

ภาคผนวก ค

ใบรับรองผลการตรวจวิเคราะห์ผลกระทบล้าง

คุณภาพอากาศในบรรยากาศ



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong
Thailand 21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391222

Date Received : Aug 16, 2023

Date Reported : Aug 22, 2023

Report Number: 2737087-1C9

Page 1 of 1

Sample Description	Air Quality						
Location	samsung (GPS 47P 0724381, 1402551)						
Parameter	Nitrogen dioxide (ppm)						
Measurement Date	Aug 09, 2023 - Aug 16, 2023						
Measurement by	Mongkon Phalathip						
Time	2391222-1 Aug 09, 2023	2391222-2 Aug 10, 2023	2391222-3 Aug 11, 2023	2391222-4 Aug 12, 2023	2391222-5 Aug 13, 2023	2391222-6 Aug 14, 2023	2391222-7 Aug 15, 2023
11:00 AM - 12:00 PM	0.004	0.003	0.002	0.004	0.004	0.012	0.007
12:00 PM - 01:00 PM	0.003	0.003	0.003	0.008	0.004	0.018	0.006
01:00 PM - 02:00 PM	0.004	0.003	0.003	0.006	0.005	0.020	0.006
02:00 PM - 03:00 PM	0.006	0.004	0.004	0.006	0.006	0.018	0.006
03:00 PM - 04:00 PM	0.006	0.005	0.005	0.005	0.006	0.025	0.006
04:00 PM - 05:00 PM	0.005	0.004	0.011	0.008	0.005	0.029	0.007
05:00 PM - 06:00 PM	0.004	0.004	0.010	0.008	0.005	0.008	0.011
06:00 PM - 07:00 PM	0.003	0.004	0.007	0.008	0.007	0.009	0.014
07:00 PM - 08:00 PM	0.003	0.007	0.008	0.006	0.007	0.009	0.014
08:00 PM - 09:00 PM	0.003	0.003	0.008	0.007	0.006	0.008	0.013
09:00 PM - 10:00 PM	0.002	0.004	0.006	0.007	0.004	0.007	0.016
10:00 PM - 11:00 PM	0.008	0.004	0.005	0.011	0.004	0.006	0.014
11:00 PM - 12:00 AM	0.006	0.003	0.006	0.012	0.008	0.006	0.013
12:00 AM - 01:00 AM	0.008	0.003	0.007	0.009	0.008	0.007	0.008
01:00 AM - 02:00 AM	0.009	0.009	0.007	0.008	0.009	0.008	0.007
02:00 AM - 03:00 AM	0.005	0.009	0.010	0.011	0.007	0.011	0.008
03:00 AM - 04:00 AM	0.005	0.004	0.010	0.010	0.007	0.007	0.006
04:00 AM - 05:00 AM	0.007	0.004	0.014	0.012	0.008	0.016	0.007
05:00 AM - 06:00 AM	0.006	0.003	0.015	0.014	0.011	0.017	0.008
06:00 AM - 07:00 AM	0.005	0.004	0.012	0.013	0.010	0.007	0.009
07:00 AM - 08:00 AM	0.005	0.004	0.009	0.013	0.008	0.014	0.010
08:00 AM - 09:00 AM	0.004	0.004	0.009	0.008	0.009	0.007	0.008
09:00 AM - 10:00 AM	0.003	0.004	0.008	0.004	0.009	0.006	0.006
10:00 AM - 11:00 AM	0.003	0.003	0.005	0.003	0.013	0.007	0.009
Average	0.005	0.004	0.008	0.008	0.007	0.012	0.009
1hr - Maximum	0.008	0.009	0.015	0.014	0.013	0.029	0.016
Standard 1hr - Average	0.170	0.170	0.170	0.170	0.170	0.170	0.170

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

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

Approved by

Tanyatom Mongkornjirawasi
Supervisor

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08/22/2024



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong
Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant



TESTING

No.0042

Lot ID: 2391009

Date Received : Aug 16, 2023

Date Reported : Aug 22, 2023

Report Number: 2736754-1

Page 1 of 1

Sample Description	Air Quality			
Location	samsung (GPS 47P 0724381, 1402551)			
Date Analysis Commenced	Aug 18, 2023			
Condition of Sample	Drawn into one glass filter paper (8x10 inch) placed in plastic bag			
Sample Number	Sampled Date	Total Suspended Particulate (mg/m3)	Barometric Pressure (mm Hg)	Atmospheric Temperature (°C)
2391009-1	Aug 09 - Aug 10, 2023	0.028	756	31
2391009-2	Aug 10 - Aug 11, 2023	0.026	756	31
2391009-3	Aug 11 - Aug 12, 2023	0.023	756	31
2391009-4	Aug 12 - Aug 13, 2023	0.032	756	31
2391009-5	Aug 13 - Aug 14, 2023	0.021	756	31
2391009-6	Aug 14 - Aug 15, 2023	0.032	756	31
2391009-7	Aug 15 - Aug 16, 2023	0.030	756	31
Guideline	0.33			

Reference Method

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

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

Sampled By : Mongkon Phalathip

Remark :

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

Approved by

Thanita Kulsurwong
Scientist (4)

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05/25/2024 / 13:44

S:\Reports_Air Ambient\T1\aya_1.rpt (12:25PM)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong
Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391017

Date Received : Aug 16, 2023

Date Reported : Aug 22, 2023

Report Number: 2736766-1

Page 1 of 1

Sample Description : Air Quality

Location : กรุงเทพมหานคร (GPS 47P 0730051, 1409677)

Parameter : Nitrogen dioxide (ppm)

Measurement Date : Aug 09, 2023 - Aug 16, 2023

Measurement by : Mongkon Phalathip

Time	2391017-1 Aug 09, 2023	2391017-2 Aug 10, 2023	2391017-3 Aug 11, 2023	2391017-4 Aug 12, 2023	2391017-5 Aug 13, 2023	2391017-6 Aug 14, 2023	2391017-7 Aug 15, 2023
12:00 PM - 01:00 PM	0.001	0.002	0.002	0.002	0.001	<0.001	<0.001
01:00 PM - 02:00 PM	0.002	0.001	0.002	0.002	<0.001	<0.001	<0.001
02:00 PM - 03:00 PM	<0.001	<0.001	0.001	0.001	<0.001	<0.001	<0.001
03:00 PM - 04:00 PM	0.001	<0.001	0.001	0.004	<0.001	0.001	<0.001
04:00 PM - 05:00 PM	0.001	<0.001	0.002	0.001	<0.001	<0.001	<0.001
05:00 PM - 06:00 PM	0.001	<0.001	<0.001	0.001	0.002	<0.001	<0.001
06:00 PM - 07:00 PM	0.001	0.002	<0.001	0.002	0.002	0.002	<0.001
07:00 PM - 08:00 PM	0.002	0.004	0.001	0.002	0.001	<0.001	<0.001
08:00 PM - 09:00 PM	0.002	0.003	0.001	0.001	<0.001	<0.001	<0.001
09:00 PM - 10:00 PM	0.003	0.002	<0.001	0.002	<0.001	<0.001	<0.001
10:00 PM - 11:00 PM	0.003	0.002	0.002	0.001	<0.001	<0.001	0.001
11:00 PM - 12:00 AM	0.002	0.004	0.008	0.001	<0.001	<0.001	0.001
12:00 AM - 01:00 AM	0.001	0.002	0.003	<0.001	<0.001	<0.001	<0.001
01:00 AM - 02:00 AM	0.001	0.002	0.001	<0.001	<0.001	<0.001	<0.001
02:00 AM - 03:00 AM	0.002	0.002	0.002	0.001	<0.001	<0.001	<0.001
03:00 AM - 04:00 AM	0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001
04:00 AM - 05:00 AM	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
05:00 AM - 06:00 AM	0.007	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
06:00 AM - 07:00 AM	0.006	0.001	0.001	<0.001	<0.001	<0.001	<0.001
07:00 AM - 08:00 AM	0.004	0.002	0.001	0.001	<0.001	0.001	<0.001
08:00 AM - 09:00 AM	0.014	0.006	0.002	0.003	0.001	0.002	0.003
09:00 AM - 10:00 AM	0.007	0.006	0.003	0.002	0.001	0.004	0.002
10:00 AM - 11:00 AM	0.003	0.002	0.003	0.002	0.001	0.001	0.001
11:00 AM - 12:00 PM	0.002	<0.001	0.002	0.001	<0.001	<0.001	0.002
Average	0.003	0.002	0.002	0.001	<0.001	0.001	<0.001
1hr - Maximum	0.014	0.006	0.008	0.004	0.002	0.004	0.003
Standard 1hr - Average	0.170	0.170	0.170	0.170	0.170	0.170	0.170

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

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

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Approved by

Tanyat Mongkonjirawat

Tanyat Mongkonjirawat
Supervisor

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong
Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant



TESTING

No.0042

Lot ID: 2391019

Date Received : Aug 16, 2023

Date Reported : Aug 22, 2023

Report Number: 2736769-1

Page 1 of 1

Sample Description : Air Quality

Location : กรุงเทพมหานคร (GPS 47P 0730051, 1409677)

Date Analysis Commenced : Aug 18, 2023

Condition of Sample : Drawn into one glass filter paper (8x10 inch) placed in plastic bag

Sample Number	Sampled Date	Total Suspended Particulate (mg/m3)	Barometric Pressure (mm Hg)	Atmospheric Temperature (°C)
2391019-1	Aug 09 - Aug 10, 2023	0.059	756	31
2391019-2	Aug 10 - Aug 11, 2023	0.069	756	31
2391019-3	Aug 11 - Aug 12, 2023	0.062	756	31
2391019-4	Aug 12 - Aug 13, 2023	0.059	756	31
2391019-5	Aug 13 - Aug 14, 2023	0.071	756	31
2391019-6	Aug 14 - Aug 15, 2023	0.070	756	31
2391019-7	Aug 15 - Aug 16, 2023	0.053	756	31
Guideline		0.33		

Reference Method

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

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

Sampled By : Mongkon Phalathip

Remark :

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

Approved by

Thanita K.

Thanita Kulsurwong
Scientist (4)

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IS25-209 / TMAE

S:\Reports_Air Ambient\Tays_1.rpt (12:30PM)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391225

Date Received : Aug 16, 2023

Date Reported : Aug 23, 2023

Report Number : 2737093-1 C9

Page 1 of 2

Sample Number : 2391225-1 to 7
Parameter : Wind Speed / Wind Direction
Location : กรุงเทพมหานคร (GPS 47P 0730823, 1407374)
Sampling Date : Aug 09 - Aug 16, 2023
Sampling by : Mongkon Phalathip

Time	Aug 09 - Aug 10, 2023		Aug 10 - Aug 11, 2023		Aug 11 - Aug 12, 2023		Aug 12 - Aug 13, 2023		Aug 13 - Aug 14, 2023		Aug 14 - Aug 15, 2023		Aug 15 - Aug 16, 2023	
	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)	WS (m/s)	WD (deg)
09:00 AM - 10:00 AM	1.1	256.0	WSW	0.5	337.0	NNW	0.1	-	-	0.8	300.0	WNW	1.0	288.0
10:00 AM - 11:00 AM	1.5	277.0	W	0.0	-	-	1.0	268.0	W	1.6	329.0	NNW	0.9	184.0
11:00 AM - 12:00 PM	0.3	287.0	WNW	0.7	251.0	WSW	0.8	316.0	NW	1.5	184.0	S	1.9	318.0
12:00 PM - 01:00 PM	1.1	348.0	NNW	0.9	253.0	WSW	0.0	-	-	0.4	259.0	W	0.4	182.0
01:00 PM - 02:00 PM	0.0	-	-	1.1	256.0	WSW	0.7	262.0	W	0.8	266.0	W	0.5	216.0
02:00 PM - 03:00 PM	1.7	231.0	SW	1.5	277.0	W	2.3	225.0	SW	1.7	194.0	SSW	1.0	290.0
03:00 PM - 04:00 PM	1.0	276.0	W	0.5	260.0	W	0.6	313.0	NW	0.7	244.0	WSW	0.3	252.0
04:00 PM - 05:00 PM	1.5	255.0	WSW	0.3	199.0	SSW	0.8	240.0	WSW	0.3	317.0	NW	0.4	284.0
05:00 PM - 06:00 PM	0.1	-	-	0.7	355.0	N	0.7	297.0	WNW	0.3	281.0	W	0.3	227.0
06:00 PM - 07:00 PM	0.8	285.0	WNW	0.6	296.0	WNW	0.8	323.0	NW	0.7	12.0	NNE	0.2	-
07:00 PM - 08:00 PM	0.5	296.0	WNW	0.4	170.0	S	0.8	166.0	SSE	1.2	271.0	W	0.0	-
08:00 PM - 09:00 PM	0.6	310.0	NW	0.1	-	-	0.9	208.0	SSW	0.3	20.0	NNE	0.4	267.0
09:00 PM - 10:00 PM	0.2	-	-	0.4	279.0	W	0.0	-	-	0.2	-	-	0.4	284.0
10:00 PM - 11:00 PM	0.4	288.0	WNW	0.0	-	-	0.0	-	-	0.0	-	-	1.0	220.0
11:00 PM - 12:00 AM	0.3	339.0	NNW	0.2	-	-	0.9	29.0	NNE	0.3	44.0	NE	0.0	-
12:00 AM - 01:00 AM	0.2	-	-	0.9	306.0	NW	0.0	-	-	0.2	-	-	0.2	-
01:00 AM - 02:00 AM	0.1	-	-	0.5	347.0	NNW	0.4	37.0	NE	0.1	-	-	0.8	346.0
02:00 AM - 03:00 AM	0.1	-	-	0.5	302.0	WNW	0.3	313.0	NW	0.1	-	-	0.5	290.0
03:00 AM - 04:00 AM	0.2	-	-	0.0	-	-	0.4	339.0	NNW	0.2	-	-	0.3	337.0
04:00 AM - 05:00 AM	0.1	-	-	2.0	319.0	NW	0.0	-	-	0.3	346.0	NNW	0.2	-
05:00 AM - 06:00 AM	0.3	359.0	N	0.1	-	-	0.2	-	-	0.2	-	-	0.2	-
06:00 AM - 07:00 AM	0.2	-	-	0.3	326.0	NW	0.3	333.0	NNW	0.1	-	-	0.6	315.0
07:00 AM - 08:00 AM	0.2	-	-	0.2	-	-	0.8	296.0	WNW	0.4	303.0	WNW	0.3	335.0
08:00 AM - 09:00 AM	0.3	256.0	WSW	0.2	-	-	0.4	328.0	NNW	1.1	304.0	NW	1.0	282.0

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Approved by

Sarayuth Jitranont
Assistant General Manager



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

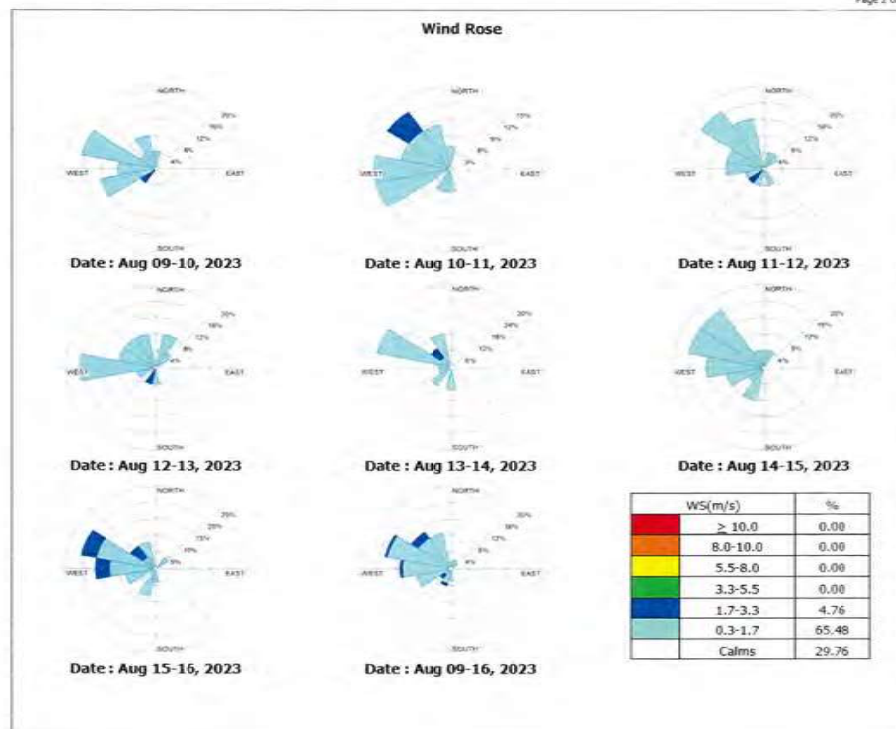
Lot ID: 2391225

Date Received : Aug 16, 2023

Date Reported : Aug 23, 2023

Report Number : 2737093-1 C9

Page 2 of 2



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Approved by

Sarayuth Jitranont
Assistant General Manager

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong
Thailand 21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HFPO-TPO Plant

Lot ID: 2374978

Date Received : Jul 04, 2023

Date Reported : Sep 13, 2023

Report Number : 2698984-1C9 Rev. No.1

Page 1 of 3

Sample Number : 2374978-1
Sampled Date : Jul 03, 2023
Sample Description : Air Quality
Location : ต.บึงขาม อ.บ้านค่าย จ.ระยอง (GPS 47P 0726292, 1407282)
Date Analysis Commenced : Jul 05, 2023
Condition of Sample : Drawn into one 6-L Canister, two sorbent tubes and one amber plastic bottle, refrigerated
Barometric Pressure : 757 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,4-Dichlorobenzene	03/07/23 - 04/07/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetaldehyde	03/07/23 - 04/07/23	ug/m3	0.05	0.18	3.10	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	03/07/23 - 04/07/23	ug/m3	0.05	0.16	<0.16	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Hexane	03/07/23 - 04/07/23	ug/m3	0.60	1.76	<1.76	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hydrogen Peroxide	03/07/23 - 04/07/23	ug/m3	0.3	5.0	Not Detected	No Standard	OSHA, V16	-	Bangkok
Propene (Propylene)	03/07/23 - 04/07/23	ug/m3	0.30	0.86	0.96	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propylene Oxide	03/07/23 - 04/07/23	ug/m3	1.2	14	Not Detected	No Standard	Based on NIOSH, 1612	-	Bangkok
Toluene	03/07/23 - 04/07/23	ug/m3	0.60	1.88	2.64	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Guideline :

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009)

Note : Phatthanak Mit Bannang Community station has moderate traffic, Cloudy, Normal activity, Nearby temple and Community

This Analysis test report is reissued to supersede report No. 2698984-1, Date Reported : Jul 15, 2023 due to revise analytical information.

Sampled By : Nantawat Sann

Remark :

LOD : Limit of Detection

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

Approved by

Orawan R.

Orawan Rakyong
Scientist (3)

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong
Thailand 21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HFPO-TPO Plant

Lot ID: 2374978

Date Received : Jul 04, 2023

Date Reported : Sep 13, 2023

Report Number : 2698984-1C9 Rev. No.1

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Sample Number : 2374978-2
Sampled Date : Jul 03, 2023
Sample Description : Air Quality
Location : ต.บึงขาม อ.บ้านค่าย จ.ระยอง (GPS 47P 0724377, 1402458)
Date Analysis Commenced : Jul 05, 2023
Condition of Sample : Drawn into one 6-L Canister, two sorbent tubes and one amber plastic bottle, refrigerated
Barometric Pressure : 757 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,4-Dichlorobenzene	03/07/23 - 04/07/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetaldehyde	03/07/23 - 04/07/23	ug/m3	0.05	0.18	1.70	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	03/07/23 - 04/07/23	ug/m3	0.05	0.16	<0.16	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Hexane	03/07/23 - 04/07/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hydrogen Peroxide	03/07/23 - 04/07/23	ug/m3	0.3	5.0	Not Detected	No Standard	OSHA, V16	-	Bangkok
Propene (Propylene)	03/07/23 - 04/07/23	ug/m3	0.30	0.86	<0.86	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propylene Oxide	03/07/23 - 04/07/23	ug/m3	1.2	14	Not Detected	No Standard	Based on NIOSH, 1612	-	Bangkok
Toluene	03/07/23 - 04/07/23	ug/m3	0.60	1.88	<1.88	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Guideline :

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009)

Note : Pa Yoon Community station has moderate traffic, Cloudy, Normal activity, Nearby temple, school and Community

This Analysis test report is reissued to supersede report No. 2698984-1, Date Reported : Jul 15, 2023 due to revise analytical information.

Sampled By : Nantawat Sann

Remark :

LOD : Limit of Detection

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

Approved by

Orawan R.

Orawan Rakyong
Scientist (3)

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong
Thailand 21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPD-TPO Plant

Lot ID: 2374978

Date Received : Jul 04, 2023

Date Reported : Sep 13, 2023

Report Number : 2698984-1CS Rev. No.1

Page 3 of 3

Sample Number : 2374978-3
Sampled Date : Jul 03, 2023
Sample Description : Air Quality
Location : กรุงเทพมหานคร (GPS 47P 0730826, 1407366)
Date Analysis Commenced : Jul 05, 2023
Condition of Sample : Drawn into one 6-L Canister, two sorbent tubes and one amber plastic bottle, refrigerated
Barometric Pressure : 757 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,4-Dichlorobenzene	03/07/23 - 04/07/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetaldehyde	03/07/23 - 04/07/23	ug/m3	0.05	0.18	1.37	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	03/07/23 - 04/07/23	ug/m3	0.05	0.16	0.38	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Hexane	03/07/23 - 04/07/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hydrogen Peroxide	03/07/23 - 04/07/23	ug/m3	0.3	5.0	Not Detected	No Standard	OSHA, VI6	-	Bangkok
Propene (Propylene)	03/07/23 - 04/07/23	ug/m3	0.30	0.86	<0.86	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propylene Oxide	03/07/23 - 04/07/23	ug/m3	1.2	14	Not Detected	No Standard	Based on NIOSH, 1612	-	Bangkok
Toluene	03/07/23 - 04/07/23	ug/m3	0.60	1.88	2.19	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Guideline :

NEB : Notification of National Environment Board, B.E. 2540 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009)

Note : - Map Cha Load Community station has moderate traffic, Cloudy, Normal activity, Nearby temple, school and Community

This Analysis test report is reissued to supersed report No. 2698984-1, Date Reported : Jul 15, 2023 due to revise analytical information.

Sampled By : Nantawat Sarin

Remark :

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

Approved by

Orawan R.

Orawan Rakyong
Scientist (3)

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang,
Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPD-TPO Plant

Lot ID : 2374983

Date Received : Jul 04, 2023

Date Reported : Jul 10, 2023

Report Number : 2699005-1

Page 1 of 2

Sample Number : 2374983-1
Parameter : Wind Speed / Wind Direction
Location : กรุงเทพมหานคร (GPS 47P 0730825, 1407366)
Sampling Date : Jul 03 - Jul 04, 2023
Sampling by : Nantawat Sarin

Time	Jul 03 - Jul 04, 2023															
	WS (m/s)	WD (deg)														
12:00 AM - 11:00 AM	0.6	199.0	SSW	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM - 12:00 PM	0.4	231.0	SW	-	-	-	-	-	-	-	-	-	-	-	-	-
12:00 PM - 01:00 PM	0.7	313.0	NW	-	-	-	-	-	-	-	-	-	-	-	-	-
01:00 PM - 02:00 PM	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02:00 PM - 03:00 PM	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03:00 PM - 04:00 PM	0.3	282.0	WNW	-	-	-	-	-	-	-	-	-	-	-	-	-
04:00 PM - 05:00 PM	0.6	320.0	NW	-	-	-	-	-	-	-	-	-	-	-	-	-
05:00 PM - 06:00 PM	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06:00 PM - 07:00 PM	0.5	296.0	WNW	-	-	-	-	-	-	-	-	-	-	-	-	-
07:00 PM - 08:00 PM	0.3	289.0	WNW	-	-	-	-	-	-	-	-	-	-	-	-	-
08:00 PM - 09:00 PM	0.7	299.0	WNW	-	-	-	-	-	-	-	-	-	-	-	-	-
09:00 PM - 10:00 PM	1.0	315.0	NW	-	-	-	-	-	-	-	-	-	-	-	-	-
10:00 PM - 11:00 PM	0.8	307.0	NW	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 PM - 12:00 AM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12:00 AM - 01:00 AM	0.4	210.0	SSW	-	-	-	-	-	-	-	-	-	-	-	-	-
01:00 AM - 02:00 AM	0.6	287.0	WNW	-	-	-	-	-	-	-	-	-	-	-	-	-
02:00 AM - 03:00 AM	0.3	289.0	WNW	-	-	-	-	-	-	-	-	-	-	-	-	-
03:00 AM - 04:00 AM	0.5	294.0	WNW	-	-	-	-	-	-	-	-	-	-	-	-	-
04:00 AM - 05:00 AM	0.7	136.0	SE	-	-	-	-	-	-	-	-	-	-	-	-	-
05:00 AM - 06:00 AM	1.2	278.0	W	-	-	-	-	-	-	-	-	-	-	-	-	-
06:00 AM - 07:00 AM	0.3	194.0	SSE	-	-	-	-	-	-	-	-	-	-	-	-	-
07:00 AM - 08:00 AM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08:00 AM - 09:00 AM	1.4	259.0	W	-	-	-	-	-	-	-	-	-	-	-	-	-
09:00 AM - 10:00 AM	0.8	315.0	NW	-	-	-	-	-	-	-	-	-	-	-	-	-

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Approved by

Sarayuth Jitranont

Sarayuth Jitranont
Assistant General Manager

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang,
Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPD-TPO Plant

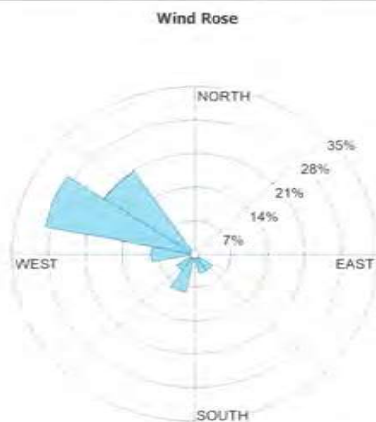
Lot ID : 2374983

Date Received : Jul 04, 2023

Date Reported : Jul 10, 2023

Report Number : 2699005-1

Page 2 of 2



Date : Jul 03-04, 2023

WS(m/s)	%
≥ 10.0	0.00
8.0-10.0	0.00
5.5-8.0	0.00
3.3-5.5	0.00
1.7-3.3	0.00
0.3-1.7	79.17
Calms	20.83

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Approved by

Sarayuth Jitranont
Assistant General Manager

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong
Thailand 21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPD-TPO Plant

Lot ID: 2387916

Date Received : Aug 04, 2023

Date Reported : Aug 22, 2023

Report Number : 2729814-1C9 Rev. No.1

Page 1 of 3

Sample Number : 2387916-1
Sampled Date : Aug 03, 2023
Sample Description : Air Quality
Location : เขตอุตสาหกรรมปทุมธานี (GPS 47P 0726292, 1407282)
Date Analysis Commenced : Aug 07, 2023
Condition of Sample : Drawn into one 6-L Canister, one sorbent tube and one amber plastic bottle, refrigerated
Barometric Pressure : 755 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,4-Dichlorobenzene	03/08/23 - 04/08/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetaldehyde	03/08/23 - 04/08/23	ug/m3	0.05	0.18	1.37	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	03/08/23 - 04/08/23	ug/m3	0.05	0.16	<0.16	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Hexane	03/08/23 - 04/08/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	---	Rayong
Hydrogen Peroxide	03/08/23 - 04/08/23	ug/m3	0.3	5.0	Not Detected	No Standard	OSHA, VI6	---	Bangkok
Propene (Propylene)	03/08/23 - 04/08/23	ug/m3	0.30	0.86	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	---	Rayong
Propylene Oxide	03/08/23 - 04/08/23	ug/m3	1.2	14	Not Detected	No Standard	Based on NIOSH, 1612	---	Bangkok
Toluene	03/08/23 - 04/08/23	ug/m3	0.60	1.88	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	---	Rayong

Guideline :

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009)

Note : Pradum Mit Bamrung Community station has moderate traffic Cloudy, Normal active, Nearby temple and Community

This Analysis test report is reissued to supersede report No. 2729814-1, Date Reported : Aug 17, 2023 due to revise analytical information.

Sampled By : Adisak Talesoon

Remark :

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

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Approved by

Orawan Rakkyong
Scientist (3)

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong
Thailand 21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HIPPO-TPO Plant

Lot ID: 2387916

Date Received : Aug 04, 2023

Date Reported : Aug 22, 2023

Report Number : 2729814-1C9 Rev. No.1

Page 2 of 3

Sample Number : 2387916-2
Sampled Date : Aug 03, 2023
Sample Description : Air Quality
Location : กรุงเทพมหานคร (GPS 47P 0724377, 1402458)
Date Analysis Commenced : Aug 07, 2023
Condition of Sample : Drawn into one 6-L Canister, one sorbent tube and one amber plastic bottle, refrigerated.
Barometric Pressure : 755 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,4-Dichlorobenzene	03/08/23 - 04/08/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetaldehyde	03/08/23 - 04/08/23	ug/m3	0.05	0.18	1.80	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	03/08/23 - 04/08/23	ug/m3	0.05	0.16	Not Detected	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Hexane	03/08/23 - 04/08/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hydrogen Peroxide	03/08/23 - 04/08/23	ug/m3	0.3	5.0	Not Detected	No Standard	OSHA, VI6	-	Bangkok
Propene (Propylene)	03/08/23 - 04/08/23	ug/m3	0.30	0.86	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propylene Oxide	03/08/23 - 04/08/23	ug/m3	1.2	14	Not Detected	No Standard	Based on NIOSH, 1612	-	Bangkok
Toluene	03/08/23 - 04/08/23	ug/m3	0.60	1.88	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Guideline :

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009)

Note : Pa Yoon Community station has moderate traffic, Cloudy, Normal activity, Nearby temple, school and Community

This Analysis test report is resubmitted to supersede report No. 2729814-1, Date Reported : Aug 17, 2023 due to revise analytical information.

Sampled By : Adisak Talesoon

Remark :

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

Approved by

Orawan R.

Orawan Rakhyong
Scientist (3)

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong
Thailand 21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HIPPO-TPO Plant

Lot ID: 2387916

Date Received : Aug 04, 2023

Date Reported : Aug 22, 2023

Report Number : 2729814-1C9 Rev. No.1

Page 3 of 3

Sample Number : 2387916-3
Sampled Date : Aug 03, 2023
Sample Description : Air Quality
Location : กรุงเทพมหานคร (GPS 47P 0730826, 1407366)
Date Analysis Commenced : Aug 07, 2023
Condition of Sample : Drawn into one 6-L Canister, one sorbent tube and one amber plastic bottle, refrigerated.
Barometric Pressure : 755 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,4-Dichlorobenzene	03/08/23 - 04/08/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetaldehyde	03/08/23 - 04/08/23	ug/m3	0.05	0.18	1.26	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	03/08/23 - 04/08/23	ug/m3	0.05	0.16	<0.16	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Hexane	03/08/23 - 04/08/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hydrogen Peroxide	03/08/23 - 04/08/23	ug/m3	0.3	5.0	Not Detected	No Standard	OSHA, VI6	-	Bangkok
Propene (Propylene)	03/08/23 - 04/08/23	ug/m3	0.30	0.86	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propylene Oxide	03/08/23 - 04/08/23	ug/m3	1.2	14	Not Detected	No Standard	Based on NIOSH, 1612	-	Bangkok
Toluene	03/08/23 - 04/08/23	ug/m3	0.60	1.88	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Guideline :

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009)

Note : Map Cha Lood Community station has moderate traffic, Cloudy, Normal activity, Nearby temple, school and Community

This Analysis test report is resubmitted to supersede report No. 2729814-1, Date Reported : Aug 17, 2023 due to revise analytical information.

