

## ภาคผนวก ค

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ผลการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม

# ภาคผนวก ค-1

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ผลการตรวจวัดคุณภาพอากาศจากปล่องระบาย



## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**  
**Project Name :** EIA Monitoring  
**Project Location :**

**Lot ID: 22141974**

Date Received : Dec 26, 2022  
Date Reported : Jan 06, 2023  
Report Number: 2499050-1 Rev. No.1

Page 1 of 2

**Sample Number** 22141974-1  
**Sampled Date** Dec 21, 2022  
**Sample Description** Emission from Stationary Source  
**Location** Normal Operation : หม้อไอน้ำ No. 5 ขนาด 80 ตัน/ชม.  
**Date Analysis Commenced** Dec 27, 2022  
**Condition of Sample** Extracted into two 2-L collection flasks, one filter paper placed in plastic petri dish and one amber plastic bottle, refrigerated

### Stack Description

Ambient Pressure	744	mmHg	Diameter	2.90	m	Oxygen	11.3	%
Ambient Temperature	28.0	°C	Shape	Circle		Carbon Dioxide	9.5	%
Type of Process	Combustion		Stack Temperature	82.0	°C	Gas Velocity	12.5	m/s
Type of Fuel	Biomass (Bagasse)		Moisture	19.24	%	Flow Rate (Actual O2)	197467	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	11:10 AM - 11:20 AM	ppm	-	1.06	95.0	200	United States Environmental Protection Agency, EPA Method 7	Bangkok
Sulfur dioxide	11:10 AM - 11:40 AM	ppm	-	2.0	<2.00	60	United States Environmental Protection Agency, EPA Method 6	Bangkok
Total Suspended Particulate	11:10 AM - 11:58 AM	mg/m3	-	0.5	156	320	United States Environmental Protection Agency, EPA Method 5	Bangkok

Technical Management

*Saranya C.*  
Saranya Chalermthamrong  
Scientist (4)  
ทะเบียนเลขที่ ว-204-จ-4717

Approved by

*Kanokkorn Anek*  
Kanokkorn Anek  
Senior Manager  
ทะเบียนเลขที่ ว-204-ค-6111

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



## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**  
**Project Name :** EIA Monitoring  
**Project Location :**

**Lot ID: 22141974**

Date Received : Dec 26, 2022  
Date Reported : Jan 06, 2023  
Report Number: 2499050-1 Rev. No.1

Page 2 of 2

**Sample Number** 22141974-1  
**Sampled Date** Dec 21, 2022  
**Sample Description** Emission from Stationary Source  
**Location** Normal Operation : หม้อไอน้ำ No. 5 ขนาด 80 ตัน/ชม.  
**Date Analysis Commenced** Dec 27, 2022  
**Condition of Sample** Extracted into two 2-L collection flasks, one filter paper placed in plastic petri dish and one amber plastic bottle, refrigerated

### Stack Description

Ambient Pressure	744	mmHg	Diameter	2.90	m	Oxygen	11.3	%
Ambient Temperature	28.0	°C	Shape	Circle		Carbon Dioxide	9.5	%
Type of Process	Combustion		Stack Temperature	82.0	°C	Gas Velocity	12.5	m/s
Type of Fuel	Biomass (Bagasse)		Moisture	19.24	%	Flow Rate (Actual O2)	197467	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Guideline Limit	Method	Testing Location
<b>Air Testing</b>								
Oxides of Nitrogen	11:10 AM - 11:20 AM	g/s	-	-	6.76	No Standard	Calculated	Bangkok
Sulfur dioxide	11:10 AM - 11:40 AM	g/s	-	-	<0.3	No Standard	Calculated	Bangkok
Total Suspended Particulate	11:10 AM - 11:58 AM	g/s	-	-	5.91	No Standard	Calculated	Bangkok

**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)

**Note:** This Analysis test report is reissued to supersede report No. 2499050-1 Date Reported : Jan 04, 2023 due to revise analytical information.

**Sampled By :** Anantachai Wesom

Remark :

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

**Technical Management**

*Saranya C.*  
Saranya Chalermthamrong  
Scientist (4)  
ทะเบียนเลขที่ ว-204-จ-4717

**Approved by**

*Kanokkorn Anek*  
Kanokkorn Anek  
Senior Manager  
ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**  
**Project Name :** EIA Monitoring  
**Project Location :**

**Lot ID: 22141975**

Date Received : Dec 26, 2022  
Date Reported : Jan 06, 2023  
Report Number: 2499056-1 Rev. No.1

Page 1 of 2

**Sample Number** 22141975-1  
**Sampled Date** Dec 21, 2022  
**Sample Description** Emission from Stationary Source  
**Location** Normal Operation : หม้อไอน้ำ No. 6 ขนาด 57 ตัน/ชม.  
**Date Analysis Commenced** Dec 27, 2022  
**Condition of Sample** Extracted into two 2-L collection flasks, one filter paper placed in plastic petri dish and one amber plastic bottle, refrigerated

### Stack Description

Ambient Pressure	744	mmHg	Diameter	2.90	m	Oxygen	16.2	%
Ambient Temperature	28.0	°C	Shape	Circle		Carbon Dioxide	4.5	%
Type of Process	Combustion		Stack Temperature	77.0	°C	Gas Velocity	6.0	m/s
Type of Fuel	Biomass (Bagasse)		Moisture	20.40	%	Flow Rate (Actual O2)	94846	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	01:30 PM - 01:40 PM	ppm	-	1.06	45.9	200	United States Environmental Protection Agency, EPA Method 7	Bangkok
Sulfur dioxide	01:20 PM - 01:50 PM	ppm	-	2.0	<2.00	60	United States Environmental Protection Agency, EPA Method 6	Bangkok
Total Suspended Particulate	01:20 PM - 02:02 PM	mg/m3	-	0.5	306	320	United States Environmental Protection Agency, EPA Method 5	Bangkok

**Technical Management**

*Saranya C.*  
Saranya Chalermthamrong  
Scientist (4)  
ทะเบียนเลขที่ ว-204-จ-4717

**Approved by**

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**  
**Project Name :** EIA Monitoring  
**Project Location :**

**Lot ID: 22141975**

Date Received : Dec 26, 2022  
Date Reported : Jan 06, 2023  
Report Number: 2499056-1 Rev. No.1

Page 2 of 2

**Sample Number** 22141975-1  
**Sampled Date** Dec 21, 2022  
**Sample Description** Emission from Stationary Source  
**Location** Normal Operation : หม้อไอน้ำ No. 6 ขนาด 57 ตัน/ชม.  
**Date Analysis Commenced** Dec 27, 2022  
**Condition of Sample** Extracted into two 2-L collection flasks, one filter paper placed in plastic petri dish and one amber plastic bottle, refrigerated

### Stack Description

Ambient Pressure	744	mmHg	Diameter	2.90	m	Oxygen	16.2	%
Ambient Temperature	28.0	°C	Shape	Circle		Carbon Dioxide	4.5	%
Type of Process	Combustion		Stack Temperature	77.0	°C	Gas Velocity	6.0	m/s
Type of Fuel	Biomass (Bagasse)		Moisture	20.40	%	Flow Rate (Actual O2)	94846	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Guideline Limit	Method	Testing Location
<b>Air Testing</b>								
Oxides of Nitrogen	01:30 PM - 01:40 PM	g/s	-	-	0.76	No Standard	Calculated	Bangkok
Sulfur dioxide	01:20 PM - 01:50 PM	g/s	-	-	<0.1	No Standard	Calculated	Bangkok
Total Suspended Particulate	01:20 PM - 02:02 PM	g/s	-	-	2.70	No Standard	Calculated	Bangkok

**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)

**Note:** This Analysis test report is reissued to supersede report No. 2499056 -1 Date Reported : Jan 04, 2023 due to revise analytical information.

**Sampled By :** Anantachai Wesom

Remark :

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

**Technical Management**

*Saranya C.*  
Saranya Chalermthamrong  
Scientist (4)  
ทะเบียนเลขที่ ว-204-จ-4717

**Approved by**

*Kanokkorn Anek*  
Kanokkorn Anek  
Senior Manager  
ทะเบียนเลขที่ ว-204-ค-6111

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## ภาคผนวก ค-2

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ผลการตรวจวัดคุณภาพอากาศโดยทั่วไป



## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142026**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2499181-1

Page 1 of 1

<b>Sample Description</b>	Air Quality
<b>Location</b>	วัดสามัคคีวนาราม (GPS 48Q 281051, 1891307)
<b>Date Analysis Commenced</b>	Jan 03, 2023
<b>Condition of Sample</b>	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag

Sample Number	Sampled Date	Total Suspended Particulate (mg/m3)	Particulate Matter (PM-10) (mg/m3)	Barometric Pressure (mm Hg)	Atmospheric Temperature (°C)
22142026-1	Dec 20 - Dec 21, 2022	0.136	0.094	760	28
22142026-2	Dec 21 - Dec 22, 2022	0.101	0.068	760	28
22142026-3	Dec 22 - Dec 23, 2022	0.120	0.083	760	28
22142026-4	Dec 23 - Dec 24, 2022	0.100	0.069	760	29
22142026-5	Dec 24 - Dec 25, 2022	0.091	0.057	760	29
22142026-6	Dec 25 - Dec 26, 2022	0.112	0.071	760	28
22142026-7	Dec 26 - Dec 27, 2022	0.101	0.066	760	28
<b>Guideline</b>		0.33	0.12	-	-

### Reference Method

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

Particulate Matter (PM-10) : US EPA 40 CFR Part 50 Appendix J

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

**Sampled By :** Jatsarawut Pattama

### Remark :

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

Approved by

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142028**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2499303-1

Page 1 of 1

<b>Sample Description</b>	Air Quality				
<b>Location</b>	โรงเรียนบ้านห้วยกองสี (GPS 48Q 279878, 1889419)				
<b>Date Analysis Commenced</b>	Jan 03, 2023				
<b>Condition of Sample</b>	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag				
Sample Number	Sampled Date	Total Suspended Particulate (mg/m3)	Particulate Matter (PM-10) (mg/m3)	Barometric Pressure (mm Hg)	Atmospheric Temperature (°C)
22142028-1	Dec 20 - Dec 21, 2022	0.125	0.092	760	28
22142028-2	Dec 21 - Dec 22, 2022	0.099	0.059	760	28
22142028-3	Dec 22 - Dec 23, 2022	0.152	0.077	760	28
22142028-4	Dec 23 - Dec 24, 2022	0.129	0.066	760	29
22142028-5	Dec 24 - Dec 25, 2022	0.089	0.039	760	29
22142028-6	Dec 25 - Dec 26, 2022	0.124	0.059	760	28
22142028-7	Dec 26 - Dec 27, 2022	0.140	0.068	760	28
<b>Guideline</b>		0.33	0.12	-	-

### Reference Method

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

Particulate Matter (PM-10) : US EPA 40 CFR Part 50 Appendix J

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

**Sampled By :** Jatsarawut Pattama

### Remark :

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

Approved by

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142030**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2499333-1

Page 1 of 1

<b>Sample Description</b>	Air Quality
<b>Location</b>	วัดสระแก้ว (GPS 48Q 278998, 1887277)
<b>Date Analysis Commenced</b>	Jan 03, 2023
<b>Condition of Sample</b>	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag

Sample Number	Sampled Date	Total Suspended Particulate (mg/m3)	Particulate Matter (PM-10) (mg/m3)	Barometric Pressure (mm Hg)	Atmospheric Temperature (°C)
22142030-1	Dec 20 - Dec 21, 2022	0.109	0.082	760	28
22142030-2	Dec 21 - Dec 22, 2022	0.061	0.039	760	28
22142030-3	Dec 22 - Dec 23, 2022	0.100	0.068	760	28
22142030-4	Dec 23 - Dec 24, 2022	0.130	0.065	760	29
22142030-5	Dec 24 - Dec 25, 2022	0.081	0.036	760	29
22142030-6	Dec 25 - Dec 26, 2022	0.123	0.058	760	28
22142030-7	Dec 26 - Dec 27, 2022	0.100	0.064	760	28
<b>Guideline</b>		0.33	0.12	-	-

### Reference Method

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

Particulate Matter (PM-10) : US EPA 40 CFR Part 50 Appendix J

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

**Sampled By :** Jatsarawut Pattama

### Remark :

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

Approved by

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142041**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2499345-1

Page 1 of 1

<b>Sample Description</b>	Air Quality				
<b>Location</b>	วัดสุราษฎร์ (GPS 48Q 276878, 1887972)				
<b>Date Analysis Commenced</b>	Jan 03, 2023				
<b>Condition of Sample</b>	Drawn into one glass filter paper (8x10 inch) placed in plastic bag and one quartz filter paper (8x10 inch) placed in plastic bag				
Sample Number	Sampled Date	Total Suspended Particulate (mg/m3)	Particulate Matter (PM-10) (mg/m3)	Barometric Pressure (mm Hg)	Atmospheric Temperature (°C)
22142041-1	Dec 20 - Dec 21, 2022	0.091	0.053	760	28
22142041-2	Dec 21 - Dec 22, 2022	0.079	0.040	760	28
22142041-3	Dec 22 - Dec 23, 2022	0.095	0.049	760	28
22142041-4	Dec 23 - Dec 24, 2022	0.089	0.055	760	29
22142041-5	Dec 24 - Dec 25, 2022	0.070	0.036	760	29
22142041-6	Dec 25 - Dec 26, 2022	0.072	0.048	760	28
22142041-7	Dec 26 - Dec 27, 2022	0.077	0.048	760	28
<b>Guideline</b>		0.33	0.12	-	-

### Reference Method

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

Particulate Matter (PM-10) : US EPA 40 CFR Part 50 Appendix J

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

**Sampled By :** Jatsarawut Pattama

### Remark :

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

Approved by

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22141988**

Date Received : Dec 29, 2022

Date Reported : Jan 05, 2023

Report Number: 2499076-1

Page 1 of 1

**Sample Description** Air Quality  
**Location** วัดสามัคคีวนาราม (GPS 48Q 281051, 1891307)  
**Parameter** Nitrogen dioxide (ppm)  
**Measurement Date** Dec 20, 2022 - Dec 27, 2022  
**Measurement by** Jatsarawut Pattama

	22141988-1 Dec 20, 2022	22141988-2 Dec 21, 2022	22141988-3 Dec 22, 2022	22141988-4 Dec 23, 2022	22141988-5 Dec 24, 2022	22141988-6 Dec 25, 2022	22141988-7 Dec 26, 2022
Time							
01:00 PM - 02:00 PM	0.004	0.004	0.004	0.005	0.004	0.003	0.003
02:00 PM - 03:00 PM	0.003	0.004	0.004	0.005	0.003	0.002	0.002
03:00 PM - 04:00 PM	0.004	0.004	0.004	0.004	0.003	0.002	0.003
04:00 PM - 05:00 PM	0.004	0.004	0.004	0.004	0.003	0.003	0.002
05:00 PM - 06:00 PM	0.005	0.005	0.003	0.004	0.003	0.004	0.002
06:00 PM - 07:00 PM	0.005	0.005	0.006	0.004	0.004	0.004	0.004
07:00 PM - 08:00 PM	0.023	0.017	0.020	0.006	0.010	0.010	0.013
08:00 PM - 09:00 PM	0.031	0.025	0.023	0.008	0.019	0.026	0.026
09:00 PM - 10:00 PM	0.023	0.024	0.023	0.008	0.014	0.021	0.023
10:00 PM - 11:00 PM	0.020	0.022	0.020	0.017	0.011	0.019	0.020
11:00 PM - 12:00 AM	0.020	0.020	0.020	0.024	0.004	0.017	0.016
12:00 AM - 01:00 AM	0.016	0.020	0.021	0.025	0.004	0.018	0.018
01:00 AM - 02:00 AM	0.016	0.020	0.013	0.018	0.004	0.017	0.014
02:00 AM - 03:00 AM	0.014	0.016	0.017	0.019	0.010	0.013	0.011
03:00 AM - 04:00 AM	0.010	0.013	0.018	0.014	0.010	0.012	0.011
04:00 AM - 05:00 AM	0.012	0.012	0.015	0.010	0.009	0.012	0.014
05:00 AM - 06:00 AM	0.013	0.011	0.016	0.014	0.009	0.014	0.011
06:00 AM - 07:00 AM	0.016	0.014	0.014	0.017	0.012	0.012	0.009
07:00 AM - 08:00 AM	0.014	0.016	0.013	0.013	0.019	0.013	0.009
08:00 AM - 09:00 AM	0.012	0.016	0.015	0.012	0.015	0.016	0.012
09:00 AM - 10:00 AM	0.010	0.010	0.016	0.008	0.010	0.015	0.011
10:00 AM - 11:00 AM	0.007	0.006	0.007	0.004	0.004	0.005	0.008
11:00 AM - 12:00 PM	0.006	0.004	0.005	0.004	0.003	0.004	0.005
12:00 PM - 01:00 PM	0.004	0.004	0.005	0.003	0.003	0.003	0.004
Average	0.012	0.012	0.013	0.010	0.008	0.011	0.010
1hr - Maximum	0.031	0.025	0.023	0.025	0.019	0.026	0.026
Standard 1hr - Average	0.170	0.170	0.170	0.170	0.170	0.170	0.170

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

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

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Approved by

*Saranya C.*

Saranya Chalermthamrong

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22141990**

Date Received : Dec 29, 2022

Date Reported : Jan 05, 2023

Report Number: 2499077-1

Page 1 of 1

<b>Sample Description</b>	Air Quality						
<b>Location</b>	โรงเรียนบ้านห้วยกองสี (GPS 48Q 279878, 1889419)						
<b>Parameter</b>	Nitrogen dioxide (ppm)						
<b>Measurement Date</b>	Dec 20, 2022 - Dec 27, 2022						
<b>Measurement by</b>	Jatsarawut Pattama						
	22141990-1 Dec 20, 2022	22141990-2 Dec 21, 2022	22141990-3 Dec 22, 2022	22141990-4 Dec 23, 2022	22141990-5 Dec 24, 2022	22141990-6 Dec 25, 2022	22141990-7 Dec 26, 2022
Time							
12:00 PM - 01:00 PM	0.004	0.003	0.002	0.003	0.002	0.002	0.002
01:00 PM - 02:00 PM	0.003	0.003	0.002	0.002	0.001	0.002	0.001
02:00 PM - 03:00 PM	0.003	0.002	0.004	0.003	0.002	0.002	0.005
03:00 PM - 04:00 PM	0.009	0.003	0.004	0.004	0.002	0.002	0.004
04:00 PM - 05:00 PM	0.010	0.003	0.003	0.004	0.001	0.002	0.004
05:00 PM - 06:00 PM	0.013	0.004	0.002	0.003	0.001	0.001	0.008
06:00 PM - 07:00 PM	0.020	0.002	0.002	0.002	0.002	0.001	0.007
07:00 PM - 08:00 PM	0.039	0.030	0.025	0.002	0.003	0.003	0.013
08:00 PM - 09:00 PM	0.032	0.028	0.030	0.004	0.008	0.014	0.014
09:00 PM - 10:00 PM	0.027	0.023	0.023	0.005	0.011	0.025	0.014
10:00 PM - 11:00 PM	0.026	0.018	0.020	0.006	0.005	0.019	0.014
11:00 PM - 12:00 AM	0.023	0.013	0.015	0.005	0.003	0.017	0.012
12:00 AM - 01:00 AM	0.021	0.006	0.014	0.004	0.002	0.015	0.011
01:00 AM - 02:00 AM	0.017	0.008	0.012	0.004	0.001	0.016	0.008
02:00 AM - 03:00 AM	0.015	0.018	0.012	0.014	0.005	0.016	0.006
03:00 AM - 04:00 AM	0.013	0.016	0.016	0.016	0.017	0.012	0.008
04:00 AM - 05:00 AM	0.014	0.016	0.018	0.015	0.012	0.011	0.006
05:00 AM - 06:00 AM	0.015	0.015	0.017	0.016	0.014	0.014	0.004
06:00 AM - 07:00 AM	0.015	0.015	0.014	0.017	0.014	0.015	0.009
07:00 AM - 08:00 AM	0.014	0.015	0.013	0.016	0.012	0.014	0.007
08:00 AM - 09:00 AM	0.015	0.017	0.015	0.020	0.014	0.012	0.009
09:00 AM - 10:00 AM	0.011	0.010	0.013	0.013	0.010	0.011	0.008
10:00 AM - 11:00 AM	0.008	0.006	0.008	0.004	0.007	0.007	0.003
11:00 AM - 12:00 PM	0.006	0.003	0.004	0.002	0.002	0.002	0.004
Average	0.016	0.012	0.012	0.008	0.006	0.010	0.008
1hr - Maximum	0.039	0.030	0.030	0.020	0.017	0.025	0.014
Standard 1hr - Average	0.170	0.170	0.170	0.170	0.170	0.170	0.170

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

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

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22141991**

Date Received : Dec 29, 2022

Date Reported : Jan 05, 2023

Report Number: 2499081-1

Page 1 of 1

**Sample Description** Air Quality  
**Location** วัดสระแก้ว (GPS 48Q 278998, 1887277)  
**Parameter** Nitrogen dioxide (ppm)  
**Measurement Date** Dec 20, 2022 - Dec 27, 2022  
**Measurement by** Jatsarawut Pattama

Time	22141991-1 Dec 20, 2022	22141991-2 Dec 21, 2022	22141991-3 Dec 22, 2022	22141991-4 Dec 23, 2022	22141991-5 Dec 24, 2022	22141991-6 Dec 25, 2022	22141991-7 Dec 26, 2022
10:00 AM - 11:00 AM	0.004	0.006	0.004	0.005	0.002	0.004	0.005
11:00 AM - 12:00 PM	0.005	0.004	0.003	0.003	0.002	0.002	0.004
12:00 PM - 01:00 PM	0.004	0.003	0.002	0.003	0.002	0.002	0.002
01:00 PM - 02:00 PM	0.003	0.002	0.002	0.003	0.002	0.002	0.002
02:00 PM - 03:00 PM	0.003	0.002	0.003	0.003	0.001	0.002	0.003
03:00 PM - 04:00 PM	0.005	0.002	0.002	0.004	0.001	0.002	0.002
04:00 PM - 05:00 PM	0.004	0.002	0.003	0.004	0.001	0.002	0.002
05:00 PM - 06:00 PM	0.005	0.004	0.004	0.002	0.001	0.002	0.003
06:00 PM - 07:00 PM	0.009	0.003	0.003	0.007	0.002	0.002	0.003
07:00 PM - 08:00 PM	0.010	0.004	0.010	0.005	0.004	0.004	0.008
08:00 PM - 09:00 PM	0.031	0.005	0.018	0.004	0.004	0.005	0.009
09:00 PM - 10:00 PM	0.038	0.005	0.021	0.005	0.006	0.007	0.008
10:00 PM - 11:00 PM	0.030	0.007	0.018	0.007	0.005	0.010	0.013
11:00 PM - 12:00 AM	0.026	0.006	0.018	0.004	0.010	0.016	0.018
12:00 AM - 01:00 AM	0.022	0.004	0.020	0.004	0.007	0.017	0.018
01:00 AM - 02:00 AM	0.014	0.018	0.016	0.004	0.006	0.019	0.018
02:00 AM - 03:00 AM	0.020	0.021	0.016	0.018	0.004	0.019	0.018
03:00 AM - 04:00 AM	0.018	0.019	0.015	0.026	0.012	0.016	0.018
04:00 AM - 05:00 AM	0.018	0.020	0.013	0.020	0.013	0.016	0.015
05:00 AM - 06:00 AM	0.020	0.019	0.015	0.021	0.017	0.018	0.013
06:00 AM - 07:00 AM	0.020	0.014	0.013	0.022	0.019	0.020	0.010
07:00 AM - 08:00 AM	0.020	0.025	0.019	0.021	0.020	0.015	0.011
08:00 AM - 09:00 AM	0.019	0.017	0.021	0.019	0.017	0.015	0.013
09:00 AM - 10:00 AM	0.011	0.013	0.012	0.006	0.008	0.008	0.014
Average	0.015	0.009	0.011	0.009	0.007	0.009	0.009
1hr - Maximum	0.038	0.025	0.021	0.026	0.020	0.020	0.018
Standard 1hr - Average	0.170	0.170	0.170	0.170	0.170	0.170	0.170

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

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

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22141993**

Date Received : Dec 29, 2022

Date Reported : Jan 05, 2023

Report Number: 2499113-1

Page 1 of 1

**Sample Description** Air Quality  
**Location** วัดสุราษฎร์ (GPS 48Q 276878, 1887972)  
**Parameter** Nitrogen dioxide (ppm)  
**Measurement Date** Dec 20, 2022 - Dec 27, 2022  
**Measurement by** Jatsarawut Pattama

Time	22141993-1 Dec 20, 2022	22141993-2 Dec 21, 2022	22141993-3 Dec 22, 2022	22141993-4 Dec 23, 2022	22141993-5 Dec 24, 2022	22141993-6 Dec 25, 2022	22141993-7 Dec 26, 2022
11:00 AM - 12:00 PM	0.002	0.004	0.007	0.008	0.004	0.005	0.008
12:00 PM - 01:00 PM	0.002	0.004	0.010	0.010	0.006	0.004	0.006
01:00 PM - 02:00 PM	0.004	0.005	0.005	0.011	0.006	0.003	0.004
02:00 PM - 03:00 PM	0.004	0.004	0.003	0.011	0.005	0.002	0.002
03:00 PM - 04:00 PM	0.004	0.004	0.003	0.006	0.005	0.002	0.003
04:00 PM - 05:00 PM	0.003	0.004	0.004	0.005	0.004	0.002	0.002
05:00 PM - 06:00 PM	0.004	0.003	0.004	0.004	0.005	0.002	0.002
06:00 PM - 07:00 PM	0.004	0.004	0.005	0.005	0.009	0.004	0.004
07:00 PM - 08:00 PM	0.006	0.007	0.009	0.008	0.011	0.006	0.006
08:00 PM - 09:00 PM	0.018	0.008	0.009	0.013	0.015	0.008	0.009
09:00 PM - 10:00 PM	0.017	0.013	0.012	0.014	0.017	0.010	0.011
10:00 PM - 11:00 PM	0.014	0.010	0.012	0.013	0.009	0.010	0.013
11:00 PM - 12:00 AM	0.012	0.011	0.010	0.015	0.008	0.012	0.011
12:00 AM - 01:00 AM	0.012	0.009	0.010	0.007	0.004	0.008	0.009
01:00 AM - 02:00 AM	0.010	0.010	0.008	0.008	0.006	0.009	0.008
02:00 AM - 03:00 AM	0.008	0.007	0.008	0.008	0.006	0.009	0.007
03:00 AM - 04:00 AM	0.008	0.007	0.007	0.006	0.005	0.007	0.008
04:00 AM - 05:00 AM	0.008	0.007	0.007	0.006	0.005	0.007	0.008
05:00 AM - 06:00 AM	0.009	0.006	0.007	0.007	0.004	0.006	0.006
06:00 AM - 07:00 AM	0.007	0.005	0.006	0.007	0.004	0.008	0.005
07:00 AM - 08:00 AM	0.009	0.005	0.006	0.006	0.005	0.005	0.006
08:00 AM - 09:00 AM	0.007	0.006	0.007	0.005	0.005	0.006	0.005
09:00 AM - 10:00 AM	0.005	0.006	0.005	0.006	0.004	0.005	0.004
10:00 AM - 11:00 AM	0.004	0.009	0.007	0.011	0.004	0.006	0.006
Average	0.008	0.007	0.007	0.008	0.007	0.006	0.006
1hr - Maximum	0.018	0.013	0.012	0.015	0.017	0.012	0.013
Standard 1hr - Average	0.170	0.170	0.170	0.170	0.170	0.170	0.170

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

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

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22141998**

Date Received : Dec 29, 2022

Date Reported : Jan 05, 2023

Report Number: 2499151-1

Page 1 of 1

**Sample Description** Air Quality  
**Location** วัดสามัคคีวนาราม (GPS 48Q 281051, 1891307)  
**Parameter** Sulfur Dioxide (ppm)  
**Measurement Date** Dec 20, 2022 - Dec 27, 2022  
**Measurement by** Jatsarawut Pattama

	22141998-1 Dec 20, 2022	22141998-2 Dec 21, 2022	22141998-3 Dec 22, 2022	22141998-4 Dec 23, 2022	22141998-5 Dec 24, 2022	22141998-6 Dec 25, 2022	22141998-7 Dec 26, 2022
Time							
01:00 PM - 02:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
02:00 PM - 03:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
03:00 PM - 04:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
04:00 PM - 05:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
05:00 PM - 06:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
06:00 PM - 07:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
07:00 PM - 08:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
08:00 PM - 09:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
09:00 PM - 10:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
10:00 PM - 11:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
11:00 PM - 12:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
12:00 AM - 01:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
01:00 AM - 02:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
02:00 AM - 03:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
03:00 AM - 04:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
04:00 AM - 05:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
05:00 AM - 06:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
06:00 AM - 07:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
07:00 AM - 08:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
08:00 AM - 09:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
09:00 AM - 10:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
10:00 AM - 11:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
11:00 AM - 12:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
12:00 PM - 01:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Average	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1hr - Maximum	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Standard 1hr - Average	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Standard 24 hrs - Average	0.12	0.12	0.12	0.12	0.12	0.12	0.12

Standard : Notification of the National Environment Board No.10, 1995 (B.E.2538), No. 21, 2001 (B.E.2544) and No.24, 2004 (B.E.2547).

Reference Method : US EPA Method Part 53 and 58

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142000**

Date Received : Dec 29, 2022

Date Reported : Jan 05, 2023

Report Number: 2499154-1

Page 1 of 1

**Sample Description** Air Quality  
**Location** โรงเรียนบ้านห้วยกองสี (GPS 48Q 279878, 1889419)  
**Parameter** Sulfur Dioxide (ppm)  
**Measurement Date** Dec 20, 2022 - Dec 27, 2022  
**Measurement by** Jatsarawut Pattama

	22142000-1 Dec 20, 2022	22142000-2 Dec 21, 2022	22142000-3 Dec 22, 2022	22142000-4 Dec 23, 2022	22142000-5 Dec 24, 2022	22142000-6 Dec 25, 2022	22142000-7 Dec 26, 2022
Time							
12:00 PM - 01:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
01:00 PM - 02:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
02:00 PM - 03:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
03:00 PM - 04:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
04:00 PM - 05:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
05:00 PM - 06:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
06:00 PM - 07:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
07:00 PM - 08:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
08:00 PM - 09:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
09:00 PM - 10:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
10:00 PM - 11:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
11:00 PM - 12:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
12:00 AM - 01:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
01:00 AM - 02:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
02:00 AM - 03:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
03:00 AM - 04:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
04:00 AM - 05:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
05:00 AM - 06:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
06:00 AM - 07:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
07:00 AM - 08:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
08:00 AM - 09:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
09:00 AM - 10:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
10:00 AM - 11:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
11:00 AM - 12:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Average	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1hr - Maximum	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Standard 1hr - Average	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Standard 24 hrs - Average	0.12	0.12	0.12	0.12	0.12	0.12	0.12

Standard : Notification of the National Environment Board No.10, 1995 (B.E.2538), No. 21, 2001 (B.E.2544) and No.24, 2004 (B.E.2547).

Reference Method : US EPA Method Part 53 and 58

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

Approved by

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Saranya Chalermthamrong

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142002**

Date Received : Dec 29, 2022

Date Reported : Jan 05, 2023

Report Number: 2499157-1

Page 1 of 1

**Sample Description** Air Quality  
**Location** วัดสระแก้ว (GPS 48Q 278998, 1887277)  
**Parameter** Sulfur Dioxide (ppm)  
**Measurement Date** Dec 20, 2022 - Dec 27, 2022  
**Measurement by** Jatsarawut Pattama

Time	22142002-1 Dec 20, 2022	22142002-2 Dec 21, 2022	22142002-3 Dec 22, 2022	22142002-4 Dec 23, 2022	22142002-5 Dec 24, 2022	22142002-6 Dec 25, 2022	22142002-7 Dec 26, 2022
10:00 AM - 11:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
11:00 AM - 12:00 PM	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001
12:00 PM - 01:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
01:00 PM - 02:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.001
02:00 PM - 03:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001
03:00 PM - 04:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001
04:00 PM - 05:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
05:00 PM - 06:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001
06:00 PM - 07:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
07:00 PM - 08:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
08:00 PM - 09:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
09:00 PM - 10:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
10:00 PM - 11:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
11:00 PM - 12:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
12:00 AM - 01:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
01:00 AM - 02:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
02:00 AM - 03:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
03:00 AM - 04:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
04:00 AM - 05:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
05:00 AM - 06:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
06:00 AM - 07:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
07:00 AM - 08:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
08:00 AM - 09:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
09:00 AM - 10:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Average	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1hr - Maximum	<0.001	<0.001	<0.001	<0.001	0.001	0.002	0.001
Standard 1hr - Average	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Standard 24 hrs - Average	0.12	0.12	0.12	0.12	0.12	0.12	0.12

Standard : Notification of the National Environment Board No.10, 1995 (B.E.2538), No. 21, 2001 (B.E.2544) and No.24, 2004 (B.E.2547).

Reference Method : US EPA Method Part 53 and 58

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142016**

Date Received : Dec 29, 2022

Date Reported : Jan 05, 2023

Report Number: 2499162-1

Page 1 of 1

**Sample Description** Air Quality  
**Location** วัดสุราษฎร์ (GPS 48Q 276878, 1887972)  
**Parameter** Sulfur Dioxide (ppm)  
**Measurement Date** Dec 20, 2022 - Dec 27, 2022  
**Measurement by** Jatsarawut Pattama

Time	22142016-1 Dec 20, 2022	22142016-2 Dec 21, 2022	22142016-3 Dec 22, 2022	22142016-4 Dec 23, 2022	22142016-5 Dec 24, 2022	22142016-6 Dec 25, 2022	22142016-7 Dec 26, 2022
11:00 AM - 12:00 PM	0.001	0.001	<0.001	<0.001	0.001	<0.001	0.001
12:00 PM - 01:00 PM	<0.001	<0.001	0.001	0.001	0.001	0.001	0.001
01:00 PM - 02:00 PM	0.001	<0.001	0.001	0.001	0.001	0.001	0.001
02:00 PM - 03:00 PM	0.001	<0.001	<0.001	0.001	<0.001	<0.001	0.001
03:00 PM - 04:00 PM	0.001	<0.001	<0.001	0.001	0.001	0.001	0.001
04:00 PM - 05:00 PM	0.001	<0.001	<0.001	0.001	0.001	<0.001	0.001
05:00 PM - 06:00 PM	0.001	<0.001	<0.001	<0.001	0.001	<0.001	0.001
06:00 PM - 07:00 PM	0.001	<0.001	<0.001	0.001	0.001	0.001	0.001
07:00 PM - 08:00 PM	0.001	<0.001	<0.001	<0.001	0.001	0.001	0.001
08:00 PM - 09:00 PM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
09:00 PM - 10:00 PM	0.001	<0.001	<0.001	<0.001	0.001	0.001	0.001
10:00 PM - 11:00 PM	0.001	<0.001	<0.001	<0.001	0.001	0.001	0.001
11:00 PM - 12:00 AM	0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.001
12:00 AM - 01:00 AM	0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001
01:00 AM - 02:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.001
02:00 AM - 03:00 AM	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	0.001
03:00 AM - 04:00 AM	0.001	<0.001	<0.001	<0.001	0.001	<0.001	0.001
04:00 AM - 05:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
05:00 AM - 06:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
06:00 AM - 07:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
07:00 AM - 08:00 AM	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	0.001
08:00 AM - 09:00 AM	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	0.001
09:00 AM - 10:00 AM	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001
10:00 AM - 11:00 AM	0.001	<0.001	<0.001	0.001	<0.001	<0.001	0.001
Average	0.001	<0.001	<0.001	<0.001	0.001	<0.001	0.001
1hr - Maximum	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Standard 1hr - Average	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Standard 24 hrs - Average	0.12	0.12	0.12	0.12	0.12	0.12	0.12

Standard : Notification of the National Environment Board No.10, 1995 (B.E.2538), No. 21, 2001 (B.E.2544) and No.24, 2004 (B.E.2547).  
Reference Method : US EPA Method Part 53 and 58

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## Analysis / Test Report

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370  
P/O :  
Project Name : EIA Monitoring  
Project Location :

Lot ID : 22142044  
Date Received : Dec 29, 2022  
Date Reported : Jan 07, 2023  
Report Number : 2499352-1

Page 1 of 2

Sample Number 22142044-1 to 7  
Parameter Wind Speed / Wind Direction  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279878, 1889419)  
Sampling Date Dec 20 - Dec 27, 2022  
Sampling by Jatsarawut Pattama

Time	Dec 20 - Dec 21, 2022			Dec 21 - Dec 22, 2022			Dec 22 - Dec 23, 2022			Dec 23 - Dec 24, 2022			Dec 24 - Dec 25, 2022			Dec 25 - Dec 26, 2022			Dec 26 - Dec 27, 2022		
	WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)	
12:00 PM - 01:00 PM	0.9	68.0	ENE	2.3	34.0	NE	1.2	72.0	ENE	0.7	281.0	W	0.7	354.0	N	1.6	0.0	N	2.1	107.0	ESE
01:00 PM - 02:00 PM	1.1	63.0	ENE	1.2	130.0	SE	1.0	271.0	W	1.4	58.0	ENE	1.9	84.0	E	0.3	343.0	NNW	1.2	160.0	SSE
02:00 PM - 03:00 PM	1.7	56.0	NE	0.5	65.0	ENE	1.5	328.0	NNW	0.0	-	-	1.4	93.0	E	3.5	77.0	ENE	1.7	18.0	NNE
03:00 PM - 04:00 PM	0.3	68.0	ENE	0.6	20.0	NNE	0.3	88.0	E	0.4	357.0	N	1.0	38.0	NE	0.3	341.0	NNW	1.9	357.0	N
04:00 PM - 05:00 PM	0.4	49.0	NE	0.4	30.0	NNE	0.4	163.0	SSE	2.5	66.0	ENE	1.2	105.0	ESE	0.0	-	-	2.2	71.0	ENE
05:00 PM - 06:00 PM	0.6	56.0	NE	0.7	41.0	NE	0.8	37.0	NE	1.8	28.0	NNE	0.8	37.0	NE	0.6	7.0	N	1.2	42.0	NE
06:00 PM - 07:00 PM	0.0	-	-	0.0	-	-	0.0	-	-	1.0	58.0	ENE	0.0	-	-	0.3	50.0	NE	0.7	76.0	ENE
07:00 PM - 08:00 PM	0.0	-	-	0.0	-	-	0.0	-	-	0.7	81.0	E	0.0	-	-	0.0	-	-	0.0	-	-
08:00 PM - 09:00 PM	0.0	-	-	0.0	-	-	0.0	-	-	0.0	-	-	1.2	121.0	ESE	0.0	-	-	0.0	-	-
09:00 PM - 10:00 PM	0.3	12.0	NNE	0.6	33.0	NNE	0.0	-	-	0.0	-	-	1.4	68.0	ENE	0.0	-	-	0.0	-	-
10:00 PM - 11:00 PM	0.4	11.0	N	1.1	95.0	E	0.0	-	-	0.3	88.0	E	1.1	100.0	E	0.0	-	-	0.0	-	-
11:00 PM - 12:00 AM	0.5	11.0	N	0.7	90.0	E	0.0	-	-	0.9	113.0	ESE	0.6	93.0	E	0.0	-	-	0.0	-	-
12:00 AM - 01:00 AM	0.3	12.0	NNE	0.5	52.0	NE	0.0	-	-	0.0	-	-	2.2	106.0	ESE	0.0	-	-	0.0	-	-
01:00 AM - 02:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	0.0	-	-	0.0	-	-	0.0	-	-	0.0	-	-
02:00 AM - 03:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	0.8	70.0	ENE	0.0	-	-	0.0	-	-	0.0	-	-
03:00 AM - 04:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	0.6	339.0	NNW	0.0	-	-	0.0	-	-	0.0	-	-
04:00 AM - 05:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	0.0	-	-	0.0	-	-	0.0	-	-	0.0	-	-
05:00 AM - 06:00 AM	0.0	-	-	0.4	107.0	ESE	0.0	-	-	0.0	-	-	0.0	-	-	0.0	-	-	0.0	-	-
06:00 AM - 07:00 AM	0.5	285.0	WNW	0.0	-	-	0.6	39.0	NE	0.0	-	-	0.0	-	-	0.0	-	-	0.0	-	-
07:00 AM - 08:00 AM	0.6	245.0	WSW	0.5	288.0	WNW	1.4	311.0	NW	0.0	-	-	0.0	-	-	0.0	-	-	0.0	-	-
08:00 AM - 09:00 AM	0.6	288.0	WNW	1.3	328.0	NNW	1.2	63.0	ENE	0.4	7.0	N	0.5	39.0	NE	0.6	17.0	NNE	0.0	-	-
09:00 AM - 10:00 AM	1.0	21.0	NNE	1.6	40.0	NE	1.8	357.0	N	2.0	45.0	NE	0.0	-	-	1.5	1.0	N	0.4	73.0	ENE
10:00 AM - 11:00 AM	1.1	320.0	NW	0.3	127.0	SE	1.3	83.0	E	1.0	29.0	NNE	2.0	66.0	ENE	0.0	-	-	0.6	55.0	NE
11:00 AM - 12:00 PM	0.3	22.0	NNE	0.9	25.0	NNE	2.1	83.0	E	1.3	78.0	ENE	3.9	41.0	NE	0.7	100.0	E	0.3	64.0	ENE

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Approved by

Sarayuth Jittrantont  
Assistant General Manager





## Analysis / Test Report

Client : Kaset Phol Sugar Co., Ltd.

9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

P/O :

Project Name : EIA Monitoring

Project Location :

Lot ID : 22142044

Date Received : Dec 29, 2022

Date Reported : Jan 07, 2023

Report Number : 2499352-1

Page 2 of 2

### Wind Rose



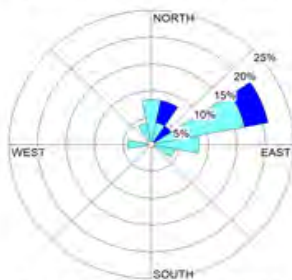
Date : Dec 20-21, 2022



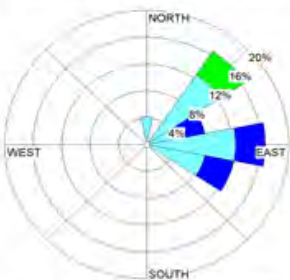
Date : Dec 21-22, 2022



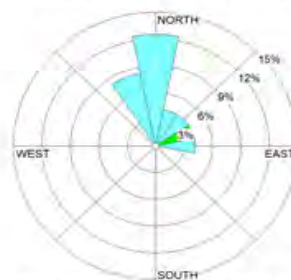
Date : Dec 22-23, 2022



Date : Dec 23-24, 2022



Date : Dec 24-25, 2022



Date : Dec 25-26, 2022



Date : Dec 26-27, 2022



Date : Dec 20-27, 2022

WS(m/s)	%
≥ 10.0	0.00
8.0-10.0	0.00
5.5-8.0	0.00
3.3-5.5	1.19
1.7-3.3	8.33
0.3-1.7	45.24
Calms	45.24

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Approved by

Sarayuth Jitranont  
Assistant General Manager

# ภาคผนวก ค-3

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ผลการตรวจวัดคุณภาพน้ำฝน



## Analysis / Test Report

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : EIA Monitoring

**Project Location** :

**Lot ID: 2276837**

Date Received : Jul 26, 2022

Date Reported : Jul 29, 2022

Report Number : 2351286-1

Page 1 of 4

<b>Sample Number</b>	2276837-1
<b>Sampled Date</b>	Jul 25, 2022 11:00 AM
<b>Sample Description</b>	น้ำฝน
<b>Location</b>	วัดสามัคคีวนาราม
<b>Date Analysis Commenced</b>	Jul 27, 2022
<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	Method	Testing Location
<b>Water Testing</b>						
Nitrate as N	mg/L	0.06	0.2	0.3	APHA (2017), 4110 B	Bangkok
pH at 25 degree C		-	-	7.5	Based on APHA (2017), 4500-H (B)	Bangkok
Sulfate	mg/L	0.15	0.5	<0.5	APHA (2017), 4110 B	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	Based on APHA (2017), 2540 D	Bangkok

**Sampled By** : Adisak Phomphai

Remark :

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

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Approved by

Siriluk P.

Siriluk Puengpang  
Supervisor

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## Analysis / Test Report

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : EIA Monitoring

**Project Location** :

**Lot ID: 2276837**

Date Received : Jul 26, 2022

Date Reported : Jul 29, 2022

Report Number : 2351286-1

Page 2 of 4

<b>Sample Number</b>	2276837-2
<b>Sampled Date</b>	Jul 25, 2022 11:20 AM
<b>Sample Description</b>	น้ำฝน
<b>Location</b>	โรงเรียนบ้านห้วยกองสี
<b>Date Analysis Commenced</b>	Jul 27, 2022
<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	Method	Testing Location
<b>Water Testing</b>						
Nitrate as N	mg/L	0.06	0.2	0.3	APHA (2017), 4110 B	Bangkok
pH at 25 degree C		-	-	7.6	Based on APHA (2017), 4500-H (B)	Bangkok
Sulfate	mg/L	0.15	0.5	<0.5	APHA (2017), 4110 B	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	Based on APHA (2017), 2540 D	Bangkok

**Sampled By** : Adisak Phomphai

Remark :

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

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Siriluk Puengpang  
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## Analysis / Test Report

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : EIA Monitoring

**Project Location** :

**Lot ID: 2276837**

Date Received : Jul 26, 2022

Date Reported : Jul 29, 2022

Report Number : 2351286-1

Page 3 of 4

<b>Sample Number</b>	2276837-3
<b>Sampled Date</b>	Jul 25, 2022 11:35 AM
<b>Sample Description</b>	น้ำฝน
<b>Location</b>	วัดสระแก้ว
<b>Date Analysis Commenced</b>	Jul 27, 2022
<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	Method	Testing Location
<b>Water Testing</b>						
Nitrate as N	mg/L	0.06	0.2	<0.2	APHA (2017), 4110 B	Bangkok
pH at 25 degree C		-	-	7.4	Based on APHA (2017), 4500-H (B)	Bangkok
Sulfate	mg/L	0.15	0.5	<0.5	APHA (2017), 4110 B	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	Based on APHA (2017), 2540 D	Bangkok

**Sampled By** : Adisak Phomphai

Remark :

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## Analysis / Test Report

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : EIA Monitoring

**Project Location** :

**Lot ID: 2276837**

Date Received : Jul 26, 2022

Date Reported : Jul 29, 2022

Report Number : 2351286-1

Page 4 of 4

<b>Sample Number</b>	2276837-4
<b>Sampled Date</b>	Jul 25, 2022 11:50 AM
<b>Sample Description</b>	น้ำฝน
<b>Location</b>	วัดสุราษฎร์
<b>Date Analysis Commenced</b>	Jul 27, 2022
<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	Method	Testing Location
<b>Water Testing</b>						
Nitrate as N	mg/L	0.06	0.2	1.1	APHA (2017), 4110 B	Bangkok
pH at 25 degree C		-	-	7.3	Based on APHA (2017), 4500-H (B)	Bangkok
Sulfate	mg/L	0.15	0.5	<0.5	APHA (2017), 4110 B	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	Based on APHA (2017), 2540 D	Bangkok

**Sampled By** : Adisak Phomphai

Remark :

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## Analysis / Test Report

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : EIA Monitoring

**Project Location** :

**Lot ID: 2287454**

Date Received : Aug 25, 2022

Date Reported : Aug 29, 2022

Report Number : 2377304-1

Page 1 of 4

<b>Sample Number</b>	2287454-1
<b>Sampled Date</b>	Aug 24, 2022 10:10 AM
<b>Sample Description</b>	น้ำฝน
<b>Location</b>	วัดสามัคคีวนาราม
<b>Date Analysis Commenced</b>	Aug 26, 2022
<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	Method	Testing Location
<b>Water Testing</b>						
Nitrate as N	mg/L	0.06	0.2	<0.2	APHA (2017), 4110 B	Bangkok
pH at 25 degree C		-	-	5.0	Based on APHA (2017), 4500-H (B)	Bangkok
Sulfate	mg/L	0.15	0.5	<0.5	APHA (2017), 4110 B	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	Based on APHA (2017), 2540 D	Bangkok

**Sampled By** : Adisak Phomphai

Remark :

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2287454**

Date Received : Aug 25, 2022

Date Reported : Aug 29, 2022

Report Number : 2377304-1

Page 2 of 4

<b>Sample Number</b>	2287454-2
<b>Sampled Date</b>	Aug 24, 2022 10:30 AM
<b>Sample Description</b>	น้ำฝน
<b>Location</b>	โรงเรียนบ้านห้วยกองสี
<b>Date Analysis Commenced</b>	Aug 26, 2022
<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	Method	Testing Location
<b>Water Testing</b>						
Nitrate as N	mg/L	0.06	0.2	1.1	APHA (2017), 4110 B	Bangkok
pH at 25 degree C		-	-	5.9	Based on APHA (2017), 4500-H (B)	Bangkok
Sulfate	mg/L	0.15	0.5	1.4	APHA (2017), 4110 B	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	Based on APHA (2017), 2540 D	Bangkok

**Sampled By :** Adisak Phomphai

Remark :

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## Analysis / Test Report

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : EIA Monitoring

**Project Location** :

**Lot ID: 2287454**

Date Received : Aug 25, 2022

Date Reported : Aug 29, 2022

Report Number : 2377304-1

Page 3 of 4

<b>Sample Number</b>	2287454-3
<b>Sampled Date</b>	Aug 24, 2022 10:50 AM
<b>Sample Description</b>	น้ำฝน
<b>Location</b>	วัดสระแก้ว
<b>Date Analysis Commenced</b>	Aug 26, 2022
<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	Method	Testing Location
<b>Water Testing</b>						
Nitrate as N	mg/L	0.06	0.2	<0.2	APHA (2017), 4110 B	Bangkok
pH at 25 degree C		-	-	8.0	Based on APHA (2017), 4500-H (B)	Bangkok
Sulfate	mg/L	0.15	0.5	<0.5	APHA (2017), 4110 B	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	Based on APHA (2017), 2540 D	Bangkok

**Sampled By** : Adisak Phomphai

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## Analysis / Test Report

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : EIA Monitoring

**Project Location** :

**Lot ID: 2287454**

Date Received : Aug 25, 2022

Date Reported : Aug 29, 2022

Report Number : 2377304-1

Page 4 of 4

<b>Sample Number</b>	2287454-4
<b>Sampled Date</b>	Aug 24, 2022 11:10 AM
<b>Sample Description</b>	น้ำฝน
<b>Location</b>	วัดสุราษฎร์
<b>Date Analysis Commenced</b>	Aug 26, 2022
<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	Method	Testing Location
<b>Water Testing</b>						
Nitrate as N	mg/L	0.06	0.2	<0.2	APHA (2017), 4110 B	Bangkok
pH at 25 degree C		-	-	5.0	Based on APHA (2017), 4500-H (B)	Bangkok
Sulfate	mg/L	0.15	0.5	<0.5	APHA (2017), 4110 B	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	Based on APHA (2017), 2540 D	Bangkok

**Sampled By** : Adisak Phomphai

Remark :

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## Analysis / Test Report

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : EIA Monitoring

**Project Location** :

**Lot ID: 22102052**

Date Received : Oct 01, 2022

Date Reported : Oct 05, 2022

Report Number : 2408144-1

Page 1 of 4

<b>Sample Number</b>	22102052-1
<b>Sampled Date</b>	Sep 30, 2022 1:50 PM
<b>Sample Description</b>	น้ำฝน
<b>Location</b>	วัดสามัคคีวนาราม
<b>Date Analysis Commenced</b>	Oct 03, 2022
<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	Method	Testing Location
<b>Water Testing</b>						
Nitrate as N	mg/L	0.06	0.2	<0.2	APHA (2017), 4110 B	Bangkok
pH at 25 degree C		-	-	6.7	Based on APHA (2017), 4500-H (B)	Bangkok
Sulfate	mg/L	0.15	0.5	<0.5	APHA (2017), 4110 B	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	Based on APHA (2017), 2540 D	Bangkok

**Sampled By** : Adisak Phomphai

Remark :

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## Analysis / Test Report

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : EIA Monitoring

**Project Location** :

**Lot ID: 22102052**

Date Received : Oct 01, 2022

Date Reported : Oct 05, 2022

Report Number : 2408144-1

Page 2 of 4

<b>Sample Number</b>	22102052-2
<b>Sampled Date</b>	Sep 30, 2022 2:10 PM
<b>Sample Description</b>	น้ำฝน
<b>Location</b>	โรงเรียนบ้านห้วยกองสี
<b>Date Analysis Commenced</b>	Oct 03, 2022
<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	Method	Testing Location
<b>Water Testing</b>						
Nitrate as N	mg/L	0.06	0.2	0.8	APHA (2017), 4110 B	Bangkok
pH at 25 degree C		-	-	7.2	Based on APHA (2017), 4500-H (B)	Bangkok
Sulfate	mg/L	0.15	0.5	16.6	APHA (2017), 4110 B	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	Based on APHA (2017), 2540 D	Bangkok

**Sampled By** : Adisak Phomphai

Remark :

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## Analysis / Test Report

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : EIA Monitoring

**Project Location** :

**Lot ID: 22102052**

Date Received : Oct 01, 2022

Date Reported : Oct 05, 2022

Report Number : 2408144-1

Page 3 of 4

<b>Sample Number</b>	22102052-3
<b>Sampled Date</b>	Sep 30, 2022 1:00 PM
<b>Sample Description</b>	น้ำฝน
<b>Location</b>	วัดสระแก้ว
<b>Date Analysis Commenced</b>	Oct 03, 2022
<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	Method	Testing Location
<b>Water Testing</b>						
Nitrate as N	mg/L	0.06	0.2	<0.2	APHA (2017), 4110 B	Bangkok
pH at 25 degree C		-	-	6.9	Based on APHA (2017), 4500-H (B)	Bangkok
Sulfate	mg/L	0.15	0.5	<0.5	APHA (2017), 4110 B	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	Based on APHA (2017), 2540 D	Bangkok

**Sampled By** : Adisak Phomphai

Remark :

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## Analysis / Test Report

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : EIA Monitoring

**Project Location** :

**Lot ID: 22102052**

Date Received : Oct 01, 2022

Date Reported : Oct 05, 2022

Report Number : 2408144-1

Page 4 of 4

<b>Sample Number</b>	22102052-4
<b>Sampled Date</b>	Sep 30, 2022 1:30 PM
<b>Sample Description</b>	น้ำฝน
<b>Location</b>	วัดสุราษฎร์
<b>Date Analysis Commenced</b>	Oct 03, 2022
<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	Method	Testing Location
<b>Water Testing</b>						
Nitrate as N	mg/L	0.06	0.2	<0.2	APHA (2017), 4110 B	Bangkok
pH at 25 degree C		-	-	6.3	Based on APHA (2017), 4500-H (B)	Bangkok
Sulfate	mg/L	0.15	0.5	<0.5	APHA (2017), 4110 B	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	Based on APHA (2017), 2540 D	Bangkok

**Sampled By** : Adisak Phomphai

Remark :

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# ภาคผนวก ค-4

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ผลการตรวจวัดคุณภาพกลิ่น



## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142089**

Date Received : Dec 29, 2022

Date Reported : Jan 11, 2023

Report Number: 2499723-1

Page 1 of 1

<b>Sample Description</b>	Air Quality
<b>Location</b>	ภายนอกตึกอาคารล้อมรอบลานกองกากอ้อยในแนวทิศทางลมพัดผ่านใต้ลม ( GPS 48Q 278881, 1888402)
<b>Parameter</b>	Hydrogen Sulfide (ug/m3)
<b>Measurement Date</b>	Dec 21, 2022 - Dec 22, 2022
<b>Measurement by</b>	Jatsarawut Pattama

	22142089-1	-	-	-	-	-	-
Time	Dec 21, 2022	-	-	-	-	-	-
10:00 AM - 11:00 AM	1.8	-	-	-	-	-	-
11:00 AM - 12:00 PM	2.0	-	-	-	-	-	-
12:00 PM - 01:00 PM	1.7	-	-	-	-	-	-
01:00 PM - 02:00 PM	2.0	-	-	-	-	-	-
02:00 PM - 03:00 PM	1.1	-	-	-	-	-	-
03:00 PM - 04:00 PM	1.1	-	-	-	-	-	-
04:00 PM - 05:00 PM	1.5	-	-	-	-	-	-
05:00 PM - 06:00 PM	3.1	-	-	-	-	-	-
06:00 PM - 07:00 PM	7.4	-	-	-	-	-	-
07:00 PM - 08:00 PM	15.3	-	-	-	-	-	-
08:00 PM - 09:00 PM	3.2	-	-	-	-	-	-
09:00 PM - 10:00 PM	0.6	-	-	-	-	-	-
10:00 PM - 11:00 PM	0.8	-	-	-	-	-	-
11:00 PM - 12:00 AM	0.4	-	-	-	-	-	-
12:00 AM - 01:00 AM	0.3	-	-	-	-	-	-
01:00 AM - 02:00 AM	0.3	-	-	-	-	-	-
02:00 AM - 03:00 AM	0.4	-	-	-	-	-	-
03:00 AM - 04:00 AM	18.4	-	-	-	-	-	-
04:00 AM - 05:00 AM	8.4	-	-	-	-	-	-
05:00 AM - 06:00 AM	19.1	-	-	-	-	-	-
06:00 AM - 07:00 AM	16.9	-	-	-	-	-	-
07:00 AM - 08:00 AM	22.9	-	-	-	-	-	-
08:00 AM - 09:00 AM	0.4	-	-	-	-	-	-
09:00 AM - 10:00 AM	1.1	-	-	-	-	-	-
Average	5.4	-	-	-	-	-	-
1hr - Maximum	22.9	-	-	-	-	-	-
Standard 1hr - Average	180	-	-	-	-	-	-

Standard : The Arizona Department of Environmental Quality Air Programs Division Dated May 11, B.E. 2542 (1999)

Reference Method :

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Approved by

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

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# ภาคผนวก ค-5

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ผลการตรวจวัดระดับเสียงทั่วไป



## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142046**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537013-1

Page 1 of 1

**Sample Number** 22142046-1  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
**Measurement Date** Dec 20 - Dec 21, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 1122504

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:00 PM - 04:00 PM	51.4	82.0	46.4
04:00 PM - 05:00 PM	53.5	78.0	46.9
05:00 PM - 06:00 PM	54.0	76.5	49.4
06:00 PM - 07:00 PM	53.2	69.7	50.6
07:00 PM - 08:00 PM	53.3	65.7	50.9
08:00 PM - 09:00 PM	51.4	74.0	47.8
09:00 PM - 10:00 PM	49.5	65.2	46.6
10:00 PM - 11:00 PM	50.6	64.8	47.4
11:00 PM - 12:00 AM	50.4	67.3	46.4
12:00 AM - 01:00 AM	51.0	79.6	46.3
01:00 AM - 02:00 AM	51.6	63.5	47.8
02:00 AM - 03:00 AM	52.1	67.1	48.5
03:00 AM - 04:00 AM	51.6	76.5	48.9
04:00 AM - 05:00 AM	50.5	72.9	44.7
05:00 AM - 06:00 AM	49.8	67.1	45.0
06:00 AM - 07:00 AM	49.7	70.1	46.2
07:00 AM - 08:00 AM	49.9	69.2	45.9
08:00 AM - 09:00 AM	51.0	76.6	46.3
09:00 AM - 10:00 AM	52.4	70.1	48.5
10:00 AM - 11:00 AM	52.3	72.5	47.8
11:00 AM - 12:00 PM	54.1	76.8	48.1
12:00 PM - 01:00 PM	54.3	75.4	48.1
01:00 PM - 02:00 PM	53.8	71.1	49.4
02:00 PM - 03:00 PM	55.5	74.6	49.5

Leq Average 24 hrs. (dB(A)) 52.3  
Lmax (dB(A)) 82.0  
L90 (dB(A)) 47.8  
Ldn (dB(A)) 57.7  
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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142046**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537014-1

Page 1 of 1

**Sample Number** 22142046-2  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
**Measurement Date** Dec 21 - Dec 22, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 1122504

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:00 PM - 04:00 PM	55.2	74.0	49.7
04:00 PM - 05:00 PM	54.9	72.3	50.4
05:00 PM - 06:00 PM	54.4	73.2	50.2
06:00 PM - 07:00 PM	55.5	68.8	53.1
07:00 PM - 08:00 PM	59.5	68.8	57.1
08:00 PM - 09:00 PM	57.6	71.5	54.6
09:00 PM - 10:00 PM	52.2	64.7	48.9
10:00 PM - 11:00 PM	50.4	67.1	46.9
11:00 PM - 12:00 AM	53.6	66.0	51.3
12:00 AM - 01:00 AM	52.0	62.0	49.6
01:00 AM - 02:00 AM	52.1	66.3	49.8
02:00 AM - 03:00 AM	52.2	56.8	50.4
03:00 AM - 04:00 AM	51.7	58.7	49.6
04:00 AM - 05:00 AM	52.4	64.3	50.1
05:00 AM - 06:00 AM	55.4	67.4	53.0
06:00 AM - 07:00 AM	54.3	71.4	51.6
07:00 AM - 08:00 AM	53.2	77.2	49.0
08:00 AM - 09:00 AM	50.4	69.3	46.0
09:00 AM - 10:00 AM	49.1	69.3	45.5
10:00 AM - 11:00 AM	48.2	66.3	44.9
11:00 AM - 12:00 PM	49.0	74.4	45.2
12:00 PM - 01:00 PM	50.7	75.7	44.7
01:00 PM - 02:00 PM	50.0	66.7	45.1
02:00 PM - 03:00 PM	50.1	71.5	46.3

Leq Average 24 hrs. (dB(A)) 53.6  
Lmax (dB(A)) 77.2  
L90 (dB(A)) 49.6  
Ldn (dB(A)) 59.5

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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142046**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537015-1

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**Sample Number** 22142046-3  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
**Measurement Date** Dec 22 - Dec 23, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 1122504

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:00 PM - 04:00 PM	50.1	69.4	45.9
04:00 PM - 05:00 PM	51.4	76.8	46.6
05:00 PM - 06:00 PM	52.3	71.2	48.6
06:00 PM - 07:00 PM	57.3	75.2	52.6
07:00 PM - 08:00 PM	54.1	71.0	50.8
08:00 PM - 09:00 PM	52.7	63.6	49.8
09:00 PM - 10:00 PM	51.3	65.1	47.8
10:00 PM - 11:00 PM	56.2	79.9	47.9
11:00 PM - 12:00 AM	51.7	64.6	46.8
12:00 AM - 01:00 AM	55.1	80.2	46.5
01:00 AM - 02:00 AM	47.8	65.2	43.4
02:00 AM - 03:00 AM	53.4	71.8	44.4
03:00 AM - 04:00 AM	51.9	66.8	46.1
04:00 AM - 05:00 AM	51.9	74.5	44.4
05:00 AM - 06:00 AM	50.3	64.9	46.1
06:00 AM - 07:00 AM	57.6	76.0	51.8
07:00 AM - 08:00 AM	55.9	77.0	50.5
08:00 AM - 09:00 AM	55.4	72.2	48.6
09:00 AM - 10:00 AM	56.2	72.7	49.8
10:00 AM - 11:00 AM	58.3	72.9	53.3
11:00 AM - 12:00 PM	58.0	73.1	52.8
12:00 PM - 01:00 PM	59.2	74.8	54.5
01:00 PM - 02:00 PM	56.9	71.2	51.8
02:00 PM - 03:00 PM	55.0	71.9	49.8

Leq Average 24 hrs. (dB(A)) 55.1  
Lmax (dB(A)) 80.2  
L90 (dB(A)) 48.6  
Ldn (dB(A)) 60.5  
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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142046**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537016-1

Page 1 of 1

**Sample Number** 22142046-4  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
**Measurement Date** Dec 23 - Dec 24, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 1122504

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:00 PM - 04:00 PM	51.5	70.6	46.2
04:00 PM - 05:00 PM	53.9	71.5	48.2
05:00 PM - 06:00 PM	59.0	78.0	53.3
06:00 PM - 07:00 PM	59.2	74.2	53.6
07:00 PM - 08:00 PM	60.0	75.0	54.0
08:00 PM - 09:00 PM	60.2	75.3	55.9
09:00 PM - 10:00 PM	57.5	72.3	52.8
10:00 PM - 11:00 PM	58.4	78.3	52.3
11:00 PM - 12:00 AM	54.0	78.2	46.5
12:00 AM - 01:00 AM	50.5	62.8	46.4
01:00 AM - 02:00 AM	51.7	65.3	48.7
02:00 AM - 03:00 AM	55.8	76.7	50.4
03:00 AM - 04:00 AM	52.2	63.9	49.8
04:00 AM - 05:00 AM	52.1	67.9	50.0
05:00 AM - 06:00 AM	53.6	65.9	51.0
06:00 AM - 07:00 AM	57.3	70.3	53.9
07:00 AM - 08:00 AM	55.8	78.8	51.6
08:00 AM - 09:00 AM	51.6	71.9	48.2
09:00 AM - 10:00 AM	52.5	69.3	49.9
10:00 AM - 11:00 AM	52.7	68.8	49.7
11:00 AM - 12:00 PM	51.5	67.7	48.9
12:00 PM - 01:00 PM	51.9	79.6	48.5
01:00 PM - 02:00 PM	52.4	69.5	48.8
02:00 PM - 03:00 PM	52.5	71.9	49.5

Leq Average 24 hrs. (dB(A)) 55.7  
Lmax (dB(A)) 79.6  
L90 (dB(A)) 49.8  
Ldn (dB(A)) 61.4  
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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142046**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537017-1

Page 1 of 1

**Sample Number** 22142046-5  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
**Measurement Date** Dec 24 - Dec 25, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 1122504

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:00 PM - 04:00 PM	52.2	70.6	48.5
04:00 PM - 05:00 PM	51.9	74.1	48.5
05:00 PM - 06:00 PM	52.0	63.8	49.7
06:00 PM - 07:00 PM	57.3	76.2	52.9
07:00 PM - 08:00 PM	54.7	73.4	50.9
08:00 PM - 09:00 PM	53.6	79.9	46.1
09:00 PM - 10:00 PM	50.7	70.0	45.3
10:00 PM - 11:00 PM	49.3	64.7	45.8
11:00 PM - 12:00 AM	49.8	68.6	43.9
12:00 AM - 01:00 AM	48.4	64.1	42.6
01:00 AM - 02:00 AM	46.9	58.0	42.1
02:00 AM - 03:00 AM	49.4	69.2	43.8
03:00 AM - 04:00 AM	47.4	59.6	44.7
04:00 AM - 05:00 AM	51.9	74.0	45.8
05:00 AM - 06:00 AM	49.1	60.1	46.2
06:00 AM - 07:00 AM	65.7	95.3	54.0
07:00 AM - 08:00 AM	56.6	77.6	52.0
08:00 AM - 09:00 AM	57.0	79.5	48.3
09:00 AM - 10:00 AM	55.9	75.5	48.7
10:00 AM - 11:00 AM	56.6	79.4	48.5
11:00 AM - 12:00 PM	55.0	85.3	48.1
12:00 PM - 01:00 PM	54.9	75.9	47.9
01:00 PM - 02:00 PM	53.9	75.7	48.1
02:00 PM - 03:00 PM	55.6	75.2	48.8

Leq Average 24 hrs. (dB(A)) 55.8  
Lmax (dB(A)) 95.3  
L90 (dB(A)) 48.1  
Ldn (dB(A)) 63.1  
Standard (dB(A)) 70

Reference Method : ISO1996-1 and 1996-2

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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142046**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537018-1

Page 1 of 1

**Sample Number** 22142046-6  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
**Measurement Date** Dec 25 - Dec 26, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 1122504

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:00 PM - 04:00 PM	53.4	68.7	48.1
04:00 PM - 05:00 PM	57.1	78.0	49.5
05:00 PM - 06:00 PM	54.9	75.6	50.5
06:00 PM - 07:00 PM	57.1	74.8	53.4
07:00 PM - 08:00 PM	53.7	69.0	51.5
08:00 PM - 09:00 PM	54.6	69.5	52.0
09:00 PM - 10:00 PM	54.4	70.5	50.8
10:00 PM - 11:00 PM	54.4	68.7	50.7
11:00 PM - 12:00 AM	57.1	83.2	49.9
12:00 AM - 01:00 AM	54.9	76.6	50.4
01:00 AM - 02:00 AM	52.5	62.4	49.9
02:00 AM - 03:00 AM	55.7	80.5	49.9
03:00 AM - 04:00 AM	51.6	60.9	48.8
04:00 AM - 05:00 AM	53.3	62.1	50.4
05:00 AM - 06:00 AM	54.7	66.6	52.0
06:00 AM - 07:00 AM	60.5	88.7	55.4
07:00 AM - 08:00 AM	57.0	80.4	53.2
08:00 AM - 09:00 AM	54.5	84.2	49.1
09:00 AM - 10:00 AM	53.0	72.4	49.4
10:00 AM - 11:00 AM	52.9	73.4	49.6
11:00 AM - 12:00 PM	53.5	74.3	49.3
12:00 PM - 01:00 PM	52.1	72.7	48.4
01:00 PM - 02:00 PM	53.8	75.4	49.2
02:00 PM - 03:00 PM	54.4	72.3	50.4

Leq Average 24 hrs. (dB(A)) 55.1  
Lmax (dB(A)) 88.7  
L90 (dB(A)) 49.9  
Ldn (dB(A)) 62.1  
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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142046**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537019-1

Page 1 of 1

**Sample Number** 22142046-7  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
**Measurement Date** Dec 26 - Dec 27, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 1122504

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:00 PM - 04:00 PM	53.6	71.9	49.2
04:00 PM - 05:00 PM	55.0	77.7	51.0
05:00 PM - 06:00 PM	55.4	80.3	51.6
06:00 PM - 07:00 PM	58.4	76.4	54.0
07:00 PM - 08:00 PM	57.2	76.1	53.3
08:00 PM - 09:00 PM	56.2	75.5	51.6
09:00 PM - 10:00 PM	56.0	75.1	51.9
10:00 PM - 11:00 PM	53.3	67.6	51.2
11:00 PM - 12:00 AM	55.3	69.4	52.4
12:00 AM - 01:00 AM	53.5	70.8	49.2
01:00 AM - 02:00 AM	52.3	65.4	48.9
02:00 AM - 03:00 AM	54.2	67.3	51.1
03:00 AM - 04:00 AM	53.8	63.3	51.3
04:00 AM - 05:00 AM	53.9	63.4	51.5
05:00 AM - 06:00 AM	54.3	69.0	52.0
06:00 AM - 07:00 AM	59.4	76.7	56.0
07:00 AM - 08:00 AM	58.2	78.4	54.2
08:00 AM - 09:00 AM	52.2	68.1	48.5
09:00 AM - 10:00 AM	51.9	72.5	47.6
10:00 AM - 11:00 AM	52.4	76.0	47.9
11:00 AM - 12:00 PM	53.3	79.8	47.4
12:00 PM - 01:00 PM	52.1	71.7	47.8
01:00 PM - 02:00 PM	54.6	73.8	50.5
02:00 PM - 03:00 PM	56.7	80.3	51.4

Leq Average 24 hrs. (dB(A)) 55.3  
Lmax (dB(A)) 80.3  
L90 (dB(A)) 51.2  
Ldn (dB(A)) 61.4  
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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142049**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537021-1

Page 1 of 1

**Sample Number** 22142049-1  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
**Measurement Date** Dec 20 - Dec 21, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 858518

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
04:00 PM - 05:00 PM	54.1	74.3	52.6
05:00 PM - 06:00 PM	55.4	72.0	53.3
06:00 PM - 07:00 PM	57.3	71.0	55.6
07:00 PM - 08:00 PM	58.1	76.9	56.3
08:00 PM - 09:00 PM	58.0	70.1	56.4
09:00 PM - 10:00 PM	57.3	67.3	56.3
10:00 PM - 11:00 PM	56.3	69.7	55.2
11:00 PM - 12:00 AM	57.0	72.7	56.0
12:00 AM - 01:00 AM	58.7	72.3	57.7
01:00 AM - 02:00 AM	58.2	69.8	57.0
02:00 AM - 03:00 AM	56.1	68.2	54.8
03:00 AM - 04:00 AM	58.3	71.3	57.1
04:00 AM - 05:00 AM	59.2	69.3	58.3
05:00 AM - 06:00 AM	57.8	76.4	56.7
06:00 AM - 07:00 AM	56.9	70.4	55.3
07:00 AM - 08:00 AM	56.6	75.5	54.4
08:00 AM - 09:00 AM	55.5	70.7	53.0
09:00 AM - 10:00 AM	53.2	66.8	49.7
10:00 AM - 11:00 AM	58.5	71.3	54.5
11:00 AM - 12:00 PM	51.7	74.9	47.9
12:00 PM - 01:00 PM	50.8	81.0	47.8
01:00 PM - 02:00 PM	50.0	67.6	47.9
02:00 PM - 03:00 PM	52.2	83.1	48.8
03:00 PM - 04:00 PM	51.0	68.1	48.3

Leq Average 24 hrs. (dB(A)) 56.5  
Lmax (dB(A)) 83.1  
L90 (dB(A)) 54.8  
Ldn (dB(A)) 63.9  
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

**Technical Management**

*Saranya C.*

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Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142049**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537022-1

Page 1 of 1

**Sample Number** 22142049-2  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
**Measurement Date** Dec 21 - Dec 22, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 858518

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
04:00 PM - 05:00 PM	50.9	65.8	48.4
05:00 PM - 06:00 PM	50.5	68.1	49.0
06:00 PM - 07:00 PM	52.4	74.1	50.8
07:00 PM - 08:00 PM	54.7	69.6	51.2
08:00 PM - 09:00 PM	52.8	69.8	50.4
09:00 PM - 10:00 PM	54.0	67.4	49.8
10:00 PM - 11:00 PM	49.4	62.3	48.1
11:00 PM - 12:00 AM	50.0	60.4	48.8
12:00 AM - 01:00 AM	53.1	68.7	51.5
01:00 AM - 02:00 AM	53.5	68.4	52.6
02:00 AM - 03:00 AM	53.5	71.2	52.0
03:00 AM - 04:00 AM	53.4	67.9	51.8
04:00 AM - 05:00 AM	54.6	69.7	53.4
05:00 AM - 06:00 AM	54.6	68.0	53.5
06:00 AM - 07:00 AM	53.8	74.8	52.5
07:00 AM - 08:00 AM	53.3	78.1	51.7
08:00 AM - 09:00 AM	53.4	73.1	51.6
09:00 AM - 10:00 AM	49.8	58.5	48.4
10:00 AM - 11:00 AM	51.2	72.3	48.0
11:00 AM - 12:00 PM	50.9	73.5	48.2
12:00 PM - 01:00 PM	51.9	73.5	49.3
01:00 PM - 02:00 PM	52.4	75.3	49.7
02:00 PM - 03:00 PM	51.1	66.8	48.4
03:00 PM - 04:00 PM	51.2	67.9	49.3

Leq Average 24 hrs. (dB(A)) 52.6  
Lmax (dB(A)) 78.1  
L90 (dB(A)) 49.8  
Ldn (dB(A)) 59.5

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142049**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537023-1

Page 1 of 1

**Sample Number** 22142049-3  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
**Measurement Date** Dec 22 - Dec 23, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 858518

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
04:00 PM - 05:00 PM	50.4	63.4	48.5
05:00 PM - 06:00 PM	50.7	68.1	48.5
06:00 PM - 07:00 PM	55.1	78.8	52.8
07:00 PM - 08:00 PM	54.7	68.0	53.6
08:00 PM - 09:00 PM	55.7	70.6	53.8
09:00 PM - 10:00 PM	55.3	67.1	54.0
10:00 PM - 11:00 PM	55.4	68.8	53.9
11:00 PM - 12:00 AM	55.9	64.2	54.3
12:00 AM - 01:00 AM	55.8	75.3	54.0
01:00 AM - 02:00 AM	53.5	74.7	51.4
02:00 AM - 03:00 AM	53.1	62.2	51.4
03:00 AM - 04:00 AM	54.3	75.0	51.7
04:00 AM - 05:00 AM	54.4	68.0	52.5
05:00 AM - 06:00 AM	51.7	71.5	49.9
06:00 AM - 07:00 AM	52.2	68.2	50.4
07:00 AM - 08:00 AM	51.8	73.6	50.2
08:00 AM - 09:00 AM	50.5	72.0	48.4
09:00 AM - 10:00 AM	49.5	71.6	46.5
10:00 AM - 11:00 AM	50.6	62.6	49.0
11:00 AM - 12:00 PM	52.2	73.5	50.3
12:00 PM - 01:00 PM	52.6	73.2	50.8
01:00 PM - 02:00 PM	54.1	73.8	51.6
02:00 PM - 03:00 PM	53.8	73.9	51.4
03:00 PM - 04:00 PM	52.9	73.3	50.4

Leq Average 24 hrs. (dB(A)) 53.6  
Lmax (dB(A)) 78.8  
L90 (dB(A)) 51.4  
Ldn (dB(A)) 60.5

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

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Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142049**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537024-1

Page 1 of 1

**Sample Number** 22142049-4  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
**Measurement Date** Dec 23 - Dec 24, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 858518

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
04:00 PM - 05:00 PM	53.0	68.1	51.1
05:00 PM - 06:00 PM	54.1	67.8	51.9
06:00 PM - 07:00 PM	53.2	65.5	51.9
07:00 PM - 08:00 PM	53.6	68.6	51.7
08:00 PM - 09:00 PM	54.8	70.5	52.7
09:00 PM - 10:00 PM	52.8	67.9	51.3
10:00 PM - 11:00 PM	53.1	67.4	51.5
11:00 PM - 12:00 AM	54.6	68.9	52.7
12:00 AM - 01:00 AM	52.5	63.8	51.4
01:00 AM - 02:00 AM	55.7	72.7	53.8
02:00 AM - 03:00 AM	57.3	71.3	55.1
03:00 AM - 04:00 AM	55.6	70.6	54.4
04:00 AM - 05:00 AM	57.5	77.2	54.5
05:00 AM - 06:00 AM	55.9	68.6	54.7
06:00 AM - 07:00 AM	56.2	68.3	53.7
07:00 AM - 08:00 AM	55.3	72.9	53.4
08:00 AM - 09:00 AM	54.3	69.3	51.7
09:00 AM - 10:00 AM	51.3	68.8	49.3
10:00 AM - 11:00 AM	52.1	82.9	49.1
11:00 AM - 12:00 PM	52.2	68.5	50.2
12:00 PM - 01:00 PM	53.2	65.7	51.1
01:00 PM - 02:00 PM	53.4	64.8	51.3
02:00 PM - 03:00 PM	53.1	72.9	51.1
03:00 PM - 04:00 PM	53.5	68.0	51.1

Leq Average 24 hrs. (dB(A)) 54.4  
Lmax (dB(A)) 82.9  
L90 (dB(A)) 51.7  
Ldn (dB(A)) 61.8  
Standard (dB(A)) 70

Reference Method : ISO1996-1 and 1996-2

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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142049**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537025-1

Page 1 of 1

**Sample Number** 22142049-5  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
**Measurement Date** Dec 24 - Dec 25, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 858518

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
04:00 PM - 05:00 PM	54.0	69.3	51.8
05:00 PM - 06:00 PM	54.7	75.6	52.6
06:00 PM - 07:00 PM	55.5	84.7	53.4
07:00 PM - 08:00 PM	53.6	69.9	51.6
08:00 PM - 09:00 PM	53.1	62.9	50.3
09:00 PM - 10:00 PM	49.8	70.4	47.0
10:00 PM - 11:00 PM	49.8	68.8	46.8
11:00 PM - 12:00 AM	47.5	65.8	45.6
12:00 AM - 01:00 AM	48.1	60.8	45.4
01:00 AM - 02:00 AM	49.7	72.2	47.2
02:00 AM - 03:00 AM	50.0	70.1	47.4
03:00 AM - 04:00 AM	51.3	64.4	49.0
04:00 AM - 05:00 AM	51.1	65.0	49.8
05:00 AM - 06:00 AM	53.5	75.3	51.6
06:00 AM - 07:00 AM	52.4	66.2	50.8
07:00 AM - 08:00 AM	52.7	66.3	50.5
08:00 AM - 09:00 AM	51.9	73.2	48.3
09:00 AM - 10:00 AM	52.1	70.9	50.1
10:00 AM - 11:00 AM	53.1	67.1	50.7
11:00 AM - 12:00 PM	52.5	70.9	50.0
12:00 PM - 01:00 PM	53.4	70.1	50.5
01:00 PM - 02:00 PM	54.8	72.1	52.5
02:00 PM - 03:00 PM	54.2	69.6	52.3
03:00 PM - 04:00 PM	53.7	72.5	51.7

