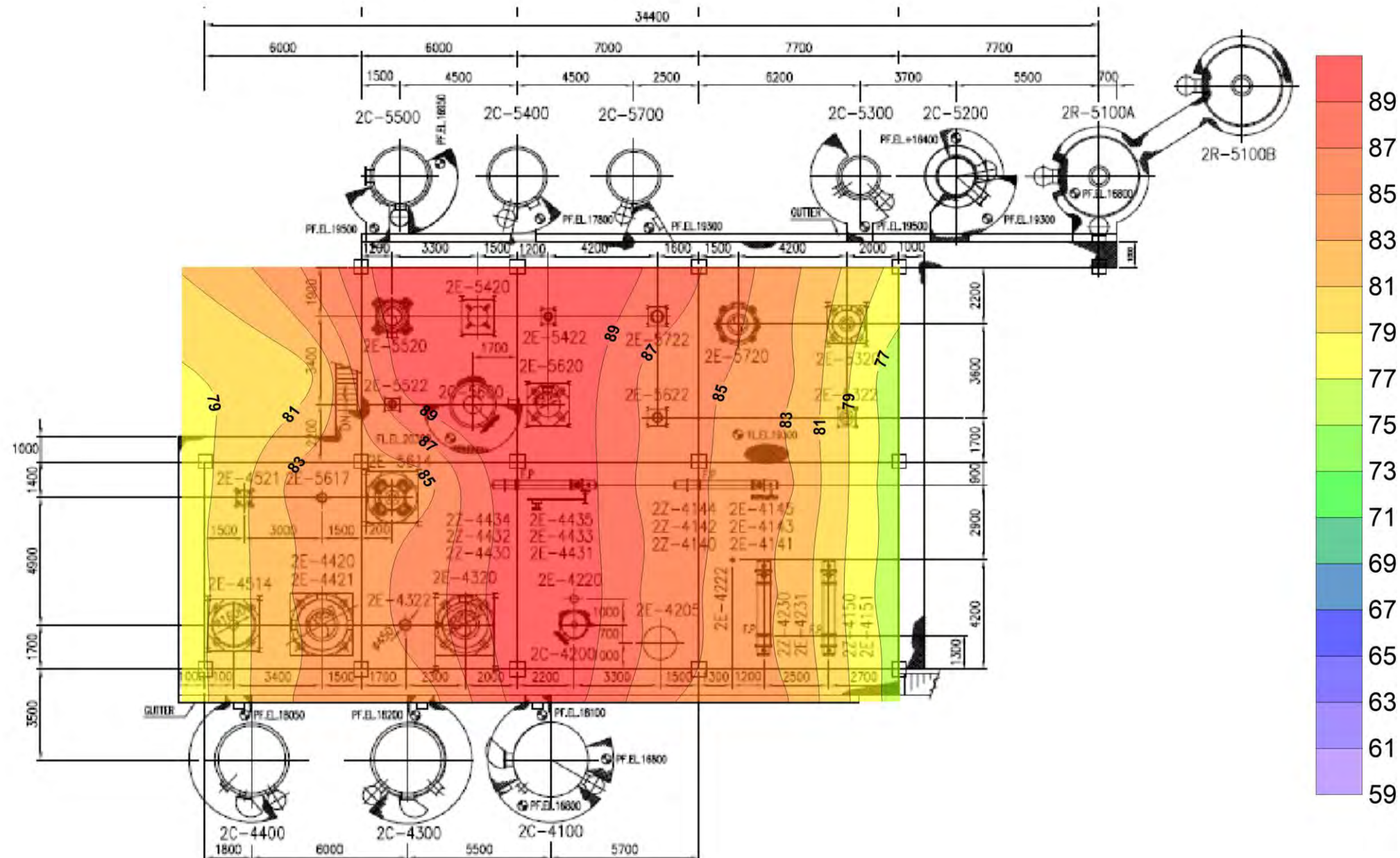
Noise Contour Map

THAI MMA Co., Ltd.

