

## ภาคผนวก ค

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ใบรับรองผลการตรวจวิเคราะห์คุณภาพสิ่งแวดล้อม

# ภาคผนวก ค-1

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คุณภาพอากาศจากแหล่งกำเนิด



## Analysis / Test Report

**Client :** Linde HyCO Limited  
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150  
**P/O :** 9103799242  
**Project Name :** Environmental Monitoring  
**Project Location :**

**Lot ID: 2449956**  
Date Received : May 09, 2024  
Date Reported : May 15, 2024  
Report Number: 2982258-1

Page 1 of 1

**Sample Number** 2449956-1  
**Sampled Date** May 09, 2024  
**Sample Description** Emission from Stationary Source  
**Location** ปล่อง Reformer Furnace  
**Date Analysis Commenced** May 10, 2024  
**Condition of Sample** Extracted into two 2-L collection flasks

### Stack Description

Ambient Pressure	757	mmHg	Diameter	0.55	m	Oxygen	2.5	%
Ambient Temperature	33.2	°C	Shape	Circle		Carbon Dioxide	10.4	%
Type of Process	Combustion		Stack Temperature	145	°C	Gas Velocity	4.5	m/s
Type of Fuel	Natural Gas		Moisture	7.35	%	Flow Rate (Actual O2)	2532	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result at 7 %O <sub>2</sub>	Guideline Limit	Method	Testing Location
<b>Air Testing</b>								
Oxides of Nitrogen	10:00 AM - 10:10 AM	ppm	-	1.06	85.8	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

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## Analysis / Test Report

**Client :** Linde HyCO Limited  
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150  
**P/O :** 9103799242  
**Project Name :** Environmental Monitoring  
**Project Location :**

**Lot ID: 2449959**  
Date Received : May 09, 2024  
Date Reported : May 15, 2024  
Report Number: 2982259-1

Page 1 of 1

**Sample Number** 2449959-1  
**Sampled Date** May 09, 2024  
**Sample Description** Emission from Stationary Source  
**Location** ปล่อง Boiler  
**Date Analysis Commenced** May 10, 2024  
**Condition of Sample** Extracted into two 2-L collection flasks

### Stack Description

Ambient Pressure	757	mmHg	Diameter	0.48	m	Oxygen	6.4	%
Ambient Temperature	33.2	°C	Shape	Circle		Carbon Dioxide	8.3	%
Type of Process	Combustion		Stack Temperature	140	°C	Gas Velocity	5.5	m/s
Type of Fuel	Natural Gas		Moisture	7.75	%	Flow Rate (Actual O2)	2377	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result at 7 %O <sub>2</sub>	Guideline Limit	Method	Testing Location
<b>Air Testing</b>								
Oxides of Nitrogen	09:40 AM - 09:50 AM	ppm	-	1.06	28.0	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  
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# ภาคผนวก ค-2

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คุณภาพน้ำ



## Analysis / Test Report

TESTING

No.0042

**Lot ID: 241941**

Date Received : Jan 15, 2024

Date Reported : Jan 22, 2024

Report Number : 2879125-1

**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 :**

Page 1 of 1

<b>Sample Number</b>	241941-1						
<b>Sampled Date</b>	Jan 15, 2024 10:35 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	จุดปล่อยน้ำทิ้งของโครงการบริเวณประตู 2 (Outlet Gate 2)						
<b>Date Analysis Commenced</b>	Jan 15, 2024						
<b>Condition of Sample</b>	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
<b>Water Testing</b>							
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		-	-	7.7	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	-	-	29.2	≤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	656	≤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 :** Wanlop Hunchainaow ทะเบียนเลขที่ ว-323-จ-9457

Remark :

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- 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

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## Analysis / Test Report

TESTING

No.0042

**Lot ID: 241942**

Date Received : Feb 15, 2024

Date Reported : Feb 22, 2024

Report Number : 2879126-1

**Client** : Linde HyCO Limited

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

**P/O** : 9103799242

**Project Name** : Environmental Monitoring

**Project Location** :

Page 1 of 1

<b>Sample Number</b>	241942-1						
<b>Sampled Date</b>	Feb 15, 2024 10:10 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	จุดปล่อยน้ำทิ้งของโครงการบริเวณประตู 2 (Outlet Gate 2)						
<b>Date Analysis Commenced</b>	Feb 15, 2024						
<b>Condition of Sample</b>	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
<b>Water Testing</b>							
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	31	≤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	-	-	31.4	≤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	612	≤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** : Chainusorn Lertnanthakunchai ทะเบียนเลขที่ ว-323-จ-9461

Remark :

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**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

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## Analysis / Test Report

TESTING

No.0042

**Lot ID: 2428239**

Date Received : Mar 15, 2024

Date Reported : Mar 22, 2024

Report Number : 2933648-1

**Client :** Linde HyCO Limited

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

**P/O :** 9103799242

**Project Name :** Environmental Monitoring

**Project Location :**

Page 1 of 1

<b>Sample Number</b>	2428239-1						
<b>Sampled Date</b>	Mar 15, 2024 11:00 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	จุดปล่อยน้ำทิ้งของโครงการบริเวณประตู 2 (Outlet Gate 2)						
<b>Date Analysis Commenced</b>	Mar 15, 2024						
<b>Condition of Sample</b>	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
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	2.3	≤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		-	-	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	-	-	31.6	≤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	588	≤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	17	≤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 thammasaro ทะเบียนเลขที่ ว-323-จ-9477

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**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

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## Analysis / Test Report

TESTING

No.0042

**Lot ID: 2440525**

Date Received : Apr 12, 2024

Date Reported : Apr 23, 2024

Report Number : 2961196-1

**Client :** Linde HyCO Limited

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

**P/O :** 9103799242

**Project Name :** Environmental Monitoring

**Project Location :**

Page 1 of 1

<b>Sample Number</b>	2440525-1
<b>Sampled Date</b>	Apr 12, 2024 10:25 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	จุดปล่อยน้ำทิ้งของโครงการบริเวณประตู 2 (Outlet Gate 2)
<b>Date Analysis Commenced</b>	Apr 12, 2024
<b>Condition of Sample</b>	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
<b>Water Testing</b>							
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		-	-	8.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	32.6	≤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	556	≤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	24	≤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

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**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

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## Analysis / Test Report

TESTING

No.0042

**Lot ID: 2447340**

Date Received : May 14, 2024

Date Reported : May 21, 2024

Report Number : 2976630-1

**Client** : Linde HyCO Limited

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

**P/O** : 9103799242

**Project Name** : Environmental Monitoring

**Project Location** :

Page 1 of 1

<b>Sample Number</b>	2447340-1
<b>Sampled Date</b>	May 14, 2024 10:35 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	จุดปล่อยน้ำทิ้งของโครงการบริเวณประตู 2 (Outlet Gate 2)
<b>Date Analysis Commenced</b>	May 14, 2024
<b>Condition of Sample</b>	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
<b>Water Testing</b>							
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		-	-	7.8	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	-	-	32.4	≤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	372	≤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** : Nattawut Athomprommarat ทะเบียนเลขที่ ว-323-จ-0006

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

Technical Management

Photchana S.