Leq Average 24 hrs. (dB(A)) 52.6  
Lmax (dB(A)) 84.7  
L90 (dB(A)) 50.3  
Ldn (dB(A)) 57.7  
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
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**Approved by**

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Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142049**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537026-1

Page 1 of 1

**Sample Number** 22142049-6  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
**Measurement Date** Dec 25 - Dec 26, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 858518

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
04:00 PM - 05:00 PM	54.4	78.0	52.3
05:00 PM - 06:00 PM	54.0	73.1	52.4
06:00 PM - 07:00 PM	54.6	67.3	53.2
07:00 PM - 08:00 PM	55.9	79.9	54.6
08:00 PM - 09:00 PM	56.7	75.5	55.5
09:00 PM - 10:00 PM	57.2	76.1	55.5
10:00 PM - 11:00 PM	55.4	69.7	54.0
11:00 PM - 12:00 AM	56.9	73.3	55.2
12:00 AM - 01:00 AM	57.1	71.4	55.6
01:00 AM - 02:00 AM	57.5	69.5	56.4
02:00 AM - 03:00 AM	58.4	74.2	57.0
03:00 AM - 04:00 AM	58.6	69.0	57.6
04:00 AM - 05:00 AM	58.8	75.2	57.7
05:00 AM - 06:00 AM	58.4	73.3	57.2
06:00 AM - 07:00 AM	57.6	70.2	55.2
07:00 AM - 08:00 AM	55.0	69.5	53.7
08:00 AM - 09:00 AM	54.1	69.0	52.0
09:00 AM - 10:00 AM	53.9	69.6	51.8
10:00 AM - 11:00 AM	53.2	66.2	51.4
11:00 AM - 12:00 PM	53.5	76.7	51.0
12:00 PM - 01:00 PM	52.0	70.3	49.8
01:00 PM - 02:00 PM	52.8	68.6	50.6
02:00 PM - 03:00 PM	53.4	74.4	50.4
03:00 PM - 04:00 PM	53.0	73.0	51.1

Leq Average 24 hrs. (dB(A)) 56.0  
Lmax (dB(A)) 79.9  
L90 (dB(A)) 53.7  
Ldn (dB(A)) 63.8  
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
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**Approved by**

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Supot Salamteh  
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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142049**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537027-1

Page 1 of 1

**Sample Number** 22142049-7  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
**Measurement Date** Dec 26 - Dec 27, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 858518

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
04:00 PM - 05:00 PM	53.9	70.2	51.3
05:00 PM - 06:00 PM	53.3	75.9	51.6
06:00 PM - 07:00 PM	54.8	70.3	53.1
07:00 PM - 08:00 PM	55.5	81.0	53.6
08:00 PM - 09:00 PM	58.9	70.1	56.6
09:00 PM - 10:00 PM	58.3	73.3	56.7
10:00 PM - 11:00 PM	58.3	73.3	56.5
11:00 PM - 12:00 AM	57.6	72.9	56.2
12:00 AM - 01:00 AM	55.0	70.3	53.8
01:00 AM - 02:00 AM	54.4	71.7	52.7
02:00 AM - 03:00 AM	57.7	75.6	55.8
03:00 AM - 04:00 AM	61.4	73.2	57.8
04:00 AM - 05:00 AM	55.8	64.0	54.8
05:00 AM - 06:00 AM	55.8	78.5	54.3
06:00 AM - 07:00 AM	55.0	67.1	53.9
07:00 AM - 08:00 AM	60.3	68.8	57.9
08:00 AM - 09:00 AM	57.2	70.0	54.2
09:00 AM - 10:00 AM	53.6	78.3	51.0
10:00 AM - 11:00 AM	54.0	81.6	51.7
11:00 AM - 12:00 PM	52.8	72.1	50.6
12:00 PM - 01:00 PM	53.7	76.3	50.5
01:00 PM - 02:00 PM	51.5	74.6	48.9
02:00 PM - 03:00 PM	51.3	82.1	47.9
03:00 PM - 04:00 PM	50.6	66.1	48.1

Leq Average 24 hrs. (dB(A)) 56.3  
Lmax (dB(A)) 82.1  
L90 (dB(A)) 53.6  
Ldn (dB(A)) 63.6  
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142050**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537038-1

Page 1 of 1

**Sample Number** 22142050-1  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
**Measurement Date** Dec 20 - Dec 21, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 610204

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:00 PM - 04:00 PM	63.4	81.3	56.6
04:00 PM - 05:00 PM	63.4	89.5	56.3
05:00 PM - 06:00 PM	62.1	77.6	57.5
06:00 PM - 07:00 PM	63.6	96.0	56.6
07:00 PM - 08:00 PM	63.1	79.4	57.5
08:00 PM - 09:00 PM	63.4	87.8	56.8
09:00 PM - 10:00 PM	61.8	88.8	55.6
10:00 PM - 11:00 PM	59.0	76.2	53.7
11:00 PM - 12:00 AM	62.2	87.9	52.7
12:00 AM - 01:00 AM	65.2	83.5	55.1
01:00 AM - 02:00 AM	64.3	83.6	53.0
02:00 AM - 03:00 AM	59.6	81.5	51.5
03:00 AM - 04:00 AM	60.6	80.5	52.0
04:00 AM - 05:00 AM	66.1	87.0	55.5
05:00 AM - 06:00 AM	61.3	85.0	54.1
06:00 AM - 07:00 AM	62.6	86.2	56.4
07:00 AM - 08:00 AM	64.2	84.5	56.9
08:00 AM - 09:00 AM	65.0	83.9	56.2
09:00 AM - 10:00 AM	65.6	85.1	55.3
10:00 AM - 11:00 AM	63.6	90.8	54.9
11:00 AM - 12:00 PM	64.3	85.9	55.5
12:00 PM - 01:00 PM	65.7	86.6	56.2
01:00 PM - 02:00 PM	62.9	86.0	55.0
02:00 PM - 03:00 PM	65.8	88.3	55.8

Leq Average 24 hrs. (dB(A)) 63.7  
Lmax (dB(A)) 96.0  
L90 (dB(A)) 55.5  
Ldn (dB(A)) 69.5

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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142050**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537039-1

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**Sample Number** 22142050-2  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
**Measurement Date** Dec 21 - Dec 22, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 610204

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:00 PM - 04:00 PM	65.5	89.2	55.4
04:00 PM - 05:00 PM	64.6	85.7	55.8
05:00 PM - 06:00 PM	62.4	81.0	56.3
06:00 PM - 07:00 PM	61.7	79.5	55.5
07:00 PM - 08:00 PM	64.4	83.5	54.4
08:00 PM - 09:00 PM	63.2	89.4	54.6
09:00 PM - 10:00 PM	64.3	82.8	53.4
10:00 PM - 11:00 PM	63.9	91.6	49.5
11:00 PM - 12:00 AM	64.2	83.7	50.0
12:00 AM - 01:00 AM	60.3	78.1	50.2
01:00 AM - 02:00 AM	56.1	70.9	49.6
02:00 AM - 03:00 AM	56.2	72.0	48.6
03:00 AM - 04:00 AM	57.6	80.2	49.1
04:00 AM - 05:00 AM	59.3	80.7	50.4
05:00 AM - 06:00 AM	60.7	78.2	52.3
06:00 AM - 07:00 AM	61.9	84.0	54.9
07:00 AM - 08:00 AM	61.2	77.9	56.4
08:00 AM - 09:00 AM	63.5	93.3	56.1
09:00 AM - 10:00 AM	61.7	80.5	55.7
10:00 AM - 11:00 AM	60.8	81.8	55.2
11:00 AM - 12:00 PM	61.3	82.8	55.5
12:00 PM - 01:00 PM	59.7	80.5	54.7
01:00 PM - 02:00 PM	59.8	85.3	53.7
02:00 PM - 03:00 PM	61.0	80.3	54.7

Leq Average 24 hrs. (dB(A)) 62.1  
Lmax (dB(A)) 93.3  
L90 (dB(A)) 54.6  
Ldn (dB(A)) 67.6  
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142050**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537040-1

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**Sample Number** 22142050-3  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
**Measurement Date** Dec 22 - Dec 23, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 610204

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:00 PM - 04:00 PM	59.5	73.3	55.1
04:00 PM - 05:00 PM	61.2	80.4	55.8
05:00 PM - 06:00 PM	62.9	95.6	55.5
06:00 PM - 07:00 PM	61.0	81.6	56.1
07:00 PM - 08:00 PM	62.4	85.0	54.6
08:00 PM - 09:00 PM	58.9	72.3	53.1
09:00 PM - 10:00 PM	62.0	83.6	53.9
10:00 PM - 11:00 PM	63.8	85.2	54.0
11:00 PM - 12:00 AM	60.4	78.7	53.7
12:00 AM - 01:00 AM	64.0	85.6	54.5
01:00 AM - 02:00 AM	60.5	79.8	51.8
02:00 AM - 03:00 AM	64.5	81.1	53.8
03:00 AM - 04:00 AM	62.4	78.4	52.9
04:00 AM - 05:00 AM	61.6	80.2	51.9
05:00 AM - 06:00 AM	62.3	87.2	53.2
06:00 AM - 07:00 AM	58.2	80.6	51.6
07:00 AM - 08:00 AM	58.8	75.8	52.2
08:00 AM - 09:00 AM	62.4	80.3	58.5
09:00 AM - 10:00 AM	63.7	86.3	58.7
10:00 AM - 11:00 AM	61.5	80.9	56.4
11:00 AM - 12:00 PM	61.2	83.6	55.7
12:00 PM - 01:00 PM	61.1	80.8	56.9
01:00 PM - 02:00 PM	61.9	81.8	56.4
02:00 PM - 03:00 PM	63.3	83.9	57.7

Leq Average 24 hrs. (dB(A)) 61.9  
Lmax (dB(A)) 95.6  
L90 (dB(A)) 54.5  
Ldn (dB(A)) 68.7  
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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
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**Approved by**

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Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142050**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537041-1

Page 1 of 1

**Sample Number** 22142050-4  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
**Measurement Date** Dec 23 - Dec 24, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 610204

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:00 PM - 04:00 PM	63.6	83.3	58.6
04:00 PM - 05:00 PM	63.3	80.9	58.4
05:00 PM - 06:00 PM	61.8	83.2	57.6
06:00 PM - 07:00 PM	61.7	85.8	56.5
07:00 PM - 08:00 PM	65.0	88.2	56.5
08:00 PM - 09:00 PM	63.5	89.9	53.5
09:00 PM - 10:00 PM	61.5	83.3	52.2
10:00 PM - 11:00 PM	59.3	86.3	51.7
11:00 PM - 12:00 AM	60.6	78.3	50.2
12:00 AM - 01:00 AM	58.3	74.5	47.2
01:00 AM - 02:00 AM	56.1	73.7	46.3
02:00 AM - 03:00 AM	60.3	78.5	49.0
03:00 AM - 04:00 AM	57.0	77.7	48.9
04:00 AM - 05:00 AM	61.8	81.6	50.4
05:00 AM - 06:00 AM	58.6	73.0	52.0
06:00 AM - 07:00 AM	60.0	77.9	54.3
07:00 AM - 08:00 AM	61.5	80.9	55.5
08:00 AM - 09:00 AM	66.3	86.7	54.9
09:00 AM - 10:00 AM	64.7	85.0	57.1
10:00 AM - 11:00 AM	65.9	84.6	58.0
11:00 AM - 12:00 PM	64.3	82.0	55.7
12:00 PM - 01:00 PM	64.6	84.2	54.4
01:00 PM - 02:00 PM	64.3	96.4	54.8
02:00 PM - 03:00 PM	64.0	78.2	55.7

Leq Average 24 hrs. (dB(A)) 62.8  
Lmax (dB(A)) 96.4  
L90 (dB(A)) 54.4  
Ldn (dB(A)) 66.9  
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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142050**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537042-1

Page 1 of 1

**Sample Number** 22142050-5  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
**Measurement Date** Dec 24 - Dec 25, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 610204

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:00 PM - 04:00 PM	65.6	99.5	56.2
04:00 PM - 05:00 PM	65.9	88.8	56.8
05:00 PM - 06:00 PM	66.9	85.5	57.0
06:00 PM - 07:00 PM	61.0	79.5	55.4
07:00 PM - 08:00 PM	60.4	80.3	56.1
08:00 PM - 09:00 PM	61.7	86.8	55.2
09:00 PM - 10:00 PM	60.6	79.5	54.6
10:00 PM - 11:00 PM	59.0	75.1	52.6
11:00 PM - 12:00 AM	60.3	80.5	51.1
12:00 AM - 01:00 AM	56.8	74.4	50.1
01:00 AM - 02:00 AM	56.7	69.7	49.0
02:00 AM - 03:00 AM	57.6	78.8	50.4
03:00 AM - 04:00 AM	57.4	73.0	50.2
04:00 AM - 05:00 AM	58.4	74.3	51.3
05:00 AM - 06:00 AM	58.4	76.1	51.6
06:00 AM - 07:00 AM	60.9	81.0	56.0
07:00 AM - 08:00 AM	61.3	79.2	57.2
08:00 AM - 09:00 AM	61.3	77.2	56.6
09:00 AM - 10:00 AM	61.2	79.2	56.0
10:00 AM - 11:00 AM	61.1	80.2	56.0
11:00 AM - 12:00 PM	60.9	81.2	55.9
12:00 PM - 01:00 PM	60.2	82.0	55.3
01:00 PM - 02:00 PM	60.1	78.7	55.0
02:00 PM - 03:00 PM	60.5	78.8	56.2

Leq Average 24 hrs. (dB(A)) 61.5  
Lmax (dB(A)) 99.5  
L90 (dB(A)) 55.3  
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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142050**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537043-1

Page 1 of 1

**Sample Number** 22142050-6  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ร่มรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
**Measurement Date** Dec 25 - Dec 26, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 610204

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:00 PM - 04:00 PM	61.8	85.9	57.0
04:00 PM - 05:00 PM	61.1	76.7	57.0
05:00 PM - 06:00 PM	61.2	80.5	56.7
06:00 PM - 07:00 PM	61.4	79.1	57.1
07:00 PM - 08:00 PM	60.5	76.3	55.9
08:00 PM - 09:00 PM	61.6	84.8	55.6
09:00 PM - 10:00 PM	59.0	73.8	53.4
10:00 PM - 11:00 PM	56.9	73.5	48.7
11:00 PM - 12:00 AM	56.1	71.6	46.5
12:00 AM - 01:00 AM	55.3	71.0	45.7
01:00 AM - 02:00 AM	56.1	75.9	48.1
02:00 AM - 03:00 AM	56.5	70.7	48.6
03:00 AM - 04:00 AM	57.0	76.9	49.5
04:00 AM - 05:00 AM	57.8	78.6	49.4
05:00 AM - 06:00 AM	58.2	74.6	51.6
06:00 AM - 07:00 AM	60.3	75.0	55.2
07:00 AM - 08:00 AM	60.7	75.7	55.9
08:00 AM - 09:00 AM	61.2	79.4	55.3
09:00 AM - 10:00 AM	61.8	84.1	56.8
10:00 AM - 11:00 AM	60.8	81.7	55.7
11:00 AM - 12:00 PM	60.6	81.6	55.2
12:00 PM - 01:00 PM	59.6	76.8	54.6
01:00 PM - 02:00 PM	60.2	78.4	55.6
02:00 PM - 03:00 PM	61.1	85.5	56.5

Leq Average 24 hrs. (dB(A)) 59.9  
Lmax (dB(A)) 85.9  
L90 (dB(A)) 55.2  
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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142050**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537044-1

Page 1 of 1

**Sample Number** 22142050-7  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ร่มรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
**Measurement Date** Dec 26 - Dec 27, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 610204

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:00 PM - 04:00 PM	61.1	85.5	56.6
04:00 PM - 05:00 PM	61.7	85.6	56.8
05:00 PM - 06:00 PM	62.2	88.8	57.9
06:00 PM - 07:00 PM	61.7	81.0	57.6
07:00 PM - 08:00 PM	60.0	76.3	56.0
08:00 PM - 09:00 PM	59.4	72.9	54.3
09:00 PM - 10:00 PM	59.0	76.3	53.1
10:00 PM - 11:00 PM	58.6	73.4	51.9
11:00 PM - 12:00 AM	56.3	74.4	48.5
12:00 AM - 01:00 AM	57.4	77.6	50.3
01:00 AM - 02:00 AM	58.5	73.0	53.0
02:00 AM - 03:00 AM	59.8	74.7	55.1
03:00 AM - 04:00 AM	59.9	78.4	54.3
04:00 AM - 05:00 AM	60.9	83.1	55.8
05:00 AM - 06:00 AM	59.9	80.7	54.9
06:00 AM - 07:00 AM	59.9	78.5	54.6
07:00 AM - 08:00 AM	57.7	80.6	51.3
08:00 AM - 09:00 AM	59.6	75.4	52.8
09:00 AM - 10:00 AM	60.3	78.2	55.1
10:00 AM - 11:00 AM	60.9	87.4	56.4
11:00 AM - 12:00 PM	60.7	84.6	55.9
12:00 PM - 01:00 PM	59.7	79.2	54.9
01:00 PM - 02:00 PM	60.2	84.5	55.6
02:00 PM - 03:00 PM	60.3	81.4	55.1

Leq Average 24 hrs. (dB(A)) 60.0  
Lmax (dB(A)) 88.8  
L90 (dB(A)) 54.9  
Ldn (dB(A)) 65.8

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

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

**Technical Management**

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**Approved by**

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Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142053**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537058-1

Page 1 of 1

**Sample Number** 22142053-1  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
**Measurement Date** Dec 20 - Dec 21, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 858523

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
04:00 PM - 05:00 PM	42.5	61.9	40.7
05:00 PM - 06:00 PM	45.2	67.6	42.9
06:00 PM - 07:00 PM	51.3	78.4	48.9
07:00 PM - 08:00 PM	55.4	70.6	50.1
08:00 PM - 09:00 PM	53.6	67.1	48.1
09:00 PM - 10:00 PM	49.6	58.8	48.2
10:00 PM - 11:00 PM	51.9	65.9	50.0
11:00 PM - 12:00 AM	53.4	64.4	52.6
12:00 AM - 01:00 AM	58.2	72.6	53.6
01:00 AM - 02:00 AM	53.3	67.9	52.4
02:00 AM - 03:00 AM	53.6	64.7	52.7
03:00 AM - 04:00 AM	56.0	72.6	53.3
04:00 AM - 05:00 AM	54.6	61.2	53.2
05:00 AM - 06:00 AM	51.7	61.0	50.5
06:00 AM - 07:00 AM	54.3	72.5	47.6
07:00 AM - 08:00 AM	48.5	66.9	43.7
08:00 AM - 09:00 AM	47.1	72.6	42.8
09:00 AM - 10:00 AM	49.2	83.0	40.4
10:00 AM - 11:00 AM	48.4	83.1	41.4
11:00 AM - 12:00 PM	45.7	73.7	42.9
12:00 PM - 01:00 PM	44.7	70.3	42.5
01:00 PM - 02:00 PM	50.1	88.6	42.2
02:00 PM - 03:00 PM	45.0	81.8	41.6
03:00 PM - 04:00 PM	44.5	69.4	41.8

Leq Average 24 hrs. (dB(A)) 52.1  
Lmax (dB(A)) 88.6  
L90 (dB(A)) 47.6  
Ldn (dB(A)) 60.5  
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

**Technical Management**

*Saranya C.*

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Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142053**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537059-1

Page 1 of 1

**Sample Number** 22142053-2  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
**Measurement Date** Dec 21 - Dec 22, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 858523

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
04:00 PM - 05:00 PM	43.3	58.8	41.2
05:00 PM - 06:00 PM	46.4	68.5	45.2
06:00 PM - 07:00 PM	51.0	63.5	48.6
07:00 PM - 08:00 PM	54.9	70.4	50.2
08:00 PM - 09:00 PM	58.8	75.2	51.1
09:00 PM - 10:00 PM	53.6	74.0	50.1
10:00 PM - 11:00 PM	53.5	73.0	49.2
11:00 PM - 12:00 AM	50.1	56.2	49.1
12:00 AM - 01:00 AM	52.6	67.9	50.6
01:00 AM - 02:00 AM	49.7	55.5	48.5
02:00 AM - 03:00 AM	54.6	71.3	49.0
03:00 AM - 04:00 AM	52.8	61.9	50.0
04:00 AM - 05:00 AM	49.3	62.3	46.5
05:00 AM - 06:00 AM	46.3	57.5	44.4
06:00 AM - 07:00 AM	51.4	63.7	47.8
07:00 AM - 08:00 AM	48.3	69.8	45.1
08:00 AM - 09:00 AM	46.2	63.0	43.2
09:00 AM - 10:00 AM	48.5	61.7	46.1
10:00 AM - 11:00 AM	46.5	68.4	41.2
11:00 AM - 12:00 PM	46.5	78.3	41.2
12:00 PM - 01:00 PM	44.3	73.3	40.4
01:00 PM - 02:00 PM	41.6	71.2	38.6
02:00 PM - 03:00 PM	41.3	59.4	39.1
03:00 PM - 04:00 PM	40.6	61.6	38.3

Leq Average 24 hrs. (dB(A)) 51.2  
Lmax (dB(A)) 78.3  
L90 (dB(A)) 46.1  
Ldn (dB(A)) 58.0  
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

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

**Technical Management**

*Saranya C.*

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**Approved by**

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Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142053**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537060-1

Page 1 of 1

**Sample Number** 22142053-3  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
**Measurement Date** Dec 22 - Dec 23, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 858523

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
04:00 PM - 05:00 PM	40.3	63.5	38.7
05:00 PM - 06:00 PM	46.0	63.3	44.8
06:00 PM - 07:00 PM	50.3	59.4	49.3
07:00 PM - 08:00 PM	54.1	73.5	50.1
08:00 PM - 09:00 PM	53.1	68.6	51.0
09:00 PM - 10:00 PM	51.7	60.1	50.5
10:00 PM - 11:00 PM	51.9	70.9	50.3
11:00 PM - 12:00 AM	53.3	70.7	51.0
12:00 AM - 01:00 AM	53.0	67.4	50.5
01:00 AM - 02:00 AM	53.8	68.2	50.2
02:00 AM - 03:00 AM	50.0	57.3	48.9
03:00 AM - 04:00 AM	50.6	71.2	49.2
04:00 AM - 05:00 AM	47.8	60.6	46.8
05:00 AM - 06:00 AM	50.4	67.1	46.2
06:00 AM - 07:00 AM	47.1	61.5	45.3
07:00 AM - 08:00 AM	46.4	77.4	41.9
08:00 AM - 09:00 AM	46.3	66.6	41.0
09:00 AM - 10:00 AM	47.9	69.0	42.2
10:00 AM - 11:00 AM	43.6	70.4	40.5
11:00 AM - 12:00 PM	44.2	69.6	41.2
12:00 PM - 01:00 PM	45.6	65.1	39.1
01:00 PM - 02:00 PM	41.5	61.9	39.6
02:00 PM - 03:00 PM	44.9	63.4	39.3
03:00 PM - 04:00 PM	45.7	66.1	41.4

Leq Average 24 hrs. (dB(A)) 49.9  
Lmax (dB(A)) 77.4  
L90 (dB(A)) 45.3  
Ldn (dB(A)) 57.5  
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

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

**Technical Management**

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Scientist (4)

**Approved by**

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Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142053**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537061-1

Page 1 of 1

**Sample Number** 22142053-4  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
**Measurement Date** Dec 23 - Dec 24, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 858523

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
04:00 PM - 05:00 PM	48.1	67.9	42.4
05:00 PM - 06:00 PM	48.4	64.5	46.7
06:00 PM - 07:00 PM	52.6	67.1	49.0
07:00 PM - 08:00 PM	51.6	67.3	49.4
08:00 PM - 09:00 PM	52.3	67.0	50.8
09:00 PM - 10:00 PM	52.5	61.5	51.3
10:00 PM - 11:00 PM	52.8	61.0	51.5
11:00 PM - 12:00 AM	51.5	59.3	50.5
12:00 AM - 01:00 AM	51.7	60.7	50.7
01:00 AM - 02:00 AM	52.1	60.2	51.0
02:00 AM - 03:00 AM	50.0	63.7	49.2
03:00 AM - 04:00 AM	49.2	58.2	48.0
04:00 AM - 05:00 AM	51.3	65.2	49.7
05:00 AM - 06:00 AM	49.3	64.2	45.8
06:00 AM - 07:00 AM	45.5	64.4	42.8
07:00 AM - 08:00 AM	46.5	64.8	42.1
08:00 AM - 09:00 AM	45.8	69.8	43.8
09:00 AM - 10:00 AM	46.1	61.4	44.0
10:00 AM - 11:00 AM	47.6	64.2	44.4
11:00 AM - 12:00 PM	48.9	76.3	43.8
12:00 PM - 01:00 PM	47.2	74.2	44.6
01:00 PM - 02:00 PM	46.8	77.9	44.6
02:00 PM - 03:00 PM	47.7	67.9	44.1
03:00 PM - 04:00 PM	46.7	82.5	44.0

Leq Average 24 hrs. (dB(A)) 49.9  
Lmax (dB(A)) 82.5  
L90 (dB(A)) 45.8  
Ldn (dB(A)) 57.0

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

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

**Technical Management**

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Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142053**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537062-1

Page 1 of 1

**Sample Number** 22142053-5  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
**Measurement Date** Dec 24 - Dec 25, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 858523

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
04:00 PM - 05:00 PM	47.1	83.8	44.7
05:00 PM - 06:00 PM	48.5	65.0	46.7
06:00 PM - 07:00 PM	50.7	62.6	49.4
07:00 PM - 08:00 PM	48.8	67.5	46.6
08:00 PM - 09:00 PM	47.3	63.1	45.4
09:00 PM - 10:00 PM	47.5	61.8	45.4
10:00 PM - 11:00 PM	49.2	84.5	45.1
11:00 PM - 12:00 AM	45.8	80.5	43.7
12:00 AM - 01:00 AM	53.4	73.7	45.1
01:00 AM - 02:00 AM	50.9	70.7	46.8
02:00 AM - 03:00 AM	53.0	70.6	47.9
03:00 AM - 04:00 AM	50.8	67.9	45.3
04:00 AM - 05:00 AM	46.7	66.5	45.3
05:00 AM - 06:00 AM	47.3	64.5	44.0
06:00 AM - 07:00 AM	48.5	63.5	44.1
07:00 AM - 08:00 AM	48.6	66.7	44.1
08:00 AM - 09:00 AM	48.4	74.8	40.2
09:00 AM - 10:00 AM	43.5	57.2	41.5
10:00 AM - 11:00 AM	46.0	71.8	42.5
11:00 AM - 12:00 PM	44.7	76.9	41.4
12:00 PM - 01:00 PM	46.9	83.9	41.1
01:00 PM - 02:00 PM	44.6	69.9	41.0
02:00 PM - 03:00 PM	44.9	80.8	41.7
03:00 PM - 04:00 PM	48.3	78.4	41.8

Leq Average 24 hrs. (dB(A)) 48.7  
Lmax (dB(A)) 84.5  
L90 (dB(A)) 44.1  
Ldn (dB(A)) 56.4

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

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

**Technical Management**

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Saranya Chalermthamrong  
Scientist (4)

**Approved by**

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Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142053**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537063-1

Page 1 of 1

**Sample Number** 22142053-6  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
**Measurement Date** Dec 25 - Dec 26, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 858523

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
04:00 PM - 05:00 PM	44.5	63.2	42.5
05:00 PM - 06:00 PM	47.8	65.1	45.6
06:00 PM - 07:00 PM	50.5	59.9	49.5
07:00 PM - 08:00 PM	51.1	61.9	50.1
08:00 PM - 09:00 PM	52.9	67.6	51.0
09:00 PM - 10:00 PM	51.2	63.6	50.2
10:00 PM - 11:00 PM	51.7	60.7	50.6
11:00 PM - 12:00 AM	51.4	59.4	50.3
12:00 AM - 01:00 AM	55.7	71.1	51.4
01:00 AM - 02:00 AM	51.7	62.8	50.5
02:00 AM - 03:00 AM	52.2	59.2	51.0
03:00 AM - 04:00 AM	49.7	72.5	47.9
04:00 AM - 05:00 AM	50.1	68.0	48.7
05:00 AM - 06:00 AM	52.2	69.5	51.0
06:00 AM - 07:00 AM	57.0	71.8	50.5
07:00 AM - 08:00 AM	46.6	65.9	41.7
08:00 AM - 09:00 AM	45.5	66.1	42.0
09:00 AM - 10:00 AM	48.0	63.5	43.3
10:00 AM - 11:00 AM	46.2	78.0	43.7
11:00 AM - 12:00 PM	47.5	76.4	44.2
12:00 PM - 01:00 PM	46.5	84.5	43.0
01:00 PM - 02:00 PM	45.1	69.2	42.0
02:00 PM - 03:00 PM	45.8	80.6	40.9
03:00 PM - 04:00 PM	44.0	74.1	41.2

Leq Average 24 hrs. (dB(A)) 50.8  
Lmax (dB(A)) 84.5  
L90 (dB(A)) 47.9  
Ldn (dB(A)) 59.1

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142053**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537064-1

Page 1 of 1

**Sample Number** 22142053-7  
**Parameter** Noise (Leq 24 hrs.)  
**Location** ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
**Measurement Date** Dec 26 - Dec 27, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 858523

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
04:00 PM - 05:00 PM	43.9	74.9	41.8
05:00 PM - 06:00 PM	48.7	67.8	46.2
06:00 PM - 07:00 PM	50.0	68.8	49.0
07:00 PM - 08:00 PM	50.8	61.4	49.9
08:00 PM - 09:00 PM	52.2	62.2	50.4
09:00 PM - 10:00 PM	52.7	63.3	51.8
10:00 PM - 11:00 PM	54.0	69.6	50.9
11:00 PM - 12:00 AM	52.3	64.4	50.6
12:00 AM - 01:00 AM	52.6	67.9	50.1
01:00 AM - 02:00 AM	51.0	65.3	48.8
02:00 AM - 03:00 AM	50.7	64.6	47.8
03:00 AM - 04:00 AM	50.9	61.1	48.0
04:00 AM - 05:00 AM	50.9	69.2	49.8
05:00 AM - 06:00 AM	51.5	61.0	50.0
06:00 AM - 07:00 AM	50.7	62.1	49.5
07:00 AM - 08:00 AM	49.0	67.2	46.0
08:00 AM - 09:00 AM	51.2	70.4	43.4
09:00 AM - 10:00 AM	45.1	63.4	42.7
10:00 AM - 11:00 AM	44.5	64.6	42.6
11:00 AM - 12:00 PM	48.2	70.5	41.7
12:00 PM - 01:00 PM	49.0	82.7	41.0
01:00 PM - 02:00 PM	53.0	85.0	40.1
02:00 PM - 03:00 PM	45.0	71.2	39.2
03:00 PM - 04:00 PM	45.6	62.7	41.2

Leq Average 24 hrs. (dB(A)) 50.5  
Lmax (dB(A)) 85.0  
L90 (dB(A)) 47.8  
Ldn (dB(A)) 57.9  
Standard (dB(A)) 70

Reference Method : ISO1996-1 and 1996-2

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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142055**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537072-1

Page 1 of 1

**Sample Number** 22142055-1  
**Parameter** Noise (Leq 24 hrs.)  
**Location** โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
**Measurement Date** Dec 20 - Dec 21, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 710641

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	57.4	87.8	48.7
02:00 PM - 03:00 PM	54.0	74.2	49.9
03:00 PM - 04:00 PM	53.5	84.6	49.4
04:00 PM - 05:00 PM	61.9	92.5	50.4
05:00 PM - 06:00 PM	64.3	86.9	54.8
06:00 PM - 07:00 PM	61.0	82.8	52.3
07:00 PM - 08:00 PM	52.6	64.7	50.1
08:00 PM - 09:00 PM	51.2	64.6	48.2
09:00 PM - 10:00 PM	50.6	61.9	47.2
10:00 PM - 11:00 PM	49.2	64.2	45.0
11:00 PM - 12:00 AM	48.3	59.2	44.3
12:00 AM - 01:00 AM	48.8	60.8	44.9
01:00 AM - 02:00 AM	48.2	63.4	43.0
02:00 AM - 03:00 AM	48.3	60.6	43.5
03:00 AM - 04:00 AM	48.8	63.9	44.1
04:00 AM - 05:00 AM	49.5	66.9	45.2
05:00 AM - 06:00 AM	49.9	62.7	45.9
06:00 AM - 07:00 AM	52.4	69.9	48.9
07:00 AM - 08:00 AM	53.7	70.4	49.9
08:00 AM - 09:00 AM	56.1	79.6	50.2
09:00 AM - 10:00 AM	53.9	70.6	49.5
10:00 AM - 11:00 AM	51.7	71.0	47.7
11:00 AM - 12:00 PM	52.0	73.2	47.9
12:00 PM - 01:00 PM	51.9	70.7	47.8

Leq Average 24 hrs. (dB(A)) 55.8  
Lmax (dB(A)) 92.5  
L90 (dB(A)) 47.9  
Ldn (dB(A)) 58.3

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142055**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537073-1

Page 1 of 1

**Sample Number** 22142055-2  
**Parameter** Noise (Leq 24 hrs.)  
**Location** โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
**Measurement Date** Dec 21 - Dec 22, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 710641

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	54.4	75.5	47.5
02:00 PM - 03:00 PM	53.2	76.0	49.0
03:00 PM - 04:00 PM	55.4	72.9	50.6
04:00 PM - 05:00 PM	59.5	80.1	52.0
05:00 PM - 06:00 PM	59.8	79.2	53.2
06:00 PM - 07:00 PM	57.8	79.9	51.9
07:00 PM - 08:00 PM	54.1	66.8	49.3
08:00 PM - 09:00 PM	53.9	69.0	48.7
09:00 PM - 10:00 PM	52.1	69.7	46.7
10:00 PM - 11:00 PM	50.9	63.8	42.0
11:00 PM - 12:00 AM	49.2	63.0	39.5
12:00 AM - 01:00 AM	48.6	64.9	39.5
01:00 AM - 02:00 AM	49.5	66.8	42.1
02:00 AM - 03:00 AM	49.5	67.3	42.6
03:00 AM - 04:00 AM	50.6	68.2	44.5
04:00 AM - 05:00 AM	51.9	76.0	44.7
05:00 AM - 06:00 AM	51.6	63.9	46.2
06:00 AM - 07:00 AM	53.4	65.5	49.1
07:00 AM - 08:00 AM	54.3	73.1	50.3
08:00 AM - 09:00 AM	63.7	84.6	53.9
09:00 AM - 10:00 AM	62.5	81.9	54.7
10:00 AM - 11:00 AM	63.8	87.3	53.7
11:00 AM - 12:00 PM	54.5	75.1	49.1
12:00 PM - 01:00 PM	53.9	73.6	48.6

Leq Average 24 hrs. (dB(A)) 57.1  
Lmax (dB(A)) 87.3  
L90 (dB(A)) 48.7  
Ldn (dB(A)) 59.7  
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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142055**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537074-1

Page 1 of 1

**Sample Number** 22142055-3  
**Parameter** Noise (Leq 24 hrs.)  
**Location** โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
**Measurement Date** Dec 22 - Dec 23, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 710641

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	55.9	84.9	49.0
02:00 PM - 03:00 PM	56.0	91.8	48.9
03:00 PM - 04:00 PM	55.1	85.6	49.3
04:00 PM - 05:00 PM	56.5	77.2	49.7
05:00 PM - 06:00 PM	57.4	74.0	52.1
06:00 PM - 07:00 PM	55.7	77.2	50.9
07:00 PM - 08:00 PM	54.3	68.6	49.8
08:00 PM - 09:00 PM	53.4	65.7	49.0
09:00 PM - 10:00 PM	51.0	65.6	45.1
10:00 PM - 11:00 PM	51.1	67.7	45.3
11:00 PM - 12:00 AM	50.2	67.8	43.6
12:00 AM - 01:00 AM	49.7	76.0	42.8
01:00 AM - 02:00 AM	49.3	64.2	40.4
02:00 AM - 03:00 AM	50.1	77.2	40.7
03:00 AM - 04:00 AM	51.7	65.3	44.8
04:00 AM - 05:00 AM	51.0	73.7	44.7
05:00 AM - 06:00 AM	52.9	74.2	47.6
06:00 AM - 07:00 AM	54.5	78.6	49.6
07:00 AM - 08:00 AM	54.7	73.8	51.3
08:00 AM - 09:00 AM	54.7	84.0	49.7
09:00 AM - 10:00 AM	55.9	79.1	48.9
10:00 AM - 11:00 AM	54.9	76.1	49.7
11:00 AM - 12:00 PM	52.6	65.4	48.8
12:00 PM - 01:00 PM	52.7	65.3	49.8

Leq Average 24 hrs. (dB(A)) 54.0  
Lmax (dB(A)) 91.8  
L90 (dB(A)) 48.9  
Ldn (dB(A)) 58.6  
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142055**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537075-1

Page 1 of 1

**Sample Number** 22142055-4  
**Parameter** Noise (Leq 24 hrs.)  
**Location** โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
**Measurement Date** Dec 23 - Dec 24, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 710641

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	54.1	70.9	49.9
02:00 PM - 03:00 PM	54.8	77.9	49.5
03:00 PM - 04:00 PM	54.2	70.2	49.9
04:00 PM - 05:00 PM	56.5	86.5	51.1
05:00 PM - 06:00 PM	58.3	85.4	52.6
06:00 PM - 07:00 PM	56.6	79.2	51.3
07:00 PM - 08:00 PM	54.0	65.7	49.7
08:00 PM - 09:00 PM	55.0	65.8	50.6
09:00 PM - 10:00 PM	53.4	66.5	47.8
10:00 PM - 11:00 PM	53.0	66.1	47.7
11:00 PM - 12:00 AM	50.2	64.6	41.9
12:00 AM - 01:00 AM	50.6	64.5	43.2
01:00 AM - 02:00 AM	50.5	67.0	44.2
02:00 AM - 03:00 AM	50.4	61.6	45.5
03:00 AM - 04:00 AM	50.4	62.6	45.1
04:00 AM - 05:00 AM	50.5	67.5	45.2
05:00 AM - 06:00 AM	52.3	62.4	48.1
06:00 AM - 07:00 AM	54.2	64.7	50.7
07:00 AM - 08:00 AM	56.0	72.2	52.0
08:00 AM - 09:00 AM	54.7	78.0	49.8
09:00 AM - 10:00 AM	54.7	82.9	50.1
10:00 AM - 11:00 AM	54.3	74.3	50.3
11:00 AM - 12:00 PM	53.4	76.9	49.9
12:00 PM - 01:00 PM	53.8	72.6	49.2

Leq Average 24 hrs. (dB(A)) 54.1  
Lmax (dB(A)) 86.5  
L90 (dB(A)) 49.7  
Ldn (dB(A)) 58.7  
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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
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*Supot S.*

Supot Salamteh  
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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142055**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537076-1

Page 1 of 1

**Sample Number** 22142055-5  
**Parameter** Noise (Leq 24 hrs.)  
**Location** โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
**Measurement Date** Dec 24 - Dec 25, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 710641

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	59.3	91.4	48.7
02:00 PM - 03:00 PM	55.0	79.7	49.7
03:00 PM - 04:00 PM	55.2	78.5	50.0
04:00 PM - 05:00 PM	61.0	81.1	53.4
05:00 PM - 06:00 PM	58.8	81.8	52.6
06:00 PM - 07:00 PM	56.9	77.5	51.7
07:00 PM - 08:00 PM	54.3	66.0	50.0
08:00 PM - 09:00 PM	52.2	63.1	46.7
09:00 PM - 10:00 PM	51.3	62.9	45.7
10:00 PM - 11:00 PM	49.9	61.6	45.2
11:00 PM - 12:00 AM	49.0	61.8	43.9
12:00 AM - 01:00 AM	48.6	63.3	42.5
01:00 AM - 02:00 AM	50.1	61.5	44.5
02:00 AM - 03:00 AM	50.5	67.5	44.5
03:00 AM - 04:00 AM	51.4	65.0	46.2
04:00 AM - 05:00 AM	52.0	68.3	47.6
05:00 AM - 06:00 AM	52.1	66.0	47.9
06:00 AM - 07:00 AM	53.9	68.3	50.1
07:00 AM - 08:00 AM	55.2	69.9	51.7
08:00 AM - 09:00 AM	56.0	72.7	49.9
09:00 AM - 10:00 AM	54.6	67.6	50.4
10:00 AM - 11:00 AM	54.6	83.6	49.5
11:00 AM - 12:00 PM	53.9	77.3	50.2
12:00 PM - 01:00 PM	53.3	74.0	49.5

Leq Average 24 hrs. (dB(A)) 55.0  
Lmax (dB(A)) 91.4  
L90 (dB(A)) 49.5  
Ldn (dB(A)) 58.8  
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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142055**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537077-1

Page 1 of 1

**Sample Number** 22142055-6  
**Parameter** Noise (Leq 24 hrs.)  
**Location** โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
**Measurement Date** Dec 25 - Dec 26, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 710641

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	53.4	71.7	49.5
02:00 PM - 03:00 PM	54.1	70.8	50.4
03:00 PM - 04:00 PM	55.0	75.2	51.0
04:00 PM - 05:00 PM	56.3	83.4	52.2
05:00 PM - 06:00 PM	57.9	77.0	52.9
06:00 PM - 07:00 PM	56.2	78.0	52.1
07:00 PM - 08:00 PM	55.8	71.0	51.9
08:00 PM - 09:00 PM	55.5	66.5	52.5
09:00 PM - 10:00 PM	55.6	81.7	51.8
10:00 PM - 11:00 PM	56.0	83.9	48.1
11:00 PM - 12:00 AM	52.5	69.4	46.4
12:00 AM - 01:00 AM	52.4	63.9	47.0
01:00 AM - 02:00 AM	51.0	63.0	45.4
02:00 AM - 03:00 AM	50.9	64.0	45.5
03:00 AM - 04:00 AM	50.8	67.7	45.4
04:00 AM - 05:00 AM	51.6	66.0	46.4
05:00 AM - 06:00 AM	53.0	66.6	48.4
06:00 AM - 07:00 AM	55.0	69.4	51.1
07:00 AM - 08:00 AM	56.3	68.9	52.8
08:00 AM - 09:00 AM	56.6	77.8	51.8
09:00 AM - 10:00 AM	53.9	65.7	49.7
10:00 AM - 11:00 AM	53.1	69.3	49.2
11:00 AM - 12:00 PM	54.7	83.5	49.8
12:00 PM - 01:00 PM	52.7	67.2	49.0

Leq Average 24 hrs. (dB(A)) 54.6  
Lmax (dB(A)) 83.9  
L90 (dB(A)) 49.7  
Ldn (dB(A)) 59.8  
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

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

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142055**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537078-1

Page 1 of 1

**Sample Number** 22142055-7  
**Parameter** Noise (Leq 24 hrs.)  
**Location** โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
**Measurement Date** Dec 26 - Dec 27, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 710641

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	54.3	71.6	49.2
02:00 PM - 03:00 PM	57.3	79.6	51.4
03:00 PM - 04:00 PM	56.0	74.9	51.6
04:00 PM - 05:00 PM	57.3	80.0	52.0
05:00 PM - 06:00 PM	59.0	80.7	52.9
06:00 PM - 07:00 PM	57.1	76.1	52.2
07:00 PM - 08:00 PM	56.5	69.6	53.0
08:00 PM - 09:00 PM	55.1	68.4	50.3
09:00 PM - 10:00 PM	53.8	66.7	49.2
10:00 PM - 11:00 PM	52.1	65.9	47.1
11:00 PM - 12:00 AM	53.7	68.0	50.1
12:00 AM - 01:00 AM	53.5	65.3	49.6
01:00 AM - 02:00 AM	52.2	61.8	48.4
02:00 AM - 03:00 AM	52.5	67.3	48.2
03:00 AM - 04:00 AM	51.4	63.4	46.2
04:00 AM - 05:00 AM	51.3	67.6	46.3
05:00 AM - 06:00 AM	52.9	73.6	48.7
06:00 AM - 07:00 AM	53.6	68.3	49.8
07:00 AM - 08:00 AM	55.6	69.1	52.4
08:00 AM - 09:00 AM	56.2	75.0	51.9
09:00 AM - 10:00 AM	53.9	70.6	50.1
10:00 AM - 11:00 AM	54.1	68.8	50.1
11:00 AM - 12:00 PM	53.2	74.7	49.7
12:00 PM - 01:00 PM	55.6	70.0	52.8

Leq Average 24 hrs. (dB(A)) 55.0  
Lmax (dB(A)) 80.7  
L90 (dB(A)) 50.1  
Ldn (dB(A)) 59.7  
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

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

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142057**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537081-1

Page 1 of 1

**Sample Number** 22142057-1  
**Parameter** Noise (Leq 24 hrs.)  
**Location** วัดสุราษฎร์ (GPS 48Q 276877, 1887945)  
**Measurement Date** Dec 20 - Dec 21, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 610207

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	47.5	65.2	42.1
01:00 PM - 02:00 PM	46.5	65.8	41.2
02:00 PM - 03:00 PM	47.8	69.5	42.3
03:00 PM - 04:00 PM	47.3	64.3	42.3
04:00 PM - 05:00 PM	46.9	64.4	43.0
05:00 PM - 06:00 PM	51.2	74.2	43.4
06:00 PM - 07:00 PM	51.1	78.0	45.4
07:00 PM - 08:00 PM	47.5	68.4	45.4
08:00 PM - 09:00 PM	47.1	69.8	43.4
09:00 PM - 10:00 PM	44.4	61.5	43.1
10:00 PM - 11:00 PM	45.7	58.2	44.3
11:00 PM - 12:00 AM	48.6	67.1	46.7
12:00 AM - 01:00 AM	53.3	79.9	50.1
01:00 AM - 02:00 AM	47.8	55.8	46.3
02:00 AM - 03:00 AM	47.1	59.3	45.2
03:00 AM - 04:00 AM	46.1	58.0	44.7
04:00 AM - 05:00 AM	46.3	53.6	45.2
05:00 AM - 06:00 AM	47.6	61.4	46.4
06:00 AM - 07:00 AM	60.7	92.8	47.5
07:00 AM - 08:00 AM	54.0	77.4	49.3
08:00 AM - 09:00 AM	51.6	70.6	44.6
09:00 AM - 10:00 AM	49.4	68.6	43.3
10:00 AM - 11:00 AM	71.6	79.4	67.5
11:00 AM - 12:00 PM	48.4	67.9	42.9

Leq Average 24 hrs. (dB(A)) 58.6  
Lmax (dB(A)) 92.8  
L90 (dB(A)) 44.6  
Ldn (dB(A)) 61.4  
Standard (dB(A)) 70

Reference Method : ISO1996-1 and 1996-2

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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

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Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142057**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537082-1

Page 1 of 1

**Sample Number** 22142057-2  
**Parameter** Noise (Leq 24 hrs.)  
**Location** วัดสุราษฎร์ (GPS 48Q 276877, 1887945)  
**Measurement Date** Dec 21 - Dec 22, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 610207

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	49.1	70.5	42.7
01:00 PM - 02:00 PM	46.8	62.6	41.8
02:00 PM - 03:00 PM	53.8	84.6	43.1
03:00 PM - 04:00 PM	47.7	68.6	42.3
04:00 PM - 05:00 PM	50.0	71.1	41.4
05:00 PM - 06:00 PM	51.5	75.6	45.5
06:00 PM - 07:00 PM	51.2	71.3	44.6
07:00 PM - 08:00 PM	58.7	81.9	45.6
08:00 PM - 09:00 PM	62.6	85.6	45.2
09:00 PM - 10:00 PM	48.0	73.4	44.1
10:00 PM - 11:00 PM	47.6	64.5	45.2
11:00 PM - 12:00 AM	45.8	67.0	44.8
12:00 AM - 01:00 AM	44.0	55.6	43.0
01:00 AM - 02:00 AM	43.0	51.5	42.0
02:00 AM - 03:00 AM	46.5	79.4	43.2
03:00 AM - 04:00 AM	43.4	61.6	42.1
04:00 AM - 05:00 AM	44.6	54.0	43.4
05:00 AM - 06:00 AM	49.4	64.5	47.8
06:00 AM - 07:00 AM	52.5	75.0	47.4
07:00 AM - 08:00 AM	51.9	76.9	47.4
08:00 AM - 09:00 AM	51.8	72.0	45.7
09:00 AM - 10:00 AM	53.3	73.0	47.4
10:00 AM - 11:00 AM	53.9	79.8	43.3
11:00 AM - 12:00 PM	50.4	73.6	42.4

Leq Average 24 hrs. (dB(A)) 53.0  
Lmax (dB(A)) 85.6  
L90 (dB(A)) 43.4  
Ldn (dB(A)) 55.9  
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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

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Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142057**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537083-1

Page 1 of 1

**Sample Number** 22142057-3  
**Parameter** Noise (Leq 24 hrs.)  
**Location** วัดสุราษฎร์ (GPS 48Q 276877, 1887945)  
**Measurement Date** Dec 22 - Dec 23, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 610207

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	46.9	67.6	40.6
01:00 PM - 02:00 PM	47.2	65.7	40.5
02:00 PM - 03:00 PM	47.0	68.1	39.9
03:00 PM - 04:00 PM	48.5	76.8	40.5
04:00 PM - 05:00 PM	46.7	76.7	40.9
05:00 PM - 06:00 PM	49.9	69.4	42.6
06:00 PM - 07:00 PM	48.3	76.7	43.4
07:00 PM - 08:00 PM	47.3	73.0	44.8
08:00 PM - 09:00 PM	54.6	78.5	45.2
09:00 PM - 10:00 PM	51.3	81.5	46.7
10:00 PM - 11:00 PM	47.6	70.7	46.0
11:00 PM - 12:00 AM	48.0	65.6	45.7
12:00 AM - 01:00 AM	47.3	65.7	44.7
01:00 AM - 02:00 AM	47.7	59.9	45.2
02:00 AM - 03:00 AM	45.8	57.1	44.5
03:00 AM - 04:00 AM	45.1	73.9	41.7
04:00 AM - 05:00 AM	41.9	55.0	40.9
05:00 AM - 06:00 AM	43.7	69.3	42.1
06:00 AM - 07:00 AM	60.9	92.7	46.1
07:00 AM - 08:00 AM	62.3	81.6	54.8
08:00 AM - 09:00 AM	53.7	91.0	42.7
09:00 AM - 10:00 AM	50.1	72.7	42.9
10:00 AM - 11:00 AM	48.4	74.0	41.5
11:00 AM - 12:00 PM	48.9	72.1	41.8

Leq Average 24 hrs. (dB(A)) 52.9  
Lmax (dB(A)) 92.7  
L90 (dB(A)) 42.7  
Ldn (dB(A)) 58.9

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

**Technical Management**

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Saranya Chalermthamrong  
Scientist (4)

**Approved by**

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Supot Salamteh  
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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142057**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537084-1

Page 1 of 1

**Sample Number** 22142057-4  
**Parameter** Noise (Leq 24 hrs.)  
**Location** วัดสุราษฎร์ (GPS 48Q 276877, 1887945)  
**Measurement Date** Dec 23 - Dec 24, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 610207

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	49.9	74.6	41.6
01:00 PM - 02:00 PM	47.8	65.3	40.6
02:00 PM - 03:00 PM	45.7	65.8	39.3
03:00 PM - 04:00 PM	48.9	70.6	42.7
04:00 PM - 05:00 PM	49.9	70.9	45.4
05:00 PM - 06:00 PM	51.0	83.0	45.3
06:00 PM - 07:00 PM	50.1	77.2	46.4
07:00 PM - 08:00 PM	48.0	68.9	45.9
08:00 PM - 09:00 PM	48.1	64.5	46.8
09:00 PM - 10:00 PM	47.2	57.2	45.9
10:00 PM - 11:00 PM	48.9	68.0	47.1
11:00 PM - 12:00 AM	50.7	77.4	46.0
12:00 AM - 01:00 AM	46.5	70.7	45.0
01:00 AM - 02:00 AM	46.4	61.3	45.0
02:00 AM - 03:00 AM	49.7	74.9	46.2
03:00 AM - 04:00 AM	54.2	76.1	44.9
04:00 AM - 05:00 AM	52.6	77.3	44.1
05:00 AM - 06:00 AM	45.8	56.2	44.7
06:00 AM - 07:00 AM	50.9	77.4	46.2
07:00 AM - 08:00 AM	53.8	77.1	47.7
08:00 AM - 09:00 AM	52.1	74.0	45.4
09:00 AM - 10:00 AM	49.6	68.0	45.1
10:00 AM - 11:00 AM	50.4	69.6	45.4
11:00 AM - 12:00 PM	50.2	67.9	45.1

Leq Average 24 hrs. (dB(A)) 50.1  
Lmax (dB(A)) 83.0  
L90 (dB(A)) 45.3  
Ldn (dB(A)) 56.7  
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

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

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Saranya Chalermthamrong  
Scientist (4)

**Approved by**

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142057**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537085-1

Page 1 of 1

**Sample Number** 22142057-5  
**Parameter** Noise (Leq 24 hrs.)  
**Location** วัดสุราษฎร์ (GPS 48Q 276877, 1887945)  
**Measurement Date** Dec 24 - Dec 25, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 610207

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	50.3	70.5	45.4
01:00 PM - 02:00 PM	48.7	67.2	43.1
02:00 PM - 03:00 PM	47.1	65.0	42.0
03:00 PM - 04:00 PM	48.6	67.0	42.1
04:00 PM - 05:00 PM	48.6	67.6	44.1
05:00 PM - 06:00 PM	53.2	81.0	43.4
06:00 PM - 07:00 PM	54.7	82.9	44.8
07:00 PM - 08:00 PM	49.0	77.2	46.2
08:00 PM - 09:00 PM	48.1	76.8	45.2
09:00 PM - 10:00 PM	47.4	73.7	44.7
10:00 PM - 11:00 PM	45.2	63.6	43.9
11:00 PM - 12:00 AM	44.7	63.4	43.3
12:00 AM - 01:00 AM	45.9	62.8	42.5
01:00 AM - 02:00 AM	44.3	63.3	42.1
02:00 AM - 03:00 AM	44.9	57.6	42.6
03:00 AM - 04:00 AM	47.3	75.4	42.4
04:00 AM - 05:00 AM	46.1	62.5	45.1
05:00 AM - 06:00 AM	47.7	73.7	46.2
06:00 AM - 07:00 AM	59.7	90.9	47.4
07:00 AM - 08:00 AM	53.1	78.2	47.5
08:00 AM - 09:00 AM	53.5	72.8	46.4
09:00 AM - 10:00 AM	51.0	69.8	45.5
10:00 AM - 11:00 AM	49.3	71.3	44.2
11:00 AM - 12:00 PM	49.1	73.0	43.7

Leq Average 24 hrs. (dB(A)) 51.0  
Lmax (dB(A)) 90.9  
L90 (dB(A)) 44.1  
Ldn (dB(A)) 57.8  
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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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S:\Reports\Air Noise.rpt ( 2:03PM)



## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142057**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537086-1

Page 1 of 1

**Sample Number** 22142057-6  
**Parameter** Noise (Leq 24 hrs.)  
**Location** วัดสุราษฎร์ (GPS 48Q 276877, 1887945)  
**Measurement Date** Dec 25 - Dec 26, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 610207

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	48.5	66.8	43.3
01:00 PM - 02:00 PM	49.3	71.8	42.6
02:00 PM - 03:00 PM	47.4	68.3	42.1
03:00 PM - 04:00 PM	53.7	76.4	46.7
04:00 PM - 05:00 PM	53.1	72.4	48.5
05:00 PM - 06:00 PM	52.1	77.5	48.1
06:00 PM - 07:00 PM	48.8	77.2	44.4
07:00 PM - 08:00 PM	47.8	72.9	43.8
08:00 PM - 09:00 PM	47.7	74.7	44.7
09:00 PM - 10:00 PM	53.3	78.0	44.4
10:00 PM - 11:00 PM	47.0	58.7	45.4
11:00 PM - 12:00 AM	51.9	79.3	46.4
12:00 AM - 01:00 AM	50.1	76.6	45.8
01:00 AM - 02:00 AM	46.5	59.7	44.7
02:00 AM - 03:00 AM	45.8	54.9	44.6
03:00 AM - 04:00 AM	43.8	58.3	42.5
04:00 AM - 05:00 AM	46.9	71.9	43.1
05:00 AM - 06:00 AM	54.5	85.6	44.4
06:00 AM - 07:00 AM	58.6	89.4	46.5
07:00 AM - 08:00 AM	52.1	74.1	46.0
08:00 AM - 09:00 AM	51.6	79.6	45.6
09:00 AM - 10:00 AM	50.9	70.3	46.2
10:00 AM - 11:00 AM	51.0	71.5	46.6
11:00 AM - 12:00 PM	47.3	65.0	42.6

Leq Average 24 hrs. (dB(A)) 51.4  
Lmax (dB(A)) 89.4  
L90 (dB(A)) 44.7  
Ldn (dB(A)) 58.4  
Standard (dB(A)) 70

Reference Method : ISO1996-1 and 1996-2

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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142057**

Date Received : Dec 29, 2022

Date Reported : Jan 06, 2023

Report Number: 2537087-1

Page 1 of 1

**Sample Number** 22142057-7  
**Parameter** Noise (Leq 24 hrs.)  
**Location** วัดสุราษฎร์ (GPS 48Q 276877, 1887945)  
**Measurement Date** Dec 26 - Dec 27, 2022  
**Measurement by** Jatsarawut Pattama  
**Sound Level meter** Serial No. 610207

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	46.7	64.7	42.1
01:00 PM - 02:00 PM	47.4	66.0	42.2
02:00 PM - 03:00 PM	47.0	63.4	42.1
03:00 PM - 04:00 PM	48.9	65.7	43.6
04:00 PM - 05:00 PM	49.9	78.3	44.1
05:00 PM - 06:00 PM	49.5	75.1	44.6
06:00 PM - 07:00 PM	46.6	69.9	43.6
07:00 PM - 08:00 PM	53.6	81.6	44.7
08:00 PM - 09:00 PM	49.4	68.5	45.6
09:00 PM - 10:00 PM	50.1	75.8	46.2
10:00 PM - 11:00 PM	49.5	65.7	46.9
11:00 PM - 12:00 AM	47.0	57.5	45.5
12:00 AM - 01:00 AM	51.8	73.1	45.6
01:00 AM - 02:00 AM	45.2	54.3	43.6
02:00 AM - 03:00 AM	47.9	72.1	43.9
03:00 AM - 04:00 AM	54.2	80.3	43.3
04:00 AM - 05:00 AM	44.7	54.7	43.6
05:00 AM - 06:00 AM	44.8	64.3	43.2
06:00 AM - 07:00 AM	59.1	89.9	47.4
07:00 AM - 08:00 AM	53.3	74.2	48.3
08:00 AM - 09:00 AM	53.6	79.5	46.9
09:00 AM - 10:00 AM	50.8	70.0	45.8
10:00 AM - 11:00 AM	50.7	70.7	45.0
11:00 AM - 12:00 PM	48.0	66.4	41.0

Leq Average 24 hrs. (dB(A)) 51.2  
Lmax (dB(A)) 89.9  
L90 (dB(A)) 44.1  
Ldn (dB(A)) 58.5

Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
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Supot Salamteh  
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# ภาคผนวก ค-6

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ผลการตรวจวัดระดับเสียงรบกวน



# Analysis / Test Report

## TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142065  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536859-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142065-1  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
Measurement Date Dec 20 - 21, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 01122504

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด		ผลต่างระดับเสียง	ตัวปรับค่า	ปรับค่าเสียงจากแหล่งกำเนิด		เสียงพื้นฐาน	ค่าระดับการรบกวน
	(A)	(B)			(A-C)	(A-C)+3		
03:00 PM - 04:00 PM	51.4	53.5	-2.1	7.0	44.4	-	50.2	-5.8
04:00 PM - 05:00 PM	53.5	53.3	0.2	7.0	46.5	-	50.6	-4.1
05:00 PM - 06:00 PM	54.0	54.0	0.0	7.0	47.0	-	51.0	-4.0
06:00 PM - 07:00 PM	53.2	54.8	-1.6	7.0	46.2	-	51.7	-5.5
07:00 PM - 08:00 PM	53.3	53.4	-0.1	7.0	46.3	-	51.9	-5.6
08:00 PM - 09:00 PM	51.4	55.1	-3.7	7.0	44.4	-	53.5	-9.1
09:00 PM - 10:00 PM	49.5	53.8	-4.3	7.0	42.5	-	52.3	-9.8
10:00 PM - 10:05 PM	49.6	53.3	-3.7	7.0	-	45.6	52.1	-6.5
10:05 PM - 10:10 PM	49.2	53.5	-4.3	7.0	-	45.2	52.2	-7.0
10:10 PM - 10:15 PM	50.7	53.2	-2.5	7.0	-	46.7	51.7	-5.0
10:15 PM - 10:20 PM	51.0	53.4	-2.4	7.0	-	47.0	52.1	-5.1
10:20 PM - 10:25 PM	49.2	52.9	-3.7	7.0	-	45.2	51.4	-6.2
10:25 PM - 10:30 PM	49.1	52.7	-3.6	7.0	-	45.1	49.8	-4.7
10:30 PM - 10:35 PM	54.3	51.2	3.1	3.0	-	54.3	49.3	5.0
10:35 PM - 10:40 PM	50.9	51.4	-0.5	7.0	-	46.9	49.5	-2.6
10:40 PM - 10:45 PM	49.5	52.7	-3.2	7.0	-	45.5	51.2	-5.7
10:45 PM - 10:50 PM	49.5	52.6	-3.1	7.0	-	45.5	50.7	-5.2
10:50 PM - 10:55 PM	51.1	52.6	-1.5	7.0	-	47.1	50.9	-3.8
10:55 PM - 11:00 PM	50.4	52.0	-1.6	7.0	-	46.4	49.9	-3.5
11:00 PM - 11:05 PM	50.3	50.8	-0.5	7.0	-	46.3	49.1	-2.8
11:05 PM - 11:10 PM	52.6	50.9	1.7	4.5	-	51.1	49.6	1.5
11:10 PM - 11:15 PM	50.8	51.9	-1.1	7.0	-	46.8	49.8	-3.0
11:15 PM - 11:20 PM	48.2	51.1	-2.9	7.0	-	44.2	49.1	-4.9
11:20 PM - 11:25 PM	50.8	50.5	0.3	7.0	-	46.8	49.1	-2.3
11:25 PM - 11:30 PM	50.7	49.8	0.9	7.0	-	46.7	48.4	-1.7
11:30 PM - 11:35 PM	49.1	50.1	-1.0	7.0	-	45.1	48.7	-3.6
11:35 PM - 11:40 PM	51.5	50.2	1.3	7.0	-	47.5	48.9	-1.4
11:40 PM - 11:45 PM	50.1	51.1	-1.0	7.0	-	46.1	49.5	-3.4
11:45 PM - 11:50 PM	48.7	51.6	-2.9	7.0	-	44.7	49.7	-5.0
11:50 PM - 11:55 PM	50.5	51.1	-0.6	7.0	-	46.5	49.6	-3.1
11:55 PM - 12:00 AM	50.2	50.9	-0.7	7.0	-	46.2	49.1	-2.9
12:00 AM - 12:05 AM	51.5	50.3	1.2	7.0	-	47.5	49.1	-1.6
12:05 AM - 12:10 AM	49.7	50.2	-0.5	7.0	-	45.7	48.6	-2.9
12:10 AM - 12:15 AM	49.4	50.3	-0.9	7.0	-	45.4	48.6	-3.2
12:15 AM - 12:20 AM	50.5	50.7	-0.2	7.0	-	46.5	49.1	-2.6
12:20 AM - 12:25 AM	48.6	50.4	-1.8	7.0	-	44.6	48.8	-4.2
12:25 AM - 12:30 AM	48.1	49.7	-1.6	7.0	-	44.1	48.1	-4.0
12:30 AM - 12:35 AM	49.1	50.3	-1.2	7.0	-	45.1	48.5	-3.4
12:35 AM - 12:40 AM	48.0	51.5	-3.5	7.0	-	44.0	49.3	-5.3
12:40 AM - 12:45 AM	52.2	48.8	3.4	3.0	-	52.2	47.6	4.6

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142065  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536859-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142065-1  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
Measurement Date Dec 20 - 21, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 01122504

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:45 AM - 12:50 AM	51.4	49.3	2.1	4.5	-	49.9	47.5	2.4
12:50 AM - 12:55 AM	55.7	49.9	5.8	1.5	-	57.2	47.8	9.4
12:55 AM - 01:00 AM	51.0	50.9	0.1	7.0	-	47.0	49.2	-2.2
01:00 AM - 01:05 AM	50.0	51.2	-1.2	7.0	-	46.0	49.6	-3.6
01:05 AM - 01:10 AM	48.9	52.6	-3.7	7.0	-	44.9	50.9	-6.0
01:10 AM - 01:15 AM	51.3	51.0	0.3	7.0	-	47.3	49.2	-1.9
01:15 AM - 01:20 AM	49.4	49.4	0.0	7.0	-	45.4	47.5	-2.1
01:20 AM - 01:25 AM	51.9	51.9	0.0	7.0	-	47.9	48.8	-0.9
01:25 AM - 01:30 AM	50.7	52.1	-1.4	7.0	-	46.7	50.8	-4.1
01:30 AM - 01:35 AM	51.1	52.4	-1.3	7.0	-	47.1	50.9	-3.8
01:35 AM - 01:40 AM	50.8	52.8	-2.0	7.0	-	46.8	51.1	-4.3
01:40 AM - 01:45 AM	50.1	53.1	-3.0	7.0	-	46.1	51.8	-5.7
01:45 AM - 01:50 AM	53.8	53.4	0.4	7.0	-	49.8	52.2	-2.4
01:50 AM - 01:55 AM	54.1	52.6	1.5	4.5	-	52.6	50.6	2.0
01:55 AM - 02:00 AM	53.4	53.6	-0.2	7.0	-	49.4	51.9	-2.5
02:00 AM - 02:05 AM	52.5	51.7	0.8	7.0	-	48.5	49.9	-1.4
02:05 AM - 02:10 AM	50.5	50.2	0.3	7.0	-	46.5	47.2	-0.7
02:10 AM - 02:15 AM	52.3	47.2	5.1	1.5	-	53.8	45.7	8.1
02:15 AM - 02:20 AM	53.8	47.5	6.3	1.5	-	55.3	46.8	8.5
02:20 AM - 02:25 AM	51.8	47.6	4.2	2.0	-	52.8	46.9	5.9
02:25 AM - 02:30 AM	52.6	47.0	5.6	1.5	-	54.1	46.1	8.0
02:30 AM - 02:35 AM	51.7	47.0	4.7	1.5	-	53.2	46.1	7.1
02:35 AM - 02:40 AM	51.0	46.9	4.1	2.0	-	52.0	45.8	6.2
02:40 AM - 02:45 AM	52.2	47.6	4.6	1.5	-	53.7	46.0	7.7
02:45 AM - 02:50 AM	52.0	49.2	2.8	3.0	-	52.0	46.3	5.7
02:50 AM - 02:55 AM	51.8	50.0	1.8	4.5	-	50.3	48.0	2.3
02:55 AM - 03:00 AM	51.7	47.5	4.2	2.0	-	52.7	46.1	6.6
03:00 AM - 03:05 AM	52.3	46.9	5.4	1.5	-	53.8	46.1	7.7
03:05 AM - 03:10 AM	52.3	46.1	6.2	1.5	-	53.8	45.1	8.7
03:10 AM - 03:15 AM	52.9	49.7	3.2	3.0	-	52.9	47.7	5.2
03:15 AM - 03:20 AM	51.9	49.4	2.5	3.0	-	51.9	48.3	3.6
03:20 AM - 03:25 AM	51.9	50.7	1.2	7.0	-	47.9	49.2	-1.3
03:25 AM - 03:30 AM	52.4	51.0	1.4	7.0	-	48.4	49.3	-0.9
03:30 AM - 03:35 AM	51.4	50.5	0.9	7.0	-	47.4	48.2	-0.8
03:35 AM - 03:40 AM	52.5	50.5	2.0	4.5	-	51.0	48.0	3.0
03:40 AM - 03:45 AM	52.7	50.5	2.2	4.5	-	51.2	48.5	2.7
03:45 AM - 03:50 AM	49.7	52.5	-2.8	7.0	-	45.7	50.5	-4.8
03:50 AM - 03:55 AM	46.2	53.0	-6.8	7.0	-	42.2	50.9	-8.7
03:55 AM - 04:00 AM	49.7	52.2	-2.5	7.0	-	45.7	50.3	-4.6
04:00 AM - 04:05 AM	49.6	53.4	-3.8	7.0	-	45.6	50.4	-4.8

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142065  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536859-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142065-1  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
Measurement Date Dec 20 - 21, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 01122504

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับการรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:05 AM - 04:10 AM	47.3	52.2	-4.9	7.0	-	43.3	50.1	-6.8
04:10 AM - 04:15 AM	45.5	52.0	-6.5	7.0	-	41.5	50.3	-8.8
04:15 AM - 04:20 AM	48.4	52.9	-4.5	7.0	-	44.4	50.5	-6.1
04:20 AM - 04:25 AM	50.3	53.1	-2.8	7.0	-	46.3	50.8	-4.5
04:25 AM - 04:30 AM	47.6	53.0	-5.4	7.0	-	43.6	50.4	-6.8
04:30 AM - 04:35 AM	46.7	54.3	-7.6	7.0	-	42.7	52.1	-9.4
04:35 AM - 04:40 AM	50.3	54.9	-4.6	7.0	-	46.3	52.7	-6.4
04:40 AM - 04:45 AM	55.9	51.4	4.5	1.5	-	57.4	49.6	7.8
04:45 AM - 04:50 AM	46.3	51.5	-5.2	7.0	-	42.3	50.0	-7.7
04:50 AM - 04:55 AM	52.9	52.0	0.9	7.0	-	48.9	50.7	-1.8
04:55 AM - 05:00 AM	52.2	52.3	-0.1	7.0	-	48.2	50.0	-1.8
05:00 AM - 05:05 AM	49.5	53.2	-3.7	7.0	-	45.5	50.2	-4.7
05:05 AM - 05:10 AM	50.4	52.8	-2.4	7.0	-	46.4	51.1	-4.7
05:10 AM - 05:15 AM	50.2	52.9	-2.7	7.0	-	46.2	50.0	-3.8
05:15 AM - 05:20 AM	48.4	50.8	-2.4	7.0	-	44.4	49.1	-4.7
05:20 AM - 05:25 AM	49.5	50.1	-0.6	7.0	-	45.5	48.2	-2.7
05:25 AM - 05:30 AM	48.3	50.4	-2.1	7.0	-	44.3	48.2	-3.9
05:30 AM - 05:35 AM	49.9	51.5	-1.6	7.0	-	45.9	48.4	-2.5
05:35 AM - 05:40 AM	51.0	51.6	-0.6	7.0	-	47.0	48.7	-1.7
05:40 AM - 05:45 AM	49.3	51.5	-2.2	7.0	-	45.3	49.5	-4.2
05:45 AM - 05:50 AM	51.6	51.9	-0.3	7.0	-	47.6	49.5	-1.9
05:50 AM - 05:55 AM	48.7	52.2	-3.5	7.0	-	44.7	50.4	-5.7
05:55 AM - 06:00 AM	49.5	52.5	-3.0	7.0	-	45.5	51.1	-5.6
06:00 AM - 07:00 AM	49.7	54.7	-5.0	7.0	42.7	-	51.4	-8.7
07:00 AM - 08:00 AM	49.9	53.4	-3.5	7.0	42.9	-	50.3	-7.4
08:00 AM - 09:00 AM	51.0	55.4	-4.4	7.0	44.0	-	49.8	-5.8
09:00 AM - 10:00 AM	52.4	52.6	-0.2	7.0	45.4	-	49.2	-3.8
10:00 AM - 11:00 AM	52.3	54.2	-1.9	7.0	45.3	-	49.9	-4.6
11:00 AM - 12:00 PM	54.1	54.6	-0.5	7.0	47.1	-	50.2	-3.1
12:00 PM - 01:00 PM	54.3	52.6	1.7	4.5	49.8	-	49.8	0.0
01:00 PM - 02:00 PM	53.8	56.2	-2.4	7.0	46.8	-	51.4	-4.6
02:00 PM - 03:00 PM	55.5	53.1	2.4	4.5	51.0	-	49.7	1.3

ค่ามาตรฐาน

≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 20-21 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142075-1 วันที่ตรวจวัด 27-28 มิถุนายน 2565)

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



# Analysis / Test Report

## TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142065  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536860-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142065-2  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
Measurement Date Dec 21 - 22, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 01122504

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด <sup>(A)</sup>	เสียงขณะ ไม่มีการรบกวน <sup>(B)</sup>	ผลต่าง ระดับเสียง <sup>(A-B)</sup>	ตัวปรับค่า <sup>(C)</sup>	ปรับค่าเสียงจากแหล่งกำเนิด <sup>(B)</sup>		เสียงพื้นฐาน <sup>(E)</sup>	ค่าระดับ การรบกวน <sup>(D-E)</sup>
					กลางวัน <sup>(A-C)</sup>	กลางคืน <sup>(A-C)+3</sup>		
03:00 PM - 04:00 PM	55.2	55.1	0.1	7.0	48.2	-	51.6	-3.4
04:00 PM - 05:00 PM	54.9	55.2	-0.3	7.0	47.9	-	52.2	-4.3
05:00 PM - 06:00 PM	54.4	54.5	-0.1	7.0	47.4	-	52.3	-4.9
06:00 PM - 07:00 PM	55.5	53.8	1.7	4.5	51.0	-	50.3	0.7
07:00 PM - 08:00 PM	59.5	49.5	10.0	0.5	59.0	-	48.1	10.9
08:00 PM - 09:00 PM	57.6	50.0	7.6	0.5	57.1	-	48.3	8.8
09:00 PM - 10:00 PM	52.2	51.5	0.7	7.0	45.2	-	49.9	-4.7
10:00 PM - 10:05 PM	48.5	52.0	-3.5	7.0	-	44.5	50.8	-6.3
10:05 PM - 10:10 PM	48.9	51.9	-3.0	7.0	-	44.9	50.6	-5.7
10:10 PM - 10:15 PM	50.5	51.6	-1.1	7.0	-	46.5	50.5	-4.0
10:15 PM - 10:20 PM	50.8	51.2	-0.4	7.0	-	46.8	50.0	-3.2
10:20 PM - 10:25 PM	48.6	51.9	-3.3	7.0	-	44.6	50.7	-6.1
10:25 PM - 10:30 PM	48.5	51.6	-3.1	7.0	-	44.5	50.5	-6.0
10:30 PM - 10:35 PM	50.2	51.6	-1.4	7.0	-	46.2	50.4	-4.2
10:35 PM - 10:40 PM	48.6	51.2	-2.6	7.0	-	44.6	50.0	-5.4
10:40 PM - 10:45 PM	49.6	51.1	-1.5	7.0	-	45.6	48.2	-2.6
10:45 PM - 10:50 PM	53.4	49.1	4.3	2.0	-	54.4	47.4	7.0
10:50 PM - 10:55 PM	52.8	47.9	4.9	1.5	-	54.3	46.9	7.4
10:55 PM - 11:00 PM	50.1	50.4	-0.3	7.0	-	46.1	47.4	-1.3
11:00 PM - 11:05 PM	52.4	52.0	0.4	7.0	-	48.4	49.8	-1.4
11:05 PM - 11:10 PM	53.6	52.0	1.6	4.5	-	52.1	50.8	1.3
11:10 PM - 11:15 PM	54.1	52.0	2.1	4.5	-	52.6	50.7	1.9
11:15 PM - 11:20 PM	54.4	51.4	3.0	3.0	-	54.4	50.1	4.3
11:20 PM - 11:25 PM	54.5	51.6	2.9	3.0	-	54.5	50.1	4.4
11:25 PM - 11:30 PM	54.0	51.3	2.7	3.0	-	54.0	49.8	4.2
11:30 PM - 11:35 PM	52.3	51.4	0.9	7.0	-	48.3	49.8	-1.5
11:35 PM - 11:40 PM	52.9	51.6	1.3	7.0	-	48.9	50.4	-1.5
11:40 PM - 11:45 PM	52.3	51.2	1.1	7.0	-	48.3	49.8	-1.5
11:45 PM - 11:50 PM	54.8	51.0	3.8	2.0	-	55.8	49.8	6.0
11:50 PM - 11:55 PM	54.1	51.2	2.9	3.0	-	54.1	48.5	5.6
11:55 PM - 12:00 AM	53.3	51.9	1.4	7.0	-	49.3	49.9	-0.6
12:00 AM - 12:05 AM	53.1	51.2	1.9	4.5	-	51.6	49.5	2.1
12:05 AM - 12:10 AM	52.8	51.4	1.4	7.0	-	48.8	49.9	-1.1
12:10 AM - 12:15 AM	52.6	51.8	0.8	7.0	-	48.6	50.1	-1.5
12:15 AM - 12:20 AM	52.7	50.1	2.6	3.0	-	52.7	46.7	6.0
12:20 AM - 12:25 AM	52.1	50.7	1.4	7.0	-	48.1	47.1	1.0
12:25 AM - 12:30 AM	52.4	52.2	0.2	7.0	-	48.4	50.0	-1.6
12:30 AM - 12:35 AM	51.9	50.9	1.0	7.0	-	47.9	49.4	-1.5
12:35 AM - 12:40 AM	52.9	50.7	2.2	4.5	-	51.4	49.0	2.4
12:40 AM - 12:45 AM	52.9	51.7	1.2	7.0	-	48.9	50.0	-1.1

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142065  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536860-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142065-2  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
Measurement Date Dec 21 - 22, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 01122504

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
	แหล่งกำเนิด				กลางวัน (A-C)	กลางคืน (A-C)+3		
12:45 AM - 12:50 AM	44.9	51.2	-6.3	7.0	-	40.9	49.6	-8.7
12:50 AM - 12:55 AM	48.9	51.3	-2.4	7.0	-	44.9	49.9	-5.0
12:55 AM - 01:00 AM	51.1	51.8	-0.7	7.0	-	47.1	50.5	-3.4
01:00 AM - 01:05 AM	52.2	51.9	0.3	7.0	-	48.2	50.4	-2.2
01:05 AM - 01:10 AM	50.5	51.7	-1.2	7.0	-	46.5	50.3	-3.8
01:10 AM - 01:15 AM	51.3	51.7	-0.4	7.0	-	47.3	50.3	-3.0
01:15 AM - 01:20 AM	51.3	51.8	-0.5	7.0	-	47.3	50.4	-3.1
01:20 AM - 01:25 AM	51.3	51.9	-0.6	7.0	-	47.3	50.6	-3.3
01:25 AM - 01:30 AM	52.6	52.0	0.6	7.0	-	48.6	50.6	-2.0
01:30 AM - 01:35 AM	52.7	52.2	0.5	7.0	-	48.7	50.9	-2.2
01:35 AM - 01:40 AM	52.1	52.1	0.0	7.0	-	48.1	50.7	-2.6
01:40 AM - 01:45 AM	52.5	51.8	0.7	7.0	-	48.5	50.4	-1.9
01:45 AM - 01:50 AM	52.8	51.6	1.2	7.0	-	48.8	50.0	-1.2
01:50 AM - 01:55 AM	52.8	50.9	1.9	4.5	-	51.3	49.1	2.2
01:55 AM - 02:00 AM	52.5	51.4	1.1	7.0	-	48.5	50.2	-1.7
02:00 AM - 02:05 AM	51.9	51.3	0.6	7.0	-	47.9	50.0	-2.1
02:05 AM - 02:10 AM	52.5	51.2	1.3	7.0	-	48.5	49.9	-1.4
02:10 AM - 02:15 AM	52.4	51.0	1.4	7.0	-	48.4	49.6	-1.2
02:15 AM - 02:20 AM	52.6	51.2	1.4	7.0	-	48.6	49.4	-0.8
02:20 AM - 02:25 AM	52.4	51.1	1.3	7.0	-	48.4	49.7	-1.3
02:25 AM - 02:30 AM	52.6	50.7	1.9	4.5	-	51.1	49.3	1.8
02:30 AM - 02:35 AM	52.7	50.7	2.0	4.5	-	51.2	49.2	2.0
02:35 AM - 02:40 AM	52.0	51.0	1.0	7.0	-	48.0	49.7	-1.7
02:40 AM - 02:45 AM	52.1	50.9	1.2	7.0	-	48.1	49.5	-1.4
02:45 AM - 02:50 AM	52.0	51.4	0.6	7.0	-	48.0	49.9	-1.9
02:50 AM - 02:55 AM	51.7	50.1	1.6	4.5	-	50.2	46.8	3.4
02:55 AM - 03:00 AM	51.8	47.7	4.1	2.0	-	52.8	46.4	6.4
03:00 AM - 03:05 AM	52.0	47.2	4.8	1.5	-	53.5	46.2	7.3
03:05 AM - 03:10 AM	50.8	48.1	2.7	3.0	-	50.8	46.9	3.9
03:10 AM - 03:15 AM	51.5	48.0	3.5	2.0	-	52.5	46.9	5.6
03:15 AM - 03:20 AM	52.0	47.4	4.6	1.5	-	53.5	46.1	7.4
03:20 AM - 03:25 AM	51.3	49.4	1.9	4.5	-	49.8	46.9	2.9
03:25 AM - 03:30 AM	52.0	49.3	2.7	3.0	-	52.0	46.6	5.4
03:30 AM - 03:35 AM	51.2	47.3	3.9	2.0	-	52.2	46.1	6.1
03:35 AM - 03:40 AM	51.7	48.2	3.5	2.0	-	52.7	46.2	6.5
03:40 AM - 03:45 AM	51.4	51.7	-0.3	7.0	-	47.4	50.1	-2.7
03:45 AM - 03:50 AM	51.8	51.9	-0.1	7.0	-	47.8	50.3	-2.5
03:50 AM - 03:55 AM	52.0	53.3	-1.3	7.0	-	48.0	49.6	-1.6
03:55 AM - 04:00 AM	52.3	54.1	-1.8	7.0	-	48.3	49.7	-1.4
04:00 AM - 04:05 AM	52.6	51.6	1.0	7.0	-	48.6	49.9	-1.3