Reference Number : Lot 2432088-1

Measurement Date : Apr 30, 2024

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



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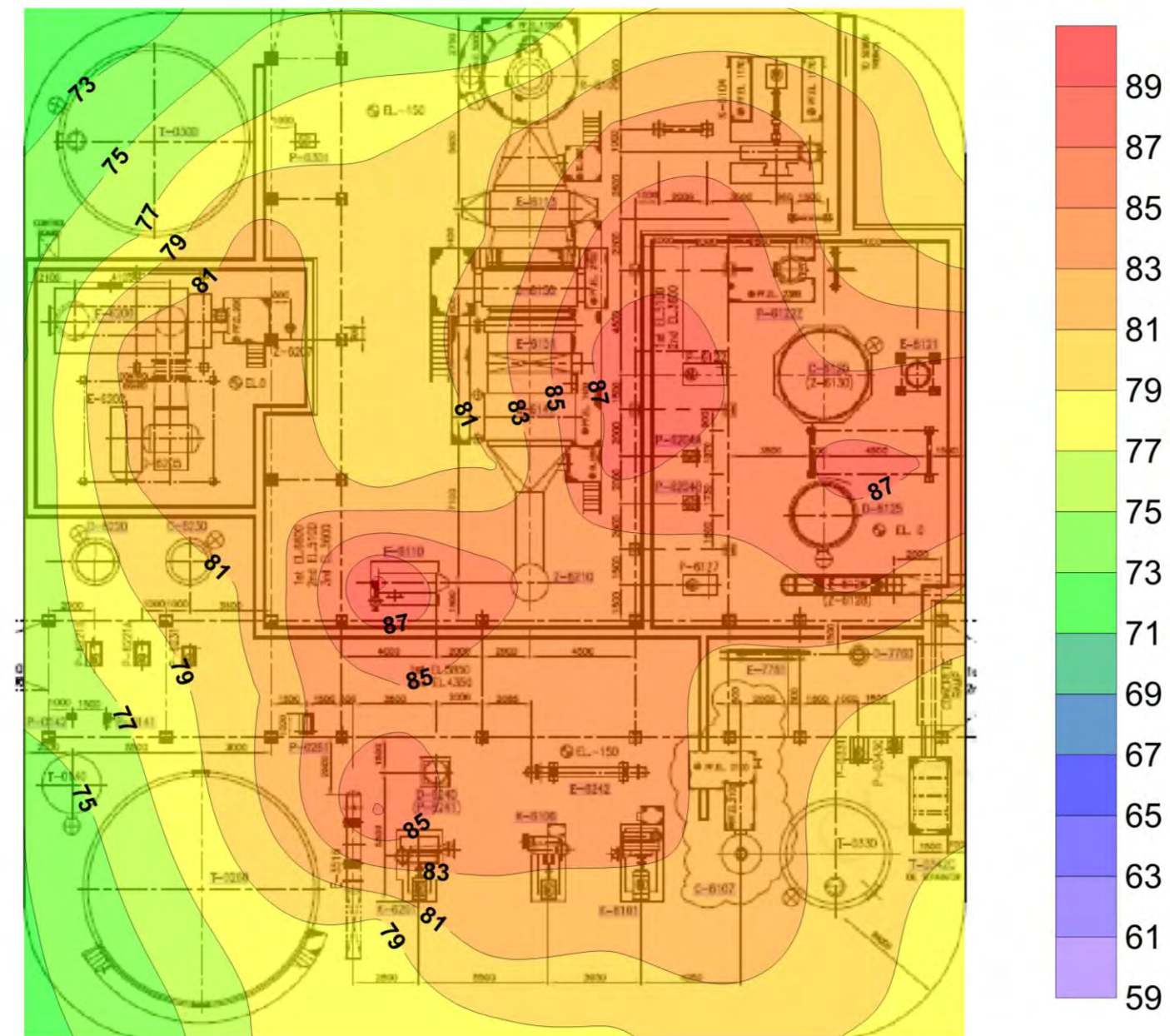
Noise Contour Map

THAI MMA Co., Ltd.