Sampled By : Adisak Talesoon

Remark :

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

Approved by

Orawan R.

Orawan Rakhyong
Scientist (3)

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang,
Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID : 2387919

Date Received : Aug 04, 2023

Date Reported : Aug 11, 2023

Report Number : 2729828-1

Sample Number : 2387919-1

Parameter : Wind Speed / Wind Direction

Location : สภามณฑล (GPS 47P 0730826, 1407366)

Sampling Date : Aug 03 - Aug 04, 2023

Sampling by : Adisak Talesoon

Time	Aug 03 - Aug 04, 2023																	
	WS (m/s)	WD (deg)																
01:00 PM - 02:00 PM	0.5	113.0	ESE															
02:00 PM - 03:00 PM	0.5	143.0	SE															
03:00 PM - 04:00 PM	0.4	110.0	ESE															
04:00 PM - 05:00 PM	0.3	191.0	S															
05:00 PM - 06:00 PM	0.3	166.0	ESE															
06:00 PM - 07:00 PM	0.3	176.0	S															
07:00 PM - 08:00 PM	0.1	197.0	SSW															
08:00 PM - 09:00 PM	0.2																	
09:00 PM - 10:00 PM	0.5	161.0	SSE															
10:00 PM - 11:00 PM	0.4	64.0	ENE															
11:00 PM - 12:00 AM	1.1	51.0	NE															
12:00 AM - 01:00 AM	0.8	51.0	NE															
01:00 AM - 02:00 AM	0.6	42.0	NE															
02:00 AM - 03:00 AM	0.0	31.0	NNE															
03:00 AM - 04:00 AM	1.5	31.0	NNE															
04:00 AM - 05:00 AM	0.0	58.0	ENE															
05:00 AM - 06:00 AM	0.5	175.0	S															
06:00 AM - 07:00 AM	0.8	146.0	SE															
07:00 AM - 08:00 AM	0.5	190.0	S															
08:00 AM - 09:00 AM	0.3	171.0	S															
09:00 AM - 10:00 AM	0.1																	
10:00 AM - 11:00 AM	1.2	65.0	ENE															
11:00 AM - 12:00 PM	2.6	63.0	ENE															
12:00 PM - 01:00 PM	1.3	64.0	ENE															

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Approved by

Sarayuth Jitranont
Assistant General Manager

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang,
Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

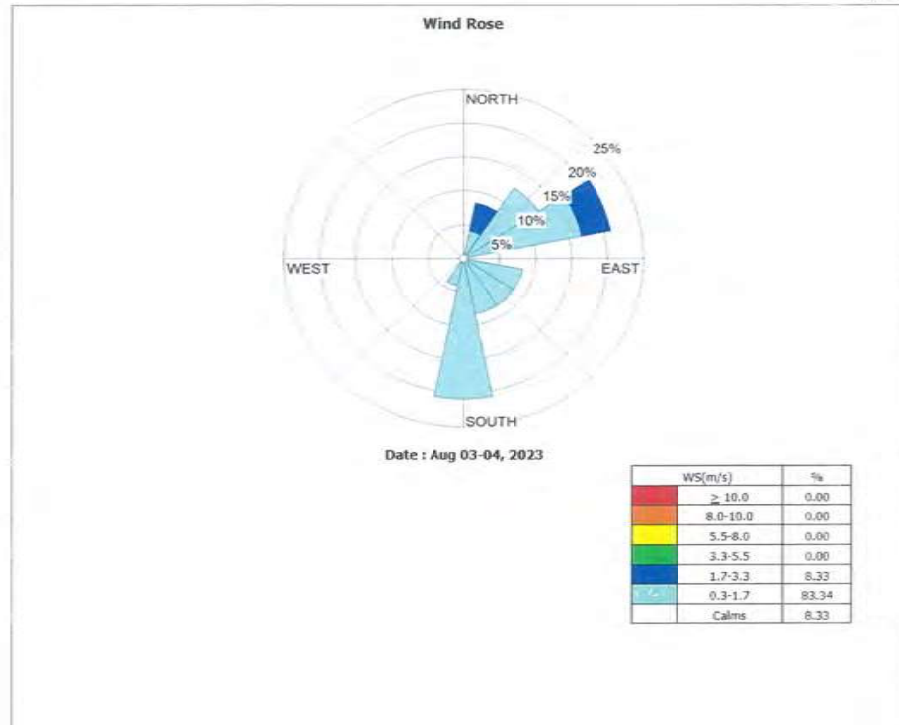
Project Location : AIE_HPPO-TPO Plant

Lot ID : 2387919

Date Received : Aug 04, 2023

Date Reported : Aug 11, 2023

Report Number : 2729828-1



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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong
Thailand 21130
P/O : 4510824480
Project Name : Environmental Quality Monitoring
Project Location : AIE_HHPO-TPO Plant

Lot ID: 23101326
Date Received : Sep 05, 2023
Date Reported : Sep 12, 2023
Report Number : 2759766-1C9

Page 1 of 3

Sample Number : 23101326-1
Sampled Date : Sep 04, 2023
Sample Description : Air Quality
Location : กรุงเทพมหานคร (GPS 47P 0726292, 1407282)
Date Analysis Commenced : Sep 06, 2023
Condition of Sample : Drawn into one 6-L Canister, one amber plastic bottle and two sorbent tubes, refrigerated
Barometric Pressure : 753 mmHg
Atmospheric Temperature : 31.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,4-Dichlorobenzene	04/09/23 - 05/09/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetaldehyde	04/09/23 - 05/09/23	ug/m3	0.05	0.18	2.92	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	04/09/23 - 05/09/23	ug/m3	0.05	0.16	0.32	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Hexane	04/09/23 - 05/09/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hydrogen Peroxide	04/09/23 - 05/09/23	ug/m3	0.3	5.0	Not Detected	No Standard	OSHA, VI6	-	Bangkok
Propene (Propylene)	04/09/23 - 05/09/23	ug/m3	0.30	0.86	<0.86	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propylene Oxide	04/09/23 - 05/09/23	ug/m3	1.2	14	Not Detected	No Standard	Based on NIOSH, 1612	-	Bangkok
Toluene	04/09/23 - 05/09/23	ug/m3	0.60	1.88	<1.88	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Guideline :
NEB : Notification of National Environment Board, B.E. 2560 (2017)
PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009)
Note : Pradium Mit Bannung Community station has moderate traffic, There is construction in the temple, Clear sky, Nearby School, temple and Community
Sampled By : Suphachai Wongsunchari
Remark :
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Tanyatorn Mongkonjirawut
Supervisor

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1207-21/09/23



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong
Thailand 21130
P/O : 4510824480
Project Name : Environmental Quality Monitoring
Project Location : AIE_HHPO-TPO Plant

Lot ID: 23101326
Date Received : Sep 05, 2023
Date Reported : Sep 12, 2023
Report Number : 2759766-1C9

Page 2 of 3

Sample Number : 23101326-2
Sampled Date : Sep 04, 2023
Sample Description : Air Quality
Location : กรุงเทพมหานคร (GPS 47P 0724377, 1402458)
Date Analysis Commenced : Sep 06, 2023
Condition of Sample : Drawn into one 6-L Canister, one amber plastic bottle and two sorbent tubes, refrigerated
Barometric Pressure : 753 mmHg
Atmospheric Temperature : 31.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,4-Dichlorobenzene	04/09/23 - 05/09/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetaldehyde	04/09/23 - 05/09/23	ug/m3	0.05	0.18	1.91	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	04/09/23 - 05/09/23	ug/m3	0.05	0.16	<0.16	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Hexane	04/09/23 - 05/09/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hydrogen Peroxide	04/09/23 - 05/09/23	ug/m3	0.3	5.0	Not Detected	No Standard	OSHA, VI6	-	Bangkok
Propene (Propylene)	04/09/23 - 05/09/23	ug/m3	0.30	0.86	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propylene Oxide	04/09/23 - 05/09/23	ug/m3	1.2	14	Not Detected	No Standard	Based on NIOSH, 1612	-	Bangkok
Toluene	04/09/23 - 05/09/23	ug/m3	0.60	1.88	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Guideline :
NEB : Notification of National Environment Board, B.E. 2560 (2017)
PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009)
Note : Pa Yoon Community station has moderate traffic, Clear sky, Normal activity, Nearby temple, school and Community
Sampled By : Suphachai Wongsunchari
Remark :
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Tanyatorn Mongkonjirawut
Supervisor

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1207-21/09/23



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 451082480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPD-TPO Plant

Lot ID: 23101326

Date Received : Sep 05, 2023

Date Reported : Sep 12, 2023

Report Number : 2759766-1C9

Sample Number : 23101326-3
 Sample Date : Sep 04, 2023
 Sample Description : Air Quality
 Location : สหชัยภูมิ (GPS 47P 0730826, 1407366)
 Date Analysis Commenced : Sep 06, 2023
 Condition of Sample : Drawn into one 6-L Canister, one amber plastic bottle and two sorbent tubes, refrigerated
 Barometric Pressure : 753 mmHg
 Atmospheric Temperature : 31.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,4-Dichlorobenzene	04/09/23 - 05/09/23	ug/m ³	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetaldehyde	04/09/23 - 05/09/23	ug/m ³	0.05	0.18	1.37	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	04/09/23 - 05/09/23	ug/m ³	0.05	0.16	<0.16	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Hexane	04/09/23 - 05/09/23	ug/m ³	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hydrogen Peroxide	04/09/23 - 05/09/23	ug/m ³	0.3	5.0	Not Detected	No Standard	OSHA, V16	-	Bangkok
Propene (Propylene)	04/09/23 - 05/09/23	ug/m ³	0.30	0.86	<0.86	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propylene Oxide	04/09/23 - 05/09/23	ug/m ³	1.2	14	Not Detected	No Standard	Based on NIOSH, 1612	-	Bangkok
Toluene	04/09/23 - 05/09/23	ug/m ³	0.60	1.88	<1.88	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Guideline :

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009)

Note : Map Cha Looi Community station has moderate traffic, There's a funeral in the temple, Normal activity, Nearby temple, school and Community

Sampled By : Suphachai Wongsunichai

Remark :

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

Approved by

Tanyatorn Mongkonjirawat
 Supervisor

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPD-TPO Plant

Lot ID: 23101330

Date Received : Sep 05, 2023

Date Reported : Sep 11, 2023

Report Number : 2759779-1

Sample Number : 23101330-1
 Parameter : Wind Speed / Wind Direction
 Location : สหชัยภูมิ (GPS 47P 0730826, 1407366)
 Sampling Date : Sep 04 - Sep 05, 2023
 Sampling by : Suphachai Wongsunichai

Time	Sep 04 - Sep 05, 2023																	
	WS (m/s)	WD (deg)																
10:00 AM - 11:00 AM	2.1	230.0	SW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11:00 AM - 12:00 PM	1.2	241.0	WSW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12:00 PM - 01:00 PM	3.0	240.0	WSW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
01:00 PM - 02:00 PM	1.2	222.0	SW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
02:00 PM - 03:00 PM	1.7	277.0	W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
03:00 PM - 04:00 PM	3.0	232.0	SW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
04:00 PM - 05:00 PM	1.5	273.0	W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
05:00 PM - 06:00 PM	1.0	358.0	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
06:00 PM - 07:00 PM	1.6	294.0	WNW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
07:00 PM - 08:00 PM	2.7	295.0	WNW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
08:00 PM - 09:00 PM	2.1	270.0	W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
09:00 PM - 10:00 PM	0.9	270.0	W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10:00 PM - 11:00 PM	1.0	250.0	W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11:00 PM - 12:00 AM	0.7	271.0	W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12:00 AM - 01:00 AM	0.6	273.0	W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
01:00 AM - 02:00 AM	0.9	266.0	W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
02:00 AM - 03:00 AM	1.0	264.0	W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
03:00 AM - 04:00 AM	0.6	358.0	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
04:00 AM - 05:00 AM	3.8	289.0	WNW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
05:00 AM - 06:00 AM	1.6	277.0	W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
06:00 AM - 07:00 AM	2.1	251.0	WNW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
07:00 AM - 08:00 AM	1.8	254.0	W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
08:00 AM - 09:00 AM	2.2	288.0	WNW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
09:00 AM - 10:00 AM	2.5	311.0	NW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Approved by

Sarayuth Jitranont
 Assistant General Manager

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

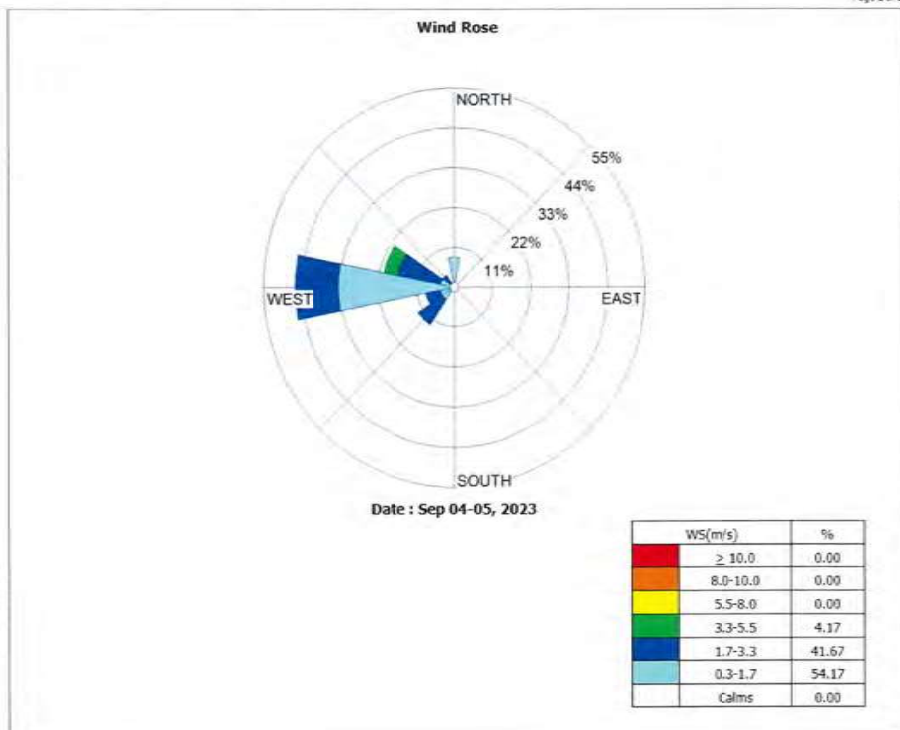
Lot ID: 23101330

Date Received : Sep 05, 2023

Date Reported : Sep 11, 2023

Report Number : 2759779-1

Page 2 of 2



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Assistant General Manager

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 23111860

Date Received : Oct 03, 2023

Date Reported : Oct 17, 2023

Report Number : 2787453-1C9

Page 1 of 3

Sample Number : 23111860-1
Sample Date : Oct 02, 2023
Sample Description : Air Quality
Location : กรุงเทพมหานคร (GPS 47P 0726292, 1407282)
Date Analysis Commenced : Oct 04, 2023
Condition of Sample : Drawn into one 6-L Canister, two amber plastic bottles and two sorbent tubes, refrigerated
Barometric Pressure : 756 mmHg
Atmospheric Temperature : 28.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,4-Dichlorobenzene	02/10/23 - 03/10/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetaldehyde	02/10/23 - 03/10/23	ug/m3	0.05	0.18	4.51	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	02/10/23 - 03/10/23	ug/m3	0.05	0.16	0.51	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Hexane	02/10/23 - 03/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hydrogen Peroxide	02/10/23 - 03/10/23	ug/m3	0.3	5.0	Not Detected	No Standard	OSHA, V16	-	Bangkok
Propene (Propylene)	02/10/23 - 03/10/23	ug/m3	0.30	0.86	1.20	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propylene Oxide	02/10/23 - 03/10/23	ug/m3	1.2	14	Not Detected	No Standard	Based on NIOSH, 1612	-	Bangkok
Toluene	02/10/23 - 03/10/23	ug/m3	0.60	1.88	2.94	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Guideline :

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009)

Note : Pradum Mit Bannong Community station has moderate traffic, light to moderate rain, Nearby School, temple and Community

Sampled By : Sawai Tonpho

Remark :

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

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

Approved by

Tatyatorn Mongkonjarawit
Supervisor

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7307-210-0040



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong
Thailand 21130
P/O : 4510824480
Project Name : Environmental Quality Monitoring
Project Location : AIE_HPPO-TPO Plant

Lot ID: 23111860
Date Received : Oct 03, 2023
Date Reported : Oct 12, 2023
Report Number : 2787453-1C9

Page 2 of 3

Sample Number : 23111860-2
Sampled Date : Oct 02, 2023
Sample Description : Air Quality
Location : ๓๒๓๓๓๓๓๓ (GPS 47P 0724377, 1402458)
Date Analysis Commenced : Oct 04, 2023
Condition of Sample : Drawn into one 6-L Canister, two amber plastic bottles and two sorbent tubes, refrigerated
Barometric Pressure : 756 mmHg
Atmospheric Temperature : 28.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,4-Dichlorobenzene	02/10/23 - 03/10/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetaldehyde	02/10/23 - 03/10/23	ug/m3	0.05	0.18	7.86	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	02/10/23 - 03/10/23	ug/m3	0.05	0.16	0.32	7.5	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzonitrile	02/10/23 - 03/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hydrogen Peroxide	02/10/23 - 03/10/23	ug/m3	0.3	5.0	Not Detected	No Standard	OSHA, V16	-	Bangkok
Propene (Propylene)	02/10/23 - 03/10/23	ug/m3	0.30	0.86	<0.86	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propylene Oxide	02/10/23 - 03/10/23	ug/m3	1.2	14	Not Detected	No Standard	Based on NIOSH, 1612	-	Bangkok
Toluene	02/10/23 - 03/10/23	ug/m3	0.60	1.88	2.34	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Guideline :

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009)

Note : Pa Yoon Community station has moderate traffic, Normal activity, light to moderate rain, Nearby temple, school and Community

Sampled By : Sawai Tongpho

Remark :

LOD : Limit of Detection

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

Approved by

Tanyatorn Mongkonjirawat

Tanyatorn Mongkonjirawat
Supervisor

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02/02/2024



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong
Thailand 21130
P/O : 4510824480
Project Name : Environmental Quality Monitoring
Project Location : AIE_HPPO-TPO Plant

Lot ID: 23111860
Date Received : Oct 03, 2023
Date Reported : Oct 12, 2023
Report Number : 2787453-1C9

Page 3 of 3

Sample Number : 23111860-3
Sampled Date : Oct 02, 2023
Sample Description : Air Quality
Location : ๓๒๓๓๓๓๓๓ (GPS 47P 0730826, 1407366)
Date Analysis Commenced : Oct 04, 2023
Condition of Sample : Drawn into one 6-L Canister, two amber plastic bottles and two sorbent tubes, refrigerated
Barometric Pressure : 756 mmHg
Atmospheric Temperature : 28.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,4-Dichlorobenzene	02/10/23 - 03/10/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetaldehyde	02/10/23 - 03/10/23	ug/m3	0.05	0.18	3.17	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	02/10/23 - 03/10/23	ug/m3	0.05	0.16	0.45	7.5	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzonitrile	02/10/23 - 03/10/23	ug/m3	0.60	1.76	<1.76	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hydrogen Peroxide	02/10/23 - 03/10/23	ug/m3	0.3	5.0	Not Detected	No Standard	OSHA, V16	-	Bangkok
Propene (Propylene)	02/10/23 - 03/10/23	ug/m3	0.30	0.86	1.41	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propylene Oxide	02/10/23 - 03/10/23	ug/m3	1.2	14	Not Detected	No Standard	Based on NIOSH, 1612	-	Bangkok
Toluene	02/10/23 - 03/10/23	ug/m3	0.60	1.88	2.49	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Guideline :

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009)

Note : Map Cha Lood Community station has moderate traffic, Normal activity, light to moderate rain, Nearby temple, school and Community

Sampled By : Sawai Tongpho

Remark :

LOD : Limit of Detection

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

Approved by

Tanyatorn Mongkonjirawat

Tanyatorn Mongkonjirawat
Supervisor

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02/02/2024



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 23111862

Date Received : Oct 03, 2023

Date Reported : Oct 09, 2023

Report Number : 2787456-1

Page 1 of 2

Sample Number 23111862-1

Parameter Wind Speed / Wind Direction

Location กรุงเทพมหานคร (GPS 47P 0730826, 1407366)

Sampling Date Oct 02 - Oct 03, 2022

Sampling by Sawai Tonpho

Time	Oct 02 - Oct 03, 2022																	
	WS (m/s)	WD (deg)																
11:00 AM - 12:00 PM	1.0	264.0	W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12:00 PM - 01:00 PM	0.9	251.0	WSW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01:00 PM - 02:00 PM	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02:00 PM - 03:00 PM	1.2	311.0	NW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03:00 PM - 04:00 PM	0.8	254.0	WSW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04:00 PM - 05:00 PM	0.5	309.0	NW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
05:00 PM - 06:00 PM	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06:00 PM - 07:00 PM	0.3	359.0	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
07:00 PM - 08:00 PM	0.4	359.0	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08:00 PM - 09:00 PM	0.9	294.0	WNW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
09:00 PM - 10:00 PM	1.6	265.0	W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10:00 PM - 11:00 PM	0.3	289.0	WNW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 PM - 12:00 AM	1.2	308.0	NW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12:00 AM - 01:00 AM	1.6	309.0	NW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01:00 AM - 02:00 AM	0.5	321.0	NW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02:00 AM - 03:00 AM	0.4	323.0	NW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03:00 AM - 04:00 AM	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04:00 AM - 05:00 AM	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
05:00 AM - 06:00 AM	0.8	358.0	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06:00 AM - 07:00 AM	0.7	351.0	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
07:00 AM - 08:00 AM	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08:00 AM - 09:00 AM	0.3	302.0	WNW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
09:00 AM - 10:00 AM	1.1	273.0	W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10:00 AM - 11:00 AM	0.6	299.0	WNW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Approved by

Sarayuth Jitranont
Assistant General Manager

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

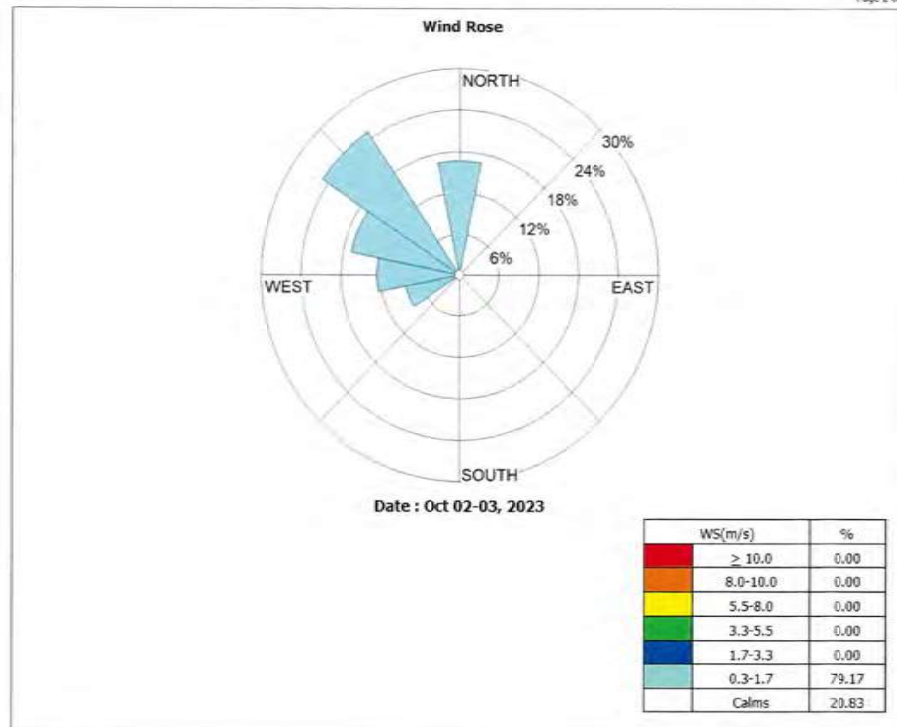
Lot ID: 23111862

Date Received : Oct 03, 2023

Date Reported : Oct 09, 2023

Report Number : 2787456-1

Page 2 of 2



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Sarayuth Jitranont
Assistant General Manager

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong
Thailand 21130
P/O : 4510824480
Project Name : Environmental Quality Monitoring
Project Location : AIE_HPPO-TPO Plant

Lot ID: 23125255
Date Received : Nov 02, 2023
Date Reported : Nov 10, 2023
Report Number : 2817963-1C9

Page 1 of 3

Sample Number	23125255-1
Sampled Date	Nov 01, 2023
Sample Description	Air Quality
Location	ตำบลบึงพระวินยต (GPS 47P 0726292, 1407282)
Date Analysis Commenced	Nov 03, 2023
Condition of Sample	Drawn into one 6-L Canister and one amber plastic bottle and one sorbent tube, refrigerated
Barometric Pressure	758 mmHg
Atmospheric Temperature	28.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,4-Dichlorobenzene	01/11/23 - 02/11/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetaldehyde	01/11/23 - 02/11/23	ug/m3	0.05	0.18	3.93	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	01/11/23 - 02/11/23	ug/m3	0.05	0.16	1.15	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Hexane	01/11/23 - 02/11/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hydrogen Peroxide	01/11/23 - 02/11/23	ug/m3	0.3	5.0	Not Detected	No Standard	OSHA, V16	-	Bangkok
Propene (Propylene)	01/11/23 - 02/11/23	ug/m3	0.30	0.86	1.10	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propylene Oxide	01/11/23 - 02/11/23	ug/m3	1.2	14	Not Detected	No Standard	Based on NIOSH, 1612	-	Bangkok
Toluene	01/11/23 - 02/11/23	ug/m3	0.60	1.88	4.15	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Guideline :

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009)

Note : Prachum MB Bannung Community station has moderate traffic, Clear sky, Normal activity, Nearby temple and Community

Sampled By : Chatchai Sukpia

Remark :

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

Approved by

Tanyatorn Mongkonjirawut
Supervisor

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000-23-17000



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong
Thailand 21130
P/O : 4510824480
Project Name : Environmental Quality Monitoring
Project Location : AIE_HPPO-TPO Plant

Lot ID: 23125255
Date Received : Nov 02, 2023
Date Reported : Nov 10, 2023
Report Number : 2817963-1C9

Page 2 of 3

Sample Number	23125255-2
Sampled Date	Nov 01, 2023
Sample Description	Air Quality
Location	ตำบลบึงพระวินยต (GPS 47P 0724377, 1402458)
Date Analysis Commenced	Nov 03, 2023
Condition of Sample	Drawn into one 6-L Canister and one amber plastic bottle and one sorbent tube, refrigerated
Barometric Pressure	758 mmHg
Atmospheric Temperature	28.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,4-Dichlorobenzene	01/11/23 - 02/11/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetaldehyde	01/11/23 - 02/11/23	ug/m3	0.05	0.18	2.89	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	01/11/23 - 02/11/23	ug/m3	0.05	0.16	0.64	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Hexane	01/11/23 - 02/11/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hydrogen Peroxide	01/11/23 - 02/11/23	ug/m3	0.3	5.0	Not Detected	No Standard	OSHA, V16	-	Bangkok
Propene (Propylene)	01/11/23 - 02/11/23	ug/m3	0.30	0.86	1.10	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propylene Oxide	01/11/23 - 02/11/23	ug/m3	1.2	14	Not Detected	No Standard	Based on NIOSH, 1612	-	Bangkok
Toluene	01/11/23 - 02/11/23	ug/m3	0.60	1.88	3.17	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Guideline :

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009)

Note : Pa Yoon Community station has moderate traffic, Clear sky, Normal activity, Nearby temple and Community

Sampled By : Chatchai Sukpia

Remark :

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

Approved by

Tanyatorn Mongkonjirawut
Supervisor

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2760-23-17000



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong

Thailand 21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPD-TPO Plant

Lot ID: 23125255

Date Received : Nov 02, 2023

Date Reported : Nov 10, 2023

Report Number : 2817963-1C9

Sample Number : 23125255-3
 Sampled Date : Nov 01, 2023
 Sample Description : Air Quality
 Location : กรุงเทพมหานคร (GPS 47P 0730826, 1407366)
 Date Analysis Commenced : Nov 03, 2023
 Condition of Sample : Drawn into one 6-L Canister and one amber plastic bottle and one sorbent tube, refrigerated
 Barometric Pressure : 758 mmHg
 Atmospheric Temperature : 28.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,4-Dichlorobenzene	01/11/23 - 02/11/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetaldehyde	01/11/23 - 02/11/23	ug/m3	0.05	0.18	6.85	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	01/11/23 - 02/11/23	ug/m3	0.05	0.16	1.47	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Hexane	01/11/23 - 02/11/23	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hydrogen Peroxide	01/11/23 - 02/11/23	ug/m3	0.3	5.0	Not Detected	No Standard	OSHA, V16	-	Bangkok
Propene (Propylene)	01/11/23 - 02/11/23	ug/m3	0.30	0.86	3.55	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propylene Oxide	01/11/23 - 02/11/23	ug/m3	1.2	14	Not Detected	No Standard	Based on NIOSH, 1612	-	Bangkok
Toluene	01/11/23 - 02/11/23	ug/m3	0.60	1.88	7.46	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Guideline :

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009)

Note : Map Cha Loo Community station has moderate traffic, Clear sky, Normal activity, Nearby temple, school and Community

Sampled By : Chatchai Sukpia

Remark :

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

Approved by

Tanyatorn Mongkornjirawut
Supervisor

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PH 10/10/23



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPD-TPO Plant

Lot ID: 23125258

Date Received : Nov 02, 2023

Date Reported : Nov 07, 2023

Report Number : 2817976-1

Page 1 of 2

Sample Number : 23125258-1
 Parameter : Wind Speed / Wind Direction
 Location : กรุงเทพมหานคร (GPS 47P 0730826, 1407366)
 Sampling Date : Nov 01 - Nov 02, 2023
 Sampling by : Chatchai Sukpia

Time	Nov 01 - Nov 02, 2023																	
	WS (m/s)	WD (deg)																
10:00 AM - 11:00 AM	1.7	0.0	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM - 12:00 PM	2.8	227.0	SW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12:00 PM - 01:00 PM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01:00 PM - 02:00 PM	0.9	0.0	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02:00 PM - 03:00 PM	1.0	186.0	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03:00 PM - 04:00 PM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04:00 PM - 05:00 PM	0.4	86.0	E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
05:00 PM - 06:00 PM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06:00 PM - 07:00 PM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
07:00 PM - 08:00 PM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08:00 PM - 09:00 PM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
09:00 PM - 10:00 PM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10:00 PM - 11:00 PM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 PM - 12:00 AM	0.9	0.0	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12:00 AM - 01:00 AM	1.1	0.0	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01:00 AM - 02:00 AM	1.2	0.0	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02:00 AM - 03:00 AM	0.8	0.0	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03:00 AM - 04:00 AM	1.0	0.0	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04:00 AM - 05:00 AM	0.8	0.0	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
05:00 AM - 06:00 AM	0.6	0.0	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06:00 AM - 07:00 AM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
07:00 AM - 08:00 AM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08:00 AM - 09:00 AM	0.8	0.0	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
09:00 AM - 10:00 AM	0.9	0.0	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Sarayuth Jitranont
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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

