

ภาคผนวก ค

ใบรับรองผลการตรวจวิเคราะห์คุณภาพสิ่งแวดล้อม

ภาคผนวก ค-1

คุณภาพอากาศจากแหล่งกำเนิด



Analysis / Test Report

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150
P/O : 9103573177
Project Name : Environmental Monitoring
Project Location :

Lot ID: 23126243
Date Received : Dec 01, 2023
Date Reported : Dec 08, 2023
Report Number: 2819153-1

Page 1 of 1

Sample Number 23126243-1
Sampled Date Dec 01, 2023
Sample Description Emission from Stationary Source
Location ปล่อง Reformer Furnace
Date Analysis Commenced Dec 02, 2023
Condition of Sample Extracted into two 2-L collection flasks

Stack Description

Ambient Pressure	757	mmHg	Diameter	0.55	m	Oxygen	2.3	%
Ambient Temperature	31.0	°C	Shape	Circle		Carbon Dioxide	10.4	%
Type of Process	Combustion		Stack Temperature	145	°C	Gas Velocity	4.4	m/s
Type of Fuel	Natural Gas		Moisture	8.10	%	Flow Rate (Actual O2)	2457	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result at 7 %O ₂	Guideline Limit	Method	Testing Location
Air Testing								
Oxides of Nitrogen	09:40 AM - 09:50 AM	ppm	-	1.06	87.3	200	United States Environmental Protection Agency, EPA Method 7	Rayong

Guideline : 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)

Sampled By : Jittakorn Sriwasa

Remark :

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

Technical Management

Thanita K.

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

Approved by

D. Changchon

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

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

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

8369-21/ EMAIL

S:\Reports_Air Stack_GL.rpt (2:44PM)



Analysis / Test Report

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150
P/O : 9103573177
Project Name : Environmental Monitoring
Project Location :

Lot ID: 23126245

Date Received : Dec 01, 2023
Date Reported : Dec 08, 2023
Report Number: 2819157-1

Page 1 of 1

Sample Number 23126245-1
Sampled Date Dec 01, 2023
Sample Description Emission from Stationary Source
Location ปล่อง Boiler
Date Analysis Commenced Dec 02, 2023
Condition of Sample Extracted into two 2-L collection flasks

Stack Description

Ambient Pressure	757	mmHg	Diameter	0.48	m	Oxygen	0.9	%
Ambient Temperature	31.0	°C	Shape	Circle		Carbon Dioxide	8.0	%
Type of Process	Combustion		Stack Temperature	135	°C	Gas Velocity	5.6	m/s
Type of Fuel	Natural Gas		Moisture	8.49	%	Flow Rate (Actual O2)	2430	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result at 7 %O ₂	Guideline Limit	Method	Testing Location
Air Testing								
Oxides of Nitrogen	09:00 AM - 09:10 AM	ppm	-	1.06	18.5	200	United States Environmental Protection Agency, EPA Method 7	Rayong

Guideline : 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)

Sampled By : Jittakorn Sriwasa

Remark :

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

Technical Management

Thanita K.

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

Approved by

D. Changchon

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

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

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

ภาคผนวก ค-2

คุณภาพน้ำ



Analysis / Test Report

TESTING

No.0042

Lot ID: 2371987

Date Received : Jul 14, 2023

Date Reported : Jul 21, 2023

Report Number : 2692468-1

Client : Linde HyCO Limited

10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150

P/O : 9103573177

Project Name : Environmental Monitoring

Project Location :

Page 1 of 1

Sample Number	2371987-1
Sampled Date	Jul 14, 2023 10:30 AM
Sample Description	Wastewater
Location	จุดปล่อยน้ำทิ้งของโครงการบริเวณประตู 2 (Outlet Gate 2)
Date Analysis Commenced	Jul 14, 2023
Condition of Sample	Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<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	<25	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	≤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 *		-	-	8.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	31.7	≤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	632	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<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 : Narunat thammassaro ทะเบียนเลขที่ ว-323-จ-9477

Remark :

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

Technical Management

N. Banchongkit

Narumon Banchongkit

Supervisor

ทะเบียนเลขที่ ว-323-จ-9445

Approved by

D. Changchon

Dej Changchon

Senior Manager

ทะเบียนเลขที่ ว-323-ค-9442

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

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

TESTING

No.0042

Lot ID: 2384512

Date Received : Aug 17, 2023

Date Reported : Aug 24, 2023

Report Number : 2722917-1

Client : Linde HyCO Limited

10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150

P/O : 9103573177

Project Name : Environmental Monitoring

Project Location :

Page 1 of 1

Sample Number	2384512-1
Sampled Date	Aug 17, 2023 10:58 AM
Sample Description	Wastewater
Location	จุดปล่อยน้ำทิ้งของโครงการบริเวณประตู 2 (Outlet Gate 2)
Date Analysis Commenced	Aug 17, 2023
Condition of Sample	Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<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	<25	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	≤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 *		-	-	8.0	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	29.0	≤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	274	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	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 : Paramet Sattayakun ทะเบียนเลขที่ ว-323-จ-9476

Remark :

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

Technical Management

N. Banongkit

Narumon Banchongkit
Supervisor

ทะเบียนเลขที่ ว-323-จ-9445

Approved by

D. Changchon

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-9442

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

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

TESTING

No.0042

Lot ID: 2395455

Date Received : Sep 14, 2023

Date Reported : Oct 04, 2023

Report Number : 2797397-1

Client : Linde HyCO Limited

10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150

P/O : 9103573177

Project Name : Environmental Monitoring

Project Location :

Page 1 of 1

Sample Number	2395455-1
Sampled Date	Sep 14, 2023 2:05 PM
Sample Description	Wastewater
Location	จุดปล่อยน้ำทิ้งของโครงการบริเวณประตู 2 (Outlet Gate 2)
Date Analysis Commenced	Sep 14, 2023
Condition of Sample	Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<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	28	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	≤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 *		-	-	8.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	30.2	≤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	492	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong

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

Note : This Analysis test report is reissued to supersede report No.2745987-1, Date Reported : Sep 21, 2023 due to revise analytical information.