Photchana Seeda

Scientist (4)

ทะเบียนเลขที่ ว-323-จ-9446

Approved by

D. Chumon.

Dej Changchon

Senior Manager

ทะเบียนเลขที่ ว-323-ค-9442

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## Analysis / Test Report

TESTING

No.0042

**Lot ID: 2465889**

Date Received : Jun 17, 2024

Date Reported : Jul 03, 2024

Report Number : 3043616-1

**Client :** Linde HyCO Limited

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

**P/O :** 9103799242

**Project Name :** Environmental Monitoring

**Project Location :**

Page 1 of 1

<b>Sample Number</b>	2465889-1						
<b>Sampled Date</b>	Jun 17, 2024 9:33 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	จุดปล่อยน้ำทิ้งของโครงการบริเวณประตู 2 (Outlet Gate 2)						
<b>Date Analysis Commenced</b>	Jun 17, 2024						
<b>Condition of Sample</b>	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
<b>Water Testing</b>							
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	31	≤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		-	-	7.6	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	-	-	30.4	≤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	304	≤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.3019598-1, Date Reported : Jun 24, 2024 due to revise analytical information.

**Sampling By :** Chainusorn Lertnanthakunchai ทะเบียนเลขที่ ว-323-จ-9461

Remark :

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

Technical Management

Photchana S.

Photchana Seeda

Scientist (4)

ทะเบียนเลขที่ ว-323-จ-9446

Approved by

D. Chumson.

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.  
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## Analysis / Test Report

TESTING

No.0042

**Lot ID: 2472881**

Date Received : Jun 26, 2024

Date Reported : Jul 01, 2024

Report Number : 3035511-1

**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 :**

Page 1 of 1

<b>Sample Number</b>	2472881-1
<b>Sampled Date</b>	Jun 26, 2024 9:17 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	จุดปล่อยน้ำทิ้งของโครงการบริเวณประตู 2 (Outlet Gate 2)
<b>Date Analysis Commenced</b>	Jun 27, 2024
<b>Condition of Sample</b>	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
<b>Water Testing</b>							
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 :** Chainusorn Lertnanthakunchai ทะเบียนเลขที่ ว-323-จ-9461

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

Chontichak

Chonticha Subongkoch

Scientist (3)

ทะเบียนเลขที่ ว-323-จ-9449

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.  
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## ภาคผนวก ค-3

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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 :** 9103799242  
**Project Name :** Environmental Monitoring  
**Project Location :**

**Lot ID: 2449973**

Date Received : May 17, 2024  
Date Reported : May 23, 2024  
Report Number: 3001481-1

Page 1 of 1

**Sample Number** 2449973-1  
**Parameter** Noise (Leq 24 hrs.)  
**Location** บริเวณริมรั้วของโรงงานด้านทิศใต้ (พื้นที่ลานปูน) (GPS 47P 0733650, 1404821)  
**Measurement Date** May 09 - May 10, 2024  
**Measurement by** Natthapon Jiengwareewong  
**Sound Level meter** Serial No. 472126

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	58.7	68.6	57.6
10:00 AM - 11:00 AM	58.0	69.0	56.9
11:00 AM - 12:00 PM	58.5	68.4	57.4
12:00 PM - 01:00 PM	57.5	66.6	56.5
01:00 PM - 02:00 PM	57.7	68.7	56.6
02:00 PM - 03:00 PM	57.8	72.5	56.9
03:00 PM - 04:00 PM	58.0	67.8	57.0
04:00 PM - 05:00 PM	57.8	68.3	56.9
05:00 PM - 06:00 PM	57.9	69.4	56.9
06:00 PM - 07:00 PM	58.7	79.0	57.4
07:00 PM - 08:00 PM	59.3	77.7	58.4
08:00 PM - 09:00 PM	58.9	64.7	58.2
09:00 PM - 10:00 PM	59.0	63.8	58.4
10:00 PM - 11:00 PM	59.0	63.1	58.3
11:00 PM - 12:00 AM	59.0	66.5	58.0
12:00 AM - 01:00 AM	61.3	78.2	59.4
01:00 AM - 02:00 AM	61.6	81.0	59.3
02:00 AM - 03:00 AM	59.4	65.2	58.7
03:00 AM - 04:00 AM	59.5	67.4	58.7
04:00 AM - 05:00 AM	59.7	64.3	59.0
05:00 AM - 06:00 AM	59.5	67.0	58.7
06:00 AM - 07:00 AM	59.4	71.1	58.6
07:00 AM - 08:00 AM	58.7	75.3	57.5
08:00 AM - 09:00 AM	57.9	72.7	56.9

Leq Average 24 hrs. (dB(A)) 59.0  
Lmax (dB(A)) 81.0  
L90 (dB(A)) 57.6  
Ldn (dB(A)) 66.1

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 :** 9103799242  
**Project Name :** Environmental Monitoring  
**Project Location :**

**Lot ID: 2449973**

Date Received : May 17, 2024  
Date Reported : May 23, 2024  
Report Number: 3001482-1

Page 1 of 1

**Sample Number** 2449973-2  
**Parameter** Noise (Leq 24 hrs.)  
**Location** บริเวณริมรั้วของโรงงานด้านทิศใต้ (พื้นที่ลานปูน) (GPS 47P 0733650, 1404821)  
**Measurement Date** May 10 - May 11, 2024  
**Measurement by** Natthapon Jiengwareewong  
**Sound Level meter** Serial No. 472126

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	57.8	71.3	56.5
10:00 AM - 11:00 AM	57.9	67.2	56.9
11:00 AM - 12:00 PM	57.6	71.5	56.4
12:00 PM - 01:00 PM	57.4	64.4	56.4
01:00 PM - 02:00 PM	57.3	67.7	56.3
02:00 PM - 03:00 PM	57.8	71.4	56.7
03:00 PM - 04:00 PM	57.5	64.8	56.6
04:00 PM - 05:00 PM	57.9	68.6	57.0
05:00 PM - 06:00 PM	58.0	68.0	57.2
06:00 PM - 07:00 PM	58.2	66.6	57.3
07:00 PM - 08:00 PM	58.6	66.6	57.8
08:00 PM - 09:00 PM	58.3	64.8	57.5
09:00 PM - 10:00 PM	59.2	79.9	57.8
10:00 PM - 11:00 PM	58.9	71.4	58.2
11:00 PM - 12:00 AM	59.8	76.2	58.1
12:00 AM - 01:00 AM	63.4	88.3	57.9
01:00 AM - 02:00 AM	58.6	65.6	57.3
02:00 AM - 03:00 AM	58.0	62.9	57.3
03:00 AM - 04:00 AM	58.4	64.8	57.6
04:00 AM - 05:00 AM	59.0	66.4	58.2
05:00 AM - 06:00 AM	59.4	70.9	58.6
06:00 AM - 07:00 AM	59.2	69.3	58.1
07:00 AM - 08:00 AM	59.4	77.6	57.9
08:00 AM - 09:00 AM	59.2	76.1	57.8