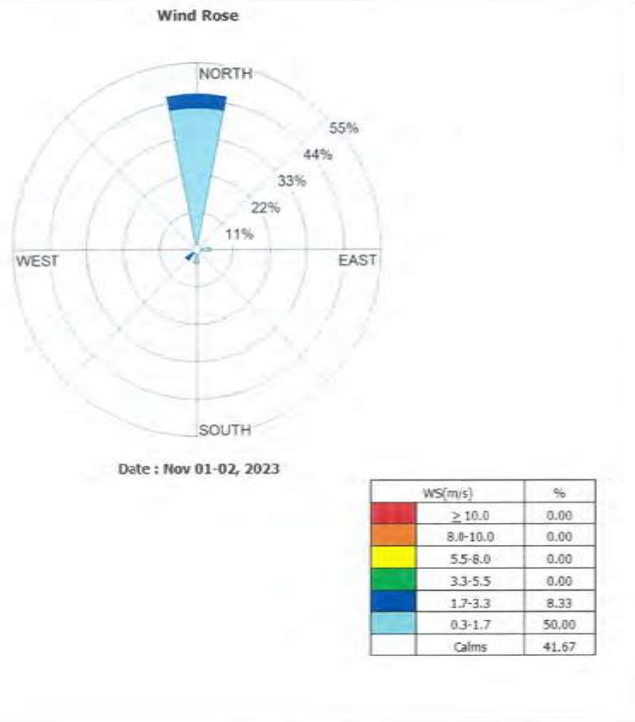
Lot ID: 23125258

Date Received : Nov 02, 2023

Date Reported : Nov 07, 2023

Report Number : 2817976-1

Page 2 of 2



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Sarayuth Jitranont
Assistant General Manager

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 23136615

Date Received : Dec 07, 2023

Date Reported : Dec 19, 2023

Report Number : 2843574-1C9

Page 1 of 3

Sample Number : 23136615-1
Sampled Date : Dec 06, 2023
Sample Description : Air Quality
Location : กรุงเทพมหานคร (GPS 47P 0726292, 1407282)
Date Analysis Commenced : Dec 08, 2023
Condition of Sample : Drawn into one 6-L Canister, one amber plastic bottle and one sorbent tube, refrigerated
Barometric Pressure : 758 mmHg
Atmospheric Temperature : 28.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,4-Dichlorobenzene	06/12/23 - 07/12/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetaldehyde	06/12/23 - 07/12/23	ug/m3	0.05	0.18	2.74	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	06/12/23 - 07/12/23	ug/m3	0.05	0.16	0.77	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Hexane	06/12/23 - 07/12/23	ug/m3	0.60	1.76	<1.76	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hydrogen Peroxide	06/12/23 - 07/12/23	ug/m3	0.3	5.0	Not Detected	No Standard	OSHA, V16	-	Bangkok
Propene (Propylene)	06/12/23 - 07/12/23	ug/m3	0.30	0.86	1.45	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propylene Oxide	06/12/23 - 07/12/23	ug/m3	1.2	14	Not Detected	No Standard	Based on NIOSH, 1612	-	Bangkok
Toluene	06/12/23 - 07/12/23	ug/m3	0.60	1.88	2.34	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Guideline :

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009)

Note : Prachum Mit Banrung Community station has moderate traffic, Clear sky, Normal activity, Nearby temple, school and Community

Sampled By : Adisak Telesoon

Remark :

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

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Approved by

Orawan Rakying
Scientist (3)

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737-23/EN/AL



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong
Thailand 21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 23136615

Date Received : Dec 07, 2023

Date Reported : Dec 19, 2023

Report Number : 2843528-1C9

Sample Number 23136615-2
Sampled Date Dec 06, 2023
Sample Description Air Quality
Location กรุงเทพมหานคร (GPS 47P 0724377, 1402458)
Date Analysis Commenced Dec 08, 2023
Condition of Sample Drawn into one 6-L Canister, one amber plastic bottle and one sorbent tube, refrigerated
Barometric Pressure 758 mmHg
Atmospheric Temperature 28.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,4-Dichlorobenzene	06/12/23 - 07/12/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetaldehyde	06/12/23 - 07/12/23	ug/m3	0.05	0.18	3.72	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	06/12/23 - 07/12/23	ug/m3	0.05	0.16	1.02	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Hexane	06/12/23 - 07/12/23	ug/m3	0.60	1.76	<1.76	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hydrogen Peroxide	06/12/23 - 07/12/23	ug/m3	0.3	5.0	Not Detected	No Standard	OSHA, V16	-	Bangkok
Propene (Propylene)	06/12/23 - 07/12/23	ug/m3	0.30	0.86	2.13	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propylene Oxide	06/12/23 - 07/12/23	ug/m3	1.2	14	Not Detected	No Standard	Based on NIOSH, 1612	-	Bangkok
Toluene	06/12/23 - 07/12/23	ug/m3	0.60	1.88	3.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Guideline :

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009)

Note : Pa Yoon Community station has moderate traffic, Clear sky, Normal activity, Nearby temple, school and Community

Sampled By : Adsak Talesoon

Remark :

LOD : Limit of Detection

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

Approved by

Orawan R.

Orawan Rakyoung
Scientist (3)

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15.02.2018



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong
Thailand 21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 23136615

Date Received : Dec 07, 2023

Date Reported : Dec 19, 2023

Report Number : 2843528-1C9

Sample Number 23136615-3
Sampled Date Dec 06, 2023
Sample Description Air Quality
Location กรุงเทพมหานคร (GPS 47P 0730826, 1407366)
Date Analysis Commenced Dec 08, 2023
Condition of Sample Drawn into one 6-L Canister, one amber plastic bottle and one sorbent tube, refrigerated
Barometric Pressure 758 mmHg
Atmospheric Temperature 28.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,4-Dichlorobenzene	06/12/23 - 07/12/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetaldehyde	06/12/23 - 07/12/23	ug/m3	0.05	0.18	2.89	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	06/12/23 - 07/12/23	ug/m3	0.05	0.16	0.96	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Hexane	06/12/23 - 07/12/23	ug/m3	0.60	1.76	<1.76	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hydrogen Peroxide	06/12/23 - 07/12/23	ug/m3	0.3	5.0	Not Detected	No Standard	OSHA, V16	-	Bangkok
Propene (Propylene)	06/12/23 - 07/12/23	ug/m3	0.30	0.86	2.07	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propylene Oxide	06/12/23 - 07/12/23	ug/m3	1.2	14	Not Detected	No Standard	Based on NIOSH, 1612	-	Bangkok
Toluene	06/12/23 - 07/12/23	ug/m3	0.60	1.88	6.63	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Guideline :

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009)

Note : Map Cha Lood Community station has moderate traffic, There's a funeral in the temple, Normal activity, Nearby temple, school and Community

Sampled By : Adsak Talesoon

Remark :

LOD : Limit of Detection

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

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730-20-0946



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 23136603

Date Received : Dec 07, 2023

Date Reported : Dec 15, 2023

Report Number : 2843495-1

Sample Number 23136603-1

Parameter Wind Speed / Wind Direction

Location ๑๑๑๑๑๑๑๑๑๑ (GPS 47P 0730826, 1407366)

Sampling Date Dec 06 - Dec 07, 2023

Sampling by Adisak Talesoon

Time	Dec 06 - Dec 07, 2023																	
	WS (m/s)	WD (deg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM - 12:00 PM	0.3	65.0	ENE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12:00 PM - 01:00 PM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01:00 PM - 02:00 PM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02:00 PM - 03:00 PM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03:00 PM - 04:00 PM	0.3	296.0	WNW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04:00 PM - 05:00 PM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
05:00 PM - 06:00 PM	0.4	269.0	W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06:00 PM - 07:00 PM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
07:00 PM - 08:00 PM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08:00 PM - 09:00 PM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
09:00 PM - 10:00 PM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10:00 PM - 11:00 PM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 PM - 12:00 AM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12:00 AM - 01:00 AM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01:00 AM - 02:00 AM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02:00 AM - 03:00 AM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03:00 AM - 04:00 AM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04:00 AM - 05:00 AM	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
05:00 AM - 06:00 AM	0.6	63.0	ENE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06:00 AM - 07:00 AM	1.0	73.0	ENE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
07:00 AM - 08:00 AM	0.3	60.0	ENE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08:00 AM - 09:00 AM	0.5	58.0	ENE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
09:00 AM - 10:00 AM	0.6	68.0	ENE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10:00 AM - 11:00 AM	0.4	78.0	ENE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Approved by

Sarayuth Jitranont
Assistant General Manager

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

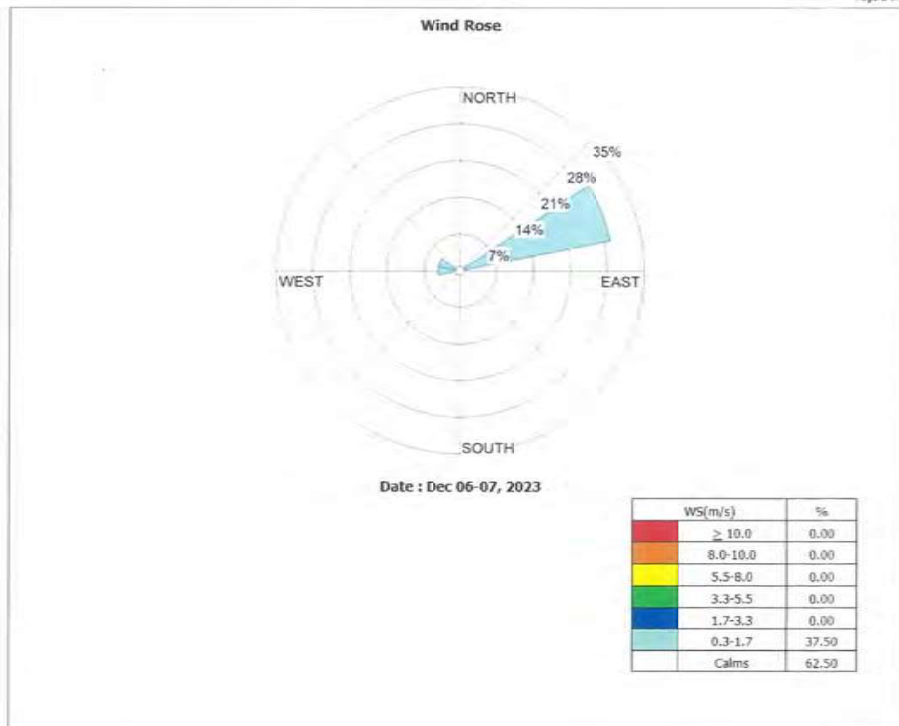
Project Location : AIE_HPPO-TPO Plant

Lot ID: 23136603

Date Received : Dec 07, 2023

Date Reported : Dec 15, 2023

Report Number : 2843495-1



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Approved by

Sarayuth Jitranont
Assistant General Manager

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Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391150

Date Received : Aug 10, 2023

Date Reported : Aug 19, 2023

Report Number: 2736943-1

Page 1 of 2

Sample Number 2391150-1
Sampled Date Aug 10, 2023
Sample Description Emission from Stationary Source
Location TOX1 (ERU Stack) (GPS 47P 0726915, 1405346)
Date Analysis Commenced Aug 11, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish and one plastic bottle

Stack Description

Ambient Pressure	755	mmHg	Diameter	3.00	m	Oxygen	8.6	%
Ambient Temperature	35.0	°C	Shape	Circle		Carbon Dioxide	8.5	%
Type of Process	Combustion		Stack Temperature	205	°C	Gas Velocity	3.5	m/s
Type of Fuel	Natural Gas		Moisture	25.88	%	Flow Rate (Actual O2)	41006	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result at 7 % O ₂ at 8.6 % O ₂	Guideline (1)	Guideline (2)	Method	Testing Location	
Air Testing										
Total Suspended Particulate	12:00 PM - 12:48 PM	mg/m3	-	0.5	<0.5	<0.5	320	35	United States Environmental Protection Agency, EPA Method 5	Rayong

Guideline :

Guideline

- 1).Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
- 2).Emission Air Standard according to EIA study of HPPO Plant, Approval Letter No. Tor Sor 1009.8/7196 dated June 09, 2017 (B.E. 2560)



Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391150

Date Received : Aug 10, 2023

Date Reported : Aug 19, 2023

Report Number: 2736943-1

Page 2 of 2

Sample Number 2391150-1
Sampled Date Aug 10, 2023
Sample Description Emission from Stationary Source
Location TOX1 (ERU Stack) (GPS 47P 0726915, 1405346)
Date Analysis Commenced Aug 11, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish and one plastic bottle

Stack Description

Ambient Pressure	755	mmHg	Diameter	3.00	m	Oxygen	8.6	%
Ambient Temperature	35.0	°C	Shape	Circle		Carbon Dioxide	8.5	%
Type of Process	Combustion		Stack Temperature	205	°C	Gas Velocity	3.5	m/s
Type of Fuel	Natural Gas		Moisture	25.88	%	Flow Rate (Actual O2)	41006	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Suspended Particulate *	12:00 PM - 12:48 PM	g/s	-	-	<0.006	-	0.52	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)
- 2).Emission Air Standard according to EIA study of HPPO Plant, Approval Letter No. Tor Sor 1009.8/7196 dated June 09, 2017 (B.E. 2560)

Sampled By : Sathaporn Thakarw

Remark :

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

Technical Management

Thanita K.

Thanita Kulsurwong
Scientist (4)
โทรศัพท์ 3-323-9-9447

Approved by

D. Changchon

Dej Changchon
Senior Manager
โทรศัพท์ 3-323-9-9442

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S:\Reports\Air Stack_O2_2GL.rpt (11:45AM)

8525-209/ EMAIL

Technical Management

Thanita K.

Thanita Kulsurwong
Scientist (4)
โทรศัพท์ 3-323-9-9447

Approved by

D. Changchon

Dej Changchon
Senior Manager
โทรศัพท์ 3-323-9-9442

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8525-209/ EMAIL

S:\Reports\Air Stack_O2_2GL.rpt (11:45AM)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong
Thailand 21130
P/O : 4514156966
Project Name : Environmental Quality Monitoring
Project Location : AIE_HPPO-TPO Plant

Lot ID: 2390836
Date Received :Aug 11, 2023
Date Reported :Aug 18, 2023
Report Number :2736923-1

Page 1 of 1

Sample Number 2390836-2
Sample Description Emission from Stationary Source
Location TOX1 (ERU Stack) (GPS 47P 0726915, 1405346)
Measurement Date Aug 10, 2023

Stack Description							
Ambient Temperature	35	°C	Diameter	3.00	m	Oxygen	8.55 %
Ambient Pressure	755	mmHg	Shape	Circle		Carbon dioxide	8.46 %
Type of Process	Combustion		Stack Temperature	205	°C	Gas Velocity	4.06 m/s
Type of Fuel	Natural Gas		Moisture	25.89	%	Flow Rate	47398 Nm3/hr

Run No.	Sampling Time	Oxygen (%)	Carbon Dioxide (%)	Oxides of Nitrogen (ppm)		Carbon Monoxide (ppm)	
				at Actual O ₂	at 7% O ₂	at Actual O ₂	at 7% O ₂
1	12:00 PM - 12:20 PM	8.68	8.37	12.40	14.10	0.77	0.88
2	12:21 PM - 12:41 PM	8.43	8.53	12.56	14.00	0.59	0.65
3	12:42 PM - 01:02 PM	8.54	8.46	11.92	13.40	0.40	0.45
Average (ppm)		8.55	8.46	12.29	13.83	0.59	0.66
Guideline ^{1/} (ppm)				-	72	-	-
Guideline ^{2/} (ppm)				23.13	26.03	0.67	0.76
Result (mg/Nm ³)				0.3045		0.0088	
Emission Rate at Actual O ₂ (g/s)				2.0		-	
Guideline ^{2/} (g/s)				US EPA Method 7E		US EPA Method 10	
Method							

Sampled By : Saksit Phaisanphisit
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)
^{2/} Emission Air Standard according to EIA study of HPPO Plant, Approval Letter No. Tor Sor 1009.8/7196 dated June 09, 2017 (B.E. 2560)

Technical Management

Wichan Choonharat
Wichan Choonharat
Manager
เบอร์โทร 2-204-ค-6113

Approved by

Sarayuth Jittrant
Sarayuth Jittrant
Assistant General Manager
เบอร์โทร 2-204-ค-4702

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514156966
Project Name : Environmental Quality Monitoring
Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391186
Date Received : Aug 10, 2023
Date Reported : Aug 19, 2023
Report Number: 2736999-1

Page 1 of 2

Sample Number 2391186-1
Sampled Date Aug 09, 2023
Sample Description Emission from Stationary Source
Location TOX2 (ERU Stack) (GPS 47P 0726941, 1405348)
Date Analysis Commenced Aug 11, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish and one plastic bottle

Stack Description							
Ambient Pressure	755	mmHg	Diameter	3.00	m	Oxygen	6.0 %
Ambient Temperature	35.0	°C	Shape	Circle		Carbon Dioxide	9.0 %
Type of Process	Combustion		Stack Temperature	209	°C	Gas Velocity	4.0 m/s
Type of Fuel	Natural Gas		Moisture	19.94	%	Flow Rate (Actual O ₂)	50292 Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result at 7 % O ₂ at 6.0 % O ₂	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Suspended Particulate	12:30 PM - 01:30 PM	mg/m3	-	0.5	<0.5	<0.5	320	35	United States Environmental Protection Agency, EPA Method 5

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)
2). Emission Air Standard according to EIA study of HPPO Plant, Approval Letter No. Tor Sor 1009.8/7196 dated June 09, 2017 (B.E. 2560)

Technical Management

Thanita K.
Thanita Kulsuriwong
Scientist (4)
เบอร์โทร 2-323-ค-9447

Approved by

Dej Changchon
Dej Changchon
Senior Manager
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Analysis / Test Report



TESTING
No.0042

Lot ID: 2391186

Date Received : Aug 10, 2023

Date Reported : Aug 19, 2023

Report Number: 2736999-1

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand

21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Sample Number 2391186-1

Sampled Date Aug 09, 2023

Sample Description Emission from Stationary Source

Location TOX2 (ERU Stack) (GPS 47P 0726941, 1405348)

Date Analysis Commenced Aug 11, 2023

Condition of Sample Extracted into one filter paper placed in plastic petri dish and one plastic bottle

Stack Description

Ambient Pressure	755	mmHg	Diameter	3.00	m	Oxygen	6.0	%
Ambient Temperature	35.0	°C	Shape	Circle		Carbon Dioxide	9.0	%
Type of Process	Combustion		Stack Temperature	209	°C	Gas Velocity	4.0	m/s
Type of Fuel	Natural Gas		Moisture	19.94	%	Flow Rate (Actual O2)	50292	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 *	12:30 PM - 01:30 PM	g/s	-	-	<0.007	-	0.52	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)

2). Emission Air Standard according to EIA study of HPPO Plant, Approval Letter No. Tor Sor 1009.8/7196 dated June 09, 2017 (B.E. 2560)

Sampled By : Sathaporn Thakarnw

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)
โทรศัพท์ ๖-323-๙-๙๔๔๗

Approved by

D. Changchon

Dej Changchon
Senior Manager
โทรศัพท์ ๖-323-๙-๙๔๔๒

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong

Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391088

Date Received : Aug 11, 2023

Date Reported : Aug 18, 2023

Report Number :2736927-1

Page 1 of 1

Sample Number 2391088-2

Sample Description Emission from Stationary Source

Location TOX2 (ERU Stack) (GPS 47P 0726941, 1405348)

Measurement Date Aug 09, 2023

Stack Description

Ambient Temperature	35	°C	Diameter	3.00	m	Oxygen	6.03	%
Ambient Pressure	755	mmHg	Shape	Circle		Carbon dioxide	8.97	%
Type of Process	Combustion		Stack Temperature	209	°C	Gas Velocity	4.02	m/s
Type of Fuel	Natural Gas		Moisture	19.85	%	Flow Rate	50400	Nm3/hr

Run No.	Sampling Time	Oxygen (%)	Carbon Dioxide (%)	Oxides of Nitrogen (ppm) at Actual O ₂	Oxides of Nitrogen (ppm) at 7% O ₂	Carbon Monoxide (ppm) at Actual O ₂	Carbon Monoxide (ppm) at 7% O ₂
1	12:30 PM - 12:50 PM	5.55	9.29	6.68	6.05	0.66	0.59
2	12:51 PM - 01:11 PM	6.20	8.85	6.53	6.18	1.12	1.06
3	01:12 PM - 01:32 PM	6.32	8.77	6.56	6.26	1.24	1.18
Average (ppm)		6.03	8.97	6.59	6.16	1.01	0.95
Guideline ^{1/} (ppm)		-	-	-	200	-	690
Guideline ^{2/} (ppm)		-	-	-	72	-	-
Result (mg/Nm ³)		-	-	12.40	11.59	1.15	1.08
Emission Rate at Actual O ₂ (g/s)		-	-	-	0.1736	-	0.0161
Guideline ^{2/} (g/s)		-	-	-	2.0	-	-
Method		-	-	-	US EPA Method 7E	-	US EPA Method 10

Sampled By : Saksit Phaisanphisit

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)

^{2/} Emission Air Standard according to EIA study of HPPO Plant, Approval Letter No. Tor Sor 1009.8/7196 dated June 09, 2017 (B.E. 2560)

Technical Management

Wichan Choonharat

Wichan Choonharat
Manager
โทรศัพท์ ๖-204-๙-6113

Approved by

Sarayu Jitranont

Sarayuth Jitranont
Assistant General Manager
โทรศัพท์ ๖-204-๙-4702

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การตรวจสอบประสิทธิภาพระบบ CEMs



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2390836

Date Received : Aug 11, 2023

Date Reported : Aug 18, 2023

Report Number : 2736923-1

Page 1 of 3

Sample Number 2390836-1
Sampled Date Aug 10, 2023
Sample Description Emission from Stationary Source
Location TOX1 (ERU Stack) (GPS 47P 0726915, 1405346)
Parameter NOx

Relative Accuracy Test Audit Report

Run No.	Date	Time		Raw Data at Actual O2		Corrected Value at 7% O2		Difference
		Start	Stop	CEMs (ppm)	RM (ppm)	CEMs (ppm)	RM (ppm)	
1	10 Aug 23	12:00	12:20	10.40	12.40	11.76	14.10	2.34
2	10 Aug 23	12:21	12:41	10.41	12.56	11.53	14.00	2.46
3	10 Aug 23	12:42	13:02	9.54	11.92	10.67	13.40	2.73
4	10 Aug 23	13:03	13:23	9.16	11.53	10.13	12.85	2.72
5*	10 Aug 23	13:24	13:44	8.87	11.35	9.77	12.57	2.80
6	10 Aug 23	13:45	14:05	8.94	11.29	9.80	12.45	2.65
7	10 Aug 23	14:06	14:26	8.97	11.31	9.76	12.38	2.62
8*	10 Aug 23	14:27	14:47	8.20	10.76	9.02	11.91	2.89
9	10 Aug 23	14:48	15:08	8.79	11.08	9.54	12.11	2.57
10	10 Aug 23	15:09	15:29	8.98	11.30	9.82	12.44	2.62
11	10 Aug 23	15:30	15:50	9.34	11.64	10.15	12.75	2.60
12*	10 Aug 23	15:51	16:11	8.80	11.31	9.69	12.52	2.83
Average						10.35	12.94	2.59
Confidence Coefficient (CC)								0.09
Relative Accuracy (Compared with Emission Standard : 72 ppm) (%)								3.73
Relative Accuracy Criteria ^{1/} (Compared with Emission Standard)								≤ 10%

Reference Method : US EPA Method 7E

Remark: * Sample with * is a rejected data

^{1/} Relative Accuracy Criteria of NOx is refer to 40 CFR Part 60 Appendix B : Performance Specification Test 2 (PS-2) compared with Emission Standard 72 ppm at 7%O2

RA Result is within Criteria

Technical Management

Wichan Choonharat
Manager
หมายเลขโทรศัพท์ 2-204-6-6113

Approved by

Sarayuth Jitranont
Assistant General Manager
หมายเลขโทรศัพท์ 2-204-6-4702

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2390836

Date Received : Aug 11, 2023

Date Reported : Aug 18, 2023

Report Number : 2736923-1

Page 2 of 3

Sample Number 2390836-1
Sampled Date Aug 10, 2023
Sample Description Emission from Stationary Source
Location TOX1 (ERU Stack) (GPS 47P 0726915, 1405346)
Parameter CO

Relative Accuracy Test Audit Report

Run No.	Date	Time		Raw Data at Actual O2		Corrected Value at 7% O2		Difference
		Start	Stop	CEMs (ppm)	RM (ppm)	CEMs (ppm)	RM (ppm)	
1*	10 Aug 23	12:00	12:20	0.00	0.77	0.00	0.88	0.88
2*	10 Aug 23	12:21	12:41	0.00	0.59	0.00	0.65	0.65
3	10 Aug 23	12:42	13:02	0.00	0.40	0.00	0.45	0.45
4	10 Aug 23	13:03	13:23	0.00	0.18	0.00	0.20	0.20
5	10 Aug 23	13:24	13:44	0.00	0.09	0.00	0.09	0.09
6	10 Aug 23	13:45	14:05	0.00	0.13	0.00	0.14	0.14
7	10 Aug 23	14:06	14:26	0.00	0.26	0.00	0.28	0.28
8	10 Aug 23	14:27	14:47	0.00	0.32	0.00	0.36	0.36
9	10 Aug 23	14:48	15:08	0.00	0.35	0.00	0.38	0.38
10	10 Aug 23	15:09	15:29	0.00	0.41	0.00	0.45	0.45
11	10 Aug 23	15:30	15:50	0.00	0.39	0.00	0.43	0.43
12*	10 Aug 23	15:51	16:11	0.00	0.51	0.00	0.56	0.56
Average						0.00	0.31	0.31
Confidence Coefficient (CC)								0.10
Relative Accuracy (Compared with Emission Standard : 690 ppm) (%)								0.06
Relative Accuracy Criteria ^{1/} (Compared with Emission Standard)								≤ 5%

Reference Method : US EPA Method 10

Remark: * Sample with * is a rejected data

^{1/} Relative Accuracy Criteria of CO is refer to 40 CFR Part 60 Appendix B : Performance Specification Test 4 (PS-4) compared with Emission Standard 690 ppm at 7%O2

RA Result is within Criteria

Technical Management

Wichan Choonharat
Manager
หมายเลขโทรศัพท์ 2-204-6-6113

Approved by

Sarayuth Jitranont
Assistant General Manager
หมายเลขโทรศัพท์ 2-204-6-4702

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2390836

Date Received : Aug 11, 2023

Date Reported : Aug 18, 2023

Report Number : 2736923-1

Sample Number 2390836-1
Sampled Date Aug 10, 2023
Sample Description Emission from Stationary Source
Location TOX1 (ERU Stack) (GPS 47P 0726915, 1405346)
Parameter O2

Page 3 of 3

Relative Accuracy Test Audit Report

Run No.	Date	Time		Raw Data at Actual		Difference
		Start	Stop	CEMs (%)	RM (%)	
1	10 Aug 23	12:00	12:20	8.61	8.68	0.07
2	10 Aug 23	12:21	12:41	8.35	8.43	0.07
3	10 Aug 23	12:42	13:02	8.47	8.54	0.07
4*	10 Aug 23	13:03	13:23	8.33	8.42	0.09
5	10 Aug 23	13:24	13:44	8.27	8.34	0.07
6	10 Aug 23	13:45	14:05	8.21	8.29	0.08
7*	10 Aug 23	14:06	14:26	8.12	8.20	0.09
8	10 Aug 23	14:27	14:47	8.26	8.34	0.08
9	10 Aug 23	14:48	15:08	8.10	8.18	0.08
10	10 Aug 23	15:09	15:29	8.19	8.27	0.08
11*	10 Aug 23	15:30	15:50	8.12	8.21	0.09
12	10 Aug 23	15:51	16:11	8.28	8.35	0.07
Average				8.30	8.38	0.08
Confidence Coefficient (CC)				-		-
Relative Accuracy (Compared in Actual) (%)				0.08		0.08
Relative Accuracy Criteria (%)				≤ 1%		≤ 1%

Reference Method : US EPA Method 3A

Remark: * Sample with * is a rejected data

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

RA Result is within Criteria

Sampled By : Saksit Phaisanphisit

Technical Management

Wichan Choonharat
Manager
หมายเลขโทรศัพท์ 2-204-6-6113

Approved by

Sarayuth Jitranont
Assistant General Manager
หมายเลขโทรศัพท์ 2-204-6-4702

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391089

Date Received : Aug 11, 2023

Date Reported : Aug 21, 2023

Report Number : 2736937-2

Sample Number 2391089-1
Sampled Date Aug 10, 2023
Sample Description Emission from Stationary Source
Location TOX1 (ERU Stack) (GPS 47P 0726915, 1405346)
Parameter Flowrate

Page 1 of 1

Relative Accuracy Test Audit Report

Run No.	Date	Time		Raw Data at Actual		Difference
		Start	Stop	CEMs (Nm3/Hr)	RM (Nm3/Hr)	
1	10 Aug 23	12:00	12:19	39,763	40887	1,124
2	10 Aug 23	12:20	12:39	38,507	41612	3,105
3	10 Aug 23	12:40	12:59	38,790	43591	4,801
4	10 Aug 23	13:00	13:19	38,303	42585	4,282
5	10 Aug 23	13:20	13:39	37,409	43471	6,062
6*	10 Aug 23	13:40	13:59	37,035	46037	9,002
7	10 Aug 23	14:00	14:19	36,575	40162	3,587
8*	10 Aug 23	14:20	14:39	37,635	46933	9,298
9	10 Aug 23	14:40	14:59	37,192	42134	4,942
10	10 Aug 23	15:00	15:19	38,314	42172	3,858
11*	10 Aug 23	15:20	15:39	38,309	46606	8,297
12	10 Aug 23	15:40	15:59	38,943	41842	2,899
Average				38,200	42,051	3,851
Confidence Coefficient (CC)				1.092		1.092
Relative Accuracy ^{1/} (Compared with RM) (%)				11.75		11.75
Relative Accuracy Criteria (Compared with RM)				≤ 20 %		≤ 20 %

Reference Method : US EPA Method 2

Remark: * Sample with * is a rejected data

^{1/} Relative Accuracy Criteria of Flowrate is refer to 40 CFR Part 60 Appendix B : Performance Specification Test 6 (PS-6)

RA Result is within Criteria

Sampled By : Saksit Phaisanphisit

Technical Management

Wichan Choonharat
Manager
หมายเลขโทรศัพท์ 2-204-6-6113

Approved by

Sarayuth Jitranont
Assistant General Manager
หมายเลขโทรศัพท์ 2-204-6-4702

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130
P/O : 4514156966
Project Name : Environmental Quality Monitoring
Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391088
Date Received : Aug 11, 2023
Date Reported : Aug 18, 2023
Report Number : 2736927-1

Page 1 of 3

Sample Number 2391088-1
Sampled Date Aug 09, 2023
Sample Description Emission from Stationary Source
Location TOX2 (ERU Stack) (GPS 47P 0726941, 1405348)
Parameter NOx