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142065  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536860-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142065-2  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
Measurement Date Dec 21 - 22, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 01122504

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B) (C)	ตัวปรับค่า (D)	ปรับค่าเสียงจากแหล่งกำเนิด (E)		เสียงพื้นฐาน (F)	ค่าระดับการรบกวน (G-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:05 AM - 04:10 AM	52.1	51.2	0.9	7.0	-	48.1	49.6	-1.5
04:10 AM - 04:15 AM	52.4	50.8	1.6	4.5	-	50.9	48.6	2.3
04:15 AM - 04:20 AM	51.6	51.1	0.5	7.0	-	47.6	49.5	-1.9
04:20 AM - 04:25 AM	52.4	51.4	1.0	7.0	-	48.4	49.9	-1.5
04:25 AM - 04:30 AM	52.6	51.1	1.5	4.5	-	51.1	49.5	1.6
04:30 AM - 04:35 AM	53.0	51.0	2.0	4.5	-	51.5	49.3	2.2
04:35 AM - 04:40 AM	52.9	51.3	1.6	4.5	-	51.4	49.5	1.9
04:40 AM - 04:45 AM	51.5	51.5	0.0	7.0	-	47.5	49.8	-2.3
04:45 AM - 04:50 AM	51.0	50.5	0.5	7.0	-	47.0	47.8	-0.8
04:50 AM - 04:55 AM	53.1	52.1	1.0	7.0	-	49.1	50.1	-1.0
04:55 AM - 05:00 AM	53.4	51.5	1.9	4.5	-	51.9	49.8	2.1
05:00 AM - 05:05 AM	53.1	51.6	1.5	4.5	-	51.6	49.1	2.5
05:05 AM - 05:10 AM	53.5	51.2	2.3	4.5	-	52.0	49.0	3.0
05:10 AM - 05:15 AM	53.5	50.6	2.9	3.0	-	53.5	47.4	6.1
05:15 AM - 05:20 AM	54.3	52.0	2.3	4.5	-	52.8	48.4	4.4
05:20 AM - 05:25 AM	54.6	49.0	5.6	1.5	-	56.1	47.4	8.7
05:25 AM - 05:30 AM	55.4	49.1	6.3	1.5	-	56.9	47.6	9.3
05:30 AM - 05:35 AM	56.0	49.2	6.8	1.0	-	58.0	47.5	10.5
05:35 AM - 05:40 AM	56.1	48.4	7.7	0.5	-	58.6	47.0	11.6
05:40 AM - 05:45 AM	56.2	50.3	5.9	1.5	-	57.7	47.6	10.1
05:45 AM - 05:50 AM	56.1	49.9	6.2	1.5	-	57.6	48.0	9.6
05:50 AM - 05:55 AM	57.7	49.9	7.8	0.5	-	60.2	47.9	12.3
05:55 AM - 06:00 AM	55.6	51.7	3.9	2.0	-	56.6	49.6	7.0
06:00 AM - 07:00 AM	54.3	55.7	-1.4	7.0	47.3	-	51.2	-3.9
07:00 AM - 08:00 AM	53.2	55.7	-2.5	7.0	46.2	-	52.5	-6.3
08:00 AM - 09:00 AM	50.4	54.9	-4.5	7.0	43.4	-	51.5	-8.1
09:00 AM - 10:00 AM	49.1	54.7	-5.6	7.0	42.1	-	51.8	-9.7
10:00 AM - 11:00 AM	48.2	54.6	-6.4	7.0	41.2	-	51.2	-10.0
11:00 AM - 12:00 PM	49.0	52.8	-3.8	7.0	42.0	-	49.1	-7.1
12:00 PM - 01:00 PM	50.7	51.4	-0.7	7.0	43.7	-	48.9	-5.2
01:00 PM - 02:00 PM	50.0	54.2	-4.2	7.0	43.0	-	50.6	-7.6
02:00 PM - 03:00 PM	50.1	54.2	-4.1	7.0	43.1	-	50.3	-7.2

ค่ามาตรฐาน

≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 21-22 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142075-2 วันที่ตรวจวัด 28-29 มิถุนายน 2565)

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

Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



# Analysis / Test Report

## TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142065  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536861-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142065-3  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
Measurement Date Dec 22 - 23, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 01122504

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด		ผลต่างระดับเสียง	ตัวปรับค่า	ปรับค่าเสียงจากแหล่งกำเนิด		เสียงพื้นฐาน	ค่าระดับการรบกวน
	(A)	(B)			(A-C)	(A-C)+3		
03:00 PM - 04:00 PM	50.1	54.6	-4.5	7.0	43.1	-	51.2	-8.1
04:00 PM - 05:00 PM	51.4	55.5	-4.1	7.0	44.4	-	52.4	-8.0
05:00 PM - 06:00 PM	52.3	55.0	-2.7	7.0	45.3	-	52.0	-6.7
06:00 PM - 07:00 PM	57.3	54.4	2.9	3.0	54.3	-	50.9	3.4
07:00 PM - 08:00 PM	54.1	52.9	1.2	7.0	47.1	-	51.3	-4.2
08:00 PM - 09:00 PM	52.7	53.3	-0.6	7.0	45.7	-	51.9	-6.2
09:00 PM - 10:00 PM	51.3	52.9	-1.6	7.0	44.3	-	51.8	-7.5
10:00 PM - 10:05 PM	55.0	51.7	3.3	3.0	-	55.0	50.7	4.3
10:05 PM - 10:10 PM	53.0	51.7	1.3	7.0	-	49.0	50.5	-1.5
10:10 PM - 10:15 PM	53.2	51.9	1.3	7.0	-	49.2	50.9	-1.7
10:15 PM - 10:20 PM	54.5	51.8	2.7	3.0	-	54.5	49.5	5.0
10:20 PM - 10:25 PM	52.5	48.8	3.7	2.0	-	53.5	48.1	5.4
10:25 PM - 10:30 PM	64.0	49.4	14.6	0.0	-	67.0	48.4	18.6
10:30 PM - 10:35 PM	53.6	48.8	4.8	1.5	-	55.1	48.1	7.0
10:35 PM - 10:40 PM	53.1	47.8	5.3	1.5	-	54.6	46.7	7.9
10:40 PM - 10:45 PM	57.3	46.5	10.8	0.5	-	59.8	45.1	14.7
10:45 PM - 10:50 PM	50.5	46.9	3.6	2.0	-	51.5	45.7	5.8
10:50 PM - 10:55 PM	50.6	48.1	2.5	3.0	-	50.6	46.0	4.6
10:55 PM - 11:00 PM	48.9	49.0	-0.1	7.0	-	44.9	47.9	-3.0
11:00 PM - 11:05 PM	51.5	48.6	2.9	3.0	-	51.5	47.3	4.2
11:05 PM - 11:10 PM	53.4	47.5	5.9	1.5	-	54.9	46.5	8.4
11:10 PM - 11:15 PM	52.3	48.1	4.2	2.0	-	53.3	45.9	7.4
11:15 PM - 11:20 PM	53.3	47.4	5.9	1.5	-	54.8	46.1	8.7
11:20 PM - 11:25 PM	51.9	47.5	4.4	2.0	-	52.9	46.2	6.7
11:25 PM - 11:30 PM	52.1	48.0	4.1	2.0	-	53.1	46.5	6.6
11:30 PM - 11:35 PM	50.0	49.1	0.9	7.0	-	46.0	46.9	-0.9
11:35 PM - 11:40 PM	50.7	51.2	-0.5	7.0	-	46.7	48.0	-1.3
11:40 PM - 11:45 PM	50.2	53.6	-3.4	7.0	-	46.2	50.5	-4.3
11:45 PM - 11:50 PM	49.3	52.3	-3.0	7.0	-	45.3	50.1	-4.8
11:50 PM - 11:55 PM	50.0	51.3	-1.3	7.0	-	46.0	49.5	-3.5
11:55 PM - 12:00 AM	53.3	51.3	2.0	4.5	-	51.8	49.8	2.0
12:00 AM - 12:05 AM	47.1	50.5	-3.4	7.0	-	43.1	46.4	-3.3
12:05 AM - 12:10 AM	48.4	51.6	-3.2	7.0	-	44.4	50.2	-5.8
12:10 AM - 12:15 AM	52.3	50.2	2.1	4.5	-	50.8	46.4	4.4
12:15 AM - 12:20 AM	56.1	51.0	5.1	1.5	-	57.6	49.1	8.5
12:20 AM - 12:25 AM	52.0	51.4	0.6	7.0	-	48.0	50.0	-2.0
12:25 AM - 12:30 AM	53.0	51.1	1.9	4.5	-	51.5	49.5	2.0
12:30 AM - 12:35 AM	55.1	51.2	3.9	2.0	-	56.1	49.7	6.4
12:35 AM - 12:40 AM	48.0	51.3	-3.3	7.0	-	44.0	49.9	-5.9
12:40 AM - 12:45 AM	51.2	51.4	-0.2	7.0	-	47.2	50.0	-2.8

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142065  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536861-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142065-3  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
Measurement Date Dec 22 - 23, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 01122504

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด	เสียงขณะ ไม่มีการรบกวน	ผลต่าง ระดับเสียง	ตัวปรับค่า	ปรับค่าเสียงจากแหล่งกำเนิด		เสียงพื้นฐาน	ค่าระดับ การรบกวน
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:45 AM - 12:50 AM	62.7	51.3	11.4	0.5	-	65.2	49.9	15.3
12:50 AM - 12:55 AM	51.1	51.8	-0.7	7.0	-	47.1	50.3	-3.2
12:55 AM - 01:00 AM	54.7	50.4	4.3	2.0	-	55.7	47.4	8.3
01:00 AM - 01:05 AM	44.9	50.0	-5.1	7.0	-	40.9	47.4	-6.5
01:05 AM - 01:10 AM	47.8	51.3	-3.5	7.0	-	43.8	49.9	-6.1
01:10 AM - 01:15 AM	51.6	50.4	1.2	7.0	-	47.6	49.3	-1.7
01:15 AM - 01:20 AM	45.8	50.5	-4.7	7.0	-	41.8	49.2	-7.4
01:20 AM - 01:25 AM	50.1	51.9	-1.8	7.0	-	46.1	50.5	-4.4
01:25 AM - 01:30 AM	45.9	51.8	-5.9	7.0	-	41.9	50.4	-8.5
01:30 AM - 01:35 AM	49.2	51.7	-2.5	7.0	-	45.2	49.7	-4.5
01:35 AM - 01:40 AM	44.5	54.1	-9.6	7.0	-	40.5	52.4	-11.9
01:40 AM - 01:45 AM	49.7	53.4	-3.7	7.0	-	45.7	51.8	-6.1
01:45 AM - 01:50 AM	44.2	53.5	-9.3	7.0	-	40.2	51.8	-11.6
01:50 AM - 01:55 AM	44.9	51.4	-6.5	7.0	-	40.9	48.1	-7.2
01:55 AM - 02:00 AM	47.1	51.6	-4.5	7.0	-	43.1	49.9	-6.8
02:00 AM - 02:05 AM	58.1	51.3	6.8	1.0	-	60.1	49.6	10.5
02:05 AM - 02:10 AM	54.3	51.7	2.6	3.0	-	54.3	50.1	4.2
02:10 AM - 02:15 AM	55.4	52.6	2.8	3.0	-	55.4	50.5	4.9
02:15 AM - 02:20 AM	44.1	52.0	-7.9	7.0	-	40.1	50.4	-10.3
02:20 AM - 02:25 AM	48.7	51.4	-2.7	7.0	-	44.7	49.9	-5.2
02:25 AM - 02:30 AM	57.4	51.8	5.6	1.5	-	58.9	50.2	8.7
02:30 AM - 02:35 AM	52.3	52.2	0.1	7.0	-	48.3	50.3	-2.0
02:35 AM - 02:40 AM	53.8	51.6	2.2	4.5	-	52.3	49.6	2.7
02:40 AM - 02:45 AM	50.3	51.8	-1.5	7.0	-	46.3	50.2	-3.9
02:45 AM - 02:50 AM	46.1	51.8	-5.7	7.0	-	42.1	50.2	-8.1
02:50 AM - 02:55 AM	47.5	51.4	-3.9	7.0	-	43.5	49.7	-6.2
02:55 AM - 03:00 AM	48.6	51.4	-2.8	7.0	-	44.6	49.9	-5.3
03:00 AM - 03:05 AM	54.6	51.1	3.5	2.0	-	55.6	49.3	6.3
03:05 AM - 03:10 AM	49.2	51.0	-1.8	7.0	-	45.2	49.7	-4.5
03:10 AM - 03:15 AM	49.5	50.8	-1.3	7.0	-	45.5	49.2	-3.7
03:15 AM - 03:20 AM	50.4	51.0	-0.6	7.0	-	46.4	49.5	-3.1
03:20 AM - 03:25 AM	54.0	51.2	2.8	3.0	-	54.0	49.6	4.4
03:25 AM - 03:30 AM	48.0	48.0	0.0	7.0	-	44.0	46.2	-2.2
03:30 AM - 03:35 AM	53.8	46.8	7.0	1.0	-	55.8	44.8	11.0
03:35 AM - 03:40 AM	50.5	47.9	2.6	3.0	-	50.5	46.3	4.2
03:40 AM - 03:45 AM	53.7	48.0	5.7	1.5	-	55.2	46.6	8.6
03:45 AM - 03:50 AM	51.2	48.4	2.8	3.0	-	51.2	46.9	4.3
03:50 AM - 03:55 AM	52.8	48.3	4.5	1.5	-	54.3	46.6	7.7
03:55 AM - 04:00 AM	47.8	48.6	-0.8	7.0	-	43.8	47.3	-3.5
04:00 AM - 04:05 AM	53.5	48.6	4.9	1.5	-	55.0	46.4	8.6

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142065  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536861-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142065-3  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
Measurement Date Dec 22 - 23, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 01122504

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B) (C)	ตัวปรับค่า (D)	ปรับค่าเสียงจากแหล่งกำเนิด (E)		เสียงพื้นฐาน (F)	ค่าระดับการรบกวน (G-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:05 AM - 04:10 AM	46.0	47.5	-1.5	7.0	-	42.0	46.2	-4.2
04:10 AM - 04:15 AM	47.3	47.9	-0.6	7.0	-	43.3	46.8	-3.5
04:15 AM - 04:20 AM	47.2	48.5	-1.3	7.0	-	43.2	47.2	-4.0
04:20 AM - 04:25 AM	59.2	48.4	10.8	0.5	-	61.7	47.2	14.5
04:25 AM - 04:30 AM	50.5	50.0	0.5	7.0	-	46.5	47.6	-1.1
04:30 AM - 04:35 AM	49.0	52.2	-3.2	7.0	-	45.0	50.7	-5.7
04:35 AM - 04:40 AM	49.7	52.0	-2.3	7.0	-	45.7	50.6	-4.9
04:40 AM - 04:45 AM	46.6	51.9	-5.3	7.0	-	42.6	50.5	-7.9
04:45 AM - 04:50 AM	52.4	52.4	0.0	7.0	-	48.4	50.1	-1.7
04:50 AM - 04:55 AM	49.3	52.6	-3.3	7.0	-	45.3	51.0	-5.7
04:55 AM - 05:00 AM	48.3	51.4	-3.1	7.0	-	44.3	49.9	-5.6
05:00 AM - 05:05 AM	53.5	52.3	1.2	7.0	-	49.5	50.8	-1.3
05:05 AM - 05:10 AM	49.1	49.8	-0.7	7.0	-	45.1	48.0	-2.9
05:10 AM - 05:15 AM	51.1	49.5	1.6	4.5	-	49.6	47.7	1.9
05:15 AM - 05:20 AM	48.5	50.4	-1.9	7.0	-	44.5	48.2	-3.7
05:20 AM - 05:25 AM	50.8	50.9	-0.1	7.0	-	46.8	48.8	-2.0
05:25 AM - 05:30 AM	48.5	52.5	-4.0	7.0	-	44.5	48.7	-4.2
05:30 AM - 05:35 AM	48.4	49.5	-1.1	7.0	-	44.4	47.6	-3.2
05:35 AM - 05:40 AM	50.2	49.8	0.4	7.0	-	46.2	47.7	-1.5
05:40 AM - 05:45 AM	49.6	49.7	-0.1	7.0	-	45.6	48.0	-2.4
05:45 AM - 05:50 AM	50.2	50.4	-0.2	7.0	-	46.2	48.3	-2.1
05:50 AM - 05:55 AM	51.1	51.2	-0.1	7.0	-	47.1	48.7	-1.6
05:55 AM - 06:00 AM	49.0	51.7	-2.7	7.0	-	45.0	48.7	-3.7
06:00 AM - 07:00 AM	57.6	54.2	3.4	3.0	54.6	-	51.2	3.4
07:00 AM - 08:00 AM	55.9	54.9	1.0	7.0	48.9	-	51.4	-2.5
08:00 AM - 09:00 AM	55.4	53.6	1.8	4.5	50.9	-	50.8	0.1
09:00 AM - 10:00 AM	56.2	53.5	2.7	3.0	53.2	-	50.6	2.6
10:00 AM - 11:00 AM	58.3	53.9	4.4	2.0	56.3	-	50.3	6.0
11:00 AM - 12:00 PM	58.0	54.2	3.8	2.0	56.0	-	50.6	5.4
12:00 PM - 01:00 PM	59.2	51.3	7.9	0.5	58.7	-	48.0	10.7
01:00 PM - 02:00 PM	56.9	54.5	2.4	4.5	52.4	-	51.4	1.0
02:00 PM - 03:00 PM	55.0	55.1	-0.1	7.0	48.0	-	51.8	-3.8
ค่ามาตรฐาน	≤ 10							

Reference Method : Based on ISO 1996-1 and ISO 1996-2

#### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 22-23 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142075-3 วันที่ตรวจวัด 29-30 มิถุนายน 2565)

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

Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142065  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536862-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142065-4  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
Measurement Date Dec 23 - 24, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 01122504

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด <sup>(A)</sup>	เสียงขณะ ไม่มีการรบกวน <sup>(B)</sup>	ผลต่าง ระดับเสียง <sup>(A-B)</sup>	ตัวปรับค่า <sup>(C)</sup>	ปรับค่าเสียงจากแหล่งกำเนิด <sup>(B)</sup>		เสียงพื้นฐาน <sup>(E)</sup>	ค่าระดับ การรบกวน <sup>(D-E)</sup>
					กลางวัน <sup>(A-C)</sup>	กลางคืน <sup>(A-C)+3</sup>		
03:00 PM - 04:00 PM	51.5	53.7	-2.2	7.0	44.5	-	50.7	-6.2
04:00 PM - 05:00 PM	53.9	52.5	1.4	7.0	46.9	-	48.5	-1.6
05:00 PM - 06:00 PM	59.0	53.6	5.4	1.5	57.5	-	50.6	6.9
06:00 PM - 07:00 PM	59.2	53.7	5.5	1.5	57.7	-	50.2	7.5
07:00 PM - 08:00 PM	60.0	50.2	9.8	0.5	59.5	-	48.5	11.0
08:00 PM - 09:00 PM	60.2	50.3	9.9	0.5	59.7	-	48.2	11.5
09:00 PM - 10:00 PM	57.5	51.3	6.2	1.5	56.0	-	48.2	7.8
10:00 PM - 10:05 PM	56.8	49.1	7.7	0.5	-	59.3	47.3	12.0
10:05 PM - 10:10 PM	55.7	53.1	2.6	3.0	-	55.7	49.5	6.2
10:10 PM - 10:15 PM	57.1	53.0	4.1	2.0	-	58.1	49.1	9.0
10:15 PM - 10:20 PM	59.1	50.1	9.0	0.5	-	61.6	48.8	12.8
10:20 PM - 10:25 PM	60.8	50.3	10.5	0.5	-	63.3	49.0	14.3
10:25 PM - 10:30 PM	62.9	53.0	9.9	0.5	-	65.4	48.7	16.7
10:30 PM - 10:35 PM	59.8	52.2	7.6	0.5	-	62.3	48.6	13.7
10:35 PM - 10:40 PM	60.5	49.7	10.8	0.5	-	63.0	47.9	15.1
10:40 PM - 10:45 PM	58.2	50.9	7.3	1.0	-	60.2	48.4	11.8
10:45 PM - 10:50 PM	48.0	51.9	-3.9	7.0	-	44.0	48.7	-4.7
10:50 PM - 10:55 PM	49.8	51.5	-1.7	7.0	-	45.8	47.9	-2.1
10:55 PM - 11:00 PM	51.6	51.8	-0.2	7.0	-	47.6	49.1	-1.5
11:00 PM - 11:05 PM	51.0	48.6	2.4	4.5	-	49.5	47.2	2.3
11:05 PM - 11:10 PM	47.4	47.9	-0.5	7.0	-	43.4	47.1	-3.7
11:10 PM - 11:15 PM	50.6	48.2	2.4	4.5	-	49.1	46.9	2.2
11:15 PM - 11:20 PM	48.3	48.4	-0.1	7.0	-	44.3	47.3	-3.0
11:20 PM - 11:25 PM	62.6	49.5	13.1	0.0	-	65.6	47.7	17.9
11:25 PM - 11:30 PM	49.2	47.7	1.5	4.5	-	47.7	46.8	0.9
11:30 PM - 11:35 PM	49.2	48.5	0.7	7.0	-	45.2	47.4	-2.2
11:35 PM - 11:40 PM	48.5	48.1	0.4	7.0	-	44.5	47.1	-2.6
11:40 PM - 11:45 PM	53.4	48.0	5.4	1.5	-	54.9	46.8	8.1
11:45 PM - 11:50 PM	49.0	48.5	0.5	7.0	-	45.0	47.1	-2.1
11:50 PM - 11:55 PM	52.6	48.1	4.5	1.5	-	54.1	47.1	7.0
11:55 PM - 12:00 AM	49.2	54.2	-5.0	7.0	-	45.2	47.2	-2.0
12:00 AM - 12:05 AM	51.1	47.8	3.3	3.0	-	51.1	47.0	4.1
12:05 AM - 12:10 AM	46.9	48.2	-1.3	7.0	-	42.9	46.6	-3.7
12:10 AM - 12:15 AM	48.3	48.1	0.2	7.0	-	44.3	47.2	-2.9
12:15 AM - 12:20 AM	47.5	48.5	-1.0	7.0	-	43.5	47.6	-4.1
12:20 AM - 12:25 AM	49.7	48.3	1.4	7.0	-	45.7	47.5	-1.8
12:25 AM - 12:30 AM	51.1	48.9	2.2	4.5	-	49.6	48.1	1.5
12:30 AM - 12:35 AM	52.0	49.4	2.6	3.0	-	52.0	48.1	3.9
12:35 AM - 12:40 AM	50.1	48.3	1.8	4.5	-	48.6	47.6	1.0
12:40 AM - 12:45 AM	51.1	52.3	-1.2	7.0	-	47.1	48.7	-1.6

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142065  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536862-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142065-4  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
Measurement Date Dec 23 - 24, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 01122504

#### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
	กลางวัน (A-C)	กลางคืน (A-C)+3						
12:45 AM - 12:50 AM	52.2	50.4	1.8	4.5	-	50.7	49.5	1.2
12:50 AM - 12:55 AM	52.2	52.7	-0.5	7.0	-	48.2	49.1	-0.9
12:55 AM - 01:00 AM	50.0	55.7	-5.7	7.0	-	46.0	53.8	-7.8
01:00 AM - 01:05 AM	52.0	55.2	-3.2	7.0	-	48.0	53.3	-5.3
01:05 AM - 01:10 AM	49.5	55.3	-5.8	7.0	-	45.5	53.6	-8.1
01:10 AM - 01:15 AM	49.8	54.9	-5.1	7.0	-	45.8	52.2	-6.4
01:15 AM - 01:20 AM	49.9	53.2	-3.3	7.0	-	45.9	48.0	-2.1
01:20 AM - 01:25 AM	51.7	54.8	-3.1	7.0	-	47.7	53.0	-5.3
01:25 AM - 01:30 AM	54.2	55.0	-0.8	7.0	-	50.2	53.1	-2.9
01:30 AM - 01:35 AM	52.9	54.9	-2.0	7.0	-	48.9	53.1	-4.2
01:35 AM - 01:40 AM	51.3	55.0	-3.7	7.0	-	47.3	53.2	-5.9
01:40 AM - 01:45 AM	52.4	54.9	-2.5	7.0	-	48.4	53.0	-4.6
01:45 AM - 01:50 AM	52.2	54.9	-2.7	7.0	-	48.2	52.7	-4.5
01:50 AM - 01:55 AM	51.5	54.5	-3.0	7.0	-	47.5	51.1	-3.6
01:55 AM - 02:00 AM	50.9	55.4	-4.5	7.0	-	46.9	53.3	-6.4
02:00 AM - 02:05 AM	58.4	53.6	4.8	1.5	-	59.9	47.9	12.0
02:05 AM - 02:10 AM	51.2	48.3	2.9	3.0	-	51.2	46.6	4.6
02:10 AM - 02:15 AM	53.6	47.7	5.9	1.5	-	55.1	46.1	9.0
02:15 AM - 02:20 AM	54.0	51.0	3.0	3.0	-	54.0	47.2	6.8
02:20 AM - 02:25 AM	59.7	48.6	11.1	0.5	-	62.2	47.0	15.2
02:25 AM - 02:30 AM	53.1	54.5	-1.4	7.0	-	49.1	52.3	-3.2
02:30 AM - 02:35 AM	56.3	54.4	1.9	4.5	-	54.8	52.1	2.7
02:35 AM - 02:40 AM	53.7	54.9	-1.2	7.0	-	49.7	52.6	-2.9
02:40 AM - 02:45 AM	54.0	55.4	-1.4	7.0	-	50.0	52.9	-2.9
02:45 AM - 02:50 AM	56.7	55.1	1.6	4.5	-	55.2	52.9	2.3
02:50 AM - 02:55 AM	57.5	54.7	2.8	3.0	-	57.5	52.6	4.9
02:55 AM - 03:00 AM	53.3	54.6	-1.3	7.0	-	49.3	52.4	-3.1
03:00 AM - 03:05 AM	52.2	54.8	-2.6	7.0	-	48.2	52.6	-4.4
03:05 AM - 03:10 AM	52.6	54.7	-2.1	7.0	-	48.6	52.5	-3.9
03:10 AM - 03:15 AM	53.0	54.4	-1.4	7.0	-	49.0	52.1	-3.1
03:15 AM - 03:20 AM	53.0	54.1	-1.1	7.0	-	49.0	51.7	-2.7
03:20 AM - 03:25 AM	52.8	54.1	-1.3	7.0	-	48.8	52.0	-3.2
03:25 AM - 03:30 AM	51.4	54.7	-3.3	7.0	-	47.4	52.2	-4.8
03:30 AM - 03:35 AM	52.7	54.8	-2.1	7.0	-	48.7	52.7	-4.0
03:35 AM - 03:40 AM	51.4	54.8	-3.4	7.0	-	47.4	52.5	-5.1
03:40 AM - 03:45 AM	51.4	54.4	-3.0	7.0	-	47.4	52.1	-4.7
03:45 AM - 03:50 AM	51.8	54.0	-2.2	7.0	-	47.8	51.7	-3.9
03:50 AM - 03:55 AM	51.7	52.8	-1.1	7.0	-	47.7	47.7	0.0
03:55 AM - 04:00 AM	51.7	53.7	-2.0	7.0	-	47.7	47.8	-0.1
04:00 AM - 04:05 AM	51.4	54.3	-2.9	7.0	-	47.4	52.1	-4.7

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142065  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536862-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142065-4  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
Measurement Date Dec 23 - 24, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 01122504

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับการรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:05 AM - 04:10 AM	53.9	54.6	-0.7	7.0	-	49.9	52.6	-2.7
04:10 AM - 04:15 AM	51.1	54.6	-3.5	7.0	-	47.1	52.5	-5.4
04:15 AM - 04:20 AM	50.5	54.9	-4.4	7.0	-	46.5	52.8	-6.3
04:20 AM - 04:25 AM	51.6	55.1	-3.5	7.0	-	47.6	52.9	-5.3
04:25 AM - 04:30 AM	52.5	54.9	-2.4	7.0	-	48.5	52.7	-4.2
04:30 AM - 04:35 AM	52.0	54.7	-2.7	7.0	-	48.0	52.6	-4.6
04:35 AM - 04:40 AM	51.9	54.9	-3.0	7.0	-	47.9	52.3	-4.4
04:40 AM - 04:45 AM	51.7	55.5	-3.8	7.0	-	47.7	52.9	-5.2
04:45 AM - 04:50 AM	52.1	54.3	-2.2	7.0	-	48.1	52.2	-4.1
04:50 AM - 04:55 AM	51.5	55.5	-4.0	7.0	-	47.5	52.9	-5.4
04:55 AM - 05:00 AM	54.0	54.2	-0.2	7.0	-	50.0	49.1	0.9
05:00 AM - 05:05 AM	55.5	50.8	4.7	1.5	-	57.0	47.4	9.6
05:05 AM - 05:10 AM	52.7	48.7	4.0	2.0	-	53.7	46.9	6.8
05:10 AM - 05:15 AM	55.7	48.9	6.8	1.0	-	57.7	46.9	10.8
05:15 AM - 05:20 AM	54.2	51.7	2.5	3.0	-	54.2	48.8	5.4
05:20 AM - 05:25 AM	52.7	50.3	2.4	4.5	-	51.2	48.3	2.9
05:25 AM - 05:30 AM	52.5	55.2	-2.7	7.0	-	48.5	49.2	-0.7
05:30 AM - 05:35 AM	52.4	55.5	-3.1	7.0	-	48.4	51.2	-2.8
05:35 AM - 05:40 AM	52.8	54.9	-2.1	7.0	-	48.8	52.3	-3.5
05:40 AM - 05:45 AM	52.6	52.4	0.2	7.0	-	48.6	50.0	-1.4
05:45 AM - 05:50 AM	52.9	51.8	1.1	7.0	-	48.9	49.4	-0.5
05:50 AM - 05:55 AM	54.1	51.9	2.2	4.5	-	52.6	49.6	3.0
05:55 AM - 06:00 AM	53.4	53.9	-0.5	7.0	-	49.4	50.6	-1.2
06:00 AM - 07:00 AM	57.3	54.8	2.5	3.0	54.3	-	51.7	2.6
07:00 AM - 08:00 AM	55.8	55.1	0.7	7.0	48.8	-	51.5	-2.7
08:00 AM - 09:00 AM	51.6	55.7	-4.1	7.0	44.6	-	52.7	-8.1
09:00 AM - 10:00 AM	52.5	55.3	-2.8	7.0	45.5	-	52.3	-6.8
10:00 AM - 11:00 AM	52.7	55.5	-2.8	7.0	45.7	-	52.5	-6.8
11:00 AM - 12:00 PM	51.5	52.7	-1.2	7.0	44.5	-	49.7	-5.2
12:00 PM - 01:00 PM	51.9	50.9	1.0	7.0	44.9	-	49.3	-4.4
01:00 PM - 02:00 PM	52.4	55.3	-2.9	7.0	45.4	-	51.5	-6.1
02:00 PM - 03:00 PM	52.5	52.1	0.4	7.0	45.5	-	50.5	-5.0

ค่ามาตรฐาน

≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 23-24 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142075-4 วันที่ตรวจวัด มีถุนายน 30-01 กรกฎาคม 2565)

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

Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





# Analysis / Test Report

## TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142065  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536863-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142065-5  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
Measurement Date Dec 24 - 25, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 01122504

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด		ผลต่างระดับเสียง	ตัวปรับค่า	ปรับค่าเสียงจากแหล่งกำเนิด		เสียงพื้นฐาน	ค่าระดับการรบกวน
	(A)	(B)			(A-C)	(A-C)+3		
03:00 PM - 04:00 PM	52.2	57.4	-5.2	7.0	45.2	-	53.5	-8.3
04:00 PM - 05:00 PM	51.9	54.6	-2.7	7.0	44.9	-	51.4	-6.5
05:00 PM - 06:00 PM	52.0	54.1	-2.1	7.0	45.0	-	51.2	-6.2
06:00 PM - 07:00 PM	57.3	54.8	2.5	3.0	54.3	-	51.9	2.4
07:00 PM - 08:00 PM	54.7	52.7	2.0	4.5	50.2	-	51.0	-0.8
08:00 PM - 09:00 PM	53.6	53.0	0.6	7.0	46.6	-	49.7	-3.1
09:00 PM - 10:00 PM	50.7	52.2	-1.5	7.0	43.7	-	50.2	-6.5
10:00 PM - 10:05 PM	50.0	51.0	-1.0	7.0	-	46.0	49.7	-3.7
10:05 PM - 10:10 PM	50.8	51.2	-0.4	7.0	-	46.8	49.7	-2.9
10:10 PM - 10:15 PM	50.2	51.8	-1.6	7.0	-	46.2	50.3	-4.1
10:15 PM - 10:20 PM	49.5	51.2	-1.7	7.0	-	45.5	49.9	-4.4
10:20 PM - 10:25 PM	48.5	49.5	-1.0	7.0	-	44.5	48.5	-4.0
10:25 PM - 10:30 PM	48.3	48.7	-0.4	7.0	-	44.3	47.7	-3.4
10:30 PM - 10:35 PM	48.6	47.7	0.9	7.0	-	44.6	46.9	-2.3
10:35 PM - 10:40 PM	48.9	56.2	-7.3	7.0	-	44.9	47.9	-3.0
10:40 PM - 10:45 PM	47.0	62.7	-15.7	7.0	-	43.0	53.7	-10.7
10:45 PM - 10:50 PM	49.2	68.8	-19.6	7.0	-	45.2	62.0	-16.8
10:50 PM - 10:55 PM	49.6	59.4	-9.8	7.0	-	45.6	57.0	-11.4
10:55 PM - 11:00 PM	49.9	62.2	-12.3	7.0	-	45.9	54.6	-8.7
11:00 PM - 11:05 PM	51.8	69.1	-17.3	7.0	-	47.8	66.0	-18.2
11:05 PM - 11:10 PM	47.9	66.9	-19.0	7.0	-	43.9	59.9	-16.0
11:10 PM - 11:15 PM	47.9	60.4	-12.5	7.0	-	43.9	57.0	-13.1
11:15 PM - 11:20 PM	52.0	65.3	-13.3	7.0	-	48.0	59.5	-11.5
11:20 PM - 11:25 PM	50.8	65.0	-14.2	7.0	-	46.8	61.3	-14.5
11:25 PM - 11:30 PM	47.9	55.2	-7.3	7.0	-	43.9	52.0	-8.1
11:30 PM - 11:35 PM	49.6	55.1	-5.5	7.0	-	45.6	52.1	-6.5
11:35 PM - 11:40 PM	53.0	54.3	-1.3	7.0	-	49.0	51.8	-2.8
11:40 PM - 11:45 PM	47.0	53.9	-6.9	7.0	-	43.0	52.2	-9.2
11:45 PM - 11:50 PM	46.4	54.5	-8.1	7.0	-	42.4	52.3	-9.9
11:50 PM - 11:55 PM	49.5	54.2	-4.7	7.0	-	45.5	52.2	-6.7
11:55 PM - 12:00 AM	47.4	54.0	-6.6	7.0	-	43.4	51.7	-8.3
12:00 AM - 12:05 AM	51.0	53.6	-2.6	7.0	-	47.0	52.1	-5.1
12:05 AM - 12:10 AM	49.4	53.5	-4.1	7.0	-	45.4	52.1	-6.7
12:10 AM - 12:15 AM	49.3	53.2	-3.9	7.0	-	45.3	51.8	-6.5
12:15 AM - 12:20 AM	47.3	53.3	-6.0	7.0	-	43.3	52.0	-8.7
12:20 AM - 12:25 AM	46.2	52.8	-6.6	7.0	-	42.2	51.4	-9.2
12:25 AM - 12:30 AM	49.2	52.9	-3.7	7.0	-	45.2	51.7	-6.5
12:30 AM - 12:35 AM	44.7	52.7	-8.0	7.0	-	40.7	51.4	-10.7
12:35 AM - 12:40 AM	45.5	52.9	-7.4	7.0	-	41.5	51.7	-10.2
12:40 AM - 12:45 AM	48.6	52.6	-4.0	7.0	-	44.6	51.4	-6.8

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142065  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536863-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142065-5  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
Measurement Date Dec 24 - 25, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 01122504

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด <sup>(A)</sup>	เสียงขณะ ไม่มีการรบกวน <sup>(B)</sup>	ผลต่าง ระดับเสียง <sup>(A-B)</sup>	ตัวปรับค่า <sup>(C)</sup>	ปรับค่าเสียงจากแหล่งกำเนิด <sup>(D)</sup>		เสียงพื้นฐาน <sup>(E)</sup>	ค่าระดับ การรบกวน <sup>(D-E)</sup>
					กลางวัน <sup>(A-C)</sup>	กลางคืน <sup>(A-C)+3</sup>		
12:45 AM - 12:50 AM	48.0	50.7	-2.7	7.0	-	44.0	49.4	-5.4
12:50 AM - 12:55 AM	45.7	50.4	-4.7	7.0	-	41.7	48.9	-7.2
12:55 AM - 01:00 AM	50.7	49.2	1.5	4.5	-	49.2	48.0	1.2
01:00 AM - 01:05 AM	47.6	49.1	-1.5	7.0	-	43.6	47.4	-3.8
01:05 AM - 01:10 AM	45.9	49.1	-3.2	7.0	-	41.9	47.9	-6.0
01:10 AM - 01:15 AM	45.9	49.9	-4.0	7.0	-	41.9	49.0	-7.1
01:15 AM - 01:20 AM	44.3	52.7	-8.4	7.0	-	40.3	50.4	-10.1
01:20 AM - 01:25 AM	46.2	56.9	-10.7	7.0	-	42.2	55.3	-13.1
01:25 AM - 01:30 AM	48.6	53.9	-5.3	7.0	-	44.6	52.2	-7.6
01:30 AM - 01:35 AM	46.6	57.1	-10.5	7.0	-	42.6	55.2	-12.6
01:35 AM - 01:40 AM	48.3	58.3	-10.0	7.0	-	44.3	57.0	-12.7
01:40 AM - 01:45 AM	46.8	55.5	-8.7	7.0	-	42.8	54.5	-11.7
01:45 AM - 01:50 AM	47.4	54.3	-6.9	7.0	-	43.4	53.2	-9.8
01:50 AM - 01:55 AM	45.8	52.0	-6.2	7.0	-	41.8	50.5	-8.7
01:55 AM - 02:00 AM	47.1	49.9	-2.8	7.0	-	43.1	48.7	-5.6
02:00 AM - 02:05 AM	48.0	49.7	-1.7	7.0	-	44.0	48.6	-4.6
02:05 AM - 02:10 AM	51.3	49.3	2.0	4.5	-	49.8	47.9	1.9
02:10 AM - 02:15 AM	48.3	49.2	-0.9	7.0	-	44.3	48.3	-4.0
02:15 AM - 02:20 AM	47.1	50.8	-3.7	7.0	-	43.1	49.3	-6.2
02:20 AM - 02:25 AM	47.1	49.8	-2.7	7.0	-	43.1	48.9	-5.8
02:25 AM - 02:30 AM	55.8	50.2	5.6	1.5	-	57.3	49.1	8.2
02:30 AM - 02:35 AM	46.0	50.1	-4.1	7.0	-	42.0	48.9	-6.9
02:35 AM - 02:40 AM	49.4	49.3	0.1	7.0	-	45.4	48.4	-3.0
02:40 AM - 02:45 AM	44.0	48.6	-4.6	7.0	-	40.0	47.8	-7.8
02:45 AM - 02:50 AM	46.7	50.3	-3.6	7.0	-	42.7	48.5	-5.8
02:50 AM - 02:55 AM	48.1	50.4	-2.3	7.0	-	44.1	49.3	-5.2
02:55 AM - 03:00 AM	45.4	49.0	-3.6	7.0	-	41.4	48.0	-6.6
03:00 AM - 03:05 AM	46.7	51.6	-4.9	7.0	-	42.7	47.8	-5.1
03:05 AM - 03:10 AM	45.6	48.9	-3.3	7.0	-	41.6	48.2	-6.6
03:10 AM - 03:15 AM	46.4	50.4	-4.0	7.0	-	42.4	48.9	-6.5
03:15 AM - 03:20 AM	47.4	50.5	-3.1	7.0	-	43.4	48.8	-5.4
03:20 AM - 03:25 AM	47.5	48.9	-1.4	7.0	-	43.5	47.5	-4.0
03:25 AM - 03:30 AM	46.7	49.2	-2.5	7.0	-	42.7	47.9	-5.2
03:30 AM - 03:35 AM	49.2	50.4	-1.2	7.0	-	45.2	48.8	-3.6
03:35 AM - 03:40 AM	46.4	49.0	-2.6	7.0	-	42.4	47.8	-5.4
03:40 AM - 03:45 AM	48.1	49.7	-1.6	7.0	-	44.1	48.2	-4.1
03:45 AM - 03:50 AM	47.7	50.9	-3.2	7.0	-	43.7	48.9	-5.2
03:50 AM - 03:55 AM	48.5	52.4	-3.9	7.0	-	44.5	51.7	-7.2
03:55 AM - 04:00 AM	47.5	52.9	-5.4	7.0	-	43.5	52.0	-8.5
04:00 AM - 04:05 AM	55.7	52.7	3.0	3.0	-	55.7	52.1	3.6

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142065  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536863-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142065-5  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
Measurement Date Dec 24 - 25, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 01122504

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B) (C)	ตัวปรับค่า (D)	ปรับค่าเสียงจากแหล่งกำเนิด (E)		เสียงพื้นฐาน (F)	ค่าระดับการรบกวน (G-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:05 AM - 04:10 AM	47.9	52.5	-4.6	7.0	-	43.9	52.0	-8.1
04:10 AM - 04:15 AM	47.9	53.4	-5.5	7.0	-	43.9	52.7	-8.8
04:15 AM - 04:20 AM	52.8	53.0	-0.2	7.0	-	48.8	51.9	-3.1
04:20 AM - 04:25 AM	49.6	52.5	-2.9	7.0	-	45.6	51.6	-6.0
04:25 AM - 04:30 AM	58.4	51.7	6.7	1.0	-	60.4	50.8	9.6
04:30 AM - 04:35 AM	48.3	51.2	-2.9	7.0	-	44.3	50.3	-6.0
04:35 AM - 04:40 AM	50.4	50.6	-0.2	7.0	-	46.4	49.8	-3.4
04:40 AM - 04:45 AM	48.1	49.8	-1.7	7.0	-	44.1	48.8	-4.7
04:45 AM - 04:50 AM	47.1	50.1	-3.0	7.0	-	43.1	48.9	-5.8
04:50 AM - 04:55 AM	47.1	53.8	-6.7	7.0	-	43.1	48.1	-5.0
04:55 AM - 05:00 AM	47.9	56.5	-8.6	7.0	-	43.9	48.8	-4.9
05:00 AM - 05:05 AM	47.1	50.3	-3.2	7.0	-	43.1	48.6	-5.5
05:05 AM - 05:10 AM	47.0	52.6	-5.6	7.0	-	43.0	50.1	-7.1
05:10 AM - 05:15 AM	48.4	51.3	-2.9	7.0	-	44.4	50.3	-5.9
05:15 AM - 05:20 AM	47.8	51.5	-3.7	7.0	-	43.8	50.4	-6.6
05:20 AM - 05:25 AM	48.8	52.6	-3.8	7.0	-	44.8	51.6	-6.8
05:25 AM - 05:30 AM	48.2	51.9	-3.7	7.0	-	44.2	50.7	-6.5
05:30 AM - 05:35 AM	49.3	53.1	-3.8	7.0	-	45.3	50.8	-5.5
05:35 AM - 05:40 AM	49.1	52.5	-3.4	7.0	-	45.1	50.2	-5.1
05:40 AM - 05:45 AM	50.4	52.7	-2.3	7.0	-	46.4	50.2	-3.8
05:45 AM - 05:50 AM	50.5	50.9	-0.4	7.0	-	46.5	49.3	-2.8
05:50 AM - 05:55 AM	51.5	51.8	-0.3	7.0	-	47.5	50.0	-2.5
05:55 AM - 06:00 AM	48.6	53.3	-4.7	7.0	-	44.6	49.5	-4.9
06:00 AM - 07:00 AM	65.7	55.7	10.0	0.5	65.2	-	52.0	13.2
07:00 AM - 08:00 AM	56.6	53.5	3.1	3.0	53.6	-	50.6	3.0
08:00 AM - 09:00 AM	57.0	53.9	3.1	3.0	54.0	-	50.0	4.0
09:00 AM - 10:00 AM	55.9	54.2	1.7	4.5	51.4	-	50.7	0.7
10:00 AM - 11:00 AM	56.6	54.9	1.7	4.5	52.1	-	50.6	1.5
11:00 AM - 12:00 PM	55.0	54.3	0.7	7.0	48.0	-	51.9	-3.9
12:00 PM - 01:00 PM	54.9	54.5	0.4	7.0	47.9	-	51.7	-3.8
01:00 PM - 02:00 PM	53.9	57.9	-4.0	7.0	46.9	-	52.8	-5.9
02:00 PM - 03:00 PM	55.6	56.5	-0.9	7.0	48.6	-	52.6	-4.0
ค่ามาตรฐาน								≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

#### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 24-25 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142075-5 วันที่ตรวจวัด 01-02 กรกฎาคม 2565)

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Approved by

Kanokkorn Anek  
Senior Manager



# Analysis / Test Report

## TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142065  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536864-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142065-6  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
Measurement Date Dec 25 - 26, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 01122504

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด <sup>(A)</sup>	เสียงขณะ ไม่มีการรบกวน <sup>(B)</sup>	ผลต่าง ระดับเสียง <sup>(A-B)</sup>	ตัวปรับค่า <sup>(C)</sup>	ปรับค่าเสียงจากแหล่งกำเนิด <sup>(B)</sup>		เสียงพื้นฐาน <sup>(E)</sup>	ค่าระดับ การรบกวน <sup>(D-E)</sup>
					กลางวัน <sup>(A-C)</sup>	กลางคืน <sup>(A-C)+3</sup>		
03:00 PM - 04:00 PM	53.4	54.1	-0.7	7.0	46.4	-	49.5	-3.1
04:00 PM - 05:00 PM	57.1	54.5	2.6	3.0	54.1	-	50.3	3.8
05:00 PM - 06:00 PM	54.9	54.5	0.4	7.0	47.9	-	51.0	-3.1
06:00 PM - 07:00 PM	57.1	54.9	2.2	4.5	52.6	-	51.7	0.9
07:00 PM - 08:00 PM	53.7	52.5	1.2	7.0	46.7	-	50.8	-4.1
08:00 PM - 09:00 PM	54.6	52.3	2.3	4.5	50.1	-	50.9	-0.8
09:00 PM - 10:00 PM	54.4	51.2	3.2	3.0	51.4	-	49.8	1.6
10:00 PM - 10:05 PM	54.8	50.1	4.7	1.5	-	56.3	48.6	7.7
10:05 PM - 10:10 PM	57.8	50.7	7.1	1.0	-	59.8	49.0	10.8
10:10 PM - 10:15 PM	53.6	50.5	3.1	3.0	-	53.6	48.9	4.7
10:15 PM - 10:20 PM	54.1	50.8	3.3	3.0	-	54.1	49.3	4.8
10:20 PM - 10:25 PM	54.3	50.9	3.4	3.0	-	54.3	49.0	5.3
10:25 PM - 10:30 PM	54.9	50.2	4.7	1.5	-	56.4	48.6	7.8
10:30 PM - 10:35 PM	53.8	49.9	3.9	2.0	-	54.8	48.1	6.7
10:35 PM - 10:40 PM	53.9	50.9	3.0	3.0	-	53.9	49.0	4.9
10:40 PM - 10:45 PM	54.6	49.1	5.5	1.5	-	56.1	47.1	9.0
10:45 PM - 10:50 PM	54.3	49.2	5.1	1.5	-	55.8	47.8	8.0
10:50 PM - 10:55 PM	51.3	49.5	1.8	4.5	-	49.8	48.1	1.7
10:55 PM - 11:00 PM	52.8	50.0	2.8	3.0	-	52.8	48.6	4.2
11:00 PM - 11:05 PM	56.1	49.7	6.4	1.5	-	57.6	47.7	9.9
11:05 PM - 11:10 PM	53.4	49.2	4.2	2.0	-	54.4	47.5	6.9
11:10 PM - 11:15 PM	52.9	49.7	3.2	3.0	-	52.9	48.6	4.3
11:15 PM - 11:20 PM	64.9	50.4	14.5	0.0	-	67.9	49.0	18.9
11:20 PM - 11:25 PM	53.3	49.8	3.5	2.0	-	54.3	48.4	5.9
11:25 PM - 11:30 PM	51.6	50.7	0.9	7.0	-	47.6	49.3	-1.7
11:30 PM - 11:35 PM	51.8	50.5	1.3	7.0	-	47.8	49.2	-1.4
11:35 PM - 11:40 PM	57.1	49.9	7.2	1.0	-	59.1	48.5	10.6
11:40 PM - 11:45 PM	53.0	50.1	2.9	3.0	-	53.0	48.9	4.1
11:45 PM - 11:50 PM	53.0	50.4	2.6	3.0	-	53.0	48.5	4.5
11:50 PM - 11:55 PM	58.0	49.6	8.4	0.5	-	60.5	47.5	13.0
11:55 PM - 12:00 AM	53.7	48.3	5.4	1.5	-	55.2	46.4	8.8
12:00 AM - 12:05 AM	51.5	49.5	2.0	4.5	-	50.0	47.6	2.4
12:05 AM - 12:10 AM	52.4	49.4	3.0	3.0	-	52.4	47.7	4.7
12:10 AM - 12:15 AM	52.4	49.1	3.3	3.0	-	52.4	47.2	5.2
12:15 AM - 12:20 AM	52.3	49.0	3.3	3.0	-	52.3	47.1	5.2
12:20 AM - 12:25 AM	53.4	49.2	4.2	2.0	-	54.4	47.3	7.1
12:25 AM - 12:30 AM	53.5	49.2	4.3	2.0	-	54.5	47.2	7.3
12:30 AM - 12:35 AM	52.9	49.1	3.8	2.0	-	53.9	47.4	6.5
12:35 AM - 12:40 AM	54.9	49.4	5.5	1.5	-	56.4	47.5	8.9
12:40 AM - 12:45 AM	61.8	49.9	11.9	0.5	-	64.3	48.1	16.2

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

Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142065  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536864-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142065-6  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
Measurement Date Dec 25 - 26, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 01122504

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
	แหล่งกำเนิด (A-C)	กลางคืน (A-C)+3			กลางวัน (A-C)	กลางคืน (A-C)+3		
12:45 AM - 12:50 AM	53.0	50.1	2.9	3.0	-	53.0	47.7	5.3
12:50 AM - 12:55 AM	53.0	49.3	3.7	2.0	-	54.0	47.0	7.0
12:55 AM - 01:00 AM	53.0	49.6	3.4	3.0	-	53.0	46.4	6.6
01:00 AM - 01:05 AM	52.8	48.9	3.9	2.0	-	53.8	45.6	8.2
01:05 AM - 01:10 AM	52.0	48.0	4.0	2.0	-	53.0	45.9	7.1
01:10 AM - 01:15 AM	53.2	47.7	5.5	1.5	-	54.7	45.7	9.0
01:15 AM - 01:20 AM	52.5	47.9	4.6	1.5	-	54.0	45.8	8.2
01:20 AM - 01:25 AM	51.5	47.8	3.7	2.0	-	52.5	45.8	6.7
01:25 AM - 01:30 AM	50.1	48.3	1.8	4.5	-	48.6	45.6	3.0
01:30 AM - 01:35 AM	53.3	50.9	2.4	4.5	-	51.8	49.3	2.5
01:35 AM - 01:40 AM	52.4	50.7	1.7	4.5	-	50.9	49.0	1.9
01:40 AM - 01:45 AM	53.6	51.1	2.5	3.0	-	53.6	49.6	4.0
01:45 AM - 01:50 AM	51.7	51.3	0.4	7.0	-	47.7	49.6	-1.9
01:50 AM - 01:55 AM	52.8	52.3	0.5	7.0	-	48.8	50.4	-1.6
01:55 AM - 02:00 AM	53.3	47.0	6.3	1.5	-	54.8	45.2	9.6
02:00 AM - 02:05 AM	53.1	48.9	4.2	2.0	-	54.1	47.1	7.0
02:05 AM - 02:10 AM	52.4	52.2	0.2	7.0	-	48.4	49.2	-0.8
02:10 AM - 02:15 AM	54.0	51.9	2.1	4.5	-	52.5	49.6	2.9
02:15 AM - 02:20 AM	53.7	52.3	1.4	7.0	-	49.7	50.6	-0.9
02:20 AM - 02:25 AM	52.1	52.3	-0.2	7.0	-	48.1	50.6	-2.5
02:25 AM - 02:30 AM	53.0	50.8	2.2	4.5	-	51.5	46.9	4.6
02:30 AM - 02:35 AM	52.2	50.9	1.3	7.0	-	48.2	49.3	-1.1
02:35 AM - 02:40 AM	52.0	50.7	1.3	7.0	-	48.0	49.0	-1.0
02:40 AM - 02:45 AM	53.6	51.1	2.5	3.0	-	53.6	49.6	4.0
02:45 AM - 02:50 AM	63.8	51.3	12.5	0.0	-	66.8	49.6	17.2
02:50 AM - 02:55 AM	52.3	52.3	0.0	7.0	-	48.3	50.4	-2.1
02:55 AM - 03:00 AM	51.5	54.6	-3.1	7.0	-	47.5	51.6	-4.1
03:00 AM - 03:05 AM	51.9	54.3	-2.4	7.0	-	47.9	52.0	-4.1
03:05 AM - 03:10 AM	52.6	54.7	-2.1	7.0	-	48.6	53.0	-4.4
03:10 AM - 03:15 AM	52.5	54.7	-2.2	7.0	-	48.5	53.0	-4.5
03:15 AM - 03:20 AM	51.5	53.2	-1.7	7.0	-	47.5	49.3	-1.8
03:20 AM - 03:25 AM	52.3	50.0	2.3	4.5	-	50.8	48.6	2.2
03:25 AM - 03:30 AM	50.4	49.8	0.6	7.0	-	46.4	48.2	-1.8
03:30 AM - 03:35 AM	51.2	49.2	2.0	4.5	-	49.7	47.7	2.0
03:35 AM - 03:40 AM	51.6	48.8	2.8	3.0	-	51.6	47.3	4.3
03:40 AM - 03:45 AM	50.8	48.9	1.9	4.5	-	49.3	47.2	2.1
03:45 AM - 03:50 AM	50.5	48.7	1.8	4.5	-	49.0	47.3	1.7
03:50 AM - 03:55 AM	51.9	49.0	2.9	3.0	-	51.9	47.4	4.5
03:55 AM - 04:00 AM	51.1	48.5	2.6	3.0	-	51.1	46.6	4.5
04:00 AM - 04:05 AM	53.7	47.2	6.5	1.0	-	55.7	45.7	10.0

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142065  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536864-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142065-6  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
Measurement Date Dec 25 - 26, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 01122504

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B) (C)	ตัวปรับค่า (D)	ปรับค่าเสียงจากแหล่งกำเนิด (E)		เสียงพื้นฐาน (F)	ค่าระดับการรบกวน (G-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:05 AM - 04:10 AM	52.5	47.3	5.2	1.5	-	54.0	45.8	8.2
04:10 AM - 04:15 AM	54.0	47.0	7.0	1.0	-	56.0	45.2	10.8
04:15 AM - 04:20 AM	53.3	48.4	4.9	1.5	-	54.8	46.7	8.1
04:20 AM - 04:25 AM	52.5	49.0	3.5	2.0	-	53.5	47.3	6.2
04:25 AM - 04:30 AM	52.8	47.9	4.9	1.5	-	54.3	45.1	9.2
04:30 AM - 04:35 AM	52.1	46.4	5.7	1.5	-	53.6	44.7	8.9
04:35 AM - 04:40 AM	52.6	46.3	6.3	1.5	-	54.1	44.7	9.4
04:40 AM - 04:45 AM	50.4	46.7	3.7	2.0	-	51.4	45.3	6.1
04:45 AM - 04:50 AM	54.3	47.0	7.3	1.0	-	56.3	45.3	11.0
04:50 AM - 04:55 AM	54.9	45.9	9.0	0.5	-	57.4	44.4	13.0
04:55 AM - 05:00 AM	55.0	45.7	9.3	0.5	-	57.5	44.2	13.3
05:00 AM - 05:05 AM	53.9	46.7	7.2	1.0	-	55.9	44.6	11.3
05:05 AM - 05:10 AM	54.2	48.2	6.0	1.5	-	55.7	44.2	11.5
05:10 AM - 05:15 AM	54.9	50.7	4.2	2.0	-	55.9	48.5	7.4
05:15 AM - 05:20 AM	54.1	51.3	2.8	3.0	-	54.1	48.7	5.4
05:20 AM - 05:25 AM	54.1	51.4	2.7	3.0	-	54.1	47.8	6.3
05:25 AM - 05:30 AM	53.3	48.7	4.6	1.5	-	54.8	46.8	8.0
05:30 AM - 05:35 AM	53.0	49.4	3.6	2.0	-	54.0	47.0	7.0
05:35 AM - 05:40 AM	54.7	48.8	5.9	1.5	-	56.2	46.4	9.8
05:40 AM - 05:45 AM	55.3	49.6	5.7	1.5	-	56.8	46.4	10.4
05:45 AM - 05:50 AM	56.0	48.4	7.6	0.5	-	58.5	45.7	12.8
05:50 AM - 05:55 AM	56.5	46.9	9.6	0.5	-	59.0	44.8	14.2
05:55 AM - 06:00 AM	55.0	47.5	7.5	0.5	-	57.5	45.2	12.3
06:00 AM - 07:00 AM	60.5	51.0	9.5	0.5	60.0	-	47.6	12.4
07:00 AM - 08:00 AM	57.0	50.9	6.1	1.5	55.5	-	47.6	7.9
08:00 AM - 09:00 AM	54.5	51.4	3.1	3.0	51.5	-	48.8	2.7
09:00 AM - 10:00 AM	53.0	51.8	1.2	7.0	46.0	-	49.5	-3.5
10:00 AM - 11:00 AM	52.9	51.4	1.5	4.5	48.4	-	49.4	-1.0
11:00 AM - 12:00 PM	53.5	55.2	-1.7	7.0	46.5	-	50.8	-4.3
12:00 PM - 01:00 PM	52.1	52.3	-0.2	7.0	45.1	-	48.8	-3.7
01:00 PM - 02:00 PM	53.8	55.8	-2.0	7.0	46.8	-	50.8	-4.0
02:00 PM - 03:00 PM	54.4	53.8	0.6	7.0	47.4	-	50.4	-3.0

ค่ามาตรฐาน

≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 25-26 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142075-6 วันที่ตรวจวัด 02-03 กรกฎาคม 2565)

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142065  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536865-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142065-7  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
Measurement Date Dec 26 - 27, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 01122504

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด <sup>(A)</sup>	เสียงขณะ ไม่มีการรบกวน <sup>(B)</sup>	ผลต่าง ระดับเสียง <sup>(A-B)</sup>	ตัวปรับค่า <sup>(C)</sup>	ปรับค่าเสียงจากแหล่งกำเนิด <sup>(B)</sup>		เสียงพื้นฐาน <sup>(E)</sup>	ค่าระดับ การรบกวน <sup>(D-E)</sup>
					กลางวัน <sup>(A-C)</sup>	กลางคืน <sup>(A-C)+3</sup>		
03:00 PM - 04:00 PM	53.6	51.5	2.1	4.5	49.1	-	48.8	0.3
04:00 PM - 05:00 PM	55.0	53.0	2.0	4.5	50.5	-	49.9	0.6
05:00 PM - 06:00 PM	55.4	52.7	2.7	3.0	52.4	-	50.4	2.0
06:00 PM - 07:00 PM	58.4	55.0	3.4	3.0	55.4	-	52.3	3.1
07:00 PM - 08:00 PM	57.2	52.5	4.7	1.5	55.7	-	50.7	5.0
08:00 PM - 09:00 PM	56.2	54.6	1.6	4.5	51.7	-	53.1	-1.4
09:00 PM - 10:00 PM	56.0	54.9	1.1	7.0	49.0	-	53.4	-4.4
10:00 PM - 10:05 PM	53.6	51.5	2.1	4.5	-	52.1	50.1	2.0
10:05 PM - 10:10 PM	52.9	51.6	1.3	7.0	-	48.9	49.6	-0.7
10:10 PM - 10:15 PM	52.8	51.4	1.4	7.0	-	48.8	50.0	-1.2
10:15 PM - 10:20 PM	52.8	51.5	1.3	7.0	-	48.8	49.9	-1.1
10:20 PM - 10:25 PM	51.8	51.4	0.4	7.0	-	47.8	49.8	-2.0
10:25 PM - 10:30 PM	53.3	51.4	1.9	4.5	-	51.8	49.8	2.0
10:30 PM - 10:35 PM	53.3	50.5	2.8	3.0	-	53.3	48.5	4.8
10:35 PM - 10:40 PM	54.3	49.5	4.8	1.5	-	55.8	47.7	8.1
10:40 PM - 10:45 PM	53.5	49.7	3.8	2.0	-	54.5	48.3	6.2
10:45 PM - 10:50 PM	53.2	49.7	3.5	2.0	-	54.2	48.2	6.0
10:50 PM - 10:55 PM	54.4	50.2	4.2	2.0	-	55.4	48.5	6.9
10:55 PM - 11:00 PM	53.5	50.8	2.7	3.0	-	53.5	49.3	4.2
11:00 PM - 11:05 PM	55.4	50.7	4.7	1.5	-	56.9	49.1	7.8
11:05 PM - 11:10 PM	57.3	51.5	5.8	1.5	-	58.8	49.9	8.9
11:10 PM - 11:15 PM	55.7	51.4	4.3	2.0	-	56.7	49.8	6.9
11:15 PM - 11:20 PM	55.2	51.2	4.0	2.0	-	56.2	49.5	6.7
11:20 PM - 11:25 PM	55.2	50.8	4.4	2.0	-	56.2	48.9	7.3
11:25 PM - 11:30 PM	55.1	51.2	3.9	2.0	-	56.1	49.5	6.6
11:30 PM - 11:35 PM	55.2	51.9	3.3	3.0	-	55.2	50.4	4.8
11:35 PM - 11:40 PM	55.3	52.1	3.2	3.0	-	55.3	50.7	4.6
11:40 PM - 11:45 PM	55.5	51.9	3.6	2.0	-	56.5	50.3	6.2
11:45 PM - 11:50 PM	53.7	52.0	1.7	4.5	-	52.2	50.5	1.7
11:50 PM - 11:55 PM	55.0	51.8	3.2	3.0	-	55.0	50.1	4.9
11:55 PM - 12:00 AM	54.7	51.1	3.6	2.0	-	55.7	49.4	6.3
12:00 AM - 12:05 AM	52.8	51.0	1.8	4.5	-	51.3	49.3	2.0
12:05 AM - 12:10 AM	52.6	53.4	-0.8	7.0	-	48.6	50.9	-2.3
12:10 AM - 12:15 AM	54.1	53.7	0.4	7.0	-	50.1	52.3	-2.2
12:15 AM - 12:20 AM	53.8	53.8	0.0	7.0	-	49.8	51.9	-2.1
12:20 AM - 12:25 AM	54.2	53.8	0.4	7.0	-	50.2	52.3	-2.1
12:25 AM - 12:30 AM	54.5	54.1	0.4	7.0	-	50.5	52.6	-2.1
12:30 AM - 12:35 AM	54.6	51.8	2.8	3.0	-	54.6	50.1	4.5
12:35 AM - 12:40 AM	53.6	51.5	2.1	4.5	-	52.1	49.4	2.7
12:40 AM - 12:45 AM	53.6	51.5	2.1	4.5	-	52.1	49.9	2.2

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142065  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536865-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142065-7  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
Measurement Date Dec 26 - 27, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 01122504

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
	แหล่งกำเนิด (A-C)	กลางคืน (A-C)+3			กลางวัน (A-C)	กลางคืน (A-C)+3		
12:45 AM - 12:50 AM	52.9	52.1	0.8	7.0	-	48.9	49.9	-1.0
12:50 AM - 12:55 AM	51.1	51.2	-0.1	7.0	-	47.1	50.0	-2.9
12:55 AM - 01:00 AM	52.7	51.0	1.7	4.5	-	51.2	49.9	1.3
01:00 AM - 01:05 AM	53.0	51.2	1.8	4.5	-	51.5	50.1	1.4
01:05 AM - 01:10 AM	53.8	50.3	3.5	2.0	-	54.8	45.4	9.4
01:10 AM - 01:15 AM	52.1	50.6	1.5	4.5	-	50.6	45.6	5.0
01:15 AM - 01:20 AM	52.0	51.3	0.7	7.0	-	48.0	50.1	-2.1
01:20 AM - 01:25 AM	50.6	51.8	-1.2	7.0	-	46.6	50.8	-4.2
01:25 AM - 01:30 AM	52.0	50.7	1.3	7.0	-	48.0	46.9	1.1
01:30 AM - 01:35 AM	51.6	53.7	-2.1	7.0	-	47.6	50.6	-3.0
01:35 AM - 01:40 AM	52.2	51.2	1.0	7.0	-	48.2	46.6	1.6
01:40 AM - 01:45 AM	51.9	51.6	0.3	7.0	-	47.9	48.8	-0.9
01:45 AM - 01:50 AM	52.2	53.7	-1.5	7.0	-	48.2	50.4	-2.2
01:50 AM - 01:55 AM	52.7	51.3	1.4	7.0	-	48.7	49.9	-1.2
01:55 AM - 02:00 AM	52.5	51.6	0.9	7.0	-	48.5	50.5	-2.0
02:00 AM - 02:05 AM	53.3	52.0	1.3	7.0	-	49.3	50.0	-0.7
02:05 AM - 02:10 AM	53.1	51.0	2.1	4.5	-	51.6	49.8	1.8
02:10 AM - 02:15 AM	53.8	50.3	3.5	2.0	-	54.8	49.0	5.8
02:15 AM - 02:20 AM	53.9	50.3	3.6	2.0	-	54.9	49.2	5.7
02:20 AM - 02:25 AM	52.5	50.4	2.1	4.5	-	51.0	49.2	1.8
02:25 AM - 02:30 AM	56.7	50.4	6.3	1.5	-	58.2	49.3	8.9
02:30 AM - 02:35 AM	54.7	49.7	5.0	1.5	-	56.2	48.6	7.6
02:35 AM - 02:40 AM	55.0	50.5	4.5	1.5	-	56.5	44.9	11.6
02:40 AM - 02:45 AM	53.2	52.0	1.2	7.0	-	49.2	48.1	1.1
02:45 AM - 02:50 AM	54.3	49.2	5.1	1.5	-	55.8	48.2	7.6
02:50 AM - 02:55 AM	53.1	49.5	3.6	2.0	-	54.1	47.6	6.5
02:55 AM - 03:00 AM	55.2	53.9	1.3	7.0	-	51.2	48.5	2.7
03:00 AM - 03:05 AM	53.7	52.2	1.5	4.5	-	52.2	49.6	2.6
03:05 AM - 03:10 AM	53.2	52.5	0.7	7.0	-	49.2	50.4	-1.2
03:10 AM - 03:15 AM	51.9	52.3	-0.4	7.0	-	47.9	50.1	-2.2
03:15 AM - 03:20 AM	52.8	52.6	0.2	7.0	-	48.8	50.4	-1.6
03:20 AM - 03:25 AM	53.6	53.6	0.0	7.0	-	49.6	48.8	0.8
03:25 AM - 03:30 AM	54.0	53.9	0.1	7.0	-	50.0	48.6	1.4
03:30 AM - 03:35 AM	54.0	52.8	1.2	7.0	-	50.0	48.5	1.5
03:35 AM - 03:40 AM	54.0	52.7	1.3	7.0	-	50.0	49.6	0.4
03:40 AM - 03:45 AM	54.9	53.3	1.6	4.5	-	53.4	50.3	3.1
03:45 AM - 03:50 AM	53.9	51.7	2.2	4.5	-	52.4	44.7	7.7
03:50 AM - 03:55 AM	54.4	50.2	4.2	2.0	-	55.4	44.4	11.0
03:55 AM - 04:00 AM	53.9	52.8	1.1	7.0	-	49.9	50.5	-0.6
04:00 AM - 04:05 AM	53.5	52.5	1.0	7.0	-	49.5	50.2	-0.7

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142065  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536865-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142065-7  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169)  
Measurement Date Dec 26 - 27, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 01122504

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B) (C)	ตัวปรับค่า (D)	ปรับค่าเสียงจากแหล่งกำเนิด (E)		เสียงพื้นฐาน (F)	ค่าระดับการรบกวน (G-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:05 AM - 04:10 AM	54.4	52.6	1.8	4.5	-	52.9	50.3	2.6
04:10 AM - 04:15 AM	54.2	52.3	1.9	4.5	-	52.7	50.1	2.6
04:15 AM - 04:20 AM	53.7	52.6	1.1	7.0	-	49.7	50.4	-0.7
04:20 AM - 04:25 AM	54.8	49.1	5.7	1.5	-	56.3	44.3	12.0
04:25 AM - 04:30 AM	54.4	49.4	5.0	1.5	-	55.9	44.1	11.8
04:30 AM - 04:35 AM	53.1	51.9	1.2	7.0	-	49.1	48.2	0.9
04:35 AM - 04:40 AM	52.5	48.2	4.3	2.0	-	53.5	47.1	6.4
04:40 AM - 04:45 AM	53.8	48.7	5.1	1.5	-	55.3	47.6	7.7
04:45 AM - 04:50 AM	53.7	48.9	4.8	1.5	-	55.2	47.5	7.7
04:50 AM - 04:55 AM	54.5	50.9	3.6	2.0	-	55.5	48.6	6.9
04:55 AM - 05:00 AM	53.6	51.9	1.7	4.5	-	52.1	47.5	4.6
05:00 AM - 05:05 AM	54.1	53.6	0.5	7.0	-	50.1	50.8	-0.7
05:05 AM - 05:10 AM	54.6	49.7	4.9	1.5	-	56.1	48.4	7.7
05:10 AM - 05:15 AM	54.2	50.7	3.5	2.0	-	55.2	48.9	6.3
05:15 AM - 05:20 AM	54.5	51.4	3.1	3.0	-	54.5	49.7	4.8
05:20 AM - 05:25 AM	53.9	52.7	1.2	7.0	-	49.9	49.6	0.3
05:25 AM - 05:30 AM	54.3	54.3	0.0	7.0	-	50.3	50.0	0.3
05:30 AM - 05:35 AM	53.6	53.4	0.2	7.0	-	49.6	49.5	0.1
05:35 AM - 05:40 AM	53.2	54.2	-1.0	7.0	-	49.2	50.4	-1.2
05:40 AM - 05:45 AM	53.2	51.9	1.3	7.0	-	49.2	50.1	-0.9
05:45 AM - 05:50 AM	54.9	51.3	3.6	2.0	-	55.9	49.8	6.1
05:50 AM - 05:55 AM	53.0	52.2	0.8	7.0	-	49.0	49.5	-0.5
05:55 AM - 06:00 AM	56.4	53.3	3.1	3.0	-	56.4	50.3	6.1
06:00 AM - 07:00 AM	59.4	54.9	4.5	1.5	57.9	-	51.9	6.0
07:00 AM - 08:00 AM	58.2	54.4	3.8	2.0	56.2	-	51.6	4.6
08:00 AM - 09:00 AM	52.2	53.7	-1.5	7.0	45.2	-	51.1	-5.9
09:00 AM - 10:00 AM	51.9	54.3	-2.4	7.0	44.9	-	51.0	-6.1
10:00 AM - 11:00 AM	52.4	53.4	-1.0	7.0	45.4	-	50.4	-5.0
11:00 AM - 12:00 PM	53.3	53.0	0.3	7.0	46.3	-	50.1	-3.8
12:00 PM - 01:00 PM	52.1	51.9	0.2	7.0	45.1	-	49.0	-3.9
01:00 PM - 02:00 PM	54.6	51.3	3.3	3.0	51.6	-	48.6	3.0
02:00 PM - 03:00 PM	56.7	51.4	5.3	1.5	55.2	-	48.9	6.3
ค่ามาตรฐาน								≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

#### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 26-27 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142075-7 วันที่ตรวจวัด 03-04 กรกฎาคม 2565)

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142068  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536870-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142068-1  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
Measurement Date Dec 20 - 21, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858518

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)		เสียงขณะไม่มีกิจกรรม (B)		ผลต่างระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (B)		เสียงพื้นฐาน (E)	ค่าระดับการรบกวน (D-E)
	เสียงจากแหล่งกำเนิด		เสียงขณะไม่มีกิจกรรม				กลางวัน (A-C)	กลางคืน (A-C)+3		
04:00 PM - 05:00 PM	54.1		51.6		2.5	3.0	51.1	-	48.5	2.6
05:00 PM - 06:00 PM	55.4		53.8		1.6	4.5	50.9	-	50.0	0.9
06:00 PM - 07:00 PM	57.3		52.1		5.2	1.5	55.8	-	49.7	6.1
07:00 PM - 08:00 PM	58.1		53.7		4.4	2.0	56.1	-	50.4	5.7
08:00 PM - 09:00 PM	58.0		52.8		5.2	1.5	56.5	-	50.4	6.1
09:00 PM - 10:00 PM	57.3		52.5		4.8	1.5	55.8	-	51.2	4.6
10:00 PM - 10:05 PM	57.5		52.5		5.0	1.5	-	59.0	50.8	8.2
10:05 PM - 10:10 PM	58.2		51.0		7.2	1.0	-	60.2	49.3	10.9
10:10 PM - 10:15 PM	57.6		51.3		6.3	1.5	-	59.1	49.8	9.3
10:15 PM - 10:20 PM	57.1		51.2		5.9	1.5	-	58.6	50.3	8.3
10:20 PM - 10:25 PM	56.2		50.7		5.5	1.5	-	57.7	49.3	8.4
10:25 PM - 10:30 PM	55.3		52.3		3.0	3.0	-	55.3	50.4	4.9
10:30 PM - 10:35 PM	56.2		51.4		4.8	1.5	-	57.7	49.4	8.3
10:35 PM - 10:40 PM	56.7		51.7		5.0	1.5	-	58.2	49.8	8.4
10:40 PM - 10:45 PM	55.3		52.9		2.4	4.5	-	53.8	51.0	2.8
10:45 PM - 10:50 PM	54.6		52.2		2.4	4.5	-	53.1	50.8	2.3
10:50 PM - 10:55 PM	53.7		51.9		1.8	4.5	-	52.2	50.3	1.9
10:55 PM - 11:00 PM	55.3		50.8		4.5	1.5	-	56.8	49.0	7.8
11:00 PM - 11:05 PM	55.9		50.1		5.8	1.5	-	57.4	48.6	8.8
11:05 PM - 11:10 PM	55.7		51.5		4.2	2.0	-	56.7	49.7	7.0
11:10 PM - 11:15 PM	56.1		50.3		5.8	1.5	-	57.6	49.3	8.3
11:15 PM - 11:20 PM	55.7		51.3		4.4	2.0	-	56.7	49.9	6.8
11:20 PM - 11:25 PM	56.7		51.1		5.6	1.5	-	58.2	49.0	9.2
11:25 PM - 11:30 PM	57.9		52.0		5.9	1.5	-	59.4	50.0	9.4
11:30 PM - 11:35 PM	57.6		51.7		5.9	1.5	-	59.1	49.6	9.5
11:35 PM - 11:40 PM	57.3		51.3		6.0	1.5	-	58.8	49.9	8.9
11:40 PM - 11:45 PM	57.2		50.2		7.0	1.0	-	59.2	49.6	9.6
11:45 PM - 11:50 PM	57.0		50.1		6.9	1.0	-	59.0	49.3	9.7
11:50 PM - 11:55 PM	57.7		50.9		6.8	1.0	-	59.7	50.3	9.4
11:55 PM - 12:00 AM	58.3		50.9		7.4	1.0	-	60.3	50.1	10.2
12:00 AM - 12:05 AM	58.3		52.0		6.3	1.5	-	59.8	50.5	9.3
12:05 AM - 12:10 AM	57.8		51.1		6.7	1.0	-	59.8	50.4	9.4
12:10 AM - 12:15 AM	57.7		50.8		6.9	1.0	-	59.7	50.2	9.5
12:15 AM - 12:20 AM	57.8		50.7		7.1	1.0	-	59.8	50.2	9.6
12:20 AM - 12:25 AM	58.2		50.3		7.9	0.5	-	60.7	49.8	10.9
12:25 AM - 12:30 AM	58.4		50.0		8.4	0.5	-	60.9	49.0	11.9
12:30 AM - 12:35 AM	59.0		49.5		9.5	0.5	-	61.5	48.8	12.7
12:35 AM - 12:40 AM	59.3		50.2		9.1	0.5	-	61.8	49.5	12.3
12:40 AM - 12:45 AM	59.2		50.0		9.2	0.5	-	61.7	49.2	12.5
12:45 AM - 12:50 AM	60.2		49.7		10.5	0.5	-	62.7	49.2	13.5

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142068  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536870-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142068-1  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
Measurement Date Dec 20 - 21, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858518

ระดับเสียง (dB(A))								
เวลา	(A) เสียงจากแหล่งกำเนิด	(B) เสียงขณะไม่มีการรบกวน	(A-B) ผลต่างระดับเสียง	(C) ตัวปรับค่า	(D) ปรับค่าเสียงจากแหล่งกำเนิด		(E) เสียงพื้นฐาน	(D-E) ค่าระดับการรบกวน
					(A-C) กลางวัน	(A-C)+3 กลางคืน		
12:50 AM - 12:55 AM	58.2	50.2	8.0	0.5	-	60.7	49.5	11.2
12:55 AM - 01:00 AM	59.2	49.6	9.6	0.5	-	61.7	48.9	12.8
01:00 AM - 01:05 AM	60.1	52.0	8.1	0.5	-	62.6	50.6	12.0
01:05 AM - 01:10 AM	59.8	52.8	7.0	1.0	-	61.8	52.2	9.6
01:10 AM - 01:15 AM	60.1	51.8	8.3	0.5	-	62.6	51.0	11.6
01:15 AM - 01:20 AM	60.0	51.1	8.9	0.5	-	62.5	50.6	11.9
01:20 AM - 01:25 AM	57.5	51.2	6.3	1.5	-	59.0	50.6	8.4
01:25 AM - 01:30 AM	56.4	51.5	4.9	1.5	-	57.9	51.0	6.9
01:30 AM - 01:35 AM	57.0	51.1	5.9	1.5	-	58.5	50.6	7.9
01:35 AM - 01:40 AM	56.8	51.0	5.8	1.5	-	58.3	50.4	7.9
01:40 AM - 01:45 AM	57.5	51.2	6.3	1.5	-	59.0	50.4	8.6
01:45 AM - 01:50 AM	56.3	51.5	4.8	1.5	-	57.8	50.8	7.0
01:50 AM - 01:55 AM	55.9	51.6	4.3	2.0	-	56.9	51.1	5.8
01:55 AM - 02:00 AM	57.2	51.2	6.0	1.5	-	58.7	50.5	8.2
02:00 AM - 02:05 AM	55.9	51.4	4.5	1.5	-	57.4	50.4	7.0
02:05 AM - 02:10 AM	55.6	50.9	4.7	1.5	-	57.1	50.2	6.9
02:10 AM - 02:15 AM	55.4	51.1	4.3	2.0	-	56.4	50.5	5.9
02:15 AM - 02:20 AM	56.3	51.0	5.3	1.5	-	57.8	50.3	7.5
02:20 AM - 02:25 AM	55.5	51.0	4.5	1.5	-	57.0	50.4	6.6
02:25 AM - 02:30 AM	56.8	50.9	5.9	1.5	-	58.3	50.4	7.9
02:30 AM - 02:35 AM	55.7	50.4	5.3	1.5	-	57.2	49.9	7.3
02:35 AM - 02:40 AM	57.0	50.5	6.5	1.0	-	59.0	49.8	9.2
02:40 AM - 02:45 AM	56.6	50.4	6.2	1.5	-	58.1	49.7	8.4
02:45 AM - 02:50 AM	55.7	50.6	5.1	1.5	-	57.2	50.0	7.2
02:50 AM - 02:55 AM	55.7	50.3	5.4	1.5	-	57.2	49.5	7.7
02:55 AM - 03:00 AM	56.5	50.6	5.9	1.5	-	58.0	49.8	8.2
03:00 AM - 03:05 AM	57.4	50.3	7.1	1.0	-	59.4	49.3	10.1
03:05 AM - 03:10 AM	56.7	49.9	6.8	1.0	-	58.7	49.2	9.5
03:10 AM - 03:15 AM	56.4	50.3	6.1	1.5	-	57.9	49.5	8.4
03:15 AM - 03:20 AM	57.7	50.2	7.5	0.5	-	60.2	49.5	10.7
03:20 AM - 03:25 AM	56.7	50.1	6.6	1.0	-	58.7	49.5	9.2
03:25 AM - 03:30 AM	56.7	50.3	6.4	1.5	-	58.2	49.7	8.5
03:30 AM - 03:35 AM	57.7	50.4	7.3	1.0	-	59.7	49.3	10.4
03:35 AM - 03:40 AM	58.7	50.4	8.3	0.5	-	61.2	49.5	11.7
03:40 AM - 03:45 AM	58.7	50.7	8.0	0.5	-	61.2	49.6	11.6
03:45 AM - 03:50 AM	59.6	50.3	9.3	0.5	-	62.1	49.6	12.5
03:50 AM - 03:55 AM	60.1	50.0	10.1	0.5	-	62.6	49.4	13.2
03:55 AM - 04:00 AM	60.5	49.8	10.7	0.5	-	63.0	49.2	13.8
04:00 AM - 04:05 AM	59.7	49.8	9.9	0.5	-	62.2	49.1	13.1
04:05 AM - 04:10 AM	59.6	50.3	9.3	0.5	-	62.1	49.8	12.3