Leq Average 24 hrs. (dB(A)) 58.8  
Lmax (dB(A)) 88.3  
L90 (dB(A)) 57.3  
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



## 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 :** 9103799242  
**Project Name :** Environmental Monitoring  
**Project Location :**

**Lot ID: 2449973**

Date Received : May 17, 2024  
Date Reported : May 23, 2024  
Report Number: 3001483-1

Page 1 of 1

**Sample Number** 2449973-3  
**Parameter** Noise (Leq 24 hrs.)  
**Location** บริเวณริมรั้วของโรงงานด้านทิศใต้ (พื้นที่ลานปูน) (GPS 47P 0733650, 1404821)  
**Measurement Date** May 11 - May 12, 2024  
**Measurement by** Natthapon Jiengwareewong  
**Sound Level meter** Serial No. 472126

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	58.7	73.8	57.0
10:00 AM - 11:00 AM	59.6	81.3	57.3
11:00 AM - 12:00 PM	58.9	80.5	56.4
12:00 PM - 01:00 PM	58.6	64.0	57.6
01:00 PM - 02:00 PM	57.9	64.6	56.9
02:00 PM - 03:00 PM	57.5	65.3	56.6
03:00 PM - 04:00 PM	57.4	66.2	56.5
04:00 PM - 05:00 PM	58.2	70.7	56.9
05:00 PM - 06:00 PM	59.4	70.8	58.2
06:00 PM - 07:00 PM	59.5	72.6	58.6
07:00 PM - 08:00 PM	59.1	76.5	58.2
08:00 PM - 09:00 PM	64.9	86.0	58.1
09:00 PM - 10:00 PM	59.4	65.3	58.8
10:00 PM - 11:00 PM	59.7	77.4	58.7
11:00 PM - 12:00 AM	59.3	62.7	58.2
12:00 AM - 01:00 AM	59.0	64.2	58.3
01:00 AM - 02:00 AM	59.5	66.2	58.6
02:00 AM - 03:00 AM	59.7	66.9	58.8
03:00 AM - 04:00 AM	59.6	64.0	58.7
04:00 AM - 05:00 AM	59.9	66.6	59.1
05:00 AM - 06:00 AM	60.1	66.6	59.1
06:00 AM - 07:00 AM	59.6	74.2	58.4
07:00 AM - 08:00 AM	59.7	80.5	58.0
08:00 AM - 09:00 AM	58.2	66.0	57.2

Leq Average 24 hrs. (dB(A)) 59.6  
Lmax (dB(A)) 86.0  
L90 (dB(A)) 58.2  
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





## 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 :** 9103799242  
**Project Name :** Environmental Monitoring  
**Project Location :**

**Lot ID: 2449973**

Date Received : May 17, 2024  
Date Reported : May 23, 2024  
Report Number: 3001484-1

Page 1 of 1

**Sample Number** 2449973-4  
**Parameter** Noise (Leq 24 hrs.)  
**Location** บริเวณริมรั้วของโรงงานด้านทิศใต้ (พื้นที่ลานปูน) (GPS 47P 0733650, 1404821)  
**Measurement Date** May 12 - May 13, 2024  
**Measurement by** Natthapon Jiengwareewong  
**Sound Level meter** Serial No. 472126

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	58.5	76.8	57.1
10:00 AM - 11:00 AM	57.7	63.9	56.8
11:00 AM - 12:00 PM	56.9	66.3	55.8
12:00 PM - 01:00 PM	56.9	63.3	56.0
01:00 PM - 02:00 PM	57.5	68.6	56.5
02:00 PM - 03:00 PM	57.3	64.0	56.4
03:00 PM - 04:00 PM	57.8	65.3	56.8
04:00 PM - 05:00 PM	57.8	69.2	56.9
05:00 PM - 06:00 PM	57.7	65.3	56.9
06:00 PM - 07:00 PM	57.9	70.4	57.0
07:00 PM - 08:00 PM	58.0	67.3	57.2
08:00 PM - 09:00 PM	58.7	83.0	57.3
09:00 PM - 10:00 PM	58.8	66.6	57.9
10:00 PM - 11:00 PM	58.9	76.1	57.9
11:00 PM - 12:00 AM	58.8	76.0	57.8
12:00 AM - 01:00 AM	58.0	64.2	57.1
01:00 AM - 02:00 AM	61.3	80.7	59.0
02:00 AM - 03:00 AM	59.1	64.9	58.4
03:00 AM - 04:00 AM	59.2	67.1	58.4
04:00 AM - 05:00 AM	59.4	64.0	58.7
05:00 AM - 06:00 AM	59.2	66.7	58.4
06:00 AM - 07:00 AM	59.1	70.8	58.3
07:00 AM - 08:00 AM	58.4	75.0	57.2
08:00 AM - 09:00 AM	57.6	72.4	56.6

Leq Average 24 hrs. (dB(A)) 58.5  
Lmax (dB(A)) 83.0  
L90 (dB(A)) 57.1  
Ldn (dB(A)) 65.5  
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 :** 9103799242

**Project Name :** Environmental Monitoring

**Project Location :**

**Lot ID: 2449973**

Date Received : May 17, 2024

Date Reported : May 23, 2024

Report Number: 3001485-1

Page 1 of 1

**Sample Number** 2449973-5  
**Parameter** Noise (Leq 24 hrs.)  
**Location** บริเวณริมรั้วของโรงงานด้านทิศใต้ (พื้นที่ลานปูน) (GPS 47P 0733650, 1404821)  
**Measurement Date** May 13 - May 14, 2024  
**Measurement by** Natthapon Jiengwareewong  
**Sound Level meter** Serial No. 472126