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

Remark :

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

Technical Management

N. Banongkit

Narumon Banchongkit
Supervisor

ทะเบียนเลขที่ ว-323-จ-9445

Approved by

D. Changchon

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-9442

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

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150

P/O :

Project Name : Environmental Monitoring

Project Location :

TESTING

No.0042

Lot ID: 23111237

Date Received : Sep 25, 2023

Date Reported : Sep 28, 2023

Report Number : 2785834-1

Page 1 of 1

Sample Number 23111237-1
Sampled Date Sep 25, 2023 10:40 AM
Sample Description Wastewater
Location จุดปล่อยน้ำทิ้งของโครงการบริเวณประตู 2 (Outlet Gate 2)
Date Analysis Commenced Sep 26, 2023
Condition of Sample Contained in one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
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 : Paramet Sattayakun ทะเบียนเลขที่ ว-323-จ-9476

Remark :

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

Technical Management

N. Banchongkit

Narumon Banchongkit
Supervisor

ทะเบียนเลขที่ ว-323-จ-9445

Approved by

D. Changchon

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-9442

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

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

TESTING

No.0042

Lot ID: 23111236

Date Received : Oct 17, 2023

Date Reported : Oct 25, 2023

Report Number : 2785831-1

Client : Linde HyCO Limited

10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150

P/O : 9103573177

Project Name : Environmental Monitoring

Project Location :

Page 1 of 1

Sample Number	23111236-1
Sampled Date	Oct 17, 2023 10:31 AM
Sample Description	Wastewater
Location	จุดปล่อยน้ำทิ้งของโครงการบริเวณประตู 2 (Outlet Gate 2)
Date Analysis Commenced	Oct 17, 2023
Condition of Sample	Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<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	26	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	≤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 *		-	-	7.9	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	29.9	≤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	228	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong

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

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

Remark :

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

Technical Management

N. Banchongkit

Narumon Banchongkit
Supervisor

ทะเบียนเลขที่ ว-323-จ-9445

Approved by

D. Changchon

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-9442

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

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150

P/O :

Project Name : Environmental Monitoring

Project Location :

TESTING

No.0042

Lot ID: 23127542

Date Received : Nov 01, 2023

Date Reported : Nov 07, 2023

Report Number : 2822080-1

Page 1 of 1

Sample Number 23127542-1
Sampled Date Oct 31, 2023 5:05 PM
Sample Description Wastewater
Location จุดปล่อยน้ำทิ้งของโครงการบริเวณประตู 2 (Outlet Gate 2)
Date Analysis Commenced Nov 02, 2023
Condition of Sample Contained in one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	10	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 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 : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-9457

Remark :

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

Technical Management

N. Banchongkit

Narumon Banchongkit
Supervisor

ทะเบียนเลขที่ ว-323-จ-9445

Approved by

D. Changchon

Dej Changchon
Senior Manager

ทะเบียนเลขที่ ว-323-ค-9442

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

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

TESTING

No.0042

Lot ID: 23123518

Date Received : Nov 13, 2023

Date Reported : Nov 20, 2023

Report Number : 2814579-1

Client : Linde HyCO Limited

10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150

P/O : 9103573177

Project Name : Environmental Monitoring

Project Location :

Page 1 of 1

Sample Number	23123518-1
Sampled Date	Nov 13, 2023 10:03 AM
Sample Description	Wastewater
Location	จุดปล่อยน้ำทิ้งของโครงการบริเวณประตู 2 (Outlet Gate 2)
Date Analysis Commenced	Nov 13, 2023
Condition of Sample	Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	15.8	≤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	43	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	≤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 *		-	-	8.0	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	28.8	≤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	240	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	10	≤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 : Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-9457

Remark :

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

Technical Management

N. Banchongkit

Narumon Banchongkit

Supervisor

ทะเบียนเลขที่ ว-323-จ-9445

Approved by

D. Changchon

Dej Changchon

Senior Manager

ทะเบียนเลขที่ ว-323-ค-9442

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

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

TESTING

No.0042

Lot ID: 23134791

Date Received : Dec 14, 2023

Date Reported : Jan 09, 2024

Report Number : 2881313-1

Client : Linde HyCO Limited

10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150

P/O : 9103573177

Project Name : Environmental Monitoring

Project Location :

Page 1 of 1

Sample Number	23134791-1						
Sampled Date	Dec 14, 2023 10:25 AM						
Sample Description	Wastewater						
Location	จุดปล่อยน้ำทิ้งของโครงการบริเวณประตู 2 (Outlet Gate 2)						
Date Analysis Commenced	Dec 14, 2023						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<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	29	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	≤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 *		-	-	8.0	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	29.8	≤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	396	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong

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

Note : This Analysis test report is reissued to supersede report No.2840252-1, Date Reported : Dec 21, 2023 due to revise analytical information.

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

Remark :

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

Technical Management

N. Banchongkit

Narumon Banchongkit

Supervisor

ทะเบียนเลขที่ ว-323-จ-9445

Approved by

D. Changchon

Dej Changchon

Senior Manager

ทะเบียนเลขที่ ว-323-ค-9442

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

ADDRESS 616/10 Moo 5 T. Maenam Khu A. Pluakdaeng Rayong 21140 Thailand | PHONE +66 0 3304 8555 | FAX +66 0 3304 8556

ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150
P/O : 9103781040,9103781039
Project Name : Environmental Monitoring
Project Location :

TESTING
No.0042
Lot ID: 23147996
Date Received : Dec 27, 2023
Date Reported : Dec 29, 2023
Report Number : 2873931-1

Page 1 of 1

Sample Number 23147996-1
Sampled Date Dec 27, 2023 10:44 AM
Sample Description Wastewater
Location จุดปล่อยน้ำทิ้งของโครงการบริเวณประตู 2 (Outlet Gate 2)
Date Analysis Commenced Dec 28, 2023
Condition of Sample Contained in one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	23	≤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 : Surawit Narapong ทะเบียนเลขที่ ว-323-จ-0011

Remark :

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

Technical Management

N. Banongkit

Narumon Banchongkit
Supervisor
ทะเบียนเลขที่ ว-323-จ-9445

Approved by

D. Changchon

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

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

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

ภาคผนวก ค-3

ระดับเสียงโดยทั่วไป



Analysis / Test Report

TESTING
No.0042

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150

P/O : 9103573177

Project Name : Air Testing

Project Location :

Lot ID: 23126246

Date Received : Dec 08, 2023

Date Reported : Dec 14, 2023

Report Number: 2863234-1

Page 1 of 1

Sample Number 23126246-1
Parameter Noise (Leq 24 hrs.)
Location บริเวณริมรั้วของโรงงานด้านทิศใต้ (พื้นที่ลานปูน) (GPS 47P 0733650, 1404821)
Measurement Date Dec 01 - Dec 02, 2023
Measurement by Jaradrawee Sriruksa
Sound Level meter Serial No. 296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	57.5	73.9	56.3
11:00 AM - 12:00 PM	66.0	98.9	56.3
12:00 PM - 01:00 PM	57.4	76.9	56.1
01:00 PM - 02:00 PM	58.3	86.2	56.4
02:00 PM - 03:00 PM	63.9	85.9	56.2
03:00 PM - 04:00 PM	61.9	83.9	54.2
04:00 PM - 05:00 PM	60.0	76.7	57.0
05:00 PM - 06:00 PM	57.7	75.7	56.8
06:00 PM - 07:00 PM	58.5	76.1	57.2
07:00 PM - 08:00 PM	57.9	68.3	57.2
08:00 PM - 09:00 PM	58.4	66.0	57.7
09:00 PM - 10:00 PM	58.7	78.2	57.6
10:00 PM - 11:00 PM	58.2	63.7	57.5
11:00 PM - 12:00 AM	58.4	64.4	57.6
12:00 AM - 01:00 AM	59.5	67.7	58.1
01:00 AM - 02:00 AM	58.8	67.3	58.1
02:00 AM - 03:00 AM	58.7	80.3	58.0
03:00 AM - 04:00 AM	58.5	68.0	57.9
04:00 AM - 05:00 AM	59.0	69.5	58.2
05:00 AM - 06:00 AM	58.6	63.5	58.0
06:00 AM - 07:00 AM	58.3	67.8	57.7
07:00 AM - 08:00 AM	59.7	85.7	58.0
08:00 AM - 09:00 AM	58.6	73.3	57.8
09:00 AM - 10:00 AM	58.1	65.9	57.4