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142068  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536870-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142068-1  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
Measurement Date Dec 20 - 21, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858518

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B) (C)	ตัวปรับค่า (D)	ปรับค่าเสียงจากแหล่งกำเนิด (E)		เสียงพื้นฐาน (F)	ค่าระดับการรบกวน (G-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:10 AM - 04:15 AM	60.1	50.0	10.1	0.5	-	62.6	49.5	13.1
04:15 AM - 04:20 AM	60.1	50.3	9.8	0.5	-	62.6	49.7	12.9
04:20 AM - 04:25 AM	59.8	50.2	9.6	0.5	-	62.3	49.6	12.7
04:25 AM - 04:30 AM	59.0	50.0	9.0	0.5	-	61.5	49.4	12.1
04:30 AM - 04:35 AM	59.7	50.0	9.7	0.5	-	62.2	49.4	12.8
04:35 AM - 04:40 AM	59.0	50.3	8.7	0.5	-	61.5	49.6	11.9
04:40 AM - 04:45 AM	58.7	50.4	8.3	0.5	-	61.2	49.6	11.6
04:45 AM - 04:50 AM	58.6	50.8	7.8	0.5	-	61.1	49.5	11.6
04:50 AM - 04:55 AM	57.6	50.7	6.9	1.0	-	59.6	49.8	9.8
04:55 AM - 05:00 AM	57.6	50.9	6.7	1.0	-	59.6	49.9	9.7
05:00 AM - 05:05 AM	58.2	49.3	8.9	0.5	-	60.7	48.6	12.1
05:05 AM - 05:10 AM	58.5	50.1	8.4	0.5	-	61.0	48.8	12.2
05:10 AM - 05:15 AM	57.0	49.7	7.3	1.0	-	59.0	48.3	10.7
05:15 AM - 05:20 AM	57.3	50.1	7.2	1.0	-	59.3	48.6	10.7
05:20 AM - 05:25 AM	57.4	52.3	5.1	1.5	-	58.9	48.4	10.5
05:25 AM - 05:30 AM	57.4	51.8	5.6	1.5	-	58.9	48.3	10.6
05:30 AM - 05:35 AM	56.9	54.3	2.6	3.0	-	56.9	49.2	7.7
05:35 AM - 05:40 AM	58.1	54.0	4.1	2.0	-	59.1	48.8	10.3
05:40 AM - 05:45 AM	58.5	52.4	6.1	1.5	-	60.0	48.7	11.3
05:45 AM - 05:50 AM	57.9	52.2	5.7	1.5	-	59.4	49.2	10.2
05:50 AM - 05:55 AM	57.7	51.9	5.8	1.5	-	59.2	48.8	10.4
05:55 AM - 06:00 AM	58.6	49.6	9.0	0.5	-	61.1	47.8	13.3
06:00 AM - 07:00 AM	56.9	51.3	5.6	1.5	55.4	-	47.9	7.5
07:00 AM - 08:00 AM	56.6	52.6	4.0	2.0	54.6	-	49.1	5.5
08:00 AM - 09:00 AM	55.5	52.5	3.0	3.0	52.5	-	49.1	3.4
09:00 AM - 10:00 AM	53.2	52.7	0.5	7.0	46.2	-	49.4	-3.2
10:00 AM - 11:00 AM	58.5	55.0	3.5	2.0	56.5	-	49.5	7.0
11:00 AM - 12:00 PM	51.7	54.1	-2.4	7.0	44.7	-	48.3	-3.6
12:00 PM - 01:00 PM	50.8	52.7	-1.9	7.0	43.8	-	48.1	-4.3
01:00 PM - 02:00 PM	50.0	52.2	-2.2	7.0	43.0	-	49.1	-6.1
02:00 PM - 03:00 PM	52.2	51.9	0.3	7.0	45.2	-	48.1	-2.9
03:00 PM - 04:00 PM	51.0	53.5	-2.5	7.0	44.0	-	49.3	-5.3
ค่ามาตรฐาน								≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

#### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 20-21 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142077-1 วันที่ตรวจวัด 27-28 มิถุนายน 2565)

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Approved by

Kanokkorn Anek  
Senior Manager



# Analysis / Test Report

## TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142068  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536871-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142068-2  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
Measurement Date Dec 21 - 22, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858518

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:00 PM - 05:00 PM	50.9	56.0	-5.1	7.0	43.9	-	49.1	-5.2
05:00 PM - 06:00 PM	50.5	54.9	-4.4	7.0	43.5	-	49.0	-5.5
06:00 PM - 07:00 PM	52.4	53.0	-0.6	7.0	45.4	-	49.9	-4.5
07:00 PM - 08:00 PM	54.7	53.3	1.4	7.0	47.7	-	51.2	-3.5
08:00 PM - 09:00 PM	52.8	53.4	-0.6	7.0	45.8	-	51.2	-5.4
09:00 PM - 10:00 PM	54.0	51.1	2.9	3.0	51.0	-	49.6	1.4
10:00 PM - 10:05 PM	48.1	50.1	-2.0	7.0	-	44.1	49.1	-5.0
10:05 PM - 10:10 PM	48.2	51.9	-3.7	7.0	-	44.2	49.4	-5.2
10:10 PM - 10:15 PM	50.0	49.8	0.2	7.0	-	46.0	48.7	-2.7
10:15 PM - 10:20 PM	48.3	50.8	-2.5	7.0	-	44.3	49.5	-5.2
10:20 PM - 10:25 PM	47.7	51.1	-3.4	7.0	-	43.7	49.9	-6.2
10:25 PM - 10:30 PM	48.4	51.4	-3.0	7.0	-	44.4	49.7	-5.3
10:30 PM - 10:35 PM	48.3	51.7	-3.4	7.0	-	44.3	50.2	-5.9
10:35 PM - 10:40 PM	50.8	51.0	-0.2	7.0	-	46.8	48.8	-2.0
10:40 PM - 10:45 PM	50.8	49.6	1.2	7.0	-	46.8	48.8	-2.0
10:45 PM - 10:50 PM	50.6	49.8	0.8	7.0	-	46.6	48.5	-1.9
10:50 PM - 10:55 PM	50.6	50.1	0.5	7.0	-	46.6	48.9	-2.3
10:55 PM - 11:00 PM	49.4	50.3	-0.9	7.0	-	45.4	49.3	-3.9
11:00 PM - 11:05 PM	49.1	50.1	-1.0	7.0	-	45.1	49.2	-4.1
11:05 PM - 11:10 PM	49.0	50.7	-1.7	7.0	-	45.0	49.5	-4.5
11:10 PM - 11:15 PM	49.6	50.2	-0.6	7.0	-	45.6	48.8	-3.2
11:15 PM - 11:20 PM	49.8	49.6	0.2	7.0	-	45.8	48.8	-3.0
11:20 PM - 11:25 PM	49.9	49.7	0.2	7.0	-	45.9	48.6	-2.7
11:25 PM - 11:30 PM	49.6	49.6	0.0	7.0	-	45.6	48.7	-3.1
11:30 PM - 11:35 PM	50.6	50.1	0.5	7.0	-	46.6	49.1	-2.5
11:35 PM - 11:40 PM	50.0	50.4	-0.4	7.0	-	46.0	49.1	-3.1
11:40 PM - 11:45 PM	50.1	50.0	0.1	7.0	-	46.1	48.4	-2.3
11:45 PM - 11:50 PM	50.5	50.3	0.2	7.0	-	46.5	48.7	-2.2
11:50 PM - 11:55 PM	50.2	49.5	0.7	7.0	-	46.2	48.5	-2.3
11:55 PM - 12:00 AM	50.8	48.8	2.0	4.5	-	49.3	48.0	1.3
12:00 AM - 12:05 AM	52.9	49.5	3.4	3.0	-	52.9	48.6	4.3
12:05 AM - 12:10 AM	52.6	49.2	3.4	3.0	-	52.6	48.2	4.4
12:10 AM - 12:15 AM	51.5	49.6	1.9	4.5	-	50.0	48.9	1.1
12:15 AM - 12:20 AM	50.7	49.1	1.6	4.5	-	49.2	48.2	1.0
12:20 AM - 12:25 AM	52.6	48.3	4.3	2.0	-	53.6	47.1	6.5
12:25 AM - 12:30 AM	53.0	49.6	3.4	3.0	-	53.0	48.5	4.5
12:30 AM - 12:35 AM	53.5	48.8	4.7	1.5	-	55.0	48.2	6.8
12:35 AM - 12:40 AM	52.2	48.2	4.0	2.0	-	53.2	47.4	5.8
12:40 AM - 12:45 AM	54.4	48.2	6.2	1.5	-	55.9	47.6	8.3
12:45 AM - 12:50 AM	55.3	49.3	6.0	1.5	-	56.8	48.0	8.8

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142068  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536871-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142068-2  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
Measurement Date Dec 21 - 22, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858518

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:50 AM - 12:55 AM	53.5	49.9	3.6	2.0	-	54.5	49.2	5.3
12:55 AM - 01:00 AM	53.6	50.0	3.6	2.0	-	54.6	48.7	5.9
01:00 AM - 01:05 AM	53.8	49.6	4.2	2.0	-	54.8	48.4	6.4
01:05 AM - 01:10 AM	54.0	49.1	4.9	1.5	-	55.5	48.3	7.2
01:10 AM - 01:15 AM	53.8	49.5	4.3	2.0	-	54.8	47.9	6.9
01:15 AM - 01:20 AM	53.3	51.0	2.3	4.5	-	51.8	48.4	3.4
01:20 AM - 01:25 AM	53.2	50.2	3.0	3.0	-	53.2	49.0	4.2
01:25 AM - 01:30 AM	55.1	49.5	5.6	1.5	-	56.6	48.4	8.2
01:30 AM - 01:35 AM	54.0	50.4	3.6	2.0	-	55.0	48.6	6.4
01:35 AM - 01:40 AM	52.7	48.8	3.9	2.0	-	53.7	48.0	5.7
01:40 AM - 01:45 AM	52.6	49.4	3.2	3.0	-	52.6	48.4	4.2
01:45 AM - 01:50 AM	52.9	50.1	2.8	3.0	-	52.9	49.1	3.8
01:50 AM - 01:55 AM	53.2	50.4	2.8	3.0	-	53.2	49.1	4.1
01:55 AM - 02:00 AM	52.8	50.2	2.6	3.0	-	52.8	48.9	3.9
02:00 AM - 02:05 AM	52.6	50.3	2.3	4.5	-	51.1	48.5	2.6
02:05 AM - 02:10 AM	51.5	51.1	0.4	7.0	-	47.5	49.9	-2.4
02:10 AM - 02:15 AM	51.4	50.7	0.7	7.0	-	47.4	49.4	-2.0
02:15 AM - 02:20 AM	54.0	49.6	4.4	2.0	-	55.0	48.8	6.2
02:20 AM - 02:25 AM	52.2	50.5	1.7	4.5	-	50.7	49.1	1.6
02:25 AM - 02:30 AM	52.3	50.3	2.0	4.5	-	50.8	48.4	2.4
02:30 AM - 02:35 AM	54.6	50.8	3.8	2.0	-	55.6	48.9	6.7
02:35 AM - 02:40 AM	55.1	50.2	4.9	1.5	-	56.6	48.7	7.9
02:40 AM - 02:45 AM	55.4	49.9	5.5	1.5	-	56.9	48.4	8.5
02:45 AM - 02:50 AM	54.4	50.0	4.4	2.0	-	55.4	48.5	6.9
02:50 AM - 02:55 AM	53.5	50.4	3.1	3.0	-	53.5	49.5	4.0
02:55 AM - 03:00 AM	52.6	49.7	2.9	3.0	-	52.6	48.6	4.0
03:00 AM - 03:05 AM	52.2	49.9	2.3	4.5	-	50.7	48.2	2.5
03:05 AM - 03:10 AM	52.0	50.1	1.9	4.5	-	50.5	48.5	2.0
03:10 AM - 03:15 AM	52.3	49.8	2.5	3.0	-	52.3	48.7	3.6
03:15 AM - 03:20 AM	52.8	50.0	2.8	3.0	-	52.8	49.0	3.8
03:20 AM - 03:25 AM	52.9	49.8	3.1	3.0	-	52.9	48.5	4.4
03:25 AM - 03:30 AM	52.2	50.9	1.3	7.0	-	48.2	49.3	-1.1
03:30 AM - 03:35 AM	52.4	51.2	1.2	7.0	-	48.4	49.7	-1.3
03:35 AM - 03:40 AM	52.6	50.8	1.8	4.5	-	51.1	49.6	1.5
03:40 AM - 03:45 AM	55.6	50.6	5.0	1.5	-	57.1	48.9	8.2
03:45 AM - 03:50 AM	56.1	50.6	5.5	1.5	-	57.6	49.0	8.6
03:50 AM - 03:55 AM	53.5	50.4	3.1	3.0	-	53.5	49.2	4.3
03:55 AM - 04:00 AM	53.9	51.2	2.7	3.0	-	53.9	49.5	4.4
04:00 AM - 04:05 AM	53.0	51.1	1.9	4.5	-	51.5	49.6	1.9
04:05 AM - 04:10 AM	53.1	50.8	2.3	4.5	-	51.6	49.4	2.2

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142068  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536871-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142068-2  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
Measurement Date Dec 21 - 22, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858518

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B) (C)	ตัวปรับค่า (D)	ปรับค่าเสียงจากแหล่งกำเนิด (E)		เสียงพื้นฐาน (F)	ค่าระดับการรบกวน (G-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:10 AM - 04:15 AM	53.8	51.2	2.6	3.0	-	53.8	50.1	3.7
04:15 AM - 04:20 AM	55.1	50.3	4.8	1.5	-	56.6	49.6	7.0
04:20 AM - 04:25 AM	54.8	50.3	4.5	1.5	-	56.3	49.3	7.0
04:25 AM - 04:30 AM	54.9	51.2	3.7	2.0	-	55.9	50.1	5.8
04:30 AM - 04:35 AM	55.7	51.1	4.6	1.5	-	57.2	48.9	8.3
04:35 AM - 04:40 AM	55.3	51.3	4.0	2.0	-	56.3	49.6	6.7
04:40 AM - 04:45 AM	54.7	50.5	4.2	2.0	-	55.7	48.6	7.1
04:45 AM - 04:50 AM	53.8	50.5	3.3	3.0	-	53.8	49.2	4.6
04:50 AM - 04:55 AM	55.3	50.7	4.6	1.5	-	56.8	49.4	7.4
04:55 AM - 05:00 AM	55.1	51.5	3.6	2.0	-	56.1	50.1	6.0
05:00 AM - 05:05 AM	55.3	50.8	4.5	1.5	-	56.8	50.0	6.8
05:05 AM - 05:10 AM	56.3	51.7	4.6	1.5	-	57.8	50.3	7.5
05:10 AM - 05:15 AM	55.0	51.6	3.4	3.0	-	55.0	50.4	4.6
05:15 AM - 05:20 AM	54.7	50.8	3.9	2.0	-	55.7	49.8	5.9
05:20 AM - 05:25 AM	55.0	50.0	5.0	1.5	-	56.5	48.5	8.0
05:25 AM - 05:30 AM	54.6	48.9	5.7	1.5	-	56.1	47.9	8.2
05:30 AM - 05:35 AM	54.5	51.1	3.4	3.0	-	54.5	48.8	5.7
05:35 AM - 05:40 AM	53.8	52.9	0.9	7.0	-	49.8	46.9	2.9
05:40 AM - 05:45 AM	53.9	52.1	1.8	4.5	-	52.4	47.0	5.4
05:45 AM - 05:50 AM	53.8	50.0	3.8	2.0	-	54.8	46.8	8.0
05:50 AM - 05:55 AM	53.8	51.6	2.2	4.5	-	52.3	49.6	2.7
05:55 AM - 06:00 AM	53.8	50.1	3.7	2.0	-	54.8	47.2	7.6
06:00 AM - 07:00 AM	53.8	51.7	2.1	4.5	49.3	-	46.3	3.0
07:00 AM - 08:00 AM	53.3	52.8	0.5	7.0	46.3	-	47.5	-1.2
08:00 AM - 09:00 AM	53.4	54.8	-1.4	7.0	46.4	-	49.7	-3.3
09:00 AM - 10:00 AM	49.8	53.2	-3.4	7.0	42.8	-	49.2	-6.4
10:00 AM - 11:00 AM	51.2	54.0	-2.8	7.0	44.2	-	48.3	-4.1
11:00 AM - 12:00 PM	50.9	55.2	-4.3	7.0	43.9	-	48.7	-4.8
12:00 PM - 01:00 PM	51.9	52.4	-0.5	7.0	44.9	-	48.0	-3.1
01:00 PM - 02:00 PM	52.4	53.1	-0.7	7.0	45.4	-	49.0	-3.6
02:00 PM - 03:00 PM	51.1	53.1	-2.0	7.0	44.1	-	49.5	-5.4
03:00 PM - 04:00 PM	51.2	54.0	-2.8	7.0	44.2	-	50.5	-6.3
ค่ามาตรฐาน								≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

#### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
- ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
- ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561  
ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 21-22 ธันวาคม 2565  
ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142077-2 วันที่ตรวจวัด 28-29 มิถุนายน 2565)

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142068  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536872-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142068-3  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
Measurement Date Dec 22 - 23, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858518

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:00 PM - 05:00 PM	50.4	51.5	-1.1	7.0	43.4	-	47.2	-3.8
05:00 PM - 06:00 PM	50.7	51.6	-0.9	7.0	43.7	-	47.2	-3.5
06:00 PM - 07:00 PM	55.1	51.2	3.9	2.0	53.1	-	47.6	5.5
07:00 PM - 08:00 PM	54.7	52.5	2.2	4.5	50.2	-	51.1	-0.9
08:00 PM - 09:00 PM	55.7	50.8	4.9	1.5	54.2	-	49.4	4.8
09:00 PM - 10:00 PM	55.3	51.7	3.6	2.0	53.3	-	50.5	2.8
10:00 PM - 10:05 PM	54.4	51.2	3.2	3.0	-	54.4	50.3	4.1
10:05 PM - 10:10 PM	53.6	50.0	3.6	2.0	-	54.6	49.2	5.4
10:10 PM - 10:15 PM	55.0	50.5	4.5	1.5	-	56.5	49.2	7.3
10:15 PM - 10:20 PM	55.1	49.8	5.3	1.5	-	56.6	48.6	8.0
10:20 PM - 10:25 PM	55.5	51.2	4.3	2.0	-	56.5	49.9	6.6
10:25 PM - 10:30 PM	56.1	50.7	5.4	1.5	-	57.6	50.0	7.6
10:30 PM - 10:35 PM	55.8	50.7	5.1	1.5	-	57.3	49.5	7.8
10:35 PM - 10:40 PM	55.9	51.4	4.5	1.5	-	57.4	49.3	8.1
10:40 PM - 10:45 PM	55.7	51.4	4.3	2.0	-	56.7	49.8	6.9
10:45 PM - 10:50 PM	56.0	51.6	4.4	2.0	-	57.0	50.0	7.0
10:50 PM - 10:55 PM	56.0	51.7	4.3	2.0	-	57.0	50.1	6.9
10:55 PM - 11:00 PM	55.6	51.3	4.3	2.0	-	56.6	50.1	6.5
11:00 PM - 11:05 PM	55.7	50.8	4.9	1.5	-	57.2	49.9	7.3
11:05 PM - 11:10 PM	55.9	50.5	5.4	1.5	-	57.4	49.5	7.9
11:10 PM - 11:15 PM	55.0	49.2	5.8	1.5	-	56.5	48.0	8.5
11:15 PM - 11:20 PM	55.6	49.7	5.9	1.5	-	57.1	48.9	8.2
11:20 PM - 11:25 PM	55.0	50.0	5.0	1.5	-	56.5	49.1	7.4
11:25 PM - 11:30 PM	54.9	51.1	3.8	2.0	-	55.9	50.1	5.8
11:30 PM - 11:35 PM	55.0	51.1	3.9	2.0	-	56.0	49.2	6.8
11:35 PM - 11:40 PM	55.2	51.4	3.8	2.0	-	56.2	50.9	5.3
11:40 PM - 11:45 PM	56.1	51.2	4.9	1.5	-	57.6	50.4	7.2
11:45 PM - 11:50 PM	56.6	51.1	5.5	1.5	-	58.1	50.2	7.9
11:50 PM - 11:55 PM	56.9	50.9	6.0	1.5	-	58.4	49.9	8.5
11:55 PM - 12:00 AM	57.4	50.7	6.7	1.0	-	59.4	49.8	9.6
12:00 AM - 12:05 AM	56.9	51.1	5.8	1.5	-	58.4	50.3	8.1
12:05 AM - 12:10 AM	55.9	51.2	4.7	1.5	-	57.4	50.2	7.2
12:10 AM - 12:15 AM	56.4	52.3	4.1	2.0	-	57.4	51.3	6.1
12:15 AM - 12:20 AM	57.1	51.5	5.6	1.5	-	58.6	50.9	7.7
12:20 AM - 12:25 AM	58.3	51.3	7.0	1.0	-	60.3	50.7	9.6
12:25 AM - 12:30 AM	55.0	51.5	3.5	2.0	-	56.0	50.6	5.4
12:30 AM - 12:35 AM	54.6	51.5	3.1	3.0	-	54.6	50.8	3.8
12:35 AM - 12:40 AM	53.8	51.5	2.3	4.5	-	52.3	50.8	1.5
12:40 AM - 12:45 AM	54.8	51.4	3.4	3.0	-	54.8	50.8	4.0
12:45 AM - 12:50 AM	54.9	51.7	3.2	3.0	-	54.9	51.1	3.8

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142068  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536872-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142068-3  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
Measurement Date Dec 22 - 23, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858518

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด	เสียงขณะ ไม่มีการรบกวน	ผลต่าง ระดับเสียง	ตัวปรับค่า	ปรับค่าเสียงจากแหล่งกำเนิด		เสียงพื้นฐาน	ค่าระดับ การรบกวน
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:50 AM - 12:55 AM	54.7	51.5	3.2	3.0	-	54.7	50.8	3.9
12:55 AM - 01:00 AM	54.7	51.1	3.6	2.0	-	55.7	50.6	5.1
01:00 AM - 01:05 AM	54.7	51.2	3.5	2.0	-	55.7	50.6	5.1
01:05 AM - 01:10 AM	54.4	50.9	3.5	2.0	-	55.4	50.3	5.1
01:10 AM - 01:15 AM	52.4	50.9	1.5	4.5	-	50.9	50.2	0.7
01:15 AM - 01:20 AM	52.1	50.9	1.2	7.0	-	48.1	49.6	-1.5
01:20 AM - 01:25 AM	51.0	50.7	0.3	7.0	-	47.0	50.2	-3.2
01:25 AM - 01:30 AM	52.6	50.9	1.7	4.5	-	51.1	50.1	1.0
01:30 AM - 01:35 AM	53.4	50.5	2.9	3.0	-	53.4	49.9	3.5
01:35 AM - 01:40 AM	53.9	50.5	3.4	3.0	-	53.9	49.3	4.6
01:40 AM - 01:45 AM	54.3	49.3	5.0	1.5	-	55.8	48.5	7.3
01:45 AM - 01:50 AM	54.6	49.0	5.6	1.5	-	56.1	48.4	7.7
01:50 AM - 01:55 AM	53.6	49.4	4.2	2.0	-	54.6	48.8	5.8
01:55 AM - 02:00 AM	53.4	49.7	3.7	2.0	-	54.4	49.2	5.2
02:00 AM - 02:05 AM	53.1	49.9	3.2	3.0	-	53.1	49.3	3.8
02:05 AM - 02:10 AM	52.2	50.0	2.2	4.5	-	50.7	49.2	1.5
02:10 AM - 02:15 AM	52.9	51.3	1.6	4.5	-	51.4	49.8	1.6
02:15 AM - 02:20 AM	52.0	49.6	2.4	4.5	-	50.5	48.9	1.6
02:20 AM - 02:25 AM	53.2	49.5	3.7	2.0	-	54.2	48.9	5.3
02:25 AM - 02:30 AM	52.8	49.5	3.3	3.0	-	52.8	48.9	3.9
02:30 AM - 02:35 AM	52.8	49.7	3.1	3.0	-	52.8	48.9	3.9
02:35 AM - 02:40 AM	52.1	50.2	1.9	4.5	-	50.6	49.6	1.0
02:40 AM - 02:45 AM	53.0	49.9	3.1	3.0	-	53.0	49.3	3.7
02:45 AM - 02:50 AM	53.2	50.7	2.5	3.0	-	53.2	49.9	3.3
02:50 AM - 02:55 AM	54.1	50.0	4.1	2.0	-	55.1	49.4	5.7
02:55 AM - 03:00 AM	54.6	50.2	4.4	2.0	-	55.6	49.6	6.0
03:00 AM - 03:05 AM	53.3	50.2	3.1	3.0	-	53.3	49.4	3.9
03:05 AM - 03:10 AM	53.1	50.1	3.0	3.0	-	53.1	49.5	3.6
03:10 AM - 03:15 AM	53.1	49.4	3.7	2.0	-	54.1	48.7	5.4
03:15 AM - 03:20 AM	51.1	49.3	1.8	4.5	-	49.6	48.8	0.8
03:20 AM - 03:25 AM	51.4	50.0	1.4	7.0	-	47.4	49.3	-1.9
03:25 AM - 03:30 AM	51.1	50.4	0.7	7.0	-	47.1	49.8	-2.7
03:30 AM - 03:35 AM	51.4	50.1	1.3	7.0	-	47.4	49.5	-2.1
03:35 AM - 03:40 AM	56.2	50.1	6.1	1.5	-	57.7	49.4	8.3
03:40 AM - 03:45 AM	52.1	50.2	1.9	4.5	-	50.6	49.6	1.0
03:45 AM - 03:50 AM	58.5	50.9	7.6	0.5	-	61.0	50.1	10.9
03:50 AM - 03:55 AM	56.8	50.8	6.0	1.5	-	58.3	50.1	8.2
03:55 AM - 04:00 AM	54.6	50.2	4.4	2.0	-	55.6	49.6	6.0
04:00 AM - 04:05 AM	55.7	50.0	5.7	1.5	-	57.2	49.4	7.8
04:05 AM - 04:10 AM	56.4	49.5	6.9	1.0	-	58.4	48.9	9.5

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142068  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536872-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142068-3  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
Measurement Date Dec 22 - 23, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858518

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B) (C)	ตัวปรับค่า (D)	ปรับค่าเสียงจากแหล่งกำเนิด (E)		เสียงพื้นฐาน (F)	ค่าระดับการรบกวน (G-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:10 AM - 04:15 AM	56.4	49.7	6.7	1.0	-	58.4	49.3	9.1
04:15 AM - 04:20 AM	55.0	49.8	5.2	1.5	-	56.5	49.3	7.2
04:20 AM - 04:25 AM	54.0	50.6	3.4	3.0	-	54.0	49.7	4.3
04:25 AM - 04:30 AM	53.3	50.6	2.7	3.0	-	53.3	49.8	3.5
04:30 AM - 04:35 AM	53.8	50.6	3.2	3.0	-	53.8	50.0	3.8
04:35 AM - 04:40 AM	55.3	50.1	5.2	1.5	-	56.8	49.6	7.2
04:40 AM - 04:45 AM	53.9	50.4	3.5	2.0	-	54.9	49.3	5.6
04:45 AM - 04:50 AM	52.0	50.1	1.9	4.5	-	50.5	49.3	1.2
04:50 AM - 04:55 AM	52.4	50.3	2.1	4.5	-	50.9	49.1	1.8
04:55 AM - 05:00 AM	51.9	50.5	1.4	7.0	-	47.9	49.5	-1.6
05:00 AM - 05:05 AM	52.7	51.1	1.6	4.5	-	51.2	48.9	2.3
05:05 AM - 05:10 AM	54.9	59.2	-4.3	7.0	-	50.9	49.7	1.2
05:10 AM - 05:15 AM	50.8	50.6	0.2	7.0	-	46.8	49.3	-2.5
05:15 AM - 05:20 AM	51.4	51.0	0.4	7.0	-	47.4	48.8	-1.4
05:20 AM - 05:25 AM	50.7	50.0	0.7	7.0	-	46.7	48.6	-1.9
05:25 AM - 05:30 AM	51.1	50.7	0.4	7.0	-	47.1	48.8	-1.7
05:30 AM - 05:35 AM	51.2	50.4	0.8	7.0	-	47.2	48.5	-1.3
05:35 AM - 05:40 AM	51.2	50.5	0.7	7.0	-	47.2	48.4	-1.2
05:40 AM - 05:45 AM	51.5	51.3	0.2	7.0	-	47.5	48.5	-1.0
05:45 AM - 05:50 AM	51.6	50.4	1.2	7.0	-	47.6	48.2	-0.6
05:50 AM - 05:55 AM	50.7	49.7	1.0	7.0	-	46.7	47.8	-1.1
05:55 AM - 06:00 AM	49.9	50.0	-0.1	7.0	-	45.9	48.0	-2.1
06:00 AM - 07:00 AM	52.2	50.6	1.6	4.5	47.7	-	46.1	1.6
07:00 AM - 08:00 AM	51.8	52.5	-0.7	7.0	44.8	-	46.4	-1.6
08:00 AM - 09:00 AM	50.5	51.6	-1.1	7.0	43.5	-	46.8	-3.3
09:00 AM - 10:00 AM	49.5	57.8	-8.3	7.0	42.5	-	48.6	-6.1
10:00 AM - 11:00 AM	50.6	58.1	-7.5	7.0	43.6	-	49.5	-5.9
11:00 AM - 12:00 PM	52.2	53.1	-0.9	7.0	45.2	-	47.6	-2.4
12:00 PM - 01:00 PM	52.6	50.0	2.6	3.0	49.6	-	46.2	3.4
01:00 PM - 02:00 PM	54.1	53.1	1.0	7.0	47.1	-	47.5	-0.4
02:00 PM - 03:00 PM	53.8	51.1	2.7	3.0	50.8	-	47.8	3.0
03:00 PM - 04:00 PM	52.9	54.0	-1.1	7.0	45.9	-	47.2	-1.3
ค่ามาตรฐาน								≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

#### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
- ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
- ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561  
ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 22-23 ธันวาคม 2565  
ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142077-3 วันที่ตรวจวัด 29-30 มิถุนายน 2565)

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

Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



# Analysis / Test Report

## TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142068  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536873-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142068-4  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
Measurement Date Dec 23 - 24, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858518

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด		ผลต่างระดับเสียง	ตัวปรับค่า	ปรับค่าเสียงจากแหล่งกำเนิด		เสียงพื้นฐาน	ค่าระดับการรบกวน
	(A)	(B)			(A-C)	(A-C)+3		
04:00 PM - 05:00 PM	53.0	57.7	-4.7	7.0	46.0	-	54.4	-8.4
05:00 PM - 06:00 PM	54.1	55.0	-0.9	7.0	47.1	-	52.1	-5.0
06:00 PM - 07:00 PM	53.2	51.7	1.5	4.5	48.7	-	50.7	-2.0
07:00 PM - 08:00 PM	53.6	53.4	0.2	7.0	46.6	-	52.3	-5.7
08:00 PM - 09:00 PM	54.8	54.0	0.8	7.0	47.8	-	52.7	-4.9
09:00 PM - 10:00 PM	52.8	52.8	0.0	7.0	45.8	-	52.0	-6.2
10:00 PM - 10:05 PM	54.3	52.2	2.1	4.5	-	52.8	51.3	1.5
10:05 PM - 10:10 PM	52.5	52.9	-0.4	7.0	-	48.5	51.9	-3.4
10:10 PM - 10:15 PM	52.1	60.1	-8.0	7.0	-	48.1	52.2	-4.1
10:15 PM - 10:20 PM	53.8	59.8	-6.0	7.0	-	49.8	52.1	-2.3
10:20 PM - 10:25 PM	53.7	53.2	0.5	7.0	-	49.7	52.2	-2.5
10:25 PM - 10:30 PM	52.9	52.8	0.1	7.0	-	48.9	52.0	-3.1
10:30 PM - 10:35 PM	53.5	53.3	0.2	7.0	-	49.5	52.4	-2.9
10:35 PM - 10:40 PM	52.9	53.0	-0.1	7.0	-	48.9	51.8	-2.9
10:40 PM - 10:45 PM	51.8	52.8	-1.0	7.0	-	47.8	51.8	-4.0
10:45 PM - 10:50 PM	52.0	52.6	-0.6	7.0	-	48.0	51.9	-3.9
10:50 PM - 10:55 PM	53.6	52.3	1.3	7.0	-	49.6	51.4	-1.8
10:55 PM - 11:00 PM	53.4	52.4	1.0	7.0	-	49.4	51.4	-2.0
11:00 PM - 11:05 PM	57.0	52.7	4.3	2.0	-	58.0	51.7	6.3
11:05 PM - 11:10 PM	58.8	52.4	6.4	1.5	-	60.3	50.9	9.4
11:10 PM - 11:15 PM	56.4	52.2	4.2	2.0	-	57.4	51.2	6.2
11:15 PM - 11:20 PM	53.0	51.7	1.3	7.0	-	49.0	50.9	-1.9
11:20 PM - 11:25 PM	52.4	52.0	0.4	7.0	-	48.4	51.3	-2.9
11:25 PM - 11:30 PM	53.6	52.2	1.4	7.0	-	49.6	51.1	-1.5
11:30 PM - 11:35 PM	53.1	52.3	0.8	7.0	-	49.1	50.9	-1.8
11:35 PM - 11:40 PM	52.0	52.0	0.0	7.0	-	48.0	50.1	-2.1
11:40 PM - 11:45 PM	53.5	51.6	1.9	4.5	-	52.0	50.7	1.3
11:45 PM - 11:50 PM	53.1	50.4	2.7	3.0	-	53.1	49.3	3.8
11:50 PM - 11:55 PM	52.5	51.0	1.5	4.5	-	51.0	49.4	1.6
11:55 PM - 12:00 AM	52.0	50.5	1.5	4.5	-	50.5	49.3	1.2
12:00 AM - 12:05 AM	51.8	50.2	1.6	4.5	-	50.3	49.3	1.0
12:05 AM - 12:10 AM	52.6	50.3	2.3	4.5	-	51.1	49.4	1.7
12:10 AM - 12:15 AM	52.3	51.0	1.3	7.0	-	48.3	49.2	-0.9
12:15 AM - 12:20 AM	52.2	50.5	1.7	4.5	-	50.7	49.2	1.5
12:20 AM - 12:25 AM	52.8	50.0	2.8	3.0	-	52.8	49.2	3.6
12:25 AM - 12:30 AM	53.1	49.6	3.5	2.0	-	54.1	48.4	5.7
12:30 AM - 12:35 AM	52.6	50.0	2.6	3.0	-	52.6	48.3	4.3
12:35 AM - 12:40 AM	52.7	49.9	2.8	3.0	-	52.7	48.2	4.5
12:40 AM - 12:45 AM	52.2	48.1	4.1	2.0	-	53.2	47.0	6.2
12:45 AM - 12:50 AM	52.4	49.6	2.8	3.0	-	52.4	48.0	4.4

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142068  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536873-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142068-4  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
Measurement Date Dec 23 - 24, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858518

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า ปรับค่าเสียงจากแหล่งกำเนิด (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน เสียงพื้น (E)	ค่าระดับ การรบกวน (D-E)
	กลางวัน (A-C)	กลางคืน (A-C)+3						
12:50 AM - 12:55 AM	52.3	51.0	1.3	7.0	-	48.3	48.9	-0.6
12:55 AM - 01:00 AM	52.5	50.6	1.9	4.5	-	51.0	48.8	2.2
01:00 AM - 01:05 AM	52.3	50.5	1.8	4.5	-	50.8	48.9	1.9
01:05 AM - 01:10 AM	53.6	50.5	3.1	3.0	-	53.6	48.4	5.2
01:10 AM - 01:15 AM	54.5	50.2	4.3	2.0	-	55.5	48.7	6.8
01:15 AM - 01:20 AM	57.0	50.1	6.9	1.0	-	59.0	49.0	10.0
01:20 AM - 01:25 AM	56.6	51.2	5.4	1.5	-	58.1	49.7	8.4
01:25 AM - 01:30 AM	56.3	50.6	5.7	1.5	-	57.8	49.2	8.6
01:30 AM - 01:35 AM	56.2	51.0	5.2	1.5	-	57.7	49.4	8.3
01:35 AM - 01:40 AM	56.0	50.9	5.1	1.5	-	57.5	49.2	8.3
01:40 AM - 01:45 AM	55.8	51.3	4.5	1.5	-	57.3	48.7	8.6
01:45 AM - 01:50 AM	54.9	52.5	2.4	4.5	-	53.4	48.4	5.0
01:50 AM - 01:55 AM	55.3	50.2	5.1	1.5	-	56.8	48.3	8.5
01:55 AM - 02:00 AM	57.5	49.5	8.0	0.5	-	60.0	47.5	12.5
02:00 AM - 02:05 AM	58.9	50.6	8.3	0.5	-	61.4	46.3	15.1
02:05 AM - 02:10 AM	56.8	48.6	8.2	0.5	-	59.3	47.0	12.3
02:10 AM - 02:15 AM	61.2	49.4	11.8	0.5	-	63.7	47.3	16.4
02:15 AM - 02:20 AM	57.3	50.3	7.0	1.0	-	59.3	48.2	11.1
02:20 AM - 02:25 AM	56.6	49.8	6.8	1.0	-	58.6	47.9	10.7
02:25 AM - 02:30 AM	56.0	49.7	6.3	1.5	-	57.5	47.4	10.1
02:30 AM - 02:35 AM	54.5	50.0	4.5	1.5	-	56.0	48.4	7.6
02:35 AM - 02:40 AM	55.2	50.2	5.0	1.5	-	56.7	49.1	7.6
02:40 AM - 02:45 AM	56.4	49.7	6.7	1.0	-	58.4	48.3	10.1
02:45 AM - 02:50 AM	56.9	50.2	6.7	1.0	-	58.9	48.8	10.1
02:50 AM - 02:55 AM	55.9	50.4	5.5	1.5	-	57.4	48.6	8.8
02:55 AM - 03:00 AM	56.8	50.0	6.8	1.0	-	58.8	48.4	10.4
03:00 AM - 03:05 AM	56.0	50.1	5.9	1.5	-	57.5	48.9	8.6
03:05 AM - 03:10 AM	55.7	50.0	5.7	1.5	-	57.2	48.7	8.5
03:10 AM - 03:15 AM	55.9	49.8	6.1	1.5	-	57.4	48.2	9.2
03:15 AM - 03:20 AM	55.9	49.9	6.0	1.5	-	57.4	48.3	9.1
03:20 AM - 03:25 AM	55.4	51.0	4.4	2.0	-	56.4	49.7	6.7
03:25 AM - 03:30 AM	55.8	50.4	5.4	1.5	-	57.3	49.6	7.7
03:30 AM - 03:35 AM	56.6	49.5	7.1	1.0	-	58.6	48.6	10.0
03:35 AM - 03:40 AM	55.0	49.7	5.3	1.5	-	56.5	48.8	7.7
03:40 AM - 03:45 AM	55.7	50.0	5.7	1.5	-	57.2	49.1	8.1
03:45 AM - 03:50 AM	55.4	50.3	5.1	1.5	-	56.9	48.9	8.0
03:50 AM - 03:55 AM	54.9	49.9	5.0	1.5	-	56.4	49.2	7.2
03:55 AM - 04:00 AM	55.0	50.5	4.5	1.5	-	56.5	49.3	7.2
04:00 AM - 04:05 AM	55.0	49.7	5.3	1.5	-	56.5	48.7	7.8
04:05 AM - 04:10 AM	56.0	50.4	5.6	1.5	-	57.5	49.3	8.2

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142068  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536873-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142068-4  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
Measurement Date Dec 23 - 24, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858518

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B) (C)	ตัวปรับค่า (D)	ปรับค่าเสียงจากแหล่งกำเนิด (E)		เสียงพื้นฐาน (F)	ค่าระดับการรบกวน (G-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:10 AM - 04:15 AM	56.2	50.2	6.0	1.5	-	57.7	48.9	8.8
04:15 AM - 04:20 AM	56.5	50.6	5.9	1.5	-	58.0	49.3	8.7
04:20 AM - 04:25 AM	57.0	50.2	6.8	1.0	-	59.0	48.8	10.2
04:25 AM - 04:30 AM	62.1	50.3	11.8	0.5	-	64.6	49.5	15.1
04:30 AM - 04:35 AM	55.1	50.4	4.7	1.5	-	56.6	48.9	7.7
04:35 AM - 04:40 AM	55.6	50.7	4.9	1.5	-	57.1	49.0	8.1
04:40 AM - 04:45 AM	58.4	50.5	7.9	0.5	-	60.9	49.3	11.6
04:45 AM - 04:50 AM	59.0	49.3	9.7	0.5	-	61.5	48.4	13.1
04:50 AM - 04:55 AM	56.5	49.7	6.8	1.0	-	58.5	48.5	10.0
04:55 AM - 05:00 AM	56.1	50.2	5.9	1.5	-	57.6	49.0	8.6
05:00 AM - 05:05 AM	56.1	51.9	4.2	2.0	-	57.1	50.2	6.9
05:05 AM - 05:10 AM	56.1	51.2	4.9	1.5	-	57.6	49.6	8.0
05:10 AM - 05:15 AM	55.4	49.3	6.1	1.5	-	56.9	48.1	8.8
05:15 AM - 05:20 AM	56.0	51.2	4.8	1.5	-	57.5	48.0	9.5
05:20 AM - 05:25 AM	55.8	53.3	2.5	3.0	-	55.8	50.0	5.8
05:25 AM - 05:30 AM	55.3	51.3	4.0	2.0	-	56.3	49.8	6.5
05:30 AM - 05:35 AM	55.1	50.6	4.5	1.5	-	56.6	48.5	8.1
05:35 AM - 05:40 AM	56.6	50.5	6.1	1.5	-	58.1	48.5	9.6
05:40 AM - 05:45 AM	56.2	52.2	4.0	2.0	-	57.2	48.4	8.8
05:45 AM - 05:50 AM	56.1	49.7	6.4	1.5	-	57.6	47.9	9.7
05:50 AM - 05:55 AM	55.8	51.0	4.8	1.5	-	57.3	47.7	9.6
05:55 AM - 06:00 AM	56.0	48.9	7.1	1.0	-	58.0	47.3	10.7
06:00 AM - 07:00 AM	56.2	52.7	3.5	2.0	54.2	-	48.0	6.2
07:00 AM - 08:00 AM	55.3	52.3	3.0	3.0	52.3	-	49.2	3.1
08:00 AM - 09:00 AM	54.3	54.3	0.0	7.0	47.3	-	50.4	-3.1
09:00 AM - 10:00 AM	51.3	54.4	-3.1	7.0	44.3	-	50.1	-5.8
10:00 AM - 11:00 AM	52.1	58.6	-6.5	7.0	45.1	-	48.7	-3.6
11:00 AM - 12:00 PM	52.2	56.6	-4.4	7.0	45.2	-	47.9	-2.7
12:00 PM - 01:00 PM	53.2	57.0	-3.8	7.0	46.2	-	46.7	-0.5
01:00 PM - 02:00 PM	53.4	56.6	-3.2	7.0	46.4	-	48.8	-2.4
02:00 PM - 03:00 PM	53.1	53.8	-0.7	7.0	46.1	-	51.0	-4.9
03:00 PM - 04:00 PM	53.5	54.3	-0.8	7.0	46.5	-	50.1	-3.6
ค่ามาตรฐาน								≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

#### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
- ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
- ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561  
ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 23-24 ธันวาคม 2565  
ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142077-4 วันที่ตรวจวัด มีถุนายน 30-01 กรกฎาคม 2565)

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142068  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536874-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142068-5  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
Measurement Date Dec 24 - 25, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858518

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด		ผลต่างระดับเสียง	ตัวปรับค่า	ปรับค่าเสียงจากแหล่งกำเนิด		เสียงพื้นฐาน	ค่าระดับการรบกวน
	(A)	(B)			(A-C)	(A-C)+3		
04:00 PM - 05:00 PM	54.0	56.3	-2.3	7.0	47.0	-	53.4	-6.4
05:00 PM - 06:00 PM	54.7	53.6	1.1	7.0	47.7	-	51.2	-3.5
06:00 PM - 07:00 PM	55.5	54.6	0.9	7.0	48.5	-	52.4	-3.9
07:00 PM - 08:00 PM	53.6	54.3	-0.7	7.0	46.6	-	51.4	-4.8
08:00 PM - 09:00 PM	53.1	53.3	-0.2	7.0	46.1	-	50.3	-4.2
09:00 PM - 10:00 PM	49.8	51.6	-1.8	7.0	42.8	-	49.3	-6.5
10:00 PM - 10:05 PM	49.6	49.2	0.4	7.0	-	45.6	48.2	-2.6
10:05 PM - 10:10 PM	50.2	48.9	1.3	7.0	-	46.2	48.1	-1.9
10:10 PM - 10:15 PM	47.4	49.9	-2.5	7.0	-	43.4	48.6	-5.2
10:15 PM - 10:20 PM	48.4	50.1	-1.7	7.0	-	44.4	48.7	-4.3
10:20 PM - 10:25 PM	48.8	54.2	-5.4	7.0	-	44.8	50.0	-5.2
10:25 PM - 10:30 PM	47.5	55.8	-8.3	7.0	-	43.5	51.8	-8.3
10:30 PM - 10:35 PM	48.2	54.8	-6.6	7.0	-	44.2	52.3	-8.1
10:35 PM - 10:40 PM	49.8	53.4	-3.6	7.0	-	45.8	51.6	-5.8
10:40 PM - 10:45 PM	49.0	52.4	-3.4	7.0	-	45.0	51.2	-6.2
10:45 PM - 10:50 PM	50.7	52.1	-1.4	7.0	-	46.7	50.9	-4.2
10:50 PM - 10:55 PM	48.2	51.8	-3.6	7.0	-	44.2	50.8	-6.6
10:55 PM - 11:00 PM	54.2	51.6	2.6	3.0	-	54.2	50.6	3.6
11:00 PM - 11:05 PM	49.3	51.3	-2.0	7.0	-	45.3	50.5	-5.2
11:05 PM - 11:10 PM	48.0	52.3	-4.3	7.0	-	44.0	51.0	-7.0
11:10 PM - 11:15 PM	47.3	52.5	-5.2	7.0	-	43.3	51.1	-7.8
11:15 PM - 11:20 PM	47.1	53.6	-6.5	7.0	-	43.1	51.3	-8.2
11:20 PM - 11:25 PM	48.1	56.6	-8.5	7.0	-	44.1	54.0	-9.9
11:25 PM - 11:30 PM	49.0	55.7	-6.7	7.0	-	45.0	52.5	-7.5
11:30 PM - 11:35 PM	46.0	52.8	-6.8	7.0	-	42.0	50.9	-8.9
11:35 PM - 11:40 PM	45.4	53.1	-7.7	7.0	-	41.4	50.4	-9.0
11:40 PM - 11:45 PM	46.8	51.2	-4.4	7.0	-	42.8	48.9	-6.1
11:45 PM - 11:50 PM	47.0	50.4	-3.4	7.0	-	43.0	48.8	-5.8
11:50 PM - 11:55 PM	47.5	50.7	-3.2	7.0	-	43.5	49.0	-5.5
11:55 PM - 12:00 AM	46.8	50.2	-3.4	7.0	-	42.8	48.5	-5.7
12:00 AM - 12:05 AM	45.9	51.6	-5.7	7.0	-	41.9	49.7	-7.8
12:05 AM - 12:10 AM	45.7	50.8	-5.1	7.0	-	41.7	49.2	-7.5
12:10 AM - 12:15 AM	46.2	50.3	-4.1	7.0	-	42.2	48.6	-6.4
12:15 AM - 12:20 AM	46.5	51.1	-4.6	7.0	-	42.5	49.1	-6.6
12:20 AM - 12:25 AM	46.8	51.0	-4.2	7.0	-	42.8	48.5	-5.7
12:25 AM - 12:30 AM	48.0	54.2	-6.2	7.0	-	44.0	52.5	-8.5
12:30 AM - 12:35 AM	50.8	55.0	-4.2	7.0	-	46.8	53.6	-6.8
12:35 AM - 12:40 AM	48.3	53.6	-5.3	7.0	-	44.3	52.1	-7.8
12:40 AM - 12:45 AM	49.8	52.5	-2.7	7.0	-	45.8	50.2	-4.4
12:45 AM - 12:50 AM	46.3	51.3	-5.0	7.0	-	42.3	49.1	-6.8

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142068  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536874-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142068-5  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
Measurement Date Dec 24 - 25, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858518

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:50 AM - 12:55 AM	50.3	50.0	0.3	7.0	-	46.3	48.2	-1.9
12:55 AM - 01:00 AM	48.0	51.0	-3.0	7.0	-	44.0	48.8	-4.8
01:00 AM - 01:05 AM	47.5	52.6	-5.1	7.0	-	43.5	48.8	-5.3
01:05 AM - 01:10 AM	49.9	53.8	-3.9	7.0	-	45.9	51.7	-5.8
01:10 AM - 01:15 AM	49.2	53.0	-3.8	7.0	-	45.2	51.0	-5.8
01:15 AM - 01:20 AM	49.3	52.9	-3.6	7.0	-	45.3	50.9	-5.6
01:20 AM - 01:25 AM	51.0	53.0	-2.0	7.0	-	47.0	50.9	-3.9
01:25 AM - 01:30 AM	48.7	52.2	-3.5	7.0	-	44.7	50.3	-5.6
01:30 AM - 01:35 AM	50.0	51.9	-1.9	7.0	-	46.0	50.1	-4.1
01:35 AM - 01:40 AM	50.0	52.1	-2.1	7.0	-	46.0	50.1	-4.1
01:40 AM - 01:45 AM	48.6	51.7	-3.1	7.0	-	44.6	50.0	-5.4
01:45 AM - 01:50 AM	48.1	51.5	-3.4	7.0	-	44.1	49.8	-5.7
01:50 AM - 01:55 AM	52.2	54.9	-2.7	7.0	-	48.2	50.2	-2.0
01:55 AM - 02:00 AM	50.1	52.3	-2.2	7.0	-	46.1	50.2	-4.1
02:00 AM - 02:05 AM	49.9	51.4	-1.5	7.0	-	45.9	49.3	-3.4
02:05 AM - 02:10 AM	51.7	50.6	1.1	7.0	-	47.7	48.6	-0.9
02:10 AM - 02:15 AM	54.8	50.5	4.3	2.0	-	55.8	48.5	7.3
02:15 AM - 02:20 AM	50.8	50.6	0.2	7.0	-	46.8	48.5	-1.7
02:20 AM - 02:25 AM	51.4	49.8	1.6	4.5	-	49.9	47.9	2.0
02:25 AM - 02:30 AM	48.4	49.5	-1.1	7.0	-	44.4	47.7	-3.3
02:30 AM - 02:35 AM	46.7	49.7	-3.0	7.0	-	42.7	47.7	-5.0
02:35 AM - 02:40 AM	46.5	49.3	-2.8	7.0	-	42.5	47.6	-5.1
02:40 AM - 02:45 AM	47.0	49.1	-2.1	7.0	-	43.0	47.4	-4.4
02:45 AM - 02:50 AM	46.6	52.5	-5.9	7.0	-	42.6	47.8	-5.2
02:50 AM - 02:55 AM	47.6	49.9	-2.3	7.0	-	43.6	47.8	-4.2
02:55 AM - 03:00 AM	48.3	50.4	-2.1	7.0	-	44.3	47.8	-3.5
03:00 AM - 03:05 AM	50.5	49.0	1.5	4.5	-	49.0	47.5	1.5
03:05 AM - 03:10 AM	47.6	49.9	-2.3	7.0	-	43.6	47.8	-4.2
03:10 AM - 03:15 AM	48.4	51.1	-2.7	7.0	-	44.4	49.2	-4.8
03:15 AM - 03:20 AM	50.4	52.1	-1.7	7.0	-	46.4	50.5	-4.1
03:20 AM - 03:25 AM	49.5	52.4	-2.9	7.0	-	45.5	50.8	-5.3
03:25 AM - 03:30 AM	50.2	52.6	-2.4	7.0	-	46.2	51.3	-5.1
03:30 AM - 03:35 AM	50.1	54.1	-4.0	7.0	-	46.1	53.0	-6.9
03:35 AM - 03:40 AM	56.6	55.8	0.8	7.0	-	52.6	54.9	-2.3
03:40 AM - 03:45 AM	51.8	56.1	-4.3	7.0	-	47.8	54.9	-7.1
03:45 AM - 03:50 AM	51.4	58.1	-6.7	7.0	-	47.4	57.0	-9.6
03:50 AM - 03:55 AM	50.9	58.5	-7.6	7.0	-	46.9	57.5	-10.6
03:55 AM - 04:00 AM	50.8	58.3	-7.5	7.0	-	46.8	57.2	-10.4
04:00 AM - 04:05 AM	50.5	58.5	-8.0	7.0	-	46.5	57.4	-10.9
04:05 AM - 04:10 AM	50.8	58.0	-7.2	7.0	-	46.8	56.7	-9.9

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

Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142068  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536874-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142068-5  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
Measurement Date Dec 24 - 25, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858518

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B) (C)	ตัวปรับค่า (D)	ปรับค่าเสียงจากแหล่งกำเนิด (E)		เสียงพื้นฐาน (F)	ค่าระดับการรบกวน (G-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:10 AM - 04:15 AM	50.6	57.4	-6.8	7.0	-	46.6	55.5	-8.9
04:15 AM - 04:20 AM	51.7	55.6	-3.9	7.0	-	47.7	54.1	-6.4
04:20 AM - 04:25 AM	50.5	54.8	-4.3	7.0	-	46.5	53.1	-6.6
04:25 AM - 04:30 AM	51.0	54.5	-3.5	7.0	-	47.0	52.7	-5.7
04:30 AM - 04:35 AM	51.0	54.4	-3.4	7.0	-	47.0	52.3	-5.3
04:35 AM - 04:40 AM	50.8	54.4	-3.6	7.0	-	46.8	52.2	-5.4
04:40 AM - 04:45 AM	52.3	54.6	-2.3	7.0	-	48.3	52.0	-3.7
04:45 AM - 04:50 AM	49.8	55.1	-5.3	7.0	-	45.8	52.6	-6.8
04:50 AM - 04:55 AM	51.3	55.6	-4.3	7.0	-	47.3	53.1	-5.8
04:55 AM - 05:00 AM	52.4	55.9	-3.5	7.0	-	48.4	53.3	-4.9
05:00 AM - 05:05 AM	53.8	56.1	-2.3	7.0	-	49.8	53.5	-3.7
05:05 AM - 05:10 AM	55.2	56.3	-1.1	7.0	-	51.2	54.0	-2.8
05:10 AM - 05:15 AM	54.2	57.2	-3.0	7.0	-	50.2	55.5	-5.3
05:15 AM - 05:20 AM	53.8	57.0	-3.2	7.0	-	49.8	55.4	-5.6
05:20 AM - 05:25 AM	53.0	56.3	-3.3	7.0	-	49.0	54.6	-5.6
05:25 AM - 05:30 AM	52.5	56.2	-3.7	7.0	-	48.5	54.5	-6.0
05:30 AM - 05:35 AM	53.1	56.0	-2.9	7.0	-	49.1	53.5	-4.4
05:35 AM - 05:40 AM	53.4	56.3	-2.9	7.0	-	49.4	53.2	-3.8
05:40 AM - 05:45 AM	54.1	54.9	-0.8	7.0	-	50.1	52.9	-2.8
05:45 AM - 05:50 AM	52.7	54.8	-2.1	7.0	-	48.7	52.5	-3.8
05:50 AM - 05:55 AM	52.5	53.6	-1.1	7.0	-	48.5	51.4	-2.9
05:55 AM - 06:00 AM	52.2	52.5	-0.3	7.0	-	48.2	50.6	-2.4
06:00 AM - 07:00 AM	52.4	54.6	-2.2	7.0	45.4	-	51.8	-6.4
07:00 AM - 08:00 AM	52.7	54.6	-1.9	7.0	45.7	-	52.1	-6.4
08:00 AM - 09:00 AM	51.9	55.4	-3.5	7.0	44.9	-	52.6	-7.7
09:00 AM - 10:00 AM	52.1	55.6	-3.5	7.0	45.1	-	52.9	-7.8
10:00 AM - 11:00 AM	53.1	53.6	-0.5	7.0	46.1	-	51.2	-5.1
11:00 AM - 12:00 PM	52.5	55.0	-2.5	7.0	45.5	-	52.3	-6.8
12:00 PM - 01:00 PM	53.4	54.3	-0.9	7.0	46.4	-	50.9	-4.5
01:00 PM - 02:00 PM	54.8	55.6	-0.8	7.0	47.8	-	51.7	-3.9
02:00 PM - 03:00 PM	54.2	57.2	-3.0	7.0	47.2	-	51.9	-4.7
03:00 PM - 04:00 PM	53.7	56.3	-2.6	7.0	46.7	-	52.2	-5.5
ค่ามาตรฐาน	≤ 10							

Reference Method : Based on ISO 1996-1 and ISO 1996-2

#### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
- ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
- ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561  
ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 24-25 ธันวาคม 2565  
ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142077-5 วันที่ตรวจวัด 01-02 กรกฎาคม 2565)

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Approved by

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142068  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536875-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142068-6  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
Measurement Date Dec 25 - 26, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858518

#### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด <sup>(A)</sup>	เสียงขณะ ไม่มีการรบกวน <sup>(B)</sup>	ผลต่าง ระดับเสียง <sup>(A-B)</sup>	ตัวปรับค่า <sup>(C)</sup>	ปรับค่าเสียงจากแหล่งกำเนิด <sup>(B)</sup>		เสียงพื้นฐาน <sup>(E)</sup>	ค่าระดับ การรบกวน <sup>(D-E)</sup>
					กลางวัน <sup>(A-C)</sup>	กลางคืน <sup>(A-C)+3</sup>		
04:00 PM - 05:00 PM	54.4	49.7	4.7	1.5	52.9	-	45.8	7.1
05:00 PM - 06:00 PM	54.0	50.8	3.2	3.0	51.0	-	47.5	3.5
06:00 PM - 07:00 PM	54.6	54.9	-0.3	7.0	47.6	-	52.3	-4.7
07:00 PM - 08:00 PM	55.9	54.8	1.1	7.0	48.9	-	53.0	-4.1
08:00 PM - 09:00 PM	56.7	51.1	5.6	1.5	55.2	-	48.9	6.3
09:00 PM - 10:00 PM	57.2	51.2	6.0	1.5	55.7	-	49.7	6.0
10:00 PM - 10:05 PM	55.9	51.1	4.8	1.5	-	57.4	48.8	8.6
10:05 PM - 10:10 PM	55.9	50.1	5.8	1.5	-	57.4	47.8	9.6
10:10 PM - 10:15 PM	56.5	49.8	6.7	1.0	-	58.5	47.2	11.3
10:15 PM - 10:20 PM	57.5	49.8	7.7	0.5	-	60.0	47.7	12.3
10:20 PM - 10:25 PM	54.8	51.0	3.8	2.0	-	55.8	48.6	7.2
10:25 PM - 10:30 PM	54.1	50.6	3.5	2.0	-	55.1	48.1	7.0
10:30 PM - 10:35 PM	54.3	50.2	4.1	2.0	-	55.3	48.0	7.3
10:35 PM - 10:40 PM	55.1	49.3	5.8	1.5	-	56.6	46.7	9.9
10:40 PM - 10:45 PM	55.2	49.5	5.7	1.5	-	56.7	46.8	9.9
10:45 PM - 10:50 PM	54.6	49.4	5.2	1.5	-	56.1	46.6	9.5
10:50 PM - 10:55 PM	54.9	47.7	7.2	1.0	-	56.9	45.3	11.6
10:55 PM - 11:00 PM	54.9	47.5	7.4	1.0	-	56.9	45.7	11.2
11:00 PM - 11:05 PM	55.2	50.2	5.0	1.5	-	56.7	46.0	10.7
11:05 PM - 11:10 PM	55.0	50.0	5.0	1.5	-	56.5	46.5	10.0
11:10 PM - 11:15 PM	56.0	49.6	6.4	1.5	-	57.5	47.1	10.4
11:15 PM - 11:20 PM	55.5	49.9	5.6	1.5	-	57.0	46.3	10.7
11:20 PM - 11:25 PM	55.9	49.4	6.5	1.0	-	57.9	45.8	12.1
11:25 PM - 11:30 PM	57.5	50.5	7.0	1.0	-	59.5	46.0	13.5
11:30 PM - 11:35 PM	58.3	48.3	10.0	0.5	-	60.8	45.3	15.5
11:35 PM - 11:40 PM	56.8	49.2	7.6	0.5	-	59.3	46.4	12.9
11:40 PM - 11:45 PM	56.6	48.6	8.0	0.5	-	59.1	45.8	13.3
11:45 PM - 11:50 PM	57.7	48.3	9.4	0.5	-	60.2	45.7	14.5
11:50 PM - 11:55 PM	59.0	48.5	10.5	0.5	-	61.5	45.5	16.0
11:55 PM - 12:00 AM	56.9	48.3	8.6	0.5	-	59.4	44.2	15.2
12:00 AM - 12:05 AM	58.3	48.7	9.6	0.5	-	60.8	44.5	16.3
12:05 AM - 12:10 AM	57.9	49.1	8.8	0.5	-	60.4	45.6	14.8
12:10 AM - 12:15 AM	57.3	48.6	8.7	0.5	-	59.8	45.2	14.6
12:15 AM - 12:20 AM	57.4	48.0	9.4	0.5	-	59.9	44.9	15.0
12:20 AM - 12:25 AM	57.9	48.2	9.7	0.5	-	60.4	45.6	14.8
12:25 AM - 12:30 AM	55.6	48.5	7.1	1.0	-	57.6	46.0	11.6
12:30 AM - 12:35 AM	57.7	47.9	9.8	0.5	-	60.2	45.7	14.5
12:35 AM - 12:40 AM	55.7	49.1	6.6	1.0	-	57.7	45.3	12.4
12:40 AM - 12:45 AM	56.3	48.2	8.1	0.5	-	58.8	45.5	13.3
12:45 AM - 12:50 AM	56.8	48.7	8.1	0.5	-	59.3	46.2	13.1

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142068  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536875-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142068-6  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
Measurement Date Dec 25 - 26, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858518

ระดับเสียง (dB(A))								
เวลา	(A) เสียงจากแหล่งกำเนิด	(B) เสียงขณะไม่มีการรบกวน	(A-B) ผลต่างระดับเสียง	(C) ตัวปรับค่า	(D) ปรับค่าเสียงจากแหล่งกำเนิด		(E) เสียงพื้นฐาน	(D-E) ค่าระดับการรบกวน
					(A-C) กลางวัน	(A-C)+3 กลางคืน		
12:50 AM - 12:55 AM	56.8	48.4	8.4	0.5	-	59.3	46.2	13.1
12:55 AM - 01:00 AM	56.5	48.0	8.5	0.5	-	59.0	45.3	13.7
01:00 AM - 01:05 AM	56.0	48.9	7.1	1.0	-	58.0	46.0	12.0
01:05 AM - 01:10 AM	59.2	47.5	11.7	0.5	-	61.7	45.2	16.5
01:10 AM - 01:15 AM	57.7	47.7	10.0	0.5	-	60.2	45.7	14.5
01:15 AM - 01:20 AM	58.9	48.1	10.8	0.5	-	61.4	45.9	15.5
01:20 AM - 01:25 AM	57.3	47.5	9.8	0.5	-	59.8	45.9	13.9
01:25 AM - 01:30 AM	58.3	47.1	11.2	0.5	-	60.8	45.0	15.8
01:30 AM - 01:35 AM	56.7	47.3	9.4	0.5	-	59.2	45.5	13.7
01:35 AM - 01:40 AM	56.4	48.2	8.2	0.5	-	58.9	45.6	13.3
01:40 AM - 01:45 AM	57.0	48.5	8.5	0.5	-	59.5	46.2	13.3
01:45 AM - 01:50 AM	57.8	48.7	9.1	0.5	-	60.3	45.4	14.9
01:50 AM - 01:55 AM	56.9	47.9	9.0	0.5	-	59.4	44.7	14.7
01:55 AM - 02:00 AM	56.7	46.5	10.2	0.5	-	59.2	44.1	15.1
02:00 AM - 02:05 AM	57.6	48.2	9.4	0.5	-	60.1	45.5	14.6
02:05 AM - 02:10 AM	57.0	49.0	8.0	0.5	-	59.5	46.7	12.8
02:10 AM - 02:15 AM	56.9	47.8	9.1	0.5	-	59.4	45.3	14.1
02:15 AM - 02:20 AM	57.2	46.9	10.3	0.5	-	59.7	44.9	14.8
02:20 AM - 02:25 AM	58.3	48.5	9.8	0.5	-	60.8	45.7	15.1
02:25 AM - 02:30 AM	59.3	48.3	11.0	0.5	-	61.8	45.7	16.1
02:30 AM - 02:35 AM	58.9	47.1	11.8	0.5	-	61.4	44.4	17.0
02:35 AM - 02:40 AM	60.6	47.0	13.6	0.0	-	63.6	45.0	18.6
02:40 AM - 02:45 AM	58.6	48.1	10.5	0.5	-	61.1	45.4	15.7
02:45 AM - 02:50 AM	58.1	49.9	8.2	0.5	-	60.6	45.3	15.3
02:50 AM - 02:55 AM	58.7	47.9	10.8	0.5	-	61.2	45.9	15.3
02:55 AM - 03:00 AM	58.0	48.1	9.9	0.5	-	60.5	45.9	14.6
03:00 AM - 03:05 AM	58.7	47.1	11.6	0.5	-	61.2	44.7	16.5
03:05 AM - 03:10 AM	58.7	48.0	10.7	0.5	-	61.2	45.8	15.4
03:10 AM - 03:15 AM	58.2	47.2	11.0	0.5	-	60.7	45.9	14.8
03:15 AM - 03:20 AM	58.1	46.9	11.2	0.5	-	60.6	45.7	14.9
03:20 AM - 03:25 AM	58.4	48.4	10.0	0.5	-	60.9	45.3	15.6
03:25 AM - 03:30 AM	59.0	47.3	11.7	0.5	-	61.5	45.7	15.8
03:30 AM - 03:35 AM	59.4	47.4	12.0	0.5	-	61.9	45.3	16.6
03:35 AM - 03:40 AM	58.7	49.2	9.5	0.5	-	61.2	45.4	15.8
03:40 AM - 03:45 AM	58.7	49.2	9.5	0.5	-	61.2	45.4	15.8
03:45 AM - 03:50 AM	58.6	49.7	8.9	0.5	-	61.1	45.1	16.0
03:50 AM - 03:55 AM	58.4	50.5	7.9	0.5	-	60.9	45.4	15.5
03:55 AM - 04:00 AM	58.2	50.2	8.0	0.5	-	60.7	46.4	14.3
04:00 AM - 04:05 AM	59.2	50.7	8.5	0.5	-	61.7	46.7	15.0
04:05 AM - 04:10 AM	58.9	52.2	6.7	1.0	-	60.9	47.4	13.5

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142068  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536875-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142068-6  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
Measurement Date Dec 25 - 26, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858518

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับการรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:10 AM - 04:15 AM	59.4	51.8	7.6	0.5	-	61.9	47.9	14.0
04:15 AM - 04:20 AM	59.5	51.7	7.8	0.5	-	62.0	47.6	14.4
04:20 AM - 04:25 AM	59.3	52.6	6.7	1.0	-	61.3	49.1	12.2
04:25 AM - 04:30 AM	58.9	52.4	6.5	1.0	-	60.9	48.1	12.8
04:30 AM - 04:35 AM	58.2	52.7	5.5	1.5	-	59.7	47.6	12.1
04:35 AM - 04:40 AM	58.6	52.6	6.0	1.5	-	60.1	47.1	13.0
04:40 AM - 04:45 AM	58.2	52.0	6.2	1.5	-	59.7	47.0	12.7
04:45 AM - 04:50 AM	58.9	52.7	6.2	1.5	-	60.4	47.7	12.7
04:50 AM - 04:55 AM	58.2	53.5	4.7	1.5	-	59.7	49.1	10.6
04:55 AM - 05:00 AM	57.3	53.7	3.6	2.0	-	58.3	49.2	9.1
05:00 AM - 05:05 AM	57.5	53.8	3.7	2.0	-	58.5	48.6	9.9
05:05 AM - 05:10 AM	59.0	54.0	5.0	1.5	-	60.5	50.4	10.1
05:10 AM - 05:15 AM	58.3	54.5	3.8	2.0	-	59.3	50.4	8.9
05:15 AM - 05:20 AM	58.9	53.9	5.0	1.5	-	60.4	50.6	9.8
05:20 AM - 05:25 AM	57.4	52.9	4.5	1.5	-	58.9	50.5	8.4
05:25 AM - 05:30 AM	57.8	52.2	5.6	1.5	-	59.3	49.7	9.6
05:30 AM - 05:35 AM	58.0	52.5	5.5	1.5	-	59.5	50.4	9.1
05:35 AM - 05:40 AM	58.1	53.3	4.8	1.5	-	59.6	51.2	8.4
05:40 AM - 05:45 AM	58.9	51.1	7.8	0.5	-	61.4	48.1	13.3
05:45 AM - 05:50 AM	58.6	51.6	7.0	1.0	-	60.6	48.1	12.5
05:50 AM - 05:55 AM	59.2	54.2	5.0	1.5	-	60.7	51.9	8.8
05:55 AM - 06:00 AM	58.1	53.6	4.5	1.5	-	59.6	50.8	8.8
06:00 AM - 07:00 AM	57.6	52.7	4.9	1.5	56.1	-	49.3	6.8
07:00 AM - 08:00 AM	55.0	53.8	1.2	7.0	48.0	-	49.2	-1.2
08:00 AM - 09:00 AM	54.1	51.8	2.3	4.5	49.6	-	47.6	2.0
09:00 AM - 10:00 AM	53.9	60.2	-6.3	7.0	46.9	-	52.1	-5.2
10:00 AM - 11:00 AM	53.2	56.7	-3.5	7.0	46.2	-	50.2	-4.0
11:00 AM - 12:00 PM	53.5	49.4	4.1	2.0	51.5	-	47.1	4.4
12:00 PM - 01:00 PM	52.0	50.0	2.0	4.5	47.5	-	47.1	0.4
01:00 PM - 02:00 PM	52.8	52.6	0.2	7.0	45.8	-	49.0	-3.2
02:00 PM - 03:00 PM	53.4	52.1	1.3	7.0	46.4	-	48.5	-2.1
03:00 PM - 04:00 PM	53.0	53.7	-0.7	7.0	46.0	-	47.3	-1.3
ค่ามาตรฐาน	≤ 10							

Reference Method : Based on ISO 1996-1 and ISO 1996-2

#### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
- ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
- ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561  
ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 25-26 ธันวาคม 2565  
ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142077-6 วันที่ตรวจวัด 02-03 กรกฎาคม 2565)

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142068  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536876-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142068-7  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
Measurement Date Dec 26 - 27, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858518

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (B)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:00 PM - 05:00 PM	53.9	52.6	1.3	7.0	46.9	-	49.0	-2.1
05:00 PM - 06:00 PM	53.3	54.6	-1.3	7.0	46.3	-	49.7	-3.4
06:00 PM - 07:00 PM	54.8	53.2	1.6	4.5	50.3	-	50.5	-0.2
07:00 PM - 08:00 PM	55.5	57.8	-2.3	7.0	48.5	-	56.3	-7.8
08:00 PM - 09:00 PM	58.9	58.1	0.8	7.0	51.9	-	56.7	-4.8
09:00 PM - 10:00 PM	58.3	55.7	2.6	3.0	55.3	-	53.5	1.8
10:00 PM - 10:05 PM	57.9	55.8	2.1	4.5	-	56.4	53.0	3.4
10:05 PM - 10:10 PM	57.8	55.6	2.2	4.5	-	56.3	51.1	5.2
10:10 PM - 10:15 PM	58.0	55.7	2.3	4.5	-	56.5	51.3	5.2
10:15 PM - 10:20 PM	58.2	55.9	2.3	4.5	-	56.7	53.6	3.1
10:20 PM - 10:25 PM	59.3	55.8	3.5	2.0	-	60.3	53.2	7.1
10:25 PM - 10:30 PM	57.8	54.0	3.8	2.0	-	58.8	48.0	10.8
10:30 PM - 10:35 PM	58.0	53.8	4.2	2.0	-	59.0	48.4	10.6
10:35 PM - 10:40 PM	59.6	51.1	8.5	0.5	-	62.1	48.7	13.4
10:40 PM - 10:45 PM	58.6	50.0	8.6	0.5	-	61.1	47.2	13.9
10:45 PM - 10:50 PM	57.7	49.7	8.0	0.5	-	60.2	47.0	13.2
10:50 PM - 10:55 PM	58.8	51.8	7.0	1.0	-	60.8	48.5	12.3
10:55 PM - 11:00 PM	57.4	51.4	6.0	1.5	-	58.9	48.2	10.7
11:00 PM - 11:05 PM	56.9	51.1	5.8	1.5	-	58.4	47.5	10.9
11:05 PM - 11:10 PM	58.3	50.3	8.0	0.5	-	60.8	48.0	12.8
11:10 PM - 11:15 PM	57.7	49.8	7.9	0.5	-	60.2	47.5	12.7
11:15 PM - 11:20 PM	57.7	47.9	9.8	0.5	-	60.2	45.9	14.3
11:20 PM - 11:25 PM	58.2	51.4	6.8	1.0	-	60.2	48.4	11.8
11:25 PM - 11:30 PM	58.0	50.6	7.4	1.0	-	60.0	46.8	13.2
11:30 PM - 11:35 PM	59.3	48.4	10.9	0.5	-	61.8	46.7	15.1
11:35 PM - 11:40 PM	57.0	48.8	8.2	0.5	-	59.5	46.5	13.0
11:40 PM - 11:45 PM	56.6	48.2	8.4	0.5	-	59.1	46.2	12.9
11:45 PM - 11:50 PM	56.7	49.1	7.6	0.5	-	59.2	46.9	12.3
11:50 PM - 11:55 PM	56.6	49.4	7.2	1.0	-	58.6	46.5	12.1
11:55 PM - 12:00 AM	56.7	50.1	6.6	1.0	-	58.7	47.5	11.2
12:00 AM - 12:05 AM	56.9	49.0	7.9	0.5	-	59.4	46.5	12.9
12:05 AM - 12:10 AM	57.2	48.4	8.8	0.5	-	59.7	45.6	14.1
12:10 AM - 12:15 AM	56.7	48.7	8.0	0.5	-	59.2	45.9	13.3
12:15 AM - 12:20 AM	56.7	50.3	6.4	1.5	-	58.2	47.0	11.2
12:20 AM - 12:25 AM	54.8	49.1	5.7	1.5	-	56.3	45.2	11.1
12:25 AM - 12:30 AM	54.6	48.1	6.5	1.0	-	56.6	46.1	10.5
12:30 AM - 12:35 AM	54.2	49.1	5.1	1.5	-	55.7	46.3	9.4
12:35 AM - 12:40 AM	53.7	48.0	5.7	1.5	-	55.2	45.3	9.9
12:40 AM - 12:45 AM	53.2	47.5	5.7	1.5	-	54.7	45.9	8.8
12:45 AM - 12:50 AM	52.3	48.2	4.1	2.0	-	53.3	46.6	6.7

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142068  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536876-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142068-7  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
Measurement Date Dec 26 - 27, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858518

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:50 AM - 12:55 AM	52.8	48.0	4.8	1.5	-	54.3	46.2	8.1
12:55 AM - 01:00 AM	52.6	46.7	5.9	1.5	-	54.1	45.3	8.8
01:00 AM - 01:05 AM	53.9	46.4	7.5	0.5	-	56.4	44.8	11.6
01:05 AM - 01:10 AM	53.2	48.3	4.9	1.5	-	54.7	46.3	8.4
01:10 AM - 01:15 AM	53.7	48.2	5.5	1.5	-	55.2	46.1	9.1
01:15 AM - 01:20 AM	53.7	47.9	5.8	1.5	-	55.2	45.9	9.3
01:20 AM - 01:25 AM	54.3	47.3	7.0	1.0	-	56.3	45.4	10.9
01:25 AM - 01:30 AM	53.8	47.4	6.4	1.5	-	55.3	45.1	10.2
01:30 AM - 01:35 AM	53.6	46.5	7.1	1.0	-	55.6	44.7	10.9
01:35 AM - 01:40 AM	53.7	48.2	5.5	1.5	-	55.2	45.8	9.4
01:40 AM - 01:45 AM	53.1	47.5	5.6	1.5	-	54.6	45.2	9.4
01:45 AM - 01:50 AM	54.9	47.2	7.7	0.5	-	57.4	45.4	12.0
01:50 AM - 01:55 AM	56.3	48.3	8.0	0.5	-	58.8	45.9	12.9
01:55 AM - 02:00 AM	56.6	47.9	8.7	0.5	-	59.1	45.4	13.7
02:00 AM - 02:05 AM	56.8	48.4	8.4	0.5	-	59.3	46.7	12.6
02:05 AM - 02:10 AM	56.1	48.1	8.0	0.5	-	58.6	45.8	12.8
02:10 AM - 02:15 AM	58.0	47.4	10.6	0.5	-	60.5	45.2	15.3
02:15 AM - 02:20 AM	57.4	47.2	10.2	0.5	-	59.9	45.4	14.5
02:20 AM - 02:25 AM	57.3	47.5	9.8	0.5	-	59.8	45.8	14.0
02:25 AM - 02:30 AM	58.0	46.8	11.2	0.5	-	60.5	45.4	15.1
02:30 AM - 02:35 AM	57.1	46.7	10.4	0.5	-	59.6	45.3	14.3
02:35 AM - 02:40 AM	59.6	46.6	13.0	0.0	-	62.6	45.4	17.2
02:40 AM - 02:45 AM	57.2	47.1	10.1	0.5	-	59.7	45.5	14.2
02:45 AM - 02:50 AM	57.2	47.4	9.8	0.5	-	59.7	45.7	14.0
02:50 AM - 02:55 AM	59.1	47.4	11.7	0.5	-	61.6	46.0	15.6
02:55 AM - 03:00 AM	57.4	47.0	10.4	0.5	-	59.9	45.1	14.8
03:00 AM - 03:05 AM	56.6	47.6	9.0	0.5	-	59.1	45.9	13.2
03:05 AM - 03:10 AM	57.1	47.2	9.9	0.5	-	59.6	45.8	13.8
03:10 AM - 03:15 AM	64.4	47.1	17.3	0.0	-	67.4	45.7	21.7
03:15 AM - 03:20 AM	67.5	48.3	19.2	0.0	-	70.5	46.5	24.0
03:20 AM - 03:25 AM	66.5	47.8	18.7	0.0	-	69.5	46.0	23.5
03:25 AM - 03:30 AM	59.7	48.5	11.2	0.5	-	62.2	46.6	15.6
03:30 AM - 03:35 AM	57.0	47.9	9.1	0.5	-	59.5	46.2	13.3
03:35 AM - 03:40 AM	53.8	49.6	4.2	2.0	-	54.8	47.3	7.5
03:40 AM - 03:45 AM	54.9	48.3	6.6	1.0	-	56.9	46.5	10.4
03:45 AM - 03:50 AM	55.9	49.2	6.7	1.0	-	57.9	47.3	10.6
03:50 AM - 03:55 AM	53.6	48.6	5.0	1.5	-	55.1	46.6	8.5
03:55 AM - 04:00 AM	53.8	48.7	5.1	1.5	-	55.3	47.2	8.1
04:00 AM - 04:05 AM	55.4	48.6	6.8	1.0	-	57.4	47.0	10.4
04:05 AM - 04:10 AM	57.2	48.8	8.4	0.5	-	59.7	47.3	12.4