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	57.5	71.0	56.2
10:00 AM - 11:00 AM	58.9	78.7	56.8
11:00 AM - 12:00 PM	67.3	78.1	58.2
12:00 PM - 01:00 PM	63.6	78.9	57.9
01:00 PM - 02:00 PM	58.9	71.7	57.5
02:00 PM - 03:00 PM	59.8	77.2	57.8
03:00 PM - 04:00 PM	58.1	65.4	57.3
04:00 PM - 05:00 PM	58.2	74.1	57.3
05:00 PM - 06:00 PM	58.2	69.3	57.3
06:00 PM - 07:00 PM	58.1	68.4	57.2
07:00 PM - 08:00 PM	58.0	69.8	57.2
08:00 PM - 09:00 PM	58.0	62.7	57.2
09:00 PM - 10:00 PM	58.8	79.4	57.6
10:00 PM - 11:00 PM	58.5	67.5	57.8
11:00 PM - 12:00 AM	58.4	63.0	57.5
12:00 AM - 01:00 AM	58.2	62.8	57.3
01:00 AM - 02:00 AM	58.5	78.5	57.4
02:00 AM - 03:00 AM	58.1	68.4	57.3
03:00 AM - 04:00 AM	58.2	62.4	57.4
04:00 AM - 05:00 AM	58.1	62.9	57.4
05:00 AM - 06:00 AM	58.5	65.2	57.7
06:00 AM - 07:00 AM	58.3	64.4	57.5
07:00 AM - 08:00 AM	59.9	80.0	57.7
08:00 AM - 09:00 AM	59.4	71.5	58.1

Leq Average 24 hrs. (dB(A)) 59.9  
Lmax (dB(A)) 80.0  
L90 (dB(A)) 57.4  
Ldn (dB(A)) 65.1  
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

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## 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 :** 9103799242  
**Project Name :** Environmental Monitoring  
**Project Location :**

**Lot ID: 2449973**

Date Received : May 17, 2024  
Date Reported : May 23, 2024  
Report Number: 3001486-1

Page 1 of 1

**Sample Number** 2449973-6  
**Parameter** Noise (Leq 24 hrs.)  
**Location** บริเวณริมรั้วของโรงงานด้านทิศใต้ (พื้นที่ลานปูน) (GPS 47P 0733650, 1404821)  
**Measurement Date** May 14 - May 15, 2024  
**Measurement by** Natthapon Jiengwareewong  
**Sound Level meter** Serial No. 472126

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	59.1	71.2	57.8
10:00 AM - 11:00 AM	58.3	66.6	57.2
11:00 AM - 12:00 PM	57.7	73.8	56.3
12:00 PM - 01:00 PM	57.2	65.4	56.2
01:00 PM - 02:00 PM	58.0	65.4	57.2
02:00 PM - 03:00 PM	58.7	65.7	57.1
03:00 PM - 04:00 PM	58.8	70.3	57.2
04:00 PM - 05:00 PM	58.3	64.8	57.4
05:00 PM - 06:00 PM	58.6	69.0	57.7
06:00 PM - 07:00 PM	59.5	79.3	57.6
07:00 PM - 08:00 PM	58.4	70.4	57.6
08:00 PM - 09:00 PM	59.2	80.5	57.7
09:00 PM - 10:00 PM	59.0	63.9	58.3
10:00 PM - 11:00 PM	58.6	65.0	57.9
11:00 PM - 12:00 AM	58.9	65.2	58.0
12:00 AM - 01:00 AM	58.8	63.1	57.9
01:00 AM - 02:00 AM	58.8	75.2	57.9
02:00 AM - 03:00 AM	61.5	80.7	58.5
03:00 AM - 04:00 AM	60.3	77.8	58.0
04:00 AM - 05:00 AM	59.0	66.1	58.1
05:00 AM - 06:00 AM	58.8	68.6	57.6
06:00 AM - 07:00 AM	58.4	72.4	57.3
07:00 AM - 08:00 AM	58.7	78.5	57.0
08:00 AM - 09:00 AM	58.2	67.0	57.0

Leq Average 24 hrs. (dB(A)) 58.9  
Lmax (dB(A)) 80.7  
L90 (dB(A)) 57.6  
Ldn (dB(A)) 65.7  
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 :** 9103799242  
**Project Name :** Environmental Monitoring  
**Project Location :**

**Lot ID: 2449973**

Date Received : May 17, 2024  
Date Reported : May 23, 2024  
Report Number: 3001487-1

Page 1 of 1

**Sample Number** 2449973-7  
**Parameter** Noise (Leq 24 hrs.)  
**Location** บริเวณริมรั้วของโรงงานด้านทิศใต้ (พื้นที่ลานปูน) (GPS 47P 0733650, 1404821)  
**Measurement Date** May 15 - May 16, 2024  
**Measurement by** Natthapon Jiengwareewong  
**Sound Level meter** Serial No. 472126

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	60.9	77.9	57.5
10:00 AM - 11:00 AM	57.5	66.4	56.5
11:00 AM - 12:00 PM	57.4	71.4	56.2
12:00 PM - 01:00 PM	57.8	69.5	56.4
01:00 PM - 02:00 PM	59.3	74.9	58.1
02:00 PM - 03:00 PM	58.9	66.3	57.8
03:00 PM - 04:00 PM	59.0	82.3	57.4
04:00 PM - 05:00 PM	58.8	74.6	57.8
05:00 PM - 06:00 PM	58.4	65.7	57.6
06:00 PM - 07:00 PM	58.4	66.2	57.6
07:00 PM - 08:00 PM	58.2	68.2	57.4
08:00 PM - 09:00 PM	58.6	81.1	57.2
09:00 PM - 10:00 PM	58.6	64.7	57.8
10:00 PM - 11:00 PM	58.5	67.7	57.7
11:00 PM - 12:00 AM	58.8	63.3	57.6
12:00 AM - 01:00 AM	58.0	63.2	57.3
01:00 AM - 02:00 AM	57.8	65.3	56.9
02:00 AM - 03:00 AM	57.3	66.5	56.5
03:00 AM - 04:00 AM	57.3	62.1	56.6
04:00 AM - 05:00 AM	57.5	63.3	56.7
05:00 AM - 06:00 AM	58.3	67.8	57.0
06:00 AM - 07:00 AM	58.3	80.5	57.2
07:00 AM - 08:00 AM	58.7	80.8	57.1
08:00 AM - 09:00 AM	59.1	74.4	57.7

Leq Average 24 hrs. (dB(A)) 58.5  
Lmax (dB(A)) 82.3  
L90 (dB(A)) 57.3  
Ldn (dB(A)) 64.5  
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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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 :** 9103799242

**Project Name :** Environmental Monitoring

**Project Location :**

**Lot ID: 2449973**

Date Received : May 17, 2024

Date Reported : May 23, 2024

Report Number: 3001488-1

Page 1 of 1

**Sample Number** 2449973-8  
**Parameter** Noise (Leq 24 hrs.)  
**Location** บริเวณริมรั้วของโรงงาน ด้านทิศตะวันตกเฉียงเหนือ (ป้อมประตู 1) (GPS 47P 0733599, 1405064)  
**Measurement Date** May 09 - May 10, 2024  
**Measurement by** Natthapon Jiengwareewong  
**Sound Level meter** Serial No. 734218