#6000 Waste and Disposal M2

Reference Number : Lot 2432088-1

Measurement Date : Apr 30, 2024



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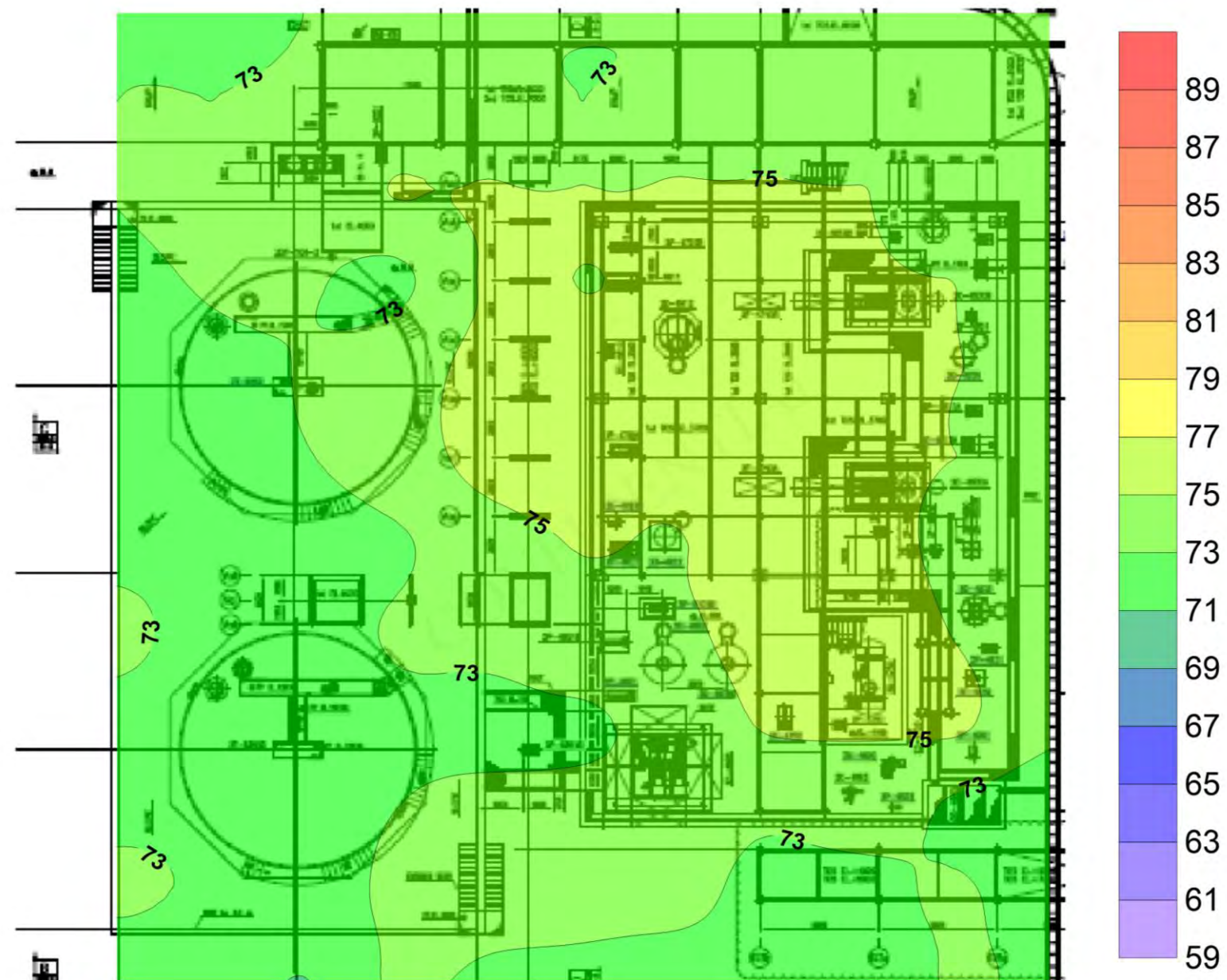
Noise Contour Map

THAI MMA Co., Ltd.

