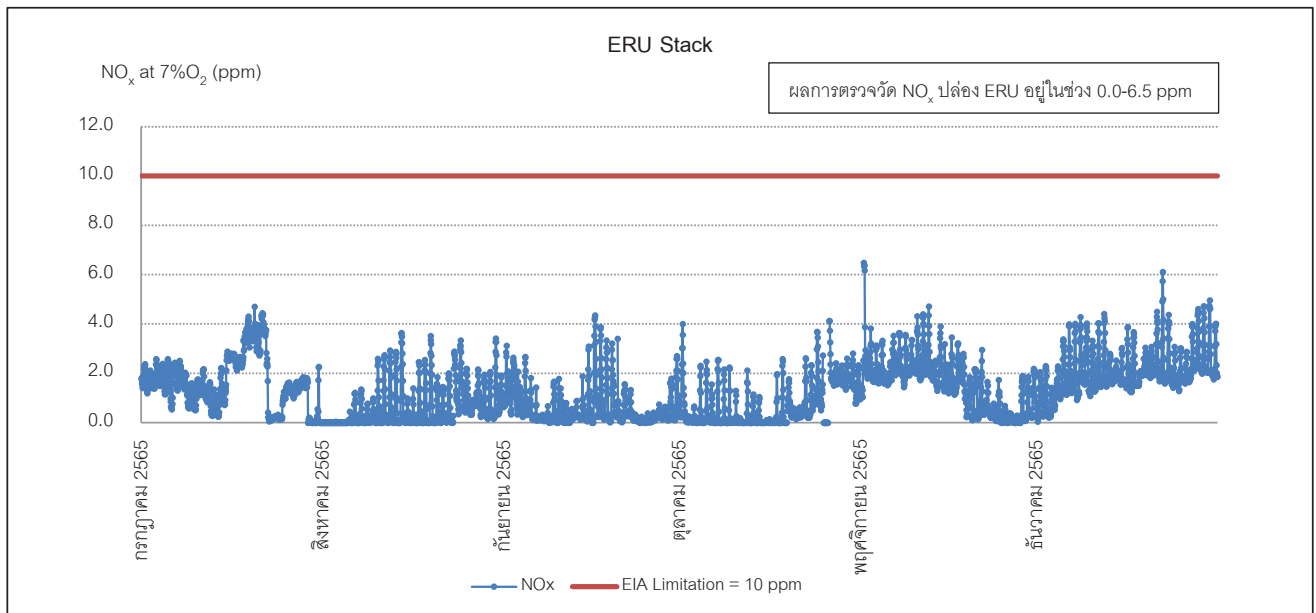
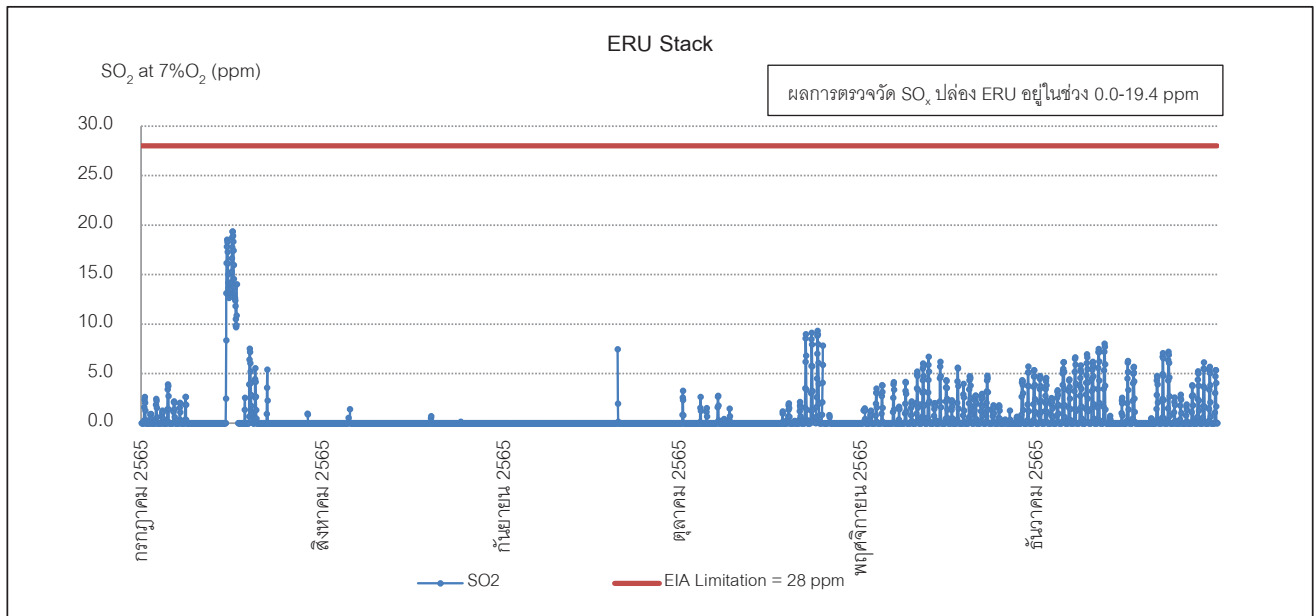


ภาคผนวกที่ 9

ข้อมูลด้าน CEMS ของโครงการ

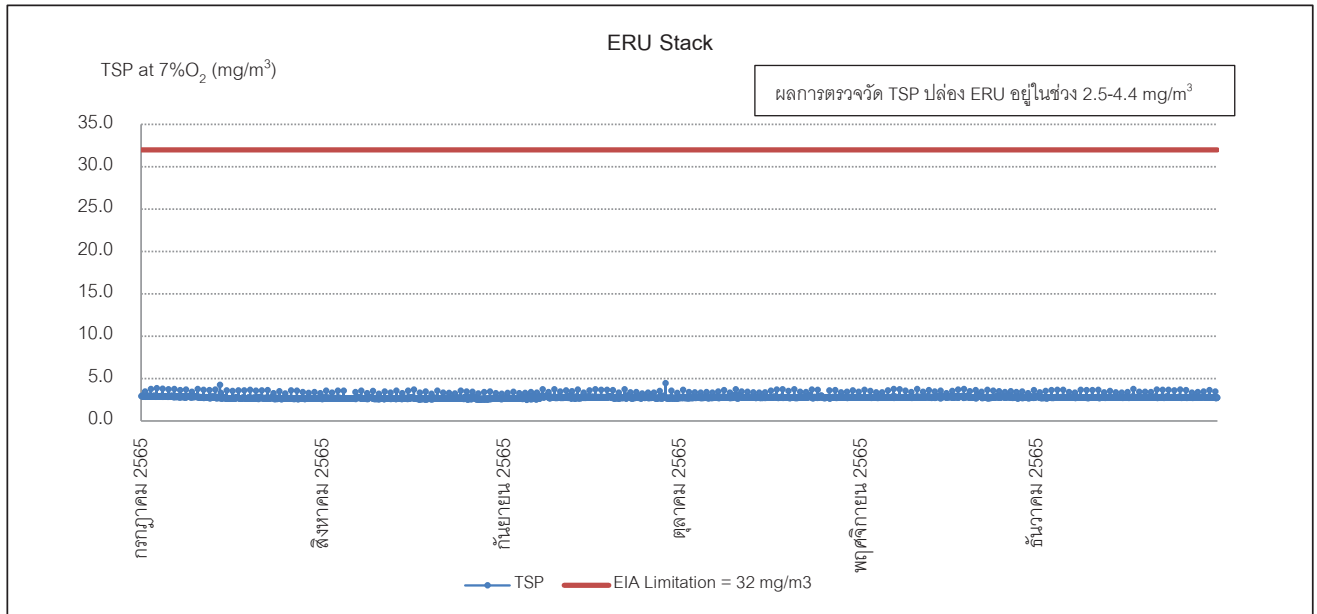
- ผล CEMS ระหว่างเดือนกรกฎาคม-ธันวาคม 2565
- แผนและผลการตรวจสอบความถูกต้องของระบบ CEMS ประจำปี พ.ศ. 2565
 - ตัวอย่างการสอบเทียบระบบ CEMS โดยโครงการ (Internal Check)
 - ผลการตรวจสอบค่าความดันลดของระบบบำบัดปล่อย SAR
ระหว่างเดือนกรกฎาคม-ธันวาคม 2565

ผลการตรวจวัดคุณภาพอากาศจากปล่องด้วยระบบ CEMS
บริษัท พีทีที อาซาฮี เคมิคอล จำกัด ระหว่างเดือนกรกฎาคม-ธันวาคม 2565

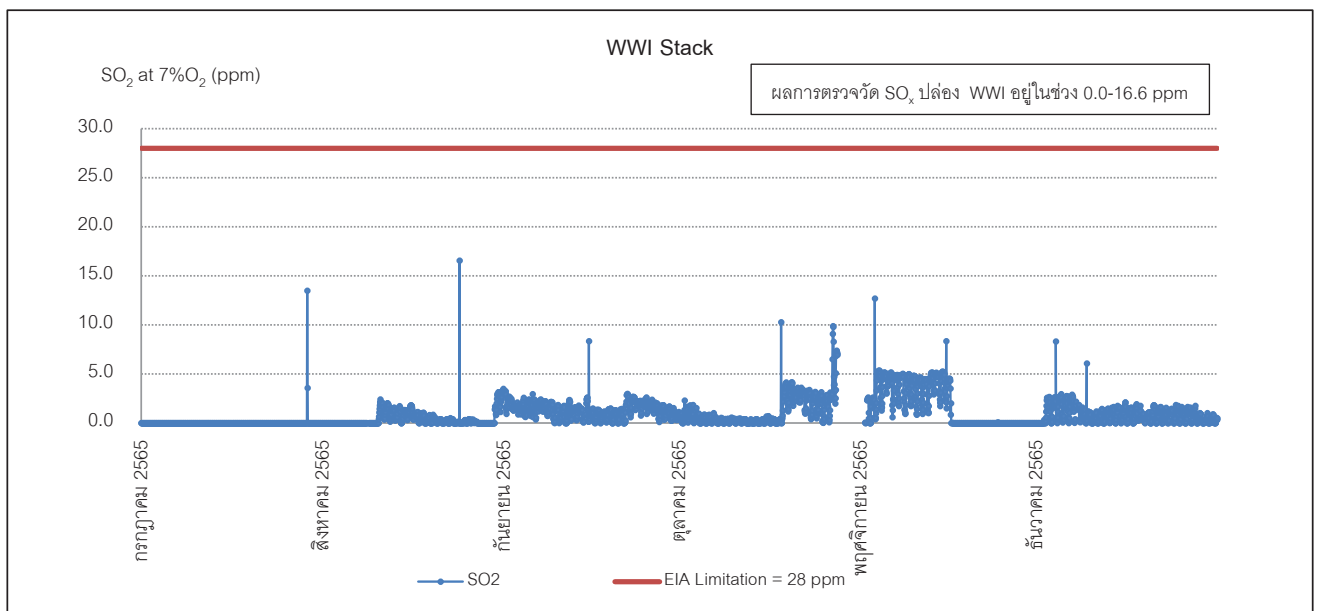


หมายเหตุ: ข้อมูลที่ขาดหายไปมีสาเหตุมาจากการซ่อมบำรุง การหยุดเดินกระบวนการผลิต เช่น การหยุดหน่วยผลิตจากเหตุฉุกเฉิน การสอบเทียบระบบ CEMS