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	66.0	81.8	62.6
09:00 AM - 10:00 AM	65.4	83.8	62.2
10:00 AM - 11:00 AM	64.9	77.3	61.5
11:00 AM - 12:00 PM	66.1	87.3	61.9
12:00 PM - 01:00 PM	64.8	84.1	61.1
01:00 PM - 02:00 PM	64.6	75.2	61.3
02:00 PM - 03:00 PM	65.5	83.8	61.5
03:00 PM - 04:00 PM	64.9	82.1	60.4
04:00 PM - 05:00 PM	64.5	85.1	60.6
05:00 PM - 06:00 PM	63.9	77.2	60.9
06:00 PM - 07:00 PM	64.3	82.1	61.0
07:00 PM - 08:00 PM	64.9	79.8	61.8
08:00 PM - 09:00 PM	64.9	83.4	61.9
09:00 PM - 10:00 PM	63.7	73.6	61.4
10:00 PM - 11:00 PM	63.6	71.3	61.0
11:00 PM - 12:00 AM	64.0	73.5	61.5
12:00 AM - 01:00 AM	66.6	77.9	63.0
01:00 AM - 02:00 AM	65.4	87.0	63.3
02:00 AM - 03:00 AM	65.0	74.5	62.3
03:00 AM - 04:00 AM	63.7	82.1	61.1
04:00 AM - 05:00 AM	64.4	77.1	62.1
05:00 AM - 06:00 AM	65.4	80.3	62.6
06:00 AM - 07:00 AM	66.4	84.8	63.4
07:00 AM - 08:00 AM	66.3	82.0	62.9

Leq Average 24 hrs. (dB(A)) 65.1  
Lmax (dB(A)) 87.3  
L90 (dB(A)) 61.5  
Ldn (dB(A)) 71.5  
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 :** 9103799242  
**Project Name :** Environmental Monitoring  
**Project Location :**

**Lot ID: 2449973**

Date Received : May 17, 2024  
Date Reported : May 23, 2024  
Report Number: 3001489-1

Page 1 of 1

**Sample Number** 2449973-9  
**Parameter** Noise (Leq 24 hrs.)  
**Location** บริเวณริมรั้วของโรงงาน ด้านทิศตะวันตกเฉียงเหนือ (ป้อมประตู 1) (GPS 47P 0733599, 1405064)  
**Measurement Date** May 10 - May 11, 2024  
**Measurement by** Natthapon Jiengwareewong  
**Sound Level meter** Serial No. 734218

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	65.9	83.5	62.3
09:00 AM - 10:00 AM	65.6	85.0	61.9
10:00 AM - 11:00 AM	64.4	85.6	60.9
11:00 AM - 12:00 PM	64.3	85.0	60.9
12:00 PM - 01:00 PM	64.5	78.9	61.3
01:00 PM - 02:00 PM	64.4	79.1	61.1
02:00 PM - 03:00 PM	64.9	86.1	61.3
03:00 PM - 04:00 PM	64.8	76.9	61.0
04:00 PM - 05:00 PM	66.1	87.8	61.9
05:00 PM - 06:00 PM	65.1	78.8	61.2
06:00 PM - 07:00 PM	65.2	79.1	61.5
07:00 PM - 08:00 PM	65.5	77.2	61.8
08:00 PM - 09:00 PM	64.2	78.6	61.0
09:00 PM - 10:00 PM	63.6	74.6	60.7
10:00 PM - 11:00 PM	63.8	81.4	60.7
11:00 PM - 12:00 AM	63.9	74.3	61.0
12:00 AM - 01:00 AM	65.0	93.4	62.1
01:00 AM - 02:00 AM	64.2	76.5	62.2
02:00 AM - 03:00 AM	64.1	88.0	61.9
03:00 AM - 04:00 AM	65.0	76.4	62.4
04:00 AM - 05:00 AM	66.5	82.6	64.2
05:00 AM - 06:00 AM	67.2	85.5	64.6
06:00 AM - 07:00 AM	67.4	81.2	64.4
07:00 AM - 08:00 AM	66.7	80.7	63.4

Leq Average 24 hrs. (dB(A)) 65.2  
Lmax (dB(A)) 93.4  
L90 (dB(A)) 61.5  
Ldn (dB(A)) 71.8  
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

*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 :** 9103799242  
**Project Name :** Environmental Monitoring  
**Project Location :**

**Lot ID: 2449973**

Date Received : May 17, 2024  
Date Reported : May 23, 2024  
Report Number: 3001490-1

Page 1 of 1

**Sample Number** 2449973-10  
**Parameter** Noise (Leq 24 hrs.)  
**Location** บริเวณริมรั้วของโรงงาน ด้านทิศตะวันตกเฉียงเหนือ (ป้อมประตู 1) (GPS 47P 0733599, 1405064)  
**Measurement Date** May 11 - May 12, 2024  
**Measurement by** Natthapon Jiengwareewong  
**Sound Level meter** Serial No. 734218

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	66.7	82.4	63.0
09:00 AM - 10:00 AM	65.7	78.3	62.4
10:00 AM - 11:00 AM	64.9	81.0	61.7
11:00 AM - 12:00 PM	64.5	79.4	61.1
12:00 PM - 01:00 PM	64.6	77.7	62.0
01:00 PM - 02:00 PM	64.9	74.7	61.7
02:00 PM - 03:00 PM	64.8	80.1	61.5
03:00 PM - 04:00 PM	65.1	82.0	61.9
04:00 PM - 05:00 PM	66.2	84.5	62.8
05:00 PM - 06:00 PM	66.2	79.2	63.2
06:00 PM - 07:00 PM	66.2	85.8	63.6
07:00 PM - 08:00 PM	65.4	76.7	62.9
08:00 PM - 09:00 PM	65.1	82.5	62.1
09:00 PM - 10:00 PM	64.4	75.1	62.0
10:00 PM - 11:00 PM	64.2	72.6	62.1
11:00 PM - 12:00 AM	64.6	87.9	62.3
12:00 AM - 01:00 AM	63.9	73.4	61.8
01:00 AM - 02:00 AM	64.1	73.5	62.0
02:00 AM - 03:00 AM	64.9	74.2	62.2
03:00 AM - 04:00 AM	65.2	79.4	62.8
04:00 AM - 05:00 AM	65.0	82.6	62.7
05:00 AM - 06:00 AM	65.6	74.5	63.2
06:00 AM - 07:00 AM	67.0	80.1	63.7
07:00 AM - 08:00 AM	67.1	89.1	63.8