MAA Unit M2

Reference Number : Lot 2432088-1

Measurement Date : Apr 30, 2024



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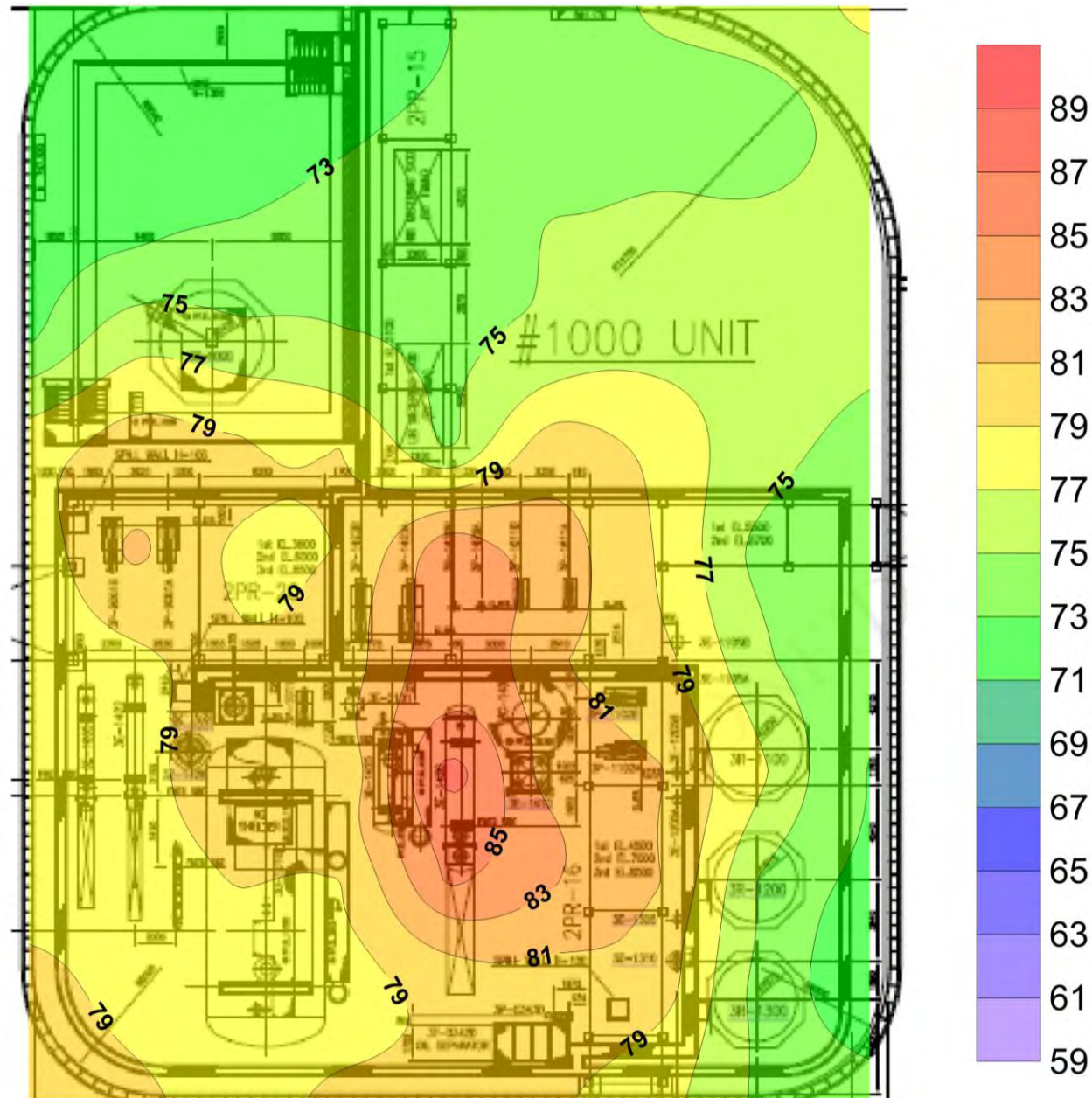
Noise Contour Map

THAI MMA Co., Ltd.