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142068  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536876-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142068-7  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633)  
Measurement Date Dec 26 - 27, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858518

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับการรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:10 AM - 04:15 AM	57.1	49.2	7.9	0.5	-	59.6	47.8	11.8
04:15 AM - 04:20 AM	56.8	49.8	7.0	1.0	-	58.8	48.1	10.7
04:20 AM - 04:25 AM	56.1	49.4	6.7	1.0	-	58.1	47.6	10.5
04:25 AM - 04:30 AM	54.8	49.7	5.1	1.5	-	56.3	47.8	8.5
04:30 AM - 04:35 AM	55.5	50.0	5.5	1.5	-	57.0	48.3	8.7
04:35 AM - 04:40 AM	55.4	50.2	5.2	1.5	-	56.9	48.3	8.6
04:40 AM - 04:45 AM	56.1	51.0	5.1	1.5	-	57.6	49.4	8.2
04:45 AM - 04:50 AM	55.3	50.9	4.4	2.0	-	56.3	48.9	7.4
04:50 AM - 04:55 AM	54.3	51.8	2.5	3.0	-	54.3	49.9	4.4
04:55 AM - 05:00 AM	54.1	51.7	2.4	4.5	-	52.6	49.6	3.0
05:00 AM - 05:05 AM	55.3	51.6	3.7	2.0	-	56.3	50.1	6.2
05:05 AM - 05:10 AM	55.1	52.6	2.5	3.0	-	55.1	50.8	4.3
05:10 AM - 05:15 AM	55.3	51.5	3.8	2.0	-	56.3	49.9	6.4
05:15 AM - 05:20 AM	54.9	52.5	2.4	4.5	-	53.4	50.0	3.4
05:20 AM - 05:25 AM	55.9	52.0	3.9	2.0	-	56.9	49.8	7.1
05:25 AM - 05:30 AM	56.5	53.0	3.5	2.0	-	57.5	51.3	6.2
05:30 AM - 05:35 AM	57.3	52.4	4.9	1.5	-	58.8	50.2	8.6
05:35 AM - 05:40 AM	54.9	51.7	3.2	3.0	-	54.9	49.4	5.5
05:40 AM - 05:45 AM	55.3	51.4	3.9	2.0	-	56.3	49.6	6.7
05:45 AM - 05:50 AM	55.5	52.4	3.1	3.0	-	55.5	50.6	4.9
05:50 AM - 05:55 AM	56.5	51.4	5.1	1.5	-	58.0	49.3	8.7
05:55 AM - 06:00 AM	56.6	53.6	3.0	3.0	-	56.6	52.6	4.0
06:00 AM - 07:00 AM	55.0	52.0	3.0	3.0	52.0	-	49.7	2.3
07:00 AM - 08:00 AM	60.3	52.5	7.8	0.5	59.8	-	49.2	10.6
08:00 AM - 09:00 AM	57.2	53.9	3.3	3.0	54.2	-	50.4	3.8
09:00 AM - 10:00 AM	53.6	55.0	-1.4	7.0	46.6	-	50.2	-3.6
10:00 AM - 11:00 AM	54.0	53.2	0.8	7.0	47.0	-	49.6	-2.6
11:00 AM - 12:00 PM	52.8	54.7	-1.9	7.0	45.8	-	50.1	-4.3
12:00 PM - 01:00 PM	53.7	52.7	1.0	7.0	46.7	-	48.1	-1.4
01:00 PM - 02:00 PM	51.5	53.9	-2.4	7.0	44.5	-	48.3	-3.8
02:00 PM - 03:00 PM	51.3	54.3	-3.0	7.0	44.3	-	48.1	-3.8
03:00 PM - 04:00 PM	50.6	52.8	-2.2	7.0	43.6	-	49.8	-6.2
ค่ามาตรฐาน								≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

#### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 26-27 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142077-7 วันที่ตรวจวัด 03-04 กรกฎาคม 2565)

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Approved by

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142070  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536880-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142070-1  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
Measurement Date Dec 20 - 21, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00610204

#### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด <sup>(A)</sup>	เสียงขณะ ไม่มีการรบกวน <sup>(B)</sup>	ผลต่าง ระดับเสียง <sup>(A-B)</sup>	ตัวปรับค่า <sup>(C)</sup>	ปรับค่าเสียงจากแหล่งกำเนิด <sup>(B)</sup>		เสียงพื้นฐาน <sup>(E)</sup>	ค่าระดับ การรบกวน <sup>(D-E)</sup>
					กลางวัน <sup>(A-C)</sup>	กลางคืน <sup>(A-C)+3</sup>		
03:00 PM - 04:00 PM	63.4	56.2	7.2	1.0	62.4	-	49.7	12.7
04:00 PM - 05:00 PM	63.4	57.3	6.1	1.5	61.9	-	49.4	12.5
05:00 PM - 06:00 PM	62.1	55.4	6.7	1.0	61.1	-	49.9	11.2
06:00 PM - 07:00 PM	63.6	56.3	7.3	1.0	62.6	-	49.1	13.5
07:00 PM - 08:00 PM	63.1	55.7	7.4	1.0	62.1	-	48.8	13.3
08:00 PM - 09:00 PM	63.4	54.2	9.2	0.5	62.9	-	46.8	16.1
09:00 PM - 10:00 PM	61.8	53.0	8.8	0.5	61.3	-	45.2	16.1
10:00 PM - 10:05 PM	59.2	52.0	7.2	1.0	-	61.2	44.9	16.3
10:05 PM - 10:10 PM	59.0	51.2	7.8	0.5	-	61.5	44.9	16.6
10:10 PM - 10:15 PM	60.1	56.1	4.0	2.0	-	61.1	45.3	15.8
10:15 PM - 10:20 PM	58.4	49.4	9.0	0.5	-	60.9	41.2	19.7
10:20 PM - 10:25 PM	58.6	52.4	6.2	1.5	-	60.1	44.5	15.6
10:25 PM - 10:30 PM	57.0	50.8	6.2	1.5	-	58.5	43.6	14.9
10:30 PM - 10:35 PM	59.1	50.8	8.3	0.5	-	61.6	40.9	20.7
10:35 PM - 10:40 PM	58.4	50.2	8.2	0.5	-	60.9	43.8	17.1
10:40 PM - 10:45 PM	58.6	50.4	8.2	0.5	-	61.1	42.5	18.6
10:45 PM - 10:50 PM	60.0	51.7	8.3	0.5	-	62.5	40.2	22.3
10:50 PM - 10:55 PM	58.4	51.1	7.3	1.0	-	60.4	42.7	17.7
10:55 PM - 11:00 PM	60.0	45.6	14.4	0.0	-	63.0	39.5	23.5
11:00 PM - 11:05 PM	65.3	49.5	15.8	0.0	-	68.3	39.2	29.1
11:05 PM - 11:10 PM	56.3	52.3	4.0	2.0	-	57.3	43.7	13.6
11:10 PM - 11:15 PM	57.8	50.2	7.6	0.5	-	60.3	42.3	18.0
11:15 PM - 11:20 PM	59.9	54.1	5.8	1.5	-	61.4	40.3	21.1
11:20 PM - 11:25 PM	63.6	55.3	8.3	0.5	-	66.1	42.3	23.8
11:25 PM - 11:30 PM	58.0	53.0	5.0	1.5	-	59.5	44.1	15.4
11:30 PM - 11:35 PM	57.6	54.6	3.0	3.0	-	57.6	45.7	11.9
11:35 PM - 11:40 PM	62.1	50.1	12.0	0.5	-	64.6	44.2	20.4
11:40 PM - 11:45 PM	59.0	51.1	7.9	0.5	-	61.5	42.9	18.6
11:45 PM - 11:50 PM	57.8	52.7	5.1	1.5	-	59.3	42.0	17.3
11:50 PM - 11:55 PM	57.8	50.3	7.5	0.5	-	60.3	40.9	19.4
11:55 PM - 12:00 AM	68.8	54.2	14.6	0.0	-	71.8	42.9	28.9
12:00 AM - 12:05 AM	58.4	48.9	9.5	0.5	-	60.9	39.5	21.4
12:05 AM - 12:10 AM	58.3	49.4	8.9	0.5	-	60.8	40.8	20.0
12:10 AM - 12:15 AM	56.7	49.1	7.6	0.5	-	59.2	40.5	18.7
12:15 AM - 12:20 AM	67.9	48.9	19.0	0.0	-	70.9	39.2	31.7
12:20 AM - 12:25 AM	68.9	52.2	16.7	0.0	-	71.9	41.4	30.5
12:25 AM - 12:30 AM	71.3	50.6	20.7	0.0	-	74.3	42.6	31.7
12:30 AM - 12:35 AM	67.3	46.5	20.8	0.0	-	70.3	41.7	28.6
12:35 AM - 12:40 AM	59.2	47.8	11.4	0.5	-	61.7	41.7	20.0
12:40 AM - 12:45 AM	62.1	49.6	12.5	0.0	-	65.1	42.0	23.1

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142070  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536880-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142070-1  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
Measurement Date Dec 20 - 21, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00610204

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
	กลางวัน (A-C)	กลางคืน (A-C)+3						
12:45 AM - 12:50 AM	58.3	54.2	4.1	2.0	-	59.3	43.8	15.5
12:50 AM - 12:55 AM	59.2	52.2	7.0	1.0	-	61.2	39.8	21.4
12:55 AM - 01:00 AM	59.6	50.7	8.9	0.5	-	62.1	41.8	20.3
01:00 AM - 01:05 AM	68.5	48.4	20.1	0.0	-	71.5	39.4	32.1
01:05 AM - 01:10 AM	70.9	46.9	24.0	0.0	-	73.9	38.8	35.1
01:10 AM - 01:15 AM	59.6	47.7	11.9	0.5	-	62.1	38.6	23.5
01:15 AM - 01:20 AM	60.2	50.2	10.0	0.5	-	62.7	39.7	23.0
01:20 AM - 01:25 AM	64.6	45.9	18.7	0.0	-	67.6	39.7	27.9
01:25 AM - 01:30 AM	63.6	50.2	13.4	0.0	-	66.6	40.6	26.0
01:30 AM - 01:35 AM	57.9	49.1	8.8	0.5	-	60.4	39.2	21.2
01:35 AM - 01:40 AM	54.6	49.0	5.6	1.5	-	56.1	39.1	17.0
01:40 AM - 01:45 AM	56.4	48.8	7.6	0.5	-	58.9	38.9	20.0
01:45 AM - 01:50 AM	57.4	50.2	7.2	1.0	-	59.4	39.4	20.0
01:50 AM - 01:55 AM	64.9	49.5	15.4	0.0	-	67.9	40.7	27.2
01:55 AM - 02:00 AM	58.4	49.8	8.6	0.5	-	60.9	40.5	20.4
02:00 AM - 02:05 AM	58.4	51.4	7.0	1.0	-	60.4	39.5	20.9
02:05 AM - 02:10 AM	57.6	50.6	7.0	1.0	-	59.6	40.2	19.4
02:10 AM - 02:15 AM	57.3	49.9	7.4	1.0	-	59.3	40.8	18.5
02:15 AM - 02:20 AM	58.4	49.6	8.8	0.5	-	60.9	40.4	20.5
02:20 AM - 02:25 AM	56.2	49.0	7.2	1.0	-	58.2	39.6	18.6
02:25 AM - 02:30 AM	55.4	50.2	5.2	1.5	-	56.9	41.2	15.7
02:30 AM - 02:35 AM	56.6	47.5	9.1	0.5	-	59.1	39.9	19.2
02:35 AM - 02:40 AM	62.7	48.4	14.3	0.0	-	65.7	40.0	25.7
02:40 AM - 02:45 AM	65.4	50.2	15.2	0.0	-	68.4	40.4	28.0
02:45 AM - 02:50 AM	58.0	46.6	11.4	0.5	-	60.5	39.8	20.7
02:50 AM - 02:55 AM	56.0	47.4	8.6	0.5	-	58.5	39.9	18.6
02:55 AM - 03:00 AM	59.5	47.7	11.8	0.5	-	62.0	40.7	21.3
03:00 AM - 03:05 AM	58.5	47.6	10.9	0.5	-	61.0	41.4	19.6
03:05 AM - 03:10 AM	66.9	48.0	18.9	0.0	-	69.9	41.7	28.2
03:10 AM - 03:15 AM	57.2	49.0	8.2	0.5	-	59.7	41.5	18.2
03:15 AM - 03:20 AM	55.8	49.5	6.3	1.5	-	57.3	41.0	16.3
03:20 AM - 03:25 AM	61.5	51.3	10.2	0.5	-	64.0	41.9	22.1
03:25 AM - 03:30 AM	58.5	50.9	7.6	0.5	-	61.0	41.2	19.8
03:30 AM - 03:35 AM	60.4	48.8	11.6	0.5	-	62.9	40.8	22.1
03:35 AM - 03:40 AM	57.4	50.8	6.6	1.0	-	59.4	41.0	18.4
03:40 AM - 03:45 AM	56.7	49.9	6.8	1.0	-	58.7	38.7	20.0
03:45 AM - 03:50 AM	61.6	48.9	12.7	0.0	-	64.6	38.6	26.0
03:50 AM - 03:55 AM	58.5	55.4	3.1	3.0	-	58.5	41.3	17.2
03:55 AM - 04:00 AM	59.1	51.1	8.0	0.5	-	61.6	40.5	21.1
04:00 AM - 04:05 AM	60.0	54.2	5.8	1.5	-	61.5	44.7	16.8

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142070  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536880-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142070-1  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
Measurement Date Dec 20 - 21, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00610204

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B) (C)	ตัวปรับค่า (D)	ปรับค่าเสียงจากแหล่งกำเนิด (E)		เสียงพื้นฐาน (F)	ค่าระดับการรบกวน (G-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:05 AM - 04:10 AM	67.4	50.7	16.7	0.0	-	70.4	43.1	27.3
04:10 AM - 04:15 AM	59.3	51.8	7.5	0.5	-	61.8	44.2	17.6
04:15 AM - 04:20 AM	64.7	51.8	12.9	0.0	-	67.7	43.9	23.8
04:20 AM - 04:25 AM	58.1	51.1	7.0	1.0	-	60.1	43.1	17.0
04:25 AM - 04:30 AM	72.2	51.4	20.8	0.0	-	75.2	44.7	30.5
04:30 AM - 04:35 AM	67.3	51.9	15.4	0.0	-	70.3	44.6	25.7
04:35 AM - 04:40 AM	59.8	50.9	8.9	0.5	-	62.3	44.2	18.1
04:40 AM - 04:45 AM	59.0	52.2	6.8	1.0	-	61.0	44.6	16.4
04:45 AM - 04:50 AM	71.1	52.8	18.3	0.0	-	74.1	46.7	27.4
04:50 AM - 04:55 AM	59.1	53.1	6.0	1.5	-	60.6	44.2	16.4
04:55 AM - 05:00 AM	58.6	52.0	6.6	1.0	-	60.6	43.8	16.8
05:00 AM - 05:05 AM	61.9	54.6	7.3	1.0	-	63.9	46.3	17.6
05:05 AM - 05:10 AM	59.9	53.2	6.7	1.0	-	61.9	47.4	14.5
05:10 AM - 05:15 AM	58.0	55.1	2.9	3.0	-	58.0	47.8	10.2
05:15 AM - 05:20 AM	60.0	54.9	5.1	1.5	-	61.5	45.1	16.4
05:20 AM - 05:25 AM	58.4	53.8	4.6	1.5	-	59.9	46.5	13.4
05:25 AM - 05:30 AM	57.8	54.2	3.6	2.0	-	58.8	47.6	11.2
05:30 AM - 05:35 AM	58.0	55.4	2.6	3.0	-	58.0	47.7	10.3
05:35 AM - 05:40 AM	57.2	51.9	5.3	1.5	-	58.7	43.1	15.6
05:40 AM - 05:45 AM	61.2	51.1	10.1	0.5	-	63.7	43.6	20.1
05:45 AM - 05:50 AM	66.2	53.6	12.6	0.0	-	69.2	45.2	24.0
05:50 AM - 05:55 AM	59.1	53.0	6.1	1.5	-	60.6	44.9	15.7
05:55 AM - 06:00 AM	65.1	53.4	11.7	0.5	-	67.6	45.1	22.5
06:00 AM - 07:00 AM	62.6	55.3	7.3	1.0	61.6	-	49.1	12.5
07:00 AM - 08:00 AM	64.2	55.9	8.3	0.5	63.7	-	50.4	13.3
08:00 AM - 09:00 AM	65.0	56.4	8.6	0.5	64.5	-	49.5	15.0
09:00 AM - 10:00 AM	65.6	57.1	8.5	0.5	65.1	-	49.6	15.5
10:00 AM - 11:00 AM	63.6	57.4	6.2	1.5	62.1	-	49.7	12.4
11:00 AM - 12:00 PM	64.3	57.7	6.6	1.0	63.3	-	50.2	13.1
12:00 PM - 01:00 PM	65.7	54.0	11.7	0.5	65.2	-	48.0	17.2
01:00 PM - 02:00 PM	62.9	58.1	4.8	1.5	61.4	-	48.5	12.9
02:00 PM - 03:00 PM	65.8	54.2	11.6	0.5	65.3	-	48.1	17.2
ค่ามาตรฐาน								≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

#### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 20-21 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142078-1 วันที่ตรวจวัด 27-28 มิถุนายน 2565)

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142070  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536881-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142070-2  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
Measurement Date Dec 21 - 22, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00610204

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด <sup>(A)</sup>	เสียงขณะ ไม่มีการรบกวน <sup>(B)</sup>	ผลต่าง ระดับเสียง <sup>(A-B)</sup>	ตัวปรับค่า <sup>(C)</sup>	ปรับค่าเสียงจากแหล่งกำเนิด <sup>(B)</sup>		เสียงพื้นฐาน <sup>(E)</sup>	ค่าระดับ การรบกวน <sup>(D-E)</sup>
					กลางวัน <sup>(A-C)</sup>	กลางคืน <sup>(A-C)+3</sup>		
03:00 PM - 04:00 PM	65.5	55.4	10.1	0.5	65.0	-	49.3	15.7
04:00 PM - 05:00 PM	64.6	55.7	8.9	0.5	64.1	-	49.3	14.8
05:00 PM - 06:00 PM	62.4	54.6	7.8	0.5	61.9	-	48.9	13.0
06:00 PM - 07:00 PM	61.7	56.8	4.9	1.5	60.2	-	50.1	10.1
07:00 PM - 08:00 PM	64.4	55.5	8.9	0.5	63.9	-	47.5	16.4
08:00 PM - 09:00 PM	63.2	52.3	10.9	0.5	62.7	-	44.9	17.8
09:00 PM - 10:00 PM	64.3	52.7	11.6	0.5	63.8	-	44.5	19.3
10:00 PM - 10:05 PM	56.5	51.5	5.0	1.5	-	58.0	43.2	14.8
10:05 PM - 10:10 PM	62.8	54.6	8.2	0.5	-	65.3	42.4	22.9
10:10 PM - 10:15 PM	68.3	50.4	17.9	0.0	-	71.3	40.3	31.0
10:15 PM - 10:20 PM	68.1	53.7	14.4	0.0	-	71.1	46.3	24.8
10:20 PM - 10:25 PM	58.1	49.7	8.4	0.5	-	60.6	42.5	18.1
10:25 PM - 10:30 PM	66.7	54.1	12.6	0.0	-	69.7	42.5	27.2
10:30 PM - 10:35 PM	66.5	53.5	13.0	0.0	-	69.5	46.3	23.2
10:35 PM - 10:40 PM	56.2	51.9	4.3	2.0	-	57.2	46.3	10.9
10:40 PM - 10:45 PM	55.1	51.7	3.4	3.0	-	55.1	46.4	8.7
10:45 PM - 10:50 PM	59.3	48.9	10.4	0.5	-	61.8	41.8	20.0
10:50 PM - 10:55 PM	62.8	51.5	11.3	0.5	-	65.3	44.2	21.1
10:55 PM - 11:00 PM	56.7	53.4	3.3	3.0	-	56.7	45.6	11.1
11:00 PM - 11:05 PM	56.5	51.3	5.2	1.5	-	58.0	43.9	14.1
11:05 PM - 11:10 PM	55.9	51.0	4.9	1.5	-	57.4	43.6	13.8
11:10 PM - 11:15 PM	54.0	51.9	2.1	4.5	-	52.5	43.5	9.0
11:15 PM - 11:20 PM	67.8	52.1	15.7	0.0	-	70.8	42.8	28.0
11:20 PM - 11:25 PM	67.5	52.1	15.4	0.0	-	70.5	44.3	26.2
11:25 PM - 11:30 PM	63.6	49.8	13.8	0.0	-	66.6	41.9	24.7
11:30 PM - 11:35 PM	68.1	51.8	16.3	0.0	-	71.1	40.7	30.4
11:35 PM - 11:40 PM	56.0	49.2	6.8	1.0	-	58.0	40.8	17.2
11:40 PM - 11:45 PM	66.5	49.7	16.8	0.0	-	69.5	40.3	29.2
11:45 PM - 11:50 PM	63.9	50.2	13.7	0.0	-	66.9	42.0	24.9
11:50 PM - 11:55 PM	64.3	50.0	14.3	0.0	-	67.3	41.8	25.5
11:55 PM - 12:00 AM	54.3	51.3	3.0	3.0	-	54.3	40.8	13.5
12:00 AM - 12:05 AM	55.8	48.8	7.0	1.0	-	57.8	42.0	15.8
12:05 AM - 12:10 AM	56.8	52.5	4.3	2.0	-	57.8	44.8	13.0
12:10 AM - 12:15 AM	58.3	49.1	9.2	0.5	-	60.8	42.4	18.4
12:15 AM - 12:20 AM	56.9	48.6	8.3	0.5	-	59.4	40.9	18.5
12:20 AM - 12:25 AM	57.8	50.7	7.1	1.0	-	59.8	43.0	16.8
12:25 AM - 12:30 AM	57.3	50.7	6.6	1.0	-	59.3	41.7	17.6
12:30 AM - 12:35 AM	62.9	51.7	11.2	0.5	-	65.4	44.9	20.5
12:35 AM - 12:40 AM	63.5	52.7	10.8	0.5	-	66.0	46.1	19.9
12:40 AM - 12:45 AM	62.6	49.9	12.7	0.0	-	65.6	45.2	20.4

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142070  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536881-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142070-2  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
Measurement Date Dec 21 - 22, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00610204

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:45 AM - 12:50 AM	53.1	50.1	3.0	3.0	-	53.1	45.4	7.7
12:50 AM - 12:55 AM	55.3	53.6	1.7	4.5	-	53.8	45.1	8.7
12:55 AM - 01:00 AM	64.9	52.6	12.3	0.5	-	67.4	45.7	21.7
01:00 AM - 01:05 AM	54.2	49.5	4.7	1.5	-	55.7	45.1	10.6
01:05 AM - 01:10 AM	55.4	50.6	4.8	1.5	-	56.9	45.5	11.4
01:10 AM - 01:15 AM	55.8	53.5	2.3	4.5	-	54.3	46.2	8.1
01:15 AM - 01:20 AM	54.0	48.9	5.1	1.5	-	55.5	45.0	10.5
01:20 AM - 01:25 AM	55.8	50.7	5.1	1.5	-	57.3	45.3	12.0
01:25 AM - 01:30 AM	58.6	51.1	7.5	0.5	-	61.1	44.9	16.2
01:30 AM - 01:35 AM	56.5	52.6	3.9	2.0	-	57.5	45.4	12.1
01:35 AM - 01:40 AM	56.5	51.2	5.3	1.5	-	58.0	45.1	12.9
01:40 AM - 01:45 AM	58.3	50.4	7.9	0.5	-	60.8	45.1	15.7
01:45 AM - 01:50 AM	55.7	50.3	5.4	1.5	-	57.2	45.3	11.9
01:50 AM - 01:55 AM	55.0	52.5	2.5	3.0	-	55.0	45.6	9.4
01:55 AM - 02:00 AM	53.9	51.7	2.2	4.5	-	52.4	44.9	7.5
02:00 AM - 02:05 AM	56.6	49.7	6.9	1.0	-	58.6	44.4	14.2
02:05 AM - 02:10 AM	52.4	51.4	1.0	7.0	-	48.4	46.0	2.4
02:10 AM - 02:15 AM	55.5	52.6	2.9	3.0	-	55.5	46.2	9.3
02:15 AM - 02:20 AM	55.9	50.2	5.7	1.5	-	57.4	45.6	11.8
02:20 AM - 02:25 AM	55.4	51.4	4.0	2.0	-	56.4	45.6	10.8
02:25 AM - 02:30 AM	56.6	49.0	7.6	0.5	-	59.1	45.3	13.8
02:30 AM - 02:35 AM	56.2	50.7	5.5	1.5	-	57.7	45.4	12.3
02:35 AM - 02:40 AM	56.1	50.2	5.9	1.5	-	57.6	44.7	12.9
02:40 AM - 02:45 AM	55.2	49.5	5.7	1.5	-	56.7	45.4	11.3
02:45 AM - 02:50 AM	57.9	52.3	5.6	1.5	-	59.4	47.1	12.3
02:50 AM - 02:55 AM	56.9	51.5	5.4	1.5	-	58.4	45.6	12.8
02:55 AM - 03:00 AM	57.8	55.8	2.0	4.5	-	56.3	47.4	8.9
03:00 AM - 03:05 AM	57.9	50.5	7.4	1.0	-	59.9	44.9	15.0
03:05 AM - 03:10 AM	58.2	48.9	9.3	0.5	-	60.7	44.5	16.2
03:10 AM - 03:15 AM	54.9	50.3	4.6	1.5	-	56.4	45.6	10.8
03:15 AM - 03:20 AM	55.4	52.6	2.8	3.0	-	55.4	45.3	10.1
03:20 AM - 03:25 AM	59.0	51.1	7.9	0.5	-	61.5	44.8	16.7
03:25 AM - 03:30 AM	56.8	50.9	5.9	1.5	-	58.3	45.3	13.0
03:30 AM - 03:35 AM	54.2	50.1	4.1	2.0	-	55.2	45.0	10.2
03:35 AM - 03:40 AM	56.4	52.3	4.1	2.0	-	57.4	46.2	11.2
03:40 AM - 03:45 AM	55.2	50.7	4.5	1.5	-	56.7	45.1	11.6
03:45 AM - 03:50 AM	56.2	51.5	4.7	1.5	-	57.7	46.1	11.6
03:50 AM - 03:55 AM	58.1	52.0	6.1	1.5	-	59.6	47.1	12.5
03:55 AM - 04:00 AM	62.2	52.9	9.3	0.5	-	64.7	48.0	16.7
04:00 AM - 04:05 AM	56.3	52.0	4.3	2.0	-	57.3	47.0	10.3

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142070  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536881-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142070-2  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
Measurement Date Dec 21 - 22, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00610204

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B) (C)	ตัวปรับค่า (D)	ปรับค่าเสียงจากแหล่งกำเนิด (E)		เสียงพื้นฐาน (F)	ค่าระดับการรบกวน (G-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:05 AM - 04:10 AM	55.5	51.0	4.5	1.5	-	57.0	46.2	10.8
04:10 AM - 04:15 AM	56.8	52.9	3.9	2.0	-	57.8	47.4	10.4
04:15 AM - 04:20 AM	55.9	52.6	3.3	3.0	-	55.9	47.9	8.0
04:20 AM - 04:25 AM	55.6	55.6	0.0	7.0	-	51.6	49.7	1.9
04:25 AM - 04:30 AM	56.2	53.0	3.2	3.0	-	56.2	47.7	8.5
04:30 AM - 04:35 AM	56.6	53.8	2.8	3.0	-	56.6	48.1	8.5
04:35 AM - 04:40 AM	57.7	53.9	3.8	2.0	-	58.7	49.0	9.7
04:40 AM - 04:45 AM	57.3	53.2	4.1	2.0	-	58.3	47.5	10.8
04:45 AM - 04:50 AM	61.3	52.2	9.1	0.5	-	63.8	47.2	16.6
04:50 AM - 04:55 AM	66.3	52.4	13.9	0.0	-	69.3	45.8	23.5
04:55 AM - 05:00 AM	57.4	52.2	5.2	1.5	-	58.9	44.9	14.0
05:00 AM - 05:05 AM	56.3	53.0	3.3	3.0	-	56.3	46.7	9.6
05:05 AM - 05:10 AM	58.1	51.9	6.2	1.5	-	59.6	46.0	13.6
05:10 AM - 05:15 AM	59.4	52.1	7.3	1.0	-	61.4	44.5	16.9
05:15 AM - 05:20 AM	57.3	52.9	4.4	2.0	-	58.3	47.0	11.3
05:20 AM - 05:25 AM	58.6	54.2	4.4	2.0	-	59.6	46.3	13.3
05:25 AM - 05:30 AM	66.5	53.7	12.8	0.0	-	69.5	45.8	23.7
05:30 AM - 05:35 AM	57.5	53.9	3.6	2.0	-	58.5	44.9	13.6
05:35 AM - 05:40 AM	58.3	54.8	3.5	2.0	-	59.3	46.1	13.2
05:40 AM - 05:45 AM	59.1	55.5	3.6	2.0	-	60.1	48.6	11.5
05:45 AM - 05:50 AM	64.0	54.7	9.3	0.5	-	66.5	48.7	17.8
05:50 AM - 05:55 AM	60.6	54.1	6.5	1.0	-	62.6	45.8	16.8
05:55 AM - 06:00 AM	58.0	54.3	3.7	2.0	-	59.0	45.3	13.7
06:00 AM - 07:00 AM	61.9	56.6	5.3	1.5	60.4	-	50.1	10.3
07:00 AM - 08:00 AM	61.2	56.4	4.8	1.5	59.7	-	51.1	8.6
08:00 AM - 09:00 AM	63.5	57.8	5.7	1.5	62.0	-	49.9	12.1
09:00 AM - 10:00 AM	61.7	56.7	5.0	1.5	60.2	-	50.4	9.8
10:00 AM - 11:00 AM	60.8	56.4	4.4	2.0	58.8	-	49.8	9.0
11:00 AM - 12:00 PM	61.3	55.8	5.5	1.5	59.8	-	49.3	10.5
12:00 PM - 01:00 PM	59.7	54.4	5.3	1.5	58.2	-	48.4	9.8
01:00 PM - 02:00 PM	59.8	56.0	3.8	2.0	57.8	-	49.6	8.2
02:00 PM - 03:00 PM	61.0	56.8	4.2	2.0	59.0	-	49.0	10.0

ค่ามาตรฐาน

≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 21-22 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142078-2 วันที่ตรวจวัด 28-29 มิถุนายน 2565)

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142070  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536882-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142070-3  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
Measurement Date Dec 22 - 23, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00610204

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด <sup>(A)</sup>	เสียงขณะ ไม่มีการรบกวน <sup>(B)</sup>	ผลต่าง ระดับเสียง <sup>(A-B)</sup>	ตัวปรับค่า <sup>(C)</sup>	ปรับค่าเสียงจากแหล่งกำเนิด <sup>(B)</sup>		เสียงพื้นฐาน <sup>(E)</sup>	ค่าระดับ การรบกวน <sup>(D-E)</sup>
					กลางวัน <sup>(A-C)</sup>	กลางคืน <sup>(A-C)+3</sup>		
03:00 PM - 04:00 PM	59.5	56.8	2.7	3.0	56.5	-	49.5	7.0
04:00 PM - 05:00 PM	61.2	55.9	5.3	1.5	59.7	-	49.1	10.6
05:00 PM - 06:00 PM	62.9	55.4	7.5	0.5	62.4	-	49.6	12.8
06:00 PM - 07:00 PM	61.0	56.1	4.9	1.5	59.5	-	48.7	10.8
07:00 PM - 08:00 PM	62.4	54.1	8.3	0.5	61.9	-	46.4	15.5
08:00 PM - 09:00 PM	58.9	53.8	5.1	1.5	57.4	-	46.6	10.8
09:00 PM - 10:00 PM	62.0	52.0	10.0	0.5	61.5	-	44.4	17.1
10:00 PM - 10:05 PM	63.2	51.5	11.7	0.5	-	65.7	43.6	22.1
10:05 PM - 10:10 PM	62.3	53.3	9.0	0.5	-	64.8	44.0	20.8
10:10 PM - 10:15 PM	65.8	51.6	14.2	0.0	-	68.8	44.7	24.1
10:15 PM - 10:20 PM	63.2	51.2	12.0	0.5	-	65.7	43.5	22.2
10:20 PM - 10:25 PM	61.9	48.7	13.2	0.0	-	64.9	42.8	22.1
10:25 PM - 10:30 PM	63.7	51.2	12.5	0.0	-	66.7	43.8	22.9
10:30 PM - 10:35 PM	65.9	49.4	16.5	0.0	-	68.9	43.0	25.9
10:35 PM - 10:40 PM	69.2	52.3	16.9	0.0	-	72.2	43.9	28.3
10:40 PM - 10:45 PM	59.7	50.0	9.7	0.5	-	62.2	41.9	20.3
10:45 PM - 10:50 PM	57.3	51.8	5.5	1.5	-	58.8	42.7	16.1
10:50 PM - 10:55 PM	56.8	53.1	3.7	2.0	-	57.8	43.5	14.3
10:55 PM - 11:00 PM	58.8	50.6	8.2	0.5	-	61.3	41.7	19.6
11:00 PM - 11:05 PM	62.1	52.5	9.6	0.5	-	64.6	43.6	21.0
11:05 PM - 11:10 PM	61.5	51.1	10.4	0.5	-	64.0	42.7	21.3
11:10 PM - 11:15 PM	58.0	52.8	5.2	1.5	-	59.5	46.4	13.1
11:15 PM - 11:20 PM	63.1	51.6	11.5	0.5	-	65.6	42.2	23.4
11:20 PM - 11:25 PM	58.5	50.7	7.8	0.5	-	61.0	40.7	20.3
11:25 PM - 11:30 PM	56.9	51.5	5.4	1.5	-	58.4	43.1	15.3
11:30 PM - 11:35 PM	57.7	50.2	7.5	0.5	-	60.2	41.3	18.9
11:35 PM - 11:40 PM	58.2	50.1	8.1	0.5	-	60.7	39.2	21.5
11:40 PM - 11:45 PM	57.9	47.1	10.8	0.5	-	60.4	40.2	20.2
11:45 PM - 11:50 PM	61.5	48.3	13.2	0.0	-	64.5	39.2	25.3
11:50 PM - 11:55 PM	63.7	49.0	14.7	0.0	-	66.7	42.5	24.2
11:55 PM - 12:00 AM	57.4	49.9	7.5	0.5	-	59.9	41.8	18.1
12:00 AM - 12:05 AM	58.3	50.2	8.1	0.5	-	60.8	41.9	18.9
12:05 AM - 12:10 AM	61.9	48.3	13.6	0.0	-	64.9	41.3	23.6
12:10 AM - 12:15 AM	67.7	50.6	17.1	0.0	-	70.7	46.6	24.1
12:15 AM - 12:20 AM	61.9	49.7	12.2	0.5	-	64.4	46.1	18.3
12:20 AM - 12:25 AM	66.8	50.4	16.4	0.0	-	69.8	45.7	24.1
12:25 AM - 12:30 AM	63.5	49.4	14.1	0.0	-	66.5	45.0	21.5
12:30 AM - 12:35 AM	57.8	52.1	5.7	1.5	-	59.3	46.4	12.9
12:35 AM - 12:40 AM	62.8	49.2	13.6	0.0	-	65.8	45.3	20.5
12:40 AM - 12:45 AM	65.6	49.4	16.2	0.0	-	68.6	45.7	22.9

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142070  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536882-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142070-3  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
Measurement Date Dec 22 - 23, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00610204

ระดับเสียง (dB(A))								
เวลา	(A) เสียงจากแหล่งกำเนิด	(B) เสียงขณะไม่มีการรบกวน	(A-B) ผลต่างระดับเสียง	(C) ตัวปรับค่า	(D) ปรับค่าเสียงจากแหล่งกำเนิด		(E) เสียงพื้นฐาน	(D-E) ค่าระดับการรบกวน
					(A-C) กลางวัน	(A-C)+3 กลางคืน		
12:45 AM - 12:50 AM	62.4	49.2	13.2	0.0	-	65.4	45.4	20.0
12:50 AM - 12:55 AM	66.9	50.5	16.4	0.0	-	69.9	45.6	24.3
12:55 AM - 01:00 AM	56.4	49.5	6.9	1.0	-	58.4	45.1	13.3
01:00 AM - 01:05 AM	60.1	52.4	7.7	0.5	-	62.6	45.7	16.9
01:05 AM - 01:10 AM	62.2	49.8	12.4	0.5	-	64.7	45.4	19.3
01:10 AM - 01:15 AM	59.0	52.2	6.8	1.0	-	61.0	45.7	15.3
01:15 AM - 01:20 AM	62.0	49.1	12.9	0.0	-	65.0	45.5	19.5
01:20 AM - 01:25 AM	55.4	49.6	5.8	1.5	-	56.9	45.6	11.3
01:25 AM - 01:30 AM	60.4	49.1	11.3	0.5	-	62.9	45.8	17.1
01:30 AM - 01:35 AM	58.0	49.5	8.5	0.5	-	60.5	45.7	14.8
01:35 AM - 01:40 AM	63.3	50.0	13.3	0.0	-	66.3	45.5	20.8
01:40 AM - 01:45 AM	56.5	50.2	6.3	1.5	-	58.0	46.4	11.6
01:45 AM - 01:50 AM	56.7	50.4	6.3	1.5	-	58.2	46.7	11.5
01:50 AM - 01:55 AM	59.3	49.6	9.7	0.5	-	61.8	45.9	15.9
01:55 AM - 02:00 AM	63.6	49.3	14.3	0.0	-	66.6	45.9	20.7
02:00 AM - 02:05 AM	65.1	51.1	14.0	0.0	-	68.1	46.7	21.4
02:05 AM - 02:10 AM	68.2	50.9	17.3	0.0	-	71.2	46.1	25.1
02:10 AM - 02:15 AM	58.8	49.1	9.7	0.5	-	61.3	46.1	15.2
02:15 AM - 02:20 AM	59.6	50.7	8.9	0.5	-	62.1	45.9	16.2
02:20 AM - 02:25 AM	70.0	49.1	20.9	0.0	-	73.0	45.9	27.1
02:25 AM - 02:30 AM	59.0	51.2	7.8	0.5	-	61.5	46.3	15.2
02:30 AM - 02:35 AM	67.0	49.7	17.3	0.0	-	70.0	46.0	24.0
02:35 AM - 02:40 AM	56.9	49.8	7.1	1.0	-	58.9	45.9	13.0
02:40 AM - 02:45 AM	56.4	53.5	2.9	3.0	-	56.4	46.6	9.8
02:45 AM - 02:50 AM	58.1	51.8	6.3	1.5	-	59.6	46.4	13.2
02:50 AM - 02:55 AM	59.2	49.0	10.2	0.5	-	61.7	45.9	15.8
02:55 AM - 03:00 AM	66.0	51.5	14.5	0.0	-	69.0	46.0	23.0
03:00 AM - 03:05 AM	58.9	51.9	7.0	1.0	-	60.9	46.4	14.5
03:05 AM - 03:10 AM	58.7	49.8	8.9	0.5	-	61.2	38.8	22.4
03:10 AM - 03:15 AM	58.6	50.5	8.1	0.5	-	61.1	39.6	21.5
03:15 AM - 03:20 AM	65.5	47.6	17.9	0.0	-	68.5	38.5	30.0
03:20 AM - 03:25 AM	58.6	50.9	7.7	0.5	-	61.1	41.6	19.5
03:25 AM - 03:30 AM	64.1	54.8	9.3	0.5	-	66.6	40.6	26.0
03:30 AM - 03:35 AM	62.7	49.7	13.0	0.0	-	65.7	39.8	25.9
03:35 AM - 03:40 AM	60.0	53.8	6.2	1.5	-	61.5	43.2	18.3
03:40 AM - 03:45 AM	60.2	50.0	10.2	0.5	-	62.7	39.9	22.8
03:45 AM - 03:50 AM	62.8	51.7	11.1	0.5	-	65.3	42.1	23.2
03:50 AM - 03:55 AM	58.6	52.3	6.3	1.5	-	60.1	42.6	17.5
03:55 AM - 04:00 AM	67.3	50.8	16.5	0.0	-	70.3	41.4	28.9
04:00 AM - 04:05 AM	56.7	51.0	5.7	1.5	-	58.2	41.2	17.0

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142070  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536882-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142070-3  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
Measurement Date Dec 22 - 23, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00610204

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B) (C)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (B)		เสียงพื้นฐาน (E)	ค่าระดับการรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:05 AM - 04:10 AM	58.1	52.2	5.9	1.5	-	59.6	42.8	16.8
04:10 AM - 04:15 AM	56.5	52.3	4.2	2.0	-	57.5	44.1	13.4
04:15 AM - 04:20 AM	62.0	51.7	10.3	0.5	-	64.5	44.4	20.1
04:20 AM - 04:25 AM	62.7	51.1	11.6	0.5	-	65.2	44.8	20.4
04:25 AM - 04:30 AM	57.9	49.8	8.1	0.5	-	60.4	44.8	15.6
04:30 AM - 04:35 AM	58.8	51.2	7.6	0.5	-	61.3	45.8	15.5
04:35 AM - 04:40 AM	56.8	50.2	6.6	1.0	-	58.8	44.5	14.3
04:40 AM - 04:45 AM	65.6	49.4	16.2	0.0	-	68.6	43.9	24.7
04:45 AM - 04:50 AM	57.6	50.9	6.7	1.0	-	59.6	44.2	15.4
04:50 AM - 04:55 AM	56.4	52.9	3.5	2.0	-	57.4	44.6	12.8
04:55 AM - 05:00 AM	67.6	53.5	14.1	0.0	-	70.6	46.0	24.6
05:00 AM - 05:05 AM	61.1	52.3	8.8	0.5	-	63.6	43.7	19.9
05:05 AM - 05:10 AM	59.6	52.9	6.7	1.0	-	61.6	42.6	19.0
05:10 AM - 05:15 AM	58.9	51.7	7.2	1.0	-	60.9	44.9	16.0
05:15 AM - 05:20 AM	62.1	53.8	8.3	0.5	-	64.6	44.9	19.7
05:20 AM - 05:25 AM	58.7	54.6	4.1	2.0	-	59.7	45.4	14.3
05:25 AM - 05:30 AM	58.1	53.2	4.9	1.5	-	59.6	44.2	15.4
05:30 AM - 05:35 AM	60.3	53.5	6.8	1.0	-	62.3	44.7	17.6
05:35 AM - 05:40 AM	58.9	54.2	4.7	1.5	-	60.4	43.3	17.1
05:40 AM - 05:45 AM	58.7	53.7	5.0	1.5	-	60.2	46.7	13.5
05:45 AM - 05:50 AM	60.5	54.0	6.5	1.0	-	62.5	47.6	14.9
05:50 AM - 05:55 AM	62.8	54.5	8.3	0.5	-	65.3	47.8	17.5
05:55 AM - 06:00 AM	69.5	53.9	15.6	0.0	-	72.5	45.4	27.1
06:00 AM - 07:00 AM	58.2	56.0	2.2	4.5	53.7	-	49.3	4.4
07:00 AM - 08:00 AM	58.8	57.0	1.8	4.5	54.3	-	51.4	2.9
08:00 AM - 09:00 AM	62.4	55.4	7.0	1.0	61.4	-	49.5	11.9
09:00 AM - 10:00 AM	63.7	59.2	4.5	1.5	62.2	-	49.2	13.0
10:00 AM - 11:00 AM	61.5	55.8	5.7	1.5	60.0	-	49.3	10.7
11:00 AM - 12:00 PM	61.2	56.4	4.8	1.5	59.7	-	49.5	10.2
12:00 PM - 01:00 PM	61.1	53.9	7.2	1.0	60.1	-	48.6	11.5
01:00 PM - 02:00 PM	61.9	56.8	5.1	1.5	60.4	-	49.0	11.4
02:00 PM - 03:00 PM	63.3	55.6	7.7	0.5	62.8	-	49.4	13.4
ค่ามาตรฐาน								≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

#### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 22-23 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142078-3 วันที่ตรวจวัด 29-30 มิถุนายน 2565)

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

Approved by

Kanokkorn Anek  
Senior Manager



# Analysis / Test Report

TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142070  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536883-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142070-4  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
Measurement Date Dec 23 - 24, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00610204

## ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า ระดับเสียง (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
03:00 PM - 04:00 PM	63.6	59.1	4.5	1.5	62.1	-	54.2	7.9
04:00 PM - 05:00 PM	63.3	59.6	3.7	2.0	61.3	-	54.7	6.6
05:00 PM - 06:00 PM	61.8	58.9	2.9	3.0	58.8	-	54.1	4.7
06:00 PM - 07:00 PM	61.7	56.4	5.3	1.5	60.2	-	50.0	10.2
07:00 PM - 08:00 PM	65.0	54.6	10.4	0.5	64.5	-	48.5	16.0
08:00 PM - 09:00 PM	63.5	55.2	8.3	0.5	63.0	-	47.6	15.4
09:00 PM - 10:00 PM	61.5	53.5	8.0	0.5	61.0	-	46.0	15.0
10:00 PM - 10:05 PM	61.9	54.6	7.3	1.0	-	63.9	45.8	18.1
10:05 PM - 10:10 PM	59.0	51.9	7.1	1.0	-	61.0	44.3	16.7
10:10 PM - 10:15 PM	59.3	51.9	7.4	1.0	-	61.3	44.8	16.5
10:15 PM - 10:20 PM	59.0	51.8	7.2	1.0	-	61.0	45.1	15.9
10:20 PM - 10:25 PM	58.9	52.7	6.2	1.5	-	60.4	43.3	17.1
10:25 PM - 10:30 PM	57.6	49.1	8.5	0.5	-	60.1	42.2	17.9
10:30 PM - 10:35 PM	59.6	52.1	7.5	0.5	-	62.1	44.3	17.8
10:35 PM - 10:40 PM	57.8	53.1	4.7	1.5	-	59.3	42.8	16.5
10:40 PM - 10:45 PM	58.2	52.3	5.9	1.5	-	59.7	43.7	16.0
10:45 PM - 10:50 PM	58.5	50.3	8.2	0.5	-	61.0	42.7	18.3
10:50 PM - 10:55 PM	58.9	51.6	7.3	1.0	-	60.9	43.4	17.5
10:55 PM - 11:00 PM	60.8	51.1	9.7	0.5	-	63.3	42.8	20.5
11:00 PM - 11:05 PM	61.4	50.9	10.5	0.5	-	63.9	43.5	20.4
11:05 PM - 11:10 PM	61.3	52.8	8.5	0.5	-	63.8	43.1	20.7
11:10 PM - 11:15 PM	57.6	49.8	7.8	0.5	-	60.1	41.9	18.2
11:15 PM - 11:20 PM	63.8	49.5	14.3	0.0	-	66.8	42.2	24.6
11:20 PM - 11:25 PM	63.2	52.7	10.5	0.5	-	65.7	44.7	21.0
11:25 PM - 11:30 PM	58.2	50.8	7.4	1.0	-	60.2	43.4	16.8
11:30 PM - 11:35 PM	60.9	50.9	10.0	0.5	-	63.4	43.8	19.6
11:35 PM - 11:40 PM	59.5	50.5	9.0	0.5	-	62.0	44.4	17.6
11:40 PM - 11:45 PM	62.9	55.7	7.2	1.0	-	64.9	44.2	20.7
11:45 PM - 11:50 PM	55.9	50.1	5.8	1.5	-	57.4	43.3	14.1
11:50 PM - 11:55 PM	56.8	52.4	4.4	2.0	-	57.8	45.0	12.8
11:55 PM - 12:00 AM	56.8	52.7	4.1	2.0	-	57.8	43.2	14.6
12:00 AM - 12:05 AM	58.0	53.1	4.9	1.5	-	59.5	42.9	16.6
12:05 AM - 12:10 AM	56.1	51.0	5.1	1.5	-	57.6	42.1	15.5
12:10 AM - 12:15 AM	58.3	48.9	9.4	0.5	-	60.8	41.7	19.1
12:15 AM - 12:20 AM	59.9	51.6	8.3	0.5	-	62.4	42.1	20.3
12:20 AM - 12:25 AM	55.8	50.8	5.0	1.5	-	57.3	41.2	16.1
12:25 AM - 12:30 AM	61.1	51.2	9.9	0.5	-	63.6	41.6	22.0
12:30 AM - 12:35 AM	56.2	51.4	4.8	1.5	-	57.7	41.5	16.2
12:35 AM - 12:40 AM	54.7	51.7	3.0	3.0	-	54.7	44.5	10.2
12:40 AM - 12:45 AM	60.4	52.7	7.7	0.5	-	62.9	43.0	19.9

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142070  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536883-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142070-4  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
Measurement Date Dec 23 - 24, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00610204

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด	เสียงขณะ ไม่มีการรบกวน	ผลต่าง ระดับเสียง	ตัวปรับค่า	ปรับค่าเสียงจากแหล่งกำเนิด		เสียงพื้นฐาน	ค่าระดับ การรบกวน
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:45 AM - 12:50 AM	54.3	47.2	7.1	1.0	-	56.3	40.6	15.7
12:50 AM - 12:55 AM	60.4	52.2	8.2	0.5	-	62.9	43.2	19.7
12:55 AM - 01:00 AM	56.9	49.9	7.0	1.0	-	58.9	41.7	17.2
01:00 AM - 01:05 AM	55.4	50.7	4.7	1.5	-	56.9	40.1	16.8
01:05 AM - 01:10 AM	57.1	49.4	7.7	0.5	-	59.6	42.0	17.6
01:10 AM - 01:15 AM	55.6	46.1	9.5	0.5	-	58.1	40.7	17.4
01:15 AM - 01:20 AM	55.7	55.0	0.7	7.0	-	51.7	44.4	7.3
01:20 AM - 01:25 AM	55.2	49.0	6.2	1.5	-	56.7	39.9	16.8
01:25 AM - 01:30 AM	57.9	50.1	7.8	0.5	-	60.4	40.4	20.0
01:30 AM - 01:35 AM	57.0	54.4	2.6	3.0	-	57.0	43.9	13.1
01:35 AM - 01:40 AM	56.3	53.0	3.3	3.0	-	56.3	42.3	14.0
01:40 AM - 01:45 AM	57.3	50.8	6.5	1.0	-	59.3	41.3	18.0
01:45 AM - 01:50 AM	55.0	52.3	2.7	3.0	-	55.0	42.3	12.7
01:50 AM - 01:55 AM	54.5	53.9	0.6	7.0	-	50.5	45.3	5.2
01:55 AM - 02:00 AM	54.2	49.6	4.6	1.5	-	55.7	41.7	14.0
02:00 AM - 02:05 AM	53.9	51.7	2.2	4.5	-	52.4	45.1	7.3
02:05 AM - 02:10 AM	61.8	50.3	11.5	0.5	-	64.3	40.1	24.2
02:10 AM - 02:15 AM	57.5	50.0	7.5	0.5	-	60.0	41.3	18.7
02:15 AM - 02:20 AM	55.9	51.0	4.9	1.5	-	57.4	41.3	16.1
02:20 AM - 02:25 AM	55.8	49.3	6.5	1.0	-	57.8	40.8	17.0
02:25 AM - 02:30 AM	65.1	64.5	0.6	7.0	-	61.1	42.4	18.7
02:30 AM - 02:35 AM	65.3	50.8	14.5	0.0	-	68.3	39.6	28.7
02:35 AM - 02:40 AM	60.3	51.4	8.9	0.5	-	62.8	42.5	20.3
02:40 AM - 02:45 AM	58.6	52.1	6.5	1.0	-	60.6	43.1	17.5
02:45 AM - 02:50 AM	54.9	50.3	4.6	1.5	-	56.4	40.9	15.5
02:50 AM - 02:55 AM	54.7	61.6	-6.9	7.0	-	50.7	46.0	4.7
02:55 AM - 03:00 AM	58.0	51.0	7.0	1.0	-	60.0	43.6	16.4
03:00 AM - 03:05 AM	56.1	52.0	4.1	2.0	-	57.1	42.0	15.1
03:05 AM - 03:10 AM	55.4	50.0	5.4	1.5	-	56.9	41.8	15.1
03:10 AM - 03:15 AM	53.8	50.2	3.6	2.0	-	54.8	42.6	12.2
03:15 AM - 03:20 AM	58.3	51.4	6.9	1.0	-	60.3	43.4	16.9
03:20 AM - 03:25 AM	58.7	52.0	6.7	1.0	-	60.7	43.8	16.9
03:25 AM - 03:30 AM	56.2	50.3	5.9	1.5	-	57.7	41.3	16.4
03:30 AM - 03:35 AM	56.8	59.6	-2.8	7.0	-	52.8	43.5	9.3
03:35 AM - 03:40 AM	58.7	54.3	4.4	2.0	-	59.7	41.2	18.5
03:40 AM - 03:45 AM	56.3	53.2	3.1	3.0	-	56.3	45.2	11.1
03:45 AM - 03:50 AM	56.8	54.9	1.9	4.5	-	55.3	45.2	10.1
03:50 AM - 03:55 AM	56.5	52.0	4.5	1.5	-	58.0	42.8	15.2
03:55 AM - 04:00 AM	57.8	51.0	6.8	1.0	-	59.8	41.4	18.4
04:00 AM - 04:05 AM	59.7	52.0	7.7	0.5	-	62.2	41.8	20.4

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142070  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536883-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142070-4  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
Measurement Date Dec 23 - 24, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00610204

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับการรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:05 AM - 04:10 AM	67.0	51.7	15.3	0.0	-	70.0	42.4	27.6
04:10 AM - 04:15 AM	56.1	52.7	3.4	3.0	-	56.1	42.4	13.7
04:15 AM - 04:20 AM	58.1	55.0	3.1	3.0	-	58.1	44.6	13.5
04:20 AM - 04:25 AM	58.6	54.1	4.5	1.5	-	60.1	45.3	14.8
04:25 AM - 04:30 AM	67.8	54.4	13.4	0.0	-	70.8	45.9	24.9
04:30 AM - 04:35 AM	57.8	53.4	4.4	2.0	-	58.8	45.8	13.0
04:35 AM - 04:40 AM	62.2	52.1	10.1	0.5	-	64.7	45.3	19.4
04:40 AM - 04:45 AM	58.1	54.2	3.9	2.0	-	59.1	45.7	13.4
04:45 AM - 04:50 AM	57.9	60.0	-2.1	7.0	-	53.9	48.2	5.7
04:50 AM - 04:55 AM	57.9	54.4	3.5	2.0	-	58.9	45.4	13.5
04:55 AM - 05:00 AM	56.8	54.4	2.4	4.5	-	55.3	47.7	7.6
05:00 AM - 05:05 AM	58.1	54.5	3.6	2.0	-	59.1	46.6	12.5
05:05 AM - 05:10 AM	57.6	53.9	3.7	2.0	-	58.6	45.6	13.0
05:10 AM - 05:15 AM	59.8	54.8	5.0	1.5	-	61.3	47.0	14.3
05:15 AM - 05:20 AM	59.7	51.4	8.3	0.5	-	62.2	44.3	17.9
05:20 AM - 05:25 AM	56.8	53.7	3.1	3.0	-	56.8	44.1	12.7
05:25 AM - 05:30 AM	58.8	53.6	5.2	1.5	-	60.3	44.1	16.2
05:30 AM - 05:35 AM	58.4	53.5	4.9	1.5	-	59.9	46.7	13.2
05:35 AM - 05:40 AM	58.5	55.1	3.4	3.0	-	58.5	47.1	11.4
05:40 AM - 05:45 AM	58.2	55.8	2.4	4.5	-	56.7	48.5	8.2
05:45 AM - 05:50 AM	59.3	61.2	-1.9	7.0	-	55.3	52.3	3.0
05:50 AM - 05:55 AM	58.2	55.5	2.7	3.0	-	58.2	46.7	11.5
05:55 AM - 06:00 AM	58.7	54.5	4.2	2.0	-	59.7	48.0	11.7
06:00 AM - 07:00 AM	60.0	57.3	2.7	3.0	57.0	-	50.1	6.9
07:00 AM - 08:00 AM	61.5	57.6	3.9	2.0	59.5	-	51.5	8.0
08:00 AM - 09:00 AM	66.3	60.1	6.2	1.5	64.8	-	51.5	13.3
09:00 AM - 10:00 AM	64.7	58.7	6.0	1.5	63.2	-	51.5	11.7
10:00 AM - 11:00 AM	65.9	57.9	8.0	0.5	65.4	-	51.4	14.0
11:00 AM - 12:00 PM	64.3	56.2	8.1	0.5	63.8	-	49.8	14.0
12:00 PM - 01:00 PM	64.6	54.7	9.9	0.5	64.1	-	48.7	15.4
01:00 PM - 02:00 PM	64.3	55.5	8.8	0.5	63.8	-	49.0	14.8
02:00 PM - 03:00 PM	64.0	58.6	5.4	1.5	62.5	-	51.3	11.2
ค่ามาตรฐาน	≤ 10							

Reference Method : Based on ISO 1996-1 and ISO 1996-2

#### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
- ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
- ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561  
ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 23-24 ธันวาคม 2565  
ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142078-4 วันที่ตรวจวัด มีถุนายน 30-01 กรกฎาคม 2565)

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

Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142070  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536884-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142070-5  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
Measurement Date Dec 24 - 25, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00610204

#### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด <sup>(A)</sup>	เสียงขณะ ไม่มีการรบกวน <sup>(B)</sup>	ผลต่าง ระดับเสียง <sup>(A-B)</sup>	ตัวปรับค่า <sup>(C)</sup>	ปรับค่าเสียงจากแหล่งกำเนิด <sup>(B)</sup>		เสียงพื้นฐาน <sup>(E)</sup>	ค่าระดับ การรบกวน <sup>(D-E)</sup>
					กลางวัน <sup>(A-C)</sup>	กลางคืน <sup>(A-C)+3</sup>		
03:00 PM - 04:00 PM	65.6	58.0	7.6	0.5	65.1	-	51.2	13.9
04:00 PM - 05:00 PM	65.9	59.0	6.9	1.0	64.9	-	51.9	13.0
05:00 PM - 06:00 PM	66.9	57.0	9.9	0.5	66.4	-	51.7	14.7
06:00 PM - 07:00 PM	61.0	56.2	4.8	1.5	59.5	-	49.8	9.7
07:00 PM - 08:00 PM	60.4	54.7	5.7	1.5	58.9	-	49.1	9.8
08:00 PM - 09:00 PM	61.7	55.2	6.5	1.0	60.7	-	47.6	13.1
09:00 PM - 10:00 PM	60.6	53.9	6.7	1.0	59.6	-	45.4	14.2
10:00 PM - 10:05 PM	62.4	53.3	9.1	0.5	-	64.9	44.0	20.9
10:05 PM - 10:10 PM	57.4	53.1	4.3	2.0	-	58.4	45.0	13.4
10:10 PM - 10:15 PM	59.2	56.2	3.0	3.0	-	59.2	44.4	14.8
10:15 PM - 10:20 PM	57.1	53.6	3.5	2.0	-	58.1	44.0	14.1
10:20 PM - 10:25 PM	59.2	50.9	8.3	0.5	-	61.7	43.0	18.7
10:25 PM - 10:30 PM	57.2	48.6	8.6	0.5	-	59.7	41.1	18.6
10:30 PM - 10:35 PM	57.7	50.4	7.3	1.0	-	59.7	41.0	18.7
10:35 PM - 10:40 PM	59.2	49.7	9.5	0.5	-	61.7	41.5	20.2
10:40 PM - 10:45 PM	58.0	48.8	9.2	0.5	-	60.5	44.2	16.3
10:45 PM - 10:50 PM	57.1	49.1	8.0	0.5	-	59.6	42.0	17.6
10:50 PM - 10:55 PM	58.4	51.5	6.9	1.0	-	60.4	44.0	16.4
10:55 PM - 11:00 PM	60.9	53.4	7.5	0.5	-	63.4	47.8	15.6
11:00 PM - 11:05 PM	59.1	59.8	-0.7	7.0	-	55.1	53.2	1.9
11:05 PM - 11:10 PM	58.1	57.8	0.3	7.0	-	54.1	52.2	1.9
11:10 PM - 11:15 PM	68.0	52.9	15.1	0.0	-	71.0	48.8	22.2
11:15 PM - 11:20 PM	58.6	59.5	-0.9	7.0	-	54.6	52.4	2.2
11:20 PM - 11:25 PM	55.5	62.6	-7.1	7.0	-	51.5	61.0	-9.5
11:25 PM - 11:30 PM	57.9	57.5	0.4	7.0	-	53.9	54.2	-0.3
11:30 PM - 11:35 PM	57.4	56.6	0.8	7.0	-	53.4	54.0	-0.6
11:35 PM - 11:40 PM	58.1	62.6	-4.5	7.0	-	54.1	56.1	-2.0
11:40 PM - 11:45 PM	57.5	59.8	-2.3	7.0	-	53.5	50.8	2.7
11:45 PM - 11:50 PM	56.8	57.6	-0.8	7.0	-	52.8	47.5	5.3
11:50 PM - 11:55 PM	55.7	51.7	4.0	2.0	-	56.7	45.9	10.8
11:55 PM - 12:00 AM	58.5	50.2	8.3	0.5	-	61.0	42.7	18.3
12:00 AM - 12:05 AM	55.0	51.7	3.3	3.0	-	55.0	42.8	12.2
12:05 AM - 12:10 AM	56.2	52.2	4.0	2.0	-	57.2	43.2	14.0
12:10 AM - 12:15 AM	54.0	50.6	3.4	3.0	-	54.0	40.1	13.9
12:15 AM - 12:20 AM	58.6	48.6	10.0	0.5	-	61.1	40.5	20.6
12:20 AM - 12:25 AM	56.2	52.9	3.3	3.0	-	56.2	41.8	14.4
12:25 AM - 12:30 AM	57.2	47.5	9.7	0.5	-	59.7	39.6	20.1
12:30 AM - 12:35 AM	57.6	53.2	4.4	2.0	-	58.6	39.8	18.8
12:35 AM - 12:40 AM	56.5	48.4	8.1	0.5	-	59.0	41.9	17.1
12:40 AM - 12:45 AM	57.3	49.1	8.2	0.5	-	59.8	41.6	18.2

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142070  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536884-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142070-5  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
Measurement Date Dec 24 - 25, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00610204

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
	แหล่งกำเนิด (A-C)	กลางคืน (A-C)+3			กลางวัน (A-C)	กลางคืน (A-C)+3		
12:45 AM - 12:50 AM	56.1	50.9	5.2	1.5	-	57.6	41.7	15.9
12:50 AM - 12:55 AM	56.0	48.6	7.4	1.0	-	58.0	40.6	17.4
12:55 AM - 01:00 AM	58.8	52.5	6.3	1.5	-	60.3	45.4	14.9
01:00 AM - 01:05 AM	56.0	50.1	5.9	1.5	-	57.5	44.5	13.0
01:05 AM - 01:10 AM	56.1	50.0	6.1	1.5	-	57.6	42.8	14.8
01:10 AM - 01:15 AM	57.3	50.1	7.2	1.0	-	59.3	41.7	17.6
01:15 AM - 01:20 AM	58.8	47.1	11.7	0.5	-	61.3	40.3	21.0
01:20 AM - 01:25 AM	56.3	48.2	8.1	0.5	-	58.8	40.5	18.3
01:25 AM - 01:30 AM	56.6	51.5	5.1	1.5	-	58.1	42.4	15.7
01:30 AM - 01:35 AM	57.1	48.5	8.6	0.5	-	59.6	41.9	17.7
01:35 AM - 01:40 AM	54.2	54.7	-0.5	7.0	-	50.2	49.2	1.0
01:40 AM - 01:45 AM	55.6	54.1	1.5	4.5	-	54.1	50.1	4.0
01:45 AM - 01:50 AM	56.4	52.0	4.4	2.0	-	57.4	47.8	9.6
01:50 AM - 01:55 AM	56.9	55.3	1.6	4.5	-	55.4	52.7	2.7
01:55 AM - 02:00 AM	57.2	55.0	2.2	4.5	-	55.7	52.8	2.9
02:00 AM - 02:05 AM	59.1	53.4	5.7	1.5	-	60.6	50.9	9.7
02:05 AM - 02:10 AM	58.5	51.9	6.6	1.0	-	60.5	48.9	11.6
02:10 AM - 02:15 AM	56.4	49.9	6.5	1.0	-	58.4	45.0	13.4
02:15 AM - 02:20 AM	59.1	50.3	8.8	0.5	-	61.6	42.7	18.9
02:20 AM - 02:25 AM	56.5	49.3	7.2	1.0	-	58.5	41.4	17.1
02:25 AM - 02:30 AM	55.2	50.6	4.6	1.5	-	56.7	41.4	15.3
02:30 AM - 02:35 AM	57.2	55.8	1.4	7.0	-	53.2	41.2	12.0
02:35 AM - 02:40 AM	59.2	49.8	9.4	0.5	-	61.7	40.0	21.7
02:40 AM - 02:45 AM	58.1	52.9	5.2	1.5	-	59.6	41.6	18.0
02:45 AM - 02:50 AM	56.5	51.7	4.8	1.5	-	58.0	40.3	17.7
02:50 AM - 02:55 AM	56.2	49.6	6.6	1.0	-	58.2	39.1	19.1
02:55 AM - 03:00 AM	57.3	48.1	9.2	0.5	-	59.8	38.7	21.1
03:00 AM - 03:05 AM	57.8	52.1	5.7	1.5	-	59.3	39.7	19.6
03:05 AM - 03:10 AM	57.3	53.0	4.3	2.0	-	58.3	42.7	15.6
03:10 AM - 03:15 AM	58.0	50.9	7.1	1.0	-	60.0	40.9	19.1
03:15 AM - 03:20 AM	55.3	57.6	-2.3	7.0	-	51.3	41.9	9.4
03:20 AM - 03:25 AM	57.3	51.2	6.1	1.5	-	58.8	41.8	17.0
03:25 AM - 03:30 AM	57.8	51.4	6.4	1.5	-	59.3	41.8	17.5
03:30 AM - 03:35 AM	59.2	50.6	8.6	0.5	-	61.7	39.2	22.5
03:35 AM - 03:40 AM	56.8	52.9	3.9	2.0	-	57.8	42.2	15.6
03:40 AM - 03:45 AM	55.5	51.3	4.2	2.0	-	56.5	40.5	16.0
03:45 AM - 03:50 AM	57.6	51.6	6.0	1.5	-	59.1	39.8	19.3
03:50 AM - 03:55 AM	56.8	51.9	4.9	1.5	-	58.3	39.5	18.8
03:55 AM - 04:00 AM	57.6	50.7	6.9	1.0	-	59.6	41.7	17.9
04:00 AM - 04:05 AM	58.6	54.9	3.7	2.0	-	59.6	43.6	16.0

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142070  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536884-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142070-5  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
Measurement Date Dec 24 - 25, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00610204

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B) (C)	ตัวปรับค่า (D)	ปรับค่าเสียงจากแหล่งกำเนิด (E)		เสียงพื้นฐาน (F)	ค่าระดับการรบกวน (G-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:05 AM - 04:10 AM	57.7	52.4	5.3	1.5	-	59.2	46.7	12.5
04:10 AM - 04:15 AM	59.1	52.3	6.8	1.0	-	61.1	46.2	14.9
04:15 AM - 04:20 AM	55.8	52.3	3.5	2.0	-	56.8	47.4	9.4
04:20 AM - 04:25 AM	56.8	51.5	5.3	1.5	-	58.3	47.6	10.7
04:25 AM - 04:30 AM	61.1	52.3	8.8	0.5	-	63.6	47.8	15.8
04:30 AM - 04:35 AM	60.5	53.3	7.2	1.0	-	62.5	47.8	14.7
04:35 AM - 04:40 AM	58.3	51.4	6.9	1.0	-	60.3	45.7	14.6
04:40 AM - 04:45 AM	57.7	51.3	6.4	1.5	-	59.2	43.7	15.5
04:45 AM - 04:50 AM	57.9	51.1	6.8	1.0	-	59.9	45.2	14.7
04:50 AM - 04:55 AM	57.9	53.9	4.0	2.0	-	58.9	46.4	12.5
04:55 AM - 05:00 AM	56.8	50.6	6.2	1.5	-	58.3	42.7	15.6
05:00 AM - 05:05 AM	60.7	52.1	8.6	0.5	-	63.2	43.4	19.8
05:05 AM - 05:10 AM	57.9	52.9	5.0	1.5	-	59.4	44.2	15.2
05:10 AM - 05:15 AM	57.1	51.7	5.4	1.5	-	58.6	41.8	16.8
05:15 AM - 05:20 AM	58.2	51.1	7.1	1.0	-	60.2	42.5	17.7
05:20 AM - 05:25 AM	58.3	52.9	5.4	1.5	-	59.8	44.2	15.6
05:25 AM - 05:30 AM	57.3	54.7	2.6	3.0	-	57.3	44.2	13.1
05:30 AM - 05:35 AM	56.8	52.8	4.0	2.0	-	57.8	45.9	11.9
05:35 AM - 05:40 AM	57.3	54.6	2.7	3.0	-	57.3	48.2	9.1
05:40 AM - 05:45 AM	60.9	54.0	6.9	1.0	-	62.9	46.4	16.5
05:45 AM - 05:50 AM	57.8	53.5	4.3	2.0	-	58.8	46.9	11.9
05:50 AM - 05:55 AM	57.7	54.0	3.7	2.0	-	58.7	47.0	11.7
05:55 AM - 06:00 AM	58.5	53.6	4.9	1.5	-	60.0	45.5	14.5
06:00 AM - 07:00 AM	60.9	56.5	4.4	2.0	58.9	-	49.3	9.6
07:00 AM - 08:00 AM	61.3	57.4	3.9	2.0	59.3	-	51.3	8.0
08:00 AM - 09:00 AM	61.3	57.4	3.9	2.0	59.3	-	50.8	8.5
09:00 AM - 10:00 AM	61.2	57.4	3.8	2.0	59.2	-	51.6	7.6
10:00 AM - 11:00 AM	61.1	57.5	3.6	2.0	59.1	-	51.5	7.6
11:00 AM - 12:00 PM	60.9	57.8	3.1	3.0	57.9	-	50.3	7.6
12:00 PM - 01:00 PM	60.2	55.9	4.3	2.0	58.2	-	49.8	8.4
01:00 PM - 02:00 PM	60.1	58.1	2.0	4.5	55.6	-	49.6	6.0
02:00 PM - 03:00 PM	60.5	57.4	3.1	3.0	57.5	-	51.7	5.8

ค่ามาตรฐาน

≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 24-25 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142078-5 วันที่ตรวจวัด 01-02 กรกฎาคม 2565)

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142070  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536885-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142070-6  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
Measurement Date Dec 25 - 26, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00610204

#### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด <sup>(A)</sup>	เสียงขณะ ไม่มีการรบกวน <sup>(B)</sup>	ผลต่าง ระดับเสียง <sup>(A-B)</sup>	ตัวปรับค่า <sup>(C)</sup>	ปรับค่าเสียงจากแหล่งกำเนิด <sup>(B)</sup>		เสียงพื้นฐาน <sup>(E)</sup>	ค่าระดับ การรบกวน <sup>(D-E)</sup>
					กลางวัน <sup>(A-C)</sup>	กลางคืน <sup>(A-C)+3</sup>		
03:00 PM - 04:00 PM	61.8	51.7	10.1	0.5	61.3	-	45.0	16.3
04:00 PM - 05:00 PM	61.1	51.2	9.9	0.5	60.6	-	44.7	15.9
05:00 PM - 06:00 PM	61.2	52.5	8.7	0.5	60.7	-	45.7	15.0
06:00 PM - 07:00 PM	61.4	50.9	10.5	0.5	60.9	-	44.8	16.1
07:00 PM - 08:00 PM	60.5	50.8	9.7	0.5	60.0	-	43.9	16.1
08:00 PM - 09:00 PM	61.6	49.9	11.7	0.5	61.1	-	42.1	19.0
09:00 PM - 10:00 PM	59.0	49.0	10.0	0.5	58.5	-	40.8	17.7
10:00 PM - 10:05 PM	55.7	46.6	9.1	0.5	-	58.2	40.1	18.1
10:05 PM - 10:10 PM	58.1	48.5	9.6	0.5	-	60.6	41.4	19.2
10:10 PM - 10:15 PM	57.9	49.1	8.8	0.5	-	60.4	42.6	17.8
10:15 PM - 10:20 PM	57.6	48.2	9.4	0.5	-	60.1	40.6	19.5
10:20 PM - 10:25 PM	54.9	54.8	0.1	7.0	-	50.9	43.4	7.5
10:25 PM - 10:30 PM	57.5	51.9	5.6	1.5	-	59.0	42.9	16.1
10:30 PM - 10:35 PM	57.5	51.6	5.9	1.5	-	59.0	40.0	19.0
10:35 PM - 10:40 PM	56.1	49.3	6.8	1.0	-	58.1	39.3	18.8
10:40 PM - 10:45 PM	55.0	48.5	6.5	1.0	-	57.0	38.1	18.9
10:45 PM - 10:50 PM	58.6	48.1	10.5	0.5	-	61.1	40.5	20.6
10:50 PM - 10:55 PM	55.1	48.3	6.8	1.0	-	57.1	40.1	17.0
10:55 PM - 11:00 PM	56.5	48.7	7.8	0.5	-	59.0	39.8	19.2
11:00 PM - 11:05 PM	55.8	48.5	7.3	1.0	-	57.8	42.0	15.8
11:05 PM - 11:10 PM	56.6	46.3	10.3	0.5	-	59.1	38.9	20.2
11:10 PM - 11:15 PM	54.3	50.3	4.0	2.0	-	55.3	37.9	17.4
11:15 PM - 11:20 PM	55.4	48.8	6.6	1.0	-	57.4	39.4	18.0
11:20 PM - 11:25 PM	56.7	46.6	10.1	0.5	-	59.2	39.4	19.8
11:25 PM - 11:30 PM	56.5	44.0	12.5	0.0	-	59.5	37.2	22.3
11:30 PM - 11:35 PM	56.8	46.0	10.8	0.5	-	59.3	38.5	20.8
11:35 PM - 11:40 PM	57.3	48.2	9.1	0.5	-	59.8	40.5	19.3
11:40 PM - 11:45 PM	51.7	48.3	3.4	3.0	-	51.7	41.1	10.6
11:45 PM - 11:50 PM	58.1	49.1	9.0	0.5	-	60.6	40.5	20.1
11:50 PM - 11:55 PM	56.0	47.4	8.6	0.5	-	58.5	37.8	20.7
11:55 PM - 12:00 AM	55.5	44.9	10.6	0.5	-	58.0	38.4	19.6
12:00 AM - 12:05 AM	55.7	45.6	10.1	0.5	-	58.2	37.0	21.2
12:05 AM - 12:10 AM	55.0	47.3	7.7	0.5	-	57.5	39.1	18.4
12:10 AM - 12:15 AM	55.9	47.2	8.7	0.5	-	58.4	36.6	21.8
12:15 AM - 12:20 AM	52.9	46.5	6.4	1.5	-	54.4	37.0	17.4
12:20 AM - 12:25 AM	54.5	45.9	8.6	0.5	-	57.0	37.5	19.5
12:25 AM - 12:30 AM	57.2	46.5	10.7	0.5	-	59.7	35.7	24.0
12:30 AM - 12:35 AM	56.4	46.2	10.2	0.5	-	58.9	36.3	22.6
12:35 AM - 12:40 AM	56.2	47.3	8.9	0.5	-	58.7	38.5	20.2
12:40 AM - 12:45 AM	55.1	46.4	8.7	0.5	-	57.6	35.7	21.9

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142070  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536885-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142070-6  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
Measurement Date Dec 25 - 26, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00610204

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด	เสียงขณะ ไม่มีการรบกวน	ผลต่าง ระดับเสียง	ตัวปรับค่า	ปรับค่าเสียงจากแหล่งกำเนิด		เสียงพื้นฐาน	ค่าระดับ การรบกวน
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:45 AM - 12:50 AM	54.4	45.5	8.9	0.5	-	56.9	36.8	20.1
12:50 AM - 12:55 AM	53.9	45.2	8.7	0.5	-	56.4	37.1	19.3
12:55 AM - 01:00 AM	54.2	48.7	5.5	1.5	-	55.7	38.0	17.7
01:00 AM - 01:05 AM	55.0	45.8	9.2	0.5	-	57.5	37.6	19.9
01:05 AM - 01:10 AM	54.6	45.4	9.2	0.5	-	57.1	38.4	18.7
01:10 AM - 01:15 AM	55.3	44.0	11.3	0.5	-	57.8	36.8	21.0
01:15 AM - 01:20 AM	56.2	47.0	9.2	0.5	-	58.7	38.3	20.4
01:20 AM - 01:25 AM	54.6	48.7	5.9	1.5	-	56.1	40.6	15.5
01:25 AM - 01:30 AM	57.9	46.5	11.4	0.5	-	60.4	39.3	21.1
01:30 AM - 01:35 AM	57.4	47.2	10.2	0.5	-	59.9	38.7	21.2
01:35 AM - 01:40 AM	54.7	45.9	8.8	0.5	-	57.2	37.3	19.9
01:40 AM - 01:45 AM	58.7	47.0	11.7	0.5	-	61.2	37.8	23.4
01:45 AM - 01:50 AM	55.7	48.0	7.7	0.5	-	58.2	37.4	20.8
01:50 AM - 01:55 AM	55.9	46.4	9.5	0.5	-	58.4	37.9	20.5
01:55 AM - 02:00 AM	54.9	46.6	8.3	0.5	-	57.4	35.2	22.2
02:00 AM - 02:05 AM	56.4	45.0	11.4	0.5	-	58.9	35.8	23.1
02:05 AM - 02:10 AM	54.9	46.7	8.2	0.5	-	57.4	38.8	18.6
02:10 AM - 02:15 AM	55.4	47.9	7.5	0.5	-	57.9	38.8	19.1
02:15 AM - 02:20 AM	55.6	47.0	8.6	0.5	-	58.1	38.0	20.1
02:20 AM - 02:25 AM	55.9	48.7	7.2	1.0	-	57.9	38.6	19.3
02:25 AM - 02:30 AM	57.7	42.4	15.3	0.0	-	60.7	35.5	25.2
02:30 AM - 02:35 AM	57.3	46.6	10.7	0.5	-	59.8	37.4	22.4
02:35 AM - 02:40 AM	55.0	49.5	5.5	1.5	-	56.5	42.9	13.6
02:40 AM - 02:45 AM	55.6	47.9	7.7	0.5	-	58.1	39.0	19.1
02:45 AM - 02:50 AM	57.6	47.1	10.5	0.5	-	60.1	38.5	21.6
02:50 AM - 02:55 AM	56.3	48.2	8.1	0.5	-	58.8	35.6	23.2
02:55 AM - 03:00 AM	58.2	49.2	9.0	0.5	-	60.7	39.4	21.3
03:00 AM - 03:05 AM	57.6	46.5	11.1	0.5	-	60.1	34.9	25.2
03:05 AM - 03:10 AM	56.9	48.5	8.4	0.5	-	59.4	35.6	23.8
03:10 AM - 03:15 AM	58.2	47.3	10.9	0.5	-	60.7	37.4	23.3
03:15 AM - 03:20 AM	55.8	52.9	2.9	3.0	-	55.8	40.2	15.6
03:20 AM - 03:25 AM	55.4	45.9	9.5	0.5	-	57.9	38.0	19.9
03:25 AM - 03:30 AM	58.6	48.0	10.6	0.5	-	61.1	39.3	21.8
03:30 AM - 03:35 AM	55.0	45.3	9.7	0.5	-	57.5	36.4	21.1
03:35 AM - 03:40 AM	56.2	47.9	8.3	0.5	-	58.7	37.0	21.7
03:40 AM - 03:45 AM	55.9	47.3	8.6	0.5	-	58.4	37.5	20.9
03:45 AM - 03:50 AM	56.4	45.3	11.1	0.5	-	58.9	36.5	22.4
03:50 AM - 03:55 AM	57.1	47.8	9.3	0.5	-	59.6	37.7	21.9
03:55 AM - 04:00 AM	58.8	49.0	9.8	0.5	-	61.3	36.5	24.8
04:00 AM - 04:05 AM	59.6	45.6	14.0	0.0	-	62.6	36.5	26.1