Leq Average 24 hrs. (dB(A)) 59.8
Lmax (dB(A)) 98.9
L90 (dB(A)) 57.5
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



Analysis / Test Report

TESTING
No.0042

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150

P/O : 9103573177

Project Name : Air Testing

Project Location :

Lot ID: 23126246

Date Received : Dec 08, 2023

Date Reported : Dec 14, 2023

Report Number: 2863235-1

Page 1 of 1

Sample Number 23126246-2
Parameter Noise (Leq 24 hrs.)
Location บริเวณริมรั้วของโรงงานด้านทิศใต้ (พื้นที่ลานปูน) (GPS 47P 0733650, 1404821)
Measurement Date Dec 02 - Dec 03, 2023
Measurement by Jaradrawee Sriruksa
Sound Level meter Serial No. 296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	58.1	77.3	56.8
11:00 AM - 12:00 PM	57.2	63.4	56.3
12:00 PM - 01:00 PM	57.1	68.0	56.2
01:00 PM - 02:00 PM	57.1	66.8	56.3
02:00 PM - 03:00 PM	65.4	84.8	56.0
03:00 PM - 04:00 PM	66.8	81.3	57.0
04:00 PM - 05:00 PM	58.9	77.8	56.9
05:00 PM - 06:00 PM	57.6	73.0	56.8
06:00 PM - 07:00 PM	57.6	63.8	56.9
07:00 PM - 08:00 PM	57.7	63.6	57.1
08:00 PM - 09:00 PM	61.3	86.2	57.3
09:00 PM - 10:00 PM	58.4	64.0	57.9
10:00 PM - 11:00 PM	59.8	78.9	58.1
11:00 PM - 12:00 AM	59.0	68.2	58.1
12:00 AM - 01:00 AM	58.8	63.3	57.6
01:00 AM - 02:00 AM	58.8	64.3	58.0
02:00 AM - 03:00 AM	58.7	67.7	58.0
03:00 AM - 04:00 AM	58.3	66.3	57.7
04:00 AM - 05:00 AM	58.0	73.2	57.3
05:00 AM - 06:00 AM	57.9	63.0	57.3
06:00 AM - 07:00 AM	58.1	63.3	57.5
07:00 AM - 08:00 AM	60.1	87.1	57.8
08:00 AM - 09:00 AM	58.4	67.9	57.6
09:00 AM - 10:00 AM	60.1	78.6	57.2

Leq Average 24 hrs. (dB(A)) 60.1
Lmax (dB(A)) 87.1
L90 (dB(A)) 57.3
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



Analysis / Test Report

TESTING
No.0042

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150
P/O : 9103573177
Project Name : Air Testing
Project Location :

Lot ID: 23126246

Date Received : Dec 08, 2023
Date Reported : Dec 14, 2023
Report Number: 2863236-1

Page 1 of 1

Sample Number 23126246-3
Parameter Noise (Leq 24 hrs.)
Location บริเวณริมรั้วของโรงงานด้านทิศใต้ (พื้นที่ลานปูน) (GPS 47P 0733650, 1404821)
Measurement Date Dec 03 - Dec 04, 2023
Measurement by Jaradrawee Sriruksa
Sound Level meter Serial No. 296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	58.2	66.8	57.0
11:00 AM - 12:00 PM	58.0	66.6	57.2
12:00 PM - 01:00 PM	57.7	65.7	56.6
01:00 PM - 02:00 PM	57.0	67.0	56.0
02:00 PM - 03:00 PM	56.5	71.3	55.6
03:00 PM - 04:00 PM	58.1	73.0	57.0
04:00 PM - 05:00 PM	58.7	77.1	56.5
05:00 PM - 06:00 PM	57.3	66.7	56.5
06:00 PM - 07:00 PM	57.6	70.7	56.9
07:00 PM - 08:00 PM	58.2	86.1	57.0
08:00 PM - 09:00 PM	57.8	65.7	57.2
09:00 PM - 10:00 PM	58.5	79.3	56.9
10:00 PM - 11:00 PM	57.7	71.4	57.0
11:00 PM - 12:00 AM	58.1	69.1	57.1
12:00 AM - 01:00 AM	58.7	73.8	56.6
01:00 AM - 02:00 AM	56.7	60.7	56.2
02:00 AM - 03:00 AM	56.6	60.3	56.1
03:00 AM - 04:00 AM	56.7	63.8	56.0
04:00 AM - 05:00 AM	58.0	63.4	57.2
05:00 AM - 06:00 AM	65.7	78.5	57.0
06:00 AM - 07:00 AM	58.1	64.5	57.4
07:00 AM - 08:00 AM	58.4	76.9	57.4
08:00 AM - 09:00 AM	59.1	65.5	58.4
09:00 AM - 10:00 AM	59.0	64.4	58.2

Leq Average 24 hrs. (dB(A)) 58.7
Lmax (dB(A)) 86.1
L90 (dB(A)) 57.0
Ldn (dB(A)) 65.9
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

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

TESTING
No.0042

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150

P/O : 9103573177

Project Name : Air Testing

Project Location :

Lot ID: 23126246

Date Received : Dec 08, 2023

Date Reported : Dec 14, 2023

Report Number: 2863237-1

Page 1 of 1

Sample Number 23126246-4
Parameter Noise (Leq 24 hrs.)
Location บริเวณริมรั้วของโรงงานด้านทิศใต้ (พื้นที่ลานปูน) (GPS 47P 0733650, 1404821)
Measurement Date Dec 04 - Dec 05, 2023
Measurement by Jaradrawee Sriruksa
Sound Level meter Serial No. 296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	59.4	77.9	58.4
11:00 AM - 12:00 PM	59.9	78.4	58.9
12:00 PM - 01:00 PM	60.6	85.9	57.3
01:00 PM - 02:00 PM	57.5	69.8	56.1
02:00 PM - 03:00 PM	56.7	78.0	55.9
03:00 PM - 04:00 PM	56.9	83.5	55.7
04:00 PM - 05:00 PM	56.5	72.4	55.6
05:00 PM - 06:00 PM	59.9	84.5	56.0
06:00 PM - 07:00 PM	58.7	76.0	57.4
07:00 PM - 08:00 PM	57.9	68.4	56.7
08:00 PM - 09:00 PM	58.3	67.4	57.2
09:00 PM - 10:00 PM	57.7	65.5	57.1
10:00 PM - 11:00 PM	59.5	78.8	57.7
11:00 PM - 12:00 AM	58.4	68.0	57.8
12:00 AM - 01:00 AM	59.4	65.1	57.9
01:00 AM - 02:00 AM	58.8	66.4	57.9
02:00 AM - 03:00 AM	64.6	84.8	57.6
03:00 AM - 04:00 AM	57.6	62.8	57.0
04:00 AM - 05:00 AM	57.3	61.8	56.7
05:00 AM - 06:00 AM	61.5	75.0	56.9
06:00 AM - 07:00 AM	57.0	62.5	56.5
07:00 AM - 08:00 AM	57.8	67.6	57.1
08:00 AM - 09:00 AM	59.8	84.2	57.5
09:00 AM - 10:00 AM	57.9	68.6	57.1