TBA M2 #1000 Unit

Reference Number : Lot 2432088-1

Measurement Date : Apr 30, 2024



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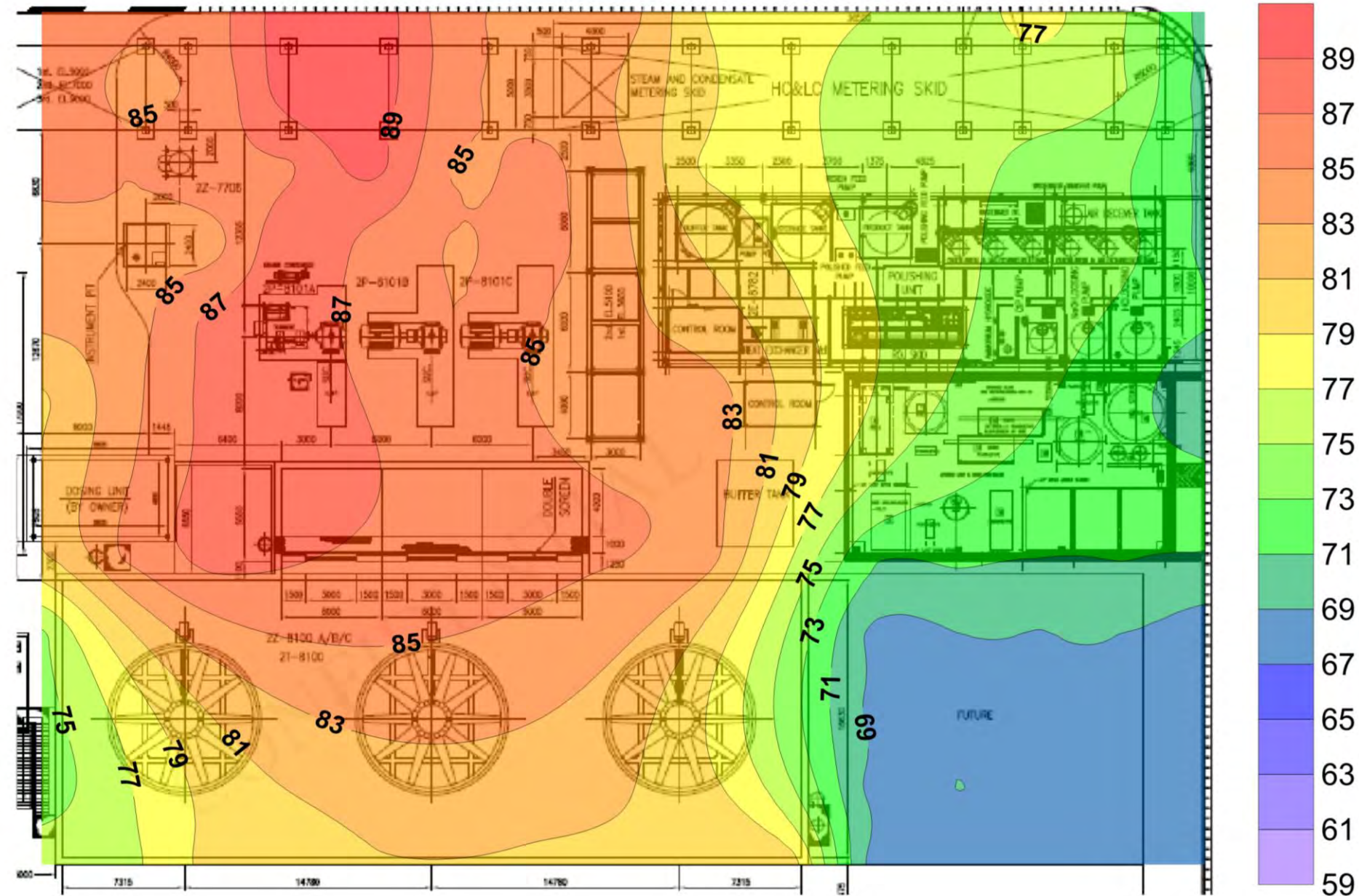
Noise Contour Map