ผลการตรวจวัดคุณภาพอากาศจากปล่องด้วยระบบ CEMS
บริษัท พีทีที อาซาฮี เคมิคอล จำกัด ระหว่างเดือนกรกฎาคม-ธันวาคม 2565 (ต่อ)



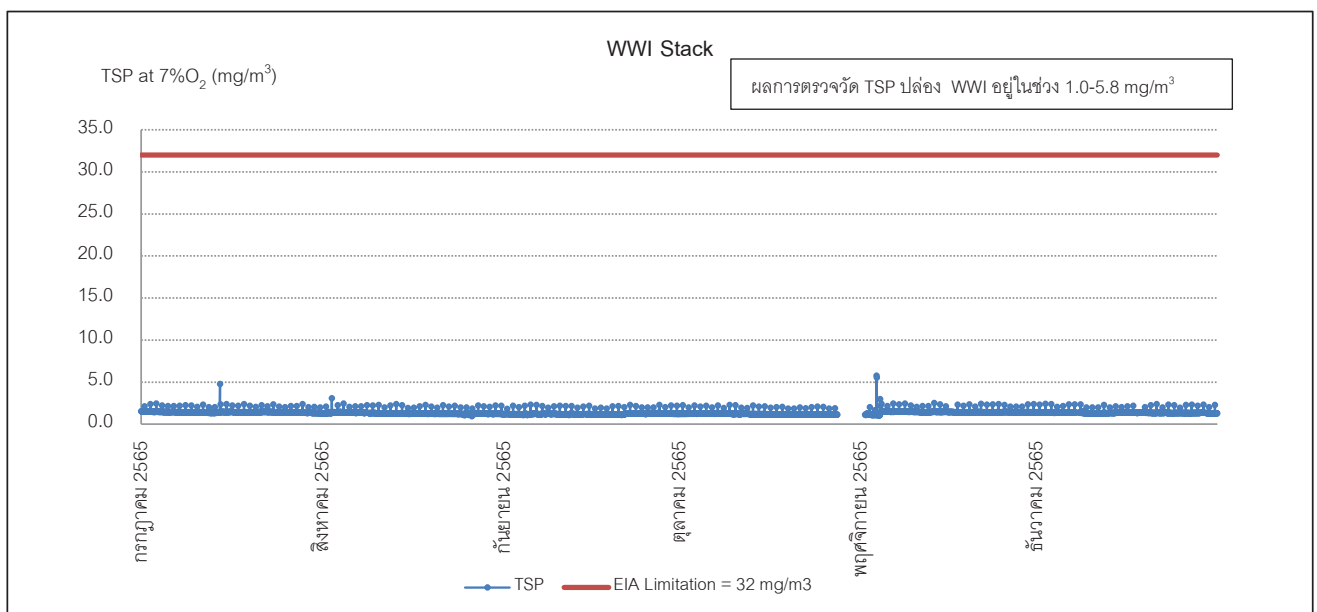
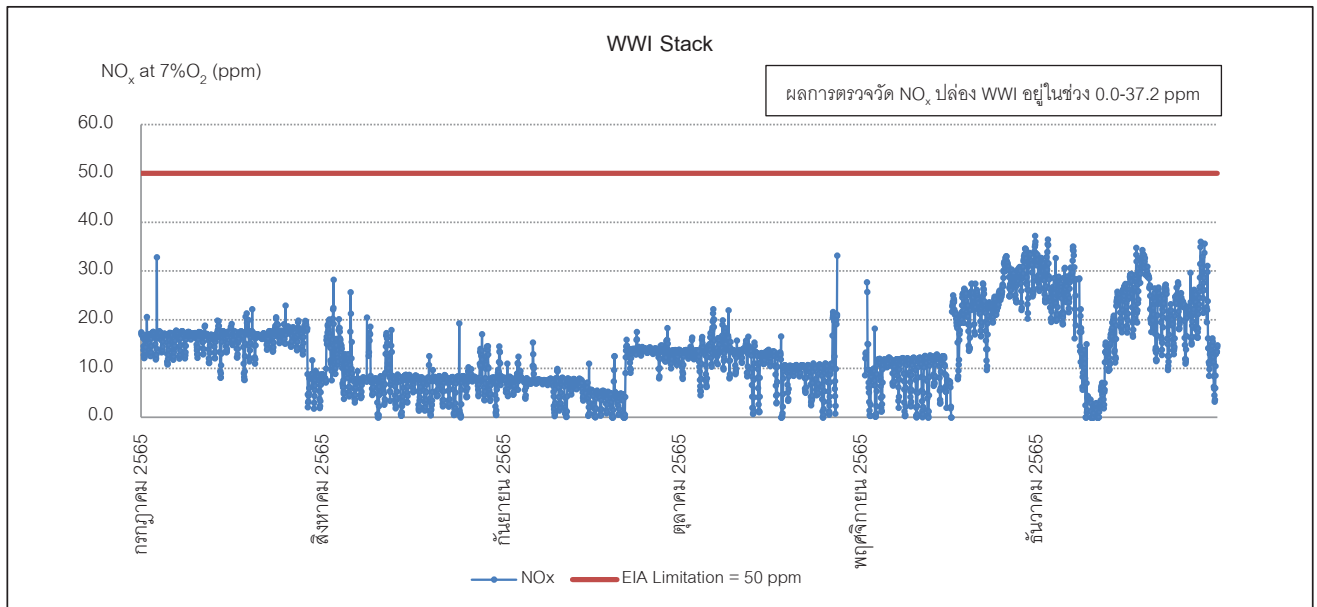
หมายเหตุ: ข้อมูลที่ขาดหายไปมีสาเหตุมาจากการซ่อมบำรุง การหยุดเดินกระบวนการผลิต เช่น การหยุดหน่วยผลิตจากเหตุฉุกเฉิน การสอบเทียบระบบ CEMS



หมายเหตุ: ข้อมูลที่ขาดหายไปมีสาเหตุมาจากการซ่อมบำรุง

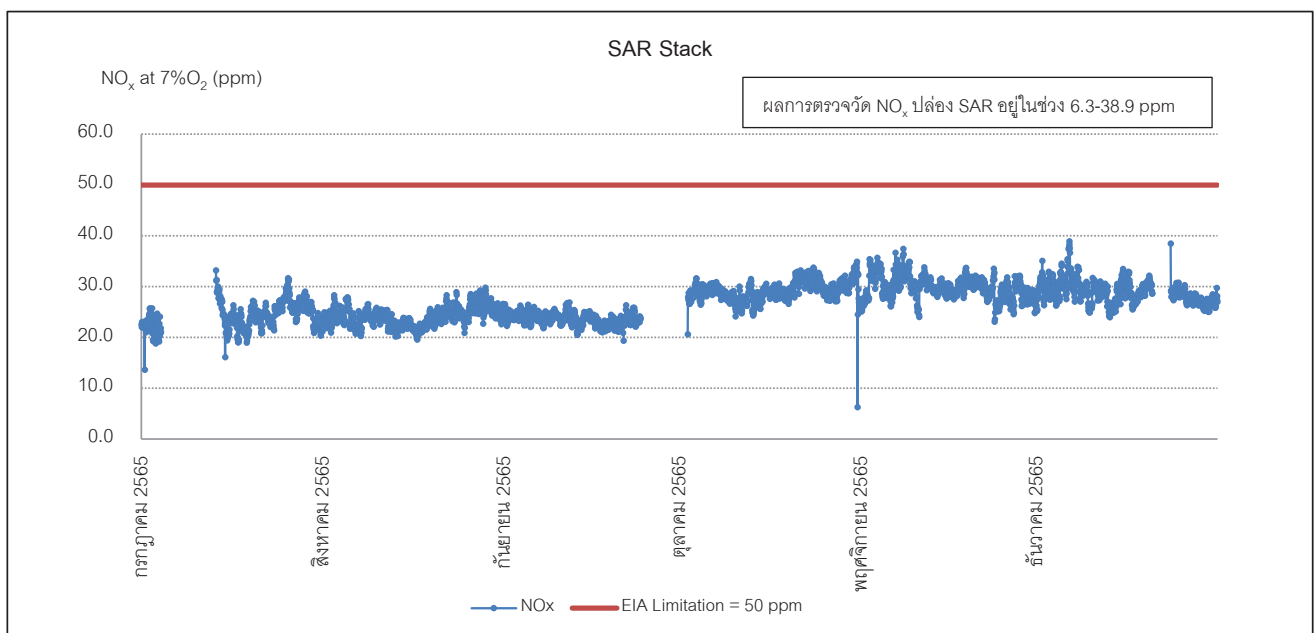
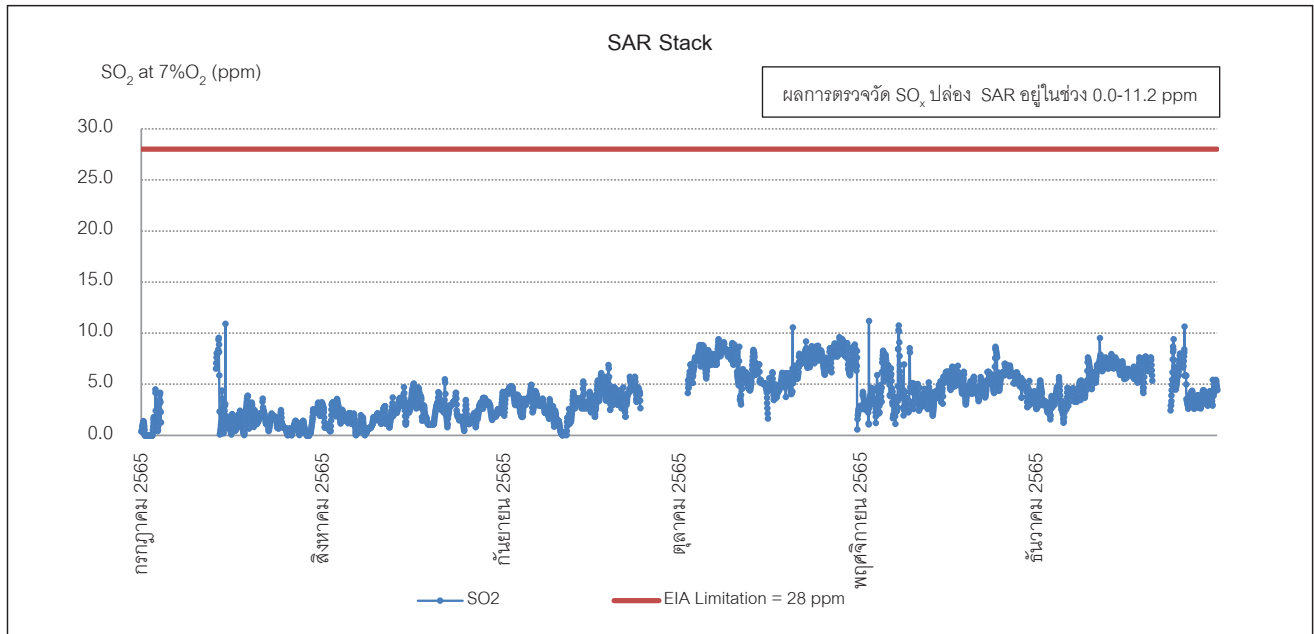
ผลการตรวจวัดคุณภาพอากาศจากปล่องด้วยระบบ CEMS