Relative Accuracy Test Audit Report

Run No.	Date	Time		Raw Data at Actual O2		Corrected Value at 7% O2		Difference
		Start	Stop	CEMs (ppm)	RM (ppm)	CEMs (ppm)	RM (ppm)	
1	09 Aug 23	12:25	12:45	8.49	6.65	7.56	5.96	-1.60
2	09 Aug 23	12:46	13:06	8.20	6.53	7.65	6.13	-1.52
3	09 Aug 23	13:07	13:27	8.20	6.57	7.75	6.27	-1.48
4	09 Aug 23	13:28	13:48	8.22	6.60	7.75	6.27	-1.48
5	09 Aug 23	13:49	14:09	8.27	6.64	7.84	6.34	-1.49
6	09 Aug 23	14:10	14:30	8.49	6.79	7.99	6.45	-1.53
7	09 Aug 23	14:31	14:51	9.19	7.32	8.35	6.70	-1.65
8	09 Aug 23	14:52	15:12	10.62	8.38	9.60	7.68	-1.93
9	09 Aug 23	15:13	15:33	12.31	10.09	11.19	9.20	-1.98
10*	09 Aug 23	15:34	15:54	12.73	10.51	12.14	10.10	-2.04
11*	09 Aug 23	15:55	16:15	13.51	11.27	13.05	10.95	-2.10
12*	09 Aug 23	16:16	16:36	13.69	11.53	13.53	11.47	-2.06
Average						8.41	6.78	-1.63
Confidence Coefficient (CC)								0.15
Relative Accuracy (Compared with Emission Standard : 72 ppm) (%)								2.47
Relative Accuracy Criteria ^{1/} (Compared with Emission Standard)								≤ 10%

Reference Method : US EPA Method 7E

Remark: * Sample with * is a rejected data

^{1/} Relative Accuracy Criteria of NOx is refer to 40 CFR Part 60 Appendix B : Performance Specification Test 2 (PS-2) compared with Emission Standard 72 ppm at 7%O2

RA Result is within Criteria

Technical Management

Wichan Choonharat
Manager
หมายเลขโทรศัพท์ 204-6113

Approved by

Sarayuth Jitranont
Assistant General Manager
หมายเลขโทรศัพท์ 204-4702

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130
P/O : 4514156966
Project Name : Environmental Quality Monitoring
Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391088
Date Received : Aug 11, 2023
Date Reported : Aug 18, 2023
Report Number : 2736927-1

Page 2 of 3

Sample Number 2391088-1
Sampled Date Aug 09, 2023
Sample Description Emission from Stationary Source
Location TOX2 (ERU Stack) (GPS 47P 0726941, 1405348)
Parameter CO

Relative Accuracy Test Audit Report

Run No.	Date	Time		Raw Data at Actual O2		Corrected Value at 7% O2		Difference
		Start	Stop	CEMs (ppm)	RM (ppm)	CEMs (ppm)	RM (ppm)	
1	09 Aug 23	12:25	12:45	1.99	0.68	1.77	0.61	-1.16
2	09 Aug 23	12:46	13:06	2.29	1.00	2.13	0.94	-1.20
3	09 Aug 23	13:07	13:27	2.58	1.32	2.44	1.25	-1.19
4	09 Aug 23	13:28	13:48	2.28	1.08	2.15	1.02	-1.13
5	09 Aug 23	13:49	14:09	2.71	1.17	2.57	1.12	-1.45
6	09 Aug 23	14:10	14:30	3.43	1.88	3.22	1.78	-1.44
7	09 Aug 23	14:31	14:51	2.07	0.64	1.88	0.59	-1.29
8	09 Aug 23	14:52	15:12	2.10	0.66	1.90	0.61	-1.30
9	09 Aug 23	15:13	15:33	1.39	0.25	1.26	0.23	-1.04
10*	09 Aug 23	15:34	15:54	2.32	0.15	2.22	0.14	-2.07
11*	09 Aug 23	15:55	16:15	2.49	0.33	2.41	0.32	-2.08
12*	09 Aug 23	16:16	16:36	2.15	0.36	2.13	0.35	-1.77
Average						2.15	0.91	-1.24
Confidence Coefficient (CC)								0.11
Relative Accuracy (Compared with Emission Standard : 690 ppm) (%)								0.20
Relative Accuracy Criteria ^{1/} (Compared with Emission Standard)								≤ 5%

Reference Method : US EPA Method 10

Remark: * Sample with * is a rejected data

^{1/} Relative Accuracy Criteria of CO is refer to 40 CFR Part 60 Appendix B : Performance Specification Test 4 (PS-4) compared with Emission Standard 690 ppm at 7%O2

RA Result is within Criteria

Technical Management

Wichan Choonharat
Manager
หมายเลขโทรศัพท์ 204-6113

Approved by

Sarayuth Jitranont
Assistant General Manager
หมายเลขโทรศัพท์ 204-4702

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130
P/O : 4514156966
Project Name : Environmental Quality Monitoring
Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391088
Date Received : Aug 11, 2023
Date Reported : Aug 18, 2023
Report Number : 2736927-1

Sample Number : 2391088-1
Sampled Date : Aug 09, 2023
Sample Description : Emission from Stationary Source
Location : TOX2 (ERU Stack) (GPS 47P 0726941, 1405348)
Parameter : O2

Page 3 of 3

Relative Accuracy Test Audit Report

Run No.	Date	Time		Raw Data at Actual		Difference
		Start	Stop	CEMs (%)	RM (%)	
1	09 Aug 23	12:25	12:45	5.29	5.39	0.10
2	09 Aug 23	12:46	13:06	6.00	6.09	0.09
3*	09 Aug 23	13:07	13:27	6.20	6.33	0.13
4	09 Aug 23	13:28	13:48	6.15	6.27	0.12
5	09 Aug 23	13:49	14:09	6.23	6.34	0.12
6*	09 Aug 23	14:10	14:30	6.13	6.27	0.14
7	09 Aug 23	14:31	14:51	5.59	5.72	0.13
8*	09 Aug 23	14:52	15:12	5.53	5.72	0.19
9	09 Aug 23	15:13	15:33	5.60	5.66	0.06
10	09 Aug 23	15:34	15:54	6.33	6.44	0.10
11	09 Aug 23	15:55	16:15	6.51	6.59	0.08
12	09 Aug 23	16:16	16:36	6.84	6.93	0.09
Average				6.06	6.16	0.10
Confidence Coefficient (CC)				-		-
Relative Accuracy (Compared in Actual) (%)				0.10		0.10
Relative Accuracy Criteria (%)				≤ 1%		≤ 1%

Reference Method : US EPA Method 3A

Remark: * Sample with * is a rejected data

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

RA Result is within Criteria

Sampled By : Saksit Phaisanphit

Technical Management

Wichan Choonharat
Manager
หมายเลขโทรศัพท์ 2-204-6113

Approved by

Sarayuth Jitranont
Assistant General Manager

หมายเลขโทรศัพท์ 2-204-61702

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130
P/O : 4514156966
Project Name : Environmental Quality Monitoring
Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391139
Date Received : Aug 11, 2023
Date Reported : Aug 21, 2023
Report Number : 2736940-2

Sample Number : 2391139-1
Sampled Date : Aug 09, 2023
Sample Description : Emission from Stationary Source
Location : TOX2 (ERU Stack) (GPS 47P 0726941, 1405348)
Parameter : Flowrate

Page 1 of 1

Relative Accuracy Test Audit Report

Run No.	Date	Time		Raw Data at Actual		Difference
		Start	Stop	CEMs (Nm3/Hr)	RM (Nm3/Hr)	
1	09 Aug 23	12:30	12:49	44,698	50221	5,523
2	09 Aug 23	12:50	13:09	47,117	51760	4,643
3	09 Aug 23	13:10	13:29	47,583	51213	3,630
4	09 Aug 23	13:30	13:49	47,451	51816	4,365
5	09 Aug 23	13:50	14:09	47,504	54775	7,271
6	09 Aug 23	14:10	14:29	47,174	56091	8,917
7*	09 Aug 23	14:30	14:49	45,705	56713	11,008
8	09 Aug 23	14:50	15:09	45,962	52305	6,343
9*	09 Aug 23	15:10	15:29	47,388	59462	12,074
10	09 Aug 23	15:30	15:49	50,991	59327	8,336
11*	09 Aug 23	15:50	16:09	52,629	62613	9,984
12	09 Aug 23	16:10	16:29	54,191	56501	2,310
Average				48,074	53,779	5,704
Confidence Coefficient (CC)				1,695		1,695
Relative Accuracy ^{1/} (Compared with RM) (%)				13.76		13.76
Relative Accuracy Criteria (Compared with RM)				≤ 20 %		≤ 20 %

Reference Method : US EPA Method 2

Remark: * Sample with * is a rejected data

^{1/} Relative Accuracy Criteria of Flowrate is refer to 40 CFR Part 60 Appendix B : Performance Specification Test 6 (PS-6)

RA Result is within Criteria

Sampled By : Saksit Phaisanphit

Technical Management

Wichan Choonharat
Manager
หมายเลขโทรศัพท์ 2-204-6113

Approved by

Sarayuth Jitranont
Assistant General Manager

หมายเลขโทรศัพท์ 2-204-61702

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คุณภาพอากาศในสถานประกอบการ



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong
Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2387922

Date Received : Aug 08, 2023

Date Reported : Aug 17, 2023

Report Number : 2729852-1

Page 1 of 2

Sample Number	2387922-1
Sampled Date	Aug 07, 2023
Sample Description	Air Quality
Location	บริเวณหน่วยผลิตสาร PO
Date Analysis Commenced	Aug 09, 2023
Condition of Sample	Drawn into one 10-L air sampling bag and one sorbent tube, refrigerated
Barometric Pressure	755 mmHg
Atmospheric Temperature	31.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Methane as Propane	09:30 AM - 11:30 AM	ppm	-	0.33	0.69	No Standard	Total Hydrocarbon Analyzer	-	Rayong
Non Methane Hydrocarbon as Propane	09:30 AM - 11:30 AM	ppm	-	0.33	<0.33	No Standard	Total Hydrocarbon Analyzer	-	Rayong
Propylene Oxide	09:30 AM - 11:30 AM	ppm	-	0.10	<0.10	100	NIOSH (1994), 1612	MOL	Bangkok
Total Hydrocarbon as Propane	09:30 AM - 11:30 AM	ppm	-	0.33	0.78	No Standard	Total Hydrocarbon Analyzer	-	Rayong

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 : Satcha Phetsawaeng

Remark :

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

Approved by

Thanita K.

Thanita Kulsuriwong
Scientist (4)

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong
Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2387922

Date Received : Aug 08, 2023

Date Reported : Aug 17, 2023

Report Number : 2729852-1

Page 2 of 2

Sample Number	2387922-2
Sampled Date	Aug 07, 2023
Sample Description	Air Quality
Location	บริเวณหน่วยผลิตสาร PO
Date Analysis Commenced	Aug 09, 2023
Condition of Sample	Drawn into one 10-L air sampling bag and one sorbent tube, refrigerated
Barometric Pressure	755 mmHg
Atmospheric Temperature	31.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Methane as Propane	09:30 AM - 11:30 AM	ppm	-	0.33	0.66	No Standard	Total Hydrocarbon Analyzer	-	Rayong
Non Methane Hydrocarbon as Propane	09:30 AM - 11:30 AM	ppm	-	0.33	0.63	No Standard	Total Hydrocarbon Analyzer	-	Rayong
Propylene Oxide	09:30 AM - 11:30 AM	ppm	-	0.10	<0.10	100	NIOSH (1994), 1612	MOL	Bangkok
Total Hydrocarbon as Propane	09:30 AM - 11:30 AM	ppm	-	0.33	1.29	No Standard	Total Hydrocarbon Analyzer	-	Rayong

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 : Satcha Phetsawaeng

Remark :

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

Approved by

Thanita K.

Thanita Kulsuriwong
Scientist (4)

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong
Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 23125270

Date Received : Oct 31, 2023

Date Reported : Nov 08, 2023

Report Number : 2818001-1

Sample Number 23125270-1
Sampled Date Oct 30, 2023
Sample Description Air Quality
Location บริษัทแบริ่งไทย จำกัด PO
Date Analysis Commenced Nov 01, 2023
Condition of Sample Drawn into one 10-L air sampling bag and one sorbent tube, refrigerated
Barometric Pressure 756 mmHg
Atmospheric Temperature 30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Methane as Propane	09:00 AM - 11:00 AM	ppm	-	0.33	1.07	No Standard	Total Hydrocarbon Analyzer	-	Rayong
Non Methane Hydrocarbon as Propane	09:00 AM - 11:00 AM	ppm	-	0.33	0.81	No Standard	Total Hydrocarbon Analyzer	-	Rayong
Propylene Oxide	09:00 AM - 11:00 AM	ppm	-	0.10	<0.10	100	NIOSH (1994), 1612	MOL	Bangkok
Total Hydrocarbon as Propane	09:00 AM - 11:00 AM	ppm	-	0.33	1.88	No Standard	Total Hydrocarbon Analyzer	-	Rayong

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 : Natthapon Jiengwarewong

Remark :

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

Page 1 of 2



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong
Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 23125270

Date Received : Oct 31, 2023

Date Reported : Nov 08, 2023

Report Number : 2818001-1

Sample Number 23125270-2
Sampled Date Oct 30, 2023
Sample Description Air Quality
Location บริษัทแบริ่งไทย จำกัด PO
Date Analysis Commenced Nov 01, 2023
Condition of Sample Drawn into one 10-L air sampling bag and one sorbent tube, refrigerated
Barometric Pressure 756 mmHg
Atmospheric Temperature 30.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Methane as Propane	09:00 AM - 11:00 AM	ppm	-	0.33	1.07	No Standard	Total Hydrocarbon Analyzer	-	Rayong
Non Methane Hydrocarbon as Propane	09:00 AM - 11:00 AM	ppm	-	0.33	0.59	No Standard	Total Hydrocarbon Analyzer	-	Rayong
Propylene Oxide	09:00 AM - 11:00 AM	ppm	-	0.10	<0.10	100	NIOSH (1994), 1612	MOL	Bangkok
Total Hydrocarbon as Propane	09:00 AM - 11:00 AM	ppm	-	0.33	1.66	No Standard	Total Hydrocarbon Analyzer	-	Rayong

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 : Natthapon Jiengwarewong

Remark :

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

Page 2 of 2

Approved by

Saranya C.

Saranya Chalermthamrong
Scientist (4)

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Approved by

Saranya C.

Saranya Chalermthamrong
Scientist (4)

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ระดับเสียงทั่วไป (Leq 24 hrs) บริเวณโรงงาน



Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391188

Date Received : Aug 16, 2023

Date Reported : Aug 19, 2023

Report Number: 2750842-1

Page : of 1

Sample Number	2391188-1
Parameter	Noise (Leq 24 hrs.)
Location	บริเวณริมรั้วของโครงการทางด้านทิศตะวันตกของพื้นที่ HPPO (GPS 47P 0726777, 1405417)
Measurement Date	Aug 09 - Aug 10, 2023
Measurement by	Mongkon Phalathip
Sound Level meter	Serial No. 597167

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	58.9	75.8	57.0
10:00 AM - 11:00 AM	59.9	83.6	57.2
11:00 AM - 12:00 PM	59.3	76.0	56.9
12:00 PM - 01:00 PM	59.4	88.2	56.3
01:00 PM - 02:00 PM	58.4	72.8	56.7
02:00 PM - 03:00 PM	58.7	70.7	57.0
03:00 PM - 04:00 PM	59.3	84.1	57.4
04:00 PM - 05:00 PM	60.5	93.0	57.2
05:00 PM - 06:00 PM	60.1	74.4	57.7
06:00 PM - 07:00 PM	60.6	78.3	58.5
07:00 PM - 08:00 PM	60.0	76.3	58.6
08:00 PM - 09:00 PM	59.5	70.8	58.7
09:00 PM - 10:00 PM	59.5	78.6	58.5
10:00 PM - 11:00 PM	59.1	66.8	58.6
11:00 PM - 12:00 AM	58.5	71.9	57.7
12:00 AM - 01:00 AM	58.5	63.5	57.7
01:00 AM - 02:00 AM	58.3	62.9	57.7
02:00 AM - 03:00 AM	58.6	80.8	57.7
03:00 AM - 04:00 AM	59.0	85.3	58.1
04:00 AM - 05:00 AM	58.1	68.5	57.6
05:00 AM - 06:00 AM	59.1	69.3	57.9
06:00 AM - 07:00 AM	60.3	77.8	57.9
07:00 AM - 08:00 AM	61.0	78.1	56.9
08:00 AM - 09:00 AM	58.8	77.0	56.7

Leq Average 24 hrs. (dB(A))	59.4		
Lmax (dB(A))		93.0	
L90 (dB(A))			57.7
Ldn (dB(A))	65.4		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391188

Date Received : Aug 16, 2023

Date Reported : Aug 19, 2023

Report Number: 2750843-1

Page : of 1

Sample Number	2391188-2
Parameter	Noise (Leq 24 hrs.)
Location	บริเวณริมรั้วของโครงการทางด้านทิศตะวันตกของพื้นที่ HPPO (GPS 47P 0726777, 1405417)
Measurement Date	Aug 10 - Aug 11, 2023
Measurement by	Mongkon Phalathip
Sound Level meter	Serial No. 597167

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	58.5	81.4	56.4
10:00 AM - 11:00 AM	58.4	72.4	56.7
11:00 AM - 12:00 PM	59.4	85.6	56.8
12:00 PM - 01:00 PM	58.8	81.7	56.6
01:00 PM - 02:00 PM	58.3	71.1	56.7
02:00 PM - 03:00 PM	58.4	74.2	56.6
03:00 PM - 04:00 PM	60.9	95.4	57.0
04:00 PM - 05:00 PM	59.9	72.1	57.8
05:00 PM - 06:00 PM	60.4	77.7	58.2
06:00 PM - 07:00 PM	60.5	77.2	58.5
07:00 PM - 08:00 PM	60.3	87.0	58.4
08:00 PM - 09:00 PM	59.2	70.1	58.3
09:00 PM - 10:00 PM	57.8	68.3	56.9
10:00 PM - 11:00 PM	57.6	67.9	56.8
11:00 PM - 12:00 AM	57.5	76.6	56.7
12:00 AM - 01:00 AM	57.4	60.6	56.7
01:00 AM - 02:00 AM	57.4	63.7	56.8
02:00 AM - 03:00 AM	57.9	59.8	57.3
03:00 AM - 04:00 AM	58.7	85.0	57.6
04:00 AM - 05:00 AM	58.2	74.5	57.2
05:00 AM - 06:00 AM	58.8	67.3	57.7
06:00 AM - 07:00 AM	60.0	74.0	57.8
07:00 AM - 08:00 AM	62.4	92.9	57.9
08:00 AM - 09:00 AM	59.6	78.3	57.1

Leq Average 24 hrs. (dB(A))	59.2		
Lmax (dB(A))		95.4	
L90 (dB(A))			57.0
Ldn (dB(A))	64.9		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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8525-209/ EMAIL

S:\Reports_Air Noise.rpt (4:51PM)



Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391188

Date Received : Aug 16, 2023

Date Reported : Aug 19, 2023

Report Number: 2750844-1

Page 1 of 1

Sample Number 2391188-3
Parameter Noise (Leq 24 hrs.)
Location บริเวณรั้วของโครงการทางด้านทิศตะวันตกของพื้นที่ HPPO (GPS 47P 0726777, 1405417)
Measurement Date Aug 11 - Aug 12, 2023
Measurement by Mongkon Phalathip
Sound Level meter Serial No. 597167

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	58.4	71.9	56.9
10:00 AM - 11:00 AM	58.6	74.8	57.0
11:00 AM - 12:00 PM	59.4	75.2	57.0
12:00 PM - 01:00 PM	58.8	74.8	56.6
01:00 PM - 02:00 PM	58.8	70.7	56.9
02:00 PM - 03:00 PM	58.0	72.8	56.8
03:00 PM - 04:00 PM	58.6	72.4	57.1
04:00 PM - 05:00 PM	59.7	78.1	57.5
05:00 PM - 06:00 PM	60.5	81.3	58.0
06:00 PM - 07:00 PM	61.0	76.2	58.3
07:00 PM - 08:00 PM	60.1	72.4	59.0
08:00 PM - 09:00 PM	59.7	71.5	58.9
09:00 PM - 10:00 PM	60.1	70.5	59.3
10:00 PM - 11:00 PM	59.2	75.2	58.1
11:00 PM - 12:00 AM	58.7	69.3	57.8
12:00 AM - 01:00 AM	58.0	71.3	57.3
01:00 AM - 02:00 AM	58.0	69.8	57.2
02:00 AM - 03:00 AM	58.2	83.8	57.3
03:00 AM - 04:00 AM	60.7	85.6	57.0
04:00 AM - 05:00 AM	58.8	71.8	56.8
05:00 AM - 06:00 AM	58.5	70.8	56.7
06:00 AM - 07:00 AM	58.6	76.5	57.1
07:00 AM - 08:00 AM	59.0	73.2	57.2
08:00 AM - 09:00 AM	59.7	74.0	57.4
Leq Average 24 hrs. (dB(A))	59.2		
Lmax (dB(A))		85.6	
L90 (dB(A))			57.2
Ldn (dB(A))	65.3		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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8525-209/ EMAIL



Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391188

Date Received : Aug 16, 2023

Date Reported : Aug 19, 2023

Report Number: 2750845-1

Page 1 of 1

Sample Number 2391188-4
Parameter Noise (Leq 24 hrs.)
Location บริเวณรั้วของโครงการทางด้านทิศตะวันตกของพื้นที่ HPPO (GPS 47P 0726777, 1405417)
Measurement Date Aug 12 - Aug 13, 2023
Measurement by Mongkon Phalathip
Sound Level meter Serial No. 597167

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	59.6	73.8	57.3
10:00 AM - 11:00 AM	60.4	74.0	58.1
11:00 AM - 12:00 PM	59.5	72.1	58.3
12:00 PM - 01:00 PM	59.0	76.3	57.7
01:00 PM - 02:00 PM	58.5	73.2	57.5
02:00 PM - 03:00 PM	58.4	72.4	57.5
03:00 PM - 04:00 PM	58.1	68.7	57.4
04:00 PM - 05:00 PM	57.8	60.4	57.2
05:00 PM - 06:00 PM	58.5	62.3	57.5
06:00 PM - 07:00 PM	59.5	79.3	58.3
07:00 PM - 08:00 PM	59.2	66.7	58.6
08:00 PM - 09:00 PM	59.5	65.4	58.8
09:00 PM - 10:00 PM	60.4	69.9	58.7
10:00 PM - 11:00 PM	60.9	76.7	58.6
11:00 PM - 12:00 AM	61.6	78.1	58.3
12:00 AM - 01:00 AM	59.8	82.7	57.5
01:00 AM - 02:00 AM	59.3	72.3	57.3
02:00 AM - 03:00 AM	59.0	71.3	57.2
03:00 AM - 04:00 AM	59.1	77.0	57.6
04:00 AM - 05:00 AM	59.5	73.7	57.7
05:00 AM - 06:00 AM	60.2	74.5	57.9
06:00 AM - 07:00 AM	60.1	74.3	57.8
07:00 AM - 08:00 AM	60.9	74.5	58.6
08:00 AM - 09:00 AM	60.0	72.6	58.8
Leq Average 24 hrs. (dB(A))	59.6		
Lmax (dB(A))		82.7	
L90 (dB(A))			57.7
Ldn (dB(A))	66.3		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPP0-TPO Plant

Lot ID: 2391188

Date Received : Aug 16, 2023

Date Reported : Aug 19, 2023

Report Number: 2750846-1

Page 1 of 1

Sample Number 2391188-5
Parameter Noise (Leq 24 hrs.)
Location บริเวณริมรั้วของโครงการทางด้านทิศตะวันตกของพื้นที่ HPP0 (GPS 47P 0726777, 1405417)
Measurement Date Aug 13 - Aug 14, 2023
Measurement by Mongkon Phalathip
Sound Level meter Serial No. 597167

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	59.5	76.8	58.2
10:00 AM - 11:00 AM	59.0	73.7	58.0
11:00 AM - 12:00 PM	58.9	72.9	58.0
12:00 PM - 01:00 PM	58.6	69.2	57.9
01:00 PM - 02:00 PM	58.3	60.9	57.7
02:00 PM - 03:00 PM	59.0	62.8	58.0
03:00 PM - 04:00 PM	60.0	79.8	58.8
04:00 PM - 05:00 PM	59.7	67.2	59.1
05:00 PM - 06:00 PM	60.0	65.9	59.3
06:00 PM - 07:00 PM	60.9	70.4	59.2
07:00 PM - 08:00 PM	61.4	77.2	59.1
08:00 PM - 09:00 PM	62.1	78.6	58.8
09:00 PM - 10:00 PM	60.3	83.2	58.0
10:00 PM - 11:00 PM	59.4	76.3	57.5
11:00 PM - 12:00 AM	60.4	84.1	57.7
12:00 AM - 01:00 AM	59.8	76.5	57.4
01:00 AM - 02:00 AM	59.9	88.7	56.8
02:00 AM - 03:00 AM	58.9	73.3	57.2
03:00 AM - 04:00 AM	59.2	71.2	57.5
04:00 AM - 05:00 AM	59.8	84.6	57.9
05:00 AM - 06:00 AM	61.0	93.5	57.7
06:00 AM - 07:00 AM	60.6	74.9	58.2
07:00 AM - 08:00 AM	61.1	78.8	59.0
08:00 AM - 09:00 AM	60.5	76.8	59.1

Leq Average 24 hrs. (dB(A)) 60.0
Lmax (dB(A)) 93.5
L90 (dB(A)) 58.0
Ldn (dB(A)) 66.4
Standard (dB(A)) 70

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supt S.

Supt Salameh
Section Head

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8525-209/ EMAIL



Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPP0-TPO Plant

Lot ID: 2391188

Date Received : Aug 16, 2023

Date Reported : Aug 19, 2023

Report Number: 2750847-1

Page 1 of 1

Sample Number 2391188-6
Parameter Noise (Leq 24 hrs.)
Location บริเวณริมรั้วของโครงการทางด้านทิศตะวันตกของพื้นที่ HPP0 (GPS 47P 0726777, 1405417)
Measurement Date Aug 14 - Aug 15, 2023
Measurement by Mongkon Phalathip
Sound Level meter Serial No. 597167

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	60.0	71.3	59.2
10:00 AM - 11:00 AM	60.0	79.1	59.0
11:00 AM - 12:00 PM	59.6	67.3	59.1
12:00 PM - 01:00 PM	59.0	72.4	58.2
01:00 PM - 02:00 PM	59.0	64.0	58.2
02:00 PM - 03:00 PM	58.8	63.4	58.2
03:00 PM - 04:00 PM	59.1	81.3	58.2
04:00 PM - 05:00 PM	59.5	85.8	58.6
05:00 PM - 06:00 PM	58.6	69.0	58.1
06:00 PM - 07:00 PM	59.6	69.8	58.4
07:00 PM - 08:00 PM	60.8	78.3	58.4
08:00 PM - 09:00 PM	61.5	78.6	57.4
09:00 PM - 10:00 PM	59.3	77.5	57.2
10:00 PM - 11:00 PM	59.0	81.9	56.9
11:00 PM - 12:00 AM	58.9	72.9	57.2
12:00 AM - 01:00 AM	59.9	86.1	57.3
01:00 AM - 02:00 AM	59.3	82.2	57.1
02:00 AM - 03:00 AM	58.8	71.6	57.2
03:00 AM - 04:00 AM	58.9	74.7	57.1
04:00 AM - 05:00 AM	61.4	95.9	57.5
05:00 AM - 06:00 AM	60.4	72.6	58.3
06:00 AM - 07:00 AM	60.9	78.2	58.7
07:00 AM - 08:00 AM	61.0	77.7	59.0
08:00 AM - 09:00 AM	60.8	87.5	58.9

Leq Average 24 hrs. (dB(A)) 59.8
Lmax (dB(A)) 95.9
L90 (dB(A)) 58.2
Ldn (dB(A)) 66.2
Standard (dB(A)) 70

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supt S.