THAI MMA Co., Ltd.

UT1 Cooling Tower M2

Reference Number : Lot 2432088-1

Measurement Date : Apr 30, 2024



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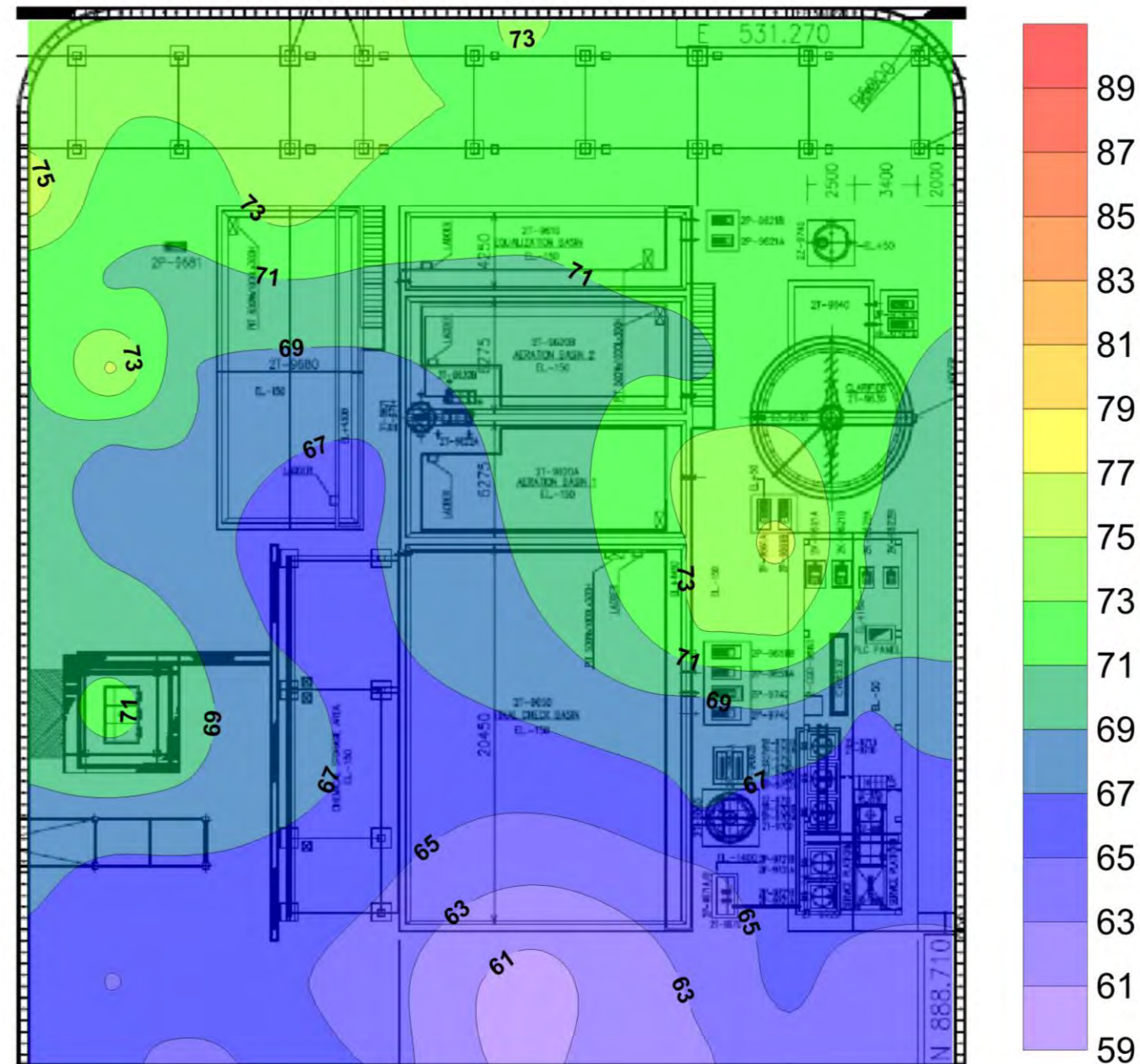
Noise Contour Map