บริษัท พีทีที อาซาฮี เคมิคอล จำกัด ระหว่างเดือนกรกฎาคม-ธันวาคม 2565 (ต่อ)



หมายเหตุ: ข้อมูลที่ขาดหายไปมีสาเหตุมาจากการซ่อมบำรุง

ผลการตรวจวัดคุณภาพอากาศจากปล่องด้วยระบบ CEMS
บริษัท พีทีที อาซาฮี เคมิคอล จำกัด ระหว่างเดือนกรกฎาคม-ธันวาคม 2565 (ต่อ)



หมายเหตุ: ข้อมูลที่ขาดหายไปมีสาเหตุมาจากการหยุดเดินกระบวนการผลิตเพื่อซ่อมบำรุง

Time table of instrument related to legal

Pillars	Strategy Objective	Equipment Type	Taget		Time 2021												Time 2022												Total	
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
	Legal equipment management	CEMS AOG	Yearly review	Plan																										
				Actual																										
	Legal equipment management	CEMS WWI	Yearly review	Plan																										
				Actual																										
	Legal equipment management	CEMS SAR	Yearly review	Plan																										
				Actual																										

Issue PR and PO

Actual

Table 7.1-1 Summary of RA Test Results at WWI Stack, PTT Asahi Chemical Co., Ltd., Rayong province during November 3, 2022

Stack name	Sampling Date	Parameter	Unit	CEMs	RM (SGS)	Diff.	CC	%RA	Compared with RM ^{1/}			Compared with Emission Standard ^{2/} and ^{3/}		
									criteria	Value	Pass /Not Pass	criteria	Value	Pass /Not Pass
WWI Stack	Nov 3, 2022	NO _x ^{2/} at 7%O ₂ (Compared with emission Standard 50 ppm)	ppm	0.16	0.06	-0.10	0.26	0.72%	-	-	-	10%	0.72%	Pass
		SO ₂ ^{1/} at 7%O ₂ (Compared with emission Standard 28 ppm)	ppm	0.68	0.43	-0.25	0.34	2.11%	-	-	-	10%	2.11%	Pass
		CO ^{3/} at 7%O ₂ (Compared with emission Standard 690 ppm)	ppm	0.00	0.79	0.79	0.07	0.12%	-	-	-	5%	0.12%	Pass
		O ₂ ^{1/} (Compared with RM)	%	12.09	12.00	-0.10	-	0.10%	1%	0.10%	Pass	-	-	-

Remark : - Emission standard at WWI stack at 7% O₂; NO_x = 50 ppm, SO₂ = 28 ppm and CO = 690 ppm
Sources : 1/ Compared with RM reference follow U.S. EPA 40 CFR Part 60 Appendix B (In case average of RM more than 50% of Emission Standard value)
2/ Compared with Emission Standard of the Plant (In case average of RM less than 50% of Emission Standard value)
3/ Notification of the Ministry of Industry, subjected "Industrial Emission Standards", dated December 4, 2006.

Table 7.1-2 Summary of RA Test Results at AOG Stack, PTT Asahi Chemical Co., Ltd., Rayong province during November 1, 2022

Stack name	Sampling Date	Parameter	Unit	CEMs	RM (SGS)	Diff.	CC	%RA	Compared with RM ^{1/}			Compared with Emission Standard ^{2/} and ^{3/}		
									criteria	Value	Pass /Not Pass	criteria	Value	Pass /Not Pass
AOG Stack	Nov 1, 2022	NO _x ^{2/} at 7%O ₂ (Compared with emission Standard 10 ppm)	ppm	6.12	5.95	-0.17	0.14	5.23%	-	-	-	10%	5.23%	Pass
		SO ₂ ^{1/} at 7%O ₂ (Compared with emission Standard 28ppm)	ppm	1.10	0.47	-0.63	0.08	2.53%	-	-	-	10%	2.53%	Pass
		CO ^{3/} at 7%O ₂ (Compared with emission Standard 690 ppm)	ppm	32.32	25.09	-7.24	0.10	1.06%	-	-	-	5%	1.06%	Pass
		O ₂ ^{1/} (Compared with RM)	%	5.43	4.91	-0.51	-	0.51%	1 %	0.51%	Pass	-	-	-

Remark : - Emission standard at AOG stack at 7% O₂; NO_x = 10 ppm, SO₂ = 28 ppm and CO = 690 ppm
Sources : 1/ Compared with RM reference follow U.S. EPA 40 CFR Part 60 Appendix B (In case average of RM more than 50% of Emission Standard value)
2/ Compared with Emission Standard of the Plant (In case average of RM less than 50% of Emission Standard value)
3/ Notification of the Ministry of Industry, subjected "Industrial Emission Standards", dated December 4, 2006.

Table 7.1-3 Summary of RA Test Results at SAR Stack, PTT Asahi Chemical Co., Ltd., Rayong province during November 2, 2022

Stack name	Sampling Date	Parameter	Unit	CEMs	RM (SGS)	Diff.	CC	%RA	Compared with RM ^{1/}			Compared with Emission Standard ^{2/}		
									criteria	Value	Pass / Not Pass	criteria	Value	Pass / Not Pass
SAR Stack	Nov 2, 2022	NO _x ^{2/} at 7%O ₂ (Compared with RM)	ppm	34.71	38.83	4.11	0.15	10.99%	20%	10.99%	Pass	-	-	-
		SO ₂ ^{1/} at 7%O ₂ (Compared with emission Standard 28 ppm)	ppm	3.30	3.00	-0.30	0.26	2.01%	-	-	-	10%	2.01%	Pass
		O ₂ ^{1/} (Compared with RM)	%	5.75	5.43	-0.32	-	0.32%	1%	0.32%	Pass	-	-	-

Remark : - Emission standard at SAR stack at 7% O₂; NO_x = 50 ppm and SO₂ = 28 ppm

Sources : ^{1/} Compared with RM reference follow U.S. EPA 40 CFR Part 60 Appendix B (In case average of RM more than 50% of Emission Standard value)

^{2/} Compared with Emission Standard of the Plant (In case average of RM less than 50% of Emission Standard value)



Report No. : 2022-5005555 / 001-2 (Page 1 of 4)

Issued date : November 7, 2022

CLIENT : PTT ASAHI CHEMICAL COMPANY LIMITED
CONTACT : Khun Chawalit Puchongkawanin
ADDRESS : 8 Phangmuang Chapoh 3-1 Road, Huaypong Sub-District, Muang Rayong District, Rayong 21150
Tel. 094-423-9236

Analysis Report

SAMPLE DESCRIPTION : Emission Air
SAMPLE DESIGNATED AS : Relative Accuracy Test Audit : NO_x MEASUREMENT DATE : November 1, 2022
MEASUREMENT LOCATION : AOG Stack, PTT Asahi Chemical Company Limited, Rayong province
MEASUREMENT BY : Phatsakorn Soonthornwiphat

No.	Date (DD/MM/YY)	Time	NO _x				Diff
			Raw Data (at actual O ₂)		Corrected Value (at 7%O ₂)		
			CEMs	RM	CEMs	RM	
			ppm	ppm	ppm	ppm	
1	01/11/2022	11:31-12:00	6.29	6.79	5.66	5.93	0.27
2	01/11/2022	12:01-12:30	7.09	7.12	6.35	6.19	-0.17
3	01/11/2022	12:31-13:00	7.35	7.30	6.60	6.35	-0.25
4*	01/11/2022	13:01-13:30	7.25	7.15	6.51	6.21	-0.30
5	01/11/2022	13:31-14:00	6.95	6.89	6.24	5.99	-0.25
6	01/11/2022	14:01-14:30	7.05	6.98	6.33	6.06	-0.27
7*	01/11/2022	14:31-15:00	7.14	7.05	6.42	6.13	-0.29
8	01/11/2022	15:01-15:30	7.02	6.93	6.31	6.03	-0.28
9	01/11/2022	15:31-16:00	7.23	7.14	6.49	6.20	-0.29
10*	01/11/2022	16:01-16:30	7.47	7.32	6.69	6.34	-0.35
11	01/11/2022	16:31-17:00	6.33	6.26	5.71	5.46	-0.25
12	01/11/2022	17:01-17:30	5.99	6.13	5.39	5.33	-0.06
Average					6.12	5.95	-0.17
Confidence Coefficient							0.14
Relative Accuracy (Compared with Emission standard NO _x = 10 ppm)							5.23%
Relative Accuracy Criteria ^{1/} (Compared with Emission standard NO _x = 10 ppm)							10%
Conclusion							Pass

Remarks : * Sample with * is rejected data
- Emission standard of the plant; NO_x at 7% O₂ = 10 ppm

Source : ^{1/} RA Criteria of NO_x is referred to U.S. EPA 40 CFR Part 60, Appendix B: Performance Specification 2 (PS-2) and compared with emission standard of the plant.