Supt Salameh
Section Head

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Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391188

Date Received : Aug 16, 2023

Date Reported : Aug 19, 2023

Report Number: 2750848-1

Page 1 of 1

Sample Number 2391188-7
Parameter Noise (Leq 24 hrs.)
Location บริเวณรั้วรอบโรงการทางด้านทิศตะวันตกของพื้นที่ HPPO (GPS 47P 0726777, 1405417)
Measurement Date Aug 15 - Aug 16, 2023
Measurement by Mongkon Phalathip
Sound Level meter Serial No. 597167

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	59.7	70.6	58.8
10:00 AM - 11:00 AM	58.3	68.8	57.4
11:00 AM - 12:00 PM	58.1	68.4	57.3
12:00 PM - 01:00 PM	58.0	77.1	57.2
01:00 PM - 02:00 PM	57.9	61.1	57.2
02:00 PM - 03:00 PM	57.9	64.2	57.3
03:00 PM - 04:00 PM	58.4	60.3	57.8
04:00 PM - 05:00 PM	59.2	85.5	58.1
05:00 PM - 06:00 PM	58.7	75.0	57.7
06:00 PM - 07:00 PM	59.3	67.8	58.2
07:00 PM - 08:00 PM	60.5	74.5	58.3
08:00 PM - 09:00 PM	62.9	93.4	58.4
09:00 PM - 10:00 PM	60.1	78.8	57.6
10:00 PM - 11:00 PM	58.9	72.4	57.4
11:00 PM - 12:00 AM	59.1	75.3	57.5
12:00 AM - 01:00 AM	59.9	75.7	57.5
01:00 AM - 02:00 AM	59.3	75.3	57.1
02:00 AM - 03:00 AM	59.3	71.2	57.4
03:00 AM - 04:00 AM	58.5	73.3	57.3
04:00 AM - 05:00 AM	59.1	72.9	57.6
05:00 AM - 06:00 AM	60.2	78.6	58.0
06:00 AM - 07:00 AM	61.0	81.8	58.5
07:00 AM - 08:00 AM	61.5	76.7	58.8
08:00 AM - 09:00 AM	60.6	72.9	59.5
Leq Average 24 hrs. (dB(A))	59.6		
Lmax (dB(A))		93.4	
L90 (dB(A))			57.6
Ldn (dB(A))	66.0		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391190

Date Received : Aug 16, 2023

Date Reported : Aug 19, 2023

Report Number: 2750849-1

Page 1 of 1

Sample Number 2391190-1
Parameter Noise (Leq 24 hrs.)
Location บริเวณรั้วรอบโรงการทางด้านทิศใต้ของพื้นที่ HPPO (ทางเชื่อม รพก บล็ค 45) (GPS 47P 0727136, 1404550)
Measurement Date Aug 09 - Aug 10, 2023
Measurement by Mongkon Phalathip
Sound Level meter Serial No. 623391

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	50.1	70.4	45.1
10:00 AM - 11:00 AM	50.3	71.9	45.0
11:00 AM - 12:00 PM	50.0	70.9	45.0
12:00 PM - 01:00 PM	48.3	67.0	44.0
01:00 PM - 02:00 PM	49.3	63.2	43.8
02:00 PM - 03:00 PM	49.7	66.5	44.3
03:00 PM - 04:00 PM	54.3	75.7	44.8
04:00 PM - 05:00 PM	51.4	69.4	46.4
05:00 PM - 06:00 PM	61.3	83.1	46.5
06:00 PM - 07:00 PM	57.0	77.9	45.3
07:00 PM - 08:00 PM	46.4	64.3	44.1
08:00 PM - 09:00 PM	47.8	79.4	44.0
09:00 PM - 10:00 PM	50.5	72.0	44.3
10:00 PM - 11:00 PM	46.9	68.3	45.1
11:00 PM - 12:00 AM	46.0	52.0	45.2
12:00 AM - 01:00 AM	49.0	66.4	46.7
01:00 AM - 02:00 AM	47.5	52.4	47.0
02:00 AM - 03:00 AM	49.3	67.9	47.0
03:00 AM - 04:00 AM	48.2	62.7	47.6
04:00 AM - 05:00 AM	48.9	67.4	47.1
05:00 AM - 06:00 AM	55.4	77.5	48.0
06:00 AM - 07:00 AM	56.5	82.3	49.1
07:00 AM - 08:00 AM	54.1	75.3	45.9
08:00 AM - 09:00 AM	49.1	71.5	44.5
Leq Average 24 hrs. (dB(A))	52.8		
Lmax (dB(A))		83.1	
L90 (dB(A))			45.1
Ldn (dB(A))	58.2		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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8525-209/ EMAIL

S:\Reports_Air Noise.rpt (4:53PM)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130
P/O : 4514156966
Project Name : Environmental Quality Monitoring
Project Location : AIE_HPPO-TPO Plant



TESTING
No.0042

Lot ID: 2391190
Date Received : Aug 16, 2023
Date Reported : Aug 19, 2023
Report Number: 2750850-1

Page 1 of 1

Sample Number	2391190-2
Parameter	Noise (Leq 24 hrs.)
Location	บริเวณริมรั้วของโครงการทางด้านทิศใต้ของพื้นที่ HPPO (ข้างปั๊มน รถ บดลค 45) (GPS 47P 0727136, 1404550)
Measurement Date	Aug 10 - Aug 11, 2023
Measurement by	Mongkon Phalathip
Sound Level meter	Serial No. 623391

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	48.6	66.1	44.3
10:00 AM - 11:00 AM	51.1	73.9	44.9
11:00 AM - 12:00 PM	50.0	70.3	45.0
12:00 PM - 01:00 PM	49.2	65.4	45.5
01:00 PM - 02:00 PM	49.3	69.0	45.7
02:00 PM - 03:00 PM	54.2	80.4	43.6
03:00 PM - 04:00 PM	52.2	70.7	45.0
04:00 PM - 05:00 PM	53.8	75.4	46.2
05:00 PM - 06:00 PM	64.1	86.0	46.1
06:00 PM - 07:00 PM	52.3	78.9	43.9
07:00 PM - 08:00 PM	46.3	66.0	43.2
08:00 PM - 09:00 PM	45.1	59.0	43.9
09:00 PM - 10:00 PM	48.9	68.7	44.6
10:00 PM - 11:00 PM	45.9	65.1	44.6
11:00 PM - 12:00 AM	45.2	52.0	44.3
12:00 AM - 01:00 AM	49.3	71.2	44.4
01:00 AM - 02:00 AM	46.2	64.0	44.8
02:00 AM - 03:00 AM	47.6	52.7	46.6
03:00 AM - 04:00 AM	48.0	66.6	46.4
04:00 AM - 05:00 AM	48.6	72.2	46.6
05:00 AM - 06:00 AM	53.4	74.5	48.1
06:00 AM - 07:00 AM	53.7	75.3	48.5
07:00 AM - 08:00 AM	52.8	73.0	45.2
08:00 AM - 09:00 AM	57.3	89.8	44.1

Leq Average 24 hrs. (dB(A))	53.7		
Lmax (dB(A))		89.8	
L90 (dB(A))			44.9
Ldn (dB(A))	57.4		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supt S

Supot Salamteh
Section Head

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8525-209/ EMAIL



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130
P/O : 4514156966
Project Name : Environmental Quality Monitoring
Project Location : AIE_HPPO-TPO Plant



TESTING
No.0042

Lot ID: 2391190
Date Received : Aug 16, 2023
Date Reported : Aug 19, 2023
Report Number: 2750851-1

Page 1 of 1

Sample Number	2391190-3
Parameter	Noise (Leq 24 hrs.)
Location	บริเวณริมรั้วของโครงการทางด้านทิศใต้ของพื้นที่ HPPO (ข้างปั๊มน รถ บดลค 45) (GPS 47P 0727136, 1404550)
Measurement Date	Aug 11 - Aug 12, 2023
Measurement by	Mongkon Phalathip
Sound Level meter	Serial No. 623391

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	49.1	72.1	43.7
10:00 AM - 11:00 AM	49.6	69.7	44.0
11:00 AM - 12:00 PM	54.1	77.6	45.1
12:00 PM - 01:00 PM	49.7	78.6	45.1
01:00 PM - 02:00 PM	47.6	65.9	44.1
02:00 PM - 03:00 PM	49.7	65.2	45.6
03:00 PM - 04:00 PM	54.4	75.4	46.4
04:00 PM - 05:00 PM	52.9	81.3	45.6
05:00 PM - 06:00 PM	48.7	68.6	44.2
06:00 PM - 07:00 PM	50.5	72.6	45.0
07:00 PM - 08:00 PM	54.7	79.7	44.6
08:00 PM - 09:00 PM	51.0	72.5	45.8
09:00 PM - 10:00 PM	53.1	70.5	46.0
10:00 PM - 11:00 PM	52.8	75.5	46.6
11:00 PM - 12:00 AM	61.8	83.9	46.7
12:00 AM - 01:00 AM	57.7	81.3	45.1
01:00 AM - 02:00 AM	47.4	66.8	44.1
02:00 AM - 03:00 AM	49.4	68.7	44.8
03:00 AM - 04:00 AM	45.2	62.5	43.8
04:00 AM - 05:00 AM	45.8	52.9	44.6
05:00 AM - 06:00 AM	46.4	60.0	45.2
06:00 AM - 07:00 AM	48.0	71.1	45.0
07:00 AM - 08:00 AM	50.8	87.0	44.2
08:00 AM - 09:00 AM	44.9	52.7	43.8

Leq Average 24 hrs. (dB(A))	52.9		
Lmax (dB(A))		87.0	
L90 (dB(A))			45.0
Ldn (dB(A))	60.7		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supt S

Supot Salamteh
Section Head

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Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391190

Date Received : Aug 16, 2023

Date Reported : Aug 19, 2023

Report Number: 2750852-1

Page 1 of 1

Sample Number : 2391190-4
Parameter : Noise (Leq 24 hrs.)
Location : บริเวณรั้วของโครงการทางด้านทิศใต้ของพื้นที่ HPPO (ข้างปั๊มน รถบด 45) (GPS 47P 0727136, 1404550)
Measurement Date : Aug 12 - Aug 13, 2023
Measurement by : Mongkon Phalathip
Sound Level meter : Serial No. 623391

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	47.4	66.9	42.8
10:00 AM - 11:00 AM	49.2	71.3	43.3
11:00 AM - 12:00 PM	53.8	77.9	46.8
12:00 PM - 01:00 PM	55.2	77.9	48.0
01:00 PM - 02:00 PM	56.2	87.2	45.8
02:00 PM - 03:00 PM	49.7	69.1	44.8
03:00 PM - 04:00 PM	53.6	82.0	46.3
04:00 PM - 05:00 PM	49.4	69.3	44.9
05:00 PM - 06:00 PM	51.2	73.3	45.7
06:00 PM - 07:00 PM	55.4	80.4	45.3
07:00 PM - 08:00 PM	51.7	73.2	46.5
08:00 PM - 09:00 PM	53.8	71.2	46.7
09:00 PM - 10:00 PM	53.5	76.2	47.3
10:00 PM - 11:00 PM	62.5	84.6	47.4
11:00 PM - 12:00 AM	58.4	82.0	45.8
12:00 AM - 01:00 AM	48.1	67.5	44.8
01:00 AM - 02:00 AM	50.1	69.4	45.5
02:00 AM - 03:00 AM	45.9	63.2	44.5
03:00 AM - 04:00 AM	46.5	53.6	45.3
04:00 AM - 05:00 AM	47.1	60.7	45.9
05:00 AM - 06:00 AM	48.7	71.8	45.7
06:00 AM - 07:00 AM	51.5	87.7	44.9
07:00 AM - 08:00 AM	45.6	53.4	44.5
08:00 AM - 09:00 AM	48.1	67.6	43.5

Leq Average 24 hrs. (dB(A)) : 53.8
Lmax (dB(A)) : 87.7
L90 (dB(A)) : 45.5
Ldn (dB(A)) : 61.3
Standard (dB(A)) : 70 115

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanita K.

Thanita Kulsriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391190

Date Received : Aug 16, 2023

Date Reported : Aug 19, 2023

Report Number: 2750853-1

Page 1 of 1

Sample Number : 2391190-5
Parameter : Noise (Leq 24 hrs.)
Location : บริเวณรั้วของโครงการทางด้านทิศใต้ของพื้นที่ HPPO (ข้างปั๊มน รถบด 45) (GPS 47P 0727136, 1404550)
Measurement Date : Aug 13 - Aug 14, 2023
Measurement by : Mongkon Phalathip
Sound Level meter : Serial No. 623391

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	49.9	72.0	44.0
10:00 AM - 11:00 AM	54.5	78.6	47.5
11:00 AM - 12:00 PM	55.9	78.6	48.7
12:00 PM - 01:00 PM	56.9	87.9	46.5
01:00 PM - 02:00 PM	50.4	69.8	45.5
02:00 PM - 03:00 PM	50.8	71.1	45.8
03:00 PM - 04:00 PM	51.0	72.6	45.7
04:00 PM - 05:00 PM	50.7	71.6	45.7
05:00 PM - 06:00 PM	49.0	67.7	44.7
06:00 PM - 07:00 PM	50.0	63.9	44.5
07:00 PM - 08:00 PM	50.4	67.2	45.0
08:00 PM - 09:00 PM	55.0	76.4	45.5
09:00 PM - 10:00 PM	52.1	70.1	47.1
10:00 PM - 11:00 PM	62.0	83.8	47.2
11:00 PM - 12:00 AM	57.7	78.6	46.0
12:00 AM - 01:00 AM	47.1	65.0	44.8
01:00 AM - 02:00 AM	48.5	80.1	44.7
02:00 AM - 03:00 AM	51.2	72.7	45.0
03:00 AM - 04:00 AM	47.6	69.0	45.8
04:00 AM - 05:00 AM	46.7	52.7	45.9
05:00 AM - 06:00 AM	49.7	67.1	47.4
06:00 AM - 07:00 AM	48.2	53.1	47.7
07:00 AM - 08:00 AM	50.0	68.6	47.7
08:00 AM - 09:00 AM	48.9	63.4	48.3

Leq Average 24 hrs. (dB(A)) : 53.5
Lmax (dB(A)) : 87.9
L90 (dB(A)) : 45.8
Ldn (dB(A)) : 60.9
Standard (dB(A)) : 70 115

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanita K.

Thanita Kulsriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391190

Date Received : Aug 16, 2023

Date Reported : Aug 19, 2023

Report Number: 2750854-1

Page 1 of 1

Sample Number	2391190-6
Parameter	Noise (Leq 24 hrs.)
Location	บริเวณริมรั้วของโครงการทางด้านทิศใต้ของพื้นที่ HPPO (ข้างบ่อน รถ บลัด 45) (GPS 47P 0727136, 1404550)
Measurement Date	Aug 14 - Aug 15, 2023
Measurement by	Mongkon Phalathip
Sound Level meter	Serial No. 623391

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	49.6	68.1	47.8
10:00 AM - 11:00 AM	56.1	78.2	48.7
11:00 AM - 12:00 PM	57.2	83.0	49.8
12:00 PM - 01:00 PM	54.8	76.0	46.6
01:00 PM - 02:00 PM	49.8	72.2	45.2
02:00 PM - 03:00 PM	49.3	66.8	45.0
03:00 PM - 04:00 PM	51.8	74.6	45.6
04:00 PM - 05:00 PM	50.7	71.0	45.7
05:00 PM - 06:00 PM	49.9	66.1	46.2
06:00 PM - 07:00 PM	50.0	69.7	46.4
07:00 PM - 08:00 PM	54.9	81.1	44.3
08:00 PM - 09:00 PM	52.9	71.4	45.7
09:00 PM - 10:00 PM	54.5	76.1	46.9
10:00 PM - 11:00 PM	64.8	86.7	46.8
11:00 PM - 12:00 AM	53.0	79.6	44.6
12:00 AM - 01:00 AM	47.0	66.7	43.9
01:00 AM - 02:00 AM	45.8	59.7	44.6
02:00 AM - 03:00 AM	49.6	69.4	45.3
03:00 AM - 04:00 AM	46.6	65.8	45.3
04:00 AM - 05:00 AM	45.9	52.7	45.0
05:00 AM - 06:00 AM	50.0	71.9	45.1
06:00 AM - 07:00 AM	46.9	64.7	45.5
07:00 AM - 08:00 AM	48.3	53.4	47.3
08:00 AM - 09:00 AM	48.7	67.3	47.1

Leq Average 24 hrs. (dB(A))	54.3
Lmax (dB(A))	86.7
L90 (dB(A))	45.6
Ldn (dB(A))	62.1
Standard (dB(A))	70

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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8525-209/ EMAIL



Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391190

Date Received : Aug 16, 2023

Date Reported : Aug 19, 2023

Report Number: 2750855-1

Page 1 of 1

Sample Number	2391190-7
Parameter	Noise (Leq 24 hrs.)
Location	บริเวณริมรั้วของโครงการทางด้านทิศใต้ของพื้นที่ HPPO (ข้างบ่อน รถ บลัด 45) (GPS 47P 0727136, 1404550)
Measurement Date	Aug 15 - Aug 16, 2023
Measurement by	Mongkon Phalathip
Sound Level meter	Serial No. 623391

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	49.3	72.9	47.3
10:00 AM - 11:00 AM	54.1	75.2	48.8
11:00 AM - 12:00 PM	54.4	76.0	49.2
12:00 PM - 01:00 PM	53.5	73.7	45.9
01:00 PM - 02:00 PM	58.0	90.5	44.8
02:00 PM - 03:00 PM	49.8	72.8	44.4
03:00 PM - 04:00 PM	50.3	70.4	44.7
04:00 PM - 05:00 PM	54.8	78.3	45.8
05:00 PM - 06:00 PM	50.4	79.3	45.8
06:00 PM - 07:00 PM	48.3	66.6	44.8
07:00 PM - 08:00 PM	50.4	65.9	46.3
08:00 PM - 09:00 PM	55.1	76.1	47.1
09:00 PM - 10:00 PM	52.7	72.0	48.1
10:00 PM - 11:00 PM	48.5	65.8	47.1
11:00 PM - 12:00 AM	49.1	56.2	47.9
12:00 AM - 01:00 AM	49.7	63.3	48.5
01:00 AM - 02:00 AM	51.3	74.4	48.3
02:00 AM - 03:00 AM	54.1	90.3	47.5
03:00 AM - 04:00 AM	48.2	56.0	47.1
04:00 AM - 05:00 AM	50.7	70.2	46.1
05:00 AM - 06:00 AM	52.5	74.6	46.6
06:00 AM - 07:00 AM	57.1	81.2	50.1
07:00 AM - 08:00 AM	58.5	81.2	51.3
08:00 AM - 09:00 AM	59.5	90.5	49.1

Leq Average 24 hrs. (dB(A))	53.9
Lmax (dB(A))	90.5
L90 (dB(A))	47.1
Ldn (dB(A))	59.1
Standard (dB(A))	70

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (4:54PM)

8525-209/ EMAIL

ระดับเสียงทั่วไป (Leq 24 hrs) บริเวณชุมชน



Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391234

Date Received : Aug 16, 2023

Date Reported : Aug 22, 2023

Report Number: 2750859-1C9

Page 1 of 1

Sample Number 2391234-1
Parameter Noise (Leq 24 hrs.)
Location หมู่บ้านประจักษ์มิตรราษฎร์ (GPS 47P 0726338, 1405748)
Measurement Date Aug 09 - Aug 10, 2023
Measurement by Mongkon Phalathip
Sound Level meter Serial No. 296516

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	52.5	79.4	46.6
11:00 AM - 12:00 PM	51.8	75.7	43.9
12:00 PM - 01:00 PM	52.8	79.7	45.8
01:00 PM - 02:00 PM	54.6	81.6	43.6
02:00 PM - 03:00 PM	50.0	66.2	44.6
03:00 PM - 04:00 PM	49.4	81.5	45.1
04:00 PM - 05:00 PM	51.7	80.2	43.7
05:00 PM - 06:00 PM	51.2	72.6	44.4
06:00 PM - 07:00 PM	53.2	78.8	45.3
07:00 PM - 08:00 PM	53.2	72.0	46.1
08:00 PM - 09:00 PM	49.3	67.0	45.2
09:00 PM - 10:00 PM	48.6	61.8	47.0
10:00 PM - 11:00 PM	52.5	76.1	46.5
11:00 PM - 12:00 AM	50.8	63.1	48.6
12:00 AM - 01:00 AM	50.4	63.8	49.5
01:00 AM - 02:00 AM	49.0	58.7	47.4
02:00 AM - 03:00 AM	47.6	57.7	46.8
03:00 AM - 04:00 AM	45.8	60.1	43.9
04:00 AM - 05:00 AM	45.8	74.3	41.6
05:00 AM - 06:00 AM	43.7	64.3	41.4
06:00 AM - 07:00 AM	56.2	79.5	43.3
07:00 AM - 08:00 AM	54.3	71.4	46.7
08:00 AM - 09:00 AM	55.8	78.3	44.7
09:00 AM - 10:00 AM	49.6	67.2	42.4

Leq Average 24 hrs. (dB(A))

51.8

Lmax (dB(A))

81.6

L90 (dB(A))

45.1

Ldn (dB(A))

57.4

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

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

Technical Management

Thanitak.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S

Supot Salamteh
Section Head

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Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391234

Date Received : Aug 16, 2023

Date Reported : Aug 22, 2023

Report Number: 2750860-1C9

Page 1 of 1

Sample Number 2391234-2
Parameter Noise (Leq 24 hrs.)
Location หมู่บ้านประจักษ์มิตรราษฎร์ (GPS 47P 0726338, 1405748)
Measurement Date Aug 10 - Aug 11, 2023
Measurement by Mongkon Phalathip
Sound Level meter Serial No. 296516

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	47.3	68.5	41.1
11:00 AM - 12:00 PM	47.6	67.6	42.2
12:00 PM - 01:00 PM	51.8	75.7	43.9
01:00 PM - 02:00 PM	50.1	71.7	43.9
02:00 PM - 03:00 PM	48.6	68.4	43.4
03:00 PM - 04:00 PM	48.5	73.8	42.4
04:00 PM - 05:00 PM	48.6	67.0	43.5
05:00 PM - 06:00 PM	52.2	70.9	45.9
06:00 PM - 07:00 PM	52.7	76.9	45.8
07:00 PM - 08:00 PM	58.4	95.6	46.4
08:00 PM - 09:00 PM	49.1	66.6	46.1
09:00 PM - 10:00 PM	48.0	71.8	45.0
10:00 PM - 11:00 PM	46.5	64.1	44.0
11:00 PM - 12:00 AM	47.2	64.0	45.1
12:00 AM - 01:00 AM	48.1	60.1	47.0
01:00 AM - 02:00 AM	50.9	58.1	46.2
02:00 AM - 03:00 AM	51.7	59.1	50.8
03:00 AM - 04:00 AM	49.5	57.5	42.9
04:00 AM - 05:00 AM	47.7	72.3	44.5
05:00 AM - 06:00 AM	45.3	65.5	41.0
06:00 AM - 07:00 AM	53.5	76.8	42.8
07:00 AM - 08:00 AM	55.7	81.8	47.5
08:00 AM - 09:00 AM	61.9	94.8	45.7
09:00 AM - 10:00 AM	51.1	76.8	42.9

Leq Average 24 hrs. (dB(A))

52.9

Lmax (dB(A))

95.6

L90 (dB(A))

44.0

Ldn (dB(A))

57.1

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

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

Technical Management

Thanitak.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S

Supot Salamteh
Section Head

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Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPPO-TPO Plant

Lot ID: 2391234

Date Received : Aug 16, 2023

Date Reported : Aug 22, 2023

Report Number: 2750861-1C9

Page 1 of 1

Sample Number 2391234-3
Parameter Noise (Leq 24 hrs.)
Location หมู่บ้านประมงโคตรนาโรง (GPS 47P 0726338, 1405748)
Measurement Date Aug 11 - Aug 12, 2023
Measurement by Mongkon Phalathip
Sound Level meter Serial No. 296516

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	50.6	75.3	43.2
11:00 AM - 12:00 PM	52.8	79.0	43.7
12:00 PM - 01:00 PM	53.1	75.2	45.1
01:00 PM - 02:00 PM	50.6	71.5	44.6
02:00 PM - 03:00 PM	48.8	64.4	44.6
03:00 PM - 04:00 PM	49.8	70.4	44.9
04:00 PM - 05:00 PM	50.9	76.2	44.2
05:00 PM - 06:00 PM	52.5	79.4	46.6
06:00 PM - 07:00 PM	52.9	78.6	45.9
07:00 PM - 08:00 PM	53.2	75.9	45.9
08:00 PM - 09:00 PM	51.6	75.7	47.7
09:00 PM - 10:00 PM	48.7	70.3	47.1
10:00 PM - 11:00 PM	48.6	67.8	47.4
11:00 PM - 12:00 AM	49.1	57.4	47.1
12:00 AM - 01:00 AM	48.4	62.2	47.2
01:00 AM - 02:00 AM	48.4	65.9	47.2
02:00 AM - 03:00 AM	46.8	62.0	44.9
03:00 AM - 04:00 AM	46.7	63.1	44.6
04:00 AM - 05:00 AM	45.7	52.4	42.5
05:00 AM - 06:00 AM	44.8	70.6	42.3
06:00 AM - 07:00 AM	55.8	81.6	44.1
07:00 AM - 08:00 AM	52.8	70.3	44.8
08:00 AM - 09:00 AM	52.5	78.3	43.0
09:00 AM - 10:00 AM	52.5	80.7	42.1
Leq Average 24 hrs. (dB(A))	51.1		
Lmax (dB(A))		81.6	
L90 (dB(A))			44.8
Ldn (dB(A))	56.5		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanitak.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S

Supot Salameh
Section Head

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Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPPO-TPO Plant

Lot ID: 2391234

Date Received : Aug 16, 2023

Date Reported : Aug 22, 2023

Report Number: 2750862-1C9

Page 1 of 1

Sample Number 2391234-4
Parameter Noise (Leq 24 hrs.)
Location หมู่บ้านประมงโคตรนาโรง (GPS 47P 0726338, 1405748)
Measurement Date Aug 12 - Aug 13, 2023
Measurement by Mongkon Phalathip
Sound Level meter Serial No. 296516

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	51.4	79.3	43.1
11:00 AM - 12:00 PM	48.8	73.7	44.3
12:00 PM - 01:00 PM	55.2	85.1	44.9
01:00 PM - 02:00 PM	50.2	76.4	44.5
02:00 PM - 03:00 PM	49.6	76.7	44.0
03:00 PM - 04:00 PM	50.1	72.8	44.1
04:00 PM - 05:00 PM	53.1	78.7	45.4
05:00 PM - 06:00 PM	55.2	85.2	45.8
06:00 PM - 07:00 PM	52.5	74.0	45.0
07:00 PM - 08:00 PM	52.9	78.6	44.7
08:00 PM - 09:00 PM	53.5	74.9	46.4
09:00 PM - 10:00 PM	50.1	65.0	47.3
10:00 PM - 11:00 PM	49.6	60.3	47.0
11:00 PM - 12:00 AM	49.2	64.2	47.1
12:00 AM - 01:00 AM	49.0	60.5	46.4
01:00 AM - 02:00 AM	48.5	73.6	46.0
02:00 AM - 03:00 AM	48.4	59.3	44.2
03:00 AM - 04:00 AM	45.2	57.5	43.9
04:00 AM - 05:00 AM	45.6	55.8	42.8
05:00 AM - 06:00 AM	44.4	66.2	43.0
06:00 AM - 07:00 AM	56.3	84.7	43.7
07:00 AM - 08:00 AM	55.5	83.0	44.5
08:00 AM - 09:00 AM	51.5	73.3	43.4
09:00 AM - 10:00 AM	49.6	71.3	42.5
Leq Average 24 hrs. (dB(A))	51.7		
Lmax (dB(A))		85.2	
L90 (dB(A))			44.5
Ldn (dB(A))	56.9		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanitak.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S

Supot Salameh
Section Head

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RIGHT SOLUTIONS RIGHT PARTNER

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Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391234

Date Received : Aug 16, 2023

Date Reported : Aug 22, 2023

Report Number: 2750863-1C9

Page 1 of 1

Sample Number	2391234-5
Parameter	Noise (Leq 24 hrs.)
Location	ชุมชนบ้านประมุขมิตรบำรุง (GPS 47P 0726338, 1405748)
Measurement Date	Aug 13 - Aug 14, 2023
Measurement by	Mongkon Phalathip
Sound Level meter	Serial No. 296516

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	47.0	72.4	41.6
11:00 AM - 12:00 PM	51.6	78.2	44.3
12:00 PM - 01:00 PM	52.8	79.7	45.8
01:00 PM - 02:00 PM	50.9	78.0	44.8
02:00 PM - 03:00 PM	50.6	71.5	46.0
03:00 PM - 04:00 PM	49.6	75.3	44.5
04:00 PM - 05:00 PM	51.9	81.6	44.2
05:00 PM - 06:00 PM	51.0	72.8	44.5
06:00 PM - 07:00 PM	55.1	90.0	47.2
07:00 PM - 08:00 PM	49.6	66.6	46.6
08:00 PM - 09:00 PM	47.9	67.6	46.2
09:00 PM - 10:00 PM	47.4	59.5	45.5
10:00 PM - 11:00 PM	48.3	66.4	46.2
11:00 PM - 12:00 AM	46.8	62.2	45.4
12:00 AM - 01:00 AM	45.5	58.0	43.8
01:00 AM - 02:00 AM	46.2	64.5	44.8
02:00 AM - 03:00 AM	45.4	59.1	43.4
03:00 AM - 04:00 AM	42.9	60.0	42.1
04:00 AM - 05:00 AM	45.1	61.7	42.1
05:00 AM - 06:00 AM	58.9	81.8	43.2
06:00 AM - 07:00 AM	55.5	83.5	45.4
07:00 AM - 08:00 AM	53.7	78.4	44.0
08:00 AM - 09:00 AM	51.5	74.7	42.0
09:00 AM - 10:00 AM	48.7	69.5	42.3

Leq Average 24 hrs. (dB(A))

51.5

Lmax (dB(A))

90.0

L90 (dB(A))

44.5

Ldn (dB(A))

58.3

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการ

โรงงาน พ.ศ. 2548

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

Technical Management

Thanitak.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391234

Date Received : Aug 16, 2023

Date Reported : Aug 22, 2023

Report Number: 2750864-1C9

Page 1 of 1

Sample Number	2391234-6
Parameter	Noise (Leq 24 hrs.)
Location	ชุมชนบ้านประมุขมิตรบำรุง (GPS 47P 0726338, 1405748)
Measurement Date	Aug 14 - Aug 15, 2023
Measurement by	Mongkon Phalathip
Sound Level meter	Serial No. 296516

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	51.9	85.3	43.0
11:00 AM - 12:00 PM	52.3	80.3	45.3
12:00 PM - 01:00 PM	52.0	77.7	45.6
01:00 PM - 02:00 PM	52.6	81.9	45.5
02:00 PM - 03:00 PM	48.8	69.8	44.4
03:00 PM - 04:00 PM	50.6	73.3	44.7
04:00 PM - 05:00 PM	52.5	76.6	45.8
05:00 PM - 06:00 PM	51.6	75.8	46.7
06:00 PM - 07:00 PM	56.4	90.7	46.9
07:00 PM - 08:00 PM	51.8	70.5	46.9
08:00 PM - 09:00 PM	59.7	90.6	47.4
09:00 PM - 10:00 PM	48.7	59.6	47.1
10:00 PM - 11:00 PM	46.5	69.7	44.2
11:00 PM - 12:00 AM	46.7	62.0	45.2
12:00 AM - 01:00 AM	48.5	61.0	43.9
01:00 AM - 02:00 AM	47.0	62.9	42.7
02:00 AM - 03:00 AM	50.9	54.8	46.8
03:00 AM - 04:00 AM	51.8	60.7	51.0
04:00 AM - 05:00 AM	45.9	76.3	42.6
05:00 AM - 06:00 AM	52.6	76.7	43.7
06:00 AM - 07:00 AM	53.6	77.6	46.4
07:00 AM - 08:00 AM	56.7	86.0	45.4
08:00 AM - 09:00 AM	51.2	74.7	43.5
09:00 AM - 10:00 AM	49.6	74.3	43.3

Leq Average 24 hrs. (dB(A))

52.6

Lmax (dB(A))

90.7

L90 (dB(A))

45.3

Ldn (dB(A))

57.3

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการ

โรงงาน พ.ศ. 2548

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

Technical Management

Thanitak.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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RIGHT SOLUTIONS RIGHT PARTNER

7267-21/ EMAIL



Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391234

Date Received : Aug 16, 2023

Date Reported : Aug 22, 2023

Report Number: 2750865-1C9

Page 1 of 1

Sample Number 2391234-7
Parameter Noise (Leq 24 hrs.)
Location หมู่บ้านประทุมเมืองบางกุ้ง (GPS 47P 0726338, 1405748)
Measurement Date Aug 15 - Aug 16, 2023
Measurement by Mongkon Phalathip
Sound Level meter Serial No. 296516

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	49.6	76.9	43.8
11:00 AM - 12:00 PM	51.7	77.1	44.8
12:00 PM - 01:00 PM	51.4	80.2	44.8
01:00 PM - 02:00 PM	49.5	76.2	45.0
02:00 PM - 03:00 PM	48.8	81.8	45.2
03:00 PM - 04:00 PM	49.9	69.7	44.7
04:00 PM - 05:00 PM	52.7	83.9	45.5
05:00 PM - 06:00 PM	52.3	71.4	46.1
06:00 PM - 07:00 PM	51.8	74.0	45.7
07:00 PM - 08:00 PM	50.8	72.3	45.3
08:00 PM - 09:00 PM	48.8	66.1	45.2
09:00 PM - 10:00 PM	47.2	65.8	44.8
10:00 PM - 11:00 PM	45.8	65.7	43.0
11:00 PM - 12:00 AM	47.6	61.1	43.9
12:00 AM - 01:00 AM	47.5	60.9	44.7
01:00 AM - 02:00 AM	46.2	57.1	44.9
02:00 AM - 03:00 AM	45.9	57.8	44.8
03:00 AM - 04:00 AM	46.7	55.6	44.2
04:00 AM - 05:00 AM	44.6	65.0	42.7
05:00 AM - 06:00 AM	52.0	75.3	44.6
06:00 AM - 07:00 AM	53.5	73.7	46.2
07:00 AM - 08:00 AM	57.6	84.7	45.9
08:00 AM - 09:00 AM	50.5	77.4	43.0
09:00 AM - 10:00 AM	49.6	69.3	46.6
Leq Average 24 hrs. (dB(A))	50.8		
Lmax (dB(A))		84.7	
L90 (dB(A))			44.8
Ldn (dB(A))	55.8		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanitak.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S

Supot Salamteh
Section Head

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Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391232