THAI MMA Co., Ltd.

UT1 Waste Water M2

Reference Number : Lot 2432088-1

Measurement Date : Apr 30, 2024



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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: 2563632

Date Received : Aug 29, 2025
Date Reported : Sep 09, 2025
Report Number : 3350279-1

Page 1 of 5

Sample Number 2563632-1
Sampled Date Aug 29, 2025
Sample Description Air Quality
Location Production Loading
Date Analysis Commenced Sep 01, 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	7.1	No Standard	Total Hydrocarbon Analyzer	-	Rayong

Guideline :

Sampled By : Tarin Octjinda

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)

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: 2563632

Date Received : Aug 29, 2025
Date Reported : Sep 09, 2025
Report Number : 3350279-1

Page 2 of 5

Sample Number 2563632-2
Sampled Date Aug 29, 2025
Sample Description Air Quality
Location โรงงาน MMA 1 @ 4/5000
Date Analysis Commenced Sep 02, 2025
Condition of Sample Drawn into three sorbent tubes, refrigerated
Barometric Pressure 756 mmHg
Atmospheric Temperature 30.2 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Methanol *	09:30 AM - 11:30 AM	ppm	-	0.10	<0.10	200	NIOSH (1998), 2000	ACGIH	Bangkok
Methyl Methacrylate *	09:30 AM - 11:30 AM	ppm	-	0.5	<0.5	100	NIOSH (1994), 2537	MOL	Bangkok
Toluene	09:30 AM - 11:30 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 : Tarin Octjinda

Remark :

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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: 2563632

Date Received : Aug 29, 2025
Date Reported : Sep 09, 2025
Report Number : 3350279-1

Page 3 of 5

Sample Number 2563632-3
Sampled Date Aug 29, 2025
Sample Description Air Quality
Location โรงงาน MMA 2 @ 4/5000
Date Analysis Commenced Sep 02, 2025
Condition of Sample Drawn into three sorbent tubes, refrigerated
Barometric Pressure 756 mmHg
Atmospheric Temperature 30.2 °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 (1998), 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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Sampled By : Tarin Octjinda

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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: 2563632

Date Received : Aug 29, 2025
Date Reported : Sep 09, 2025
Report Number : 3350279-1

Page 4 of 5

Sample Number 2563632-4
Sampled Date Aug 29, 2025
Sample Description Air Quality
Location โรงงาน MMA 1 @ 2/3000
Date Analysis Commenced Sep 03, 2025
Condition of Sample Drawn into one sorbent tube, refrigerated
Barometric Pressure 756 mmHg
Atmospheric Temperature 30.2 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Acrylic acid *	09:30 AM - 11:30 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 : Tarin Octjinda

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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: 2563632

Date Received : Aug 29, 2025
Date Reported : Sep 09, 2025
Report Number : 3350279-1

Page 5 of 5

Sample Number 2563632-5
Sampled Date Aug 29, 2025
Sample Description Air Quality
Location โรงงาน MMA 2 @ 2/3000
Date Analysis Commenced Sep 03, 2025
Condition of Sample Drawn into one sorbent tube, refrigerated
Barometric Pressure 756 mmHg
Atmospheric Temperature 30.2 °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 : Tarin Octjinda

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Approved by

Orawan R.