SGS (THAILAND) LIMITED

Technical Manager

TY/PS/WI/WI

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Report No. : 2022-5005555 / 001-2 (Page 2 of 4)

Issued date : November 7, 2022

CLIENT : PTT ASAHI CHEMICAL COMPANY LIMITED
CONTACT : Khun Chawalit Puchongkawanin
ADDRESS : 8 Phangmuang Chapoh 3-1 Road, Huaypong Sub-District, Muang Rayong District, Rayong 21150
Tel. 094-423-9236

Analysis Report

SAMPLE DESCRIPTION : Emission Air
SAMPLE DESIGNATED AS : Relative Accuracy Test Audit: SO₂ MEASUREMENT DATE : November 1, 2022
MEASUREMENT LOCATION : AOG Stack, PTT Asahi Chemical Company Limited, Rayong province
MEASUREMENT BY : Phatsakorn Soonthornwiphat

No.	Date (DD/MM/YY)	Time	SO ₂				Diff
			Raw Data (at actual O ₂)		Corrected Value (at 7%O ₂)		
			CEMs	RM	CEMs	RM	
			ppm	ppm	ppm	ppm	
1	01/11/2022	11:31-12:00	0.56	0.11	0.50	0.09	-0.41
2*	01/11/2022	12:01-12:30	1.22	0.04	1.09	0.04	-1.06
3	01/11/2022	12:31-13:00	1.30	0.51	1.17	0.44	-0.73
4	01/11/2022	13:01-13:30	1.25	0.54	1.12	0.47	-0.65
5	01/11/2022	13:31-14:00	1.20	0.56	1.08	0.49	-0.59
6	01/11/2022	14:01-14:30	1.26	0.57	1.13	0.49	-0.64
7	01/11/2022	14:31-15:00	1.28	0.60	1.15	0.52	-0.63
8	01/11/2022	15:01-15:30	1.33	0.63	1.19	0.55	-0.64
9	01/11/2022	15:31-16:00	1.49	0.65	1.33	0.56	-0.77
10*	01/11/2022	16:01-16:30	1.65	0.66	1.48	0.57	-0.90
11*	01/11/2022	16:31-17:00	1.51	0.64	1.37	0.56	-0.80
12	01/11/2022	17:01-17:30	1.33	0.66	1.20	0.57	-0.62
Average					1.10	0.47	-0.63
Confidence Coefficient							0.08
Relative Accuracy (Compared with Emission Standard,SO ₂ = 28 ppm)							2.53%
Relative Accuracy Criteria ^{1/} (Compared with Emission Standard, SO ₂ =28 ppm)							10 %
Conclusion							Pass

Remarks : * Sample with * is rejected data
- Emission standard of the plant; SO₂ at 7% O₂ = 28 ppm

Source : ^{1/} RA Criteria of SO₂ is referred to U.S. EPA 40 CFR Part 60, Appendix B: Performance Specification 2 (PS-2) and compared with emission standard of the plant.

SGS (THAILAND) LIMITED

Technical Manager

TY/PS/WI/WI

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Report No. : 2022-5005555 / 001-2 (Page 3 of 4)

Issued date : November 7, 2022

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CONTACT : Khun Chawalit Puchongkawanin
ADDRESS : 8 Phangmuang Chapoh 3-1 Road, Huaypong Sub-District, Muang Rayong District, Rayong 21150
Tel. 094-423-9236

Analysis Report

SAMPLE DESCRIPTION : Emission Air
SAMPLE DESIGNATED AS : Relative Accuracy Test Audit : O₂ MEASUREMENT DATE : November 1, 2022
MEASUREMENT LOCATION : AOG Stack, PTT Asahi Chemical Company Limited, Rayong province
MEASUREMENT BY : Phatsakorn Soonthornwiphat

No.	Date (DD/MM/YY)	Time	O ₂		Diff
			CEMs	RM	
			%	%	
1	01/11/2022	11:31-12:00	5.45	4.97	-0.48
2	01/11/2022	12:01-12:30	5.40	4.90	-0.50
3	01/11/2022	12:31-13:00	5.41	4.91	-0.50
4	01/11/2022	13:01-13:30	5.42	4.91	-0.51
5	01/11/2022	13:31-14:00	5.44	4.92	-0.52
6	01/11/2022	14:01-14:30	5.43	4.90	-0.52
7	01/11/2022	14:31-15:00	5.44	4.91	-0.53
8	01/11/2022	15:01-15:30	5.44	4.91	-0.53
9	01/11/2022	15:31-16:00	5.41	4.88	-0.53
10*	01/11/2022	16:01-16:30	5.38	4.85	-0.53
11*	01/11/2022	16:31-17:00	5.48	4.95	-0.54
12*	01/11/2022	17:01-17:30	5.46	4.92	-0.55
Average			5.43	4.91	-0.51
Relative Accuracy (Compared with RM)					0.51%
Relative Accuracy Criteria ^{1/} (Compared with RM)					1%
Conclusion					Pass

Remark : * Sample with * is rejected data
Source : 1/ RA Criteria of O₂ is referred to U.S. EPA 40 CFR Part 60, Appendix B : Performance Specification 3 (PS-3)



Technical Manager

TY/PS/WI/WI

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CONTACT : Khun Chawalit Puchongkawanin
ADDRESS : 8 Phangmuang Chapoh 3-1 Road, Huaypong Sub-District, Muang Rayong District, Rayong 21150
Tel. 094-423-9236

Analysis Report

SAMPLE DESCRIPTION : Emission Air
SAMPLE DESIGNATED AS : Relative Accuracy Test Audit: CO MEASUREMENT DATE : November 1, 2022
MEASUREMENT LOCATION : AOG Stack, PTT Asahi Chemical Company Limited, Rayong province
MEASUREMENT BY : Phatsakorn Soonthornwiphat

No.	Date (DD/MM/YY)	Time	CO				Diff
			Raw Data (at actual O ₂)		Corrected Value (at 7%O ₂)		
			CEMs	RM	CEMs	RM	
			ppm	ppm	ppm	ppm	
1*	01/11/2022	11:31-12:00	38.49	29.51	34.64	25.75	-8.89
2*	01/11/2022	12:01-12:30	36.67	28.90	32.89	25.11	-7.78
3	01/11/2022	12:31-13:00	36.09	28.85	32.39	25.08	-7.31
4	01/11/2022	13:01-13:30	36.15	29.00	32.45	25.21	-7.25
5*	01/11/2022	13:31-14:00	36.43	29.09	32.75	25.30	-7.45
6	01/11/2022	14:01-14:30	36.25	28.93	32.56	25.14	-7.42
7	01/11/2022	14:31-15:00	36.04	28.86	32.40	25.09	-7.30
8	01/11/2022	15:01-15:30	36.12	28.95	32.47	25.16	-7.31
9	01/11/2022	15:31-16:00	35.75	28.69	32.08	24.90	-7.18
10	01/11/2022	16:01-16:30	35.32	28.51	31.63	24.69	-6.94
11	01/11/2022	16:31-17:00	36.01	29.05	32.47	25.31	-7.16
12	01/11/2022	17:01-17:30	36.04	28.99	32.46	25.22	-7.24
Average					32.32	25.09	-7.24
Confidence Coefficient							0.10
Relative Accuracy (Compared with Emission Standard, CO =690 ppm)							1.06%
Relative Accuracy Criteria ^{1/} (Compared with Emission Standard, CO= 690 ppm)							5%
Conclusion							Pass

Remarks : * Sample with * is rejected data
- Emission standard of CO at 7% O₂ = 690 ppm
Source : 1/ RA Criteria of CO is referred to U.S. EPA 40 CFR Part 60, Appendix B: Performance Specification 4 (PS-4) and compared with Industrial Emission Standards, Notification of the Ministry of Industry, B.E. 2549 (2006).