Leq Average 24 hrs. (dB(A)) 59.2
Lmax (dB(A)) 85.9
L90 (dB(A)) 57.1
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



Analysis / Test Report

TESTING
No.0042

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150

P/O : 9103573177

Project Name : Air Testing

Project Location :

Lot ID: 23126246

Date Received : Dec 08, 2023

Date Reported : Dec 14, 2023

Report Number: 2863238-1

Page 1 of 1

Sample Number 23126246-5
Parameter Noise (Leq 24 hrs.)
Location บริเวณริมรั้วของโรงงานด้านทิศใต้ (พื้นที่ลานปูน) (GPS 47P 0733650, 1404821)
Measurement Date Dec 05 - Dec 06, 2023
Measurement by Jaradrawee Sriruksa
Sound Level meter Serial No. 296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	57.9	78.3	56.5
11:00 AM - 12:00 PM	57.3	64.6	56.6
12:00 PM - 01:00 PM	56.8	65.4	56.0
01:00 PM - 02:00 PM	56.8	66.9	55.4
02:00 PM - 03:00 PM	56.2	63.8	55.6
03:00 PM - 04:00 PM	56.1	63.5	55.4
04:00 PM - 05:00 PM	56.8	74.7	55.5
05:00 PM - 06:00 PM	57.6	73.2	56.2
06:00 PM - 07:00 PM	58.0	65.4	57.2
07:00 PM - 08:00 PM	58.3	68.3	57.5
08:00 PM - 09:00 PM	58.1	65.8	57.4
09:00 PM - 10:00 PM	57.8	64.3	57.2
10:00 PM - 11:00 PM	58.7	78.3	57.4
11:00 PM - 12:00 AM	57.9	65.0	57.4
12:00 AM - 01:00 AM	58.6	62.8	57.6
01:00 AM - 02:00 AM	57.7	61.5	57.2
02:00 AM - 03:00 AM	57.8	68.5	57.2
03:00 AM - 04:00 AM	58.0	63.6	57.6
04:00 AM - 05:00 AM	61.5	70.0	57.9
05:00 AM - 06:00 AM	61.2	80.0	58.2
06:00 AM - 07:00 AM	58.1	63.5	57.6
07:00 AM - 08:00 AM	58.8	71.0	57.9
08:00 AM - 09:00 AM	59.2	83.0	57.1
09:00 AM - 10:00 AM	58.0	72.0	57.1

Leq Average 24 hrs. (dB(A)) 58.3
Lmax (dB(A)) 83.0
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



Analysis / Test Report



TESTING
No.0042

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150

P/O : 9103573177

Project Name : Air Testing

Project Location :

Lot ID: 23126246

Date Received : Dec 08, 2023

Date Reported : Dec 14, 2023

Report Number: 2863239-1

Page 1 of 1

Sample Number 23126246-6
Parameter Noise (Leq 24 hrs.)
Location บริเวณริมรั้วของโรงงานด้านทิศใต้ (พื้นที่ลานปูน) (GPS 47P 0733650, 1404821)
Measurement Date Dec 06 - Dec 07, 2023
Measurement by Jaradrawee Sriruksa
Sound Level meter Serial No. 296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	58.2	77.7	56.8
11:00 AM - 12:00 PM	57.1	69.8	56.3
12:00 PM - 01:00 PM	56.6	68.8	55.4
01:00 PM - 02:00 PM	56.3	67.2	55.4
02:00 PM - 03:00 PM	57.1	83.0	55.7
03:00 PM - 04:00 PM	57.2	73.1	56.1
04:00 PM - 05:00 PM	58.5	79.9	56.1
05:00 PM - 06:00 PM	57.3	71.8	56.3
06:00 PM - 07:00 PM	57.7	65.3	56.9
07:00 PM - 08:00 PM	58.0	73.8	57.1
08:00 PM - 09:00 PM	58.1	70.9	57.1
09:00 PM - 10:00 PM	57.1	68.0	56.4
10:00 PM - 11:00 PM	60.7	68.8	57.2
11:00 PM - 12:00 AM	62.1	68.1	61.2
12:00 AM - 01:00 AM	60.4	65.9	58.7
01:00 AM - 02:00 AM	59.3	67.3	57.8
02:00 AM - 03:00 AM	60.2	66.0	59.2
03:00 AM - 04:00 AM	60.5	74.5	59.0
04:00 AM - 05:00 AM	59.7	66.0	58.8
05:00 AM - 06:00 AM	61.6	74.4	59.3
06:00 AM - 07:00 AM	63.8	81.2	61.7
07:00 AM - 08:00 AM	62.5	67.7	61.2
08:00 AM - 09:00 AM	63.0	85.3	59.7
09:00 AM - 10:00 AM	58.8	67.8	58.0

Leq Average 24 hrs. (dB(A)) 59.8
Lmax (dB(A)) 85.3
L90 (dB(A)) 57.1
Ldn (dB(A)) 67.3
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



Analysis / Test Report

TESTING
No.0042

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150

P/O : 9103573177

Project Name : Air Testing

Project Location :

Lot ID: 23126246

Date Received : Dec 08, 2023

Date Reported : Dec 14, 2023

Report Number: 2863240-1

Page 1 of 1

Sample Number 23126246-7
Parameter Noise (Leq 24 hrs.)
Location บริเวณริมรั้วของโรงงานด้านทิศใต้ (พื้นที่ลานปูน) (GPS 47P 0733650, 1404821)
Measurement Date Dec 07 - Dec 08, 2023
Measurement by Jaradrawee Sriruksa
Sound Level meter Serial No. 296517

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	58.4	68.5	57.6
11:00 AM - 12:00 PM	59.9	78.6	58.2
12:00 PM - 01:00 PM	58.3	66.8	57.5
01:00 PM - 02:00 PM	58.4	70.0	57.5
02:00 PM - 03:00 PM	60.5	80.9	56.1
03:00 PM - 04:00 PM	57.8	72.2	56.4
04:00 PM - 05:00 PM	58.1	81.9	56.7
05:00 PM - 06:00 PM	58.3	83.0	56.5
06:00 PM - 07:00 PM	57.1	66.4	56.4
07:00 PM - 08:00 PM	61.5	75.9	56.3
08:00 PM - 09:00 PM	58.8	71.2	57.6
09:00 PM - 10:00 PM	67.2	82.3	58.1
10:00 PM - 11:00 PM	59.8	75.5	58.2
11:00 PM - 12:00 AM	61.9	82.8	59.4
12:00 AM - 01:00 AM	60.2	64.5	58.5
01:00 AM - 02:00 AM	58.9	63.9	58.3
02:00 AM - 03:00 AM	60.0	65.1	59.2
03:00 AM - 04:00 AM	60.1	64.7	59.2
04:00 AM - 05:00 AM	59.7	64.8	59.0
05:00 AM - 06:00 AM	59.3	68.1	58.4
06:00 AM - 07:00 AM	59.0	70.5	58.3
07:00 AM - 08:00 AM	59.3	70.9	58.7
08:00 AM - 09:00 AM	62.6	86.4	57.6
09:00 AM - 10:00 AM	59.4	84.6	57.4