Date Received : Aug 16, 2023

Date Reported : Aug 22, 2023

Report Number: 2750866-1C9

Page 1 of 1

Sample Number 2391232-1
Parameter Noise (Leq 24 hrs.)
Location หมู่บ้านประทุม (GPS 47P 20727177, 1404390)
Measurement Date Aug 09 - Aug 10, 2023
Measurement by Mongkon Phalathip
Sound Level meter Serial No. 296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	48.1	68.1	43.5
11:00 AM - 12:00 PM	46.7	59.8	45.4
12:00 PM - 01:00 PM	47.4	68.8	45.6
01:00 PM - 02:00 PM	48.8	76.0	42.6
02:00 PM - 03:00 PM	54.2	85.0	42.2
03:00 PM - 04:00 PM	46.8	68.9	42.6
04:00 PM - 05:00 PM	52.9	79.6	42.6
05:00 PM - 06:00 PM	47.8	80.0	42.9
06:00 PM - 07:00 PM	53.8	76.3	43.2
07:00 PM - 08:00 PM	48.1	69.7	43.2
08:00 PM - 09:00 PM	50.5	67.5	47.8
09:00 PM - 10:00 PM	48.7	73.9	44.7
10:00 PM - 11:00 PM	51.6	77.2	44.3
11:00 PM - 12:00 AM	46.8	68.2	44.4
12:00 AM - 01:00 AM	45.8	51.7	45.0
01:00 AM - 02:00 AM	51.0	71.7	45.5
02:00 AM - 03:00 AM	47.2	64.8	45.7
03:00 AM - 04:00 AM	50.7	72.6	44.3
04:00 AM - 05:00 AM	46.4	65.4	45.2
05:00 AM - 06:00 AM	49.4	67.0	43.6
06:00 AM - 07:00 AM	54.5	79.5	44.4
07:00 AM - 08:00 AM	54.5	86.5	44.3
08:00 AM - 09:00 AM	49.1	67.7	42.8
09:00 AM - 10:00 AM	53.3	80.9	41.9
Leq Average 24 hrs. (dB(A))	50.7		
Lmax (dB(A))		86.5	
L90 (dB(A))			44.3
Ldn (dB(A))	56.7		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanitak.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S

Supot Salamteh
Section Head

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Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391232

Date Received : Aug 16, 2023

Date Reported : Aug 22, 2023

Report Number: 2750867-1C9

Page 1 of 1

Sample Number 2391232-2
Parameter Noise (Leq 24 hrs.)
Location กรุงเทพมหานคร (GPS 47P 20727177, 1404390)
Measurement Date Aug 10 - Aug 11, 2023
Measurement by Mongkon Phalathip
Sound Level meter Serial No. 296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	49.6	74.6	42.9
11:00 AM - 12:00 PM	48.9	66.6	44.0
12:00 PM - 01:00 PM	53.0	79.2	44.1
01:00 PM - 02:00 PM	48.4	77.2	43.4
02:00 PM - 03:00 PM	50.3	81.2	45.5
03:00 PM - 04:00 PM	54.3	83.2	42.1
04:00 PM - 05:00 PM	50.0	75.3	42.6
05:00 PM - 06:00 PM	52.1	72.0	43.9
06:00 PM - 07:00 PM	50.3	72.0	43.7
07:00 PM - 08:00 PM	46.5	65.1	43.2
08:00 PM - 09:00 PM	47.3	72.6	44.8
09:00 PM - 10:00 PM	46.6	63.9	44.4
10:00 PM - 11:00 PM	51.0	74.1	45.2
11:00 PM - 12:00 AM	48.0	52.3	46.9
12:00 AM - 01:00 AM	47.2	55.0	46.2
01:00 AM - 02:00 AM	50.3	70.4	46.1
02:00 AM - 03:00 AM	48.8	74.5	44.3
03:00 AM - 04:00 AM	49.7	86.7	45.1
04:00 AM - 05:00 AM	46.5	65.9	42.8
05:00 AM - 06:00 AM	48.4	66.8	42.7
06:00 AM - 07:00 AM	52.4	78.3	44.1
07:00 AM - 08:00 AM	50.9	75.0	43.9
08:00 AM - 09:00 AM	49.8	67.8	42.6
09:00 AM - 10:00 AM	56.8	90.3	41.7

Leq Average 24 hrs. (dB(A))

50.7

Lmax (dB(A))

90.3

L90 (dB(A))

43.9

Ldn (dB(A))

56.2

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supt S

Supt Salameh
Section Head

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Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391232

Date Received : Aug 16, 2023

Date Reported : Aug 22, 2023

Report Number: 2750868-1C9

Page 1 of 1

Sample Number 2391232-3
Parameter Noise (Leq 24 hrs.)
Location กรุงเทพมหานคร (GPS 47P 20727177, 1404390)
Measurement Date Aug 11 - Aug 12, 2023
Measurement by Mongkon Phalathip
Sound Level meter Serial No. 296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	46.0	65.0	41.9
11:00 AM - 12:00 PM	48.4	71.5	42.2
12:00 PM - 01:00 PM	53.6	81.8	42.7
01:00 PM - 02:00 PM	50.1	85.4	43.6
02:00 PM - 03:00 PM	49.0	78.1	43.5
03:00 PM - 04:00 PM	50.0	80.6	44.0
04:00 PM - 05:00 PM	47.9	72.7	42.9
05:00 PM - 06:00 PM	48.0	74.6	43.0
06:00 PM - 07:00 PM	51.6	80.9	43.8
07:00 PM - 08:00 PM	48.1	68.1	43.5
08:00 PM - 09:00 PM	46.7	59.8	45.4
09:00 PM - 10:00 PM	47.4	68.8	45.6
10:00 PM - 11:00 PM	51.6	78.6	46.8
11:00 PM - 12:00 AM	52.2	76.6	46.3
12:00 AM - 01:00 AM	47.5	59.2	46.5
01:00 AM - 02:00 AM	47.7	59.1	46.3
02:00 AM - 03:00 AM	50.4	72.3	44.0
03:00 AM - 04:00 AM	47.6	63.9	43.5
04:00 AM - 05:00 AM	47.2	71.2	42.8
05:00 AM - 06:00 AM	48.9	67.6	41.9
06:00 AM - 07:00 AM	54.3	83.0	43.1
07:00 AM - 08:00 AM	57.5	83.5	44.3
08:00 AM - 09:00 AM	47.9	69.7	42.4
09:00 AM - 10:00 AM	47.6	67.7	42.2

Leq Average 24 hrs. (dB(A))

50.6

Lmax (dB(A))

85.4

L90 (dB(A))

43.5

Ldn (dB(A))

56.9

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supt S

Supt Salameh
Section Head

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Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391232

Date Received : Aug 16, 2023

Date Reported : Aug 22, 2023

Report Number: 2750869-1C9

Page 1 of 1

Sample Number 2391232-4
Parameter Noise (Leq 24 hrs.)
Location กรุงเทพมหานคร (GPS 47P 20727177, 1404390)
Measurement Date Aug 12 - Aug 13, 2023
Measurement by Mongkon Phalathip
Sound Level meter Serial No. 296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	49.3	72.3	42.7
11:00 AM - 12:00 PM	49.8	72.7	43.5
12:00 PM - 01:00 PM	52.1	91.4	44.2
01:00 PM - 02:00 PM	47.5	70.3	43.4
02:00 PM - 03:00 PM	48.0	78.8	42.7
03:00 PM - 04:00 PM	47.6	67.0	42.6
04:00 PM - 05:00 PM	56.0	85.2	42.9
05:00 PM - 06:00 PM	47.4	72.1	42.5
06:00 PM - 07:00 PM	50.9	73.9	43.5
07:00 PM - 08:00 PM	53.3	84.3	43.2
08:00 PM - 09:00 PM	47.9	59.2	46.6
09:00 PM - 10:00 PM	52.1	75.9	45.9
10:00 PM - 11:00 PM	49.1	58.5	46.8
11:00 PM - 12:00 AM	50.0	65.9	48.4
12:00 AM - 01:00 AM	51.5	77.6	48.0
01:00 AM - 02:00 AM	49.4	74.6	46.5
02:00 AM - 03:00 AM	51.3	85.5	44.8
03:00 AM - 04:00 AM	50.6	73.6	45.0
04:00 AM - 05:00 AM	45.2	63.6	43.2
05:00 AM - 06:00 AM	48.6	68.0	42.3
06:00 AM - 07:00 AM	55.1	84.6	43.5
07:00 AM - 08:00 AM	48.1	75.3	42.9
08:00 AM - 09:00 AM	53.5	85.8	42.1
09:00 AM - 10:00 AM	46.9	71.9	42.0

Leq Average 24 hrs. (dB(A))

50.9

Lmax (dB(A))

91.4

L90 (dB(A))

43.4

Ldn (dB(A))

57.3

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanitak.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391232

Date Received : Aug 16, 2023

Date Reported : Aug 22, 2023

Report Number: 2750870-1C9

Page 1 of 1

Sample Number 2391232-5
Parameter Noise (Leq 24 hrs.)
Location กรุงเทพมหานคร (GPS 47P 20727177, 1404390)
Measurement Date Aug 13 - Aug 14, 2023
Measurement by Mongkon Phalathip
Sound Level meter Serial No. 296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	46.9	72.7	41.9
11:00 AM - 12:00 PM	49.2	78.9	42.7
12:00 PM - 01:00 PM	48.1	67.6	43.8
01:00 PM - 02:00 PM	48.4	68.3	44.6
02:00 PM - 03:00 PM	51.2	86.4	45.5
03:00 PM - 04:00 PM	53.1	79.7	43.6
04:00 PM - 05:00 PM	48.6	78.1	42.8
05:00 PM - 06:00 PM	49.6	73.4	43.6
06:00 PM - 07:00 PM	51.5	76.4	44.5
07:00 PM - 08:00 PM	50.3	86.6	44.0
08:00 PM - 09:00 PM	51.6	77.6	44.5
09:00 PM - 10:00 PM	45.1	58.0	44.3
10:00 PM - 11:00 PM	46.1	58.9	44.4
11:00 PM - 12:00 AM	46.0	56.1	44.9
12:00 AM - 01:00 AM	46.9	63.2	45.6
01:00 AM - 02:00 AM	46.3	57.1	45.1
02:00 AM - 03:00 AM	49.5	72.2	45.3
03:00 AM - 04:00 AM	49.8	82.5	43.1
04:00 AM - 05:00 AM	45.9	64.8	43.1
05:00 AM - 06:00 AM	55.1	82.6	43.3
06:00 AM - 07:00 AM	53.6	76.4	44.2
07:00 AM - 08:00 AM	54.3	80.3	43.5
08:00 AM - 09:00 AM	47.8	67.8	42.2
09:00 AM - 10:00 AM	47.0	75.1	41.5

Leq Average 24 hrs. (dB(A))

50.2

Lmax (dB(A))

86.6

L90 (dB(A))

43.8

Ldn (dB(A))

56.6

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanitak.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130
P/O : 4510824480
Project Name : Environmental Quality Monitoring
Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391232
Date Received : Aug 16, 2023
Date Reported : Aug 22, 2023
Report Number: 2750871-1C9

Page 1 of 1

Sample Number 2391232-6
Parameter Noise (Leq 24 hrs.)
Location ทุ่งพญา (GPS 47P 20727177, 1404390)
Measurement Date Aug 14 - Aug 15, 2023
Measurement by Mongkon Phalathip
Sound Level meter Serial No. 296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	45.1	64.1	42.1
11:00 AM - 12:00 PM	49.5	69.0	43.4
12:00 PM - 01:00 PM	48.9	71.1	44.2
01:00 PM - 02:00 PM	58.5	88.7	44.6
02:00 PM - 03:00 PM	46.7	64.7	43.4
03:00 PM - 04:00 PM	52.3	82.4	42.8
04:00 PM - 05:00 PM	47.1	65.4	42.9
05:00 PM - 06:00 PM	49.0	78.1	42.9
06:00 PM - 07:00 PM	53.6	92.7	42.5
07:00 PM - 08:00 PM	45.9	63.4	43.8
08:00 PM - 09:00 PM	44.4	62.6	43.2
09:00 PM - 10:00 PM	44.7	75.2	43.2
10:00 PM - 11:00 PM	45.6	75.5	44.0
11:00 PM - 12:00 AM	48.0	71.9	44.3
12:00 AM - 01:00 AM	45.5	54.1	44.0
01:00 AM - 02:00 AM	51.2	73.0	43.5
02:00 AM - 03:00 AM	43.8	59.1	43.0
03:00 AM - 04:00 AM	45.1	70.7	43.0
04:00 AM - 05:00 AM	50.0	74.1	42.6
05:00 AM - 06:00 AM	56.0	79.2	42.7
06:00 AM - 07:00 AM	52.8	75.8	45.6
07:00 AM - 08:00 AM	53.1	78.4	44.5
08:00 AM - 09:00 AM	47.9	67.3	42.4
09:00 AM - 10:00 AM	48.0	67.9	43.0

Leq Average 24 hrs. (dB(A)) 50.9
Lmax (dB(A)) 92.7
L90 (dB(A)) 43.2
Ldn (dB(A)) 57.0
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2
Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130
P/O : 4510824480
Project Name : Environmental Quality Monitoring
Project Location : AIE_HPPO-TPO Plant

Lot ID: 2391232
Date Received : Aug 16, 2023
Date Reported : Aug 22, 2023
Report Number: 2750872-1C9

Page 1 of 1

Sample Number 2391232-7
Parameter Noise (Leq 24 hrs.)
Location ทุ่งพญา (GPS 47P 20727177, 1404390)
Measurement Date Aug 15 - Aug 16, 2023
Measurement by Mongkon Phalathip
Sound Level meter Serial No. 296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	47.2	72.4	43.4
11:00 AM - 12:00 PM	47.5	66.8	43.9
12:00 PM - 01:00 PM	49.0	69.6	44.6
01:00 PM - 02:00 PM	52.5	83.5	46.3
02:00 PM - 03:00 PM	48.0	67.5	44.6
03:00 PM - 04:00 PM	60.3	85.3	43.1
04:00 PM - 05:00 PM	56.1	89.7	43.4
05:00 PM - 06:00 PM	50.2	77.6	43.7
06:00 PM - 07:00 PM	53.9	77.0	44.4
07:00 PM - 08:00 PM	49.0	77.1	44.9
08:00 PM - 09:00 PM	52.7	78.9	45.6
09:00 PM - 10:00 PM	47.0	61.2	45.7
10:00 PM - 11:00 PM	47.3	57.3	46.1
11:00 PM - 12:00 AM	50.1	73.5	45.0
12:00 AM - 01:00 AM	45.3	60.6	44.4
01:00 AM - 02:00 AM	45.4	58.5	44.5
02:00 AM - 03:00 AM	45.1	52.8	44.4
03:00 AM - 04:00 AM	45.7	64.0	44.2
04:00 AM - 05:00 AM	54.2	81.8	42.5
05:00 AM - 06:00 AM	52.3	72.5	43.3
06:00 AM - 07:00 AM	55.3	84.6	44.3
07:00 AM - 08:00 AM	48.0	66.9	43.4
08:00 AM - 09:00 AM	48.6	75.3	42.2
09:00 AM - 10:00 AM	48.4	68.3	44.6

Leq Average 24 hrs. (dB(A)) 52.0
Lmax (dB(A)) 89.7
L90 (dB(A)) 44.4
Ldn (dB(A)) 57.5
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2
Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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คุณภาพน้ำทิ้ง



Analysis / Test Report

TESTING
No.0042

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPO-TPO Plant

Lot ID: 2374932
Date Received : Jul 12, 2023
Date Reported : Jul 20, 2023
Report Number : 2698858-1

Page 1 of 1

Sample Number	2374932-1					
Sampled Date	Jul 12, 2023 10:00 AM					
Sample Description	Wastewater					
Location	PUI_EQ Tank					
Date Analysis Commenced	Jul 12, 2023					
Condition of Sample	Contained in two glass vials, three amber glass bottles 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	668	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O & G	Rayong
COD	mg/L	1.5	25	2353	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	13	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	10	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Oil & Grease *	mg/L	-	3	15	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *	-	-	-	6.1	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	36.4	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1560	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	7	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Sampling By : Pathompong Komsawat รหัสประจำตัว >323-a-9468, Thanasoon Namakunna รหัสประจำตัว >204-a-8592

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

Technical Management

N. Banjongit

Narumon Banchongit
Supervisor
รหัสประจำตัว >323-a-9445

Approved by

D. Chongchon

Dej Chongchon
Senior Manager
รหัสประจำตัว >323-a-9442

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Analysis / Test Report

TESTING
No.0042

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPO-TPO Plant

Lot ID: 2374928
Date Received : Jul 12, 2023
Date Reported : Jul 20, 2023
Report Number : 2724140-1

Page 1 of 2

Page 1 of 2

Sample Number	2374928-1						
Sampled Date	Jul 12, 2023 1:30 PM						
Sample Description	Wastewater						
Location	Inspection Manhole						
Date Analysis Commenced	Jul 12, 2023						
Condition of Sample	Contained in four amber glass bottles and six 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, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	50	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	11	≤300	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	11	≤300	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Cyanide as CN *	mg/L	0.001	0.005	<0.005	≤0.2	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-CN (C, E)	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1.0	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed., 2004	Rayong
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, 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, 23rd ed., 2017, part 4500 - H (B)	Rayong
Phenol	mg/L	0.005	0.01	Not Detected	≤1.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5330 D	Rayong

Technical Management

N. Banjongit

Narumon Banchongit
Supervisor
รหัสประจำตัว >323-a-9445

Approved by

D. Chongchon

Dej Chongchon
Senior Manager
รหัสประจำตัว >323-a-9442

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPO-TPO Plant

Lot ID: 2374932
Date Received : Jul 12, 2023
Date Reported : Jul 20, 2023
Report Number : 2698858-2

Page 1 of 1

Sample Number	2374932-1					
Sampled Date	Jul 12, 2023 10:00 AM					
Sample Description	Wastewater					
Location	PUI_EQ Tank					
Date Analysis Commenced	Jul 13, 2023					
Condition of Sample	Contained in two glass vials, three amber glass bottles and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Organic Compounds						
Propylene oxide	mg/L	-	10	<10	In-house method based on United States Environmental Protection Agency, EPA Method 8015 B	Bangkok
Water Testing						
Methanol	mg/L	0.05	2.0	20.2	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok

Sampling By : Pathompong Komsawat, Thanasoon Namakunna

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

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Approved by

Nant Sornb

Nanthavadee Sornbom
Specialist 1

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPO-TPO Plant

Lot ID: 2374928
Date Received : Jul 12, 2023
Date Reported : Jul 20, 2023
Report Number : 2724140-1

Page 2 of 2

Sample Number	2374928-1						
Sampled Date	Jul 12, 2023 1:30 PM						
Sample Description	Wastewater						
Location	Inspection Manhole						
Date Analysis Commenced	Jul 12, 2023						
Condition of Sample	Contained in four amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Residual Free Chlorine *	mg/L	-	0.1	0.1	≤1.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Cl (P)	Rayong
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Rayong
Temperature *	Degree C	-	-	33.7	≤40	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1028	≤3000	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, 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, 23rd ed., 2017, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, 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 : Ambient Temperature is 31.5 degree Celsius.

Sampling By : Pathompong Komsawat รหัสประจำตัว >323-a-9468, Thanasoon Namakunna รหัสประจำตัว >204-a-8592

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

Technical Management

N. Banjongit

Narumon Banchongit
Supervisor
รหัสประจำตัว >323-a-9445

Approved by

D. Chongchon

Dej Chongchon
Senior Manager
รหัสประจำตัว >323-a-9442

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Analysis / Test Report



TESTING

No.0009

Lot ID: 2374928

Date Received : Jul 12, 2023
Date Reported : Jul 20, 2023
Report Number : 2724140-2Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPP0-TPO PlantSample Number 2374928-1
Sampled Date Jul 12, 2023 1:30 PM
Sample Description Wastewater
Location Inspection Manhole
Date Analysis Commenced Jul 14, 2023
Condition of Sample Contained in four amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Page 1 of 3

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
2,4-DDD *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
2,4-DDE *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
2,4-DDT *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDD *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDE *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDT *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Aldrin *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok

Technical Management

Siriluk P.

Siriluk Puengpang
Section Head
โทรศัพท์มือถือ : 204-4-4720

Approved by

Kankom Anek

Kankom Anek
Senior Manager
โทรศัพท์มือถือ : 204-4-6111

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Analysis / Test Report



TESTING

No.0009

Lot ID: 2374928

Date Received : Jul 12, 2023
Date Reported : Jul 20, 2023
Report Number : 2724140-2Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPP0-TPO PlantSample Number 2374928-1
Sampled Date Jul 12, 2023 1:30 PM
Sample Description Wastewater
Location Inspection Manhole
Date Analysis Commenced Jul 14, 2023
Condition of Sample Contained in four amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Page 3 of 3

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
Endrin *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Heptachlor *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Heptachlor-Epoxide *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Lindane (gamma-BHC) *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Methoxychlor *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok

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 : Ambient Temperature is 31.5 degree Celsius.

Sampling By : Pathompong Kornasawat, Thanassun Namakunna โทรศัพท์มือถือ : 204-4-8992

Remark :

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

Technical Management

Siriluk P.

Siriluk Puengpang
Section Head
โทรศัพท์มือถือ : 204-4-4720

Approved by

Kankom Anek

Kankom Anek
Senior Manager
โทรศัพท์มือถือ : 204-4-6111

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Analysis / Test Report



TESTING

No.0009

Lot ID: 2374928

Date Received : Jul 12, 2023
Date Reported : Jul 20, 2023
Report Number : 2724140-2Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPP0-TPO PlantSample Number 2374928-1
Sampled Date Jul 12, 2023 1:30 PM
Sample Description Wastewater
Location Inspection Manhole
Date Analysis Commenced Jul 14, 2023
Condition of Sample Contained in four amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Page 2 of 3

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
alpha-BHC *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
beta-BHC *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Chlordane *	ug/L	0.02	0.04	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
delta-BHC *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Dieldrin *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Endosulfan I *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Endosulfan II *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok

Technical Management

Siriluk P.

Siriluk Puengpang
Section Head
โทรศัพท์มือถือ : 204-4-4720

Approved by

Kankom Anek

Kankom Anek
Senior Manager
โทรศัพท์มือถือ : 204-4-6111

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Analysis / Test Report



TESTING

No.0009

Lot ID: 2374928

Date Received : Jul 12, 2023
Date Reported : Jul 20, 2023
Report Number : 2724140-3Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPP0-TPO PlantSample Number 2374928-1
Sampled Date Jul 12, 2023 1:30 PM
Sample Description Wastewater
Location Inspection Manhole
Date Analysis Commenced Jul 14, 2023
Condition of Sample Contained in four amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Page 1 of 1

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
Atrazine	ug/L	0.1	0.5	Not Detected	Not Detected	In-house method : STM 04-101 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Hexachlorobenzene	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Toxaphene	ug/L	2	4	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Water Testing							
Chlorine	mg/L	-	-	0.71	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Cl (7)	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 : Ambient Temperature is 31.5 degree Celsius.

Sampling By : Pathompong Kornasawat, Thanassun Namakunna

Remark :

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

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPO-TPO Plant

TESTING
No.0009
Lot ID: 2374928
Date Received : Jul 12, 2023
Date Reported : Jul 20, 2023
Report Number : 2724141-1

Page 1 of 2

Sample Number 2374928-2
Sample Date Jul 12, 2023 1:30 PM
Sample Description Wastewater
Location Inspection Manhole
Date Analysis Commenced Jul 17, 2023
Condition of Sample Contained in two glass vials 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							
Arsenic	mg/L	0.0003	0.0005	0.004	≤0.25	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Barium	mg/L	0.0003	0.0005	0.17	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Chromium	mg/L	0.0003	0.0005	0.001	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Copper	mg/L	0.0003	0.0005	0.003	≤2.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.25	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3500-C-8	Bangkok
Lead	mg/L	0.0003	0.0005	0.002	≤0.2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Manganese	mg/L	0.0003	0.0005	0.06	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok

Technical Management

Savitree N.
Savitree Naisangiam
Manager
โทรศัพท์ ๖๖๐-๖๖๖-๖๖๖-๖๖๖

Approved by

Kanokkom Anek
Kanokkom Anek
Senior Manager
โทรศัพท์ ๖๖๐-๖๖๖-๖๖๖-๖๖๖

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8225-208 (ENGL)

S (Waste), M, GL, L (3.42PM)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPO-TPO Plant

TESTING
No.0009
Lot ID: 2374928
Date Received : Jul 12, 2023
Date Reported : Jul 20, 2023
Report Number : 2724141-2

Page 1 of 1

Sample Number 2374928-2
Sample Date Jul 12, 2023 1:30 PM
Sample Description Wastewater
Location Inspection Manhole
Date Analysis Commenced Jul 17, 2023
Condition of Sample Contained in two glass vials 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							
Iron	mg/L	0.003	0.005	0.08	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Silver	mg/L	0.0003	0.0005	Not Detected	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok

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 : Pathompong Kornasawat, Thanasoun Namakunna

Remark :
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Approved by

Savitree N.
Savitree Naisangiam
Manager
โทรศัพท์ ๖๖๐-๖๖๖-๖๖๖-๖๖๖

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8225-208 (ENGL)

S (Waste), M, GL, L (3.42PM)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPO-TPO Plant

TESTING
No.0009
Lot ID: 2374928
Date Received : Jul 12, 2023
Date Reported : Jul 20, 2023
Report Number : 2724141-1

Page 2 of 2

Sample Number 2374928-2
Sample Date Jul 12, 2023 1:30 PM
Sample Description Wastewater
Location Inspection Manhole
Date Analysis Commenced Jul 17, 2023
Condition of Sample Contained in two glass vials 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							
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	In-house method : STM 05-007 based on United States Environmental Protection Agency, 2002, EPA Method 1631, Revision E	Bangkok
Nickel	mg/L	0.0003	0.0005	0.007	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Selenium	mg/L	0.0003	0.0005	<0.0005	≤0.02	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Zinc	mg/L	0.003	0.005	0.78	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok

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 : Pathompong Kornasawat, Thanasoun Namakunna

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Technical Management

Savitree N.
Savitree Naisangiam
Manager
โทรศัพท์ ๖๖๐-๖๖๖-๖๖๖-๖๖๖

Approved by

Kanokkom Anek
Kanokkom Anek
Senior Manager
โทรศัพท์ ๖๖๐-๖๖๖-๖๖๖-๖๖๖

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S (Waste), M, GL, L (3.42PM)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPO-TPO Plant

TESTING
No.0042
Lot ID: 2387459
Date Received : Aug 03, 2023
Date Reported : Aug 11, 2023
Report Number : 2728719-1

Page 1 of 1

Sample Number 2387459-1
Sample Date Aug 03, 2023 10:30 AM
Sample Description Wastewater
Location PUL EQ Tank
Date Analysis Commenced Aug 03, 2023
Condition of Sample Contained in two glass vials, three amber glass bottles 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	868	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	2669	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	13	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Oil & Grease *	mg/L	-	3	10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *	-	-	-	6.8	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	35.4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1630	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	8	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Sampling By : Wanlop Hunchanaow, Thanasoun Namakunna

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

Technical Management

Narumon Banchangit
Narumon Banchangit
Supervisor
โทรศัพท์ ๖๖๖-๖๖๖-๖๖๖-๖๖๖

Approved by

Dej Changchong
Dej Changchong
Senior Manager
โทรศัพท์ ๖๖๖-๖๖๖-๖๖๖-๖๖๖

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8225-208 (ENGL)

S (Waste), M, GL, L (3.42PM)

S (Waste), M, GL, L (3.42PM)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HHPO-TPO Plant

Lot ID: 2387459
Date Received : Aug 03, 2023
Date Reported : Aug 11, 2023
Report Number : 2728719-2

Page 1 of 1

Sample Number	2387459-1					
Sample Date	Aug 03, 2023 10:30 AM					
Sample Description	Wastewater					
Location	PUE_EQ Tank					
Date Analysis Commenced	Aug 08, 2023					
Condition of Sample	Contained in two glass vials, three amber glass bottles and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Organic Compounds						
Propylene oxide	mg/L	-	10	<10	In-house method based on United States Environmental Protection Agency, EPA Method 8015 B	Bangkok
Water Testing						
Methanol	mg/L	0.05	2.0	96.5	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B, 6200B	Bangkok

Sampling By : Wanlop Hunchainaw, Thanassou Namakunna

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

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Approved by

Siriluk P.
Siriluk Puangpaeng
Section Head

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HHPO-TPO Plant

Lot ID: 2387458
Date Received : Aug 03, 2023
Date Reported : Aug 11, 2023
Report Number : 2743222-1

Page 2 of 2

Sample Number	2387458-1						
Sample Date	Aug 03, 2023 1:48 PM						
Sample Description	Wastewater						
Location	Inspection Manhole						
Date Analysis Commenced	Aug 03, 2023						
Condition of Sample	Contained in two amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Residual Free Chlorine *	mg/L	-	0.1	<0.1	≤1.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Cl (F)	Rayong
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Rayong
Temperature *	Degree C	-	-	33.4	≤40	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1032	≤3000	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, 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, 23rd ed., 2017, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, 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 : Ambient Temperature is 30.6 degree Celsius.

Sampling By : Wanlop Hunchainaw วิไลวรรณ ว-323-0-9457, Thanassou Namakunna วิไลวรรณ ว-204-0-8592

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

Technical Management

N. Bangmit
Narumon Banchongkit
Supervisor
วิไลวรรณ ว-323-0-9445

Approved by

D. Changchon
Dag Changchon
Senior Manager
วิไลวรรณ ว-204-0-9442

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HHPO-TPO Plant

TESTING
No.0042
Lot ID: 2387458
Date Received : Aug 03, 2023
Date Reported : Aug 11, 2023
Report Number : 2743222-1

Page 1 of 3

Sample Number	2387458-1						
Sample Date	Aug 03, 2023 1:48 PM						
Sample Description	Wastewater						
Location	Inspection Manhole						
Date Analysis Commenced	Aug 03, 2023						
Condition of Sample	Contained in two amber glass bottles and six 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, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	30	≤120	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	10	≤300	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	8	≤300	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Cyanide as CN *	mg/L	0.001	0.005	<0.005	≤0.2	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-CN (C, E)	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1.0	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed, 2004	Rayong
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, 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, 23rd ed., 2017, part 4500 - H (B)	Rayong
Phenol	mg/L	0.005	0.01	0.02	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5530 U	Rayong

Technical Management

N. Bangmit
Narumon Banchongkit
Supervisor
วิไลวรรณ ว-323-0-9445

Approved by

D. Changchon
Dag Changchon
Senior Manager
วิไลวรรณ ว-204-0-9442

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HHPO-TPO Plant

TESTING
No.0009
Lot ID: 2387458
Date Received : Aug 03, 2023
Date Reported : Aug 11, 2023
Report Number : 2743222-2

Page 1 of 4

Sample Number	2387458-1						
Sampled Date	Aug 03, 2023 1:48 PM						
Sample Description	Wastewater						
Location	Inspection Manhole						
Date Analysis Commenced	Aug 04, 2023						
Condition of Sample	Contained in two amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
2,4-DDD *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
2,4-DDE *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
2,4-DDT *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDD *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDE *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDT *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Aldrin *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the	Bangkok

Technical Management

Siriluk P.
Siriluk Puangpaeng
Section Head
วิไลวรรณ ว-204-0-9442

Approved by

Kasakorn Anek
Kasakorn Anek
Senior Manager
วิไลวรรณ ว-204-0-6111

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPO-TPO Plant



TESTING

No.0009
Lot ID: 2387458
Date Received : Aug 03, 2023
Date Reported : Aug 11, 2023
Report Number : 2743222-2

Page 2 of 4

Sample Number 2387458-1
Sampled Date Aug 03, 2023 1:48 PM
Sample Description Wastewater
Location Inspection Manhole
Date Analysis Commenced Aug 04, 2023
Condition of Sample Contained in two amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
alpha-BHC *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Atrazine *	ug/L	0.1	0.5	Not Detected	Not Detected	In - house method : STM 04-101 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
beta-BHC *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Chlordane *	ug/L	0.02	0.04	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
delta-BHC *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Dieldrin *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Endosulfan I *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok

Technical Management

Siriluk P.
Siriluk Puengpang
Section Head
โทรศัพท์ 204-4-4720

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
โทรศัพท์ 204-4-6111

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPO-TPO Plant



TESTING

No.0009
Lot ID: 2387458
Date Received : Aug 03, 2023
Date Reported : Aug 11, 2023
Report Number : 2743222-2

Page 4 of 4

Note : Ambient Temperature is 30.6 degree celsius.
Sampling By : Wanlop Hunchainaw โทรศัพท์ 204-4-9457, Thanassou Namakunna โทรศัพท์ 204-4-8592

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

Technical Management

Siriluk P.
Siriluk Puengpang
Section Head
โทรศัพท์ 204-4-4720

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPO-TPO Plant



TESTING

No.0008
Lot ID: 2387458
Date Received : Aug 03, 2023
Date Reported : Aug 11, 2023
Report Number : 2743222-2

Page 3 of 4

Sample Number 2387458-1
Sampled Date Aug 03, 2023 1:48 PM
Sample Description Wastewater
Location Inspection Manhole
Date Analysis Commenced Aug 04, 2023
Condition of Sample Contained in two amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
Endosulfan II *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Endrin *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Heptachlor *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Heptachlor-Epoxide *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Lindane (gamma-BHC) *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Methoxychlor *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Toxaphene *	ug/L	2	4	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok

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).