Technical Manager

TY/PS/WI/WI

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Issued date : November 7, 2022

CLIENT : PTT ASAHI CHEMICAL COMPANY LIMITED
CONTACT : Khun Chawalit Puchongkawanin
ADDRESS : 8 Phangmuang Chapoh 3-1 Road, Huaypong Sub-District, Muang Rayong District, Rayong 21150
Tel. 094-423-9236

Analysis Report

SAMPLE DESCRIPTION : Emission Air
SAMPLE DESIGNATED AS : Relative Accuracy Test Audit : NO_x MEASUREMENT DATE : November 3, 2022
MEASUREMENT LOCATION : WWI Stack, PTT Asahi Chemical Company Limited, Rayong province
MEASUREMENT BY : Phatsakorn Soonthornwiphat

No.	Date (DD/MM/YY)	Time	NO _x				Diff
			Raw Data (at actual O ₂)		Corrected Value (at 7%O ₂)		
			CEMs	RM	CEMs	RM	
			ppm	ppm	ppm	ppm	
1	03/11/2022	11:31-12:00	0.00	0.05	0.00	0.08	0.07
2	03/11/2022	12:01-12:30	0.00	0.04	0.00	0.07	0.07
3	03/11/2022	12:31-13:00	0.01	0.04	0.01	0.06	0.05
4	03/11/2022	13:01-13:30	0.00	0.04	0.00	0.06	0.06
5	03/11/2022	13:31-14:00	0.03	0.04	0.04	0.06	0.02
6	03/11/2022	14:01-14:30	0.00	0.03	0.00	0.05	0.05
7	03/11/2022	14:31-15:00	0.02	0.03	0.04	0.05	0.02
8	03/11/2022	15:01-15:30	0.18	0.04	0.28	0.06	-0.22
9	03/11/2022	15:31-16:00	0.65	0.04	1.03	0.06	-0.97
10*	03/11/2022	16:01-16:30	1.17	0.06	1.83	0.10	-1.74
11*	03/11/2022	16:31-17:00	1.78	0.13	2.80	0.20	-2.60
12*	03/11/2022	17:01-17:30	2.65	0.13	3.98	0.20	-3.78
Average					0.16	0.06	-0.10
Confidence Coefficient							0.26
Relative Accuracy (Compared with Emission standard NO _x = 50 ppm)							0.72%
Relative Accuracy Criteria ^{1/} (Compared with Emission standard NO _x = 50 ppm)							10%
Conclusion							Pass

Remarks : * Sample with * is rejected data
- Emission standard of the plant; NO_x at 7% O₂ = 50 ppm
Source : ^{1/} RA Criteria of NO_x is referred to U.S. EPA 40 CFR Part 60, Appendix B: Performance Specification 2 (PS-2) and compared with emission standard of the plant.



Technical Manager

TY/PS/WI/WI

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Report No. : 2022-5005555 / 001-1 (Page 2 of 4)

Issued date : November 7, 2022

CLIENT : PTT ASAHI CHEMICAL COMPANY LIMITED
CONTACT : Khun Chawalit Puchongkawanin
ADDRESS : 8 Phangmuang Chapoh 3-1 Road, Huaypong Sub-District, Muang Rayong District, Rayong 21150
Tel. 094-423-9236

Analysis Report

SAMPLE DESCRIPTION : Emission Air
SAMPLE DESIGNATED AS : Relative Accuracy Test Audit: SO₂ MEASUREMENT DATE : November 3, 2022
MEASUREMENT LOCATION : WWI Stack, PTT Asahi Chemical Company Limited, Rayong province
MEASUREMENT BY : Phatsakorn Soonthornwiphat

No.	Date (DD/MM/YY)	Time	SO ₂				Diff
			Raw Data (at actual O ₂)		Corrected Value (at 7%O ₂)		
			CEMs	RM	CEMs	RM	
			ppm	ppm	ppm	ppm	
1	03/11/2022	11:31-12:00	0.11	0.17	0.17	0.27	0.10
2	03/11/2022	12:01-12:30	0.07	0.21	0.11	0.33	0.22
3	03/11/2022	12:31-13:00	0.19	0.23	0.31	0.37	0.06
4	03/11/2022	13:01-13:30	0.24	0.25	0.38	0.40	0.02
5	03/11/2022	13:31-14:00	0.27	0.29	0.43	0.45	0.02
6	03/11/2022	14:01-14:30	0.57	0.30	0.91	0.46	-0.44
7	03/11/2022	14:31-15:00	0.64	0.32	1.01	0.49	-0.51
8	03/11/2022	15:01-15:30	0.82	0.34	1.29	0.53	-0.76
9	03/11/2022	15:31-16:00	0.98	0.35	1.54	0.54	-1.00
10*	03/11/2022	16:01-16:30	1.10	0.38	1.73	0.59	-1.14
11*	03/11/2022	16:31-17:00	1.45	0.38	2.28	0.59	-1.69
12*	03/11/2022	17:01-17:30	1.82	0.40	2.74	0.62	-2.12
Average					0.68	0.43	-0.25
Confidence Coefficient							0.34
Relative Accuracy (Compared with Emission Standard,SO ₂ = 28 ppm)							2.11%
Relative Accuracy Criteria ^{1/} (Compared with Emission Standard, SO ₂ =28 ppm)							10 %
Conclusion							Pass

Remarks : * Sample with * is rejected data
- Emission standard of the plant; SO₂ at 7% O₂ = 28 ppm
Source : ^{1/} RA Criteria of SO₂ is referred to U.S. EPA 40 CFR Part 60, Appendix B: Performance Specification 2 (PS-2) and compared with emission standard of the plant.



Technical Manager

TY/PS/WI/WI

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Report No. : 2022-5005555 / 001-1 (Page 3 of 4)

Issued date : November 7, 2022

CLIENT : PTT ASAHI CHEMICAL COMPANY LIMITED
CONTACT : Khun Chawalit Puchongkawanin
ADDRESS : 8 Phangmuang Chapoh 3-1 Road, Huaypong Sub-District, Muang Rayong District, Rayong 21150
Tel. 094-423-9236

Analysis Report

SAMPLE DESCRIPTION : Emission Air
SAMPLE DESIGNATED AS : Relative Accuracy Test Audit : O₂ MEASUREMENT DATE : November 3, 2022
MEASUREMENT LOCATION : WWI Stack, PTT Asahi Chemical Company Limited, Rayong province
MEASUREMENT BY : Phatsakorn Soonthornwiphat

No.	Date (DD/MM/YY)	Time	O ₂		Diff
			CEMs	RM	
			%	%	
1*	03/11/2022	11:31-12:00	12.11	11.99	-0.12
2*	03/11/2022	12:01-12:30	12.12	12.01	-0.11
3	03/11/2022	12:31-13:00	12.15	12.03	-0.11
4	03/11/2022	13:01-13:30	12.14	12.03	-0.11
5	03/11/2022	13:31-14:00	12.09	11.99	-0.10
6	03/11/2022	14:01-14:30	12.10	12.00	-0.10
7	03/11/2022	14:31-15:00	12.10	12.00	-0.10
8	03/11/2022	15:01-15:30	12.07	11.97	-0.09
9	03/11/2022	15:31-16:00	12.06	11.97	-0.09
10	03/11/2022	16:01-16:30	12.06	11.98	-0.09
11	03/11/2022	16:31-17:00	12.07	11.99	-0.09
12*	03/11/2022	17:01-17:30	11.65	11.97	0.32
Average			12.09	12.00	-0.10
Relative Accuracy (Compared with RM)					0.10%
Relative Accuracy Criteria ^{1/} (Compared with RM)					1%
Conclusion					Pass

Remark : * Sample with * is rejected data
Source : 1/ RA Criteria of O₂ is referred to U.S. EPA 40 CFR Part 60, Appendix B : Performance Specification 3 (PS-3)



Technical Manager

TY/PS/WI/WI

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Report No. : 2022-5005555 / 001-1 (Page 4 of 4)

Issued date : November 7, 2022

CLIENT : PTT ASAHI CHEMICAL COMPANY LIMITED
CONTACT : Khun Chawalit Puchongkawanin
ADDRESS : 8 Phangmuang Chapoh 3-1 Road, Huaypong Sub-District, Muang Rayong District, Rayong 21150
Tel. 094-423-9236

Analysis Report

SAMPLE DESCRIPTION : Emission Air
SAMPLE DESIGNATED AS : Relative Accuracy Test Audit: CO MEASUREMENT DATE : November 3, 2022
MEASUREMENT LOCATION : WWI Stack, PTT Asahi Chemical Company Limited, Rayong province
MEASUREMENT BY : Phatsakorn Soonthornwiphat

No.	Date (DD/MM/YY)	Time	CO				Diff
			Raw Data (at actual O ₂)		Corrected Value (at 7%O ₂)		
			CEMs	RM	CEMs	RM	
			ppm	ppm	ppm	ppm	
1*	03/11/2022	11:31-12:00	0.00	0.60	0.00	0.94	0.94
2	03/11/2022	12:01-12:30	0.00	0.58	0.00	0.91	0.91
3*	03/11/2022	12:31-13:00	0.00	0.62	0.00	0.97	0.97
4*	03/11/2022	13:01-13:30	0.00	0.58	0.00	0.91	0.91
5	03/11/2022	13:31-14:00	0.00	0.57	0.00	0.88	0.88
6	03/11/2022	14:01-14:30	0.00	0.56	0.00	0.88	0.88
7	03/11/2022	14:31-15:00	0.00	0.54	0.00	0.85	0.85
8	03/11/2022	15:01-15:30	0.00	0.47	0.00	0.73	0.73
9	03/11/2022	15:31-16:00	0.00	0.45	0.00	0.70	0.70
10	03/11/2022	16:01-16:30	0.00	0.46	0.00	0.72	0.72
11	03/11/2022	16:31-17:00	0.00	0.47	0.00	0.73	0.73
12	03/11/2022	17:01-17:30	0.00	0.45	0.00	0.71	0.71
Average					0.00	0.79	0.79
Confidence Coefficient							0.07
Relative Accuracy (Compared with Emission Standard, CO =690 ppm)							0.12%
Relative Accuracy Criteria ^{1/} (Compared with Emission Standard, CO= 690 ppm)							5%
Conclusion							Pass

Remarks : * Sample with * is rejected data
- Emission standard of CO at 7% O₂ = 690 ppm
Source : 1/ RA Criteria of CO is referred to U.S. EPA 40 CFR Part 60, Appendix B: Performance Specification 4 (PS-4) and compared with Industrial Emission Standards, Notification of the Ministry of Industry, B.E. 2549 (2006).