Leq Average 24 hrs. (dB(A)) 65.4  
Lmax (dB(A)) 89.1  
L90 (dB(A)) 62.2  
Ldn (dB(A)) 71.5  
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 :** 9103799242

**Project Name :** Environmental Monitoring

**Project Location :**

**Lot ID: 2449973**

Date Received : May 17, 2024

Date Reported : May 23, 2024

Report Number: 3001491-1

Page 1 of 1

**Sample Number** 2449973-11  
**Parameter** Noise (Leq 24 hrs.)  
**Location** บริเวณเริ่มรั้วของโรงงาน ด้านทิศตะวันตกเฉียงเหนือ (ป้อมประตู 1) (GPS 47P 0733599, 1405064)  
**Measurement Date** May 12 - May 13, 2024  
**Measurement by** Natthapon Jiengwareewong  
**Sound Level meter** Serial No. 734218

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	65.7	84.4	62.6
09:00 AM - 10:00 AM	65.3	89.4	62.1
10:00 AM - 11:00 AM	64.3	79.3	61.0
11:00 AM - 12:00 PM	64.2	81.9	60.4
12:00 PM - 01:00 PM	63.8	79.8	60.1
01:00 PM - 02:00 PM	63.9	86.0	59.7
02:00 PM - 03:00 PM	63.9	89.1	59.6
03:00 PM - 04:00 PM	64.5	83.7	60.2
04:00 PM - 05:00 PM	64.8	76.7	60.9
05:00 PM - 06:00 PM	64.5	84.4	60.9
06:00 PM - 07:00 PM	64.6	85.5	61.1
07:00 PM - 08:00 PM	64.8	81.7	61.4
08:00 PM - 09:00 PM	64.2	81.9	61.2
09:00 PM - 10:00 PM	63.3	78.5	60.1
10:00 PM - 11:00 PM	63.1	82.5	60.0
11:00 PM - 12:00 AM	62.8	74.3	59.8
12:00 AM - 01:00 AM	62.7	73.9	59.7
01:00 AM - 02:00 AM	63.0	77.5	60.0
02:00 AM - 03:00 AM	64.1	88.2	60.1
03:00 AM - 04:00 AM	64.8	73.7	62.3
04:00 AM - 05:00 AM	66.8	90.0	64.0
05:00 AM - 06:00 AM	66.8	82.4	64.7
06:00 AM - 07:00 AM	67.4	88.2	64.8
07:00 AM - 08:00 AM	67.3	84.4	64.6

Leq Average 24 hrs. (dB(A)) 64.8  
Lmax (dB(A)) 90.0  
L90 (dB(A)) 60.9  
Ldn (dB(A)) 71.4  
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 :** 9103799242

**Project Name :** Environmental Monitoring

**Project Location :**

**Lot ID: 2449973**

Date Received : May 17, 2024

Date Reported : May 23, 2024

Report Number: 3001492-1

Page 1 of 1

**Sample Number** 2449973-12  
**Parameter** Noise (Leq 24 hrs.)  
**Location** บริเวณเริ่มรั้วของโรงงาน ด้านทิศตะวันตกเฉียงเหนือ (ป้อมประตู 1) (GPS 47P 0733599, 1405064)  
**Measurement Date** May 13 - May 14, 2024  
**Measurement by** Natthapon Jiengwareewong  
**Sound Level meter** Serial No. 734218

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	67.2	83.4	63.9
09:00 AM - 10:00 AM	66.2	74.9	63.2
10:00 AM - 11:00 AM	65.7	79.4	62.6
11:00 AM - 12:00 PM	65.7	83.5	62.0
12:00 PM - 01:00 PM	65.0	85.4	61.1
01:00 PM - 02:00 PM	64.6	81.7	60.7
02:00 PM - 03:00 PM	65.2	84.6	61.3
03:00 PM - 04:00 PM	65.3	78.8	62.3
04:00 PM - 05:00 PM	66.9	82.4	64.1
05:00 PM - 06:00 PM	67.1	79.1	63.9
06:00 PM - 07:00 PM	66.0	76.0	63.0
07:00 PM - 08:00 PM	65.7	80.1	63.3
08:00 PM - 09:00 PM	64.6	77.8	61.6
09:00 PM - 10:00 PM	64.9	77.6	61.8
10:00 PM - 11:00 PM	66.9	83.0	63.4
11:00 PM - 12:00 AM	67.2	84.4	63.8
12:00 AM - 01:00 AM	66.7	78.4	63.9
01:00 AM - 02:00 AM	65.9	76.1	62.6
02:00 AM - 03:00 AM	67.1	76.1	63.2
03:00 AM - 04:00 AM	66.1	74.9	63.3
04:00 AM - 05:00 AM	66.7	87.6	63.3
05:00 AM - 06:00 AM	67.2	83.9	63.9
06:00 AM - 07:00 AM	67.6	86.3	64.2
07:00 AM - 08:00 AM	67.4	86.9	64.0

Leq Average 24 hrs. (dB(A)) 66.3  
Lmax (dB(A)) 87.6  
L90 (dB(A)) 63.2  
Ldn (dB(A)) 73.1  
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)

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Section Head

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## 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 :** 9103799242  
**Project Name :** Environmental Monitoring  
**Project Location :**

**Lot ID: 2449973**

Date Received : May 17, 2024  
Date Reported : May 23, 2024  
Report Number: 3001493-1

Page 1 of 1

**Sample Number** 2449973-13  
**Parameter** Noise (Leq 24 hrs.)  
**Location** บริเวณริมรั้วของโรงงาน ด้านทิศตะวันตกเฉียงเหนือ (ป้อมประตู 1) (GPS 47P 0733599, 1405064)  
**Measurement Date** May 14 - May 15, 2024  
**Measurement by** Natthapon Jiengwareewong  
**Sound Level meter** Serial No. 734218

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	66.7	78.8	63.4
09:00 AM - 10:00 AM	66.8	78.9	63.5
10:00 AM - 11:00 AM	65.9	80.8	62.8
11:00 AM - 12:00 PM	65.2	79.0	61.2
12:00 PM - 01:00 PM	64.7	82.9	61.0
01:00 PM - 02:00 PM	64.3	77.5	60.5
02:00 PM - 03:00 PM	65.2	81.9	61.0
03:00 PM - 04:00 PM	65.2	76.9	61.5
04:00 PM - 05:00 PM	65.1	76.3	61.7
05:00 PM - 06:00 PM	65.5	78.9	62.4
06:00 PM - 07:00 PM	65.5	81.6	62.6
07:00 PM - 08:00 PM	65.2	85.3	62.5
08:00 PM - 09:00 PM	64.3	74.8	62.2
09:00 PM - 10:00 PM	64.5	86.9	62.0
10:00 PM - 11:00 PM	63.8	75.1	61.5
11:00 PM - 12:00 AM	63.7	80.2	61.1
12:00 AM - 01:00 AM	63.9	79.5	61.3
01:00 AM - 02:00 AM	64.2	85.4	61.3
02:00 AM - 03:00 AM	63.9	72.8	61.5
03:00 AM - 04:00 AM	66.6	80.9	62.1
04:00 AM - 05:00 AM	65.7	80.9	61.8
05:00 AM - 06:00 AM	64.7	79.9	61.9
06:00 AM - 07:00 AM	66.1	81.4	63.0
07:00 AM - 08:00 AM	66.3	82.7	62.9