Leq Average 24 hrs. (dB(A)) 60.4
Lmax (dB(A)) 86.4
L90 (dB(A)) 57.6
Ldn (dB(A)) 66.5
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



Analysis / Test Report

TESTING
No.0042

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150

P/O : 9103573177

Project Name : Air Testing

Project Location :

Lot ID: 23126246

Date Received : Dec 08, 2023

Date Reported : Dec 14, 2023

Report Number: 2863241-1

Page 1 of 1

Sample Number 23126246-8
Parameter Noise (Leq 24 hrs.)
Location บริเวณริมรั้วของโรงงาน ด้านทิศตะวันตกเฉียงเหนือ (ป้อมประตู 1) (GPS 47P 0733599, 1405064)
Measurement Date Dec 01 - Dec 02, 2023
Measurement by Jaradrawee Sriruksa
Sound Level meter Serial No. 296518

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	63.2	79.5	58.7
11:00 AM - 12:00 PM	63.0	87.3	58.5
12:00 PM - 01:00 PM	64.7	86.9	59.4
01:00 PM - 02:00 PM	64.6	88.1	60.9
02:00 PM - 03:00 PM	63.7	79.4	60.3
03:00 PM - 04:00 PM	64.0	84.9	60.8
04:00 PM - 05:00 PM	62.4	79.7	60.0
05:00 PM - 06:00 PM	63.6	83.3	60.7
06:00 PM - 07:00 PM	61.8	71.8	59.6
07:00 PM - 08:00 PM	63.5	77.2	60.9
08:00 PM - 09:00 PM	62.3	81.1	59.7
09:00 PM - 10:00 PM	62.2	76.4	59.6
10:00 PM - 11:00 PM	60.8	84.4	58.5
11:00 PM - 12:00 AM	60.6	79.0	58.3
12:00 AM - 01:00 AM	60.9	75.2	58.5
01:00 AM - 02:00 AM	61.5	71.0	58.9
02:00 AM - 03:00 AM	64.1	80.6	60.6
03:00 AM - 04:00 AM	64.9	81.1	60.6
04:00 AM - 05:00 AM	63.7	79.6	60.0
05:00 AM - 06:00 AM	63.8	88.9	59.8
06:00 AM - 07:00 AM	62.5	77.7	59.0
07:00 AM - 08:00 AM	62.8	83.9	59.0
08:00 AM - 09:00 AM	61.7	76.8	58.4
09:00 AM - 10:00 AM	61.6	82.5	57.7

Leq Average 24 hrs. (dB(A)) 63.0
Lmax (dB(A)) 88.9
L90 (dB(A)) 59.6
Ldn (dB(A)) 69.3
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



Analysis / Test Report

TESTING
No.0042

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150
P/O : 9103573177
Project Name : Air Testing
Project Location :

Lot ID: 23126246

Date Received : Dec 08, 2023
Date Reported : Dec 14, 2023
Report Number: 2863242-1

Page 1 of 1

Sample Number 23126246-9
Parameter Noise (Leq 24 hrs.)
Location บริเวณริมรั้วของโรงงาน ด้านทิศตะวันตกเฉียงเหนือ (ป้อมประตู 1) (GPS 47P 0733599, 1405064)
Measurement Date Dec 02 - Dec 03, 2023
Measurement by Jaradrawee Sriruksa
Sound Level meter Serial No. 296518

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	62.2	85.7	57.5
11:00 AM - 12:00 PM	62.6	77.5	58.1
12:00 PM - 01:00 PM	64.6	81.5	60.5
01:00 PM - 02:00 PM	63.2	76.4	60.3
02:00 PM - 03:00 PM	64.5	84.4	61.2
03:00 PM - 04:00 PM	63.7	83.3	60.2
04:00 PM - 05:00 PM	62.0	82.2	59.6
05:00 PM - 06:00 PM	61.8	81.4	59.6
06:00 PM - 07:00 PM	61.1	78.0	59.3
07:00 PM - 08:00 PM	62.7	88.8	60.1
08:00 PM - 09:00 PM	60.7	77.1	59.2
09:00 PM - 10:00 PM	60.9	80.8	59.3
10:00 PM - 11:00 PM	61.5	87.3	59.7
11:00 PM - 12:00 AM	61.6	80.9	60.0
12:00 AM - 01:00 AM	62.5	83.5	60.4
01:00 AM - 02:00 AM	63.4	84.6	60.6
02:00 AM - 03:00 AM	64.4	82.9	60.9
03:00 AM - 04:00 AM	64.7	89.1	60.4
04:00 AM - 05:00 AM	63.9	78.0	59.7
05:00 AM - 06:00 AM	63.4	81.3	59.9
06:00 AM - 07:00 AM	63.6	86.8	59.4
07:00 AM - 08:00 AM	62.3	83.4	58.1
08:00 AM - 09:00 AM	62.1	80.2	57.6
09:00 AM - 10:00 AM	61.8	79.9	57.4

Leq Average 24 hrs. (dB(A)) 62.9
Lmax (dB(A)) 89.1
L90 (dB(A)) 59.7
Ldn (dB(A)) 69.7
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head



Analysis / Test Report

TESTING
No.0042

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150
P/O : 9103573177
Project Name : Air Testing
Project Location :

Lot ID: 23126246

Date Received : Dec 08, 2023
Date Reported : Dec 14, 2023
Report Number: 2863243-1

Page 1 of 1

Sample Number 23126246-10
Parameter Noise (Leq 24 hrs.)
Location บริเวณเริ่มรั้วของโรงงาน ด้านทิศตะวันตกเฉียงเหนือ (ป้อมประตู 1) (GPS 47P 0733599, 1405064)
Measurement Date Dec 03 - Dec 04, 2023
Measurement by Jaradrawee Sriruksa
Sound Level meter Serial No. 296518