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142070  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536885-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142070-6  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
Measurement Date Dec 25 - 26, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00610204

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B) (C)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (B)		เสียงพื้นฐาน (E)	ค่าระดับการรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:05 AM - 04:10 AM	55.1	47.5	7.6	0.5	-	57.6	36.8	20.8
04:10 AM - 04:15 AM	56.4	50.3	6.1	1.5	-	57.9	39.2	18.7
04:15 AM - 04:20 AM	58.1	47.0	11.1	0.5	-	60.6	38.8	21.8
04:20 AM - 04:25 AM	56.6	47.9	8.7	0.5	-	59.1	38.5	20.6
04:25 AM - 04:30 AM	57.5	51.2	6.3	1.5	-	59.0	38.6	20.4
04:30 AM - 04:35 AM	56.6	48.9	7.7	0.5	-	59.1	39.0	20.1
04:35 AM - 04:40 AM	57.9	50.3	7.6	0.5	-	60.4	40.5	19.9
04:40 AM - 04:45 AM	57.0	50.0	7.0	1.0	-	59.0	40.6	18.4
04:45 AM - 04:50 AM	58.6	48.9	9.7	0.5	-	61.1	39.9	21.2
04:50 AM - 04:55 AM	59.1	49.2	9.9	0.5	-	61.6	39.8	21.8
04:55 AM - 05:00 AM	59.3	49.0	10.3	0.5	-	61.8	39.4	22.4
05:00 AM - 05:05 AM	56.2	50.1	6.1	1.5	-	57.7	40.5	17.2
05:05 AM - 05:10 AM	58.3	47.7	10.6	0.5	-	60.8	38.9	21.9
05:10 AM - 05:15 AM	58.6	47.0	11.6	0.5	-	61.1	40.3	20.8
05:15 AM - 05:20 AM	56.8	48.2	8.6	0.5	-	59.3	40.3	19.0
05:20 AM - 05:25 AM	59.0	49.1	9.9	0.5	-	61.5	41.1	20.4
05:25 AM - 05:30 AM	57.5	51.3	6.2	1.5	-	59.0	43.6	15.4
05:30 AM - 05:35 AM	58.7	50.5	8.2	0.5	-	61.2	40.9	20.3
05:35 AM - 05:40 AM	58.5	52.2	6.3	1.5	-	60.0	41.2	18.8
05:40 AM - 05:45 AM	59.1	52.5	6.6	1.0	-	61.1	43.5	17.6
05:45 AM - 05:50 AM	57.1	50.6	6.5	1.0	-	59.1	42.5	16.6
05:50 AM - 05:55 AM	58.3	53.1	5.2	1.5	-	59.8	46.1	13.7
05:55 AM - 06:00 AM	59.2	51.0	8.2	0.5	-	61.7	44.2	17.5
06:00 AM - 07:00 AM	60.3	52.2	8.1	0.5	59.8	-	44.8	15.0
07:00 AM - 08:00 AM	60.7	54.9	5.8	1.5	59.2	-	48.1	11.1
08:00 AM - 09:00 AM	61.2	55.1	6.1	1.5	59.7	-	49.0	10.7
09:00 AM - 10:00 AM	61.8	55.1	6.7	1.0	60.8	-	49.4	11.4
10:00 AM - 11:00 AM	60.8	53.5	7.3	1.0	59.8	-	48.4	11.4
11:00 AM - 12:00 PM	60.6	54.1	6.5	1.0	59.6	-	48.1	11.5
12:00 PM - 01:00 PM	59.6	53.9	5.7	1.5	58.1	-	48.2	9.9
01:00 PM - 02:00 PM	60.2	51.5	8.7	0.5	59.7	-	46.1	13.6
02:00 PM - 03:00 PM	61.1	50.5	10.6	0.5	60.6	-	44.5	16.1
ค่ามาตรฐาน	≤ 10							

Reference Method : Based on ISO 1996-1 and ISO 1996-2

#### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
- ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
- ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561  
ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 25-26 ธันวาคม 2565  
ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142078-6 วันที่ตรวจวัด 02-03 กรกฎาคม 2565)

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142070  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536886-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142070-7  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
Measurement Date Dec 26 - 27, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00610204

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด <sup>(A)</sup>	เสียงขณะ ไม่มีการรบกวน <sup>(B)</sup>	ผลต่าง ระดับเสียง <sup>(A-B)</sup>	ตัวปรับค่า <sup>(C)</sup>	ปรับค่าเสียงจากแหล่งกำเนิด <sup>(B)</sup>		เสียงพื้นฐาน <sup>(E)</sup>	ค่าระดับ การรบกวน <sup>(D-E)</sup>
					กลางวัน <sup>(A-C)</sup>	กลางคืน <sup>(A-C)+3</sup>		
03:00 PM - 04:00 PM	61.1	55.8	5.3	1.5	59.6	-	50.2	9.4
04:00 PM - 05:00 PM	61.7	56.1	5.6	1.5	60.2	-	51.4	8.8
05:00 PM - 06:00 PM	62.2	57.2	5.0	1.5	60.7	-	52.2	8.5
06:00 PM - 07:00 PM	61.7	56.3	5.4	1.5	60.2	-	50.7	9.5
07:00 PM - 08:00 PM	60.0	55.4	4.6	1.5	58.5	-	49.5	9.0
08:00 PM - 09:00 PM	59.4	54.3	5.1	1.5	57.9	-	47.6	10.3
09:00 PM - 10:00 PM	59.0	53.8	5.2	1.5	57.5	-	47.4	10.1
10:00 PM - 10:05 PM	58.9	52.4	6.5	1.0	-	60.9	44.4	16.5
10:05 PM - 10:10 PM	58.7	53.0	5.7	1.5	-	60.2	45.5	14.7
10:10 PM - 10:15 PM	60.3	53.0	7.3	1.0	-	62.3	46.7	15.6
10:15 PM - 10:20 PM	58.4	51.3	7.1	1.0	-	60.4	43.5	16.9
10:20 PM - 10:25 PM	57.1	52.6	4.5	1.5	-	58.6	44.3	14.3
10:25 PM - 10:30 PM	55.6	51.5	4.1	2.0	-	56.6	45.7	10.9
10:30 PM - 10:35 PM	57.7	50.3	7.4	1.0	-	59.7	42.9	16.8
10:35 PM - 10:40 PM	57.4	52.0	5.4	1.5	-	58.9	43.6	15.3
10:40 PM - 10:45 PM	58.1	52.3	5.8	1.5	-	59.6	44.6	15.0
10:45 PM - 10:50 PM	59.6	52.5	7.1	1.0	-	61.6	44.1	17.5
10:50 PM - 10:55 PM	58.2	50.9	7.3	1.0	-	60.2	41.7	18.5
10:55 PM - 11:00 PM	60.7	49.8	10.9	0.5	-	63.2	41.8	21.4
11:00 PM - 11:05 PM	58.1	51.0	7.1	1.0	-	60.1	43.2	16.9
11:05 PM - 11:10 PM	56.0	53.1	2.9	3.0	-	56.0	44.4	11.6
11:10 PM - 11:15 PM	57.8	51.5	6.3	1.5	-	59.3	43.4	15.9
11:15 PM - 11:20 PM	54.5	50.4	4.1	2.0	-	55.5	42.2	13.3
11:20 PM - 11:25 PM	54.1	52.4	1.7	4.5	-	52.6	42.7	9.9
11:25 PM - 11:30 PM	55.4	50.9	4.5	1.5	-	56.9	42.7	14.2
11:30 PM - 11:35 PM	57.1	51.4	5.7	1.5	-	58.6	42.6	16.0
11:35 PM - 11:40 PM	55.6	50.6	5.0	1.5	-	57.1	43.1	14.0
11:40 PM - 11:45 PM	56.5	52.3	4.2	2.0	-	57.5	42.7	14.8
11:45 PM - 11:50 PM	55.6	49.6	6.0	1.5	-	57.1	41.2	15.9
11:50 PM - 11:55 PM	56.9	53.1	3.8	2.0	-	57.9	42.9	15.0
11:55 PM - 12:00 AM	56.0	53.6	2.4	4.5	-	54.5	42.3	12.2
12:00 AM - 12:05 AM	57.6	49.4	8.2	0.5	-	60.1	43.0	17.1
12:05 AM - 12:10 AM	58.1	50.0	8.1	0.5	-	60.6	41.9	18.7
12:10 AM - 12:15 AM	58.3	46.9	11.4	0.5	-	60.8	40.5	20.3
12:15 AM - 12:20 AM	55.2	49.3	5.9	1.5	-	56.7	42.5	14.2
12:20 AM - 12:25 AM	57.3	49.1	8.2	0.5	-	59.8	41.5	18.3
12:25 AM - 12:30 AM	57.6	50.9	6.7	1.0	-	59.6	43.3	16.3
12:30 AM - 12:35 AM	55.8	51.6	4.2	2.0	-	56.8	42.0	14.8
12:35 AM - 12:40 AM	58.0	50.6	7.4	1.0	-	60.0	38.9	21.1
12:40 AM - 12:45 AM	56.5	50.3	6.2	1.5	-	58.0	39.7	18.3

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142070  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536886-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142070-7  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
Measurement Date Dec 26 - 27, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00610204

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด	เสียงขณะ ไม่มีการรบกวน	ผลต่าง ระดับเสียง	ตัวปรับค่า	ปรับค่าเสียงจากแหล่งกำเนิด		เสียงพื้นฐาน	ค่าระดับ การรบกวน
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:45 AM - 12:50 AM	57.7	51.2	6.5	1.0	-	59.7	42.5	17.2
12:50 AM - 12:55 AM	57.5	52.8	4.7	1.5	-	59.0	40.8	18.2
12:55 AM - 01:00 AM	58.1	48.9	9.2	0.5	-	60.6	38.1	22.5
01:00 AM - 01:05 AM	56.1	50.8	5.3	1.5	-	57.6	40.6	17.0
01:05 AM - 01:10 AM	57.3	51.1	6.2	1.5	-	58.8	42.3	16.5
01:10 AM - 01:15 AM	58.2	48.3	9.9	0.5	-	60.7	38.6	22.1
01:15 AM - 01:20 AM	58.2	48.7	9.5	0.5	-	60.7	41.7	19.0
01:20 AM - 01:25 AM	57.2	49.8	7.4	1.0	-	59.2	41.9	17.3
01:25 AM - 01:30 AM	58.6	50.1	8.5	0.5	-	61.1	40.5	20.6
01:30 AM - 01:35 AM	58.1	44.9	13.2	0.0	-	61.1	37.8	23.3
01:35 AM - 01:40 AM	58.8	48.0	10.8	0.5	-	61.3	40.4	20.9
01:40 AM - 01:45 AM	58.9	49.8	9.1	0.5	-	61.4	40.6	20.8
01:45 AM - 01:50 AM	59.0	50.9	8.1	0.5	-	61.5	42.6	18.9
01:50 AM - 01:55 AM	60.1	48.6	11.5	0.5	-	62.6	38.9	23.7
01:55 AM - 02:00 AM	60.0	49.4	10.6	0.5	-	62.5	40.9	21.6
02:00 AM - 02:05 AM	60.4	48.1	12.3	0.5	-	62.9	39.6	23.3
02:05 AM - 02:10 AM	60.8	50.3	10.5	0.5	-	63.3	41.4	21.9
02:10 AM - 02:15 AM	60.1	50.9	9.2	0.5	-	62.6	39.6	23.0
02:15 AM - 02:20 AM	59.9	48.9	11.0	0.5	-	62.4	39.8	22.6
02:20 AM - 02:25 AM	59.5	50.1	9.4	0.5	-	62.0	41.0	21.0
02:25 AM - 02:30 AM	60.0	47.4	12.6	0.0	-	63.0	39.3	23.7
02:30 AM - 02:35 AM	58.8	51.1	7.7	0.5	-	61.3	42.8	18.5
02:35 AM - 02:40 AM	60.0	50.7	9.3	0.5	-	62.5	41.1	21.4
02:40 AM - 02:45 AM	59.0	46.8	12.2	0.5	-	61.5	37.7	23.8
02:45 AM - 02:50 AM	59.6	50.7	8.9	0.5	-	62.1	41.0	21.1
02:50 AM - 02:55 AM	58.8	51.7	7.1	1.0	-	60.8	41.1	19.7
02:55 AM - 03:00 AM	60.5	50.3	10.2	0.5	-	63.0	41.2	21.8
03:00 AM - 03:05 AM	60.2	50.0	10.2	0.5	-	62.7	39.9	22.8
03:05 AM - 03:10 AM	60.5	49.5	11.0	0.5	-	63.0	40.7	22.3
03:10 AM - 03:15 AM	59.2	52.1	7.1	1.0	-	61.2	39.9	21.3
03:15 AM - 03:20 AM	58.7	50.3	8.4	0.5	-	61.2	42.1	19.1
03:20 AM - 03:25 AM	59.1	51.6	7.5	0.5	-	61.6	41.7	19.9
03:25 AM - 03:30 AM	60.0	49.9	10.1	0.5	-	62.5	39.9	22.6
03:30 AM - 03:35 AM	60.2	48.2	12.0	0.5	-	62.7	38.7	24.0
03:35 AM - 03:40 AM	60.0	50.8	9.2	0.5	-	62.5	41.3	21.2
03:40 AM - 03:45 AM	60.3	49.6	10.7	0.5	-	62.8	41.2	21.6
03:45 AM - 03:50 AM	59.3	50.6	8.7	0.5	-	61.8	41.0	20.8
03:50 AM - 03:55 AM	59.8	50.9	8.9	0.5	-	62.3	40.5	21.8
03:55 AM - 04:00 AM	61.3	52.1	9.2	0.5	-	63.8	42.0	21.8
04:00 AM - 04:05 AM	59.8	51.2	8.6	0.5	-	62.3	42.6	19.7

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142070  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536886-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142070-7  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929)  
Measurement Date Dec 26 - 27, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00610204

### ระดับเสียง (dB(A))

เวลา	(A) เสียงจากแหล่งกำเนิด	(B) เสียงขณะไม่มีการรบกวน	(A-B) ผลต่างระดับเสียง	(C) ตัวปรับค่า	(D) ปรับค่าเสียงจากแหล่งกำเนิด		(E) เสียงพื้นฐาน	(D-E) ค่าระดับการรบกวน
					(A-C) กลางวัน	(A-C)+3 กลางคืน		
04:05 AM - 04:10 AM	62.5	53.1	9.4	0.5	-	65.0	42.2	22.8
04:10 AM - 04:15 AM	60.0	51.9	8.1	0.5	-	62.5	41.1	21.4
04:15 AM - 04:20 AM	61.1	51.7	9.4	0.5	-	63.6	41.6	22.0
04:20 AM - 04:25 AM	59.6	50.1	9.5	0.5	-	62.1	40.6	21.5
04:25 AM - 04:30 AM	63.1	52.0	11.1	0.5	-	65.6	41.4	24.2
04:30 AM - 04:35 AM	59.8	49.5	10.3	0.5	-	62.3	40.5	21.8
04:35 AM - 04:40 AM	60.0	49.1	10.9	0.5	-	62.5	42.0	20.5
04:40 AM - 04:45 AM	61.6	52.2	9.4	0.5	-	64.1	43.2	20.9
04:45 AM - 04:50 AM	60.6	50.8	9.8	0.5	-	63.1	43.3	19.8
04:50 AM - 04:55 AM	61.0	52.1	8.9	0.5	-	63.5	43.5	20.0
04:55 AM - 05:00 AM	60.0	50.5	9.5	0.5	-	62.5	42.1	20.4
05:00 AM - 05:05 AM	60.4	51.9	8.5	0.5	-	62.9	44.5	18.4
05:05 AM - 05:10 AM	60.3	50.4	9.9	0.5	-	62.8	40.7	22.1
05:10 AM - 05:15 AM	60.2	52.5	7.7	0.5	-	62.7	42.9	19.8
05:15 AM - 05:20 AM	60.8	55.1	5.7	1.5	-	62.3	44.7	17.6
05:20 AM - 05:25 AM	60.3	54.1	6.2	1.5	-	61.8	46.6	15.2
05:25 AM - 05:30 AM	59.2	52.9	6.3	1.5	-	60.7	44.7	16.0
05:30 AM - 05:35 AM	58.5	53.7	4.8	1.5	-	60.0	47.4	12.6
05:35 AM - 05:40 AM	58.0	54.6	3.4	3.0	-	58.0	49.0	9.0
05:40 AM - 05:45 AM	58.9	52.6	6.3	1.5	-	60.4	46.3	14.1
05:45 AM - 05:50 AM	61.7	53.6	8.1	0.5	-	64.2	47.4	16.8
05:50 AM - 05:55 AM	59.7	54.5	5.2	1.5	-	61.2	47.9	13.3
05:55 AM - 06:00 AM	59.4	55.9	3.5	2.0	-	60.4	50.2	10.2
06:00 AM - 07:00 AM	59.9	57.3	2.6	3.0	56.9	-	50.0	6.9
07:00 AM - 08:00 AM	57.7	56.9	0.8	7.0	50.7	-	51.7	-1.0
08:00 AM - 09:00 AM	59.6	56.2	3.4	3.0	56.6	-	50.7	5.9
09:00 AM - 10:00 AM	60.3	55.8	4.5	1.5	58.8	-	50.3	8.5
10:00 AM - 11:00 AM	60.9	56.6	4.3	2.0	58.9	-	50.7	8.2
11:00 AM - 12:00 PM	60.7	55.9	4.8	1.5	59.2	-	51.2	8.0
12:00 PM - 01:00 PM	59.7	54.7	5.0	1.5	58.2	-	49.9	8.3
01:00 PM - 02:00 PM	60.2	54.1	6.1	1.5	58.7	-	49.3	9.4
02:00 PM - 03:00 PM	60.3	55.5	4.8	1.5	58.8	-	49.7	9.1

ค่ามาตรฐาน

≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

#### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 26-27 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142078-7 วันที่ตรวจวัด 03-04 กรกฎาคม 2565)

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



# Analysis / Test Report

## TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142071  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536891-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142071-1  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
Measurement Date Dec 20 - 21, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858523

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด		ผลต่างระดับเสียง	ตัวปรับค่า	ปรับค่าเสียงจากแหล่งกำเนิด		เสียงพื้นฐาน	ค่าระดับการรบกวน
	(A)	(B)			(A-C)	(A-C)+3		
04:00 PM - 05:00 PM	42.5	44.1	-1.6	7.0	35.5	-	40.2	-4.7
05:00 PM - 06:00 PM	45.2	46.9	-1.7	7.0	38.2	-	40.5	-2.3
06:00 PM - 07:00 PM	51.3	45.2	6.1	1.5	49.8	-	42.8	7.0
07:00 PM - 08:00 PM	55.4	43.7	11.7	0.5	54.9	-	39.6	15.3
08:00 PM - 09:00 PM	53.6	42.8	10.8	0.5	53.1	-	38.1	15.0
09:00 PM - 10:00 PM	49.6	44.6	5.0	1.5	48.1	-	37.7	10.4
10:00 PM - 10:05 PM	50.0	39.7	10.3	0.5	-	52.5	36.7	15.8
10:05 PM - 10:10 PM	56.9	37.8	19.1	0.0	-	59.9	35.7	24.2
10:10 PM - 10:15 PM	52.1	39.7	12.4	0.5	-	54.6	37.0	17.6
10:15 PM - 10:20 PM	50.9	39.4	11.5	0.5	-	53.4	36.8	16.6
10:20 PM - 10:25 PM	51.6	40.2	11.4	0.5	-	54.1	36.3	17.8
10:25 PM - 10:30 PM	51.7	38.4	13.3	0.0	-	54.7	35.6	19.1
10:30 PM - 10:35 PM	52.0	39.4	12.6	0.0	-	55.0	37.3	17.7
10:35 PM - 10:40 PM	52.2	40.6	11.6	0.5	-	54.7	37.8	16.9
10:40 PM - 10:45 PM	49.7	45.1	4.6	1.5	-	51.2	37.8	13.4
10:45 PM - 10:50 PM	48.8	42.6	6.2	1.5	-	50.3	37.4	12.9
10:50 PM - 10:55 PM	49.9	38.8	11.1	0.5	-	52.4	36.4	16.0
10:55 PM - 11:00 PM	50.1	45.1	5.0	1.5	-	51.6	36.7	14.9
11:00 PM - 11:05 PM	51.6	44.4	7.2	1.0	-	53.6	41.4	12.2
11:05 PM - 11:10 PM	52.5	42.6	9.9	0.5	-	55.0	39.2	15.8
11:10 PM - 11:15 PM	53.0	43.2	9.8	0.5	-	55.5	40.7	14.8
11:15 PM - 11:20 PM	52.9	41.5	11.4	0.5	-	55.4	38.4	17.0
11:20 PM - 11:25 PM	52.7	42.5	10.2	0.5	-	55.2	38.9	16.3
11:25 PM - 11:30 PM	52.3	43.7	8.6	0.5	-	54.8	40.6	14.2
11:30 PM - 11:35 PM	53.3	42.9	10.4	0.5	-	55.8	39.2	16.6
11:35 PM - 11:40 PM	53.0	41.6	11.4	0.5	-	55.5	38.1	17.4
11:40 PM - 11:45 PM	53.4	44.4	9.0	0.5	-	55.9	41.4	14.5
11:45 PM - 11:50 PM	54.5	41.8	12.7	0.0	-	57.5	38.1	19.4
11:50 PM - 11:55 PM	55.4	43.3	12.1	0.5	-	57.9	37.5	20.4
11:55 PM - 12:00 AM	55.0	39.6	15.4	0.0	-	58.0	35.2	22.8
12:00 AM - 12:05 AM	55.3	39.2	16.1	0.0	-	58.3	35.5	22.8
12:05 AM - 12:10 AM	54.7	41.2	13.5	0.0	-	57.7	35.5	22.2
12:10 AM - 12:15 AM	54.7	42.4	12.3	0.5	-	57.2	35.4	21.8
12:15 AM - 12:20 AM	55.7	42.0	13.7	0.0	-	58.7	37.1	21.6
12:20 AM - 12:25 AM	55.2	43.1	12.1	0.5	-	57.7	37.4	20.3
12:25 AM - 12:30 AM	55.7	45.7	10.0	0.5	-	58.2	36.9	21.3
12:30 AM - 12:35 AM	54.2	40.0	14.2	0.0	-	57.2	36.6	20.6
12:35 AM - 12:40 AM	66.4	46.3	20.1	0.0	-	69.4	37.5	31.9
12:40 AM - 12:45 AM	57.4	49.7	7.7	0.5	-	59.9	35.9	24.0
12:45 AM - 12:50 AM	53.5	46.7	6.8	1.0	-	55.5	37.0	18.5

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142071  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536891-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142071-1  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
Measurement Date Dec 20 - 21, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858523

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า ปรับ (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:50 AM - 12:55 AM	53.5	41.2	12.3	0.5	-	56.0	36.5	19.5
12:55 AM - 01:00 AM	54.0	40.9	13.1	0.0	-	57.0	36.2	20.8
01:00 AM - 01:05 AM	53.8	41.3	12.5	0.0	-	56.8	36.4	20.4
01:05 AM - 01:10 AM	54.2	39.7	14.5	0.0	-	57.2	36.2	21.0
01:10 AM - 01:15 AM	53.9	38.0	15.9	0.0	-	56.9	35.2	21.7
01:15 AM - 01:20 AM	53.4	45.1	8.3	0.5	-	55.9	35.1	20.8
01:20 AM - 01:25 AM	52.6	40.9	11.7	0.5	-	55.1	35.7	19.4
01:25 AM - 01:30 AM	52.7	42.6	10.1	0.5	-	55.2	35.5	19.7
01:30 AM - 01:35 AM	52.9	41.2	11.7	0.5	-	55.4	35.9	19.5
01:35 AM - 01:40 AM	53.0	42.4	10.6	0.5	-	55.5	35.7	19.8
01:40 AM - 01:45 AM	53.5	47.3	6.2	1.5	-	55.0	36.1	18.9
01:45 AM - 01:50 AM	53.1	44.8	8.3	0.5	-	55.6	36.9	18.7
01:50 AM - 01:55 AM	53.2	39.4	13.8	0.0	-	56.2	36.4	19.8
01:55 AM - 02:00 AM	53.5	40.9	12.6	0.0	-	56.5	37.1	19.4
02:00 AM - 02:05 AM	52.6	38.8	13.8	0.0	-	55.6	36.3	19.3
02:05 AM - 02:10 AM	52.4	38.7	13.7	0.0	-	55.4	35.8	19.6
02:10 AM - 02:15 AM	52.2	39.2	13.0	0.0	-	55.2	36.7	18.5
02:15 AM - 02:20 AM	52.4	39.2	13.2	0.0	-	55.4	36.2	19.2
02:20 AM - 02:25 AM	52.3	40.1	12.2	0.5	-	54.8	38.0	16.8
02:25 AM - 02:30 AM	52.1	42.5	9.6	0.5	-	54.6	37.7	16.9
02:30 AM - 02:35 AM	52.4	45.5	6.9	1.0	-	54.4	38.3	16.1
02:35 AM - 02:40 AM	54.2	41.0	13.2	0.0	-	57.2	38.3	18.9
02:40 AM - 02:45 AM	54.2	40.8	13.4	0.0	-	57.2	38.2	19.0
02:45 AM - 02:50 AM	55.0	41.5	13.5	0.0	-	58.0	38.4	19.6
02:50 AM - 02:55 AM	55.1	40.8	14.3	0.0	-	58.1	37.2	20.9
02:55 AM - 03:00 AM	56.0	41.4	14.6	0.0	-	59.0	37.6	21.4
03:00 AM - 03:05 AM	59.5	46.4	13.1	0.0	-	62.5	43.8	18.7
03:05 AM - 03:10 AM	54.8	52.3	2.5	3.0	-	54.8	44.6	10.2
03:10 AM - 03:15 AM	61.6	52.8	8.8	0.5	-	64.1	46.5	17.6
03:15 AM - 03:20 AM	54.3	47.4	6.9	1.0	-	56.3	45.1	11.2
03:20 AM - 03:25 AM	53.6	47.5	6.1	1.5	-	55.1	45.1	10.0
03:25 AM - 03:30 AM	53.0	47.3	5.7	1.5	-	54.5	45.2	9.3
03:30 AM - 03:35 AM	53.7	47.6	6.1	1.5	-	55.2	44.8	10.4
03:35 AM - 03:40 AM	53.6	47.6	6.0	1.5	-	55.1	44.5	10.6
03:40 AM - 03:45 AM	53.3	44.8	8.5	0.5	-	55.8	43.1	12.7
03:45 AM - 03:50 AM	54.1	46.4	7.7	0.5	-	56.6	43.6	13.0
03:50 AM - 03:55 AM	53.8	48.1	5.7	1.5	-	55.3	44.0	11.3
03:55 AM - 04:00 AM	53.7	47.8	5.9	1.5	-	55.2	44.7	10.5
04:00 AM - 04:05 AM	54.2	47.8	6.4	1.5	-	55.7	44.2	11.5
04:05 AM - 04:10 AM	54.8	45.9	8.9	0.5	-	57.3	43.2	14.1

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142071  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536891-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142071-1  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
Measurement Date Dec 20 - 21, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858523

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับการรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:10 AM - 04:15 AM	56.2	44.9	11.3	0.5	-	58.7	42.9	15.8
04:15 AM - 04:20 AM	55.6	43.6	12.0	0.5	-	58.1	42.6	15.5
04:20 AM - 04:25 AM	54.9	43.3	11.6	0.5	-	57.4	42.0	15.4
04:25 AM - 04:30 AM	54.4	43.9	10.5	0.5	-	56.9	42.1	14.8
04:30 AM - 04:35 AM	54.3	43.5	10.8	0.5	-	56.8	42.0	14.8
04:35 AM - 04:40 AM	54.6	44.1	10.5	0.5	-	57.1	42.5	14.6
04:40 AM - 04:45 AM	54.5	44.4	10.1	0.5	-	57.0	42.2	14.8
04:45 AM - 04:50 AM	54.9	43.3	11.6	0.5	-	57.4	40.6	16.8
04:50 AM - 04:55 AM	53.4	41.6	11.8	0.5	-	55.9	40.3	15.6
04:55 AM - 05:00 AM	52.6	42.3	10.3	0.5	-	55.1	40.7	14.4
05:00 AM - 05:05 AM	50.8	42.5	8.3	0.5	-	53.3	41.1	12.2
05:05 AM - 05:10 AM	50.9	43.0	7.9	0.5	-	53.4	41.1	12.3
05:10 AM - 05:15 AM	51.2	42.6	8.6	0.5	-	53.7	40.8	12.9
05:15 AM - 05:20 AM	51.9	48.1	3.8	2.0	-	52.9	41.8	11.1
05:20 AM - 05:25 AM	51.7	45.0	6.7	1.0	-	53.7	41.6	12.1
05:25 AM - 05:30 AM	52.2	43.9	8.3	0.5	-	54.7	41.4	13.3
05:30 AM - 05:35 AM	51.9	43.4	8.5	0.5	-	54.4	41.6	12.8
05:35 AM - 05:40 AM	52.6	48.1	4.5	1.5	-	54.1	42.3	11.8
05:40 AM - 05:45 AM	52.9	49.2	3.7	2.0	-	53.9	43.5	10.4
05:45 AM - 05:50 AM	51.5	48.5	3.0	3.0	-	51.5	44.3	7.2
05:50 AM - 05:55 AM	51.4	49.1	2.3	4.5	-	49.9	44.8	5.1
05:55 AM - 06:00 AM	51.1	45.9	5.2	1.5	-	52.6	41.7	10.9
06:00 AM - 07:00 AM	54.3	46.8	7.5	0.5	53.8	-	40.8	13.0
07:00 AM - 08:00 AM	48.5	43.1	5.4	1.5	47.0	-	37.2	9.8
08:00 AM - 09:00 AM	47.1	52.1	-5.0	7.0	40.1	-	50.9	-10.8
09:00 AM - 10:00 AM	49.2	54.0	-4.8	7.0	42.2	-	52.9	-10.7
10:00 AM - 11:00 AM	48.4	54.5	-6.1	7.0	41.4	-	53.3	-11.9
11:00 AM - 12:00 PM	45.7	54.0	-8.3	7.0	38.7	-	52.7	-14.0
12:00 PM - 01:00 PM	44.7	54.0	-9.3	7.0	37.7	-	52.8	-15.1
01:00 PM - 02:00 PM	50.1	53.2	-3.1	7.0	43.1	-	51.9	-8.8
02:00 PM - 03:00 PM	45.0	53.2	-8.2	7.0	38.0	-	51.7	-13.7
03:00 PM - 04:00 PM	44.5	49.6	-5.1	7.0	37.5	-	47.3	-9.8
ค่ามาตรฐาน	≤ 10							

Reference Method : Based on ISO 1996-1 and ISO 1996-2

#### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
- ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
- ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561  
ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 20-21 ธันวาคม 2565  
ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142082-1 วันที่ตรวจวัด 27-28 มิถุนายน 2565)

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Approved by

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142071  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536892-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142071-2  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
Measurement Date Dec 21 - 22, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858523

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด <sup>(A)</sup>	เสียงขณะ ไม่มีการรบกวน <sup>(B)</sup>	ผลต่าง ระดับเสียง <sup>(A-B)</sup>	ตัวปรับค่า <sup>(C)</sup>	ปรับค่าเสียงจากแหล่งกำเนิด <sup>(B)</sup>		เสียงพื้นฐาน <sup>(E)</sup>	ค่าระดับ การรบกวน <sup>(D-E)</sup>
					กลางวัน <sup>(A-C)</sup>	กลางคืน <sup>(A-C)+3</sup>		
04:00 PM - 05:00 PM	43.3	43.6	-0.3	7.0	36.3	-	38.8	-2.5
05:00 PM - 06:00 PM	46.4	42.7	3.7	2.0	44.4	-	39.0	5.4
06:00 PM - 07:00 PM	51.0	45.7	5.3	1.5	49.5	-	42.4	7.1
07:00 PM - 08:00 PM	54.9	47.5	7.4	1.0	53.9	-	40.3	13.6
08:00 PM - 09:00 PM	58.8	45.5	13.3	0.0	58.8	-	39.5	19.3
09:00 PM - 10:00 PM	53.6	44.7	8.9	0.5	53.1	-	38.7	14.4
10:00 PM - 10:05 PM	50.7	44.4	6.3	1.5	-	52.2	38.7	13.5
10:05 PM - 10:10 PM	55.1	42.9	12.2	0.5	-	57.6	36.8	20.8
10:10 PM - 10:15 PM	60.5	38.4	22.1	0.0	-	63.5	36.1	27.4
10:15 PM - 10:20 PM	54.3	42.9	11.4	0.5	-	56.8	37.1	19.7
10:20 PM - 10:25 PM	50.3	42.2	8.1	0.5	-	52.8	37.6	15.2
10:25 PM - 10:30 PM	50.4	43.3	7.1	1.0	-	52.4	37.7	14.7
10:30 PM - 10:35 PM	50.2	41.3	8.9	0.5	-	52.7	37.3	15.4
10:35 PM - 10:40 PM	50.6	43.1	7.5	0.5	-	53.1	37.6	15.5
10:40 PM - 10:45 PM	50.4	48.9	1.5	4.5	-	48.9	37.4	11.5
10:45 PM - 10:50 PM	50.7	39.3	11.4	0.5	-	53.2	36.9	16.3
10:50 PM - 10:55 PM	50.0	41.0	9.0	0.5	-	52.5	37.6	14.9
10:55 PM - 11:00 PM	49.8	38.6	11.2	0.5	-	52.3	36.2	16.1
11:00 PM - 11:05 PM	49.7	42.0	7.7	0.5	-	52.2	36.7	15.5
11:05 PM - 11:10 PM	50.5	39.6	10.9	0.5	-	53.0	36.5	16.5
11:10 PM - 11:15 PM	50.4	41.0	9.4	0.5	-	52.9	36.4	16.5
11:15 PM - 11:20 PM	49.9	39.6	10.3	0.5	-	52.4	36.0	16.4
11:20 PM - 11:25 PM	49.9	38.7	11.2	0.5	-	52.4	35.9	16.5
11:25 PM - 11:30 PM	49.8	38.7	11.1	0.5	-	52.3	35.9	16.4
11:30 PM - 11:35 PM	49.9	42.2	7.7	0.5	-	52.4	37.2	15.2
11:35 PM - 11:40 PM	50.1	41.3	8.8	0.5	-	52.6	37.2	15.4
11:40 PM - 11:45 PM	50.1	40.6	9.5	0.5	-	52.6	37.2	15.4
11:45 PM - 11:50 PM	50.4	41.2	9.2	0.5	-	52.9	36.7	16.2
11:50 PM - 11:55 PM	50.7	42.9	7.8	0.5	-	53.2	36.2	17.0
11:55 PM - 12:00 AM	50.1	37.9	12.2	0.5	-	52.6	35.4	17.2
12:00 AM - 12:05 AM	49.9	41.5	8.4	0.5	-	52.4	37.3	15.1
12:05 AM - 12:10 AM	50.3	41.8	8.5	0.5	-	52.8	38.6	14.2
12:10 AM - 12:15 AM	50.3	42.3	8.0	0.5	-	52.8	37.5	15.3
12:15 AM - 12:20 AM	49.5	42.9	6.6	1.0	-	51.5	38.3	13.2
12:20 AM - 12:25 AM	49.7	47.5	2.2	4.5	-	48.2	39.0	9.2
12:25 AM - 12:30 AM	50.4	39.7	10.7	0.5	-	52.9	37.6	15.3
12:30 AM - 12:35 AM	50.7	43.5	7.2	1.0	-	52.7	36.7	16.0
12:35 AM - 12:40 AM	51.1	41.4	9.7	0.5	-	53.6	38.3	15.3
12:40 AM - 12:45 AM	60.1	39.2	20.9	0.0	-	63.1	36.3	26.8
12:45 AM - 12:50 AM	50.8	41.8	9.0	0.5	-	53.3	36.7	16.6

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142071  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536892-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142071-2  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
Measurement Date Dec 21 - 22, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858523

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:50 AM - 12:55 AM	50.0	39.6	10.4	0.5	-	52.5	38.0	14.5
12:55 AM - 01:00 AM	49.8	39.1	10.7	0.5	-	52.3	37.4	14.9
01:00 AM - 01:05 AM	51.2	40.1	11.1	0.5	-	53.7	38.1	15.6
01:05 AM - 01:10 AM	51.2	38.2	13.0	0.0	-	54.2	36.2	18.0
01:10 AM - 01:15 AM	51.0	39.5	11.5	0.5	-	53.5	35.6	17.9
01:15 AM - 01:20 AM	50.1	44.0	6.1	1.5	-	51.6	36.7	14.9
01:20 AM - 01:25 AM	49.7	40.6	9.1	0.5	-	52.2	38.2	14.0
01:25 AM - 01:30 AM	48.9	40.5	8.4	0.5	-	51.4	37.7	13.7
01:30 AM - 01:35 AM	49.7	40.9	8.8	0.5	-	52.2	37.9	14.3
01:35 AM - 01:40 AM	48.7	40.5	8.2	0.5	-	51.2	37.5	13.7
01:40 AM - 01:45 AM	48.3	39.0	9.3	0.5	-	50.8	36.5	14.3
01:45 AM - 01:50 AM	47.6	47.2	0.4	7.0	-	43.6	37.0	6.6
01:50 AM - 01:55 AM	47.7	38.3	9.4	0.5	-	50.2	35.2	15.0
01:55 AM - 02:00 AM	49.8	41.5	8.3	0.5	-	52.3	35.7	16.6
02:00 AM - 02:05 AM	50.3	41.4	8.9	0.5	-	52.8	37.7	15.1
02:05 AM - 02:10 AM	49.2	39.5	9.7	0.5	-	51.7	35.9	15.8
02:10 AM - 02:15 AM	62.3	39.9	22.4	0.0	-	65.3	36.0	29.3
02:15 AM - 02:20 AM	56.5	42.4	14.1	0.0	-	59.5	36.4	23.1
02:20 AM - 02:25 AM	50.4	42.5	7.9	0.5	-	52.9	35.4	17.5
02:25 AM - 02:30 AM	51.1	47.6	3.5	2.0	-	52.1	36.8	15.3
02:30 AM - 02:35 AM	49.6	41.5	8.1	0.5	-	52.1	38.2	13.9
02:35 AM - 02:40 AM	50.5	49.2	1.3	7.0	-	46.5	39.5	7.0
02:40 AM - 02:45 AM	50.1	44.8	5.3	1.5	-	51.6	37.9	13.7
02:45 AM - 02:50 AM	52.2	48.2	4.0	2.0	-	53.2	37.9	15.3
02:50 AM - 02:55 AM	54.5	40.8	13.7	0.0	-	57.5	38.7	18.8
02:55 AM - 03:00 AM	50.6	41.2	9.4	0.5	-	53.1	39.3	13.8
03:00 AM - 03:05 AM	52.2	40.9	11.3	0.5	-	54.7	38.5	16.2
03:05 AM - 03:10 AM	50.7	42.0	8.7	0.5	-	53.2	38.7	14.5
03:10 AM - 03:15 AM	56.6	39.8	16.8	0.0	-	59.6	37.3	22.3
03:15 AM - 03:20 AM	55.9	41.6	14.3	0.0	-	58.9	38.5	20.4
03:20 AM - 03:25 AM	52.5	39.8	12.7	0.0	-	55.5	37.1	18.4
03:25 AM - 03:30 AM	53.1	38.9	14.2	0.0	-	56.1	37.2	18.9
03:30 AM - 03:35 AM	52.6	40.1	12.5	0.0	-	55.6	37.9	17.7
03:35 AM - 03:40 AM	50.6	38.7	11.9	0.5	-	53.1	36.1	17.0
03:40 AM - 03:45 AM	51.2	38.6	12.6	0.0	-	54.2	36.8	17.4
03:45 AM - 03:50 AM	50.1	38.8	11.3	0.5	-	52.6	36.9	15.7
03:50 AM - 03:55 AM	50.4	40.0	10.4	0.5	-	52.9	37.3	15.6
03:55 AM - 04:00 AM	50.9	40.9	10.0	0.5	-	53.4	37.9	15.5
04:00 AM - 04:05 AM	50.0	47.0	3.0	3.0	-	50.0	44.8	5.2
04:05 AM - 04:10 AM	50.5	46.2	4.3	2.0	-	51.5	43.5	8.0

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142071  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536892-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142071-2  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
Measurement Date Dec 21 - 22, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858523

### ระดับเสียง (dB(A))

เวลา	(A) เสียงจากแหล่งกำเนิด	(B) เสียงขณะไม่มีการรบกวน	(A-B) ผลต่างระดับเสียง	(C) ตัวปรับค่า	(D) ปรับค่าเสียงจากแหล่งกำเนิด		(E) เสียงพื้นฐาน	(D-E) ค่าระดับการรบกวน
					(A-C) กลางวัน	(A-C)+3 กลางคืน		
04:10 AM - 04:15 AM	52.6	44.6	8.0	0.5	-	55.1	42.4	12.7
04:15 AM - 04:20 AM	54.0	46.0	8.0	0.5	-	56.5	42.8	13.7
04:20 AM - 04:25 AM	44.8	44.2	0.6	7.0	-	40.8	42.3	-1.5
04:25 AM - 04:30 AM	44.9	45.3	-0.4	7.0	-	40.9	42.7	-1.8
04:30 AM - 04:35 AM	45.3	44.4	0.9	7.0	-	41.3	42.5	-1.2
04:35 AM - 04:40 AM	46.4	45.0	1.4	7.0	-	42.4	42.6	-0.2
04:40 AM - 04:45 AM	46.1	43.9	2.2	4.5	-	44.6	41.8	2.8
04:45 AM - 04:50 AM	49.3	42.6	6.7	1.0	-	51.3	41.5	9.8
04:50 AM - 04:55 AM	47.9	43.1	4.8	1.5	-	49.4	41.9	7.5
04:55 AM - 05:00 AM	46.1	43.3	2.8	3.0	-	46.1	41.9	4.2
05:00 AM - 05:05 AM	44.9	43.5	1.4	7.0	-	40.9	41.7	-0.8
05:05 AM - 05:10 AM	45.4	44.3	1.1	7.0	-	41.4	41.6	-0.2
05:10 AM - 05:15 AM	46.4	45.2	1.2	7.0	-	42.4	42.0	0.4
05:15 AM - 05:20 AM	45.3	46.5	-1.2	7.0	-	41.3	42.0	-0.7
05:20 AM - 05:25 AM	47.4	48.7	-1.3	7.0	-	43.4	42.7	0.7
05:25 AM - 05:30 AM	46.2	46.9	-0.7	7.0	-	42.2	43.2	-1.0
05:30 AM - 05:35 AM	46.9	47.7	-0.8	7.0	-	42.9	44.3	-1.4
05:35 AM - 05:40 AM	46.4	50.3	-3.9	7.0	-	42.4	45.3	-2.9
05:40 AM - 05:45 AM	45.3	45.9	-0.6	7.0	-	41.3	43.6	-2.3
05:45 AM - 05:50 AM	48.0	46.8	1.2	7.0	-	44.0	44.1	-0.1
05:50 AM - 05:55 AM	45.1	47.9	-2.8	7.0	-	41.1	44.4	-3.3
05:55 AM - 06:00 AM	46.7	46.2	0.5	7.0	-	42.7	42.5	0.2
06:00 AM - 07:00 AM	51.4	46.0	5.4	1.5	49.9	-	42.9	7.0
07:00 AM - 08:00 AM	48.3	55.2	-6.9	7.0	41.3	-	53.8	-12.5
08:00 AM - 09:00 AM	46.2	57.4	-11.2	7.0	39.2	-	55.7	-16.5
09:00 AM - 10:00 AM	48.5	55.4	-6.9	7.0	41.5	-	54.0	-12.5
10:00 AM - 11:00 AM	46.5	55.2	-8.7	7.0	39.5	-	53.6	-14.1
11:00 AM - 12:00 PM	46.5	55.1	-8.6	7.0	39.5	-	53.6	-14.1
12:00 PM - 01:00 PM	44.3	55.1	-10.8	7.0	37.3	-	53.4	-16.1
01:00 PM - 02:00 PM	41.6	52.9	-11.3	7.0	34.6	-	51.1	-16.5
02:00 PM - 03:00 PM	41.3	48.9	-7.6	7.0	34.3	-	46.8	-12.5
03:00 PM - 04:00 PM	40.6	47.4	-6.8	7.0	33.6	-	45.8	-12.2

ค่ามาตรฐาน

≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

#### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 21-22 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142082-2 วันที่ตรวจวัด 28-29 มิถุนายน 2565)

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142071  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536893-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142071-3  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
Measurement Date Dec 22 - 23, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858523

#### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด <sup>(A)</sup>	เสียงขณะ ไม่มีการรบกวน <sup>(B)</sup>	ผลต่าง ระดับเสียง <sup>(A-B)</sup>	ตัวปรับค่า <sup>(C)</sup>	ปรับค่าเสียงจากแหล่งกำเนิด <sup>(B)</sup>		เสียงพื้นฐาน <sup>(E)</sup>	ค่าระดับ การรบกวน <sup>(D-E)</sup>
					กลางวัน <sup>(A-C)</sup>	กลางคืน <sup>(A-C)+3</sup>		
04:00 PM - 05:00 PM	40.3	42.2	-1.9	7.0	33.3	-	39.6	-6.3
05:00 PM - 06:00 PM	46.0	41.1	4.9	1.5	44.5	-	36.1	8.4
06:00 PM - 07:00 PM	50.3	42.0	8.3	0.5	49.8	-	39.1	10.7
07:00 PM - 08:00 PM	54.1	47.6	6.5	1.0	53.1	-	39.5	13.6
08:00 PM - 09:00 PM	53.1	40.4	12.7	0.0	53.1	-	35.4	17.7
09:00 PM - 10:00 PM	51.7	38.3	13.4	0.0	51.7	-	33.7	18.0
10:00 PM - 10:05 PM	53.2	40.2	13.0	0.0	-	56.2	34.6	21.6
10:05 PM - 10:10 PM	55.1	37.4	17.7	0.0	-	58.1	33.7	24.4
10:10 PM - 10:15 PM	51.1	35.9	15.2	0.0	-	54.1	33.0	21.1
10:15 PM - 10:20 PM	50.9	40.5	10.4	0.5	-	53.4	33.8	19.6
10:20 PM - 10:25 PM	50.7	38.4	12.3	0.5	-	53.2	33.9	19.3
10:25 PM - 10:30 PM	50.5	36.7	13.8	0.0	-	53.5	33.7	19.8
10:30 PM - 10:35 PM	51.1	38.8	12.3	0.5	-	53.6	34.4	19.2
10:35 PM - 10:40 PM	51.1	36.7	14.4	0.0	-	54.1	33.4	20.7
10:40 PM - 10:45 PM	52.3	40.1	12.2	0.5	-	54.8	33.2	21.6
10:45 PM - 10:50 PM	51.4	39.8	11.6	0.5	-	53.9	34.2	19.7
10:50 PM - 10:55 PM	51.8	39.6	12.2	0.5	-	54.3	33.9	20.4
10:55 PM - 11:00 PM	51.2	39.1	12.1	0.5	-	53.7	33.8	19.9
11:00 PM - 11:05 PM	51.5	39.9	11.6	0.5	-	54.0	35.4	18.6
11:05 PM - 11:10 PM	51.0	38.8	12.2	0.5	-	53.5	35.5	18.0
11:10 PM - 11:15 PM	51.6	40.6	11.0	0.5	-	54.1	35.9	18.2
11:15 PM - 11:20 PM	50.9	41.6	9.3	0.5	-	53.4	34.6	18.8
11:20 PM - 11:25 PM	56.5	39.2	17.3	0.0	-	59.5	33.4	26.1
11:25 PM - 11:30 PM	53.7	40.1	13.6	0.0	-	56.7	32.6	24.1
11:30 PM - 11:35 PM	54.4	41.1	13.3	0.0	-	57.4	33.3	24.1
11:35 PM - 11:40 PM	52.6	43.7	8.9	0.5	-	55.1	34.5	20.6
11:40 PM - 11:45 PM	52.5	43.2	9.3	0.5	-	55.0	34.4	20.6
11:45 PM - 11:50 PM	56.4	42.8	13.6	0.0	-	59.4	36.5	22.9
11:50 PM - 11:55 PM	51.0	45.5	5.5	1.5	-	52.5	35.5	17.0
11:55 PM - 12:00 AM	51.7	41.1	10.6	0.5	-	54.2	33.6	20.6
12:00 AM - 12:05 AM	51.6	38.2	13.4	0.0	-	54.6	34.4	20.2
12:05 AM - 12:10 AM	51.8	35.2	16.6	0.0	-	54.8	33.9	20.9
12:10 AM - 12:15 AM	52.8	36.8	16.0	0.0	-	55.8	33.4	22.4
12:15 AM - 12:20 AM	52.5	38.5	14.0	0.0	-	55.5	34.6	20.9
12:20 AM - 12:25 AM	51.7	38.2	13.5	0.0	-	54.7	35.2	19.5
12:25 AM - 12:30 AM	50.5	37.8	12.7	0.0	-	53.5	34.6	18.9
12:30 AM - 12:35 AM	51.5	36.1	15.4	0.0	-	54.5	33.1	21.4
12:35 AM - 12:40 AM	51.7	39.7	12.0	0.5	-	54.2	33.6	20.6
12:40 AM - 12:45 AM	58.8	38.5	20.3	0.0	-	61.8	32.5	29.3
12:45 AM - 12:50 AM	51.7	35.5	16.2	0.0	-	54.7	32.0	22.7

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142071  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536893-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142071-3  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
Measurement Date Dec 22 - 23, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858523

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:50 AM - 12:55 AM	51.7	35.7	16.0	0.0	-	54.7	33.5	21.2
12:55 AM - 01:00 AM	50.6	42.3	8.3	0.5	-	53.1	34.1	19.0
01:00 AM - 01:05 AM	50.8	37.2	13.6	0.0	-	53.8	34.0	19.8
01:05 AM - 01:10 AM	51.8	36.8	15.0	0.0	-	54.8	34.3	20.5
01:10 AM - 01:15 AM	52.0	46.8	5.2	1.5	-	53.5	33.7	19.8
01:15 AM - 01:20 AM	58.9	35.0	23.9	0.0	-	61.9	32.5	29.4
01:20 AM - 01:25 AM	53.3	43.7	9.6	0.5	-	55.8	33.6	22.2
01:25 AM - 01:30 AM	50.5	40.4	10.1	0.5	-	53.0	33.1	19.9
01:30 AM - 01:35 AM	58.9	36.8	22.1	0.0	-	61.9	35.2	26.7
01:35 AM - 01:40 AM	51.0	42.7	8.3	0.5	-	53.5	34.7	18.8
01:40 AM - 01:45 AM	51.1	40.2	10.9	0.5	-	53.6	32.8	20.8
01:45 AM - 01:50 AM	51.0	41.4	9.6	0.5	-	53.5	32.8	20.7
01:50 AM - 01:55 AM	50.8	39.4	11.4	0.5	-	53.3	36.5	16.8
01:55 AM - 02:00 AM	49.9	39.2	10.7	0.5	-	52.4	36.0	16.4
02:00 AM - 02:05 AM	49.8	38.9	10.9	0.5	-	52.3	36.2	16.1
02:05 AM - 02:10 AM	50.3	39.3	11.0	0.5	-	52.8	35.4	17.4
02:10 AM - 02:15 AM	50.5	42.7	7.8	0.5	-	53.0	35.2	17.8
02:15 AM - 02:20 AM	50.6	37.8	12.8	0.0	-	53.6	33.7	19.9
02:20 AM - 02:25 AM	50.9	38.3	12.6	0.0	-	53.9	33.3	20.6
02:25 AM - 02:30 AM	50.1	40.0	10.1	0.5	-	52.6	33.1	19.5
02:30 AM - 02:35 AM	50.3	40.9	9.4	0.5	-	52.8	34.3	18.5
02:35 AM - 02:40 AM	49.4	37.8	11.6	0.5	-	51.9	34.6	17.3
02:40 AM - 02:45 AM	49.9	38.8	11.1	0.5	-	52.4	33.8	18.6
02:45 AM - 02:50 AM	49.0	40.3	8.7	0.5	-	51.5	34.8	16.7
02:50 AM - 02:55 AM	49.8	41.9	7.9	0.5	-	52.3	35.2	17.1
02:55 AM - 03:00 AM	48.3	42.0	6.3	1.5	-	49.8	36.6	13.2
03:00 AM - 03:05 AM	48.4	38.8	9.6	0.5	-	50.9	36.3	14.6
03:05 AM - 03:10 AM	47.9	43.1	4.8	1.5	-	49.4	36.5	12.9
03:10 AM - 03:15 AM	49.0	43.0	6.0	1.5	-	50.5	34.5	16.0
03:15 AM - 03:20 AM	48.7	42.0	6.7	1.0	-	50.7	37.6	13.1
03:20 AM - 03:25 AM	50.3	39.5	10.8	0.5	-	52.8	35.7	17.1
03:25 AM - 03:30 AM	51.5	44.1	7.4	1.0	-	53.5	35.3	18.2
03:30 AM - 03:35 AM	50.7	37.4	13.3	0.0	-	53.7	34.7	19.0
03:35 AM - 03:40 AM	52.0	35.6	16.4	0.0	-	55.0	33.2	21.8
03:40 AM - 03:45 AM	53.3	36.5	16.8	0.0	-	56.3	33.4	22.9
03:45 AM - 03:50 AM	51.7	37.0	14.7	0.0	-	54.7	33.4	21.3
03:50 AM - 03:55 AM	51.2	36.7	14.5	0.0	-	54.2	33.7	20.5
03:55 AM - 04:00 AM	49.4	37.9	11.5	0.5	-	51.9	36.4	15.5
04:00 AM - 04:05 AM	49.1	39.7	9.4	0.5	-	51.6	35.4	16.2
04:05 AM - 04:10 AM	47.1	41.8	5.3	1.5	-	48.6	37.7	10.9

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142071  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536893-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142071-3  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
Measurement Date Dec 22 - 23, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858523

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B) (C)	ตัวปรับค่า (D)	ปรับค่าเสียงจากแหล่งกำเนิด (E)		เสียงพื้นฐาน (F)	ค่าระดับการรบกวน (G-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:10 AM - 04:15 AM	47.4	41.2	6.2	1.5	-	48.9	36.3	12.6
04:15 AM - 04:20 AM	48.4	36.2	12.2	0.5	-	50.9	33.9	17.0
04:20 AM - 04:25 AM	48.2	36.7	11.5	0.5	-	50.7	33.1	17.6
04:25 AM - 04:30 AM	48.9	43.4	5.5	1.5	-	50.4	32.3	18.1
04:30 AM - 04:35 AM	48.1	37.9	10.2	0.5	-	50.6	33.4	17.2
04:35 AM - 04:40 AM	47.5	34.3	13.2	0.0	-	50.5	32.2	18.3
04:40 AM - 04:45 AM	47.6	36.4	11.2	0.5	-	50.1	34.6	15.5
04:45 AM - 04:50 AM	46.9	42.5	4.4	2.0	-	47.9	35.7	12.2
04:50 AM - 04:55 AM	47.1	38.6	8.5	0.5	-	49.6	35.4	14.2
04:55 AM - 05:00 AM	46.6	37.3	9.3	0.5	-	49.1	35.4	13.7
05:00 AM - 05:05 AM	47.1	43.7	3.4	3.0	-	47.1	42.7	4.4
05:05 AM - 05:10 AM	46.9	43.3	3.6	2.0	-	47.9	42.4	5.5
05:10 AM - 05:15 AM	47.1	43.1	4.0	2.0	-	48.1	41.7	6.4
05:15 AM - 05:20 AM	47.8	44.1	3.7	2.0	-	48.8	42.4	6.4
05:20 AM - 05:25 AM	46.8	43.9	2.9	3.0	-	46.8	41.8	5.0
05:25 AM - 05:30 AM	47.4	46.7	0.7	7.0	-	43.4	41.5	1.9
05:30 AM - 05:35 AM	47.7	45.7	2.0	4.5	-	46.2	41.8	4.4
05:35 AM - 05:40 AM	47.8	48.7	-0.9	7.0	-	43.8	43.3	0.5
05:40 AM - 05:45 AM	48.5	46.6	1.9	4.5	-	47.0	42.9	4.1
05:45 AM - 05:50 AM	48.6	53.7	-5.1	7.0	-	44.6	43.1	1.5
05:50 AM - 05:55 AM	47.0	44.9	2.1	4.5	-	45.5	42.6	2.9
05:55 AM - 06:00 AM	58.4	45.6	12.8	0.0	-	61.4	42.2	19.2
06:00 AM - 07:00 AM	47.1	45.2	1.9	4.5	42.6	-	39.7	2.9
07:00 AM - 08:00 AM	46.4	54.0	-7.6	7.0	39.4	-	52.8	-13.4
08:00 AM - 09:00 AM	46.3	56.6	-10.3	7.0	39.3	-	53.8	-14.5
09:00 AM - 10:00 AM	47.9	56.4	-8.5	7.0	40.9	-	53.5	-12.6
10:00 AM - 11:00 AM	43.6	52.4	-8.8	7.0	36.6	-	50.0	-13.4
11:00 AM - 12:00 PM	44.2	51.9	-7.7	7.0	37.2	-	50.5	-13.3
12:00 PM - 01:00 PM	45.6	54.5	-8.9	7.0	38.6	-	51.5	-12.9
01:00 PM - 02:00 PM	41.5	54.0	-12.5	7.0	34.5	-	51.0	-16.5
02:00 PM - 03:00 PM	44.9	48.0	-3.1	7.0	37.9	-	45.7	-7.8
03:00 PM - 04:00 PM	45.7	47.0	-1.3	7.0	38.7	-	43.8	-5.1
ค่ามาตรฐาน								≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

#### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 22-23 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142082-3 วันที่ตรวจวัด 29-30 มิถุนายน 2565)

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

Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142071  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536894-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142071-4  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
Measurement Date Dec 23 - 24, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858523

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด <sup>(A)</sup>	เสียงขณะ ไม่มีการรบกวน <sup>(B)</sup>	ผลต่าง ระดับเสียง <sup>(A-B)</sup>	ตัวปรับค่า <sup>(C)</sup>	ปรับค่าเสียงจากแหล่งกำเนิด <sup>(B)</sup>		เสียงพื้นฐาน <sup>(E)</sup>	ค่าระดับ การรบกวน <sup>(D-E)</sup>
					กลางวัน <sup>(A-C)</sup>	กลางคืน <sup>(A-C)+3</sup>		
04:00 PM - 05:00 PM	48.1	51.1	-3.0	7.0	41.1	-	49.2	-8.1
05:00 PM - 06:00 PM	48.4	52.3	-3.9	7.0	41.4	-	48.9	-7.5
06:00 PM - 07:00 PM	52.6	51.9	0.7	7.0	45.6	-	49.6	-4.0
07:00 PM - 08:00 PM	51.6	53.6	-2.0	7.0	44.6	-	51.5	-6.9
08:00 PM - 09:00 PM	52.3	53.1	-0.8	7.0	45.3	-	51.9	-6.6
09:00 PM - 10:00 PM	52.5	47.5	5.0	1.5	51.0	-	44.2	6.8
10:00 PM - 10:05 PM	54.0	44.2	9.8	0.5	-	56.5	42.1	14.4
10:05 PM - 10:10 PM	53.8	43.2	10.6	0.5	-	56.3	41.6	14.7
10:10 PM - 10:15 PM	53.9	43.2	10.7	0.5	-	56.4	40.7	15.7
10:15 PM - 10:20 PM	52.3	44.4	7.9	0.5	-	54.8	41.7	13.1
10:20 PM - 10:25 PM	51.9	44.2	7.7	0.5	-	54.4	41.1	13.3
10:25 PM - 10:30 PM	51.8	45.5	6.3	1.5	-	53.3	41.4	11.9
10:30 PM - 10:35 PM	52.0	44.3	7.7	0.5	-	54.5	42.5	12.0
10:35 PM - 10:40 PM	52.6	47.6	5.0	1.5	-	54.1	42.8	11.3
10:40 PM - 10:45 PM	53.3	46.7	6.6	1.0	-	55.3	42.8	12.5
10:45 PM - 10:50 PM	53.2	44.2	9.0	0.5	-	55.7	41.3	14.4
10:50 PM - 10:55 PM	52.1	44.0	8.1	0.5	-	54.6	41.0	13.6
10:55 PM - 11:00 PM	52.1	51.4	0.7	7.0	-	48.1	41.4	6.7
11:00 PM - 11:05 PM	52.5	42.7	9.8	0.5	-	55.0	40.9	14.1
11:05 PM - 11:10 PM	52.1	45.3	6.8	1.0	-	54.1	40.7	13.4
11:10 PM - 11:15 PM	50.4	46.9	3.5	2.0	-	51.4	41.1	10.3
11:15 PM - 11:20 PM	51.1	51.0	0.1	7.0	-	47.1	40.1	7.0
11:20 PM - 11:25 PM	51.0	42.4	8.6	0.5	-	53.5	40.5	13.0
11:25 PM - 11:30 PM	51.1	51.0	0.1	7.0	-	47.1	40.7	6.4
11:30 PM - 11:35 PM	51.3	42.3	9.0	0.5	-	53.8	40.2	13.6
11:35 PM - 11:40 PM	51.6	42.9	8.7	0.5	-	54.1	40.3	13.8
11:40 PM - 11:45 PM	51.7	43.2	8.5	0.5	-	54.2	40.0	14.2
11:45 PM - 11:50 PM	51.6	44.3	7.3	1.0	-	53.6	41.0	12.6
11:50 PM - 11:55 PM	51.6	46.1	5.5	1.5	-	53.1	39.7	13.4
11:55 PM - 12:00 AM	51.3	46.8	4.5	1.5	-	52.8	39.1	13.7
12:00 AM - 12:05 AM	51.2	43.8	7.4	1.0	-	53.2	39.8	13.4
12:05 AM - 12:10 AM	51.5	44.2	7.3	1.0	-	53.5	40.1	13.4
12:10 AM - 12:15 AM	51.9	46.4	5.5	1.5	-	53.4	40.5	12.9
12:15 AM - 12:20 AM	51.2	46.5	4.7	1.5	-	52.7	41.0	11.7
12:20 AM - 12:25 AM	50.9	43.9	7.0	1.0	-	52.9	41.3	11.6
12:25 AM - 12:30 AM	51.1	44.1	7.0	1.0	-	53.1	39.5	13.6
12:30 AM - 12:35 AM	51.5	47.6	3.9	2.0	-	52.5	39.9	12.6
12:35 AM - 12:40 AM	51.6	46.2	5.4	1.5	-	53.1	39.1	14.0
12:40 AM - 12:45 AM	51.9	44.1	7.8	0.5	-	54.4	38.7	15.7
12:45 AM - 12:50 AM	52.0	46.7	5.3	1.5	-	53.5	39.7	13.8

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142071  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536894-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142071-4  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
Measurement Date Dec 23 - 24, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858523

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:50 AM - 12:55 AM	52.4	42.3	10.1	0.5	-	54.9	39.6	15.3
12:55 AM - 01:00 AM	53.1	43.9	9.2	0.5	-	55.6	39.7	15.9
01:00 AM - 01:05 AM	52.5	42.3	10.2	0.5	-	55.0	38.7	16.3
01:05 AM - 01:10 AM	53.3	43.8	9.5	0.5	-	55.8	40.3	15.5
01:10 AM - 01:15 AM	52.0	44.9	7.1	1.0	-	54.0	41.0	13.0
01:15 AM - 01:20 AM	52.0	42.8	9.2	0.5	-	54.5	40.0	14.5
01:20 AM - 01:25 AM	51.8	43.1	8.7	0.5	-	54.3	39.4	14.9
01:25 AM - 01:30 AM	51.7	44.5	7.2	1.0	-	53.7	39.7	14.0
01:30 AM - 01:35 AM	52.5	47.8	4.7	1.5	-	54.0	39.2	14.8
01:35 AM - 01:40 AM	52.1	42.7	9.4	0.5	-	54.6	39.7	14.9
01:40 AM - 01:45 AM	52.4	42.0	10.4	0.5	-	54.9	38.7	16.2
01:45 AM - 01:50 AM	51.5	44.0	7.5	0.5	-	54.0	38.9	15.1
01:50 AM - 01:55 AM	50.6	47.4	3.2	3.0	-	50.6	41.0	9.6
01:55 AM - 02:00 AM	52.8	44.6	8.2	0.5	-	55.3	39.2	16.1
02:00 AM - 02:05 AM	52.4	46.0	6.4	1.5	-	53.9	33.1	20.8
02:05 AM - 02:10 AM	50.5	36.9	13.6	0.0	-	53.5	33.2	20.3
02:10 AM - 02:15 AM	50.5	38.7	11.8	0.5	-	53.0	35.2	17.8
02:15 AM - 02:20 AM	50.5	39.2	11.3	0.5	-	53.0	36.2	16.8
02:20 AM - 02:25 AM	50.1	40.4	9.7	0.5	-	52.6	36.1	16.5
02:25 AM - 02:30 AM	49.3	41.1	8.2	0.5	-	51.8	35.2	16.6
02:30 AM - 02:35 AM	48.3	41.1	7.2	1.0	-	50.3	35.9	14.4
02:35 AM - 02:40 AM	47.9	43.1	4.8	1.5	-	49.4	35.5	13.9
02:40 AM - 02:45 AM	49.2	42.5	6.7	1.0	-	51.2	35.0	16.2
02:45 AM - 02:50 AM	49.6	40.7	8.9	0.5	-	52.1	36.3	15.8
02:50 AM - 02:55 AM	50.5	44.5	6.0	1.5	-	52.0	36.1	15.9
02:55 AM - 03:00 AM	49.6	49.3	0.3	7.0	-	45.6	36.5	9.1
03:00 AM - 03:05 AM	48.8	44.3	4.5	1.5	-	50.3	34.7	15.6
03:05 AM - 03:10 AM	48.5	36.7	11.8	0.5	-	51.0	32.2	18.8
03:10 AM - 03:15 AM	48.0	37.2	10.8	0.5	-	50.5	35.5	15.0
03:15 AM - 03:20 AM	48.5	39.8	8.7	0.5	-	51.0	36.8	14.2
03:20 AM - 03:25 AM	48.6	39.8	8.8	0.5	-	51.1	34.4	16.7
03:25 AM - 03:30 AM	47.2	38.1	9.1	0.5	-	49.7	34.4	15.3
03:30 AM - 03:35 AM	47.3	37.6	9.7	0.5	-	49.8	34.9	14.9
03:35 AM - 03:40 AM	50.5	42.2	8.3	0.5	-	53.0	35.1	17.9
03:40 AM - 03:45 AM	50.9	44.0	6.9	1.0	-	52.9	37.2	15.7
03:45 AM - 03:50 AM	49.2	49.6	-0.4	7.0	-	45.2	37.2	8.0
03:50 AM - 03:55 AM	50.6	44.2	6.4	1.5	-	52.1	37.4	14.7
03:55 AM - 04:00 AM	50.6	45.5	5.1	1.5	-	52.1	37.4	14.7
04:00 AM - 04:05 AM	52.7	48.5	4.2	2.0	-	53.7	45.5	8.2
04:05 AM - 04:10 AM	53.1	46.7	6.4	1.5	-	54.6	43.9	10.7

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142071  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536894-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142071-4  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
Measurement Date Dec 23 - 24, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858523

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B) (C)	ตัวปรับค่า (D)	ปรับค่าเสียงจากแหล่งกำเนิด (E)		เสียงพื้นฐาน (F)	ค่าระดับการรบกวน (G-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:10 AM - 04:15 AM	51.6	47.2	4.4	2.0	-	52.6	44.3	8.3
04:15 AM - 04:20 AM	52.3	45.6	6.7	1.0	-	54.3	43.3	11.0
04:20 AM - 04:25 AM	52.2	44.8	7.4	1.0	-	54.2	43.0	11.2
04:25 AM - 04:30 AM	50.8	45.0	5.8	1.5	-	52.3	42.9	9.4
04:30 AM - 04:35 AM	51.6	44.4	7.2	1.0	-	53.6	42.8	10.8
04:35 AM - 04:40 AM	51.5	43.8	7.7	0.5	-	54.0	42.6	11.4
04:40 AM - 04:45 AM	50.3	43.5	6.8	1.0	-	52.3	42.5	9.8
04:45 AM - 04:50 AM	50.0	44.8	5.2	1.5	-	51.5	42.1	9.4
04:50 AM - 04:55 AM	49.5	43.4	6.1	1.5	-	51.0	41.8	9.2
04:55 AM - 05:00 AM	47.4	44.9	2.5	3.0	-	47.4	43.4	4.0
05:00 AM - 05:05 AM	46.6	44.8	1.8	4.5	-	45.1	43.1	2.0
05:05 AM - 05:10 AM	45.3	44.4	0.9	7.0	-	41.3	42.5	-1.2
05:10 AM - 05:15 AM	48.6	44.1	4.5	1.5	-	50.1	42.3	7.8
05:15 AM - 05:20 AM	49.6	48.8	0.8	7.0	-	45.6	44.0	1.6
05:20 AM - 05:25 AM	50.8	46.1	4.7	1.5	-	52.3	43.7	8.6
05:25 AM - 05:30 AM	47.6	47.1	0.5	7.0	-	43.6	44.2	-0.6
05:30 AM - 05:35 AM	54.0	48.0	6.0	1.5	-	55.5	44.5	11.0
05:35 AM - 05:40 AM	48.3	48.7	-0.4	7.0	-	44.3	46.2	-1.9
05:40 AM - 05:45 AM	48.8	48.7	0.1	7.0	-	44.8	45.2	-0.4
05:45 AM - 05:50 AM	47.7	48.6	-0.9	7.0	-	43.7	45.1	-1.4
05:50 AM - 05:55 AM	47.8	60.7	-12.9	7.0	-	43.8	50.6	-6.8
05:55 AM - 06:00 AM	49.1	54.7	-5.6	7.0	-	45.1	44.2	0.9
06:00 AM - 07:00 AM	45.5	50.2	-4.7	7.0	38.5	-	45.4	-6.9
07:00 AM - 08:00 AM	46.5	57.3	-10.8	7.0	39.5	-	52.3	-12.8
08:00 AM - 09:00 AM	45.8	55.4	-9.6	7.0	38.8	-	49.5	-10.7
09:00 AM - 10:00 AM	46.1	50.7	-4.6	7.0	39.1	-	49.0	-9.9
10:00 AM - 11:00 AM	47.6	53.6	-6.0	7.0	40.6	-	51.5	-10.9
11:00 AM - 12:00 PM	48.9	53.1	-4.2	7.0	41.9	-	51.9	-10.0
12:00 PM - 01:00 PM	47.2	52.9	-5.7	7.0	40.2	-	51.6	-11.4
01:00 PM - 02:00 PM	46.8	52.1	-5.3	7.0	39.8	-	50.2	-10.4
02:00 PM - 03:00 PM	47.7	51.8	-4.1	7.0	40.7	-	50.7	-10.0
03:00 PM - 04:00 PM	46.7	51.7	-5.0	7.0	39.7	-	50.0	-10.3

ค่ามาตรฐาน

≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
- ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
- ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561  
ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 23-24 ธันวาคม 2565  
ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142082-4 วันที่ตรวจวัด มีถุนายน 30-01 กรกฎาคม 2565)

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

Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142071  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536895-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142071-5  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
Measurement Date Dec 24 - 25, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858523

#### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด <sup>(A)</sup>	เสียงขณะ ไม่มีการรบกวน <sup>(B)</sup>	ผลต่าง ระดับเสียง <sup>(A-B)</sup>	ตัวปรับค่า <sup>(C)</sup>	ปรับค่าเสียงจากแหล่งกำเนิด <sup>(B)</sup>		เสียงพื้นฐาน <sup>(E)</sup>	ค่าระดับ การรบกวน <sup>(D-E)</sup>
					กลางวัน <sup>(A-C)</sup>	กลางคืน <sup>(A-C)+3</sup>		
04:00 PM - 05:00 PM	47.1	48.5	-1.4	7.0	40.1	-	44.3	-4.2
05:00 PM - 06:00 PM	48.5	46.9	1.6	4.5	44.0	-	44.6	-0.6
06:00 PM - 07:00 PM	50.7	48.4	2.3	4.5	46.2	-	46.1	0.1
07:00 PM - 08:00 PM	48.8	47.5	1.3	7.0	41.8	-	43.3	-1.5
08:00 PM - 09:00 PM	47.3	48.4	-1.1	7.0	40.3	-	43.7	-3.4
09:00 PM - 10:00 PM	47.5	47.1	0.4	7.0	40.5	-	42.8	-2.3
10:00 PM - 10:05 PM	46.0	43.7	2.3	4.5	-	44.5	41.7	2.8
10:05 PM - 10:10 PM	45.9	45.9	0.0	7.0	-	41.9	42.4	-0.5
10:10 PM - 10:15 PM	52.3	43.8	8.5	0.5	-	54.8	41.1	13.7
10:15 PM - 10:20 PM	53.3	46.0	7.3	1.0	-	55.3	41.0	14.3
10:20 PM - 10:25 PM	47.5	45.9	1.6	4.5	-	46.0	41.6	4.4
10:25 PM - 10:30 PM	46.7	45.0	1.7	4.5	-	45.2	40.7	4.5
10:30 PM - 10:35 PM	47.9	46.3	1.6	4.5	-	46.4	40.5	5.9
10:35 PM - 10:40 PM	46.3	42.4	3.9	2.0	-	47.3	40.6	6.7
10:40 PM - 10:45 PM	46.7	43.9	2.8	3.0	-	46.7	40.5	6.2
10:45 PM - 10:50 PM	46.2	46.7	-0.5	7.0	-	42.2	41.3	0.9
10:50 PM - 10:55 PM	49.1	51.2	-2.1	7.0	-	45.1	40.5	4.6
10:55 PM - 11:00 PM	52.2	51.4	0.8	7.0	-	48.2	39.9	8.3
11:00 PM - 11:05 PM	47.0	42.7	4.3	2.0	-	48.0	40.7	7.3
11:05 PM - 11:10 PM	50.1	44.0	6.1	1.5	-	51.6	40.8	10.8
11:10 PM - 11:15 PM	46.3	43.7	2.6	3.0	-	46.3	40.2	6.1
11:15 PM - 11:20 PM	45.4	44.9	0.5	7.0	-	41.4	39.2	2.2
11:20 PM - 11:25 PM	45.3	45.8	-0.5	7.0	-	41.3	39.1	2.2
11:25 PM - 11:30 PM	44.4	41.7	2.7	3.0	-	44.4	38.7	5.7
11:30 PM - 11:35 PM	44.8	41.1	3.7	2.0	-	45.8	39.5	6.3
11:35 PM - 11:40 PM	44.6	40.8	3.8	2.0	-	45.6	38.5	7.1
11:40 PM - 11:45 PM	44.1	45.0	-0.9	7.0	-	40.1	38.8	1.3
11:45 PM - 11:50 PM	44.3	44.9	-0.6	7.0	-	40.3	38.0	2.3
11:50 PM - 11:55 PM	44.5	43.4	1.1	7.0	-	40.5	37.7	2.8
11:55 PM - 12:00 AM	44.7	41.3	3.4	3.0	-	44.7	38.4	6.3
12:00 AM - 12:05 AM	44.3	42.9	1.4	7.0	-	40.3	39.6	0.7
12:05 AM - 12:10 AM	44.3	47.1	-2.8	7.0	-	40.3	39.7	0.6
12:10 AM - 12:15 AM	45.3	45.5	-0.2	7.0	-	41.3	40.3	1.0
12:15 AM - 12:20 AM	45.9	46.5	-0.6	7.0	-	41.9	40.8	1.1
12:20 AM - 12:25 AM	56.0	42.2	13.8	0.0	-	59.0	38.7	20.3
12:25 AM - 12:30 AM	60.2	46.1	14.1	0.0	-	63.2	39.6	23.6
12:30 AM - 12:35 AM	54.1	45.5	8.6	0.5	-	56.6	39.5	17.1
12:35 AM - 12:40 AM	52.2	50.9	1.3	7.0	-	48.2	39.9	8.3
12:40 AM - 12:45 AM	46.8	44.9	1.9	4.5	-	45.3	41.5	3.8
12:45 AM - 12:50 AM	56.4	48.9	7.5	0.5	-	58.9	43.0	15.9

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142071  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536895-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142071-5  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
Measurement Date Dec 24 - 25, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858523

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:50 AM - 12:55 AM	50.7	45.4	5.3	1.5	-	52.2	39.6	12.6
12:55 AM - 01:00 AM	46.1	43.1	3.0	3.0	-	46.1	40.2	5.9
01:00 AM - 01:05 AM	48.3	43.3	5.0	1.5	-	49.8	40.1	9.7
01:05 AM - 01:10 AM	56.2	46.5	9.7	0.5	-	58.7	41.7	17.0
01:10 AM - 01:15 AM	56.6	46.4	10.2	0.5	-	59.1	43.8	15.3
01:15 AM - 01:20 AM	45.9	46.6	-0.7	7.0	-	41.9	43.8	-1.9
01:20 AM - 01:25 AM	47.5	50.6	-3.1	7.0	-	43.5	43.5	0.0
01:25 AM - 01:30 AM	47.5	46.4	1.1	7.0	-	43.5	44.2	-0.7
01:30 AM - 01:35 AM	47.8	47.2	0.6	7.0	-	43.8	44.8	-1.0
01:35 AM - 01:40 AM	48.1	46.7	1.4	7.0	-	44.1	43.4	0.7
01:40 AM - 01:45 AM	48.4	46.4	2.0	4.5	-	46.9	44.1	2.8
01:45 AM - 01:50 AM	48.5	48.1	0.4	7.0	-	44.5	45.8	-1.3
01:50 AM - 01:55 AM	48.6	51.0	-2.4	7.0	-	44.6	46.1	-1.5
01:55 AM - 02:00 AM	47.8	50.4	-2.6	7.0	-	43.8	44.3	-0.5
02:00 AM - 02:05 AM	56.4	50.9	5.5	1.5	-	57.9	45.7	12.2
02:05 AM - 02:10 AM	58.9	49.1	9.8	0.5	-	61.4	42.8	18.6
02:10 AM - 02:15 AM	55.9	44.9	11.0	0.5	-	58.4	43.2	15.2
02:15 AM - 02:20 AM	55.7	45.6	10.1	0.5	-	58.2	44.1	14.1
02:20 AM - 02:25 AM	52.4	47.3	5.1	1.5	-	53.9	45.6	8.3
02:25 AM - 02:30 AM	44.0	46.6	-2.6	7.0	-	40.0	45.4	-5.4
02:30 AM - 02:35 AM	45.9	46.5	-0.6	7.0	-	41.9	44.8	-2.9
02:35 AM - 02:40 AM	46.0	45.8	0.2	7.0	-	42.0	43.8	-1.8
02:40 AM - 02:45 AM	46.5	47.2	-0.7	7.0	-	42.5	44.4	-1.9
02:45 AM - 02:50 AM	45.4	48.5	-3.1	7.0	-	41.4	44.9	-3.5
02:50 AM - 02:55 AM	45.3	48.7	-3.4	7.0	-	41.3	44.0	-2.7
02:55 AM - 03:00 AM	46.1	49.6	-3.5	7.0	-	42.1	44.0	-1.9
03:00 AM - 03:05 AM	45.9	49.6	-3.7	7.0	-	41.9	44.8	-2.9
03:05 AM - 03:10 AM	46.3	45.4	0.9	7.0	-	42.3	44.5	-2.2
03:10 AM - 03:15 AM	47.1	46.3	0.8	7.0	-	43.1	45.3	-2.2
03:15 AM - 03:20 AM	46.3	47.7	-1.4	7.0	-	42.3	44.6	-2.3
03:20 AM - 03:25 AM	45.3	46.6	-1.3	7.0	-	41.3	44.6	-3.3
03:25 AM - 03:30 AM	45.4	44.8	0.6	7.0	-	41.4	43.0	-1.6
03:30 AM - 03:35 AM	58.8	43.9	14.9	0.0	-	61.8	42.5	19.3
03:35 AM - 03:40 AM	54.6	46.7	7.9	0.5	-	57.1	45.7	11.4
03:40 AM - 03:45 AM	45.9	45.0	0.9	7.0	-	41.9	44.1	-2.2
03:45 AM - 03:50 AM	45.6	46.4	-0.8	7.0	-	41.6	42.7	-1.1
03:50 AM - 03:55 AM	46.1	44.0	2.1	4.5	-	44.6	42.3	2.3
03:55 AM - 04:00 AM	45.6	46.7	-1.1	7.0	-	41.6	45.7	-4.1
04:00 AM - 04:05 AM	45.6	44.6	1.0	7.0	-	41.6	43.7	-2.1
04:05 AM - 04:10 AM	46.3	45.0	1.3	7.0	-	42.3	44.1	-1.8