Technical Manager

TY/PS/WI/WI

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Report No. : 2022-5005555 / 001-3 (Page 1 of 3)

Issued date : November 7, 2022

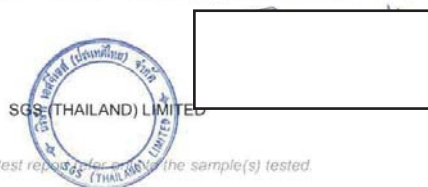
CLIENT : PTT ASAHI CHEMICAL COMPANY LIMITED
CONTACT : Khun Chawalit Puchongkawanin
ADDRESS : 8 Phangmuang Chapoh 3-1 Road, Huaypong Sub-District, Muang Rayong District, Rayong 21150
Tel. 094-423-9236

Analysis Report

SAMPLE DESCRIPTION : Emission Air
SAMPLE DESIGNATED AS : Relative Accuracy Test Audit : NO_x MEASUREMENT DATE : November 2, 2022
MEASUREMENT LOCATION : SAR Stack, PTT Asahi Chemical Company Limited, Rayong province
MEASUREMENT BY : Phatsakorn Soonthornwiphat

No.	Date (DD/MM/YY)	Time	NO _x				Diff
			Raw Data (at actual O ₂)		Corrected Value (at 7%O ₂)		
			CEMs	RM	CEMs	RM	
			ppm	ppm	ppm	ppm	
1*	02/11/2022	11:01-11:30	38.70	45.46	35.50	40.83	5.33
2	02/11/2022	11:31-12:00	38.25	43.69	35.20	39.35	4.16
3	02/11/2022	12:01-12:30	38.53	43.86	35.41	39.43	4.02
4	02/11/2022	12:31-13:00	38.27	43.98	35.16	39.53	4.37
5*	02/11/2022	13:01-13:30	37.41	43.16	34.34	38.76	4.41
6	02/11/2022	13:31-14:00	37.63	43.27	34.54	38.84	4.30
7	02/11/2022	14:01-14:30	37.35	42.34	34.25	38.36	4.11
8	02/11/2022	14:31-15:00	37.27	42.66	34.13	38.19	4.06
9	02/11/2022	15:01-15:30	37.81	43.33	34.57	38.72	4.15
10*	02/11/2022	15:31-16:00	38.67	44.49	35.31	39.68	4.37
11	02/11/2022	16:01-16:30	39.29	44.93	35.85	40.04	4.19
12	02/11/2022	16:31-17:00	36.08	41.05	33.31	36.98	3.67
Average					34.71	38.83	4.11
Confidence Coefficient							0.15
Relative Accuracy (Compared with RM)							10.99%
Relative Accuracy Criteria ^{1/} (Compared with RM)							20%
Conclusion							Pass

Remarks : * Sample with * is rejected data
- Emission standard of the plant; NO_x at 7% O₂ = 50 ppm
Source : ^{1/} RA Criteria of NO_x is referred to U.S. EPA 40 CFR Part 60, Appendix B: Performance Specification 2 (PS-2).



TY/PS/WI/WI

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Report No. : 2022-5005555 / 001-3 (Page 2 of 3)

Issued date : November 7, 2022

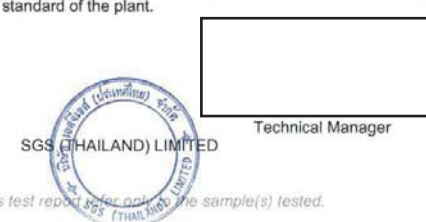
CLIENT : PTT ASAHI CHEMICAL COMPANY LIMITED
CONTACT : Khun Chawalit Puchongkawanin
ADDRESS : 8 Phangmuang Chapoh 3-1 Road, Huaypong Sub-District, Muang Rayong District, Rayong 21150
Tel. 094-423-9236

Analysis Report

SAMPLE DESCRIPTION : Emission Air
SAMPLE DESIGNATED AS : Relative Accuracy Test Audit: SO₂ MEASUREMENT DATE : November 2, 2022
MEASUREMENT LOCATION : SAR Stack, PTT Asahi Chemical Company Limited, Rayong province
MEASUREMENT BY : Phatsakorn Soonthornwiphat

No.	Date (DD/MM/YY)	Time	SO ₂				Diff
			Raw Data (at actual O ₂)		Corrected Value (at 7%O ₂)		
			CEMs	RM	CEMs	RM	
			ppm	ppm	ppm	ppm	
1	02/11/2022	11:01-11:30	2.81	3.12	2.58	2.80	0.23
2	02/11/2022	11:31-12:00	2.62	2.66	2.41	2.39	-0.02
3	02/11/2022	12:01-12:30	2.82	2.90	2.59	2.60	0.01
4	02/11/2022	12:31-13:00	3.12	3.04	2.87	2.74	-0.13
5	02/11/2022	13:01-13:30	3.55	3.17	3.25	2.84	-0.41
6	02/11/2022	13:31-14:00	3.69	3.17	3.39	2.85	-0.54
7	02/11/2022	14:01-14:30	4.03	3.27	3.70	2.96	-0.74
8*	02/11/2022	14:31-15:00	4.28	3.38	3.92	3.02	-0.89
9	02/11/2022	15:01-15:30	4.46	3.74	4.08	3.34	-0.73
10*	02/11/2022	15:31-16:00	5.13	4.37	4.68	3.89	-0.79
11	02/11/2022	16:01-16:30	5.32	5.04	4.86	4.49	-0.36
12*	02/11/2022	16:31-17:00	4.11	5.10	3.80	4.59	0.80
Average					3.30	3.00	-0.30
Confidence Coefficient							0.26
Relative Accuracy (Compared with Emission Standard,SO ₂ = 28 ppm)							2.01%
Relative Accuracy Criteria ^{1/} (Compared with Emission Standard, SO ₂ =28 ppm)							10 %
Conclusion							Pass

Remarks : * Sample with * is rejected data
- Emission standard of the plant; SO₂ at 7% O₂ = 28 ppm
Source : ^{1/} RA Criteria of SO₂ is referred to U.S. EPA 40 CFR Part 60, Appendix B : Performance Specification 2 (PS-2) and compared with emission standard of the plant.



TY/PS/WI/WI

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Report No. : 2022-5005555 / 001-3 (Page 3 of 3)

Issued date : November 7, 2022

CLIENT : PTT ASAHI CHEMICAL COMPANY LIMITED
CONTACT : Khun Chawalit Puchongkawanin
ADDRESS : 8 Phangmuang Chapoh 3-1 Road, Huaypong Sub-District, Muang Rayong District, Rayong 21150
Tel. 094-423-9236

Analysis Report

SAMPLE DESCRIPTION : Emission Air
SAMPLE DESIGNATED AS : Relative Accuracy Test Audit: O₂ MEASUREMENT DATE : November 2, 2022
MEASUREMENT LOCATION : SAR Stack, PTT Asahi Chemical Company Limited, Rayong province
MEASUREMENT BY : Phatsakorn Soonthornwiphat

No.	Date (DD/MM/YY)	Time	O ₂		Diff
			CEMs	RM	
			%	%	
1	02/11/2022	11:01-11:30	5.75	5.43	-0.32
2	02/11/2022	11:31-12:00	5.80	5.47	-0.33
3	02/11/2022	12:01-12:30	5.77	5.44	-0.33
4	02/11/2022	12:31-13:00	5.77	5.43	-0.34
5	02/11/2022	13:01-13:30	5.76	5.42	-0.34
6	02/11/2022	13:31-14:00	5.75	5.42	-0.34
7	02/11/2022	14:01-14:30	5.74	5.56	-0.18
8	02/11/2022	14:31-15:00	5.72	5.37	-0.35
9	02/11/2022	15:01-15:30	5.70	5.34	-0.35
10*	02/11/2022	15:31-16:00	5.68	5.32	-0.36
11*	02/11/2022	16:01-16:30	5.67	5.30	-0.37
12*	02/11/2022	16:31-17:00	5.84	5.47	-0.37
Average			5.75	5.43	-0.32
Relative Accuracy (Compared with RM)			0.32%		
Relative Accuracy Criteria ¹⁾ (Compared with RM)			1%		
Conclusion			Pass		

Remark : * Sample with * is rejected data
Source : 1/ RA Criteria of O₂ is referred to U.S. EPA 40 CFR Part 60, Appendix B : Performance Specification 3 (PS-3)



Technical Manager

TY/PS/WI/WI

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 PTT Asahi Chemical Co.,Ltd.		TEST AND CALIBRATION REPORT FOR CONTINUOUS EMISSION MONITORING SYSTEM (CEMS)		Mo. No.: _____ Page No.: _____				
Area: AN		Location: WWI						
Tag Number: WAT-9131, WAT-9132, WCO2-913, WO2T-913								
ANALYZER INFORMATION								
1	Anal Type:	Gas Analyzer	Brand:	SIEMENS	Model:	ULTRAMAT 6		
	S/N:		Parameter:	CO, NO, SO2				
2	Anal Type:	Gas Analyzer	Brand:	SIEMENS	Model:	OXYMAT 61		
	S/N:		Parameter:	Oxygen (O2)				
3	Anal Type:		Brand:		Model:			
	S/N:		Parameter:					
STANDARD GAS INFORMATION								
Gas Type	Std Conc.	Unit	Certificate Number	Cer. Date	Expire Date	CGA		
CO	82.2	ppm	1770/21	04/05/2021	04/05/2023	660		
NO	83.0	ppm	1770/21	04/05/2021	04/05/2023	660		
SO2	49.9	ppm	1770/21	04/05/2021	04/05/2023	660		
O2	20.9	%Vol	1517/20	28/03/2020	27/03/2024	590		
N2	Balance	%				580		
ASFOUND / VALIDATION								
Parameter	Range	Unit	Zero			Span		
			Idel	Actual	Error (+/- % FS)	Idel	Actual	Error (+/- % FS)
CO	0 - 100	ppm	0.00	1.10	1.10	82.2	82.78	0.70
SO2	0 - 100	ppm	0.00	-0.92	-0.92	79.9	78.56	-1.68
NOx	0 - 100	ppm	0.00	-0.84	-0.84	83.0	81.86	-1.34
O2	0 - 25	%Vol	0.00	0.32	1.28	20.9	20.62	-1.34
CALIBRATION								
Parameter	Range	Unit	Zero			Span		
			Idel	Actual	Error (+/- % FS)	Idel	Actual	Error (+/- % FS)
CO	0 - 100	ppm	0.00	0.00	0.00	82.2	82.2	0.00
SO2	0 - 100	ppm	0.00	0.00	0.00	79.9	79.9	0.00
NOx	0 - 100	ppm	0.00	0.00	0.00	83.0	83.0	0.00
O2	0 - 25	%Vol	0.00	0.00	0.00	20.9	20.9	0.00
Note: - PM check - Test standard gas and calibrate. - Change new max converter - Change new Filter								
Reported By: _____		Date: <u>16/4/2022</u>						