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	62.1	82.1	57.7
11:00 AM - 12:00 PM	63.1	83.1	58.7
12:00 PM - 01:00 PM	63.4	84.3	58.7
01:00 PM - 02:00 PM	62.6	82.9	58.7
02:00 PM - 03:00 PM	63.9	83.7	59.3
03:00 PM - 04:00 PM	63.6	85.0	59.5
04:00 PM - 05:00 PM	61.6	82.2	58.5
05:00 PM - 06:00 PM	62.2	86.5	58.9
06:00 PM - 07:00 PM	61.2	80.1	58.9
07:00 PM - 08:00 PM	62.0	80.1	59.5
08:00 PM - 09:00 PM	61.3	83.2	59.2
09:00 PM - 10:00 PM	60.7	70.6	59.3
10:00 PM - 11:00 PM	60.8	74.3	59.2
11:00 PM - 12:00 AM	61.2	73.4	59.5
12:00 AM - 01:00 AM	61.6	81.0	59.5
01:00 AM - 02:00 AM	63.6	84.2	60.2
02:00 AM - 03:00 AM	65.4	78.6	61.8
03:00 AM - 04:00 AM	66.0	84.3	61.6
04:00 AM - 05:00 AM	64.1	88.6	60.4
05:00 AM - 06:00 AM	63.6	77.7	60.2
06:00 AM - 07:00 AM	63.7	86.5	59.6
07:00 AM - 08:00 AM	63.4	82.3	59.1
08:00 AM - 09:00 AM	63.1	82.0	58.5
09:00 AM - 10:00 AM	62.8	77.1	58.5

Leq Average 24 hrs. (dB(A)) 63.0
Lmax (dB(A)) 88.6
L90 (dB(A)) 59.2
Ldn (dB(A)) 69.9
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



Analysis / Test Report

TESTING
No.0042

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150
P/O : 9103573177
Project Name : Air Testing
Project Location :

Lot ID: 23126246
Date Received : Dec 08, 2023
Date Reported : Dec 14, 2023
Report Number: 2863244-1

Page 1 of 1

Sample Number 23126246-11
Parameter Noise (Leq 24 hrs.)
Location บริเวณริมรั้วของโรงงาน ด้านทิศตะวันตกเฉียงเหนือ (ป้อมประตู 1) (GPS 47P 0733599, 1405064)
Measurement Date Dec 04 - Dec 05, 2023
Measurement by Jaradrawee Sriruksa
Sound Level meter Serial No. 296518

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	62.8	82.1	58.5
11:00 AM - 12:00 PM	63.9	83.7	59.8
12:00 PM - 01:00 PM	63.1	84.2	58.6
01:00 PM - 02:00 PM	62.3	79.7	58.5
02:00 PM - 03:00 PM	62.3	76.8	58.4
03:00 PM - 04:00 PM	62.9	79.2	58.4
04:00 PM - 05:00 PM	62.7	87.0	58.2
05:00 PM - 06:00 PM	64.4	86.6	59.1
06:00 PM - 07:00 PM	64.3	87.8	60.6
07:00 PM - 08:00 PM	63.4	79.1	60.0
08:00 PM - 09:00 PM	63.7	84.6	60.5
09:00 PM - 10:00 PM	62.1	79.4	59.7
10:00 PM - 11:00 PM	63.3	83.0	60.4
11:00 PM - 12:00 AM	61.5	71.5	59.3
12:00 AM - 01:00 AM	63.2	76.9	60.6
01:00 AM - 02:00 AM	62.0	80.8	59.4
02:00 AM - 03:00 AM	61.9	76.1	59.3
03:00 AM - 04:00 AM	60.5	84.1	58.2
04:00 AM - 05:00 AM	60.3	78.7	58.0
05:00 AM - 06:00 AM	60.6	74.9	58.2
06:00 AM - 07:00 AM	61.2	70.7	58.6
07:00 AM - 08:00 AM	63.8	80.3	60.3
08:00 AM - 09:00 AM	64.6	80.8	60.3
09:00 AM - 10:00 AM	63.4	79.3	59.7

Leq Average 24 hrs. (dB(A)) 62.8
Lmax (dB(A)) 87.8
L90 (dB(A)) 59.3
Ldn (dB(A)) 68.4
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

TESTING
No.0042

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150
P/O : 9103573177
Project Name : Air Testing
Project Location :

Lot ID: 23126246
Date Received : Dec 08, 2023
Date Reported : Dec 14, 2023
Report Number: 2863245-1

Page 1 of 1

Sample Number 23126246-12
Parameter Noise (Leq 24 hrs.)
Location บริเวณริมรั้วของโรงงาน ด้านทิศตะวันตกเฉียงเหนือ (ป้อมประตู 1) (GPS 47P 0733599, 1405064)
Measurement Date Dec 05 - Dec 06, 2023
Measurement by Jaradrawee Sriruksa
Sound Level meter Serial No. 296518

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	63.5	88.6	59.5
11:00 AM - 12:00 PM	62.0	77.2	58.5
12:00 PM - 01:00 PM	62.3	83.4	58.5
01:00 PM - 02:00 PM	61.2	76.3	57.9
02:00 PM - 03:00 PM	61.1	82.0	57.2
03:00 PM - 04:00 PM	61.7	85.2	57.0
04:00 PM - 05:00 PM	62.1	77.0	57.6
05:00 PM - 06:00 PM	64.1	81.0	60.0
06:00 PM - 07:00 PM	62.7	75.9	59.8
07:00 PM - 08:00 PM	64.0	83.9	60.7
08:00 PM - 09:00 PM	63.2	82.8	59.7
09:00 PM - 10:00 PM	61.8	82.0	59.4
10:00 PM - 11:00 PM	61.6	81.2	59.4
11:00 PM - 12:00 AM	60.9	77.8	59.1
12:00 AM - 01:00 AM	62.5	88.6	59.9
01:00 AM - 02:00 AM	60.5	76.9	59.0
02:00 AM - 03:00 AM	60.7	80.6	59.1
03:00 AM - 04:00 AM	61.3	87.1	59.5
04:00 AM - 05:00 AM	61.4	80.7	59.8
05:00 AM - 06:00 AM	62.3	83.3	60.2
06:00 AM - 07:00 AM	63.2	84.4	60.4
07:00 AM - 08:00 AM	64.2	82.7	60.7
08:00 AM - 09:00 AM	64.5	88.9	60.2
09:00 AM - 10:00 AM	63.8	77.9	59.6

Leq Average 24 hrs. (dB(A)) 62.5
Lmax (dB(A)) 88.9
L90 (dB(A)) 59.5
Ldn (dB(A)) 68.3
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head



Analysis / Test Report

TESTING
No.0042

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150
P/O : 9103573177
Project Name : Air Testing
Project Location :

Lot ID: 23126246
Date Received : Dec 08, 2023
Date Reported : Dec 14, 2023
Report Number: 2863246-1

Page 1 of 1

Sample Number 23126246-13
Parameter Noise (Leq 24 hrs.)
Location บริเวณเริ่มรั้วของโรงงาน ด้านทิศตะวันตกเฉียงเหนือ (ป้อมประตู 1) (GPS 47P 0733599, 1405064)
Measurement Date Dec 06 - Dec 07, 2023
Measurement by Jaradrawee Sriruksa
Sound Level meter Serial No. 296518