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142071  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536895-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142071-5  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
Measurement Date Dec 24 - 25, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858523

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับการรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:10 AM - 04:15 AM	45.3	45.4	-0.1	7.0	-	41.3	44.5	-3.2
04:15 AM - 04:20 AM	45.1	46.3	-1.2	7.0	-	41.1	45.3	-4.2
04:20 AM - 04:25 AM	46.6	46.8	-0.2	7.0	-	42.6	45.9	-3.3
04:25 AM - 04:30 AM	47.7	46.8	0.9	7.0	-	43.7	45.8	-2.1
04:30 AM - 04:35 AM	46.8	46.7	0.1	7.0	-	42.8	45.7	-2.9
04:35 AM - 04:40 AM	46.4	47.2	-0.8	7.0	-	42.4	46.4	-4.0
04:40 AM - 04:45 AM	46.5	46.0	0.5	7.0	-	42.5	44.8	-2.3
04:45 AM - 04:50 AM	46.9	44.7	2.2	4.5	-	45.4	44.0	1.4
04:50 AM - 04:55 AM	47.5	44.0	3.5	2.0	-	48.5	43.3	5.2
04:55 AM - 05:00 AM	48.2	43.6	4.6	1.5	-	49.7	43.0	6.7
05:00 AM - 05:05 AM	47.6	43.3	4.3	2.0	-	48.6	42.5	6.1
05:05 AM - 05:10 AM	46.9	43.3	3.6	2.0	-	47.9	42.6	5.3
05:10 AM - 05:15 AM	47.1	43.3	3.8	2.0	-	48.1	42.6	5.5
05:15 AM - 05:20 AM	46.9	43.5	3.4	3.0	-	46.9	42.7	4.2
05:20 AM - 05:25 AM	50.1	44.3	5.8	1.5	-	51.6	43.1	8.5
05:25 AM - 05:30 AM	44.4	45.1	-0.7	7.0	-	40.4	43.1	-2.7
05:30 AM - 05:35 AM	43.7	55.4	-11.7	7.0	-	39.7	46.1	-6.4
05:35 AM - 05:40 AM	51.9	52.9	-1.0	7.0	-	47.9	44.8	3.1
05:40 AM - 05:45 AM	45.5	46.4	-0.9	7.0	-	41.5	44.5	-3.0
05:45 AM - 05:50 AM	44.9	47.1	-2.2	7.0	-	40.9	45.2	-4.3
05:50 AM - 05:55 AM	44.8	48.2	-3.4	7.0	-	40.8	45.7	-4.9
05:55 AM - 06:00 AM	44.4	47.4	-3.0	7.0	-	40.4	45.7	-5.3
06:00 AM - 07:00 AM	48.5	49.1	-0.6	7.0	41.5	-	44.3	-2.8
07:00 AM - 08:00 AM	48.6	54.9	-6.3	7.0	41.6	-	53.4	-11.8
08:00 AM - 09:00 AM	48.4	57.8	-9.4	7.0	41.4	-	55.9	-14.5
09:00 AM - 10:00 AM	43.5	54.1	-10.6	7.0	36.5	-	51.6	-15.1
10:00 AM - 11:00 AM	46.0	54.6	-8.6	7.0	39.0	-	52.2	-13.2
11:00 AM - 12:00 PM	44.7	57.7	-13.0	7.0	37.7	-	54.5	-16.8
12:00 PM - 01:00 PM	46.9	52.7	-5.8	7.0	39.9	-	49.4	-9.5
01:00 PM - 02:00 PM	44.6	50.7	-6.1	7.0	37.6	-	47.8	-10.2
02:00 PM - 03:00 PM	44.9	50.7	-5.8	7.0	37.9	-	47.5	-9.6
03:00 PM - 04:00 PM	48.3	50.1	-1.8	7.0	41.3	-	46.4	-5.1
ค่ามาตรฐาน								≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

#### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 24-25 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142082-5 วันที่ตรวจวัด 01-02 กรกฎาคม 2565)

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



# Analysis / Test Report

## TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142071  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536896-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142071-6  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
Measurement Date Dec 25 - 26, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858523

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด <sup>(A)</sup>	เสียงขณะ ไม่มีการรบกวน <sup>(B)</sup>	ผลต่าง ระดับเสียง <sup>(A-B)</sup>	ตัวปรับค่า <sup>(C)</sup>	ปรับค่าเสียงจากแหล่งกำเนิด <sup>(B)</sup>		เสียงพื้นฐาน <sup>(E)</sup>	ค่าระดับ การรบกวน <sup>(D-E)</sup>
					กลางวัน <sup>(A-C)</sup>	กลางคืน <sup>(A-C)+3</sup>		
04:00 PM - 05:00 PM	44.5	50.6	-6.1	7.0	37.5	-	49.4	-11.9
05:00 PM - 06:00 PM	47.8	52.8	-5.0	7.0	40.8	-	50.7	-9.9
06:00 PM - 07:00 PM	50.5	53.0	-2.5	7.0	43.5	-	51.0	-7.5
07:00 PM - 08:00 PM	51.1	44.7	6.4	1.5	49.6	-	41.6	8.0
08:00 PM - 09:00 PM	52.9	45.6	7.3	1.0	51.9	-	37.2	14.7
09:00 PM - 10:00 PM	51.2	47.1	4.1	2.0	49.2	-	38.4	10.8
10:00 PM - 10:05 PM	51.3	44.6	6.7	1.0	-	53.3	37.8	15.5
10:05 PM - 10:10 PM	50.5	46.7	3.8	2.0	-	51.5	38.6	12.9
10:10 PM - 10:15 PM	50.6	48.4	2.2	4.5	-	49.1	39.9	9.2
10:15 PM - 10:20 PM	50.7	41.3	9.4	0.5	-	53.2	38.7	14.5
10:20 PM - 10:25 PM	51.4	46.4	5.0	1.5	-	52.9	39.3	13.6
10:25 PM - 10:30 PM	51.4	41.2	10.2	0.5	-	53.9	38.5	15.4
10:30 PM - 10:35 PM	51.6	47.6	4.0	2.0	-	52.6	39.7	12.9
10:35 PM - 10:40 PM	52.2	41.5	10.7	0.5	-	54.7	39.2	15.5
10:40 PM - 10:45 PM	52.8	41.5	11.3	0.5	-	55.3	38.9	16.4
10:45 PM - 10:50 PM	52.9	41.6	11.3	0.5	-	55.4	39.2	16.2
10:50 PM - 10:55 PM	52.7	45.6	7.1	1.0	-	54.7	38.9	15.8
10:55 PM - 11:00 PM	51.3	47.6	3.7	2.0	-	52.3	38.6	13.7
11:00 PM - 11:05 PM	51.4	45.7	5.7	1.5	-	52.9	39.2	13.7
11:05 PM - 11:10 PM	51.4	41.1	10.3	0.5	-	53.9	38.9	15.0
11:10 PM - 11:15 PM	51.4	42.8	8.6	0.5	-	53.9	39.1	14.8
11:15 PM - 11:20 PM	51.6	44.8	6.8	1.0	-	53.6	38.9	14.7
11:20 PM - 11:25 PM	51.2	42.0	9.2	0.5	-	53.7	39.8	13.9
11:25 PM - 11:30 PM	51.9	41.9	10.0	0.5	-	54.4	40.3	14.1
11:30 PM - 11:35 PM	51.1	42.4	8.7	0.5	-	53.6	40.1	13.5
11:35 PM - 11:40 PM	50.5	42.2	8.3	0.5	-	53.0	39.9	13.1
11:40 PM - 11:45 PM	50.9	43.1	7.8	0.5	-	53.4	39.9	13.5
11:45 PM - 11:50 PM	51.6	43.9	7.7	0.5	-	54.1	41.4	12.7
11:50 PM - 11:55 PM	51.7	43.0	8.7	0.5	-	54.2	41.0	13.2
11:55 PM - 12:00 AM	51.5	43.7	7.8	0.5	-	54.0	40.1	13.9
12:00 AM - 12:05 AM	52.6	46.5	6.1	1.5	-	54.1	40.6	13.5
12:05 AM - 12:10 AM	53.4	41.5	11.9	0.5	-	55.9	39.1	16.8
12:10 AM - 12:15 AM	53.6	41.1	12.5	0.0	-	56.6	38.8	17.8
12:15 AM - 12:20 AM	53.5	43.7	9.8	0.5	-	56.0	38.8	17.2
12:20 AM - 12:25 AM	51.8	42.5	9.3	0.5	-	54.3	39.1	15.2
12:25 AM - 12:30 AM	62.1	42.7	19.4	0.0	-	65.1	40.4	24.7
12:30 AM - 12:35 AM	59.4	44.6	14.8	0.0	-	62.4	41.6	20.8
12:35 AM - 12:40 AM	52.9	53.1	-0.2	7.0	-	48.9	40.7	8.2
12:40 AM - 12:45 AM	53.3	45.4	7.9	0.5	-	55.8	41.3	14.5
12:45 AM - 12:50 AM	53.1	47.1	6.0	1.5	-	54.6	40.9	13.7

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142071  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536896-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142071-6  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
Measurement Date Dec 25 - 26, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858523

ระดับเสียง (dB(A))								
เวลา	(A) เสียงจากแหล่งกำเนิด	(B) เสียงขณะไม่มีการรบกวน	(A-B) ผลต่างระดับเสียง	(C) ตัวปรับค่า	(D) ปรับค่าเสียงจากแหล่งกำเนิด		(E) เสียงพื้นฐาน	(D-E) ค่าระดับการรบกวน
					(A-C) กลางวัน	(A-C)+3 กลางคืน		
12:50 AM - 12:55 AM	51.8	42.2	9.6	0.5	-	54.3	39.4	14.9
12:55 AM - 01:00 AM	51.9	45.5	6.4	1.5	-	53.4	39.9	13.5
01:00 AM - 01:05 AM	53.3	48.1	5.2	1.5	-	54.8	41.3	13.5
01:05 AM - 01:10 AM	52.5	45.3	7.2	1.0	-	54.5	41.7	12.8
01:10 AM - 01:15 AM	52.2	52.5	-0.3	7.0	-	48.2	41.8	6.4
01:15 AM - 01:20 AM	51.9	46.6	5.3	1.5	-	53.4	42.4	11.0
01:20 AM - 01:25 AM	51.0	45.8	5.2	1.5	-	52.5	42.5	10.0
01:25 AM - 01:30 AM	50.3	45.5	4.8	1.5	-	51.8	42.4	9.4
01:30 AM - 01:35 AM	50.9	45.9	5.0	1.5	-	52.4	43.4	9.0
01:35 AM - 01:40 AM	50.3	46.5	3.8	2.0	-	51.3	44.3	7.0
01:40 AM - 01:45 AM	50.7	46.7	4.0	2.0	-	51.7	44.1	7.6
01:45 AM - 01:50 AM	51.4	45.7	5.7	1.5	-	52.9	44.1	8.8
01:50 AM - 01:55 AM	52.1	46.5	5.6	1.5	-	53.6	44.1	9.5
01:55 AM - 02:00 AM	52.2	46.1	6.1	1.5	-	53.7	43.8	9.9
02:00 AM - 02:05 AM	50.9	47.5	3.4	3.0	-	50.9	41.6	9.3
02:05 AM - 02:10 AM	51.8	45.1	6.7	1.0	-	53.8	41.9	11.9
02:10 AM - 02:15 AM	53.1	45.0	8.1	0.5	-	55.6	40.9	14.7
02:15 AM - 02:20 AM	53.4	46.5	6.9	1.0	-	55.4	41.2	14.2
02:20 AM - 02:25 AM	52.7	46.2	6.5	1.0	-	54.7	41.1	13.6
02:25 AM - 02:30 AM	53.2	44.1	9.1	0.5	-	55.7	41.4	14.3
02:30 AM - 02:35 AM	52.7	44.4	8.3	0.5	-	55.2	41.3	13.9
02:35 AM - 02:40 AM	52.8	43.6	9.2	0.5	-	55.3	40.3	15.0
02:40 AM - 02:45 AM	52.3	47.6	4.7	1.5	-	53.8	40.8	13.0
02:45 AM - 02:50 AM	52.0	54.4	-2.4	7.0	-	48.0	40.7	7.3
02:50 AM - 02:55 AM	51.0	52.3	-1.3	7.0	-	47.0	41.7	5.3
02:55 AM - 03:00 AM	49.3	43.5	5.8	1.5	-	50.8	41.1	9.7
03:00 AM - 03:05 AM	49.5	45.5	4.0	2.0	-	50.5	41.4	9.1
03:05 AM - 03:10 AM	47.2	43.9	3.3	3.0	-	47.2	41.5	5.7
03:10 AM - 03:15 AM	47.9	44.1	3.8	2.0	-	48.9	40.4	8.5
03:15 AM - 03:20 AM	49.4	43.7	5.7	1.5	-	50.9	40.0	10.9
03:20 AM - 03:25 AM	49.6	47.8	1.8	4.5	-	48.1	41.0	7.1
03:25 AM - 03:30 AM	49.2	46.5	2.7	3.0	-	49.2	41.6	7.6
03:30 AM - 03:35 AM	53.8	45.4	8.4	0.5	-	56.3	39.9	16.4
03:35 AM - 03:40 AM	49.2	42.5	6.7	1.0	-	51.2	40.4	10.8
03:40 AM - 03:45 AM	50.4	44.0	6.4	1.5	-	51.9	41.4	10.5
03:45 AM - 03:50 AM	49.1	47.8	1.3	7.0	-	45.1	41.7	3.4
03:50 AM - 03:55 AM	49.7	45.6	4.1	2.0	-	50.7	40.6	10.1
03:55 AM - 04:00 AM	47.8	47.2	0.6	7.0	-	43.8	41.7	2.1
04:00 AM - 04:05 AM	50.1	49.8	0.3	7.0	-	46.1	45.9	0.2
04:05 AM - 04:10 AM	51.3	50.0	1.3	7.0	-	47.3	46.6	0.7

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142071  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536896-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142071-6  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
Measurement Date Dec 25 - 26, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858523

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B) (C)	ตัวปรับค่า (D)	ปรับค่าเสียงจากแหล่งกำเนิด (E)		เสียงพื้นฐาน (F)	ค่าระดับการรบกวน (G-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:10 AM - 04:15 AM	49.3	48.5	0.8	7.0	-	45.3	45.4	-0.1
04:15 AM - 04:20 AM	49.5	47.2	2.3	4.5	-	48.0	44.7	3.3
04:20 AM - 04:25 AM	48.3	47.8	0.5	7.0	-	44.3	44.2	0.1
04:25 AM - 04:30 AM	49.8	45.9	3.9	2.0	-	50.8	43.5	7.3
04:30 AM - 04:35 AM	49.6	44.3	5.3	1.5	-	51.1	43.1	8.0
04:35 AM - 04:40 AM	48.3	43.9	4.4	2.0	-	49.3	42.9	6.4
04:40 AM - 04:45 AM	50.1	45.2	4.9	1.5	-	51.6	41.7	9.9
04:45 AM - 04:50 AM	51.3	44.7	6.6	1.0	-	53.3	42.2	11.1
04:50 AM - 04:55 AM	50.6	42.9	7.7	0.5	-	53.1	41.6	11.5
04:55 AM - 05:00 AM	51.1	42.8	8.3	0.5	-	53.6	41.3	12.3
05:00 AM - 05:05 AM	50.8	43.8	7.0	1.0	-	52.8	41.2	11.6
05:05 AM - 05:10 AM	51.3	42.7	8.6	0.5	-	53.8	41.0	12.8
05:10 AM - 05:15 AM	52.2	41.2	11.0	0.5	-	54.7	40.1	14.6
05:15 AM - 05:20 AM	51.3	42.0	9.3	0.5	-	53.8	40.1	13.7
05:20 AM - 05:25 AM	51.7	45.4	6.3	1.5	-	53.2	41.4	11.8
05:25 AM - 05:30 AM	51.6	45.0	6.6	1.0	-	53.6	41.9	11.7
05:30 AM - 05:35 AM	51.7	46.2	5.5	1.5	-	53.2	42.9	10.3
05:35 AM - 05:40 AM	52.6	46.1	6.5	1.0	-	54.6	42.9	11.7
05:40 AM - 05:45 AM	53.2	46.5	6.7	1.0	-	55.2	43.7	11.5
05:45 AM - 05:50 AM	53.8	46.6	7.2	1.0	-	55.8	43.2	12.6
05:50 AM - 05:55 AM	52.7	49.1	3.6	2.0	-	53.7	44.1	9.6
05:55 AM - 06:00 AM	52.2	47.9	4.3	2.0	-	53.2	44.3	8.9
06:00 AM - 07:00 AM	57.0	46.3	10.7	0.5	56.5	-	42.5	14.0
07:00 AM - 08:00 AM	46.6	53.7	-7.1	7.0	39.6	-	51.7	-12.1
08:00 AM - 09:00 AM	45.5	51.2	-5.7	7.0	38.5	-	48.8	-10.3
09:00 AM - 10:00 AM	48.0	43.7	4.3	2.0	46.0	-	39.6	6.4
10:00 AM - 11:00 AM	46.2	45.6	0.6	7.0	39.2	-	39.6	-0.4
11:00 AM - 12:00 PM	47.5	45.4	2.1	4.5	43.0	-	39.6	3.4
12:00 PM - 01:00 PM	46.5	52.4	-5.9	7.0	39.5	-	51.1	-11.6
01:00 PM - 02:00 PM	45.1	53.9	-8.8	7.0	38.1	-	52.6	-14.5
02:00 PM - 03:00 PM	45.8	54.1	-8.3	7.0	38.8	-	52.5	-13.7
03:00 PM - 04:00 PM	44.0	53.1	-9.1	7.0	37.0	-	51.7	-14.7
ค่ามาตรฐาน								≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

#### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
- ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
- ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561  
ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 25-26 ธันวาคม 2565  
ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142082-6 วันที่ตรวจวัด 02-03 กรกฎาคม 2565)

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142071  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536897-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142071-7  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
Measurement Date Dec 26 - 27, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858523

#### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด <sup>(A)</sup>	เสียงขณะ ไม่มีการรบกวน <sup>(B)</sup>	ผลต่าง ระดับเสียง <sup>(A-B)</sup>	ตัวปรับค่า <sup>(C)</sup>	ปรับค่าเสียงจากแหล่งกำเนิด <sup>(B)</sup>		เสียงพื้นฐาน <sup>(E)</sup>	ค่าระดับ การรบกวน <sup>(D-E)</sup>
					กลางวัน <sup>(A-C)</sup>	กลางคืน <sup>(A-C)+3</sup>		
04:00 PM - 05:00 PM	43.9	48.6	-4.7	7.0	36.9	-	40.2	-3.3
05:00 PM - 06:00 PM	48.7	46.1	2.6	3.0	45.7	-	41.1	4.6
06:00 PM - 07:00 PM	50.0	45.3	4.7	1.5	48.5	-	43.0	5.5
07:00 PM - 08:00 PM	50.8	45.9	4.9	1.5	49.3	-	41.1	8.2
08:00 PM - 09:00 PM	52.2	49.1	3.1	3.0	49.2	-	40.8	8.4
09:00 PM - 10:00 PM	52.7	44.7	8.0	0.5	52.2	-	39.3	12.9
10:00 PM - 10:05 PM	52.2	39.1	13.1	0.0	-	55.2	36.6	18.6
10:05 PM - 10:10 PM	52.0	40.3	11.7	0.5	-	54.5	37.9	16.6
10:10 PM - 10:15 PM	50.6	40.6	10.0	0.5	-	53.1	38.2	14.9
10:15 PM - 10:20 PM	61.1	38.6	22.5	0.0	-	64.1	36.7	27.4
10:20 PM - 10:25 PM	52.0	43.5	8.5	0.5	-	54.5	35.7	18.8
10:25 PM - 10:30 PM	50.6	46.7	3.9	2.0	-	51.6	37.6	14.0
10:30 PM - 10:35 PM	51.7	42.4	9.3	0.5	-	54.2	37.3	16.9
10:35 PM - 10:40 PM	51.6	43.0	8.6	0.5	-	54.1	37.7	16.4
10:40 PM - 10:45 PM	52.2	40.7	11.5	0.5	-	54.7	38.3	16.4
10:45 PM - 10:50 PM	52.3	40.3	12.0	0.5	-	54.8	37.5	17.3
10:50 PM - 10:55 PM	52.3	41.5	10.8	0.5	-	54.8	37.4	17.4
10:55 PM - 11:00 PM	53.1	38.8	14.3	0.0	-	56.1	36.8	19.3
11:00 PM - 11:05 PM	52.8	46.0	6.8	1.0	-	54.8	38.1	16.7
11:05 PM - 11:10 PM	51.7	39.5	12.2	0.5	-	54.2	37.6	16.6
11:10 PM - 11:15 PM	51.7	42.3	9.4	0.5	-	54.2	37.8	16.4
11:15 PM - 11:20 PM	56.7	43.4	13.3	0.0	-	59.7	37.3	22.4
11:20 PM - 11:25 PM	51.4	43.8	7.6	0.5	-	53.9	37.5	16.4
11:25 PM - 11:30 PM	51.8	40.1	11.7	0.5	-	54.3	37.1	17.2
11:30 PM - 11:35 PM	51.2	41.7	9.5	0.5	-	53.7	39.1	14.6
11:35 PM - 11:40 PM	51.6	41.0	10.6	0.5	-	54.1	37.1	17.0
11:40 PM - 11:45 PM	51.0	40.8	10.2	0.5	-	53.5	38.1	15.4
11:45 PM - 11:50 PM	51.4	41.8	9.6	0.5	-	53.9	39.4	14.5
11:50 PM - 11:55 PM	51.1	41.5	9.6	0.5	-	53.6	37.4	16.2
11:55 PM - 12:00 AM	51.3	38.8	12.5	0.0	-	54.3	36.8	17.5
12:00 AM - 12:05 AM	51.4	40.7	10.7	0.5	-	53.9	37.9	16.0
12:05 AM - 12:10 AM	51.1	40.6	10.5	0.5	-	53.6	38.4	15.2
12:10 AM - 12:15 AM	51.1	41.3	9.8	0.5	-	53.6	38.4	15.2
12:15 AM - 12:20 AM	51.4	41.6	9.8	0.5	-	53.9	38.4	15.5
12:20 AM - 12:25 AM	52.1	41.9	10.2	0.5	-	54.6	39.7	14.9
12:25 AM - 12:30 AM	51.9	47.4	4.5	1.5	-	53.4	39.1	14.3
12:30 AM - 12:35 AM	51.6	49.3	2.3	4.5	-	50.1	38.7	11.4
12:35 AM - 12:40 AM	51.7	41.2	10.5	0.5	-	54.2	38.9	15.3
12:40 AM - 12:45 AM	50.3	42.7	7.6	0.5	-	52.8	40.0	12.8
12:45 AM - 12:50 AM	58.6	44.1	14.5	0.0	-	61.6	41.2	20.4

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



# Analysis / Test Report

## TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142071  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536897-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142071-7  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
Measurement Date Dec 26 - 27, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858523

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:50 AM - 12:55 AM	50.4	43.4	7.0	1.0	-	52.4	39.8	12.6
12:55 AM - 01:00 AM	50.4	44.2	6.2	1.5	-	51.9	39.6	12.3
01:00 AM - 01:05 AM	50.0	47.6	2.4	4.5	-	48.5	38.6	9.9
01:05 AM - 01:10 AM	50.4	47.3	3.1	3.0	-	50.4	39.6	10.8
01:10 AM - 01:15 AM	51.4	42.0	9.4	0.5	-	53.9	39.6	14.3
01:15 AM - 01:20 AM	50.8	42.8	8.0	0.5	-	53.3	39.3	14.0
01:20 AM - 01:25 AM	49.9	42.9	7.0	1.0	-	51.9	39.7	12.2
01:25 AM - 01:30 AM	49.3	43.7	5.6	1.5	-	50.8	39.7	11.1
01:30 AM - 01:35 AM	49.0	41.3	7.7	0.5	-	51.5	38.9	12.6
01:35 AM - 01:40 AM	49.6	41.7	7.9	0.5	-	52.1	39.2	12.9
01:40 AM - 01:45 AM	56.2	40.8	15.4	0.0	-	59.2	38.9	20.3
01:45 AM - 01:50 AM	50.7	43.4	7.3	1.0	-	52.7	39.6	13.1
01:50 AM - 01:55 AM	48.9	43.2	5.7	1.5	-	50.4	39.6	10.8
01:55 AM - 02:00 AM	48.6	40.5	8.1	0.5	-	51.1	38.6	12.5
02:00 AM - 02:05 AM	49.9	42.1	7.8	0.5	-	52.4	37.4	15.0
02:05 AM - 02:10 AM	55.7	46.1	9.6	0.5	-	58.2	38.9	19.3
02:10 AM - 02:15 AM	54.7	45.1	9.6	0.5	-	57.2	39.9	17.3
02:15 AM - 02:20 AM	47.6	41.5	6.1	1.5	-	49.1	39.0	10.1
02:20 AM - 02:25 AM	47.6	41.3	6.3	1.5	-	49.1	39.2	9.9
02:25 AM - 02:30 AM	47.9	44.0	3.9	2.0	-	48.9	40.4	8.5
02:30 AM - 02:35 AM	48.9	42.9	6.0	1.5	-	50.4	40.5	9.9
02:35 AM - 02:40 AM	50.2	44.6	5.6	1.5	-	51.7	40.8	10.9
02:40 AM - 02:45 AM	49.0	43.5	5.5	1.5	-	50.5	39.7	10.8
02:45 AM - 02:50 AM	48.7	42.4	6.3	1.5	-	50.2	39.5	10.7
02:50 AM - 02:55 AM	49.4	41.1	8.3	0.5	-	51.9	38.0	13.9
02:55 AM - 03:00 AM	45.8	41.7	4.1	2.0	-	46.8	38.6	8.2
03:00 AM - 03:05 AM	49.3	43.9	5.4	1.5	-	50.8	40.0	10.8
03:05 AM - 03:10 AM	51.3	44.0	7.3	1.0	-	53.3	39.4	13.9
03:10 AM - 03:15 AM	54.9	41.2	13.7	0.0	-	57.9	39.0	18.9
03:15 AM - 03:20 AM	52.1	42.2	9.9	0.5	-	54.6	39.1	15.5
03:20 AM - 03:25 AM	51.6	42.4	9.2	0.5	-	54.1	39.3	14.8
03:25 AM - 03:30 AM	47.6	45.0	2.6	3.0	-	47.6	39.3	8.3
03:30 AM - 03:35 AM	48.7	43.2	5.5	1.5	-	50.2	40.2	10.0
03:35 AM - 03:40 AM	49.2	43.0	6.2	1.5	-	50.7	40.9	9.8
03:40 AM - 03:45 AM	48.4	42.8	5.6	1.5	-	49.9	40.0	9.9
03:45 AM - 03:50 AM	50.1	42.4	7.7	0.5	-	52.6	39.5	13.1
03:50 AM - 03:55 AM	49.0	41.7	7.3	1.0	-	51.0	39.6	11.4
03:55 AM - 04:00 AM	52.2	43.1	9.1	0.5	-	54.7	39.0	15.7
04:00 AM - 04:05 AM	51.1	48.6	2.5	3.0	-	51.1	44.3	6.8
04:05 AM - 04:10 AM	50.9	45.7	5.2	1.5	-	52.4	43.0	9.4

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142071  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2536897-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142071-7  
Parameter เสียงรบกวน  
Location ริมรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277638, 1888807)  
Measurement Date Dec 26 - 27, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00858523

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B) (C)	ตัวปรับค่า (D)	ปรับค่าเสียงจากแหล่งกำเนิด (E)		เสียงพื้นฐาน (F)	ค่าระดับการรบกวน (G-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
04:10 AM - 04:15 AM	51.9	44.7	7.2	1.0	-	53.9	42.9	11.0
04:15 AM - 04:20 AM	49.9	46.0	3.9	2.0	-	50.9	43.8	7.1
04:20 AM - 04:25 AM	50.7	45.5	5.2	1.5	-	52.2	43.1	9.1
04:25 AM - 04:30 AM	51.4	44.9	6.5	1.0	-	53.4	42.7	10.7
04:30 AM - 04:35 AM	49.9	45.0	4.9	1.5	-	51.4	42.6	8.8
04:35 AM - 04:40 AM	50.7	45.8	4.9	1.5	-	52.2	42.6	9.6
04:40 AM - 04:45 AM	51.3	44.9	6.4	1.5	-	52.8	42.8	10.0
04:45 AM - 04:50 AM	50.8	45.2	5.6	1.5	-	52.3	42.4	9.9
04:50 AM - 04:55 AM	51.4	44.6	6.8	1.0	-	53.4	42.0	11.4
04:55 AM - 05:00 AM	50.6	45.4	5.2	1.5	-	52.1	42.4	9.7
05:00 AM - 05:05 AM	51.1	44.7	6.4	1.5	-	52.6	42.2	10.4
05:05 AM - 05:10 AM	50.5	44.0	6.5	1.0	-	52.5	42.0	10.5
05:10 AM - 05:15 AM	49.8	42.6	7.2	1.0	-	51.8	41.3	10.5
05:15 AM - 05:20 AM	50.6	44.9	5.7	1.5	-	52.1	41.9	10.2
05:20 AM - 05:25 AM	54.9	50.6	4.3	2.0	-	55.9	42.7	13.2
05:25 AM - 05:30 AM	50.0	48.3	1.7	4.5	-	48.5	42.7	5.8
05:30 AM - 05:35 AM	51.1	46.4	4.7	1.5	-	52.6	42.5	10.1
05:35 AM - 05:40 AM	50.9	45.5	5.4	1.5	-	52.4	42.9	9.5
05:40 AM - 05:45 AM	50.8	47.3	3.5	2.0	-	51.8	43.1	8.7
05:45 AM - 05:50 AM	51.0	49.4	1.6	4.5	-	49.5	42.8	6.7
05:50 AM - 05:55 AM	52.2	50.6	1.6	4.5	-	50.7	42.7	8.0
05:55 AM - 06:00 AM	52.7	46.5	6.2	1.5	-	54.2	42.7	11.5
06:00 AM - 07:00 AM	50.7	45.2	5.5	1.5	49.2	-	42.1	7.1
07:00 AM - 08:00 AM	49.0	52.6	-3.6	7.0	42.0	-	51.6	-9.6
08:00 AM - 09:00 AM	51.2	54.7	-3.5	7.0	44.2	-	53.5	-9.3
09:00 AM - 10:00 AM	45.1	53.9	-8.8	7.0	38.1	-	52.2	-14.1
10:00 AM - 11:00 AM	44.5	54.6	-10.1	7.0	37.5	-	52.6	-15.1
11:00 AM - 12:00 PM	48.2	56.5	-8.3	7.0	41.2	-	54.3	-13.1
12:00 PM - 01:00 PM	49.0	56.8	-7.8	7.0	42.0	-	54.9	-12.9
01:00 PM - 02:00 PM	53.0	55.4	-2.4	7.0	46.0	-	53.6	-7.6
02:00 PM - 03:00 PM	45.0	55.6	-10.6	7.0	38.0	-	53.0	-15.0
03:00 PM - 04:00 PM	45.6	53.7	-8.1	7.0	38.6	-	49.8	-11.2

ค่ามาตรฐาน

≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
- ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
- ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561  
ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 26-27 ธันวาคม 2565  
ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142082-7 วันที่ตรวจวัด 03-04 กรกฎาคม 2565)

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



# Analysis / Test Report

## TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142072  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2537160-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142072-1  
Parameter เสียงรบกวน  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
Measurement Date Dec 20 - 21, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00710641

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (B)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
01:00 PM - 02:00 PM	57.4	50.4	7.0	1.0	56.4	-	44.6	11.8
02:00 PM - 03:00 PM	54.0	51.6	2.4	4.5	49.5	-	45.5	4.0
03:00 PM - 04:00 PM	53.5	51.2	2.3	4.5	49.0	-	45.4	3.6
04:00 PM - 05:00 PM	61.9	56.9	5.0	1.5	60.4	-	46.6	13.8
05:00 PM - 06:00 PM	64.3	53.5	10.8	0.5	63.8	-	46.2	17.6
06:00 PM - 07:00 PM	61.0	51.7	9.3	0.5	60.5	-	48.5	12.0
07:00 PM - 08:00 PM	52.6	49.2	3.4	3.0	49.6	-	46.8	2.8
08:00 PM - 09:00 PM	51.2	48.5	2.7	3.0	48.2	-	45.2	3.0
09:00 PM - 10:00 PM	50.6	47.1	3.5	2.0	48.6	-	45.0	3.6
10:00 PM - 10:05 PM	49.0	46.4	2.6	3.0	-	49.0	44.4	4.6
10:05 PM - 10:10 PM	50.6	47.0	3.6	2.0	-	51.6	45.1	6.5
10:10 PM - 10:15 PM	49.9	46.3	3.6	2.0	-	50.9	45.3	5.6
10:15 PM - 10:20 PM	51.1	46.3	4.8	1.5	-	52.6	45.1	7.5
10:20 PM - 10:25 PM	48.6	46.4	2.2	4.5	-	47.1	44.7	2.4
10:25 PM - 10:30 PM	48.5	46.1	2.4	4.5	-	47.0	44.6	2.4
10:30 PM - 10:35 PM	48.1	46.5	1.6	4.5	-	46.6	44.8	1.8
10:35 PM - 10:40 PM	48.5	45.4	3.1	3.0	-	48.5	43.6	4.9
10:40 PM - 10:45 PM	48.5	45.6	2.9	3.0	-	48.5	43.6	4.9
10:45 PM - 10:50 PM	48.1	47.2	0.9	7.0	-	44.1	43.5	0.6
10:50 PM - 10:55 PM	49.9	44.9	5.0	1.5	-	51.4	43.1	8.3
10:55 PM - 11:00 PM	48.2	47.1	1.1	7.0	-	44.2	44.0	0.2
11:00 PM - 11:05 PM	49.4	46.1	3.3	3.0	-	49.4	42.8	6.6
11:05 PM - 11:10 PM	49.4	45.3	4.1	2.0	-	50.4	43.0	7.4
11:10 PM - 11:15 PM	46.8	45.6	1.2	7.0	-	42.8	43.1	-0.3
11:15 PM - 11:20 PM	48.4	45.5	2.9	3.0	-	48.4	43.2	5.2
11:20 PM - 11:25 PM	46.2	46.8	-0.6	7.0	-	42.2	43.4	-1.2
11:25 PM - 11:30 PM	47.7	47.0	0.7	7.0	-	43.7	43.3	0.4
11:30 PM - 11:35 PM	46.6	45.7	0.9	7.0	-	42.6	43.5	-0.9
11:35 PM - 11:40 PM	47.8	45.6	2.2	4.5	-	46.3	42.8	3.5
11:40 PM - 11:45 PM	49.3	46.4	2.9	3.0	-	49.3	43.1	6.2
11:45 PM - 11:50 PM	49.2	44.8	4.4	2.0	-	50.2	42.7	7.5
11:50 PM - 11:55 PM	48.0	46.4	1.6	4.5	-	46.5	42.6	3.9
11:55 PM - 12:00 AM	49.2	46.9	2.3	4.5	-	47.7	43.1	4.6
12:00 AM - 12:05 AM	48.4	45.7	2.7	3.0	-	48.4	43.1	5.3
12:05 AM - 12:10 AM	48.5	44.5	4.0	2.0	-	49.5	42.5	7.0
12:10 AM - 12:15 AM	48.3	46.2	2.1	4.5	-	46.8	42.9	3.9
12:15 AM - 12:20 AM	48.9	45.7	3.2	3.0	-	48.9	43.4	5.5
12:20 AM - 12:25 AM	49.0	44.4	4.6	1.5	-	50.5	42.6	7.9
12:25 AM - 12:30 AM	50.3	45.5	4.8	1.5	-	51.8	42.7	9.1
12:30 AM - 12:35 AM	49.0	44.8	4.2	2.0	-	50.0	42.3	7.7

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142072  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2537160-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142072-1  
Parameter เสียงรบกวน  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
Measurement Date Dec 20 - 21, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00710641

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
	กลางวัน (A-C)	กลางคืน (A-C)+3						
12:35 AM - 12:40 AM	48.9	44.4	4.5	1.5	-	50.4	42.6	7.8
12:40 AM - 12:45 AM	49.2	44.1	5.1	1.5	-	50.7	42.0	8.7
12:45 AM - 12:50 AM	48.6	45.6	3.0	3.0	-	48.6	43.2	5.4
12:50 AM - 12:55 AM	48.6	46.3	2.3	4.5	-	47.1	43.2	3.9
12:55 AM - 01:00 AM	47.3	45.4	1.9	4.5	-	45.8	43.1	2.7
01:00 AM - 01:05 AM	50.0	49.6	0.4	7.0	-	46.0	43.0	3.0
01:05 AM - 01:10 AM	46.9	44.8	2.1	4.5	-	45.4	42.1	3.3
01:10 AM - 01:15 AM	48.9	46.2	2.7	3.0	-	48.9	43.4	5.5
01:15 AM - 01:20 AM	50.8	45.4	5.4	1.5	-	52.3	42.9	9.4
01:20 AM - 01:25 AM	48.9	45.6	3.3	3.0	-	48.9	42.5	6.4
01:25 AM - 01:30 AM	47.0	45.8	1.2	7.0	-	43.0	43.1	-0.1
01:30 AM - 01:35 AM	47.4	45.0	2.4	4.5	-	45.9	42.1	3.8
01:35 AM - 01:40 AM	47.3	45.4	1.9	4.5	-	45.8	42.8	3.0
01:40 AM - 01:45 AM	46.8	45.8	1.0	7.0	-	42.8	42.7	0.1
01:45 AM - 01:50 AM	46.6	44.8	1.8	4.5	-	45.1	43.1	2.0
01:50 AM - 01:55 AM	46.8	45.3	1.5	4.5	-	45.3	42.9	2.4
01:55 AM - 02:00 AM	48.2	45.0	3.2	3.0	-	48.2	42.6	5.6
02:00 AM - 02:05 AM	48.0	44.3	3.7	2.0	-	49.0	42.3	6.7
02:05 AM - 02:10 AM	48.4	45.4	3.0	3.0	-	48.4	42.5	5.9
02:10 AM - 02:15 AM	48.8	44.5	4.3	2.0	-	49.8	42.4	7.4
02:15 AM - 02:20 AM	48.3	45.0	3.3	3.0	-	48.3	41.3	7.0
02:20 AM - 02:25 AM	49.5	46.7	2.8	3.0	-	49.5	42.5	7.0
02:25 AM - 02:30 AM	48.9	45.6	3.3	3.0	-	48.9	43.0	5.9
02:30 AM - 02:35 AM	47.9	45.0	2.9	3.0	-	47.9	42.2	5.7
02:35 AM - 02:40 AM	47.5	45.4	2.1	4.5	-	46.0	42.0	4.0
02:40 AM - 02:45 AM	49.7	45.3	4.4	2.0	-	50.7	41.7	9.0
02:45 AM - 02:50 AM	46.3	44.7	1.6	4.5	-	44.8	41.0	3.8
02:50 AM - 02:55 AM	48.6	46.4	2.2	4.5	-	47.1	41.4	5.7
02:55 AM - 03:00 AM	46.7	46.1	0.6	7.0	-	42.7	42.1	0.6
03:00 AM - 03:05 AM	48.9	47.4	1.5	4.5	-	47.4	42.6	4.8
03:05 AM - 03:10 AM	48.5	45.2	3.3	3.0	-	48.5	40.9	7.6
03:10 AM - 03:15 AM	47.1	50.5	-3.4	7.0	-	43.1	40.7	2.4
03:15 AM - 03:20 AM	48.3	50.9	-2.6	7.0	-	44.3	40.8	3.5
03:20 AM - 03:25 AM	47.9	48.1	-0.2	7.0	-	43.9	40.8	3.1
03:25 AM - 03:30 AM	48.2	49.3	-1.1	7.0	-	44.2	42.3	1.9
03:30 AM - 03:35 AM	48.8	47.1	1.7	4.5	-	47.3	41.5	5.8
03:35 AM - 03:40 AM	52.0	46.7	5.3	1.5	-	53.5	41.3	12.2
03:40 AM - 03:45 AM	48.1	47.6	0.5	7.0	-	44.1	42.3	1.8
03:45 AM - 03:50 AM	47.5	48.0	-0.5	7.0	-	43.5	41.9	1.6
03:50 AM - 03:55 AM	49.4	49.0	0.4	7.0	-	45.4	41.6	3.8

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142072  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2537160-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142072-1  
Parameter เสียงรบกวน  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
Measurement Date Dec 20 - 21, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00710641

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับการรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
03:55 AM - 04:00 AM	48.4	49.2	-0.8	7.0	-	44.4	41.1	3.3
04:00 AM - 04:05 AM	51.5	50.5	1.0	7.0	-	47.5	44.2	3.3
04:05 AM - 04:10 AM	45.4	53.0	-7.6	7.0	-	41.4	44.3	-2.9
04:10 AM - 04:15 AM	49.5	53.3	-3.8	7.0	-	45.5	46.2	-0.7
04:15 AM - 04:20 AM	49.0	53.6	-4.6	7.0	-	45.0	46.5	-1.5
04:20 AM - 04:25 AM	47.1	54.2	-7.1	7.0	-	43.1	45.8	-2.7
04:25 AM - 04:30 AM	49.7	52.6	-2.9	7.0	-	45.7	46.7	-1.0
04:30 AM - 04:35 AM	50.4	51.9	-1.5	7.0	-	46.4	46.7	-0.3
04:35 AM - 04:40 AM	50.9	51.5	-0.6	7.0	-	46.9	45.5	1.4
04:40 AM - 04:45 AM	50.5	49.7	0.8	7.0	-	46.5	44.3	2.2
04:45 AM - 04:50 AM	48.4	51.0	-2.6	7.0	-	44.4	46.4	-2.0
04:50 AM - 04:55 AM	49.0	54.7	-5.7	7.0	-	45.0	45.3	-0.3
04:55 AM - 05:00 AM	49.0	57.8	-8.8	7.0	-	45.0	46.9	-1.9
05:00 AM - 05:05 AM	48.7	51.8	-3.1	7.0	-	44.7	46.6	-1.9
05:05 AM - 05:10 AM	51.6	51.3	0.3	7.0	-	47.6	45.3	2.3
05:10 AM - 05:15 AM	48.4	49.1	-0.7	7.0	-	44.4	44.7	-0.3
05:15 AM - 05:20 AM	47.7	50.7	-3.0	7.0	-	43.7	45.6	-1.9
05:20 AM - 05:25 AM	50.3	50.3	0.0	7.0	-	46.3	45.8	0.5
05:25 AM - 05:30 AM	50.3	49.7	0.6	7.0	-	46.3	45.6	0.7
05:30 AM - 05:35 AM	48.9	51.0	-2.1	7.0	-	44.9	46.1	-1.2
05:35 AM - 05:40 AM	49.6	51.0	-1.4	7.0	-	45.6	46.0	-0.4
05:40 AM - 05:45 AM	50.1	54.3	-4.2	7.0	-	46.1	46.5	-0.4
05:45 AM - 05:50 AM	51.6	51.1	0.5	7.0	-	47.6	45.7	1.9
05:50 AM - 05:55 AM	49.5	49.4	0.1	7.0	-	45.5	45.2	0.3
05:55 AM - 06:00 AM	50.2	53.4	-3.2	7.0	-	46.2	46.4	-0.2
06:00 AM - 07:00 AM	52.4	51.9	0.5	7.0	45.4	-	47.0	-1.6
07:00 AM - 08:00 AM	53.7	56.5	-2.8	7.0	46.7	-	45.3	1.4
08:00 AM - 09:00 AM	56.1	51.1	5.0	1.5	54.6	-	46.7	7.9
09:00 AM - 10:00 AM	53.9	50.2	3.7	2.0	51.9	-	45.4	6.5
10:00 AM - 11:00 AM	51.7	50.7	1.0	7.0	44.7	-	45.9	-1.2
11:00 AM - 12:00 PM	52.0	48.5	3.5	2.0	50.0	-	44.0	6.0
12:00 PM - 01:00 PM	51.9	48.7	3.2	3.0	48.9	-	44.3	4.6

ค่ามาตรฐาน

≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 20-21 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142086-1 วันที่ตรวจวัด 27-28 มิถุนายน 2565)

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142072  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2537161-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142072-2  
Parameter เสียงรบกวน  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
Measurement Date Dec 21 - 22, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00710641

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด		ผลต่างระดับเสียง	ตัวปรับค่า	ปรับค่าเสียงจากแหล่งกำเนิด		เสียงพื้นฐาน	ค่าระดับการรบกวน
	(A)	(B)			(A-C)	(A-C)+3		
01:00 PM - 02:00 PM	54.4	49.7	4.7	1.5	52.9	-	45.1	7.8
02:00 PM - 03:00 PM	53.2	51.7	1.5	4.5	48.7	-	46.1	2.6
03:00 PM - 04:00 PM	55.4	52.4	3.0	3.0	52.4	-	46.1	6.3
04:00 PM - 05:00 PM	59.5	54.5	5.0	1.5	58.0	-	46.7	11.3
05:00 PM - 06:00 PM	59.8	53.9	5.9	1.5	58.3	-	46.1	12.2
06:00 PM - 07:00 PM	57.8	49.3	8.5	0.5	57.3	-	45.3	12.0
07:00 PM - 08:00 PM	54.1	49.2	4.9	1.5	52.6	-	45.8	6.8
08:00 PM - 09:00 PM	53.9	48.8	5.1	1.5	52.4	-	45.3	7.1
09:00 PM - 10:00 PM	52.1	47.4	4.7	1.5	50.6	-	45.2	5.4
10:00 PM - 10:05 PM	50.3	46.8	3.5	2.0	-	51.3	45.1	6.2
10:05 PM - 10:10 PM	49.9	47.8	2.1	4.5	-	48.4	45.7	2.7
10:10 PM - 10:15 PM	51.3	46.9	4.4	2.0	-	52.3	44.6	7.7
10:15 PM - 10:20 PM	52.1	46.2	5.9	1.5	-	53.6	43.7	9.9
10:20 PM - 10:25 PM	50.0	46.6	3.4	3.0	-	50.0	44.1	5.9
10:25 PM - 10:30 PM	50.6	45.4	5.2	1.5	-	52.1	43.3	8.8
10:30 PM - 10:35 PM	52.4	46.1	6.3	1.5	-	53.9	44.0	9.9
10:35 PM - 10:40 PM	51.5	45.9	5.6	1.5	-	53.0	43.7	9.3
10:40 PM - 10:45 PM	49.5	45.7	3.8	2.0	-	50.5	43.5	7.0
10:45 PM - 10:50 PM	49.0	45.7	3.3	3.0	-	49.0	43.7	5.3
10:50 PM - 10:55 PM	52.2	45.9	6.3	1.5	-	53.7	43.8	9.9
10:55 PM - 11:00 PM	50.0	46.2	3.8	2.0	-	51.0	43.2	7.8
11:00 PM - 11:05 PM	48.8	45.8	3.0	3.0	-	48.8	42.9	5.9
11:05 PM - 11:10 PM	49.1	46.8	2.3	4.5	-	47.6	43.1	4.5
11:10 PM - 11:15 PM	49.5	46.5	3.0	3.0	-	49.5	44.3	5.2
11:15 PM - 11:20 PM	48.6	46.4	2.2	4.5	-	47.1	43.7	3.4
11:20 PM - 11:25 PM	49.1	46.9	2.2	4.5	-	47.6	44.0	3.6
11:25 PM - 11:30 PM	51.1	46.3	4.8	1.5	-	52.6	44.0	8.6
11:30 PM - 11:35 PM	47.9	46.1	1.8	4.5	-	46.4	43.2	3.2
11:35 PM - 11:40 PM	51.6	45.3	6.3	1.5	-	53.1	42.1	11.0
11:40 PM - 11:45 PM	48.5	43.9	4.6	1.5	-	50.0	42.2	7.8
11:45 PM - 11:50 PM	48.9	44.0	4.9	1.5	-	50.4	41.8	8.6
11:50 PM - 11:55 PM	47.1	45.8	1.3	7.0	-	43.1	42.5	0.6
11:55 PM - 12:00 AM	48.6	45.0	3.6	2.0	-	49.6	42.9	6.7
12:00 AM - 12:05 AM	47.3	45.9	1.4	7.0	-	43.3	42.8	0.5
12:05 AM - 12:10 AM	49.5	45.2	4.3	2.0	-	50.5	42.7	7.8
12:10 AM - 12:15 AM	49.3	46.5	2.8	3.0	-	49.3	43.3	6.0
12:15 AM - 12:20 AM	48.7	44.2	4.5	1.5	-	50.2	42.6	7.6
12:20 AM - 12:25 AM	46.9	45.2	1.7	4.5	-	45.4	43.4	2.0
12:25 AM - 12:30 AM	50.1	45.8	4.3	2.0	-	51.1	43.5	7.6
12:30 AM - 12:35 AM	48.8	45.7	3.1	3.0	-	48.8	43.8	5.0

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142072  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2537161-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142072-2  
Parameter เสียงรบกวน  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
Measurement Date Dec 21 - 22, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00710641

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด	เสียงขณะ ไม่มีการรบกวน	ผลต่าง ระดับเสียง	ตัวปรับค่า	ปรับค่าเสียงจากแหล่งกำเนิด		เสียงพื้นฐาน	ค่าระดับ การรบกวน
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:35 AM - 12:40 AM	49.8	45.2	4.6	1.5	-	51.3	43.0	8.3
12:40 AM - 12:45 AM	49.2	46.4	2.8	3.0	-	49.2	43.3	5.9
12:45 AM - 12:50 AM	48.2	44.3	3.9	2.0	-	49.2	41.7	7.5
12:50 AM - 12:55 AM	45.4	45.8	-0.4	7.0	-	41.4	43.2	-1.8
12:55 AM - 01:00 AM	48.3	45.6	2.7	3.0	-	48.3	43.2	5.1
01:00 AM - 01:05 AM	47.2	44.5	2.7	3.0	-	47.2	42.3	4.9
01:05 AM - 01:10 AM	47.8	46.4	1.4	7.0	-	43.8	44.1	-0.3
01:10 AM - 01:15 AM	47.4	47.0	0.4	7.0	-	43.4	45.1	-1.7
01:15 AM - 01:20 AM	50.0	46.4	3.6	2.0	-	51.0	44.0	7.0
01:20 AM - 01:25 AM	46.2	45.9	0.3	7.0	-	42.2	43.3	-1.1
01:25 AM - 01:30 AM	51.2	44.7	6.5	1.0	-	53.2	42.8	10.4
01:30 AM - 01:35 AM	51.6	45.0	6.6	1.0	-	53.6	42.8	10.8
01:35 AM - 01:40 AM	49.2	45.1	4.1	2.0	-	50.2	42.9	7.3
01:40 AM - 01:45 AM	49.9	44.8	5.1	1.5	-	51.4	43.0	8.4
01:45 AM - 01:50 AM	52.3	46.5	5.8	1.5	-	53.8	44.1	9.7
01:50 AM - 01:55 AM	47.3	45.5	1.8	4.5	-	45.8	42.7	3.1
01:55 AM - 02:00 AM	49.5	47.3	2.2	4.5	-	48.0	44.6	3.4
02:00 AM - 02:05 AM	48.7	45.3	3.4	3.0	-	48.7	43.3	5.4
02:05 AM - 02:10 AM	50.3	45.0	5.3	1.5	-	51.8	42.5	9.3
02:10 AM - 02:15 AM	47.7	45.4	2.3	4.5	-	46.2	43.4	2.8
02:15 AM - 02:20 AM	49.1	46.1	3.0	3.0	-	49.1	42.6	6.5
02:20 AM - 02:25 AM	48.9	46.0	2.9	3.0	-	48.9	43.4	5.5
02:25 AM - 02:30 AM	49.1	46.4	2.7	3.0	-	49.1	43.1	6.0
02:30 AM - 02:35 AM	50.4	45.2	5.2	1.5	-	51.9	43.1	8.8
02:35 AM - 02:40 AM	49.6	46.1	3.5	2.0	-	50.6	43.5	7.1
02:40 AM - 02:45 AM	49.3	44.9	4.4	2.0	-	50.3	42.9	7.4
02:45 AM - 02:50 AM	49.3	45.3	4.0	2.0	-	50.3	41.9	8.4
02:50 AM - 02:55 AM	49.2	46.0	3.2	3.0	-	49.2	42.4	6.8
02:55 AM - 03:00 AM	50.9	46.8	4.1	2.0	-	51.9	44.3	7.6
03:00 AM - 03:05 AM	51.3	45.8	5.5	1.5	-	52.8	43.3	9.5
03:05 AM - 03:10 AM	50.2	46.1	4.1	2.0	-	51.2	42.8	8.4
03:10 AM - 03:15 AM	52.2	46.9	5.3	1.5	-	53.7	43.7	10.0
03:15 AM - 03:20 AM	48.2	47.0	1.2	7.0	-	44.2	44.4	-0.2
03:20 AM - 03:25 AM	49.3	47.4	1.9	4.5	-	47.8	44.0	3.8
03:25 AM - 03:30 AM	52.6	46.4	6.2	1.5	-	54.1	43.6	10.5
03:30 AM - 03:35 AM	50.2	47.0	3.2	3.0	-	50.2	42.5	7.7
03:35 AM - 03:40 AM	48.3	46.9	1.4	7.0	-	44.3	43.7	0.6
03:40 AM - 03:45 AM	50.6	46.7	3.9	2.0	-	51.6	43.4	8.2
03:45 AM - 03:50 AM	49.8	48.0	1.8	4.5	-	48.3	42.0	6.3
03:50 AM - 03:55 AM	50.2	48.5	1.7	4.5	-	48.7	43.7	5.0

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142072  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2537161-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142072-2  
Parameter เสียงรบกวน  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
Measurement Date Dec 21 - 22, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00710641

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับการรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
03:55 AM - 04:00 AM	52.0	50.0	2.0	4.5	-	50.5	44.1	6.4
04:00 AM - 04:05 AM	53.4	49.9	3.5	2.0	-	54.4	44.7	9.7
04:05 AM - 04:10 AM	49.6	50.1	-0.5	7.0	-	45.6	43.6	2.0
04:10 AM - 04:15 AM	50.7	53.2	-2.5	7.0	-	46.7	46.2	0.5
04:15 AM - 04:20 AM	50.7	53.8	-3.1	7.0	-	46.7	47.9	-1.2
04:20 AM - 04:25 AM	49.7	51.8	-2.1	7.0	-	45.7	45.8	-0.1
04:25 AM - 04:30 AM	49.4	51.6	-2.2	7.0	-	45.4	48.1	-2.7
04:30 AM - 04:35 AM	55.1	53.3	1.8	4.5	-	53.6	47.2	6.4
04:35 AM - 04:40 AM	49.5	49.3	0.2	7.0	-	45.5	45.4	0.1
04:40 AM - 04:45 AM	51.9	49.9	2.0	4.5	-	50.4	45.9	4.5
04:45 AM - 04:50 AM	51.1	50.1	1.0	7.0	-	47.1	45.3	1.8
04:50 AM - 04:55 AM	52.3	50.8	1.5	4.5	-	50.8	47.2	3.6
04:55 AM - 05:00 AM	54.3	49.1	5.2	1.5	-	55.8	45.4	10.4
05:00 AM - 05:05 AM	50.9	49.4	1.5	4.5	-	49.4	45.3	4.1
05:05 AM - 05:10 AM	51.6	51.2	0.4	7.0	-	47.6	47.1	0.5
05:10 AM - 05:15 AM	52.6	49.9	2.7	3.0	-	52.6	45.3	7.3
05:15 AM - 05:20 AM	52.5	50.8	1.7	4.5	-	51.0	45.6	5.4
05:20 AM - 05:25 AM	51.2	51.4	-0.2	7.0	-	47.2	46.4	0.8
05:25 AM - 05:30 AM	50.3	52.6	-2.3	7.0	-	46.3	47.2	-0.9
05:30 AM - 05:35 AM	51.2	49.9	1.3	7.0	-	47.2	45.7	1.5
05:35 AM - 05:40 AM	52.1	50.8	1.3	7.0	-	48.1	46.1	2.0
05:40 AM - 05:45 AM	52.1	53.2	-1.1	7.0	-	48.1	47.6	0.5
05:45 AM - 05:50 AM	50.3	52.2	-1.9	7.0	-	46.3	45.0	1.3
05:50 AM - 05:55 AM	51.0	51.3	-0.3	7.0	-	47.0	45.3	1.7
05:55 AM - 06:00 AM	52.5	52.1	0.4	7.0	-	48.5	47.0	1.5
06:00 AM - 07:00 AM	53.4	52.3	1.1	7.0	46.4	-	47.5	-1.1
07:00 AM - 08:00 AM	54.3	51.4	2.9	3.0	51.3	-	45.9	5.4
08:00 AM - 09:00 AM	63.7	48.7	15.0	0.0	63.7	-	44.7	19.0
09:00 AM - 10:00 AM	62.5	52.0	10.5	0.5	62.0	-	45.2	16.8
10:00 AM - 11:00 AM	63.8	49.3	14.5	0.0	63.8	-	44.6	19.2
11:00 AM - 12:00 PM	54.5	49.2	5.3	1.5	53.0	-	44.7	8.3
12:00 PM - 01:00 PM	53.9	47.9	6.0	1.5	52.4	-	43.6	8.8

ค่ามาตรฐาน

≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 21-22 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142086-2 วันที่ตรวจวัด 28-29 มิถุนายน 2565)

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

Approved by

Kanokkorn Anek  
Senior Manager



# Analysis / Test Report

## TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142072  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2537162-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142072-3  
Parameter เสียงรบกวน  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
Measurement Date Dec 22 - 23, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00710641

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด <sup>(A)</sup>	เสียงขณะ ไม่มีการรบกวน <sup>(B)</sup>	ผลต่าง ระดับเสียง <sup>(A-B)</sup>	ตัวปรับค่า <sup>(C)</sup>	ปรับค่าเสียงจากแหล่งกำเนิด <sup>(B)</sup>		เสียงพื้นฐาน <sup>(E)</sup>	ค่าระดับ การรบกวน <sup>(D-E)</sup>
					กลางวัน <sup>(A-C)</sup>	กลางคืน <sup>(A-C)+3</sup>		
01:00 PM - 02:00 PM	55.9	50.2	5.7	1.5	54.4	-	45.5	8.9
02:00 PM - 03:00 PM	56.0	51.2	4.8	1.5	54.5	-	45.2	9.3
03:00 PM - 04:00 PM	55.1	50.6	4.5	1.5	53.6	-	45.8	7.8
04:00 PM - 05:00 PM	56.5	50.5	6.0	1.5	55.0	-	45.4	9.6
05:00 PM - 06:00 PM	57.4	51.7	5.7	1.5	55.9	-	44.9	11.0
06:00 PM - 07:00 PM	55.7	48.8	6.9	1.0	54.7	-	46.3	8.4
07:00 PM - 08:00 PM	54.3	48.8	5.5	1.5	52.8	-	46.6	6.2
08:00 PM - 09:00 PM	53.4	48.7	4.7	1.5	51.9	-	46.3	5.6
09:00 PM - 10:00 PM	51.0	48.9	2.1	4.5	46.5	-	45.3	1.2
10:00 PM - 10:05 PM	50.6	48.7	1.9	4.5	-	49.1	44.1	5.0
10:05 PM - 10:10 PM	51.5	46.0	5.5	1.5	-	53.0	43.9	9.1
10:10 PM - 10:15 PM	51.3	47.5	3.8	2.0	-	52.3	44.9	7.4
10:15 PM - 10:20 PM	50.0	47.3	2.7	3.0	-	50.0	44.6	5.4
10:20 PM - 10:25 PM	50.1	46.8	3.3	3.0	-	50.1	43.2	6.9
10:25 PM - 10:30 PM	55.4	46.6	8.8	0.5	-	57.9	44.0	13.9
10:30 PM - 10:35 PM	49.6	46.5	3.1	3.0	-	49.6	44.6	5.0
10:35 PM - 10:40 PM	51.7	47.7	4.0	2.0	-	52.7	44.5	8.2
10:40 PM - 10:45 PM	50.3	46.8	3.5	2.0	-	51.3	43.8	7.5
10:45 PM - 10:50 PM	50.3	46.0	4.3	2.0	-	51.3	44.1	7.2
10:50 PM - 10:55 PM	48.7	45.9	2.8	3.0	-	48.7	43.7	5.0
10:55 PM - 11:00 PM	48.8	45.1	3.7	2.0	-	49.8	43.5	6.3
11:00 PM - 11:05 PM	52.2	45.9	6.3	1.5	-	53.7	43.7	10.0
11:05 PM - 11:10 PM	51.5	45.2	6.3	1.5	-	53.0	43.3	9.7
11:10 PM - 11:15 PM	48.6	45.1	3.5	2.0	-	49.6	43.0	6.6
11:15 PM - 11:20 PM	50.8	44.2	6.6	1.0	-	52.8	42.0	10.8
11:20 PM - 11:25 PM	50.9	45.0	5.9	1.5	-	52.4	42.8	9.6
11:25 PM - 11:30 PM	50.2	45.6	4.6	1.5	-	51.7	42.8	8.9
11:30 PM - 11:35 PM	48.4	46.7	1.7	4.5	-	46.9	43.0	3.9
11:35 PM - 11:40 PM	49.2	45.7	3.5	2.0	-	50.2	42.8	7.4
11:40 PM - 11:45 PM	49.4	46.4	3.0	3.0	-	49.4	42.7	6.7
11:45 PM - 11:50 PM	49.5	46.9	2.6	3.0	-	49.5	43.2	6.3
11:50 PM - 11:55 PM	50.4	45.7	4.7	1.5	-	51.9	43.1	8.8
11:55 PM - 12:00 AM	49.1	45.9	3.2	3.0	-	49.1	43.8	5.3
12:00 AM - 12:05 AM	48.7	46.5	2.2	4.5	-	47.2	44.1	3.1
12:05 AM - 12:10 AM	48.0	46.5	1.5	4.5	-	46.5	44.0	2.5
12:10 AM - 12:15 AM	49.6	46.4	3.2	3.0	-	49.6	44.0	5.6
12:15 AM - 12:20 AM	48.5	44.9	3.6	2.0	-	49.5	43.0	6.5
12:20 AM - 12:25 AM	50.7	45.3	5.4	1.5	-	52.2	43.2	9.0
12:25 AM - 12:30 AM	49.1	45.4	3.7	2.0	-	50.1	43.3	6.8
12:30 AM - 12:35 AM	53.4	46.0	7.4	1.0	-	55.4	43.6	11.8

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142072  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2537162-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142072-3  
Parameter เสียงรบกวน  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
Measurement Date Dec 22 - 23, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00710641

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด	เสียงขณะ ไม่มีการรบกวน	ผลต่าง ระดับเสียง	ตัวปรับค่า	ปรับค่าเสียงจากแหล่งกำเนิด		เสียงพื้นฐาน	ค่าระดับ การรบกวน
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:35 AM - 12:40 AM	48.7	45.8	2.9	3.0	-	48.7	43.5	5.2
12:40 AM - 12:45 AM	48.8	45.5	3.3	3.0	-	48.8	42.8	6.0
12:45 AM - 12:50 AM	48.9	45.7	3.2	3.0	-	48.9	42.6	6.3
12:50 AM - 12:55 AM	49.5	44.7	4.8	1.5	-	51.0	42.1	8.9
12:55 AM - 01:00 AM	49.9	44.4	5.5	1.5	-	51.4	42.3	9.1
01:00 AM - 01:05 AM	48.8	46.1	2.7	3.0	-	48.8	43.8	5.0
01:05 AM - 01:10 AM	48.6	45.9	2.7	3.0	-	48.6	43.7	4.9
01:10 AM - 01:15 AM	52.2	45.0	7.2	1.0	-	54.2	42.2	12.0
01:15 AM - 01:20 AM	48.8	45.7	3.1	3.0	-	48.8	41.6	7.2
01:20 AM - 01:25 AM	49.5	45.0	4.5	1.5	-	51.0	42.7	8.3
01:25 AM - 01:30 AM	49.4	45.7	3.7	2.0	-	50.4	42.3	8.1
01:30 AM - 01:35 AM	48.7	44.4	4.3	2.0	-	49.7	42.7	7.0
01:35 AM - 01:40 AM	50.6	44.5	6.1	1.5	-	52.1	42.7	9.4
01:40 AM - 01:45 AM	50.0	45.1	4.9	1.5	-	51.5	43.0	8.5
01:45 AM - 01:50 AM	47.3	50.2	-2.9	7.0	-	43.3	42.6	0.7
01:50 AM - 01:55 AM	47.6	44.7	2.9	3.0	-	47.6	42.4	5.2
01:55 AM - 02:00 AM	47.2	45.6	1.6	4.5	-	45.7	42.8	2.9
02:00 AM - 02:05 AM	51.7	45.3	6.4	1.5	-	53.2	42.7	10.5
02:05 AM - 02:10 AM	48.2	45.1	3.1	3.0	-	48.2	42.3	5.9
02:10 AM - 02:15 AM	50.7	44.5	6.2	1.5	-	52.2	41.6	10.6
02:15 AM - 02:20 AM	47.6	44.3	3.3	3.0	-	47.6	41.4	6.2
02:20 AM - 02:25 AM	50.5	45.5	5.0	1.5	-	52.0	41.9	10.1
02:25 AM - 02:30 AM	50.6	45.7	4.9	1.5	-	52.1	42.9	9.2
02:30 AM - 02:35 AM	49.1	45.0	4.1	2.0	-	50.1	42.1	8.0
02:35 AM - 02:40 AM	49.6	45.5	4.1	2.0	-	50.6	42.2	8.4
02:40 AM - 02:45 AM	49.2	44.9	4.3	2.0	-	50.2	41.5	8.7
02:45 AM - 02:50 AM	48.8	45.8	3.0	3.0	-	48.8	42.2	6.6
02:50 AM - 02:55 AM	50.1	46.1	4.0	2.0	-	51.1	42.5	8.6
02:55 AM - 03:00 AM	52.4	46.1	6.3	1.5	-	53.9	42.3	11.6
03:00 AM - 03:05 AM	55.1	45.0	10.1	0.5	-	57.6	42.2	15.4
03:05 AM - 03:10 AM	51.5	46.0	5.5	1.5	-	53.0	42.2	10.8
03:10 AM - 03:15 AM	51.3	45.5	5.8	1.5	-	52.8	41.9	10.9
03:15 AM - 03:20 AM	53.1	46.0	7.1	1.0	-	55.1	42.6	12.5
03:20 AM - 03:25 AM	52.5	46.4	6.1	1.5	-	54.0	42.9	11.1
03:25 AM - 03:30 AM	50.5	45.9	4.6	1.5	-	52.0	43.3	8.7
03:30 AM - 03:35 AM	52.0	46.4	5.6	1.5	-	53.5	43.3	10.2
03:35 AM - 03:40 AM	50.6	46.8	3.8	2.0	-	51.6	44.3	7.3
03:40 AM - 03:45 AM	50.5	45.5	5.0	1.5	-	52.0	43.0	9.0
03:45 AM - 03:50 AM	49.4	45.6	3.8	2.0	-	50.4	43.2	7.2
03:50 AM - 03:55 AM	50.9	46.9	4.0	2.0	-	51.9	43.2	8.7

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142072  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2537162-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142072-3  
Parameter เสียงรบกวน  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
Measurement Date Dec 22 - 23, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00710641

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับการรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
03:55 AM - 04:00 AM	50.0	47.1	2.9	3.0	-	50.0	43.5	6.5
04:00 AM - 04:05 AM	51.6	46.8	4.8	1.5	-	53.1	42.1	11.0
04:05 AM - 04:10 AM	48.6	50.4	-1.8	7.0	-	44.6	44.7	-0.1
04:10 AM - 04:15 AM	52.5	50.9	1.6	4.5	-	51.0	44.9	6.1
04:15 AM - 04:20 AM	49.4	50.5	-1.1	7.0	-	45.4	46.3	-0.9
04:20 AM - 04:25 AM	53.1	51.2	1.9	4.5	-	51.6	45.2	6.4
04:25 AM - 04:30 AM	51.9	50.5	1.4	7.0	-	47.9	45.1	2.8
04:30 AM - 04:35 AM	51.3	50.0	1.3	7.0	-	47.3	45.1	2.2
04:35 AM - 04:40 AM	52.3	50.7	1.6	4.5	-	50.8	46.1	4.7
04:40 AM - 04:45 AM	48.3	51.1	-2.8	7.0	-	44.3	46.1	-1.8
04:45 AM - 04:50 AM	48.7	52.0	-3.3	7.0	-	44.7	46.8	-2.1
04:50 AM - 04:55 AM	51.3	49.8	1.5	4.5	-	49.8	43.2	6.6
04:55 AM - 05:00 AM	50.1	50.2	-0.1	7.0	-	46.1	42.6	3.5
05:00 AM - 05:05 AM	52.4	49.4	3.0	3.0	-	52.4	46.9	5.5
05:05 AM - 05:10 AM	52.2	49.4	2.8	3.0	-	52.2	44.5	7.7
05:10 AM - 05:15 AM	53.0	48.2	4.8	1.5	-	54.5	43.9	10.6
05:15 AM - 05:20 AM	52.0	50.2	1.8	4.5	-	50.5	44.0	6.5
05:20 AM - 05:25 AM	52.5	48.6	3.9	2.0	-	53.5	43.3	10.2
05:25 AM - 05:30 AM	52.8	50.8	2.0	4.5	-	51.3	46.9	4.4
05:30 AM - 05:35 AM	51.9	50.1	1.8	4.5	-	50.4	44.2	6.2
05:35 AM - 05:40 AM	53.6	49.8	3.8	2.0	-	54.6	43.2	11.4
05:40 AM - 05:45 AM	51.7	54.2	-2.5	7.0	-	47.7	46.1	1.6
05:45 AM - 05:50 AM	52.1	50.6	1.5	4.5	-	50.6	45.5	5.1
05:50 AM - 05:55 AM	53.8	51.1	2.7	3.0	-	53.8	46.3	7.5
05:55 AM - 06:00 AM	55.5	53.1	2.4	4.5	-	54.0	45.0	9.0
06:00 AM - 07:00 AM	54.5	51.5	3.0	3.0	51.5	-	46.1	5.4
07:00 AM - 08:00 AM	54.7	50.3	4.4	2.0	52.7	-	45.1	7.6
08:00 AM - 09:00 AM	54.7	50.2	4.5	1.5	53.2	-	45.4	7.8
09:00 AM - 10:00 AM	55.9	50.9	5.0	1.5	54.4	-	45.0	9.4
10:00 AM - 11:00 AM	54.9	50.5	4.4	2.0	52.9	-	45.1	7.8
11:00 AM - 12:00 PM	52.6	49.7	2.9	3.0	49.6	-	43.4	6.2
12:00 PM - 01:00 PM	52.7	49.1	3.6	2.0	50.7	-	44.1	6.6

ค่ามาตรฐาน

≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 22-23 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142086-3 วันที่ตรวจวัด 29-30 มิถุนายน 2565)

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Approved by

Kanokkorn Anek  
Senior Manager





# Analysis / Test Report

## TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142072  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2537163-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142072-4  
Parameter เสียงรบกวน  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
Measurement Date Dec 23 - 24, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00710641

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (B)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
01:00 PM - 02:00 PM	54.1	50.2	3.9	2.0	52.1	-	46.4	5.7
02:00 PM - 03:00 PM	54.8	50.1	4.7	1.5	53.3	-	45.3	8.0
03:00 PM - 04:00 PM	54.2	50.2	4.0	2.0	52.2	-	45.9	6.3
04:00 PM - 05:00 PM	56.5	50.3	6.2	1.5	55.0	-	47.5	7.5
05:00 PM - 06:00 PM	58.3	49.1	9.2	0.5	57.8	-	44.1	13.7
06:00 PM - 07:00 PM	56.6	49.8	6.8	1.0	55.6	-	47.2	8.4
07:00 PM - 08:00 PM	54.0	49.9	4.1	2.0	52.0	-	48.0	4.0
08:00 PM - 09:00 PM	55.0	49.7	5.3	1.5	53.5	-	47.8	5.7
09:00 PM - 10:00 PM	53.4	49.8	3.6	2.0	51.4	-	47.1	4.3
10:00 PM - 10:05 PM	54.6	48.1	6.5	1.0	-	56.6	46.0	10.6
10:05 PM - 10:10 PM	53.8	48.3	5.5	1.5	-	55.3	46.2	9.1
10:10 PM - 10:15 PM	52.2	48.4	3.8	2.0	-	53.2	46.6	6.6
10:15 PM - 10:20 PM	52.8	50.9	1.9	4.5	-	51.3	48.0	3.3
10:20 PM - 10:25 PM	54.6	49.8	4.8	1.5	-	56.1	47.9	8.2
10:25 PM - 10:30 PM	53.1	48.0	5.1	1.5	-	54.6	46.4	8.2
10:30 PM - 10:35 PM	55.5	49.7	5.8	1.5	-	57.0	48.2	8.8
10:35 PM - 10:40 PM	53.7	50.8	2.9	3.0	-	53.7	47.4	6.3
10:40 PM - 10:45 PM	50.8	50.4	0.4	7.0	-	46.8	49.0	-2.2
10:45 PM - 10:50 PM	51.2	50.3	0.9	7.0	-	47.2	49.0	-1.8
10:50 PM - 10:55 PM	50.4	50.7	-0.3	7.0	-	46.4	49.1	-2.7
10:55 PM - 11:00 PM	49.6	50.3	-0.7	7.0	-	45.6	47.6	-2.0
11:00 PM - 11:05 PM	50.7	51.6	-0.9	7.0	-	46.7	49.5	-2.8
11:05 PM - 11:10 PM	49.4	49.8	-0.4	7.0	-	45.4	47.0	-1.6
11:10 PM - 11:15 PM	50.7	50.9	-0.2	7.0	-	46.7	49.4	-2.7
11:15 PM - 11:20 PM	48.8	49.6	-0.8	7.0	-	44.8	48.0	-3.2
11:20 PM - 11:25 PM	51.4	49.2	2.2	4.5	-	49.9	47.5	2.4
11:25 PM - 11:30 PM	50.1	49.3	0.8	7.0	-	46.1	47.4	-1.3
11:30 PM - 11:35 PM	50.7	49.2	1.5	4.5	-	49.2	45.4	3.8
11:35 PM - 11:40 PM	47.9	50.4	-2.5	7.0	-	43.9	48.3	-4.4
11:40 PM - 11:45 PM	50.5	48.3	2.2	4.5	-	49.0	46.2	2.8
11:45 PM - 11:50 PM	50.6	50.9	-0.3	7.0	-	46.6	49.5	-2.9
11:50 PM - 11:55 PM	50.9	48.8	2.1	4.5	-	49.4	45.6	3.8
11:55 PM - 12:00 AM	49.4	50.7	-1.3	7.0	-	45.4	48.5	-3.1
12:00 AM - 12:05 AM	49.2	49.1	0.1	7.0	-	45.2	47.1	-1.9
12:05 AM - 12:10 AM	49.3	51.1	-1.8	7.0	-	45.3	49.7	-4.4
12:10 AM - 12:15 AM	49.3	49.8	-0.5	7.0	-	45.3	45.6	-0.3
12:15 AM - 12:20 AM	49.6	47.0	2.6	3.0	-	49.6	45.0	4.6
12:20 AM - 12:25 AM	50.0	45.3	4.7	1.5	-	51.5	43.6	7.9
12:25 AM - 12:30 AM	50.6	49.2	1.4	7.0	-	46.6	45.4	1.2
12:30 AM - 12:35 AM	50.8	50.3	0.5	7.0	-	46.8	48.1	-1.3

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142072  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2537163-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142072-4  
Parameter เสียงรบกวน  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
Measurement Date Dec 23 - 24, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00710641

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด	เสียงขณะ ไม่มีการรบกวน	ผลต่าง ระดับเสียง	ตัวปรับค่า	ปรับค่าเสียงจากแหล่งกำเนิด		เสียงพื้นฐาน	ค่าระดับ การรบกวน
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:35 AM - 12:40 AM	51.6	48.9	2.7	3.0	-	51.6	45.1	6.5
12:40 AM - 12:45 AM	52.8	46.2	6.6	1.0	-	54.8	44.6	10.2
12:45 AM - 12:50 AM	51.4	45.8	5.6	1.5	-	52.9	44.0	8.9
12:50 AM - 12:55 AM	49.7	47.5	2.2	4.5	-	48.2	45.1	3.1
12:55 AM - 01:00 AM	51.4	46.4	5.0	1.5	-	52.9	44.1	8.8
01:00 AM - 01:05 AM	51.8	45.8	6.0	1.5	-	53.3	43.2	10.1
01:05 AM - 01:10 AM	49.2	46.3	2.9	3.0	-	49.2	43.6	5.6
01:10 AM - 01:15 AM	49.8	45.6	4.2	2.0	-	50.8	43.5	7.3
01:15 AM - 01:20 AM	49.3	46.7	2.6	3.0	-	49.3	44.9	4.4
01:20 AM - 01:25 AM	51.0	46.3	4.7	1.5	-	52.5	44.2	8.3
01:25 AM - 01:30 AM	50.6	47.2	3.4	3.0	-	50.6	45.0	5.6
01:30 AM - 01:35 AM	50.4	47.7	2.7	3.0	-	50.4	46.1	4.3
01:35 AM - 01:40 AM	50.2	46.9	3.3	3.0	-	50.2	44.8	5.4
01:40 AM - 01:45 AM	52.1	47.3	4.8	1.5	-	53.6	45.3	8.3
01:45 AM - 01:50 AM	50.4	48.4	2.0	4.5	-	48.9	45.3	3.6
01:50 AM - 01:55 AM	50.7	48.6	2.1	4.5	-	49.2	46.0	3.2
01:55 AM - 02:00 AM	50.1	48.2	1.9	4.5	-	48.6	45.9	2.7
02:00 AM - 02:05 AM	50.2	48.4	1.8	4.5	-	48.7	46.0	2.7
02:05 AM - 02:10 AM	50.2	48.0	2.2	4.5	-	48.7	45.6	3.1
02:10 AM - 02:15 AM	49.6	47.6	2.0	4.5	-	48.1	44.6	3.5
02:15 AM - 02:20 AM	51.0	46.6	4.4	2.0	-	52.0	43.8	8.2
02:20 AM - 02:25 AM	50.8	47.1	3.7	2.0	-	51.8	44.0	7.8
02:25 AM - 02:30 AM	51.4	46.6	4.8	1.5	-	52.9	43.6	9.3
02:30 AM - 02:35 AM	50.0	47.3	2.7	3.0	-	50.0	43.6	6.4
02:35 AM - 02:40 AM	51.0	45.7	5.3	1.5	-	52.5	41.9	10.6
02:40 AM - 02:45 AM	50.1	47.8	2.3	4.5	-	48.6	44.5	4.1
02:45 AM - 02:50 AM	49.7	48.8	0.9	7.0	-	45.7	45.6	0.1
02:50 AM - 02:55 AM	48.7	45.7	3.0	3.0	-	48.7	43.1	5.6
02:55 AM - 03:00 AM	50.9	45.3	5.6	1.5	-	52.4	43.4	9.0
03:00 AM - 03:05 AM	50.5	47.0	3.5	2.0	-	51.5	43.9	7.6
03:05 AM - 03:10 AM	50.0	45.9	4.1	2.0	-	51.0	43.6	7.4
03:10 AM - 03:15 AM	51.0	45.8	5.2	1.5	-	52.5	42.4	10.1
03:15 AM - 03:20 AM	49.3	45.8	3.5	2.0	-	50.3	43.2	7.1
03:20 AM - 03:25 AM	48.4	46.4	2.0	4.5	-	46.9	42.4	4.5
03:25 AM - 03:30 AM	48.6	47.3	1.3	7.0	-	44.6	42.8	1.8
03:30 AM - 03:35 AM	50.4	45.6	4.8	1.5	-	51.9	42.2	9.7
03:35 AM - 03:40 AM	49.8	46.4	3.4	3.0	-	49.8	43.0	6.8
03:40 AM - 03:45 AM	52.0	46.8	5.2	1.5	-	53.5	44.1	9.4
03:45 AM - 03:50 AM	52.0	46.1	5.9	1.5	-	53.5	43.2	10.3
03:50 AM - 03:55 AM	50.0	50.3	-0.3	7.0	-	46.0	49.0	-3.0

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142072  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2537163-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142072-4  
Parameter เสียงรบกวน  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
Measurement Date Dec 23 - 24, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00710641