 PTT Asahi Chemical Co.,Ltd.		TEST AND CALIBRATION REPORT FOR CONTINUOUS EMISSION MONITORING SYSTEM (CEMS)		Mo. No.: _____ Page No.: _____	
Area: AN		Location: WWI			
Tag Number: WAT-9131, WAT-9132, WCO2-913, WO2T-913					
Sampling Handling System					
Item	Description	Set point	Actual	Remark	
1	Z-Purge	Green	/		
2	Air Conditioner	Cool	/		
3	Instrument Air Supply	Supply	/		
4	Heated Probe Box		/		
4.1	Filter Probe	Clean	/		
4.2	Heated Probe	Heat 120 °C	120 °C		
4.3	BB System	Normal	/		
5	Heated Sample Line		/		
5.1	Heated line Temp.	Heat 120 °C	120 °C		
5.2	Sample line tube	Clean	/		
6	Sample Gas Cooler		/		
6.1	Cooler Temp	3.0 - 5.0 °C	3.0 °C		
6.2	Auto drain	Rotate	/		
6.3	Peristaltic pump hose	Normal	/		
7	Sample Pump	Run	/		
8	Coalescing Filter	Clean	/		
9	Moisture Controller	Normal	/		
10	Moisture Sensor	Normal	/		
11	Perma Pure Dryer	Clean	/		
12	NO2/NO Converter	Heat	/		
13	DFU Filter	Clean	/		
14	Air Pressure Regulator (PR1)	0.5 kg/cm2	0.5 kg/cm2		
15	Air Pressure Regulator (PR2)	3.5 kg/cm3	3.5 kg/cm3		
16	Cal. Gas Flow (FL-1)	0.0 L/h.	0.0 L/h		
17	Bypass Flow (FL-2)	OFF	/	Always off	
18	CO/SO2/NOx Sample Flow (FL-3)	60 L/h.	60 L/h		
19	O2 Sample Flow (FL-4)	40 L/h.	40 L/h		
20	Air Pure Perma Pure (FL-5)	5 L/m.	5 L/m		
21	Calibration Switch Control	OFF Position	/		
22	N2 Gas Pressure in Cylinder	> 500 psi.	4200 / psi		
23	O2 Gas Pressure in Cylinder	> 500 psi.	1400 / psi		
24	Mix Gas Pressure in Cylinder	> 500 psi.	1150 / psi		
25	PLC Operation	Normal	/		
Note:					
Reported By: _____		Date: <u>16/4/2022</u>			


 PTT Asahi Chemical Co., Ltd.	TEST AND CALIBRATION REPORT FOR CONTINUOUS EMISSION MONITORING SYSTEM (CEMS)	Mo. No.: _____ Page No.: _____	
OPACITY INFORMATION			
Area:	AN	Location:	WW1
Tag Number:	WTSPT-913		
ANALYZER INFORMATION			
Brand:	Durag	Model:	D-R 290
Dust Range: (mg/m3)	0 - 100	b Factor:	O/P: 4-20 mA.
EQUIPMENT CHECK LIST			
Item	Description	Set Point	Actual
1	Blower#1	Running	OK
2	Filter Blower	Clean	Clean
3	Fail Safe Shutter#A	Normal	OK
4	Fail Safe Shutter#B	Normal	OK
5	Display Unit (AZ)	Normal	OK
6	Evaluation Unit (AW)	Normal	OK
AUDIT FILTER INFORMATION			
Item	Attenuation	Certificate Number	Expire Date
1	12.4%		
2	19.8%		
3	34.9%		
OPACITY CHECK & CALIBRATE			
Item	Description	Set Point	Actual
			Before After
1	Dust Sample Reading (mg/m3)	-	11.5 mg/m3 11.0 mg/m3
2	Opacity Sample Reading (%)	-	- % - %
2	Zero Check	0.0%	0.3 % 0.1 %
3	Span Check	71.0%	71.9 % 71.0 %
4	Window Check	<6.0%	0.3 % 0.2 %
AUDIT FILTER CHECK			
Attenuation	Before	After	Remark
	Idel Actual Error (+/- % FS)	Idel Actual Error (+/- % FS)	
12.4%	12.4		12.4
19.8%	19.8		19.8
34.9%	24.9		24.9
Note: - PM check - Test opacity zero/span check			
Reported By: _____		Date: 16/11/2022	

 PTT Asahi Chemical Co., Ltd.	TEST AND CALIBRATION REPORT FOR CONTINUOUS EMISSION MONITORING SYSTEM (CEMS)	Mo. No.: _____ Page No.: _____						
Area:	AN	Location:	AOG					
Tag Number:	GAT-9131, GAT-9132, GCOT-913, G02T-913							
ANALYZER INFORMATION								
1	Anal Type:	Gas Analyzer	Brand:	SIEMENS	Model:	ULTRAMAT 6		
	S/N:		Parameter:	CO, NO, SO2				
2	Anal Type:	Gas Analyzer	Brand:	SIEMENS	Model:	OXYMAT 61		
	S/N:		Parameter:	Oxygen (O2)				
3	Anal Type:		Brand:		Model:			
	S/N:		Parameter:					
STANDARD GAS INFORMATION								
Gas Type	Std Conc.	Unit	Certificate Number	Cer. Date	Expire Date	CGA		
CO	70.8	ppm	0821/22	24/05/2022	24/05/2024	660		
NO	80.4	ppm	0821/22	24/05/2022	24/05/2024	660		
SO2	80.3	ppm	0821/22	24/05/2022	24/05/2024	660		
O2	20.9	%Vol	1517/20	28/03/2020	27/03/2024	670		
N2	Balance	%				580		
ASFOUND / VALIDATION								
Parameter	Range	Unit	Zero			Span		
			Idel	Actual	Error (+/- % FS)	Idel	Actual	Error (+/- % FS)
CO	0 - 100	ppm	0.00	1.22	1.22	79.8	82.53	3.42
SO2	0 - 100	ppm	0.00	-3.14	-3.14	80.3	78.02	-3.91
NOx	0 - 100	ppm	0.00	-1.28	-1.28	80.9	78.15	-3.40
O2	0 - 25	%Vol	0.00	-0.12	-0.48	20.9	20.74	-0.77
CALIBRATION								
Parameter	Range	Unit	Zero			Span		
			Idel	Actual	Error (+/- % FS)	Idel	Actual	Error (+/- % FS)
CO	0 - 100	ppm	0.00	0.00	0.00	79.8	79.8	0.00
SO2	0 - 100	ppm	0.00	0.00	0.00	80.3	80.3	0.00
NOx	0 - 100	ppm	0.00	0.00	0.00	80.9	80.9	0.00
O2	0 - 25	%Vol	0.00	0.00	0.00	20.9	20.9	0.00
Note: - PM check - Test standard gas and calibrate. - Change new nox converter - Change new filter								
Reported By: _____		Date: 15/11/2022						

 TEST AND CALIBRATION REPORT FOR CONTINUOUS EMISSION MONITORING SYSTEM (CEMS)		Mo. No.: _____ Page No.: _____		
Area:	AN	Location:	A06	
Tag Number:	GAT-9131, GAT-9132, GCOT-913, G02T-913			
Sampling Handling System				
Item	Description	Set point	Actual	Remark
1	Z-Purge	Green	/	
2	Air Conditioner	Cool	/	
3	Instrument Air Supply	Supply	/	
4	Heated Probe Box			
4.1	Filter Probe	Clean	/	
4.2	Heated Probe	Heat 120 °C	120 °C	
4.3	BB System	Normal	/	
5	Heated Sample Line			
5.1	Heated line Temp.	Heat 120 °C	120 °C	
5.2	Sample line tube	Clean	/	
6	Sample Gas Cooler			
6.1	Cooler Temp	3.0 - 5.0 °C	3.0 °C	
6.2	Auto drain	Rotate	/	
6.3	Peristaltic pump hose	Normal	/	
7	Sample Pump	Run	/	
8	Coalescing Filter	Clean	/	
9	Moisture Controller	Normal	/	
10	Moisture Sensor	Normal	/	
11	Perma Pure Dryer	Clean	/	
12	NO2/NO Converter	Heat	/	
13	DFU Filter	Clean	/	
14	Air Pressure Regulator (PR1)	0.5 kg/cm2	0.5 kg/cm2	
15	Air Pressure Regulator (PR2)	3.5 kg/cm3	3.5 kg/cm3	
16	Cal. Gas Flow (FL-1)	0.0 L/h.	0.0 L/h	
17	Bypass Flow (FL-2)	OFF	/	Always off
18	CO/SO2/NOx Sample Flow (FL-3)	60 L/h.	60 L/h	
19	O2 Sample Flow (FL-4)	40 L/h.	40 L/h	
20	Air Pure Perma Pure (FL-5)	5 L/m.	5 L/h	
21	Calibration Switch Control	OFF Position	/	
22	N2 Gas Pressure in Cylinder	> 500 psi.	1900 / psi	
23	O2 Gas Pressure in Cylinder	> 500 psi.	1200 / psi	
24	Mix Gas Pressure in Cylinder	> 500 psi.	1500 / psi	
25	PLC Operation	Normal	/	
Note:				
Reported By: _____		Date: 15/11/2022		