Leq Average 24 hrs. (dB(A)) 65.2  
Lmax (dB(A)) 86.9  
L90 (dB(A)) 61.8  
Ldn (dB(A)) 71.4  
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 :** 9103799242  
**Project Name :** Environmental Monitoring  
**Project Location :**

**Lot ID: 2449973**

Date Received : May 17, 2024  
Date Reported : May 23, 2024  
Report Number: 3001494-1

Page 1 of 1

**Sample Number** 2449973-14  
**Parameter** Noise (Leq 24 hrs.)  
**Location** บริเวณเริ่มรั้วของโรงงาน ด้านทิศตะวันตกเฉียงเหนือ (ป้อมประตู 1) (GPS 47P 0733599, 1405064)  
**Measurement Date** May 15 - May 16, 2024  
**Measurement by** Natthapon Jiengwareewong  
**Sound Level meter** Serial No. 734218

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	65.9	85.8	62.4
09:00 AM - 10:00 AM	65.9	85.8	62.4
10:00 AM - 11:00 AM	64.8	75.8	61.2
11:00 AM - 12:00 PM	64.5	78.7	60.6
12:00 PM - 01:00 PM	64.8	85.1	60.4
01:00 PM - 02:00 PM	65.8	89.8	61.8
02:00 PM - 03:00 PM	65.3	79.2	62.0
03:00 PM - 04:00 PM	66.9	88.0	63.0
04:00 PM - 05:00 PM	66.0	84.3	62.8
05:00 PM - 06:00 PM	66.5	86.4	62.9
06:00 PM - 07:00 PM	65.7	86.5	62.8
07:00 PM - 08:00 PM	65.3	81.2	62.1
08:00 PM - 09:00 PM	65.0	78.0	62.0
09:00 PM - 10:00 PM	64.8	73.7	62.3
10:00 PM - 11:00 PM	64.0	75.5	60.8
11:00 PM - 12:00 AM	64.5	74.4	61.6
12:00 AM - 01:00 AM	63.9	75.9	61.4
01:00 AM - 02:00 AM	63.8	76.3	61.4
02:00 AM - 03:00 AM	63.3	77.0	60.6
03:00 AM - 04:00 AM	63.6	80.2	61.1
04:00 AM - 05:00 AM	64.3	83.3	62.1
05:00 AM - 06:00 AM	64.8	79.6	62.2
06:00 AM - 07:00 AM	66.2	83.9	62.6
07:00 AM - 08:00 AM	66.8	89.3	63.0

Leq Average 24 hrs. (dB(A)) 65.2  
Lmax (dB(A)) 89.8  
L90 (dB(A)) 62.0  
Ldn (dB(A)) 71.0  
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

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

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

Technical Management

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Supot Salamteh  
Section Head

## ภาคผนวก ค-4

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ระดับเสี่ยงในบริเวณการทำงาน



## Analysis / Test Report

**Client :** Linde HyCO Limited  
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150  
**P/O :** 9103799242  
**Project Name :** Environmental Monitoring  
**Project Location :**

**Lot ID: 2449953**

Date Received : May 10, 2024  
Date Reported : May 15, 2024  
Report Number: 2991644-1

Page 1 of 1

**Sample Number** 2449953-1  
**Parameter** Noise (Leq 8 hrs.)  
**Location** บริเวณ CO Compressor  
**Measurement Date** May 09, 2024  
**Measurement by** Natthapon Jiengwareewong

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:31 AM - 10:31 AM	70.7	81.7	69.5
10:31 AM - 11:31 AM	70.7	74.0	69.5
11:31 AM - 12:31 PM	69.7	71.2	69.2
12:31 PM - 01:31 PM	69.8	71.9	69.3
01:31 PM - 02:31 PM	69.8	73.6	69.3
02:31 PM - 03:31 PM	69.8	72.8	69.3
03:31 PM - 04:31 PM	69.7	71.2	69.3
04:31 PM - 05:31 PM	69.7	71.1	69.3

Leq Average 8 hrs. (dB(A))

70.0

Lmax (dB(A))

81.7

Standard (dB(A))

90

140

Reference Method : ISO1996-1 and 1996-2

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย  
ในการประกอบกิจการโรงงานเกี่ยวกับสภาวะแวดล้อมในการทำงาน พ.ศ.๒๕๔๖

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## Analysis / Test Report

**Client :** Linde HyCO Limited  
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150  
**P/O :** 9103799242  
**Project Name :** Environmental Monitoring  
**Project Location :**

**Lot ID: 2449953**

Date Received : May 10, 2024  
Date Reported : May 15, 2024  
Report Number: 2991645-1

Page 1 of 1

**Sample Number** 2449953-2  
**Parameter** Noise (Leq 8 hrs.)  
**Location** บริเวณ CO2 Compressor  
**Measurement Date** May 09, 2024  
**Measurement by** Natthapon Jiengwareewong

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:29 AM - 10:29 AM	66.5	87.2	63.5
10:29 AM - 11:29 AM	66.0	75.9	63.6
11:29 AM - 12:29 PM	66.6	77.2	63.3
12:29 PM - 01:29 PM	65.8	80.6	62.5
01:29 PM - 02:29 PM	65.5	81.2	62.5
02:29 PM - 03:29 PM	67.1	86.8	62.8
03:29 PM - 04:29 PM	66.6	83.9	62.5
04:29 PM - 05:29 PM	64.5	80.8	61.9

Leq Average 8 hrs. (dB(A))

66.1

Lmax (dB(A))

87.2

Standard (dB(A))

90

140

Reference Method : ISO1996-1 and 1996-2

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย  
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## Analysis / Test Report

**Client :** Linde HyCO Limited  
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150  
**P/O :** 9103799242  
**Project Name :** Environmental Monitoring  
**Project Location :**

**Lot ID: 2449953**

Date Received : May 10, 2024  
Date Reported : May 15, 2024  
Report Number: 2991646-1

Page 1 of 1

**Sample Number** 2449953-3  
**Parameter** Noise (Leq 8 hrs.)  
**Location** บริเวณ Boiler Feed Water Pumps  
**Measurement Date** May 09, 2024  
**Measurement by** Natthapon Jiengwareewong