Orawan Rakyong
Scientist (3)

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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: 2590806

Date Received : Nov 12, 2025
Date Reported : Nov 25, 2025
Report Number : 3415526-1

Page 1 of 5

Sample Number 2590806-1
Sampled Date Nov 12, 2025
Sample Description Air Quality
Location Production Loading
Date Analysis Commenced Nov 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	4.7	No Standard	Total Hydrocarbon Analyzer	-	Rayong

Guideline :

Sampled By : Prasanmit Kueanpet

Remark :

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

Approved by

Saranya C.

Saranya Chalermtamrong
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: 2590806

Date Received : Nov 12, 2025
Date Reported : Nov 25, 2025
Report Number : 3415526-1

Page 2 of 5

Sample Number 2590806-2
Sampled Date Nov 12, 2025
Sample Description Air Quality
Location โรงงาน MMA 1 @ 4/5000
Date Analysis Commenced Nov 13, 2025
Condition of Sample Drawn into three sorbent tubes, refrigerated
Barometric Pressure 751 mmHg
Atmospheric Temperature 30.1 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Methanol	09:30 AM - 11:30 AM	ppm	-	0.10	3.02	200	NIOSH (1998), 2000	ACGIH	Bangkok
Methyl Methacrylate	09:30 AM - 11:30 AM	ppm	-	0.5	<0.5	100	NIOSH (1994), 2537	MOL	Bangkok
Toluene	09:30 AM - 11:30 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 (2025).

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 : Prasanmit Kueanpet

Remark :

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

Approved by

Saranya C.

Saranya Chalermtamrong
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: 2590806

Date Received : Nov 12, 2025
Date Reported : Nov 25, 2025
Report Number : 3415526-1

Page 3 of 5

Sample Number 2590806-3
Sampled Date Nov 12, 2025
Sample Description Air Quality
Location โรงงาน MMA 2 @ 4/5000
Date Analysis Commenced Nov 13, 2025
Condition of Sample Drawn into three sorbent tubes, refrigerated
Barometric Pressure 751 mmHg
Atmospheric Temperature 30.1 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Methanol	09:30 AM - 11:30 AM	ppm	-	0.10	<0.10	200	NIOSH (1998), 2000	ACGIH	Bangkok
Methyl Methacrylate	09:30 AM - 11:30 AM	ppm	-	0.5	<0.5	100	NIOSH (1994), 2537	MOL	Bangkok
Toluene	09:30 AM - 11:30 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 (2025).

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 : Prasanmit Kueanpet

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Approved by

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Saranya Chalermtamrong
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: 2590806

Date Received : Nov 12, 2025
Date Reported : Nov 25, 2025
Report Number : 3415526-1

Page 4 of 5

Sample Number 2590806-4
Sampled Date Nov 12, 2025
Sample Description Air Quality
Location โรงงาน MMA 1 @ 2/3000
Date Analysis Commenced Nov 18, 2025
Condition of Sample Drawn into one sorbent tube, refrigerated
Barometric Pressure 751 mmHg
Atmospheric Temperature 30.1 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Acrylic acid	09:30 AM - 11:30 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 : Prasanmit Kueanpet

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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: 2590806

Date Received : Nov 12, 2025
Date Reported : Nov 25, 2025
Report Number : 3415526-1

Page 5 of 5

Sample Number : 2590806-5
Sampled Date : Nov 12, 2025
Sample Description : Air Quality
Location : โรงงาน MMA 2 @ 2/3000
Date Analysis Commenced : Nov 18, 2025
Condition of Sample : Drawn into one sorbent tube, refrigerated
Barometric Pressure : 751 mmHg
Atmospheric Temperature : 30.1 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Acrylic acid	09:30 AM - 11:30 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 : Prasanmit Kueanpet

Remark :

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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

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 : 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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- "<" : 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

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. Changchon

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

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.

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.