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	63.3	81.2	59.8
11:00 AM - 12:00 PM	63.5	86.7	59.3
12:00 PM - 01:00 PM	62.2	83.3	58.0
01:00 PM - 02:00 PM	62.0	80.1	57.5
02:00 PM - 03:00 PM	61.7	79.8	57.3
03:00 PM - 04:00 PM	62.0	82.0	57.6
04:00 PM - 05:00 PM	63.0	83.0	58.6
05:00 PM - 06:00 PM	63.3	84.2	58.6
06:00 PM - 07:00 PM	62.5	82.8	58.6
07:00 PM - 08:00 PM	63.8	83.6	59.2
08:00 PM - 09:00 PM	63.5	84.9	59.4
09:00 PM - 10:00 PM	61.5	82.1	58.4
10:00 PM - 11:00 PM	61.9	86.2	58.6
11:00 PM - 12:00 AM	60.9	79.8	58.6
12:00 AM - 01:00 AM	61.7	79.8	59.2
01:00 AM - 02:00 AM	61.0	82.9	58.9
02:00 AM - 03:00 AM	60.4	70.3	59.0
03:00 AM - 04:00 AM	60.5	74.0	58.9
04:00 AM - 05:00 AM	60.9	73.1	59.2
05:00 AM - 06:00 AM	61.3	80.7	59.2
06:00 AM - 07:00 AM	63.3	83.9	59.9
07:00 AM - 08:00 AM	65.1	78.3	61.5
08:00 AM - 09:00 AM	65.8	84.1	61.4
09:00 AM - 10:00 AM	63.9	88.4	60.2

Leq Average 24 hrs. (dB(A)) 62.7
Lmax (dB(A)) 88.4
L90 (dB(A)) 58.9
Ldn (dB(A)) 68.1
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head



Analysis / Test Report

TESTING
No.0042

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150
P/O : 9103573177
Project Name : Air Testing
Project Location :

Lot ID: 23126246
Date Received : Dec 08, 2023
Date Reported : Dec 14, 2023
Report Number: 2863247-1

Page 1 of 1

Sample Number 23126246-14
Parameter Noise (Leq 24 hrs.)
Location บริเวณริมรั้วของโรงงาน ด้านทิศตะวันตกเฉียงเหนือ (ป้อมประตู 1) (GPS 47P 0733599, 1405064)
Measurement Date Dec 07 - Dec 08, 2023
Measurement by Jaradrawee Sriruksa
Sound Level meter Serial No. 296518

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	63.4	77.5	60.0
11:00 AM - 12:00 PM	63.5	86.3	59.4
12:00 PM - 01:00 PM	63.2	82.1	58.9
01:00 PM - 02:00 PM	62.9	81.8	58.3
02:00 PM - 03:00 PM	62.6	76.9	58.3
03:00 PM - 04:00 PM	62.6	81.9	58.3
04:00 PM - 05:00 PM	62.8	79.5	58.1
05:00 PM - 06:00 PM	63.1	76.0	58.5
06:00 PM - 07:00 PM	63.7	84.3	58.6
07:00 PM - 08:00 PM	64.5	83.5	59.7
08:00 PM - 09:00 PM	64.1	78.8	60.6
09:00 PM - 10:00 PM	64.4	83.2	61.4
10:00 PM - 11:00 PM	63.5	80.1	60.7
11:00 PM - 12:00 AM	63.1	77.6	60.4
12:00 AM - 01:00 AM	65.0	85.8	62.4
01:00 AM - 02:00 AM	63.1	78.5	60.1
02:00 AM - 03:00 AM	61.2	72.8	59.5
03:00 AM - 04:00 AM	62.6	78.9	60.1
04:00 AM - 05:00 AM	63.0	76.3	60.4
05:00 AM - 06:00 AM	63.9	82.0	61.0
06:00 AM - 07:00 AM	64.1	84.4	61.0
07:00 AM - 08:00 AM	65.2	82.2	62.0
08:00 AM - 09:00 AM	65.8	86.9	62.2
09:00 AM - 10:00 AM	63.9	84.4	60.7

Leq Average 24 hrs. (dB(A)) 63.7
Lmax (dB(A)) 86.9
L90 (dB(A)) 60.1
Ldn (dB(A)) 69.9
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

ภาคผนวก ค-4

ระดับเสี่ยงในบริเวณการทำงาน



Analysis / Test Report

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150
P/O : 9103573177
Project Name : Environmental Monitoring
Project Location :

Lot ID: 23126242

Date Received : Dec 01, 2023
Date Reported : Dec 07, 2023
Report Number: 2857299-1

Page 1 of 1

Sample Number 23126242-1
Parameter Noise (Leq 8 hrs.)
Location บริเวณ CO Compressor
Measurement Date Dec 01, 2023
Measurement by Jittakorn Sriwasa

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:45 AM - 09:45 AM	67.6	72.3	67.2
09:45 AM - 10:45 AM	67.8	77.1	67.0
10:45 AM - 11:45 AM	66.8	75.3	66.2
11:45 AM - 12:45 PM	66.9	75.8	66.4
12:45 PM - 01:45 PM	66.9	69.0	66.5
01:45 PM - 02:45 PM	67.0	71.7	66.6
02:45 PM - 03:45 PM	73.0	82.8	67.1
03:45 PM - 04:45 PM	66.7	68.8	66.3

Leq Average 8 hrs. (dB(A))

68.5

Lmax (dB(A))

82.8

Standard (dB(A))

90

140

Reference Method : ISO1996-1 and 1996-2

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย
ในการประกอบกิจการโรงงานเกี่ยวกับสภาวะแวดล้อมในการทำงาน พ.ศ.๒๕๔๖

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150
P/O : 9103573177
Project Name : Environmental Monitoring
Project Location :

Lot ID: 23126242

Date Received : Dec 01, 2023
Date Reported : Dec 07, 2023
Report Number: 2857300-1

Page 1 of 1

Sample Number 23126242-2
Parameter Noise (Leq 8 hrs.)
Location บริเวณ CO2 Compressor
Measurement Date Dec 01, 2023
Measurement by Jittakorn Sriwasa

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:47 AM - 09:47 AM	64.5	75.9	61.4
09:47 AM - 10:47 AM	65.0	81.9	61.6
10:47 AM - 11:47 AM	64.4	76.3	61.2
11:47 AM - 12:47 PM	64.4	84.2	61.0
12:47 PM - 01:47 PM	64.3	80.3	60.9
01:47 PM - 02:47 PM	64.3	75.7	61.2
02:47 PM - 03:47 PM	68.0	77.4	62.9
03:47 PM - 04:47 PM	64.7	76.6	61.5

Leq Average 8 hrs. (dB(A))

65.1

Lmax (dB(A))

84.2

Standard (dB(A))

90

140

Reference Method : ISO1996-1 and 1996-2

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย
ในการประกอบกิจการโรงงานเกี่ยวกับสภาวะแวดล้อมในการทำงาน พ.ศ.๒๕๔๖

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150
P/O : 9103573177
Project Name : Environmental Monitoring
Project Location :

Lot ID: 23126242

Date Received : Dec 01, 2023
Date Reported : Dec 07, 2023
Report Number: 2857301-1

Page 1 of 1

Sample Number 23126242-3
Parameter Noise (Leq 8 hrs.)
Location บริเวณ Boiler Feed Water Pumps
Measurement Date Dec 01, 2023
Measurement by Jittakorn Sriwasa