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:23 AM - 10:23 AM	79.5	108.4	73.3
10:23 AM - 11:23 AM	75.4	83.7	74.0
11:23 AM - 12:23 PM	73.7	87.8	72.3
12:23 PM - 01:23 PM	73.1	77.7	70.9
01:23 PM - 02:23 PM	72.5	76.9	70.9
02:23 PM - 03:23 PM	73.2	77.6	71.7
03:23 PM - 04:23 PM	73.2	77.6	71.6
04:23 PM - 05:23 PM	73.5	75.4	71.8

Leq Average 8 hrs. (dB(A))

74.9

Lmax (dB(A))

108.4

Standard (dB(A))

90

140

Reference Method : ISO1996-1 and 1996-2

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย  
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## Analysis / Test Report

**Client :** Linde HyCO Limited  
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150  
**P/O :** 9103799242  
**Project Name :** Environmental Monitoring  
**Project Location :**

**Lot ID: 2449953**

Date Received : May 10, 2024  
Date Reported : May 15, 2024  
Report Number: 2991647-1

Page 1 of 1

**Sample Number** 2449953-4  
**Parameter** Noise (Leq 8 hrs.)  
**Location** บริเวณ NG Compressor  
**Measurement Date** May 09, 2024  
**Measurement by** Natthapon Jiengwareewong

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:15 AM - 10:15 AM	73.7	77.8	73.5
10:15 AM - 11:15 AM	72.9	74.9	72.6
11:15 AM - 12:15 PM	73.2	79.5	72.9
12:15 PM - 01:15 PM	73.1	74.7	72.9
01:15 PM - 02:15 PM	72.9	76.3	72.7
02:15 PM - 03:15 PM	72.8	78.0	72.4
03:15 PM - 04:15 PM	73.1	78.8	72.8
04:15 PM - 05:15 PM	73.0	78.2	72.8

Leq Average 8 hrs. (dB(A))

73.1

Lmax (dB(A))

79.5

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  
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## ภาคผนวก ค-5

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การทำงานระดับเสียงเฉลี่ยตลอดเวลาการทำงาน



## Analysis / Test Report

**Client :** Linde HyCO Limited  
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150  
**P/O :** 9103799242  
**Project Name :** Environmental Monitoring  
**Project Location :**

**Lot ID: 2449979**

Date Received : May 13, 2024

Date Reported : May 14, 2024

Report Number : 2982274-1

Page 1 of 4

**Sample Number** 2449979-1  
**Sampled Date** May 08, 2024  
**Sample Description** Noise Dose  
**Personal Sampling** คุณเอื้ออังกูร ประเสริฐ  
**Date Analysis Commenced** May 13, 2024

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Noise Dose (12 hrs.) (Calculated from Lavg)	08:00 AM - 08:00 PM	%	-	1	275	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
Noise Dose (8 hrs.)	08:00 AM - 08:00 PM	%	-	1	257	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (12 hrs.) (Calculated from Lavg)	08:00 AM - 08:00 PM	dB(A)	-	-	87.4	83*	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (8 hrs.)	08:00 AM - 08:00 PM	dB(A)	-	-	89.1	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong

### Guideline :

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

**Sampled By :** Natthapon Jiengwareewong

### Remark :

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

Approved by

Suport Salamteh  
Section Head

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.

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## Analysis / Test Report

**Client :** Linde HyCO Limited  
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150  
**P/O :** 9103799242  
**Project Name :** Environmental Monitoring  
**Project Location :**

**Lot ID: 2449979**

Date Received : May 13, 2024

Date Reported : May 14, 2024

Report Number : 2982274-1

Page 2 of 4

**Sample Number** 2449979-2  
**Sampled Date** May 08, 2024  
**Sample Description** Noise Dose  
**Personal Sampling** คุณชานันต์ นามวิชา  
**Date Analysis Commenced** May 13, 2024

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Noise Dose (12 hrs.) (Calculated from Lavg)	08:00 AM - 08:00 PM	%	-	1	12.0	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
Noise Dose (8 hrs.)	08:00 AM - 08:00 PM	%	-	1	11.5	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (12 hrs.) (Calculated from Lavg)	08:00 AM - 08:00 PM	dB(A)	-	-	73.8	83*	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (8 hrs.)	08:00 AM - 08:00 PM	dB(A)	-	-	75.6	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong

### Guideline :

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

**Sampled By :** Natthapon Jiengwareewong

### Remark :

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

Approved by

Suport Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Linde HyCO Limited  
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150  
**P/O :** 9103799242  
**Project Name :** Environmental Monitoring  
**Project Location :**

**Lot ID: 2449979**

Date Received : May 13, 2024

Date Reported : May 14, 2024

Report Number : 2982274-1

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**Sample Number** 2449979-3  
**Sampled Date** May 09, 2024  
**Sample Description** Noise Dose  
**Personal Sampling** คุณชนกฤต ศรีมาลัย  
**Date Analysis Commenced** May 13, 2024

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Noise Dose (12 hrs.) (Calculated from Lavg)	08:00 AM - 08:00 PM	%	-	1	14.4	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
Noise Dose (8 hrs.)	08:00 AM - 08:00 PM	%	-	1	13.5	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (12 hrs.) (Calculated from Lavg)	08:00 AM - 08:00 PM	dB(A)	-	-	74.6	83*	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
TWA (8 hrs.)	08:00 AM - 08:00 PM	dB(A)	-	-	76.3	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong

### Guideline :

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

**Sampled By :** Natthapon Jiengwareewong

### Remark :

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

Approved by

Suport Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Linde HyCO Limited  
10/1, I-4 Road, T.Map Ta Phut, A.Muang, Rayong Thailand 21150  
**P/O :** 9103799242  
**Project Name :** Environmental Monitoring  
**Project Location :**

**Lot ID: 2449979**

Date Received : May 13, 2024

Date Reported : May 14, 2024

Report Number : 2982274-1

Page 4 of 4

**Sample Number** 2449979-4  
**Sampled Date** May 09, 2024  
**Sample Description** Noise Dose  
**Personal Sampling** คุณจักรพันธ์ จันทรินทร์เวศน์  
**Date Analysis Commenced** May 13, 2024

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Noise Dose (12 hrs.) (Calculated from Lavg)	08:00 AM - 08:00 PM	%	-	1	7.2	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
Noise Dose (8 hrs.)	08:00 AM - 08:00 PM	%	-	1	6.9	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong
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	Rayong
TWA (8 hrs.)	08:00 AM - 08:00 PM	dB(A)	-	-	73.4	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Rayong

### Guideline :

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

**Sampled By :** Natthapon Jiengwareewong

### Remark :

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

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