Technical Management

Siriluk P.
Siriluk Puengpang
Section Head
โทรศัพท์ 204-4-4720

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
โทรศัพท์ 204-4-6111

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPO-TPO Plant

Lot ID: 2387458

Date Received : Aug 03, 2023
Date Reported : Aug 11, 2023
Report Number : 2743222-3

Page 1 of 1

Sample Number 2387458-1
Sampled Date Aug 03, 2023 1:48 PM
Sample Description Wastewater
Location Inspection Manhole
Date Analysis Commenced Aug 03, 2023
Condition of Sample Contained in two amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
Hexachlorobenzene	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Water Testing							
Chlorine	mg/L	-	-	0.33	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-CI (F)	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 : Ambient Temperature is 30.6 degree celsius.

Sampling By : Wanlop Hunchainaw, Thanassou Namakunna

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

Approved by

Siriluk P.
Siriluk Puengpang
Section Head

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Analysis / Test Report



TESTING
No.0009

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPP0-TPO Plant

Lot ID: 2387458
Date Received : Aug 03, 2023
Date Reported : Aug 11, 2023
Report Number : 2743223-1

Page 1 of 2

Sample Number	2387458-2						
Sampled Date	Aug 03, 2023 1:48 PM						
Sample Description	Wastewater						
Location	Inspection Manhole						
Date Analysis Commenced	Aug 04, 2023						
Condition of Sample	Contained in two glass vials 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							
Arsenic	mg/L	0.0003	0.0005	0.002	≤0.25	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Barium	mg/L	0.0003	0.0005	0.12	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Chromium	mg/L	0.0003	0.0005	0.0007	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Copper	mg/L	0.0003	0.0005	0.0006	≤2.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.25	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3500-Cr B	Bangkok
Lead	mg/L	0.0003	0.0005	Not Detected	≤0.2	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Manganese	mg/L	0.0003	0.0005	0.03	≤5.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok

Technical Management

Savitree N.
Savitree Naisangam
Manager
โทรศัพท์มือถือ : 204-4-4709

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
โทรศัพท์มือถือ : 204-4-6111

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Analysis / Test Report



TESTING
No.0009

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPP0-TPO Plant

Lot ID: 2387458
Date Received : Aug 03, 2023
Date Reported : Aug 11, 2023
Report Number : 2743223-2

Page 1 of 1

Page 2 of 2

Sample Number	2387458-2						
Sampled Date	Aug 03, 2023 1:48 PM						
Sample Description	Wastewater						
Location	Inspection Manhole						
Date Analysis Commenced	Aug 04, 2023						
Condition of Sample	Contained in two glass vials 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							
Iron	mg/L	0.003	0.005	0.03	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Silver	mg/L	0.0003	0.0005	Not Detected	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok

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 Hunchainawong, Thanasson Namakunna

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

Approved by

Savitree N.
Savitree Naisangam
Manager

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Analysis / Test Report



TESTING
No.0009

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPP0-TPO Plant

Lot ID: 2387458
Date Received : Aug 03, 2023
Date Reported : Aug 11, 2023
Report Number : 2743223-3

Page 2 of 2

Sample Number	2387458-2						
Sampled Date	Aug 03, 2023 1:48 PM						
Sample Description	Wastewater						
Location	Inspection Manhole						
Date Analysis Commenced	Aug 04, 2023						
Condition of Sample	Contained in two glass vials 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							
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.004	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Selenium	mg/L	0.0003	0.0005	Not Detected	≤0.02	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Zinc	mg/L	0.003	0.005	0.54	≤5.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok

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 Hunchainawong, Thanasson Namakunna

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

Savitree N.
Savitree Naisangam
Manager
โทรศัพท์มือถือ : 204-4-4709

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
โทรศัพท์มือถือ : 204-4-6111

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Analysis / Test Report



TESTING
No.0042

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPP0-TPO Plant

Lot ID: 23101100
Date Received : Sep 06, 2023
Date Reported : Sep 13, 2023
Report Number : 2759337-1

Page 1 of 1

Page 1 of 1

Sample Number	23101100-1					
Sampled Date	Sep 06, 2023 10:35 AM					
Sample Description	Wastewater					
Location	PUL EQ Tank					
Date Analysis Commenced	Sep 06, 2023					
Condition of Sample	Contained in two glass vials, two amber glass bottles 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	713	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	2800	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	9	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	8	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Oil & Grease *	mg/L	-	3	17	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *	-	-	-	6.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	36.3	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1450	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	14	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Sampling By : Sansoon Khuyaksoot, Thanasson Namakunna

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

Technical Management

Narumon Banchongkit
Narumon Banchongkit
Supervisor
โทรศัพท์มือถือ : 323-4-9445

Approved by

Dej Changchon
Dej Changchon
Senior Manager
โทรศัพท์มือถือ : 323-4-9442

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HHPO-TPO Plant

Lot ID: 23101100
Date Received : Sep 06, 2023
Date Reported : Sep 14, 2023
Report Number : 2775337-2

Sample Number	23101100-1						Page 1 of 1
Sampled Date	Sep 06, 2023 10:35 AM						
Sample Description	Wastewater						
Location	PUL_EQ Tank						
Date Analysis Commenced	Sep 06, 2023						
Condition of Sample	Contained in two glass vials, two amber glass bottles and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location	
Organic Compounds							
Propylene oxide	mg/L	-	10	<10	In-house method based on United States Environmental Protection Agency, EPA Method 8015 B	Bangkok	
Water Testing							
Methanol	mg/L	0.05	2.0	12.2	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B, 6200B	Bangkok	

Sampling By : Sansoen Khuyoksai, Thanassun Namakunna

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

Approved by

Nant Somb

Nantawadee Somboon
Specialist 1

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5-Report (AL, GL, L) (1.64PM)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HHPO-TPO Plant

TESTING
No 0042
Lot ID: 23101097
Date Received : Sep 06, 2023
Date Reported : Sep 13, 2023
Report Number : 2775337-1

Sample Number	23101097-1						Page 1 of 2
Sampled Date	Sep 06, 2023 1:40 PM						
Sample Description	Wastewater						
Location	Inspection Manhole						
Date Analysis Commenced	Sep 06, 2023						
Condition of Sample	Contained in three amber glass bottles and six 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, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	34	≤120	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	8	≤300	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	7	≤300	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Cyanide as CN *	mg/L	0.001	0.005	Not Detected	≤0.2	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-CN (C, E)	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1.0	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed., 2004	Rayong
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, 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, 23rd ed., 2017, part 4500 - H (B)	Rayong
Phenol	mg/L	0.005	0.01	Not Detected	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5530 D	Rayong

Technical Management

N. Bangnit

Narumon Banchongkiet
Supervisor
โทรศัพท์ 3-323-9445

Approved by

D. Chanchon

Deg Chanchon
Senior Manager
โทรศัพท์ 3-323-9442

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5-Report (AL, GL, L) (1.57PM)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HHPO-TPO Plant

TESTING
No 0042
Lot ID: 23101097
Date Received : Sep 06, 2023
Date Reported : Sep 13, 2023
Report Number : 2775337-1

Sample Number	23101097-1						Page 2 of 2
Sampled Date	Sep 06, 2023 1:40 PM						
Sample Description	Wastewater						
Location	Inspection Manhole						
Date Analysis Commenced	Sep 06, 2023						
Condition of Sample	Contained in three amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Residual Free Chlorine *	mg/L	-	0.1	0.2	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Cl (F)	Rayong
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Rayong
Temperature *	Degree C	-	-	34.6	≤40	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1060	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	1.2	≤100	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C), part NHD (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

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

Note : Ambient Temperature is 32.6 degree Celsius
Sampling By : Sansoen Khuyoksai โทรศัพท์ 3-323-9445, Thanassun Namakunna โทรศัพท์ 3-323-9442

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

Technical Management

N. Bangnit

Narumon Banchongkiet
Supervisor
โทรศัพท์ 3-323-9445

Approved by

D. Chanchon

Deg Chanchon
Senior Manager
โทรศัพท์ 3-323-9442

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5-Report (AL, GL, L) (1.57PM)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HHPO-TPO Plant

Lot ID: 23101097
Date Received : Sep 06, 2023
Date Reported : Sep 14, 2023
Report Number : 2775337-2

							Page 1 of 3
Sample Number	23101097-1						
Sampled Date	Sep 06, 2023 1:40 PM						
Sample Description	Wastewater						
Location	Inspection Manhole						
Date Analysis Commenced	Sep 07, 2023						
Condition of Sample	Contained in three amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
2,4-DDD	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
2,4-DDE	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
2,4-DDT	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDD	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDE	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDT	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Aldrin	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the	Bangkok

Technical Management

Nant Somb

Nantawadee Somboon
Specialist 1
โทรศัพท์ 3-323-9442

Approved by

K. Anok

Kanokorn Anok
Senior Manager
โทรศัพท์ 3-323-9441

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5-Report (AL, GL, L) (1.57PM)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HHPO-TPO Plant

Lot ID: 23101097
Date Received : Sep 06, 2023
Date Reported : Sep 14, 2023
Report Number : 2775337-2

Sample Number 23101097-1
Sampled Date Sep 06, 2023 1:40 PM
Sample Description Wastewater
Location Inspection Manhole
Date Analysis Commenced Sep 07, 2023
Condition of Sample Contained in three amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
alpha-BHC	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
beta-BHC	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Chlordane	ug/L	0.02	0.04	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
delta-BHC	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Dieldrin	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Endosulfan I	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Endosulfan II	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok

Technical Management

Nant Somb
Nanthawadee Somborn
Specialist 1
โทรศัพท์ : 0-204-4716

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
โทรศัพท์ : 0-204-4711

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HHPO-TPO Plant

Lot ID: 23101097

Date Received : Sep 06, 2023
Date Reported : Sep 14, 2023
Report Number : 2775337-2

Sample Number 23101097-1
Sampled Date Sep 06, 2023 1:40 PM
Sample Description Wastewater
Location Inspection Manhole
Date Analysis Commenced Sep 07, 2023
Condition of Sample Contained in three amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
Endrin	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Heptachlor	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Heptachlor-Epoxide	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Lindane (gamma-BHC)	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Methoxychlor	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Toxaphene	ug/L	2	4	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok

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 : Ambient Temperature is 32.8 degree Celsius.

Sampling By : Sansoen Khuyokul โทรศัพท์ : 0-323-0005, Thanasorn Namakunna โทรศัพท์ : 0-204-4892

Remark :

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

Technical Management

Nant Somb
Nanthawadee Somborn
Specialist 1
โทรศัพท์ : 0-204-4716

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
โทรศัพท์ : 0-204-4711

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HHPO-TPO Plant

Lot ID: 23101097
Date Received : Sep 06, 2023
Date Reported : Sep 14, 2023
Report Number : 2775337-3

Sample Number 23101097-1
Sampled Date Sep 06, 2023 1:40 PM
Sample Description Wastewater
Location Inspection Manhole
Date Analysis Commenced Sep 06, 2023
Condition of Sample Contained in three amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
Atrazine	ug/L	0.1	0.5	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Hexachlorobenzene	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Water Testing							
Chlorine	mg/L	-	-	0.58	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Cl (F)	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 : Ambient Temperature is 32.8 degree Celsius.

Sampling By : Sansoen Khuyokul, Thanasorn Namakunna

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

Approved by

Nant Somb
Nanthawadee Somborn
Specialist 1

Technical Management

Savitree N.
Savitree Nongsang
Manager
โทรศัพท์ : 0-204-4709

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
โทรศัพท์ : 0-204-4711

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S (Report) AL GL (pt) (6-47PM)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : A/E_HPPO-TPO Plant



TESTING

No.0009
Lot ID: 23101097
Date Received : Sep 06, 2023
Date Reported : Sep 14, 2023
Report Number : 2775338-1

Page 2 of 3

Sample Number	23101097-2						
Sampled Date	Sep 06, 2023 1:40 PM						
Sample Description	Wastewater						
Location	Inspection Manhole						
Date Analysis Commenced	Sep 07, 2023						
Condition of Sample	Contained in two glass vials 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							
Manganese	mg/L	0.0003	0.0005	0.02	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.004	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3112	Bangkok
Selenium	mg/L	0.0003	0.0005	Not Detected	≤0.02	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Silver	mg/L	0.0003	0.0005	Not Detected	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Zinc	mg/L	0.003	0.005	0.62	≤5.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok

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 : Sansoen Khuyikoussi รหัสงานที่ >323-a-0005 , Thanasoun Namakunna รหัสงานที่ >204-a-8592

Technical Management

Sawitree N.
Sawitree Noisangiam
Manager

Approved by

Kanokkom Anek
Kanokkom Anek
Senior Manager

รหัสงานที่ >204-a-4709

รหัสงานที่ >204-a-6111

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S:Report (AI, GL, pr) (7:35PM)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : A/E_HPPO-TPO Plant



TESTING

No.0009
Lot ID: 23101097
Date Received : Sep 06, 2023
Date Reported : Sep 14, 2023
Report Number : 2775338-1

Page 3 of 3

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

Technical Management

Sawitree N.
Sawitree Noisangiam
Manager

Approved by

Kanokkom Anek
Kanokkom Anek
Senior Manager

รหัสงานที่ >204-a-4709

รหัสงานที่ >204-a-6111

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S:Report (AI, GL, pr) (7:35PM)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : A/E_HPPO-TPO Plant



TESTING

No.0042
Lot ID: 23111795
Date Received : Oct 04, 2023
Date Reported : Oct 12, 2023
Report Number : 2787402-1

Page 1 of 1

Page 1 of 1

Sample Number	23111795-1					
Sampled Date	Oct 04, 2023 10:30 AM					
Sample Description	Wastewater					
Location	PUL_EQ Tank					
Date Analysis Commenced	Oct 04, 2023					
Condition of Sample	Contained in two glass vials, three amber glass bottles 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	575	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	2739	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	37	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	37	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Oil & Grease *	mg/L	-	3	9	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *	-	-	-	7.2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	36.6	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1570	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	64	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Sampling By : Sansoen Khuyikoussi รหัสงานที่ >323-a-0005 , Thanasoun Namakunna รหัสงานที่ >204-a-8592

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

Technical Management

N. Banchongkiet
Narumon Banchongkiet
Supervisor

Approved by

D. Changchon
De Changchon
Senior Manager

รหัสงานที่ >323-a-9445

รหัสงานที่ >323-a-9442

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : A/E_HPPO-TPO Plant

Lot ID: 23111795
Date Received : Oct 04, 2023
Date Reported : Oct 12, 2023
Report Number : 2787402-2

Page 1 of 1

Page 1 of 1						
Sample Number	23111795-1					
Sampled Date	Oct 04, 2023 10:30 AM					
Sample Description	Wastewater					
Location	PUL_EQ Tank					
Date Analysis Commenced	Oct 05, 2023					
Condition of Sample	Contained in two glass vials, three amber glass bottles and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOB)	Result	Method	Testing Location
Organic Compounds						
Propylene oxide	mg/L	-	10	<10	In-house method based on United States Environmental Protection Agency, EPA Method 8015 B	Bangkok
Water Testing						
Methanol	mg/L	-	0.01	55.6	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B, 5200B	Bangkok

Sampling By : Sansoen Khuyikoussi , Thanasoun Namakunna

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

Technical Management

Siriluk P.
Siriluk Puengpang
Section Head

Approved by

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S:Report (AI, GL, pr) (7:35PM)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPO-TPO Plant



TESTING

No.0042
Lot ID: 23111791
Date Received : Oct 04, 2023
Date Reported : Oct 12, 2023
Report Number : 2805461-1

Page 1 of 2

Sample Number	23111791-1						
Sampled Date	Oct 04, 2023 2:20 PM						
Sample Description	Wastewater						
Location	Inspection Manhole						
Date Analysis Commenced	Oct 04, 2023						
Condition of Sample	Contained in four amber glass bottles and six 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, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	33	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	17	≤300	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	15	≤300	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Cyanide as CN *	mg/L	0.001	0.005	<0.005	≤0.2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-CN (C, E)	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1.0	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed., 2004	Rayong
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, 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, 23rd ed., 2017, part 4500 - H (B)	Rayong
Phenol	mg/L	0.005	0.01	Not Detected	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5530 D	Rayong

Technical Management

N. Banthit

Approved by

D. Chongchon

Narumon Banchongkit
Supervisor
โทรศัพท์มือถือ ๐-๒๒๒-๐๙๔๕

Dig. Chongchon
Senior Manager
โทรศัพท์มือถือ ๐-๒๒๒-๐๙๔๕

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPO-TPO Plant



TESTING

No.0009
Lot ID: 23111791
Date Received : Oct 04, 2023
Date Reported : Oct 12, 2023
Report Number : 2805461-2

Page 1 of 4

Sample Number	23111791-1						
Sampled Date	Oct 04, 2023 2:20 PM						
Sample Description	Wastewater						
Location	Inspection Manhole						
Date Analysis Commenced	Oct 05, 2023						
Condition of Sample	Contained in four amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOQ)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
2,4-DDD *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
2,4-DDE *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
2,4-DDT *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDD *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDE *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDT *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Aldrin *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok

Technical Management

Siriluk P.

Approved by

K. Anuk

Siriluk Puanggang
Section Head
โทรศัพท์มือถือ ๐-๒๒๒-๐๙๔๕

Kanokkorn Anuk
Senior Manager
โทรศัพท์มือถือ ๐-๒๒๒-๐๙๔๕

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPO-TPO Plant

TESTING

No.0042
Lot ID: 23111791
Date Received : Oct 04, 2023
Date Reported : Oct 12, 2023
Report Number : 2805461-1

Page 2 of 2

Sample Number	23111791-1						
Sampled Date	Oct 04, 2023 2:20 PM						
Sample Description	Wastewater						
Location	Inspection Manhole						
Date Analysis Commenced	Oct 04, 2023						
Condition of Sample	Contained in four amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Residual Free Chlorine *	mg/L	-	0.1	<0.1	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Cl (F)	Rayong
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Rayong
Temperature *	Degree C	-	-	32.8	≤40	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1172	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, 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, 23rd ed., 2017, part 4500-Norg (C), part NHD (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, 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 : Ambient Temperature is 27.5 degree celsius.

Sampling By : Sanseon Khuyokul โทรศัพท์มือถือ ๐-๒๒๒-๐๙๔๕, Thanasson Namakunna โทรศัพท์มือถือ ๐-๒๒๒-๐๙๔๕

Remark :

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

Technical Management

N. Banthit

Approved by

D. Chongchon

Narumon Banchongkit
Supervisor
โทรศัพท์มือถือ ๐-๒๒๒-๐๙๔๕

Dig. Chongchon
Senior Manager
โทรศัพท์มือถือ ๐-๒๒๒-๐๙๔๕

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPO-TPO Plant

TESTING

No.0009
Lot ID: 23111791
Date Received : Oct 04, 2023
Date Reported : Oct 12, 2023
Report Number : 2805461-2

Page 2 of 4

Sample Number	23111791-1						
Sampled Date	Oct 04, 2023 2:20 PM						
Sample Description	Wastewater						
Location	Inspection Manhole						
Date Analysis Commenced	Oct 05, 2023						
Condition of Sample	Contained in four amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOQ)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
alpha-BHC *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Atrazine *	ug/L	0.1	0.5	Not Detected	Not Detected	In-house method : STM 04-101 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
beta-BHC *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Chlordane *	ug/L	0.02	0.04	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
delta-BHC *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Dieldrin *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Endosulfan I *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok

Technical Management

Siriluk P.

Approved by

K. Anuk

Siriluk Puanggang
Section Head
โทรศัพท์มือถือ ๐-๒๒๒-๐๙๔๕

Kanokkorn Anuk
Senior Manager
โทรศัพท์มือถือ ๐-๒๒๒-๐๙๔๕

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8525-200 EMAIL



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HIPO-TPO Plant

TESTING
No.0009
Lot ID: 23111791
Date Received : Oct 04, 2023
Date Reported : Oct 12, 2023
Report Number : 2805461-2

Page 1 of 4

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
Endosulfan II *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Endrin *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Heptachlor *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Heptachlor-Epoxide *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Lindane (gamma-BHC) *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Methoxychlor *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok

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 : Ambient Temperature is 27.5 degree Celsius.
Sampling By : Sansoen Khuiyoksa วสันโสนไขยอกศา >23-8-0005, Thanasorn Namakunna ทณสนนมาคุนนา >204-8-8592

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

Technical Management

Siriluk P.

Siriluk Puenggang
Section Head
วสันโสนไขยอกศา >204-8-4720

Approved by

Kankorn Anek

Kankorn Anek
Senior Manager
วสันโสนไขยอกศา >204-8-6111

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S (Report) M (CL) (2.03PM)

8525-200 (ENGL)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HIPO-TPO Plant

Lot ID: 23111791
Date Received : Oct 04, 2023
Date Reported : Oct 12, 2023
Report Number : 2805461-3

Page 1 of 1

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
Hexachlorobenzene	ug/L	0.01	0.02	<0.02	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Toxaphene	ug/L	2	4	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Water Testing							
Chlorine	mg/L	-	-	0.48	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Cl (F)	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 : Ambient Temperature is 27.5 degree Celsius.
Sampling By : Sansoen Khuiyoksa, Thanasorn Namakunna

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

Approved by

Siriluk P.

Siriluk Puenggang
Section Head

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An ALS Limited Company

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RIGHT SOLUTIONS

S (Report) M (CL) (2.03PM)

8525-200 (ENGL)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HIPO-TPO Plant

TESTING
No.0009
Lot ID: 23111791
Date Received : Oct 04, 2023
Date Reported : Oct 12, 2023
Report Number : 2805461-2

Page 4 of 4

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Arsenic	mg/L	0.0003	0.0005	0.003	≤0.25	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Barium	mg/L	0.0003	0.0005	0.12	≤1.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Chromium	mg/L	0.0003	0.0005	0.006	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Copper	mg/L	0.0003	0.0005	0.001	≤2.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.25	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3500-Cr B	Bangkok
Lead	mg/L	0.0003	0.0005	Not Detected	≤0.2	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Manganese	mg/L	0.0003	0.0005	0.03	≤5.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok

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 : Ambient Temperature is 27.5 degree Celsius.
Sampling By : Sansoen Khuiyoksa >23-8-0005, Thanasorn Namakunna >204-8-8592

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

Technical Management

Siriluk P.

Siriluk Puenggang
Section Head
วสันโสนไขยอกศา >204-8-4720

Approved by

Kankorn Anek

Kankorn Anek
Senior Manager
วสันโสนไขยอกศา >204-8-6111

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S (Report) M (CL) (2.03PM)

8525-200 (ENGL)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HIPO-TPO Plant

TESTING
No.0009
Lot ID: 23111791
Date Received : Oct 04, 2023
Date Reported : Oct 12, 2023
Report Number : 2805461-3

Page 1 of 2

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Arsenic	mg/L	0.0003	0.0005	0.003	≤0.25	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Barium	mg/L	0.0003	0.0005	0.12	≤1.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Chromium	mg/L	0.0003	0.0005	0.006	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Copper	mg/L	0.0003	0.0005	0.001	≤2.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.25	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3500-Cr B	Bangkok
Lead	mg/L	0.0003	0.0005	Not Detected	≤0.2	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Manganese	mg/L	0.0003	0.0005	0.03	≤5.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok

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 : Ambient Temperature is 27.5 degree Celsius.
Sampling By : Sansoen Khuiyoksa >23-8-0005, Thanasorn Namakunna >204-8-8592

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

Technical Management

Savitree N.

Savitree Nuisangam
Manager
วสันโสนไขยอกศา >204-8-4107

Approved by

Kankorn Anek

Kankorn Anek
Senior Manager
วสันโสนไขยอกศา >204-8-6111

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S (Report) M (CL) (2.03PM)

8525-200 (ENGL)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HHPO-TPO Plant

TESTING
No 0009
Lot ID: 23111791
Date Received : Oct 04, 2023
Date Reported : Oct 12, 2023
Report Number : 2805462-1

Page 2 of 2

Sample Number	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
23111791-2							
Sampled Date	Oct 04, 2023 2:20 PM						
Sample Description	Wastewater						
Location	Inspection Manhole						
Date Analysis Commenced	Oct 06, 2023						
Condition of Sample	Contained in two glass vials 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							
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.004	≤1.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Selenium	mg/L	0.0003	0.0005	Not Detected	≤0.02	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Zinc	mg/L	0.003	0.005	0.52	≤5.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok

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 : Sansoen Khuyokul รหัสประจำตัว >323-0-0005, Thanassun Namakunna รหัสประจำตัว >204-8-8592

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

Technical Management

Savitree N.
Savitree Naisiangiam
Manager
รหัสประจำตัว >204-8-4709

Approved by

Kanokorn Anik
Kanokorn Anik
Senior Manager
รหัสประจำตัว >204-8-6111

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8523-200 (ENGL)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HHPO-TPO Plant

TESTING
No.0042
Lot ID: 23125150
Date Received : Nov 01, 2023
Date Reported : Nov 09, 2023
Report Number : 2817716-1

Page 1 of 1

Sample Number	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
23125150-1						
Sampled Date	Nov 01, 2023 10:15 AM					
Sample Description	Wastewater					
Location	PUI_EQ Tank					
Date Analysis Commenced	Nov 01, 2023					
Condition of Sample	Contained in two glass vials, two amber glass bottles 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	708	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O-G	Rayong
COD	mg/L	1.5	25	2897	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	28	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	28	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Oil & Grease *	mg/L	-	3	5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *	-	-	-	7.3	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	36.6	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1380	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	53	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Sampling By : Chaiyosorn Lertnathakunchai รหัสประจำตัว >323-0-9461, Pattarapol Sawangjitam รหัสประจำตัว >204-8-0002

Remark :
- LOD : Limit of Detection
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- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

N. Banthit
Nanum Banchongkit
Supervisor
รหัสประจำตัว >323-0-0446

Approved by

Dej Changnon
Dej Changnon
Senior Manager
รหัสประจำตัว >323-0-9442

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5 (Report), AL, NG, pt. (2.00P)

8523-200 (ENGL)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HHPO-TPO Plant

TESTING
No 0009
Lot ID: 23111791
Date Received : Oct 04, 2023
Date Reported : Oct 12, 2023
Report Number : 2805462-2

Page 1 of 1

Sample Number	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
23111791-2							
Sampled Date	Oct 04, 2023 2:20 PM						
Sample Description	Wastewater						
Location	Inspection Manhole						
Date Analysis Commenced	Oct 06, 2023						
Condition of Sample	Contained in two glass vials 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							
Iron	mg/L	0.003	0.005	0.45	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Silver	mg/L	0.0003	0.0005	Not Detected	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok

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 : Sansoen Khuyokul , Thanassun Namakunna

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

Approved by

Savitree N.
Savitree Naisiangiam
Manager
รหัสประจำตัว >204-8-4709

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8523-200 (ENGL)

5 (Report), AL, GL, pt. (2.00P)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HHPO-TPO Plant

Lot ID: 23125150
Date Received : Nov 01, 2023
Date Reported : Nov 08, 2023
Report Number : 2817716-2

Page 1 of 1

Sample Number	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
23125150-1						
Sampled Date	Nov 01, 2023 10:15 AM					
Sample Description	Wastewater					
Location	PUI_EQ Tank					
Date Analysis Commenced	Nov 03, 2023					
Condition of Sample	Contained in two glass vials, two amber glass bottles and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Organic Compounds						
Propylene oxide	mg/L	-	10	<10	In-house method based on United States Environmental Protection Agency, EPA Method 8015 B	Bangkok
Water Testing						
Methanol	mg/L	-	0.01	9.42	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B, 6200B	Bangkok

Sampling By : Chaiyosorn Lertnathakunchai , Pattarapol Sawangjitam

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

Approved by

Siriluk P.
Siriluk Puangpiang
Section Head
รหัสประจำตัว >204-8-0002

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Analysis / Test Report

TESTING

No.0042

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPO-TPO Plant

Lot ID: 23125147
Date Received : Nov 01, 2023
Date Reported : Nov 09, 2023
Report Number : 2830261-1

Page 1 of 2

Sample Number 23125147-1
Sample Date Nov 01, 2023 1:50 PM
Sample Description Wastewater
Location Inspection Manhole
Date Analysis Commenced Nov 01, 2023
Condition of Sample Contained in four amber glass bottles and six 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, 23rd ed., 2017, 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, 23rd ed., 2017, part 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	28	≤300	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 7th ed., 2017, part 7130 F	Rayong
Color (at pH 7.0)	ADMI	-	5	26	≤300	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Cyanide as CN *	mg/L	0.001	0.005	<0.005	≤0.2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-CN (C, E)	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1.0	Wastewater analysis manual, Environmental Engineering Association of Thailand, 6th ed., 2004	Rayong
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, 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, 23rd ed., 2017, part 4500 - H (B)	Rayong
Phenol	mg/L	0.005	0.01	Not Detected	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5530 D	Rayong

Technical Management

N. Banphit

Narumon Banchongkit
Supervisor
โทรศัพท์ 323-9445

Approved by

D. Chanchon

Dej Chanchon
Senior Manager
โทรศัพท์ 323-9442

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8229-200 (ENGL)



Analysis / Test Report

TESTING

No.0042

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPO-TPO Plant

Lot ID: 23125147
Date Received : Nov 01, 2023
Date Reported : Nov 09, 2023
Report Number : 2830261-1

Page 2 of 2

Sample Number 23125147-1
Sample Date Nov 01, 2023 1:50 PM
Sample Description Wastewater
Location Inspection Manhole
Date Analysis Commenced Nov 01, 2023
Condition of Sample Contained in four amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Residual Free Chlorine *	mg/L	-	0.1	0.2	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Cl (F)	Rayong
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Rayong
Temperature *	Degree C	-	-	34.2	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2530 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1080	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, 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, 23rd ed., 2017, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, 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 : Ambient Temperature is 32.7 degree Celsius.