 TEST AND CALIBRATION REPORT FOR CONTINUOUS EMISSION MONITORING SYSTEM (CEMS)		Mo. No.: _____ Page No.: _____					
Area:	AN	Location:	A06				
Tag Number:	GTSP7-913						
OPACITY INFORMATION							
Brand: Durag Model: D-R 290 S/N: O/P: 4-20 mA.							
Dust Range: (mg/m3) 0 - 100 b Factor:							
ANALYZER INFORMATION							
EQUIPMENT CHECK LIST							
Item	Description	Set Point	Actual	Remark			
1	Blower#1	Running	OK				
2	Filter Blower	Clean	Clean				
3	Fail Safe Shutter#A	Normal	OK				
4	Fail Safe Shutter#B	Normal	OK				
5	Display Unit (AZ)	Normal	OK				
6	Evaluation Unit (AW)	Normal	OK				
AUDIT FILTER INFORMATION							
Item	Attenuation	Certificate Number	Expire Date				
1	12.4%						
2	19.8%						
3	34.9%						
OPACITY CHECK & CALIBRATE							
Item	Description	Set Point	Actual				
			Before	After			
1	Dust Sample Reading (mg/m3)	-	11.3 mg/m3	11.0 mg/m3			
2	Opacity Sample Reading (%)	-	- %	- %			
2	Zero Check	0.0%	0.2 %	0.0 %			
3	Span Check	71.0%	71.7 %	71.0 %			
4	Window Check	<6.0%	0.3 %	0.2 %			
AUDIT FILTER CHECK							
Attenuation	Before			After		Remark	
	Idel	Actual	Error (+/- %)	Idel	Actual		Error (+/- %)
12.4%	12.4			12.4			
19.8%	19.8			19.8			
34.9%	24.9			24.9			
Note: <ul style="list-style-type: none"> - PM check - Test zero/span opacity check 							
Reported By: _____				Date: 15/11/2022			

 PTT Asahi Chemical Co., Ltd.		TEST AND CALIBRATION REPORT FOR CONTINUOUS EMISSION MONITORING SYSTEM (CEMS)		Mo. No.: _____ Page No.: _____				
Area: MMA		Location: SAR						
Tag Number: FAT-430 A/B/C								
ANALYZER INFORMATION								
1	Anal Type:	Gas Analyzer	Brand:	SIEMENS	Model:	ULTRAMAT 6		
	S/N:	XD-204	Parameter:	CO, NO, SO2				
2	Anal Type:	Gas Analyzer	Brand:	SIEMENS	Model:	OXYMAT 61		
	S/N:	XD-203	Parameter:	Oxygen (O2)				
3	Anal Type:		Brand:		Model:			
	S/N:		Parameter:					
STANDARD GAS INFORMATION								
Gas Type	Std Conc.	Unit	Certificate Number	Cer. Date	Expire Date	CGA		
CO	81.3	ppm	1020/21	22/03/2021	22/03/2023	660		
NO	76.2	ppm	1020/21	22/03/2021	22/03/2023	660		
SO2	21.0	%Vol	1517/20	28/03/2020	27/03/2024	590		
N2	Balance	%				730		
ASFOUND / VALIDATION								
Parameter	Range	Unit	Zero			Span		
			Idel	Actual	Error (+/- % FS)	Idel	Actual	Error (+/- % FS)
CO	0 - 100	ppm						
SO2	0 - 100	ppm	0.00	0.23	0.23	76.2	74.7	-1.97
NOx	0 - 100	ppm	0.00	0.37	0.37	81.3	79.6	-2.09
O2	0 - 25	%Vol	0.00	0.16	0.64	21.0	20.7	-1.43
CALIBRATION								
Parameter	Range	Unit	Zero			Span		
			Idel	Actual	Error (+/- % FS)	Idel	Actual	Error (+/- % FS)
CO	0 - 100	ppm						
SO2	0 - 100	ppm	0.00	0.00	0.00	76.2	76.2	0.00
NOx	0 - 100	ppm	0.00	0.00	0.00	81.3	81.3	0.00
O2	0 - 25	%Vol	0.00	0.00	0.00	21.0	21.0	0.00
Note: - pm check - Change new nox converter - Change new Filter - Test standard gas and calibrate.								
Reported By: _____			Date: 14/4/2022					

 PTT Asahi Chemical Co., Ltd.		TEST AND CALIBRATION REPORT FOR CONTINUOUS EMISSION MONITORING SYSTEM (CEMS)		Mo. No.: _____ Page No.: _____	
Area: MMA		Location: SAR			
Tag Number: FAT-430 A/B/C					
Sampling Handling System					
Item	Description	Set point	Actual	Remark	
1	Z-Purge	Green	/		
2	Air Conditioner	Cool	/		
3	Instrument Air Supply	Supply	/		
4	Heated Probe Box		/		
4.1	Filter Probe	Clean	/		
4.2	Heated Probe	Heat 120 °C	120 °C		
4.3	BB System	Normal	/		
5	Heated Sample Line		/		
5.1	Heated line Temp.	Heat 120 °C	120 °C		
5.2	Sample line tube	Clean	/		
6	Sample Gas Cooler		/		
6.1	Cooler Temp	3.0 - 5.0 °C	3.0 °C		
6.2	Auto drain	Rotate	/		
6.3	Peristaltic pump hose	Normal	/		
7	Sample Pump	Run	/		
8	Coalescing Filter	Clean	/		
9	Moisture Controller	Normal	/		
10	Moisture Sensor	Normal	/		
11	Perma Pure Dryer	Clean	/		
12	NO2/NO Converter	Heat	/		
13	DFU Filter	Clean	/		
14	Air Pressure Regulator (PR1)	0.5 kg/cm2	0.5 kg/cm2		
15	Air Pressure Regulator (PR2)	3.5 kg/cm3	3.5 kg/cm3		
16	Cal. Gas Flow (FL-1)	0.0 L/h.	0.0 L/h		
17	Bypass Flow (FL-2)	OFF	/	Always off	
18	CO/SO2/NOx Sample Flow (FL-3)	60 L/h.	60 L/h		
19	O2 Sample Flow (FL-4)	40 L/h.	40 L/h		
20	Air Pure Perma Pure (FL-5)	5 L/m.	5 L/h		
21	Calibration Switch Control	OFF Position	/		
22	N2 Gas Pressure in Cylinder	> 500 psi.	1600 / psi		
23	O2 Gas Pressure in Cylinder	> 500 psi.	530 / psi		
24	Mix Gas Pressure in Cylinder	> 500 psi.	820 / psi		
25	PLC Operation	Normal	/		
Note:					
Reported By: _____			Date: 14/4/2022		

ผลการตรวจสอบค่าความดันลดคร่อมตัวกรอง Demister (Mis Eliminator) ของระบบบำบัดมลพิษปล่อง SAR

ระหว่างเดือนกรกฎาคม-ธันวาคม 2565

Date & Time	Normalized DP across demister@27,025 Nm ³ /hr [Minimum 240 mmH ₂ O]	FD-420 demister vendor
	FPX2-420B-FPX2-420A	
	mmH ₂ O	
26-ก.ค.-22 15:00*	768	MECs
02-ส.ค.-22 15:00	698	MECs
09-ส.ค.-22 10:00	760	MECs
16-ส.ค.-22 14:30	711	MECs
23-ส.ค.-22 14:30	726	MECs
30-ส.ค.-22 16:30	700	MECs
06-ก.ย.-22 18:30	647	MECs
13-ก.ย.-22 11:30	617	MECs
04-ต.ค.-22 10:00	732	MECs
11-ต.ค.-22 00:00	747	MECs
18-ต.ค.-22 15:00	717	MECs
01-พ.ย.-22 10:00	758	MECs
08-พ.ย.-22 13:45	725	MECs
15-พ.ย.-22 13:30	673	MECs
22-พ.ย.-22 13:30	674	MECs
29-พ.ย.-22 13:30	645	MECs
06-ธ.ค.-22 13:30	648	MECs
13-ธ.ค.-22 13:30	676	MECs
20-ธ.ค.-22 13:30	680	MECs

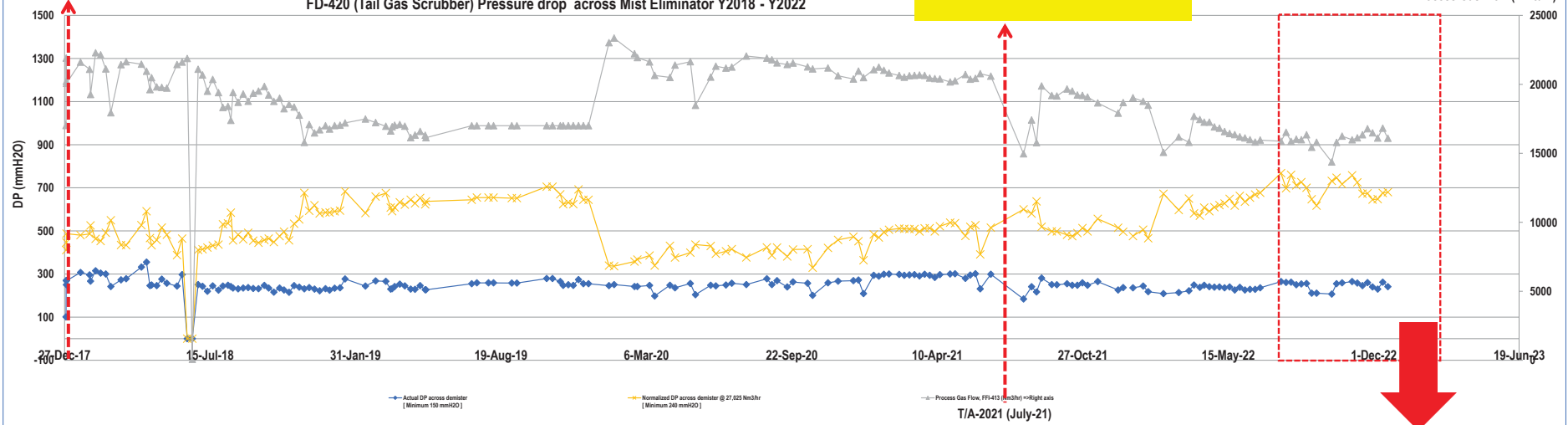
Remark: *Collect only 1 data because SAR plant S/D

Replace New MECs mist eliminator
in T/A-2021 (July)

New MECs mist eliminator monitoring

FD-420 (Tail Gas Scrubber) Pressure drop across Mist Eliminator Y2018 - Y2022

26 Dec 2022 by Navapon J.
Process Gas Flow (Nm³/hr)



- Result :**
1. Normalized pressure drop of FD-420 mist eliminator is stable.
Avg. Normalized pressure drop of FD-420 = 700 mmH₂O
[Criteria is 240 mmH₂O minimum]
 2. FD-420 demister is in good condition to control TSP emission.