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:52 AM - 09:52 AM	71.8	82.3	68.6
09:52 AM - 10:52 AM	71.4	81.9	68.2
10:52 AM - 11:52 AM	72.1	78.3	69.2
11:52 AM - 12:52 PM	73.2	95.5	69.6
12:52 PM - 01:52 PM	72.2	80.7	69.4
01:52 PM - 02:52 PM	71.9	81.7	69.2
02:52 PM - 03:52 PM	75.2	83.7	70.0
03:52 PM - 04:52 PM	71.9	80.4	69.1

Leq Average 8 hrs. (dB(A))

72.6

Lmax (dB(A))

95.5

Standard (dB(A))

90

140

Reference Method : ISO1996-1 and 1996-2

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย
ในการประกอบกิจการโรงงานเกี่ยวกับสภาวะแวดล้อมในการทำงาน พ.ศ.๒๕๔๖

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Analysis / Test Report

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150
P/O : 9103573177
Project Name : Environmental Monitoring
Project Location :

Lot ID: 23126242

Date Received : Dec 01, 2023
Date Reported : Dec 07, 2023
Report Number: 2857302-1

Page 1 of 1

Sample Number 23126242-4
Parameter Noise (Leq 8 hrs.)
Location บริเวณ NG Compressor
Measurement Date Dec 01, 2023
Measurement by Jittakorn Sriwasa

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:42 AM - 09:42 AM	72.5	77.3	72.0
09:42 AM - 10:42 AM	72.9	77.6	72.7
10:42 AM - 11:42 AM	72.9	78.7	72.6
11:42 AM - 12:42 PM	72.7	81.0	72.4
12:42 PM - 01:42 PM	72.9	76.3	72.6
01:42 PM - 02:42 PM	72.7	75.2	72.5
02:42 PM - 03:42 PM	73.4	76.8	73.1
03:42 PM - 04:42 PM	72.6	76.0	72.3

Leq Average 8 hrs. (dB(A))

72.8

Lmax (dB(A))

81.0

Standard (dB(A))

90

140

Reference Method : ISO1996-1 and 1996-2

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย
ในการประกอบกิจการโรงงานเกี่ยวกับสภาวะแวดล้อมในการทำงาน พ.ศ.๒๕๔๖

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

ภาคผนวก ค-5

การทำงานระดับเสียงเฉลี่ยตลอดเวลาการทำงาน



Analysis / Test Report

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150
P/O : 9103573177
Project Name : Air Testing
Project Location :

Lot ID: 2338200

Date Received : Apr 07, 2023
Date Reported : Apr 11, 2023
Report Number : 2613590-1

Page 1 of 4

Sample Number 2338200-1
Sampled Date Apr 05, 2023
Sample Description Noise Dose
Location Field Operation ณ C (Day)
Personal Sampling คุณธนภฤต ศรีมาลัย
Date Analysis Commenced Apr 10, 2023

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Noise Dose (12 hrs.) (Calculated from Lavg)	08:40 AM - 08:40 PM	%	-	-	6.0	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
Noise Dose (8 hrs.)	08:40 AM - 08:40 PM	%	-	1	5.6	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (12 hrs.) (Calculated from Lavg)	08:40 AM - 08:40 PM	dB(A)	-	-	70.8	83*	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (8 hrs.)	08:40 AM - 08:40 PM	dB(A)	-	-	72.5	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok

Guideline :

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

Sampled By : Natthapon Jiengwareewong

Remark :

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

Approved by

Wichan Choonharat
Assistant Manager

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



Analysis / Test Report

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150
P/O : 9103573177
Project Name : Air Testing
Project Location :

Lot ID: 2338200

Date Received : Apr 07, 2023
Date Reported : Apr 11, 2023
Report Number : 2613590-1

Page 2 of 4

Sample Number 2338200-2
Sampled Date Apr 05, 2023
Sample Description Noise Dose
Location Field Operation ณ D (Night)
Personal Sampling คุณเอื้ออังกูร ประเสริฐศักดิ์
Date Analysis Commenced Apr 10, 2023

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Noise Dose (12 hrs.) (Calculated from Lavg)	07:30 PM - 07:30 AM	%	-	-	3388	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
Noise Dose (8 hrs.)	07:30 PM - 07:30 AM	%	-	1	3162	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (12 hrs.) (Calculated from Lavg)	07:30 PM - 07:30 AM	dB(A)	-	-	98.3	83*	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (8 hrs.)	07:30 PM - 07:30 AM	dB(A)	-	-	100.0	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok

Guideline :

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

Sampled By : Natthapon Jiengwareewong

Remark :

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

Approved by

Wichan Choonharat
Assistant Manager

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



Analysis / Test Report

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150
P/O : 9103573177
Project Name : Air Testing
Project Location :

Lot ID: 2338200

Date Received : Apr 07, 2023
Date Reported : Apr 11, 2023
Report Number : 2613590-1

Page 3 of 4

Sample Number 2338200-3
Sampled Date Apr 06, 2023
Sample Description Noise Dose
Location Field Operation ณ A (Day)
Personal Sampling คุณสวัสดิ์ วิชัยคำ
Date Analysis Commenced Apr 10, 2023

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Noise Dose (12 hrs.) (Calculated from Lavg)	08:00 AM - 08:00 PM	%	-	-	7.2	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
Noise Dose (8 hrs.)	08:00 AM - 08:00 PM	%	-	1	6.8	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (12 hrs.) (Calculated from Lavg)	08:00 AM - 08:00 PM	dB(A)	-	-	71.6	83*	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (8 hrs.)	08:00 AM - 08:00 PM	dB(A)	-	-	73.3	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok

Guideline :

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

Sampled By : Natthapon Jiengwareewong

Remark :

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

Approved by

Wichan Choonharat
Assistant Manager

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



Analysis / Test Report

Client : Linde HyCO Limited
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150
P/O : 9103573177
Project Name : Air Testing
Project Location :

Lot ID: 2338200

Date Received : Apr 07, 2023
Date Reported : Apr 11, 2023
Report Number : 2613590-1

Page 4 of 4

Sample Number 2338200-4
Sampled Date Apr 06, 2023
Sample Description Noise Dose
Location Field Operation ณ D (Night)
Personal Sampling คุณณฤกร ชูพดี
Date Analysis Commenced Apr 10, 2023

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Noise Dose (12 hrs.) (Calculated from Lavg)	07:30 PM - 07:30 AM	%	-	-	<1	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
Noise Dose (8 hrs.)	07:30 PM - 07:30 AM	%	-	1	<1	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (12 hrs.) (Calculated from Lavg)	07:30 PM - 07:30 AM	dB(A)	-	-	47.1	83*	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (8 hrs.)	07:30 PM - 07:30 AM	dB(A)	-	-	48.8	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok

Guideline :

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

Sampled By : Natthapon Jiengwareewong

Remark :

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

Approved by

Wichan Choonharat

Wichan Choonharat
Assistant Manager

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.