Sampling By : Chansorn Lettanthakunchai โทรศัพท์ 323-9461, Patarapong Sawangjitam โทรศัพท์ 204-9002

Remarks :

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

Technical Management

N. Banphit

Narumon Banchongkit
Supervisor
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Approved by

D. Chanchon

Dej Chanchon
Senior Manager
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8229-200 (ENGL)



Analysis / Test Report

TESTING

No.0009

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPO-TPO Plant

Lot ID: 23125147
Date Received : Nov 01, 2023
Date Reported : Nov 08, 2023
Report Number : 2830261-2

Page 1 of 3

Sample Number 23125147-1
Sample Date Nov 01, 2023 1:50 PM
Sample Description Wastewater
Location Inspection Manhole
Date Analysis Commenced Nov 03, 2023
Condition of Sample Contained in four amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
2,4-DDD *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
2,4-DDE *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
2,4-DDT *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDD *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDE *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDT *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Aldrin *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok

Technical Management

Siriluk P.

Siriluk Puengsang
Section Head
โทรศัพท์ 204-9472

Approved by

K. Anek

Kanokkom Anek
Senior Manager
โทรศัพท์ 204-6111

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Analysis / Test Report

TESTING

No.0009

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPO-TPO Plant

Lot ID: 23125147
Date Received : Nov 01, 2023
Date Reported : Nov 08, 2023
Report Number : 2830261-2

Page 2 of 3

Sample Number 23125147-1
Sample Date Nov 01, 2023 1:50 PM
Sample Description Wastewater
Location Inspection Manhole
Date Analysis Commenced Nov 03, 2023
Condition of Sample Contained in four amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
alpha-BHC *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
beta-BHC *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Chlordane *	ug/L	0.02	0.04	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
delta-BHC *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Dieldrin *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Endosulfan I *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Endosulfan II *	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok

Technical Management

Siriluk P.

Siriluk Puengsang
Section Head
โทรศัพท์ 204-9472

Approved by

K. Anek

Kanokkom Anek
Senior Manager
โทรศัพท์ 204-6111

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8229-200 (ENGL)



Analysis / Test Report

Lot ID: 23125147
Date Received : Nov 01, 2023
Date Reported : Nov 09, 2023
Report Number : 2830261-3

Page 1 of 1

Page 1 of 2

Sample Number	23125147-1						
Sampled Date	Nov 01, 2023 1:50 PM						
Sample Description	Wastewater						
Location	Inspection Manhole						
Date Analysis Commenced	Nov 01, 2023						
Condition of Sample	Contained in four amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
Atrazine	ug/L	0.1	0.5	Not Detected	Not Detected	In - house method - STM 40-101 based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 B, part 6410 B	Bangkok
Hexachlorobenzene	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 B, part 6410 B	Bangkok
Toxaphene	ug/L	2	4	Not Detected	Not Detected	Standard Methods for the examination or water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 B, part 6410 B	Bangkok
Water Testing							
Chlorine	mg/L	-	-	0.35	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Cl (F)	Rayong

Note : Ambient Temperature is 32.7 degree celsius

Remark :

- LOD : Limit of Detection
- " \leq " : lower than LOD (Limit of Quantitation) / LOB (Limit of Reporting)

Technical Management

Approved by _____

Approved by _____

Narumon Bandhongkit
Supervisor

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Analysis / Test Report

Lot ID: 23125147
Date Received : Nov 01, 2023
Date Reported : Nov 09, 2023
Report Number : 2830262-1

Page 2 of 2

Page 2 of 2

Sample Number	23125147-2						
Sample Date	Nov 01, 2023 1:50 PM						
Sample Description	Wastewater						
Location	Inspection Marhole						
Date Analysis Commenced	Nov 03, 2023						
Condition of Sample	Contained in two glass vials and two plastic bottles, sample containers comply to pre-treatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Mercury	mg/L	0.0001	0.0005	Not Detected	≤0.005	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.006	≤1.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Selenium	mg/L	0.0003	0.0005	0.0005	≤0.02	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Silver	mg/L	0.0003	0.0005	Not Detected	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Zinc	mg/L	0.003	0.005	0.63	≤5.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok

Sampling By : Chainusorn Lertnanthakunchai โทร.09-323-2-9461 , Pattarapol S

Remark :

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

Technical Management

Approved by _____

Approved by _____

Kanokkorn Anek
Senior Manager
โทรสาร ๐๒-๒๐๔-๘๖๑๑

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5. 16.000777, 64. 0. 000000, 0. 162841.



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPPO-TPO Plant

Lot ID: 23125147
Date Received : Nov 01, 2023
Date Reported : Nov 09, 2023
Report Number : 2830262-2

Page 1 of 1

Sample Number	23125147-2						
Sampled Date	Nov 01, 2023 1:50 PM						
Sample Description	Wastewater						
Location	Inspection Manhole						
Date Analysis Commenced	Nov 03, 2023						
Condition of Sample	Contained in two glass vials 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							
Iron	mg/L	0.003	0.005	0.15	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok

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 : Chainumorn Lertnanthakunchai, Pattarapol Sawangattam

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



Analysis / Test Report



TESTING
No.0042

Lot ID: 23136588
Date Received : Dec 06, 2023
Date Reported : Dec 14, 2023
Report Number : 2843490-1

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPPO-TPO Plant

Sample Number	23136588-1					
Sampled Date	Dec 06, 2023 10:15 AM					
Sample Description	Wastewater					
Location	PUL EQ Tank					
Date Analysis Commenced	Dec 06, 2023					
Condition of Sample	Contained in two glass vials, three amber glass bottles 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	1121	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	3574	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	43	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	40	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Oil & Grease *	mg/L	-	3	9	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *	-	-	-	7.5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	37.8	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1450	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	55	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Sampling By : Chainumorn Lertnanthakunchai, Pattarapol Sawangattam

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

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Approved by

Savitree N.
Savitree Nongniam
Manager

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โทรศัพท์ 0-323-9-9445

Approved by

D. Changchon

Dej Changchon
Senior Manager
โทรศัพท์ 0-323-9-9442

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0525-2891 (THAIL)



Analysis / Test Report

TESTING
No.0042

Lot ID: 23136588
Date Received : Dec 06, 2023
Date Reported : Dec 14, 2023
Report Number : 2862893-1

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPPO-TPO Plant

Sample Number	23136584-1						
Sampled Date	Dec 06, 2023 2:10 PM						
Sample Description	Wastewater						
Location	Inspection Manhole						
Date Analysis Commenced	Dec 06, 2023						
Condition of Sample	Contained in three amber glass bottles and six 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, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	55	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	26	≤300	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	26	≤300	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Cyanide as CN *	mg/L	0.001	0.005	0.005	≤0.2	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-CN (C, E)	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1.0	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4th ed. 2004	Rayong
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *	-	-	-	8.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong

Technical Management

N. Banphit

Narumon Banchongkit
Supervisor
โทรศัพท์ 0-323-9-9445

Approved by

D. Changchon

Dej Changchon
Senior Manager
โทรศัพท์ 0-323-9-9442

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Approved by

Sumimon C.
Suwimon Chairuangvut
Scientist (3)

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location: AIE_HPPO-TPO Plant

TESTING
No 0042
Lot ID: 23136584
Date Received : Dec 06, 2023
Date Reported : Dec 14, 2023
Report Number : 2862893-1

Page 3 of 3

Sample Number 23136584-1
Sampled Date Dec 06, 2023 2:10 PM
Sample Description Wastewater
Location Inspection Manhole
Date Analysis Commenced Dec 06, 2023
Condition of Sample Contained in three amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Phenol	mg/L	0.005	0.01	Not Detected	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5530 D	Rayong
Residual Free Chlorine *	mg/L	-	0.1	0.1	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Cl (F)	Rayong
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Rayong
Temperature *	Degree C	-	-	34.5	≤40	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1070	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, 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, 23rd ed., 2017, part 4500-Norg (C), part 4500-N (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, 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 : Chainorn Lertrathakunhai รหัสประจำตัว >323-a-9461, Pattarapol Savangaitam รหัสประจำตัว >204-a-0002

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

Technical Management

N. Banphit

Narumon Banchongkit
Supervisor
รหัสประจำตัว >323-a-9445

Approved by

D. Chongchon

Dej Chongchon
Senior Manager
รหัสประจำตัว >323-a-9442

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location: AIE_HPPO-TPO Plant

TESTING
No 0042
Lot ID: 23136584
Date Received : Dec 06, 2023
Date Reported : Dec 13, 2023
Report Number : 2862893-2

Page 1 of 3

Sample Number 23136584-1
Sampled Date Dec 06, 2023 2:10 PM
Sample Description Wastewater
Location Inspection Manhole
Date Analysis Commenced Dec 09, 2023
Condition of Sample Contained in three amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
2,4-DDD	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
2,4-DDE	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
2,4-DDT	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDD	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDE	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
4,4-DDT	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Aldrin	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok

Technical Management

S. Chaiyaporn

Summon Chaiyaporn
Scientist (3)
รหัสประจำตัว >204-a-5417

Approved by

K. Anek

Kanokorn Anek
Senior Manager
รหัสประจำตัว >204-a-6111

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location: AIE_HPPO-TPO Plant

TESTING
No 0042
Lot ID: 23136584
Date Received : Dec 06, 2023
Date Reported : Dec 14, 2023
Report Number : 2862893-1

Page 3 of 3

* Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
* The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Phenol	mg/L	0.005	0.01	Not Detected	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5530 D	Rayong
Residual Free Chlorine *	mg/L	-	0.1	0.1	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Cl (F)	Rayong
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Rayong
Temperature *	Degree C	-	-	34.5	≤40	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1070	≤3000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, 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, 23rd ed., 2017, part 4500-Norg (C), part 4500-N (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, 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 : Chainorn Lertrathakunhai รหัสประจำตัว >323-a-9461, Pattarapol Savangaitam รหัสประจำตัว >204-a-0002

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

Technical Management

N. Banphit

Narumon Banchongkit
Supervisor
รหัสประจำตัว >323-a-9445

Approved by

D. Chongchon

Dej Chongchon
Senior Manager
รหัสประจำตัว >323-a-9442

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location: AIE_HPPO-TPO Plant

TESTING
No 0042
Lot ID: 23136584
Date Received : Dec 06, 2023
Date Reported : Dec 13, 2023
Report Number : 2862893-2

Page 2 of 3

Sample Number 23136584-1
Sampled Date Dec 06, 2023 2:10 PM
Sample Description Wastewater
Location Inspection Manhole
Date Analysis Commenced Dec 09, 2023
Condition of Sample Contained in three amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
alpha-BHC	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
beta-BHC	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Chlordane	ug/L	0.02	0.04	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
delta-BHC	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Dieldrin	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Endosulfan I	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Endosulfan II	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok

Technical Management

S. Chaiyaporn

Summon Chaiyaporn
Scientist (3)
รหัสประจำตัว >204-a-5417

Approved by

K. Anek

Kanokorn Anek
Senior Manager
รหัสประจำตัว >204-a-6111

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPO-TPO Plant

Lot ID: 23136584
Date Received : Dec 06, 2023
Date Reported : Dec 13, 2023
Report Number : 2862893-2

Page 2 of 2

Sample Number 23136584-1
Sample Date Dec 06, 2023 2:10 PM
Sample Description Wastewater
Location Inspection Manhole
Date Analysis Commenced Dec 08, 2023
Condition of Sample Contained in three amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
Endrin	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Heptachlor	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Heptachlor-Epoxyde	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Lindane (gamma-BHC)	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Methoxychlor	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Toxaphene	ug/L	2	4	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok

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 : Chainumorn Lerthanakunchai วิจัยและทดสอบ >323-a-9461, Pattarapol Sawangjaitam วิจัยและทดสอบ >204-a-0002

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

Technical Management

Sunimon C.
Sowmon Channangvut
Scientist (3)
วิทย์และทดสอบ >204-a-5417

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
วิทย์และทดสอบ >204-a-6111

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S (Report) At GL (at 7:05PM)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPO-TPO Plant

Lot ID: 23136584
Date Received : Dec 06, 2023
Date Reported : Dec 14, 2023
Report Number : 2862894-1

Page 1 of 2

Sample Number 23136584-2
Sample Date Dec 06, 2023 2:10 PM
Sample Description Wastewater
Location Inspection Manhole
Date Analysis Commenced Dec 08, 2023
Condition of Sample Contained in two glass vials 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							
Arsenic	mg/L	0.0003	0.0005	0.004	≤0.25	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Barium	mg/L	0.0003	0.0005	0.14	≤1.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Chromium	mg/L	0.0003	0.0005	0.005	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Copper	mg/L	0.0003	0.0005	0.001	≤2.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.25	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3500-Cr B	Bangkok
Lead	mg/L	0.0003	0.0005	<0.0005	≤0.2	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok

Technical Management

Savitree N.
Savitree Nisangarn
Manager
วิทย์และทดสอบ >204-a-4709

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
วิทย์และทดสอบ >204-a-6111

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S (Report) At GL (at 7:05PM)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPO-TPO Plant

Lot ID: 23136584
Date Received : Dec 06, 2023
Date Reported : Dec 14, 2023
Report Number : 2862893-3

Page 1 of 1

Sample Number 23136584-1
Sample Date Dec 06, 2023 2:10 PM
Sample Description Wastewater
Location Inspection Manhole
Date Analysis Commenced Dec 06, 2023
Condition of Sample Contained in three amber glass bottles and six plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Pesticides - Organochlorine Group							
Atrazine	ug/L	0.1	0.5	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Hexachlorobenzene	ug/L	0.01	0.02	Not Detected	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6630 D, part 6410 B	Bangkok
Water Testing							
Chlorine	mg/L	-	-	0.20	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Cl (P)	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).

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

Approved by

N. Banngmit
Narumon Banchongkit
Supervisor

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S (Report) At GL (at 5:08PM)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIE_HPPO-TPO Plant

Lot ID: 23136584
Date Received : Dec 06, 2023
Date Reported : Dec 14, 2023
Report Number : 2862894-1

Page 2 of 2

Sample Number 23136584-2
Sample Date Dec 06, 2023 2:10 PM
Sample Description Wastewater
Location Inspection Manhole
Date Analysis Commenced Dec 08, 2023
Condition of Sample Contained in two glass vials 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							
Manganese	mg/L	0.0003	0.0005	0.04	≤5.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.005	≤1.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Selenium	mg/L	0.0003	0.0005	<0.0005	≤0.02	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Zinc	mg/L	0.003	0.005	0.61	≤5.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok

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).

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

Technical Management

Savitree N.
Savitree Nisangarn
Manager
วิทย์และทดสอบ >204-a-4709

Approved by

Kanokorn Anek
Kanokorn Anek
Senior Manager
วิทย์และทดสอบ >204-a-6111

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130
P/O : 4514155499
Project Name : Water Testing
Project Location : AIF_HIPO-TPO Plant

TESTING
No 0009
Lot ID: 23136584
Date Received : Dec 06, 2023
Date Reported : Dec 14, 2023
Report Number : 2862894-2

Page 1 of 1

Sample Number	23136584-2						
Sample Date	Dec 06, 2023 2:10 PM						
Sample Description	Wastewater						
Location	Inspection Manhole						
Date Analysis Commenced	Dec 08, 2023						
Condition of Sample	Contained in two glass vials 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							
Iron	mg/L	0.003	0.005	0.39	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Silver	mg/L	0.0003	0.0005	Not Detected	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok

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 17, B.E.2560 (2017).
Sampling By : Chainusorn Lertnathakunchai , Pattarapol Sawangsitam

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

Approved by

Savitree N.

Savitree Nisangiam
Manager

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ระดับความร้อน



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong
Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2388103

Date Received : Aug 08, 2023

Date Reported : Aug 11, 2023

Report Number: 2730293-1

Page 1 of 1

Sample Number 2388103-1
Parameter Heat Stress (Sampling Time : 10.00 AM - 12.00 PM)
Measurement Date Aug 07, 2023
Measurement by Natthapon Jiengwareewong
Location ปฏิบัติงาน 1 พื้นที่ (ชื่อ-นามสกุล ผู้ปฏิบัติงาน : - แผนก : -)

Location	Duration (min)	WBGT (°C)	NWB (°C)	GT (°C)	DB (°C)
บริเวณหน่วย TOX (ERU)	120	30.9	28.4	37.5	35.5
Average (WBGT)		30.9			
Guideline WBGT (°C)		32.0			

Reference Method : Wet Bulb Globe Temperature

Guideline:

- 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)
- Ministerial Regulation on Prescribing of Standard for Administration and Management of Occupational Safety, Health and Environment in relation to Heat, Light and Noise, B.E.2559

Technical Management

Supot Salamteh
Section Head

Approved by

Wichan Choonharat
Assistant Manager

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Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong
Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 23125274

Date Received : Oct 31, 2023

Date Reported : Nov 02, 2023

Report Number: 2818006-1

Page 1 of 1

Sample Number 23125274-1
Parameter Heat Stress (Sampling Time : 10.00 AM - 12.00 PM)
Measurement Date Oct 30, 2023
Measurement by Natthapon Jiengwareewong
Location ปฏิบัติงาน 1 พื้นที่ (ชื่อ-นามสกุล ผู้ปฏิบัติงาน : - แผนก : -)

Location	Duration (min)	WBGT (°C)	NWB (°C)	GT (°C)	DB (°C)
บริเวณหน่วย TOX (ERU)	120	30.6	27.8	37.6	36.4
Average (WBGT)		30.6			
Guideline WBGT (°C)		32.0			

Reference Method : Wet Bulb Globe Temperature

Guideline:

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. Ministerial Regulation on Prescribing of Standard for Administration and Management of Occupational Safety, Health and Environment in relation to Heat, Light and Noise, B.E.2559

Technical Management

Supot Salamteh
Section Head

Approved by

Wichan Choonharat
Assistant Manager

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ระดับเสียงในสถานประกอบการ (Leq 8 hrs)



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2387920

Date Received : Aug 07, 2023

Date Reported : Aug 12, 2023

Report Number: 2745109-1

Page 1 of 1

Sample Number	2387920-1		
Parameter	Noise (Leq 8 hrs.)		
Location	Compressor Area		
Measurement Date	Aug 07, 2023		
Measurement by	Satcha Phetsawaeng		
Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:40 AM - 10:40 AM	77.8	82.6	77.4
10:40 AM - 11:40 AM	78.1	90.1	77.6
11:40 AM - 12:40 PM	78.3	79.7	78.0
12:40 PM - 01:40 PM	78.7	80.2	78.1
01:40 PM - 02:40 PM	78.2	79.9	77.8
02:40 PM - 03:40 PM	78.5	83.2	77.9
03:40 PM - 04:40 PM	78.2	84.5	77.7
04:40 PM - 05:40 PM	78.2	79.3	77.6
Leq Average 8 hrs. (dB(A))	78.3		
Lmax (dB(A))		90.1	
Standard (dB(A))	90	140	
Reference Method : ISO1996-1 and 1996-2			
Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรฐานเครื่องมือวัดความปลอดภัย ในการประกอบกิจการโรงงานเกี่ยวกับสภาวะแวดล้อมในการทำงาน พ.ศ.๒๕๔๖			



Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2387920

Date Received : Aug 07, 2023

Date Reported : Aug 12, 2023

Report Number: 2745110-1

Page 1 of 1

Sample Number	2387920-2		
Parameter	Noise (Leq 8 hrs.)		
Location	Cooling Tower		
Measurement Date	Aug 07, 2023		
Measurement by	Satcha Phetsawaeng		
Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:25 AM - 10:25 AM	78.1	88.3	77.9
10:25 AM - 11:25 AM	77.9	78.7	77.8
11:25 AM - 12:25 PM	78.9	98.3	77.7
12:25 PM - 01:25 PM	78.0	78.7	77.8
01:25 PM - 02:25 PM	78.0	78.7	77.8
02:25 PM - 03:25 PM	78.0	78.4	77.8
03:25 PM - 04:25 PM	78.0	78.5	77.9
04:25 PM - 05:25 PM	77.4	83.0	60.2
Leq Average 8 hrs. (dB(A))	78.1		
Lmax (dB(A))		98.3	
Standard (dB(A))	90	140	
Reference Method : ISO1996-1 and 1996-2			
Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรฐานเครื่องมือวัดความปลอดภัย ในการประกอบกิจการโรงงานเกี่ยวกับสภาวะแวดล้อมในการทำงาน พ.ศ.๒๕๔๖			

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 2387920

Date Received : Aug 07, 2023

Date Reported : Aug 12, 2023

Report Number: 2745111-1

Page 1 of 1

Sample Number : 2387920-3
Parameter : Noise (Leq 8 hrs.)
Location : TOX Area (ERU)
Measurement Date : Aug 07, 2023
Measurement by : Satcha Phetsawaeng

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:49 AM - 10:49 AM	81.2	82.8	80.9
10:49 AM - 11:49 AM	83.3	105.4	81.0
11:49 AM - 12:49 PM	81.3	82.3	81.0
12:49 PM - 01:49 PM	81.2	82.3	80.9
01:49 PM - 02:49 PM	81.3	82.4	81.0
02:49 PM - 03:49 PM	81.3	82.3	81.1
03:49 PM - 04:49 PM	81.4	82.7	81.1
04:49 PM - 05:49 PM	81.6	82.4	81.2

Leq Average 8 hrs. (dB(A))

81.6

Lmax (dB(A))

105.4

Standard (dB(A))

90

140

Reference Method : ISO1996-1 and 1996-2

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย
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Technical Management

Thanitak.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 23125260

Date Received : Oct 31, 2023

Date Reported : Nov 03, 2023

Report Number: 2823790-1

Page 1 of 1

Sample Number : 23125260-1
Parameter : Noise (Leq 8 hrs.)
Location : Compressor Area
Measurement Date : Oct 30, 2023
Measurement by : Natthapon Jitwareewong

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:18 AM - 10:18 AM	77.8	79.7	77.6
10:18 AM - 11:18 AM	78.0	90.5	77.5
11:18 AM - 12:18 PM	77.4	78.2	77.1
12:18 PM - 01:18 PM	77.3	80.0	77.1
01:18 PM - 02:18 PM	77.4	79.9	77.1
02:18 PM - 03:18 PM	78.4	79.7	77.6
03:18 PM - 04:18 PM	78.7	82.0	78.4
04:18 PM - 05:18 PM	77.8	80.5	77.6

Leq Average 8 hrs. (dB(A))

77.9

Lmax (dB(A))

90.5

Standard (dB(A))

90

140

Reference Method : ISO1996-1 and 1996-2

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย
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Technical Management

Thanitak.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 23125260

Date Received : Oct 31, 2023

Date Reported : Nov 03, 2023

Report Number: 2823791-1

Page 1 of 1

Sample Number : 23125260-2
Parameter : Noise (Leq 8 hrs.)
Location : Cooling Tower
Measurement Date : Oct 30, 2023
Measurement by : Natthapon Jhengwareewong

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:05 AM - 10:05 AM	76.9	80.1	76.8
10:05 AM - 11:05 AM	77.5	94.1	76.7
11:05 AM - 12:05 PM	76.5	77.2	76.2
12:05 PM - 01:05 PM	76.3	77.0	76.1
01:05 PM - 02:05 PM	76.4	77.0	76.2
02:05 PM - 03:05 PM	76.7	77.4	76.4
03:05 PM - 04:05 PM	77.0	77.7	76.9
04:05 PM - 05:05 PM	77.7	99.1	76.9

Leq Average 8 hrs. (dB(A))

76.9

Lmax (dB(A))

99.1

Standard (dB(A))

90

140

Reference Method : ISO1996-1 and 1996-2

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรฐานการคุ้มครองความปลอดภัย
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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand 21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 23125260

Date Received : Oct 31, 2023

Date Reported : Nov 03, 2023

Report Number: 2823792-1

Page 1 of 1

Sample Number : 23125260-3
Parameter : Noise (Leq 8 hrs.)
Location : TOX Area (ERU)
Measurement Date : Oct 30, 2023
Measurement by : Natthapon Jhengwareewong

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:25 AM - 10:25 AM	80.2	87.2	80.0
10:25 AM - 11:25 AM	81.1	100.0	79.9
11:25 AM - 12:25 PM	80.1	81.4	79.8
12:25 PM - 01:25 PM	80.1	81.2	79.9
01:25 PM - 02:25 PM	80.0	81.1	79.7
02:25 PM - 03:25 PM	80.3	81.9	79.7
03:25 PM - 04:25 PM	81.0	82.9	80.4
04:25 PM - 05:25 PM	80.7	82.3	80.1

Leq Average 8 hrs. (dB(A))

80.5

Lmax (dB(A))

100.0

Standard (dB(A))

90

140

Reference Method : ISO1996-1 and 1996-2

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรฐานการคุ้มครองความปลอดภัย
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Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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8525-209/ EMAIL

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant



TESTING
No.0009

Lot ID: 2387360

Date Received : Aug 23, 2023

Date Reported : Sep 06, 2023

Report Number : 2728679-1

Page 1 of 2

Sample Number	2387360-1						
Sampled Date	Aug 23, 2023 3:35 PM						
Sample Description	Groundwater						
Location	MW-1 (GW1)						
Date Analysis Commenced	Aug 24, 2023						
Condition of Sample	Contained in one amber glass bottle and one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Copper	mg/L	0.0003	0.0005	<0.0005	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Organic Compounds							
Propylene oxide *	mg/L	-	10	<10	No Standard	In-house method based on United States Environmental Protection Agency, EPA Method 8015 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

Sampling By : Pattarapol Sawangjaitam

Remark :

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

Approved by

Nant Somb

Nanthawadee Somboon
Specialist 1

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant



TESTING
No.0009

Lot ID: 2387359

Date Received : Aug 23, 2023

Date Reported : Sep 06, 2023

Report Number : 2762808-2 C9

Page 1 of 1

Sample Number	2387359-1						
Sampling Date	Aug 23, 2023 3:35 PM						
Sample Description	Groundwater						
Location	MW-1 (GW1)						
Date Analysis Commenced	Aug 24, 2023						
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	Not Detected	10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	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 : Wanlop Hunchinaow

Remark :

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Technical Management

Siriluk P.

Siriluk Puengpang
Section Head

หมายเลขที่ ๖-204-๖-4720

Approved by

Kanokkorn Anek

Kanokkorn Anek
Senior Manager

หมายเลขที่ ๖-204-๖-6111

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130

P/O : 4514156966

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPQ Plant



TESTING
No.0009

Lot ID: 2387360

Date Received : Aug 23, 2023

Date Reported : Sep 06, 2023

Report Number : 2728679-1

Page 2 of 2

Sample Number	2387360-2						
Sampled Date	Aug 23, 2023 2:40 PM						
Sample Description	Groundwater						
Location	MW-6 (GW2)						
Date Analysis Commenced	Aug 24, 2023						
Condition of Sample	Contained in one amber glass bottle and one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Copper	mg/L	0.0003	0.0005	Not Detected	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Organic Compounds							
Propylene oxide *	mg/L	-	10	<10	No Standard	In-house method based on United States Environmental Protection Agency, EPA Method 8015 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

Sampling By : Pattarapol Sawangjaitam

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Approved by

Nant Somb
Nanthawadee Somboon
Specialist 1

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPQ Plant



TESTING
No.0009

Lot ID: 2387359

Date Received : Aug 23, 2023

Date Reported : Sep 06, 2023

Report Number : 2762808-2 C9

Page 1 of 1

Sample Number	2387359-1						
Sampling Date	Aug 23, 2023 3:35 PM						
Sample Description	Groundwater						
Location	MW-6 (GW2)						
Date Analysis Commenced	Aug 24, 2023						
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	Not Detected	10	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	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 : Wanlop Hunchahaow

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Technical Management

Siriluk P.
Siriluk Puengpang
Section Head
หมายเลขที่ 2-204-2-4720

Approved by

Kanokkorn Anek
Kanokkorn Anek
Senior Manager
หมายเลขที่ 2-204-2-6111

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.
10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 213070

Date Received : Jul 12, 2021

Date Reported : Jul 23, 2021

Report Number : 2053744-1 C9

Page 1 of 1

Sample Number 213070-3
Sampling Date Jul 12, 2021 3:25 PM
Sample Description Soil
Location MW-6 (GW2)
Date Analysis Commenced Jul 13, 2021
Condition of Sample Packed in two glass bottles and one plastic bag, refrigerated

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Zinc	mg/kg	-	1.00	4.28	1000	Based on US EPA, Method 3050B and 6010D	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 : Pathompong Kornasawat , Thanasoun Namakunna

Remark :

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Approved by

Siriluk P.

Siriluk Puenggang
Supervisor

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location : AIE_HPPO-TPO Plant

Lot ID: 213070

Date Received : Jul 12, 2021

Date Reported : Jul 23, 2021

Report Number : 2053744-3 C9

Page 1 of 1

Sample Number 213070-3
Sampling Date Jul 12, 2021 3:25 PM
Sample Description Soil
Location MW-6 (GW2)
Date Analysis Commenced Jul 13, 2021
Condition of Sample Packed in two glass bottles and one plastic bag, refrigerated

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Copper	mg/kg	-	1.00	3.06	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Organic Compounds							
Propylene Oxide	mg/kg	-	20	<20	No Standard	Based on US EPA, Method 5035 and GC/FID	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 : Pathompong Kornasawat , Thanasoun Namakunna

Remark :

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Approved by

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Siriluk Puenggang
Supervisor

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location: AIE_HPPO-TPO Plant

Lot ID: 213070

Date Received : Jul 12, 2021

Date Reported : Jul 23, 2021

Report Number : 2053743-1 C9

Page 1 of 1

Page 1 of 1							
Sample Number	213070-1						
Sampling Date	Jul 12, 2021 11:46 AM						
Sample Description	Soil						
Location	MW-1 (GW1)						
Date Analysis Commenced	Jul 13, 2021						
Condition of Sample	Packed in two glass bottles and one plastic bag, refrigerated						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Zinc	mg/kg	-	1.00	18.4	1000	Based on US EPA, Method 3050B and 6010D	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 : Pathompong Kornasawet, Thanasoun Namakunna

Remark :

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Siriluk P.

Siriluk Puengpang
Supervisor

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Analysis / Test Report

Client : Dow Chemical Thailand Ltd.

10 Moo 2, Asia Industrial Estate, Tambol Banchang, Amphur Banchang, Rayong Thailand
21130

P/O : 4510824480

Project Name : Environmental Quality Monitoring

Project Location: AIE_HPPO-TPO Plant

Lot ID: 213070

Date Received : Jul 12, 2021

Date Reported : Jul 23, 2021

Report Number : 2053743-3 C9

Page 1 of 1

Page 1 of 1

Sample Number	213070-1						
Sampling Date	Jul 12, 2021 11:46 AM						
Sample Description	Soil						
Location	MW-1 (GW1)						
Date Analysis Commenced	Jul 13, 2021						
Condition of Sample	Packed in two glass bottles and one plastic bag, refrigerated						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Copper	mg/kg	-	1.00	2.21	No Standard	Based on US EPA, Method 3050B and 6010D	Bangkok
Organic Compounds							
Propylene Oxide	mg/kg	-	20	<20	No Standard	Based on US EPA, Method 5035 and GC/FID	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 : Pathompong Kornasawet, Thanasoun Namakunna

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Siriluk P.

Siriluk Puengpang
Supervisor

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