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับการรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
03:55 AM - 04:00 AM	50.6	50.7	-0.1	7.0	-	46.6	49.1	-2.5
04:00 AM - 04:05 AM	50.1	50.3	-0.2	7.0	-	46.1	47.6	-1.5
04:05 AM - 04:10 AM	48.4	49.7	-1.3	7.0	-	44.4	48.2	-3.8
04:10 AM - 04:15 AM	49.7	50.3	-0.6	7.0	-	45.7	47.6	-1.9
04:15 AM - 04:20 AM	49.9	51.6	-1.7	7.0	-	45.9	49.5	-3.6
04:20 AM - 04:25 AM	50.1	49.8	0.3	7.0	-	46.1	47.0	-0.9
04:25 AM - 04:30 AM	50.7	50.9	-0.2	7.0	-	46.7	49.4	-2.7
04:30 AM - 04:35 AM	50.5	49.1	1.4	7.0	-	46.5	47.1	-0.6
04:35 AM - 04:40 AM	51.1	50.0	1.1	7.0	-	47.1	45.0	2.1
04:40 AM - 04:45 AM	50.4	52.4	-2.0	7.0	-	46.4	49.1	-2.7
04:45 AM - 04:50 AM	49.9	49.0	0.9	7.0	-	45.9	47.1	-1.2
04:50 AM - 04:55 AM	50.0	48.8	1.2	7.0	-	46.0	47.6	-1.6
04:55 AM - 05:00 AM	53.5	50.9	2.6	3.0	-	53.5	49.5	4.0
05:00 AM - 05:05 AM	52.0	49.2	2.8	3.0	-	52.0	47.2	4.8
05:05 AM - 05:10 AM	51.4	47.8	3.6	2.0	-	52.4	44.5	7.9
05:10 AM - 05:15 AM	50.9	48.8	2.1	4.5	-	49.4	45.6	3.8
05:15 AM - 05:20 AM	51.8	47.3	4.5	1.5	-	53.3	42.8	10.5
05:20 AM - 05:25 AM	52.0	48.8	3.2	3.0	-	52.0	45.1	6.9
05:25 AM - 05:30 AM	52.9	50.0	2.9	3.0	-	52.9	44.1	8.8
05:30 AM - 05:35 AM	53.2	48.6	4.6	1.5	-	54.7	44.5	10.2
05:35 AM - 05:40 AM	53.1	48.0	5.1	1.5	-	54.6	45.1	9.5
05:40 AM - 05:45 AM	51.7	49.8	1.9	4.5	-	50.2	45.3	4.9
05:45 AM - 05:50 AM	52.5	48.7	3.8	2.0	-	53.5	45.4	8.1
05:50 AM - 05:55 AM	52.7	48.9	3.8	2.0	-	53.7	44.9	8.8
05:55 AM - 06:00 AM	52.7	48.7	4.0	2.0	-	53.7	44.5	9.2
06:00 AM - 07:00 AM	54.2	49.6	4.6	1.5	52.7	-	45.8	6.9
07:00 AM - 08:00 AM	56.0	50.2	5.8	1.5	54.5	-	44.6	9.9
08:00 AM - 09:00 AM	54.7	50.9	3.8	2.0	52.7	-	44.5	8.2
09:00 AM - 10:00 AM	54.7	50.4	4.3	2.0	52.7	-	44.5	8.2
10:00 AM - 11:00 AM	54.3	49.6	4.7	1.5	52.8	-	44.4	8.4
11:00 AM - 12:00 PM	53.4	49.0	4.4	2.0	51.4	-	44.5	6.9
12:00 PM - 01:00 PM	53.8	50.4	3.4	3.0	50.8	-	46.4	4.4

ค่ามาตรฐาน

≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
- ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
- ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561  
ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 23-24 ธันวาคม 2565  
ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142086-4 วันที่ตรวจวัด มีถุนายน 30-01 กรกฎาคม 2565)

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142072  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2537164-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142072-5  
Parameter เสียงรบกวน  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
Measurement Date Dec 24 - 25, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00710641

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด		ผลต่างระดับเสียง	ตัวปรับค่า	ปรับค่าเสียงจากแหล่งกำเนิด		เสียงพื้นฐาน	ค่าระดับการรบกวน
	(A)	(B)			(A-C)	(A-C)+3		
01:00 PM - 02:00 PM	59.3	50.4	8.9	0.5	58.8	-	45.7	13.1
02:00 PM - 03:00 PM	55.0	49.9	5.1	1.5	53.5	-	45.6	7.9
03:00 PM - 04:00 PM	55.2	49.4	5.8	1.5	53.7	-	45.4	8.3
04:00 PM - 05:00 PM	61.0	50.1	10.9	0.5	60.5	-	45.6	14.9
05:00 PM - 06:00 PM	58.8	49.2	9.6	0.5	58.3	-	45.1	13.2
06:00 PM - 07:00 PM	56.9	49.7	7.2	1.0	55.9	-	46.4	9.5
07:00 PM - 08:00 PM	54.3	49.5	4.8	1.5	52.8	-	46.5	6.3
08:00 PM - 09:00 PM	52.2	49.4	2.8	3.0	49.2	-	45.2	4.0
09:00 PM - 10:00 PM	51.3	49.5	1.8	4.5	46.8	-	46.7	0.1
10:00 PM - 10:05 PM	49.7	50.0	-0.3	7.0	-	45.7	47.2	-1.5
10:05 PM - 10:10 PM	50.3	49.2	1.1	7.0	-	46.3	46.4	-0.1
10:10 PM - 10:15 PM	50.6	50.7	-0.1	7.0	-	46.6	46.7	-0.1
10:15 PM - 10:20 PM	50.1	49.4	0.7	7.0	-	46.1	45.5	0.6
10:20 PM - 10:25 PM	49.8	50.6	-0.8	7.0	-	45.8	44.1	1.7
10:25 PM - 10:30 PM	50.4	49.9	0.5	7.0	-	46.4	45.2	1.2
10:30 PM - 10:35 PM	49.2	47.9	1.3	7.0	-	45.2	44.0	1.2
10:35 PM - 10:40 PM	50.3	49.6	0.7	7.0	-	46.3	43.9	2.4
10:40 PM - 10:45 PM	48.9	50.8	-1.9	7.0	-	44.9	46.7	-1.8
10:45 PM - 10:50 PM	50.1	50.6	-0.5	7.0	-	46.1	44.1	2.0
10:50 PM - 10:55 PM	49.4	48.4	1.0	7.0	-	45.4	45.8	-0.4
10:55 PM - 11:00 PM	50.1	47.7	2.4	4.5	-	48.6	44.9	3.7
11:00 PM - 11:05 PM	50.4	47.6	2.8	3.0	-	50.4	45.4	5.0
11:05 PM - 11:10 PM	50.0	45.7	4.3	2.0	-	51.0	44.1	6.9
11:10 PM - 11:15 PM	49.6	48.0	1.6	4.5	-	48.1	44.9	3.2
11:15 PM - 11:20 PM	47.9	50.3	-2.4	7.0	-	43.9	44.9	-1.0
11:20 PM - 11:25 PM	49.1	52.5	-3.4	7.0	-	45.1	49.3	-4.2
11:25 PM - 11:30 PM	49.4	47.6	1.8	4.5	-	47.9	44.3	3.6
11:30 PM - 11:35 PM	49.2	46.1	3.1	3.0	-	49.2	44.3	4.9
11:35 PM - 11:40 PM	49.2	46.6	2.6	3.0	-	49.2	45.0	4.2
11:40 PM - 11:45 PM	49.0	46.3	2.7	3.0	-	49.0	45.0	4.0
11:45 PM - 11:50 PM	46.7	48.5	-1.8	7.0	-	42.7	45.6	-2.9
11:50 PM - 11:55 PM	47.8	49.8	-2.0	7.0	-	43.8	47.3	-3.5
11:55 PM - 12:00 AM	48.3	47.8	0.5	7.0	-	44.3	46.3	-2.0
12:00 AM - 12:05 AM	48.9	46.9	2.0	4.5	-	47.4	44.8	2.6
12:05 AM - 12:10 AM	48.3	47.3	1.0	7.0	-	44.3	45.3	-1.0
12:10 AM - 12:15 AM	47.9	46.9	1.0	7.0	-	43.9	44.8	-0.9
12:15 AM - 12:20 AM	48.0	47.9	0.1	7.0	-	44.0	45.2	-1.2
12:20 AM - 12:25 AM	48.1	48.1	0.0	7.0	-	44.1	44.6	-0.5
12:25 AM - 12:30 AM	48.4	53.0	-4.6	7.0	-	44.4	48.5	-4.1
12:30 AM - 12:35 AM	49.1	51.9	-2.8	7.0	-	45.1	44.9	0.2

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142072  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2537164-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142072-5  
Parameter เสียงรบกวน  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
Measurement Date Dec 24 - 25, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00710641

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด	เสียงขณะ ไม่มีการรบกวน	ผลต่าง ระดับเสียง	ตัวปรับค่า	ปรับค่าเสียงจากแหล่งกำเนิด		เสียงพื้นฐาน	ค่าระดับ การรบกวน
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:35 AM - 12:40 AM	48.1	47.4	0.7	7.0	-	44.1	43.9	0.2
12:40 AM - 12:45 AM	49.0	47.2	1.8	4.5	-	47.5	43.9	3.6
12:45 AM - 12:50 AM	49.9	50.4	-0.5	7.0	-	45.9	45.2	0.7
12:50 AM - 12:55 AM	47.4	48.9	-1.5	7.0	-	43.4	47.4	-4.0
12:55 AM - 01:00 AM	49.4	49.0	0.4	7.0	-	45.4	47.4	-2.0
01:00 AM - 01:05 AM	50.1	52.4	-2.3	7.0	-	46.1	50.9	-4.8
01:05 AM - 01:10 AM	49.2	50.0	-0.8	7.0	-	45.2	48.3	-3.1
01:10 AM - 01:15 AM	50.0	48.3	1.7	4.5	-	48.5	47.0	1.5
01:15 AM - 01:20 AM	49.5	48.1	1.4	7.0	-	45.5	46.2	-0.7
01:20 AM - 01:25 AM	48.1	46.3	1.8	4.5	-	46.6	44.7	1.9
01:25 AM - 01:30 AM	49.0	46.7	2.3	4.5	-	47.5	44.7	2.8
01:30 AM - 01:35 AM	52.2	46.4	5.8	1.5	-	53.7	44.6	9.1
01:35 AM - 01:40 AM	50.7	46.9	3.8	2.0	-	51.7	44.0	7.7
01:40 AM - 01:45 AM	51.0	46.8	4.2	2.0	-	52.0	44.3	7.7
01:45 AM - 01:50 AM	51.1	46.0	5.1	1.5	-	52.6	43.9	8.7
01:50 AM - 01:55 AM	49.4	46.2	3.2	3.0	-	49.4	44.7	4.7
01:55 AM - 02:00 AM	49.0	47.2	1.8	4.5	-	47.5	45.1	2.4
02:00 AM - 02:05 AM	48.6	47.5	1.1	7.0	-	44.6	44.7	-0.1
02:05 AM - 02:10 AM	49.4	46.3	3.1	3.0	-	49.4	44.4	5.0
02:10 AM - 02:15 AM	52.3	51.0	1.3	7.0	-	48.3	44.7	3.6
02:15 AM - 02:20 AM	52.7	45.8	6.9	1.0	-	54.7	43.8	10.9
02:20 AM - 02:25 AM	50.0	46.3	3.7	2.0	-	51.0	44.1	6.9
02:25 AM - 02:30 AM	49.3	47.3	2.0	4.5	-	47.8	44.2	3.6
02:30 AM - 02:35 AM	51.5	46.7	4.8	1.5	-	53.0	44.9	8.1
02:35 AM - 02:40 AM	49.7	47.4	2.3	4.5	-	48.2	45.0	3.2
02:40 AM - 02:45 AM	52.3	47.4	4.9	1.5	-	53.8	44.9	8.9
02:45 AM - 02:50 AM	49.7	48.0	1.7	4.5	-	48.2	46.5	1.7
02:50 AM - 02:55 AM	48.7	49.2	-0.5	7.0	-	44.7	47.3	-2.6
02:55 AM - 03:00 AM	49.2	50.3	-1.1	7.0	-	45.2	49.0	-3.8
03:00 AM - 03:05 AM	49.5	48.3	1.2	7.0	-	45.5	47.0	-1.5
03:05 AM - 03:10 AM	51.7	48.6	3.1	3.0	-	51.7	44.9	6.8
03:10 AM - 03:15 AM	50.1	48.0	2.1	4.5	-	48.6	44.5	4.1
03:15 AM - 03:20 AM	49.3	49.8	-0.5	7.0	-	45.3	47.3	-2.0
03:20 AM - 03:25 AM	51.0	49.9	1.1	7.0	-	47.0	45.4	1.6
03:25 AM - 03:30 AM	53.4	48.9	4.5	1.5	-	54.9	43.5	11.4
03:30 AM - 03:35 AM	50.9	50.4	0.5	7.0	-	46.9	42.5	4.4
03:35 AM - 03:40 AM	52.8	49.4	3.4	3.0	-	52.8	44.6	8.2
03:40 AM - 03:45 AM	51.4	50.1	1.3	7.0	-	47.4	45.1	2.3
03:45 AM - 03:50 AM	50.8	49.9	0.9	7.0	-	46.8	45.2	1.6
03:50 AM - 03:55 AM	51.7	50.3	1.4	7.0	-	47.7	44.3	3.4

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142072  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2537164-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142072-5  
Parameter เสียงรบกวน  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
Measurement Date Dec 24 - 25, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00710641

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับการรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
03:55 AM - 04:00 AM	52.0	50.2	1.8	4.5	-	50.5	43.8	6.7
04:00 AM - 04:05 AM	51.9	49.0	2.9	3.0	-	51.9	47.4	4.5
04:05 AM - 04:10 AM	50.7	49.0	1.7	4.5	-	49.2	47.1	2.1
04:10 AM - 04:15 AM	51.7	50.8	0.9	7.0	-	47.7	48.1	-0.4
04:15 AM - 04:20 AM	50.2	51.8	-1.6	7.0	-	46.2	48.1	-1.9
04:20 AM - 04:25 AM	52.8	48.1	4.7	1.5	-	54.3	46.2	8.1
04:25 AM - 04:30 AM	53.5	50.2	3.3	3.0	-	53.5	44.9	8.6
04:30 AM - 04:35 AM	50.3	49.9	0.4	7.0	-	46.3	47.0	-0.7
04:35 AM - 04:40 AM	52.1	49.4	2.7	3.0	-	52.1	45.5	6.6
04:40 AM - 04:45 AM	51.5	50.6	0.9	7.0	-	47.5	44.1	3.4
04:45 AM - 04:50 AM	52.6	50.6	2.0	4.5	-	51.1	44.1	7.0
04:50 AM - 04:55 AM	52.0	48.6	3.4	3.0	-	52.0	45.8	6.2
04:55 AM - 05:00 AM	52.9	50.8	2.1	4.5	-	51.4	44.3	7.1
05:00 AM - 05:05 AM	49.9	49.4	0.5	7.0	-	45.9	45.5	0.4
05:05 AM - 05:10 AM	51.2	49.0	2.2	4.5	-	49.7	47.4	2.3
05:10 AM - 05:15 AM	51.0	48.9	2.1	4.5	-	49.5	47.4	2.1
05:15 AM - 05:20 AM	53.3	50.6	2.7	3.0	-	53.3	44.1	9.2
05:20 AM - 05:25 AM	53.0	48.6	4.4	2.0	-	54.0	45.8	8.2
05:25 AM - 05:30 AM	51.1	49.2	1.9	4.5	-	49.6	47.3	2.3
05:30 AM - 05:35 AM	52.8	49.8	3.0	3.0	-	52.8	46.0	6.8
05:35 AM - 05:40 AM	51.9	47.7	4.2	2.0	-	52.9	44.9	8.0
05:40 AM - 05:45 AM	52.2	47.6	4.6	1.5	-	53.7	45.4	8.3
05:45 AM - 05:50 AM	51.9	48.9	3.0	3.0	-	51.9	47.4	4.5
05:50 AM - 05:55 AM	53.2	49.0	4.2	2.0	-	54.2	47.4	6.8
05:55 AM - 06:00 AM	52.7	49.8	2.9	3.0	-	52.7	47.3	5.4
06:00 AM - 07:00 AM	53.9	49.7	4.2	2.0	51.9	-	46.1	5.8
07:00 AM - 08:00 AM	55.2	50.2	5.0	1.5	53.7	-	45.9	7.8
08:00 AM - 09:00 AM	56.0	49.9	6.1	1.5	54.5	-	46.2	8.3
09:00 AM - 10:00 AM	54.6	48.9	5.7	1.5	53.1	-	45.1	8.0
10:00 AM - 11:00 AM	54.6	49.1	5.5	1.5	53.1	-	45.0	8.1
11:00 AM - 12:00 PM	53.9	48.8	5.1	1.5	52.4	-	45.4	7.0
12:00 PM - 01:00 PM	53.3	50.2	3.1	3.0	50.3	-	46.2	4.1

ค่ามาตรฐาน

≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 24-25 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142086-5 วันที่ตรวจวัด 01-02 กรกฎาคม 2565)

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Approved by

Kanokkorn Anek  
Senior Manager



# Analysis / Test Report

## TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142072  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2537165-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142072-6  
Parameter เสียงรบกวน  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
Measurement Date Dec 25 - 26, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00710641

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีกิจกรรม (B)	ผลต่างระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (B)		เสียงพื้นฐาน (E)	ค่าระดับกิจกรรม (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
01:00 PM - 02:00 PM	53.4	50.4	3.0	3.0	50.4	-	46.4	4.0
02:00 PM - 03:00 PM	54.1	51.6	2.5	3.0	51.1	-	46.3	4.8
03:00 PM - 04:00 PM	55.0	53.7	1.3	7.0	48.0	-	46.7	1.3
04:00 PM - 05:00 PM	56.3	55.6	0.7	7.0	49.3	-	47.2	2.1
05:00 PM - 06:00 PM	57.9	48.8	9.1	0.5	57.4	-	44.6	12.8
06:00 PM - 07:00 PM	56.2	51.7	4.5	1.5	54.7	-	49.9	4.8
07:00 PM - 08:00 PM	55.8	52.4	3.4	3.0	52.8	-	51.3	1.5
08:00 PM - 09:00 PM	55.5	51.4	4.1	2.0	53.5	-	49.8	3.7
09:00 PM - 10:00 PM	55.6	50.0	5.6	1.5	54.1	-	48.4	5.7
10:00 PM - 10:05 PM	54.1	52.7	1.4	7.0	-	50.1	51.3	-1.2
10:05 PM - 10:10 PM	51.7	52.8	-1.1	7.0	-	47.7	51.4	-3.7
10:10 PM - 10:15 PM	52.0	52.6	-0.6	7.0	-	48.0	51.3	-3.3
10:15 PM - 10:20 PM	52.1	52.5	-0.4	7.0	-	48.1	51.0	-2.9
10:20 PM - 10:25 PM	52.1	51.4	0.7	7.0	-	48.1	49.2	-1.1
10:25 PM - 10:30 PM	53.1	51.0	2.1	4.5	-	51.6	49.8	1.8
10:30 PM - 10:35 PM	51.7	50.7	1.0	7.0	-	47.7	49.7	-2.0
10:35 PM - 10:40 PM	53.5	51.1	2.4	4.5	-	52.0	50.1	1.9
10:40 PM - 10:45 PM	54.0	49.7	4.3	2.0	-	55.0	46.3	8.7
10:45 PM - 10:50 PM	53.1	47.1	6.0	1.5	-	54.6	46.0	8.6
10:50 PM - 10:55 PM	64.2	47.0	17.2	0.0	-	67.2	45.5	21.7
10:55 PM - 11:00 PM	52.4	50.3	2.1	4.5	-	50.9	47.0	3.9
11:00 PM - 11:05 PM	56.2	50.7	5.5	1.5	-	57.7	48.8	8.9
11:05 PM - 11:10 PM	52.7	52.1	0.6	7.0	-	48.7	50.4	-1.7
11:10 PM - 11:15 PM	52.5	52.7	-0.2	7.0	-	48.5	51.2	-2.7
11:15 PM - 11:20 PM	51.9	48.9	3.0	3.0	-	51.9	45.3	6.6
11:20 PM - 11:25 PM	53.1	46.4	6.7	1.0	-	55.1	45.2	9.9
11:25 PM - 11:30 PM	52.6	46.8	5.8	1.5	-	54.1	45.1	9.0
11:30 PM - 11:35 PM	50.7	46.9	3.8	2.0	-	51.7	45.5	6.2
11:35 PM - 11:40 PM	52.0	46.4	5.6	1.5	-	53.5	45.3	8.2
11:40 PM - 11:45 PM	50.4	47.4	3.0	3.0	-	50.4	45.5	4.9
11:45 PM - 11:50 PM	50.8	49.1	1.7	4.5	-	49.3	46.7	2.6
11:50 PM - 11:55 PM	53.2	48.1	5.1	1.5	-	54.7	46.0	8.7
11:55 PM - 12:00 AM	50.0	47.9	2.1	4.5	-	48.5	45.9	2.6
12:00 AM - 12:05 AM	51.1	47.1	4.0	2.0	-	52.1	45.1	7.0
12:05 AM - 12:10 AM	52.3	46.1	6.2	1.5	-	53.8	44.4	9.4
12:10 AM - 12:15 AM	53.8	46.8	7.0	1.0	-	55.8	44.5	11.3
12:15 AM - 12:20 AM	52.5	46.1	6.4	1.5	-	54.0	44.1	9.9
12:20 AM - 12:25 AM	51.9	46.1	5.8	1.5	-	53.4	44.1	9.3
12:25 AM - 12:30 AM	52.1	45.2	6.9	1.0	-	54.1	43.8	10.3
12:30 AM - 12:35 AM	53.6	46.4	7.2	1.0	-	55.6	45.0	10.6

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142072  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2537165-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142072-6  
Parameter เสียงรบกวน  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
Measurement Date Dec 25 - 26, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00710641

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:35 AM - 12:40 AM	51.7	46.9	4.8	1.5	-	53.2	45.3	7.9
12:40 AM - 12:45 AM	51.1	47.1	4.0	2.0	-	52.1	45.7	6.4
12:45 AM - 12:50 AM	53.0	48.0	5.0	1.5	-	54.5	45.8	8.7
12:50 AM - 12:55 AM	52.3	46.3	6.0	1.5	-	53.8	45.3	8.5
12:55 AM - 01:00 AM	51.9	46.1	5.8	1.5	-	53.4	44.8	8.6
01:00 AM - 01:05 AM	51.8	47.1	4.7	1.5	-	53.3	45.9	7.4
01:05 AM - 01:10 AM	49.5	47.4	2.1	4.5	-	48.0	45.8	2.2
01:10 AM - 01:15 AM	52.1	46.2	5.9	1.5	-	53.6	44.8	8.8
01:15 AM - 01:20 AM	50.2	47.0	3.2	3.0	-	50.2	45.0	5.2
01:20 AM - 01:25 AM	51.2	46.7	4.5	1.5	-	52.7	44.8	7.9
01:25 AM - 01:30 AM	51.9	49.0	2.9	3.0	-	51.9	45.7	6.2
01:30 AM - 01:35 AM	50.1	51.3	-1.2	7.0	-	46.1	45.1	1.0
01:35 AM - 01:40 AM	49.5	45.6	3.9	2.0	-	50.5	44.4	6.1
01:40 AM - 01:45 AM	52.1	47.4	4.7	1.5	-	53.6	43.9	9.7
01:45 AM - 01:50 AM	49.9	45.0	4.9	1.5	-	51.4	43.3	8.1
01:50 AM - 01:55 AM	51.3	46.1	5.2	1.5	-	52.8	43.7	9.1
01:55 AM - 02:00 AM	50.7	44.9	5.8	1.5	-	52.2	43.1	9.1
02:00 AM - 02:05 AM	50.4	46.2	4.2	2.0	-	51.4	43.0	8.4
02:05 AM - 02:10 AM	49.3	45.5	3.8	2.0	-	50.3	43.8	6.5
02:10 AM - 02:15 AM	51.8	45.7	6.1	1.5	-	53.3	43.4	9.9
02:15 AM - 02:20 AM	49.8	44.9	4.9	1.5	-	51.3	43.0	8.3
02:20 AM - 02:25 AM	47.7	46.5	1.2	7.0	-	43.7	44.1	-0.4
02:25 AM - 02:30 AM	51.3	45.2	6.1	1.5	-	52.8	43.2	9.6
02:30 AM - 02:35 AM	51.2	43.9	7.3	1.0	-	53.2	42.2	11.0
02:35 AM - 02:40 AM	51.8	46.0	5.8	1.5	-	53.3	43.1	10.2
02:40 AM - 02:45 AM	51.1	45.3	5.8	1.5	-	52.6	42.5	10.1
02:45 AM - 02:50 AM	54.3	45.0	9.3	0.5	-	56.8	42.2	14.6
02:50 AM - 02:55 AM	49.0	46.5	2.5	3.0	-	49.0	43.2	5.8
02:55 AM - 03:00 AM	49.3	45.9	3.4	3.0	-	49.3	42.8	6.5
03:00 AM - 03:05 AM	50.4	45.3	5.1	1.5	-	51.9	41.6	10.3
03:05 AM - 03:10 AM	53.2	46.2	7.0	1.0	-	55.2	42.8	12.4
03:10 AM - 03:15 AM	49.8	46.0	3.8	2.0	-	50.8	43.6	7.2
03:15 AM - 03:20 AM	49.6	45.6	4.0	2.0	-	50.6	42.9	7.7
03:20 AM - 03:25 AM	52.1	48.1	4.0	2.0	-	53.1	45.0	8.1
03:25 AM - 03:30 AM	48.8	47.9	0.9	7.0	-	44.8	44.6	0.2
03:30 AM - 03:35 AM	51.7	50.0	1.7	4.5	-	50.2	44.1	6.1
03:35 AM - 03:40 AM	52.2	50.7	1.5	4.5	-	50.7	45.2	5.5
03:40 AM - 03:45 AM	49.3	49.8	-0.5	7.0	-	45.3	44.9	0.4
03:45 AM - 03:50 AM	51.4	53.5	-2.1	7.0	-	47.4	46.4	1.0
03:50 AM - 03:55 AM	50.6	56.0	-5.4	7.0	-	46.6	50.0	-3.4

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142072  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2537165-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142072-6  
Parameter เสียงรบกวน  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
Measurement Date Dec 25 - 26, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00710641

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับการรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
03:55 AM - 04:00 AM	46.9	54.5	-7.6	7.0	-	42.9	47.8	-4.9
04:00 AM - 04:05 AM	50.4	52.1	-1.7	7.0	-	46.4	44.9	1.5
04:05 AM - 04:10 AM	50.0	51.4	-1.4	7.0	-	46.0	46.4	-0.4
04:10 AM - 04:15 AM	51.1	50.8	0.3	7.0	-	47.1	45.9	1.2
04:15 AM - 04:20 AM	52.0	52.9	-0.9	7.0	-	48.0	46.3	1.7
04:20 AM - 04:25 AM	49.4	52.0	-2.6	7.0	-	45.4	46.0	-0.6
04:25 AM - 04:30 AM	51.0	49.2	1.8	4.5	-	49.5	45.8	3.7
04:30 AM - 04:35 AM	51.4	52.6	-1.2	7.0	-	47.4	46.4	1.0
04:35 AM - 04:40 AM	52.3	51.8	0.5	7.0	-	48.3	45.3	3.0
04:40 AM - 04:45 AM	50.6	51.7	-1.1	7.0	-	46.6	44.4	2.2
04:45 AM - 04:50 AM	53.2	51.6	1.6	4.5	-	51.7	44.7	7.0
04:50 AM - 04:55 AM	53.7	49.6	4.1	2.0	-	54.7	45.3	9.4
04:55 AM - 05:00 AM	51.6	50.4	1.2	7.0	-	47.6	45.8	1.8
05:00 AM - 05:05 AM	51.3	49.0	2.3	4.5	-	49.8	44.6	5.2
05:05 AM - 05:10 AM	52.7	48.8	3.9	2.0	-	53.7	45.3	8.4
05:10 AM - 05:15 AM	51.6	47.4	4.2	2.0	-	52.6	43.4	9.2
05:15 AM - 05:20 AM	52.6	51.4	1.2	7.0	-	48.6	45.7	2.9
05:20 AM - 05:25 AM	51.9	50.5	1.4	7.0	-	47.9	46.2	1.7
05:25 AM - 05:30 AM	52.8	49.3	3.5	2.0	-	53.8	44.5	9.3
05:30 AM - 05:35 AM	54.1	48.9	5.2	1.5	-	55.6	45.1	10.5
05:35 AM - 05:40 AM	54.0	49.8	4.2	2.0	-	55.0	45.9	9.1
05:40 AM - 05:45 AM	52.2	49.9	2.3	4.5	-	50.7	46.2	4.5
05:45 AM - 05:50 AM	54.6	50.8	3.8	2.0	-	55.6	46.0	9.6
05:50 AM - 05:55 AM	53.1	49.8	3.3	3.0	-	53.1	45.7	7.4
05:55 AM - 06:00 AM	53.6	52.9	0.7	7.0	-	49.6	47.5	2.1
06:00 AM - 07:00 AM	55.0	51.6	3.4	3.0	52.0	-	43.2	8.8
07:00 AM - 08:00 AM	56.3	52.0	4.3	2.0	54.3	-	49.0	5.3
08:00 AM - 09:00 AM	56.6	53.7	2.9	3.0	53.6	-	52.1	1.5
09:00 AM - 10:00 AM	53.9	52.9	1.0	7.0	46.9	-	51.7	-4.8
10:00 AM - 11:00 AM	53.1	56.4	-3.3	7.0	46.1	-	51.1	-5.0
11:00 AM - 12:00 PM	54.7	53.7	1.0	7.0	47.7	-	46.8	0.9
12:00 PM - 01:00 PM	52.7	51.0	1.7	4.5	48.2	-	46.4	1.8

ค่ามาตรฐาน

≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 25-26 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142086-6 วันที่ตรวจวัด 02-03 กรกฎาคม 2565)

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Approved by

Kanokkorn Anek  
Senior Manager



# Analysis / Test Report

## TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142072  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2537166-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142072-7  
Parameter เสียงรบกวน  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
Measurement Date Dec 26 - 27, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00710641

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (B)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
01:00 PM - 02:00 PM	54.3	51.4	2.9	3.0	51.3	-	45.9	5.4
02:00 PM - 03:00 PM	57.3	51.1	6.2	1.5	55.8	-	46.8	9.0
03:00 PM - 04:00 PM	56.0	52.6	3.4	3.0	53.0	-	47.2	5.8
04:00 PM - 05:00 PM	57.3	52.3	5.0	1.5	55.8	-	47.2	8.6
05:00 PM - 06:00 PM	59.0	49.9	9.1	0.5	58.5	-	47.0	11.5
06:00 PM - 07:00 PM	57.1	49.5	7.6	0.5	56.6	-	44.8	11.8
07:00 PM - 08:00 PM	56.5	50.9	5.6	1.5	55.0	-	47.3	7.7
08:00 PM - 09:00 PM	55.1	49.8	5.3	1.5	53.6	-	46.1	7.5
09:00 PM - 10:00 PM	53.8	48.7	5.1	1.5	52.3	-	46.2	6.1
10:00 PM - 10:05 PM	53.8	46.9	6.9	1.0	-	55.8	45.0	10.8
10:05 PM - 10:10 PM	52.3	48.6	3.7	2.0	-	53.3	45.9	7.4
10:10 PM - 10:15 PM	51.5	47.9	3.6	2.0	-	52.5	45.7	6.8
10:15 PM - 10:20 PM	51.8	46.3	5.5	1.5	-	53.3	44.5	8.8
10:20 PM - 10:25 PM	51.8	49.2	2.6	3.0	-	51.8	46.6	5.2
10:25 PM - 10:30 PM	52.8	47.3	5.5	1.5	-	54.3	45.8	8.5
10:30 PM - 10:35 PM	50.8	47.3	3.5	2.0	-	51.8	45.2	6.6
10:35 PM - 10:40 PM	53.0	49.2	3.8	2.0	-	54.0	48.0	6.0
10:40 PM - 10:45 PM	52.0	49.7	2.3	4.5	-	50.5	48.4	2.1
10:45 PM - 10:50 PM	51.4	49.7	1.7	4.5	-	49.9	48.4	1.5
10:50 PM - 10:55 PM	51.7	49.9	1.8	4.5	-	50.2	48.4	1.8
10:55 PM - 11:00 PM	50.7	49.9	0.8	7.0	-	46.7	46.2	0.5
11:00 PM - 11:05 PM	54.4	51.3	3.1	3.0	-	54.4	50.1	4.3
11:05 PM - 11:10 PM	54.2	50.7	3.5	2.0	-	55.2	47.6	7.6
11:10 PM - 11:15 PM	53.1	51.6	1.5	4.5	-	51.6	49.6	2.0
11:15 PM - 11:20 PM	52.5	48.1	4.4	2.0	-	53.5	45.6	7.9
11:20 PM - 11:25 PM	53.8	46.9	6.9	1.0	-	55.8	44.6	11.2
11:25 PM - 11:30 PM	53.5	46.1	7.4	1.0	-	55.5	44.1	11.4
11:30 PM - 11:35 PM	54.0	47.0	7.0	1.0	-	56.0	44.6	11.4
11:35 PM - 11:40 PM	53.9	46.0	7.9	0.5	-	56.4	44.3	12.1
11:40 PM - 11:45 PM	53.4	45.9	7.5	0.5	-	55.9	44.4	11.5
11:45 PM - 11:50 PM	53.2	46.1	7.1	1.0	-	55.2	44.5	10.7
11:50 PM - 11:55 PM	53.9	44.4	9.5	0.5	-	56.4	42.5	13.9
11:55 PM - 12:00 AM	53.8	44.5	9.3	0.5	-	56.3	42.8	13.5
12:00 AM - 12:05 AM	53.0	44.2	8.8	0.5	-	55.5	42.6	12.9
12:05 AM - 12:10 AM	51.8	45.3	6.5	1.0	-	53.8	43.1	10.7
12:10 AM - 12:15 AM	54.1	45.1	9.0	0.5	-	56.6	42.9	13.7
12:15 AM - 12:20 AM	53.6	45.6	8.0	0.5	-	56.1	43.3	12.8
12:20 AM - 12:25 AM	52.6	44.8	7.8	0.5	-	55.1	42.9	12.2
12:25 AM - 12:30 AM	54.1	45.5	8.6	0.5	-	56.6	43.9	12.7
12:30 AM - 12:35 AM	54.4	45.6	8.8	0.5	-	56.9	43.8	13.1

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142072  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2537166-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142072-7  
Parameter เสียงรบกวน  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
Measurement Date Dec 26 - 27, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00710641

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:35 AM - 12:40 AM	53.3	46.7	6.6	1.0	-	55.3	44.6	10.7
12:40 AM - 12:45 AM	54.4	45.6	8.8	0.5	-	56.9	43.5	13.4
12:45 AM - 12:50 AM	54.3	44.4	9.9	0.5	-	56.8	43.0	13.8
12:50 AM - 12:55 AM	52.3	45.6	6.7	1.0	-	54.3	43.0	11.3
12:55 AM - 01:00 AM	53.7	45.0	8.7	0.5	-	56.2	42.0	14.2
01:00 AM - 01:05 AM	52.3	44.9	7.4	1.0	-	54.3	42.5	11.8
01:05 AM - 01:10 AM	51.0	44.5	6.5	1.0	-	53.0	42.0	11.0
01:10 AM - 01:15 AM	52.5	43.3	9.2	0.5	-	55.0	41.0	14.0
01:15 AM - 01:20 AM	54.1	44.4	9.7	0.5	-	56.6	42.1	14.5
01:20 AM - 01:25 AM	51.4	45.2	6.2	1.5	-	52.9	43.2	9.7
01:25 AM - 01:30 AM	52.7	44.9	7.8	0.5	-	55.2	43.3	11.9
01:30 AM - 01:35 AM	52.4	45.1	7.3	1.0	-	54.4	43.1	11.3
01:35 AM - 01:40 AM	52.6	44.1	8.5	0.5	-	55.1	42.5	12.6
01:40 AM - 01:45 AM	51.4	45.3	6.1	1.5	-	52.9	42.9	10.0
01:45 AM - 01:50 AM	52.6	46.0	6.6	1.0	-	54.6	43.6	11.0
01:50 AM - 01:55 AM	52.1	45.4	6.7	1.0	-	54.1	43.1	11.0
01:55 AM - 02:00 AM	50.8	45.3	5.5	1.5	-	52.3	43.8	8.5
02:00 AM - 02:05 AM	50.9	45.7	5.2	1.5	-	52.4	43.7	8.7
02:05 AM - 02:10 AM	53.6	45.0	8.6	0.5	-	56.1	43.2	12.9
02:10 AM - 02:15 AM	51.8	45.4	6.4	1.5	-	53.3	44.0	9.3
02:15 AM - 02:20 AM	52.9	45.9	7.0	1.0	-	54.9	43.9	11.0
02:20 AM - 02:25 AM	52.2	45.2	7.0	1.0	-	54.2	41.8	12.4
02:25 AM - 02:30 AM	52.0	45.7	6.3	1.5	-	53.5	43.6	9.9
02:30 AM - 02:35 AM	53.2	44.6	8.6	0.5	-	55.7	41.3	14.4
02:35 AM - 02:40 AM	53.7	46.0	7.7	0.5	-	56.2	41.7	14.5
02:40 AM - 02:45 AM	50.7	44.6	6.1	1.5	-	52.2	41.3	10.9
02:45 AM - 02:50 AM	52.3	44.9	7.4	1.0	-	54.3	42.9	11.4
02:50 AM - 02:55 AM	51.9	44.3	7.6	0.5	-	54.4	41.3	13.1
02:55 AM - 03:00 AM	53.8	44.5	9.3	0.5	-	56.3	41.7	14.6
03:00 AM - 03:05 AM	50.8	44.9	5.9	1.5	-	52.3	41.8	10.5
03:05 AM - 03:10 AM	50.7	44.8	5.9	1.5	-	52.2	41.7	10.5
03:10 AM - 03:15 AM	51.0	44.8	6.2	1.5	-	52.5	42.2	10.3
03:15 AM - 03:20 AM	50.2	44.4	5.8	1.5	-	51.7	42.2	9.5
03:20 AM - 03:25 AM	51.6	45.2	6.4	1.5	-	53.1	42.1	11.0
03:25 AM - 03:30 AM	50.6	44.9	5.7	1.5	-	52.1	42.3	9.8
03:30 AM - 03:35 AM	50.9	44.3	6.6	1.0	-	52.9	41.1	11.8
03:35 AM - 03:40 AM	53.1	45.6	7.5	0.5	-	55.6	40.5	15.1
03:40 AM - 03:45 AM	51.3	50.6	0.7	7.0	-	47.3	44.2	3.1
03:45 AM - 03:50 AM	53.2	49.3	3.9	2.0	-	54.2	42.8	11.4
03:50 AM - 03:55 AM	50.9	54.7	-3.8	7.0	-	46.9	48.7	-1.8

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142072  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report Number : 2537166-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142072-7  
Parameter เสียงรบกวน  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320)  
Measurement Date Dec 26 - 27, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 00710641

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B) (C)	ตัวปรับค่า (D)	ปรับค่าเสียงจากแหล่งกำเนิด (E)		เสียงพื้นฐาน (F)	ค่าระดับการรบกวน (G-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
03:55 AM - 04:00 AM	51.8	54.2	-2.4	7.0	-	47.8	47.1	0.7
04:00 AM - 04:05 AM	51.6	52.8	-1.2	7.0	-	47.6	46.6	1.0
04:05 AM - 04:10 AM	50.4	51.4	-1.0	7.0	-	46.4	46.5	-0.1
04:10 AM - 04:15 AM	50.7	53.0	-2.3	7.0	-	46.7	45.4	1.3
04:15 AM - 04:20 AM	50.6	53.7	-3.1	7.0	-	46.6	46.8	-0.2
04:20 AM - 04:25 AM	52.5	51.2	1.3	7.0	-	48.5	46.0	2.5
04:25 AM - 04:30 AM	51.6	51.8	-0.2	7.0	-	47.6	48.3	-0.7
04:30 AM - 04:35 AM	50.7	50.2	0.5	7.0	-	46.7	47.1	-0.4
04:35 AM - 04:40 AM	51.3	51.8	-0.5	7.0	-	47.3	45.9	1.4
04:40 AM - 04:45 AM	50.4	50.2	0.2	7.0	-	46.4	47.1	-0.7
04:45 AM - 04:50 AM	51.9	50.6	1.3	7.0	-	47.9	46.5	1.4
04:50 AM - 04:55 AM	51.7	49.7	2.0	4.5	-	50.2	45.5	4.7
04:55 AM - 05:00 AM	51.2	49.5	1.7	4.5	-	49.7	46.8	2.9
05:00 AM - 05:05 AM	52.6	50.0	2.6	3.0	-	52.6	45.9	6.7
05:05 AM - 05:10 AM	55.0	51.1	3.9	2.0	-	56.0	45.5	10.5
05:10 AM - 05:15 AM	52.2	51.1	1.1	7.0	-	48.2	47.0	1.2
05:15 AM - 05:20 AM	53.9	50.0	3.9	2.0	-	54.9	46.7	8.2
05:20 AM - 05:25 AM	51.9	50.7	1.2	7.0	-	47.9	47.5	0.4
05:25 AM - 05:30 AM	53.8	50.0	3.8	2.0	-	54.8	46.5	8.3
05:30 AM - 05:35 AM	52.5	50.4	2.1	4.5	-	51.0	47.0	4.0
05:35 AM - 05:40 AM	52.6	52.5	0.1	7.0	-	48.6	47.0	1.6
05:40 AM - 05:45 AM	52.6	49.8	2.8	3.0	-	52.6	46.6	6.0
05:45 AM - 05:50 AM	52.3	49.9	2.4	4.5	-	50.8	47.3	3.5
05:50 AM - 05:55 AM	52.6	50.7	1.9	4.5	-	51.1	47.6	3.5
05:55 AM - 06:00 AM	51.9	51.7	0.2	7.0	-	47.9	47.6	0.3
06:00 AM - 07:00 AM	53.6	52.2	1.4	7.0	46.6	-	47.4	-0.8
07:00 AM - 08:00 AM	55.6	51.3	4.3	2.0	53.6	-	45.8	7.8
08:00 AM - 09:00 AM	56.2	50.4	5.8	1.5	54.7	-	45.4	9.3
09:00 AM - 10:00 AM	53.9	49.1	4.8	1.5	52.4	-	45.3	7.1
10:00 AM - 11:00 AM	54.1	49.1	5.0	1.5	52.6	-	45.1	7.5
11:00 AM - 12:00 PM	53.2	48.1	5.1	1.5	51.7	-	47.2	4.5
12:00 PM - 01:00 PM	55.6	47.5	8.1	0.5	55.1	-	46.6	8.5

ค่ามาตรฐาน

≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 26-27 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142086-7 วันที่ตรวจวัด 03-04 กรกฎาคม 2565)

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Approved by

Kanokkorn Anek  
Senior Manager



# Analysis / Test Report

## TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142073  
Date Received : Dec 29, 2022  
Date Reported : Jan 07, 2023  
Report Number : 2537991-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142073-1  
Parameter เสียงรบกวน  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945)  
Measurement Date Dec 20 - 21, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 610207

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด		ผลต่างระดับเสียง	ตัวปรับค่า	ปรับค่าเสียงจากแหล่งกำเนิด		เสียงพื้นฐาน	ค่าระดับการรบกวน
	(A)	(B)			(A-C)	(A-C)+3		
12:00 PM - 01:00 PM	47.5	51.3	-3.8	7.0	40.5	-	44.9	-4.4
01:00 PM - 02:00 PM	46.5	51.4	-4.9	7.0	39.5	-	46.5	-7.0
02:00 PM - 03:00 PM	47.8	51.4	-3.6	7.0	40.8	-	45.0	-4.2
03:00 PM - 04:00 PM	47.3	52.1	-4.8	7.0	40.3	-	45.3	-5.0
04:00 PM - 05:00 PM	46.9	53.5	-6.6	7.0	39.9	-	45.8	-5.9
05:00 PM - 06:00 PM	51.2	51.3	-0.1	7.0	44.2	-	45.1	-0.9
06:00 PM - 07:00 PM	51.1	51.5	-0.4	7.0	44.1	-	43.5	0.6
07:00 PM - 08:00 PM	47.5	48.6	-1.1	7.0	40.5	-	45.4	-4.9
08:00 PM - 09:00 PM	47.1	49.9	-2.8	7.0	40.1	-	47.3	-7.2
09:00 PM - 10:00 PM	44.4	49.0	-4.6	7.0	37.4	-	48.0	-10.6
10:00 PM - 10:05 PM	45.5	48.1	-2.6	7.0	-	41.5	47.4	-5.9
10:05 PM - 10:10 PM	47.9	48.4	-0.5	7.0	-	43.9	47.4	-3.5
10:10 PM - 10:15 PM	45.3	48.1	-2.8	7.0	-	41.3	47.1	-5.8
10:15 PM - 10:20 PM	45.9	47.4	-1.5	7.0	-	41.9	46.4	-4.5
10:20 PM - 10:25 PM	44.7	50.2	-5.5	7.0	-	40.7	49.3	-8.6
10:25 PM - 10:30 PM	44.4	53.1	-8.7	7.0	-	40.4	45.6	-5.2
10:30 PM - 10:35 PM	45.0	47.6	-2.6	7.0	-	41.0	45.6	-4.6
10:35 PM - 10:40 PM	45.6	47.5	-1.9	7.0	-	41.6	45.9	-4.3
10:40 PM - 10:45 PM	45.3	46.6	-1.3	7.0	-	41.3	45.2	-3.9
10:45 PM - 10:50 PM	46.7	45.5	1.2	7.0	-	42.7	45.0	-2.3
10:50 PM - 10:55 PM	46.1	45.6	0.5	7.0	-	42.1	45.0	-2.9
10:55 PM - 11:00 PM	44.2	48.1	-3.9	7.0	-	40.2	45.3	-5.1
11:00 PM - 11:05 PM	43.2	52.6	-9.4	7.0	-	39.2	51.8	-12.6
11:05 PM - 11:10 PM	42.8	52.6	-9.8	7.0	-	38.8	52.0	-13.2
11:10 PM - 11:15 PM	43.8	52.6	-8.8	7.0	-	39.8	51.8	-12.0
11:15 PM - 11:20 PM	45.3	52.8	-7.5	7.0	-	41.3	51.8	-10.5
11:20 PM - 11:25 PM	46.1	54.2	-8.1	7.0	-	42.1	51.7	-9.6
11:25 PM - 11:30 PM	46.3	51.4	-5.1	7.0	-	42.3	46.9	-4.6
11:30 PM - 11:35 PM	48.6	52.3	-3.7	7.0	-	44.6	49.9	-5.3
11:35 PM - 11:40 PM	47.0	53.0	-6.0	7.0	-	43.0	52.3	-9.3
11:40 PM - 11:45 PM	49.6	53.0	-3.4	7.0	-	45.6	52.2	-6.6
11:45 PM - 11:50 PM	51.3	53.0	-1.7	7.0	-	47.3	52.2	-4.9
11:50 PM - 11:55 PM	52.5	52.9	-0.4	7.0	-	48.5	52.1	-3.6
11:55 PM - 12:00 AM	52.1	49.0	3.1	3.0	-	52.1	44.2	7.9
12:00 AM - 12:05 AM	50.7	50.3	0.4	7.0	-	46.7	44.9	1.8
12:05 AM - 12:10 AM	51.9	46.2	5.7	1.5	-	53.4	44.7	8.7
12:10 AM - 12:15 AM	50.2	48.3	1.9	4.5	-	48.7	46.1	2.6
12:15 AM - 12:20 AM	50.4	47.4	3.0	3.0	-	50.4	46.2	4.2
12:20 AM - 12:25 AM	51.2	52.8	-1.6	7.0	-	47.2	51.7	-4.5
12:25 AM - 12:30 AM	51.5	52.8	-1.3	7.0	-	47.5	51.0	-3.5

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142073  
Date Received : Dec 29, 2022  
Date Reported : Jan 07, 2023  
Report Number : 2537991-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142073-1  
Parameter เสียงรบกวน  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945)  
Measurement Date Dec 20 - 21, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 610207

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:30 AM - 12:35 AM	54.9	53.2	1.7	4.5	-	53.4	52.5	0.9
12:35 AM - 12:40 AM	59.7	53.0	6.7	1.0	-	61.7	52.3	9.4
12:40 AM - 12:45 AM	52.2	52.4	-0.2	7.0	-	48.2	48.2	0.0
12:45 AM - 12:50 AM	51.4	48.1	3.3	3.0	-	51.4	47.6	3.8
12:50 AM - 12:55 AM	52.1	47.5	4.6	1.5	-	53.6	46.7	6.9
12:55 AM - 01:00 AM	51.0	47.4	3.6	2.0	-	52.0	46.8	5.2
01:00 AM - 01:05 AM	51.4	45.2	6.2	1.5	-	52.9	44.5	8.4
01:05 AM - 01:10 AM	49.7	45.2	4.5	1.5	-	51.2	44.5	6.7
01:10 AM - 01:15 AM	47.7	45.3	2.4	4.5	-	46.2	44.8	1.4
01:15 AM - 01:20 AM	47.9	45.5	2.4	4.5	-	46.4	44.7	1.7
01:20 AM - 01:25 AM	46.9	47.3	-0.4	7.0	-	42.9	44.6	-1.7
01:25 AM - 01:30 AM	44.1	46.1	-2.0	7.0	-	40.1	44.5	-4.4
01:30 AM - 01:35 AM	45.7	46.6	-0.9	7.0	-	41.7	44.5	-2.8
01:35 AM - 01:40 AM	49.8	43.9	5.9	1.5	-	51.3	43.2	8.1
01:40 AM - 01:45 AM	47.4	43.1	4.3	2.0	-	48.4	42.7	5.7
01:45 AM - 01:50 AM	46.1	43.1	3.0	3.0	-	46.1	42.7	3.4
01:50 AM - 01:55 AM	45.4	42.8	2.6	3.0	-	45.4	42.3	3.1
01:55 AM - 02:00 AM	45.2	43.4	1.8	4.5	-	43.7	42.9	0.8
02:00 AM - 02:05 AM	46.2	46.5	-0.3	7.0	-	42.2	42.8	-0.6
02:05 AM - 02:10 AM	46.5	51.6	-5.1	7.0	-	42.5	43.9	-1.4
02:10 AM - 02:15 AM	48.4	43.5	4.9	1.5	-	49.9	43.1	6.8
02:15 AM - 02:20 AM	47.7	46.3	1.4	7.0	-	43.7	42.6	1.1
02:20 AM - 02:25 AM	47.1	45.8	1.3	7.0	-	43.1	42.5	0.6
02:25 AM - 02:30 AM	46.6	51.8	-5.2	7.0	-	42.6	43.4	-0.8
02:30 AM - 02:35 AM	46.3	42.9	3.4	3.0	-	46.3	42.3	4.0
02:35 AM - 02:40 AM	46.0	43.2	2.8	3.0	-	46.0	42.7	3.3
02:40 AM - 02:45 AM	45.4	42.5	2.9	3.0	-	45.4	42.0	3.4
02:45 AM - 02:50 AM	45.9	47.9	-2.0	7.0	-	41.9	42.1	-0.2
02:50 AM - 02:55 AM	45.7	46.8	-1.1	7.0	-	41.7	43.1	-1.4
02:55 AM - 03:00 AM	50.2	47.2	3.0	3.0	-	50.2	43.1	7.1
03:00 AM - 03:05 AM	46.4	51.9	-5.5	7.0	-	42.4	51.0	-8.6
03:05 AM - 03:10 AM	46.0	47.8	-1.8	7.0	-	42.0	47.1	-5.1
03:10 AM - 03:15 AM	47.8	48.1	-0.3	7.0	-	43.8	47.5	-3.7
03:15 AM - 03:20 AM	45.7	49.4	-3.7	7.0	-	41.7	47.8	-6.1
03:20 AM - 03:25 AM	46.0	51.4	-5.4	7.0	-	42.0	43.6	-1.6
03:25 AM - 03:30 AM	46.1	43.2	2.9	3.0	-	46.1	42.6	3.5
03:30 AM - 03:35 AM	46.5	42.4	4.1	2.0	-	47.5	41.8	5.7
03:35 AM - 03:40 AM	45.9	42.4	3.5	2.0	-	46.9	41.7	5.2
03:40 AM - 03:45 AM	45.4	41.8	3.6	2.0	-	46.4	41.4	5.0
03:45 AM - 03:50 AM	45.8	41.9	3.9	2.0	-	46.8	41.4	5.4

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





# Analysis / Test Report

TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142073  
Date Received : Dec 29, 2022  
Date Reported : Jan 07, 2023  
Report Number : 2537991-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142073-1  
Parameter เสียงรบกวน  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945)  
Measurement Date Dec 20 - 21, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 610207

## ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B) (C)	ตัวปรับค่า (D)	ปรับค่าเสียงจากแหล่งกำเนิด (E)		เสียงพื้นฐาน (F)	ค่าระดับการรบกวน (G-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
03:50 AM - 03:55 AM	44.7	41.9	2.8	3.0	-	44.7	41.4	3.3
03:55 AM - 04:00 AM	46.0	42.1	3.9	2.0	-	47.0	41.6	5.4
04:00 AM - 04:05 AM	44.6	46.9	-2.3	7.0	-	40.6	41.7	-1.1
04:05 AM - 04:10 AM	46.7	45.5	1.2	7.0	-	42.7	41.9	0.8
04:10 AM - 04:15 AM	46.4	42.6	3.8	2.0	-	47.4	42.2	5.2
04:15 AM - 04:20 AM	45.7	43.3	2.4	4.5	-	44.2	42.5	1.7
04:20 AM - 04:25 AM	46.5	44.1	2.4	4.5	-	45.0	42.6	2.4
04:25 AM - 04:30 AM	46.7	48.1	-1.4	7.0	-	42.7	47.6	-4.9
04:30 AM - 04:35 AM	46.1	51.9	-5.8	7.0	-	42.1	42.6	-0.5
04:35 AM - 04:40 AM	47.0	48.6	-1.6	7.0	-	43.0	48.0	-5.0
04:40 AM - 04:45 AM	47.0	48.1	-1.1	7.0	-	43.0	47.6	-4.6
04:45 AM - 04:50 AM	46.6	47.8	-1.2	7.0	-	42.6	47.1	-4.5
04:50 AM - 04:55 AM	46.3	48.1	-1.8	7.0	-	42.3	47.5	-5.2
04:55 AM - 05:00 AM	45.8	48.0	-2.2	7.0	-	41.8	47.2	-5.4
05:00 AM - 05:05 AM	46.1	48.1	-2.0	7.0	-	42.1	47.4	-5.3
05:05 AM - 05:10 AM	47.0	53.8	-6.8	7.0	-	43.0	48.4	-5.4
05:10 AM - 05:15 AM	47.8	53.4	-5.6	7.0	-	43.8	47.5	-3.7
05:15 AM - 05:20 AM	47.5	47.5	0.0	7.0	-	43.5	46.7	-3.2
05:20 AM - 05:25 AM	47.4	47.4	0.0	7.0	-	43.4	46.8	-3.4
05:25 AM - 05:30 AM	46.4	45.2	1.2	7.0	-	42.4	44.5	-2.1
05:30 AM - 05:35 AM	46.5	48.3	-1.8	7.0	-	42.5	46.1	-3.6
05:35 AM - 05:40 AM	47.5	47.4	0.1	7.0	-	43.5	46.2	-2.7
05:40 AM - 05:45 AM	49.1	51.5	-2.4	7.0	-	45.1	44.6	0.5
05:45 AM - 05:50 AM	49.0	50.9	-1.9	7.0	-	45.0	44.5	0.5
05:50 AM - 05:55 AM	48.4	49.0	-0.6	7.0	-	44.4	44.2	0.2
05:55 AM - 06:00 AM	47.5	50.3	-2.8	7.0	-	43.5	44.9	-1.4
06:00 AM - 07:00 AM	60.7	50.6	10.1	0.5	60.2	-	45.9	14.3
07:00 AM - 08:00 AM	54.0	50.6	3.4	3.0	51.0	-	46.0	5.0
08:00 AM - 09:00 AM	51.6	51.0	0.6	7.0	44.6	-	45.5	-0.9
09:00 AM - 10:00 AM	49.4	52.0	-2.6	7.0	42.4	-	45.1	-2.7
10:00 AM - 11:00 AM	71.6	52.4	19.2	0.0	71.6	-	46.8	24.8
11:00 AM - 12:00 PM	48.4	52.3	-3.9	7.0	41.4	-	47.0	-5.6
ค่ามาตรฐาน								≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
- ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
- ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561

ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 20-21 ธันวาคม 2565

ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142087-1 วันที่ตรวจวัด 27-28 มิถุนายน 2565)

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Approved by

Kanokkorn Anek  
Senior Manager





# Analysis / Test Report

## TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142073  
Date Received : Dec 29, 2022  
Date Reported : Jan 07, 2023  
Report Number : 2537992-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142073-2  
Parameter เสียงรบกวน  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945)  
Measurement Date Dec 21 - 22, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 610207

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (B)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:00 PM - 01:00 PM	49.1	49.5	-0.4	7.0	42.1	-	44.4	-2.3
01:00 PM - 02:00 PM	46.8	48.5	-1.7	7.0	39.8	-	44.3	-4.5
02:00 PM - 03:00 PM	53.8	50.8	3.0	3.0	50.8	-	45.3	5.5
03:00 PM - 04:00 PM	47.7	50.7	-3.0	7.0	40.7	-	46.4	-5.7
04:00 PM - 05:00 PM	50.0	51.0	-1.0	7.0	43.0	-	47.5	-4.5
05:00 PM - 06:00 PM	51.5	51.4	0.1	7.0	44.5	-	47.9	-3.4
06:00 PM - 07:00 PM	51.2	50.3	0.9	7.0	44.2	-	46.3	-2.1
07:00 PM - 08:00 PM	58.7	50.8	7.9	0.5	58.2	-	45.6	12.6
08:00 PM - 09:00 PM	62.6	50.3	12.3	0.5	62.1	-	45.8	16.3
09:00 PM - 10:00 PM	48.0	49.1	-1.1	7.0	41.0	-	47.3	-6.3
10:00 PM - 10:05 PM	47.6	47.6	0.0	7.0	-	43.6	47.0	-3.4
10:05 PM - 10:10 PM	50.8	47.8	3.0	3.0	-	50.8	47.2	3.6
10:10 PM - 10:15 PM	50.0	49.6	0.4	7.0	-	46.0	47.5	-1.5
10:15 PM - 10:20 PM	48.2	48.1	0.1	7.0	-	44.2	47.4	-3.2
10:20 PM - 10:25 PM	45.8	49.6	-3.8	7.0	-	41.8	47.3	-5.5
10:25 PM - 10:30 PM	45.6	47.2	-1.6	7.0	-	41.6	46.3	-4.7
10:30 PM - 10:35 PM	46.5	47.6	-1.1	7.0	-	42.5	46.4	-3.9
10:35 PM - 10:40 PM	47.2	47.3	-0.1	7.0	-	43.2	46.8	-3.6
10:40 PM - 10:45 PM	48.4	50.4	-2.0	7.0	-	44.4	47.2	-2.8
10:45 PM - 10:50 PM	45.5	47.2	-1.7	7.0	-	41.5	46.6	-5.1
10:50 PM - 10:55 PM	44.9	47.9	-3.0	7.0	-	40.9	46.8	-5.9
10:55 PM - 11:00 PM	46.5	47.5	-1.0	7.0	-	42.5	46.5	-4.0
11:00 PM - 11:05 PM	45.0	47.6	-2.6	7.0	-	41.0	47.1	-6.1
11:05 PM - 11:10 PM	46.7	47.5	-0.8	7.0	-	42.7	46.9	-4.2
11:10 PM - 11:15 PM	46.4	47.4	-1.0	7.0	-	42.4	46.5	-4.1
11:15 PM - 11:20 PM	45.5	47.8	-2.3	7.0	-	41.5	46.3	-4.8
11:20 PM - 11:25 PM	45.8	53.8	-8.0	7.0	-	41.8	46.1	-4.3
11:25 PM - 11:30 PM	45.1	49.6	-4.5	7.0	-	41.1	45.5	-4.4
11:30 PM - 11:35 PM	47.5	46.8	0.7	7.0	-	43.5	45.7	-2.2
11:35 PM - 11:40 PM	46.1	47.3	-1.2	7.0	-	42.1	46.6	-4.5
11:40 PM - 11:45 PM	45.9	47.0	-1.1	7.0	-	41.9	45.3	-3.4
11:45 PM - 11:50 PM	45.2	46.7	-1.5	7.0	-	41.2	45.6	-4.4
11:50 PM - 11:55 PM	45.4	47.5	-2.1	7.0	-	41.4	46.4	-5.0
11:55 PM - 12:00 AM	44.7	46.5	-1.8	7.0	-	40.7	44.6	-3.9
12:00 AM - 12:05 AM	44.0	44.6	-0.6	7.0	-	40.0	43.6	-3.6
12:05 AM - 12:10 AM	45.0	45.2	-0.2	7.0	-	41.0	44.8	-3.8
12:10 AM - 12:15 AM	44.7	45.1	-0.4	7.0	-	40.7	44.3	-3.6
12:15 AM - 12:20 AM	44.4	45.0	-0.6	7.0	-	40.4	44.1	-3.7
12:20 AM - 12:25 AM	43.7	50.5	-6.8	7.0	-	39.7	44.7	-5.0
12:25 AM - 12:30 AM	43.8	50.4	-6.6	7.0	-	39.8	47.2	-7.4

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142073  
Date Received : Dec 29, 2022  
Date Reported : Jan 07, 2023  
Report Number : 2537992-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142073-2  
Parameter เสียงรบกวน  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945)  
Measurement Date Dec 21 - 22, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 610207

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด	เสียงขณะ ไม่มีการรบกวน	ผลต่าง ระดับเสียง	ตัวปรับค่า	ปรับค่าเสียงจากแหล่งกำเนิด		เสียงพื้นฐาน	ค่าระดับ การรบกวน
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:30 AM - 12:35 AM	44.0	44.8	-0.8	7.0	-	40.0	43.7	-3.7
12:35 AM - 12:40 AM	43.5	45.2	-1.7	7.0	-	39.5	43.7	-4.2
12:40 AM - 12:45 AM	45.5	46.5	-1.0	7.0	-	41.5	45.8	-4.3
12:45 AM - 12:50 AM	42.3	46.1	-3.8	7.0	-	38.3	45.0	-6.7
12:50 AM - 12:55 AM	42.3	44.8	-2.5	7.0	-	38.3	44.3	-6.0
12:55 AM - 01:00 AM	43.0	44.9	-1.9	7.0	-	39.0	44.4	-5.4
01:00 AM - 01:05 AM	43.3	44.7	-1.4	7.0	-	39.3	43.9	-4.6
01:05 AM - 01:10 AM	42.7	46.2	-3.5	7.0	-	38.7	45.4	-6.7
01:10 AM - 01:15 AM	43.2	44.9	-1.7	7.0	-	39.2	44.2	-5.0
01:15 AM - 01:20 AM	43.8	45.4	-1.6	7.0	-	39.8	44.8	-5.0
01:20 AM - 01:25 AM	43.0	45.5	-2.5	7.0	-	39.0	44.9	-5.9
01:25 AM - 01:30 AM	42.4	46.7	-4.3	7.0	-	38.4	46.0	-7.6
01:30 AM - 01:35 AM	42.4	45.5	-3.1	7.0	-	38.4	44.0	-5.6
01:35 AM - 01:40 AM	41.9	45.4	-3.5	7.0	-	37.9	43.9	-6.0
01:40 AM - 01:45 AM	42.1	45.2	-3.1	7.0	-	38.1	44.6	-6.5
01:45 AM - 01:50 AM	43.1	45.1	-2.0	7.0	-	39.1	44.4	-5.3
01:50 AM - 01:55 AM	42.7	46.1	-3.4	7.0	-	38.7	44.2	-5.5
01:55 AM - 02:00 AM	44.3	48.2	-3.9	7.0	-	40.3	47.3	-7.0
02:00 AM - 02:05 AM	44.4	47.3	-2.9	7.0	-	40.4	45.0	-4.6
02:05 AM - 02:10 AM	45.0	47.4	-2.4	7.0	-	41.0	44.0	-3.0
02:10 AM - 02:15 AM	50.4	45.9	4.5	1.5	-	51.9	43.6	8.3
02:15 AM - 02:20 AM	47.8	50.7	-2.9	7.0	-	43.8	43.7	0.1
02:20 AM - 02:25 AM	44.1	58.5	-14.4	7.0	-	40.1	43.4	-3.3
02:25 AM - 02:30 AM	45.1	46.5	-1.4	7.0	-	41.1	45.5	-4.4
02:30 AM - 02:35 AM	49.6	45.1	4.5	1.5	-	51.1	43.0	8.1
02:35 AM - 02:40 AM	43.7	43.4	0.3	7.0	-	39.7	42.9	-3.2
02:40 AM - 02:45 AM	43.8	43.7	0.1	7.0	-	39.8	42.9	-3.1
02:45 AM - 02:50 AM	45.8	43.5	2.3	4.5	-	44.3	42.9	1.4
02:50 AM - 02:55 AM	46.4	44.7	1.7	4.5	-	44.9	42.5	2.4
02:55 AM - 03:00 AM	43.8	43.0	0.8	7.0	-	39.8	42.4	-2.6
03:00 AM - 03:05 AM	43.1	43.1	0.0	7.0	-	39.1	42.1	-3.0
03:05 AM - 03:10 AM	44.4	42.7	1.7	4.5	-	42.9	41.9	1.0
03:10 AM - 03:15 AM	44.0	43.7	0.3	7.0	-	40.0	41.9	-1.9
03:15 AM - 03:20 AM	43.8	42.8	1.0	7.0	-	39.8	42.0	-2.2
03:20 AM - 03:25 AM	44.0	42.4	1.6	4.5	-	42.5	41.6	0.9
03:25 AM - 03:30 AM	42.1	42.3	-0.2	7.0	-	38.1	41.7	-3.6
03:30 AM - 03:35 AM	42.5	42.2	0.3	7.0	-	38.5	41.5	-3.0
03:35 AM - 03:40 AM	44.9	42.4	2.5	3.0	-	44.9	41.7	3.2
03:40 AM - 03:45 AM	41.9	43.0	-1.1	7.0	-	37.9	41.7	-3.8
03:45 AM - 03:50 AM	41.9	44.6	-2.7	7.0	-	37.9	41.6	-3.7

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142073  
Date Received : Dec 29, 2022  
Date Reported : Jan 07, 2023  
Report Number : 2537992-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142073-2  
Parameter เสียงรบกวน  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945)  
Measurement Date Dec 21 - 22, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 610207

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับการรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
03:50 AM - 03:55 AM	42.7	47.0	-4.3	7.0	-	38.7	41.7	-3.0
03:55 AM - 04:00 AM	43.9	45.0	-1.1	7.0	-	39.9	41.8	-1.9
04:00 AM - 04:05 AM	44.5	44.1	0.4	7.0	-	40.5	42.4	-1.9
04:05 AM - 04:10 AM	47.7	52.0	-4.3	7.0	-	43.7	43.5	0.2
04:10 AM - 04:15 AM	45.3	43.2	2.1	4.5	-	43.8	41.6	2.2
04:15 AM - 04:20 AM	42.6	42.1	0.5	7.0	-	38.6	41.5	-2.9
04:20 AM - 04:25 AM	41.8	42.7	-0.9	7.0	-	37.8	41.7	-3.9
04:25 AM - 04:30 AM	42.4	44.3	-1.9	7.0	-	38.4	41.6	-3.2
04:30 AM - 04:35 AM	44.4	45.5	-1.1	7.0	-	40.4	41.9	-1.5
04:35 AM - 04:40 AM	44.5	54.1	-9.6	7.0	-	40.5	45.2	-4.7
04:40 AM - 04:45 AM	45.0	55.4	-10.4	7.0	-	41.0	49.5	-8.5
04:45 AM - 04:50 AM	44.9	54.7	-9.8	7.0	-	40.9	47.9	-7.0
04:50 AM - 04:55 AM	44.3	52.1	-7.8	7.0	-	40.3	48.2	-7.9
04:55 AM - 05:00 AM	44.5	54.7	-10.2	7.0	-	40.5	48.8	-8.3
05:00 AM - 05:05 AM	45.0	53.1	-8.1	7.0	-	41.0	48.6	-7.6
05:05 AM - 05:10 AM	47.1	54.4	-7.3	7.0	-	43.1	49.1	-6.0
05:10 AM - 05:15 AM	48.4	53.1	-4.7	7.0	-	44.4	48.4	-4.0
05:15 AM - 05:20 AM	48.8	52.2	-3.4	7.0	-	44.8	47.8	-3.0
05:20 AM - 05:25 AM	49.7	50.5	-0.8	7.0	-	45.7	44.7	1.0
05:25 AM - 05:30 AM	49.9	53.6	-3.7	7.0	-	45.9	47.8	-1.9
05:30 AM - 05:35 AM	50.6	49.9	0.7	7.0	-	46.6	45.8	0.8
05:35 AM - 05:40 AM	50.2	51.0	-0.8	7.0	-	46.2	46.8	-0.6
05:40 AM - 05:45 AM	50.2	51.3	-1.1	7.0	-	46.2	47.4	-1.2
05:45 AM - 05:50 AM	49.2	55.8	-6.6	7.0	-	45.2	48.1	-2.9
05:50 AM - 05:55 AM	52.0	50.4	1.6	4.5	-	50.5	47.2	3.3
05:55 AM - 06:00 AM	48.1	50.1	-2.0	7.0	-	44.1	45.9	-1.8
06:00 AM - 07:00 AM	52.5	50.9	1.6	4.5	48.0	-	46.6	1.4
07:00 AM - 08:00 AM	51.9	51.6	0.3	7.0	44.9	-	47.5	-2.6
08:00 AM - 09:00 AM	51.8	51.8	0.0	7.0	44.8	-	47.4	-2.6
09:00 AM - 10:00 AM	53.3	50.2	3.1	3.0	50.3	-	46.0	4.3
10:00 AM - 11:00 AM	53.9	52.0	1.9	4.5	49.4	-	45.2	4.2
11:00 AM - 12:00 PM	50.4	50.0	0.4	7.0	43.4	-	44.7	-1.3
ค่ามาตรฐาน	≤ 10							

Reference Method : Based on ISO 1996-1 and ISO 1996-2

#### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 21-22 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142087-2 วันที่ตรวจวัด 28-29 มิถุนายน 2565)

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



# Analysis / Test Report

## TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142073  
Date Received : Dec 29, 2022  
Date Reported : Jan 07, 2023  
Report Number : 2537993-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142073-3  
Parameter เสียงรบกวน  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945)  
Measurement Date Dec 22 - 23, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 610207

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด		ผลต่างระดับเสียง	ตัวปรับค่า	ปรับค่าเสียงจากแหล่งกำเนิด		เสียงพื้นฐาน	ค่าระดับการรบกวน
	(A)	(B)			(A-C)	(A-C)+3		
12:00 PM - 01:00 PM	46.9	50.6	-3.7	7.0	39.9	-	45.5	-5.6
01:00 PM - 02:00 PM	47.2	51.7	-4.5	7.0	40.2	-	45.7	-5.5
02:00 PM - 03:00 PM	47.0	50.5	-3.5	7.0	40.0	-	45.3	-5.3
03:00 PM - 04:00 PM	48.5	50.6	-2.1	7.0	41.5	-	45.3	-3.8
04:00 PM - 05:00 PM	46.7	52.0	-5.3	7.0	39.7	-	46.3	-6.6
05:00 PM - 06:00 PM	49.9	50.8	-0.9	7.0	42.9	-	45.3	-2.4
06:00 PM - 07:00 PM	48.3	50.5	-2.2	7.0	41.3	-	45.5	-4.2
07:00 PM - 08:00 PM	47.3	50.8	-3.5	7.0	40.3	-	44.2	-3.9
08:00 PM - 09:00 PM	54.6	49.9	4.7	1.5	53.1	-	44.1	9.0
09:00 PM - 10:00 PM	51.3	46.6	4.7	1.5	49.8	-	45.2	4.6
10:00 PM - 10:05 PM	48.6	46.6	2.0	4.5	-	47.1	46.2	0.9
10:05 PM - 10:10 PM	48.4	47.2	1.2	7.0	-	44.4	45.7	-1.3
10:10 PM - 10:15 PM	46.9	48.3	-1.4	7.0	-	42.9	47.7	-4.8
10:15 PM - 10:20 PM	46.3	48.5	-2.2	7.0	-	42.3	48.0	-5.7
10:20 PM - 10:25 PM	50.1	46.0	4.1	2.0	-	51.1	44.8	6.3
10:25 PM - 10:30 PM	47.0	45.0	2.0	4.5	-	45.5	44.3	1.2
10:30 PM - 10:35 PM	48.1	45.7	2.4	4.5	-	46.6	44.5	2.1
10:35 PM - 10:40 PM	47.7	46.4	1.3	7.0	-	43.7	46.0	-2.3
10:40 PM - 10:45 PM	47.2	46.8	0.4	7.0	-	43.2	46.5	-3.3
10:45 PM - 10:50 PM	46.3	46.9	-0.6	7.0	-	42.3	46.3	-4.0
10:50 PM - 10:55 PM	46.1	47.1	-1.0	7.0	-	42.1	46.5	-4.4
10:55 PM - 11:00 PM	47.0	47.9	-0.9	7.0	-	43.0	47.5	-4.5
11:00 PM - 11:05 PM	47.4	47.7	-0.3	7.0	-	43.4	46.9	-3.5
11:05 PM - 11:10 PM	47.4	51.4	-4.0	7.0	-	43.4	44.2	-0.8
11:10 PM - 11:15 PM	46.9	50.2	-3.3	7.0	-	42.9	44.1	-1.2
11:15 PM - 11:20 PM	46.9	50.8	-3.9	7.0	-	42.9	47.2	-4.3
11:20 PM - 11:25 PM	46.7	47.1	-0.4	7.0	-	42.7	46.2	-3.5
11:25 PM - 11:30 PM	46.2	47.5	-1.3	7.0	-	42.2	46.9	-4.7
11:30 PM - 11:35 PM	47.3	48.0	-0.7	7.0	-	43.3	46.5	-3.2
11:35 PM - 11:40 PM	49.0	54.9	-5.9	7.0	-	45.0	48.7	-3.7
11:40 PM - 11:45 PM	47.2	51.3	-4.1	7.0	-	43.2	48.5	-5.3
11:45 PM - 11:50 PM	47.5	51.6	-4.1	7.0	-	43.5	46.3	-2.8
11:50 PM - 11:55 PM	52.1	52.3	-0.2	7.0	-	48.1	44.6	3.5
11:55 PM - 12:00 AM	47.0	49.4	-2.4	7.0	-	43.0	45.0	-2.0
12:00 AM - 12:05 AM	50.5	50.8	-0.3	7.0	-	46.5	47.2	-0.7
12:05 AM - 12:10 AM	48.8	48.8	0.0	7.0	-	44.8	46.9	-2.1
12:10 AM - 12:15 AM	46.3	49.3	-3.0	7.0	-	42.3	46.9	-4.6
12:15 AM - 12:20 AM	46.0	47.0	-1.0	7.0	-	42.0	44.3	-2.3
12:20 AM - 12:25 AM	46.1	50.6	-4.5	7.0	-	42.1	42.3	-0.2
12:25 AM - 12:30 AM	48.3	48.6	-0.3	7.0	-	44.3	47.1	-2.8

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142073  
Date Received : Dec 29, 2022  
Date Reported : Jan 07, 2023  
Report Number : 2537993-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142073-3  
Parameter เสียงรบกวน  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945)  
Measurement Date Dec 22 - 23, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 610207

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด	เสียงขณะ ไม่มีการรบกวน	ผลต่าง ระดับเสียง	ตัวปรับค่า	ปรับค่าเสียงจากแหล่งกำเนิด		เสียงพื้นฐาน	ค่าระดับ การรบกวน
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:30 AM - 12:35 AM	48.0	49.3	-1.3	7.0	-	44.0	48.6	-4.6
12:35 AM - 12:40 AM	47.1	49.6	-2.5	7.0	-	43.1	49.0	-5.9
12:40 AM - 12:45 AM	44.9	47.5	-2.6	7.0	-	40.9	44.1	-3.2
12:45 AM - 12:50 AM	44.8	48.9	-4.1	7.0	-	40.8	47.8	-7.0
12:50 AM - 12:55 AM	44.1	48.5	-4.4	7.0	-	40.1	47.7	-7.6
12:55 AM - 01:00 AM	47.9	48.6	-0.7	7.0	-	43.9	48.0	-4.1
01:00 AM - 01:05 AM	45.9	47.9	-2.0	7.0	-	41.9	46.5	-4.6
01:05 AM - 01:10 AM	45.3	48.0	-2.7	7.0	-	41.3	47.1	-5.8
01:10 AM - 01:15 AM	45.2	48.4	-3.2	7.0	-	41.2	46.5	-5.3
01:15 AM - 01:20 AM	44.8	48.7	-3.9	7.0	-	40.8	47.9	-7.1
01:20 AM - 01:25 AM	46.7	49.5	-2.8	7.0	-	42.7	48.9	-6.2
01:25 AM - 01:30 AM	47.1	49.1	-2.0	7.0	-	43.1	48.5	-5.4
01:30 AM - 01:35 AM	49.0	48.5	0.5	7.0	-	45.0	48.0	-3.0
01:35 AM - 01:40 AM	50.1	48.6	1.5	4.5	-	48.6	48.1	0.5
01:40 AM - 01:45 AM	47.1	48.8	-1.7	7.0	-	43.1	48.0	-4.9
01:45 AM - 01:50 AM	51.4	47.6	3.8	2.0	-	52.4	43.8	8.6
01:50 AM - 01:55 AM	47.5	46.7	0.8	7.0	-	43.5	43.3	0.2
01:55 AM - 02:00 AM	47.0	47.0	0.0	7.0	-	43.0	46.2	-3.2
02:00 AM - 02:05 AM	47.1	46.9	0.2	7.0	-	43.1	46.2	-3.1
02:05 AM - 02:10 AM	46.2	46.7	-0.5	7.0	-	42.2	45.9	-3.7
02:10 AM - 02:15 AM	46.3	46.1	0.2	7.0	-	42.3	43.9	-1.6
02:15 AM - 02:20 AM	46.3	44.2	2.1	4.5	-	44.8	43.5	1.3
02:20 AM - 02:25 AM	46.0	44.3	1.7	4.5	-	44.5	43.3	1.2
02:25 AM - 02:30 AM	45.8	45.9	-0.1	7.0	-	41.8	44.2	-2.4
02:30 AM - 02:35 AM	46.1	46.5	-0.4	7.0	-	42.1	45.8	-3.7
02:35 AM - 02:40 AM	46.0	46.7	-0.7	7.0	-	42.0	46.0	-4.0
02:40 AM - 02:45 AM	44.7	45.4	-0.7	7.0	-	40.7	42.2	-1.5
02:45 AM - 02:50 AM	43.6	42.7	0.9	7.0	-	39.6	42.4	-2.8
02:50 AM - 02:55 AM	44.7	42.9	1.8	4.5	-	43.2	42.6	0.6
02:55 AM - 03:00 AM	45.4	43.0	2.4	4.5	-	43.9	42.5	1.4
03:00 AM - 03:05 AM	46.6	44.2	2.4	4.5	-	45.1	42.9	2.2
03:05 AM - 03:10 AM	42.8	45.7	-2.9	7.0	-	38.8	45.2	-6.4
03:10 AM - 03:15 AM	44.0	46.1	-2.1	7.0	-	40.0	45.0	-5.0
03:15 AM - 03:20 AM	51.8	45.1	6.7	1.0	-	53.8	43.3	10.5
03:20 AM - 03:25 AM	43.3	42.9	0.4	7.0	-	39.3	42.4	-3.1
03:25 AM - 03:30 AM	42.5	42.7	-0.2	7.0	-	38.5	42.2	-3.7
03:30 AM - 03:35 AM	41.8	44.1	-2.3	7.0	-	37.8	42.9	-5.1
03:35 AM - 03:40 AM	42.3	45.1	-2.8	7.0	-	38.3	44.6	-6.3
03:40 AM - 03:45 AM	43.4	44.6	-1.2	7.0	-	39.4	43.8	-4.4
03:45 AM - 03:50 AM	42.2	47.5	-5.3	7.0	-	38.2	44.1	-5.9

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142073  
Date Received : Dec 29, 2022  
Date Reported : Jan 07, 2023  
Report Number : 2537993-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142073-3  
Parameter เสียงรบกวน  
Location วัดศาล้าย (GPS 48Q 276877, 1887945)  
Measurement Date Dec 22 - 23, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 610207

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B) (C)	ตัวปรับค่า (D)	ปรับค่าเสียงจากแหล่งกำเนิด (E)		เสียงพื้นฐาน (F)	ค่าระดับการรบกวน (G-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
03:50 AM - 03:55 AM	42.8	48.9	-6.1	7.0	-	38.8	47.8	-9.0
03:55 AM - 04:00 AM	43.1	48.1	-5.0	7.0	-	39.1	43.7	-4.6
04:00 AM - 04:05 AM	42.9	44.1	-1.2	7.0	-	38.9	43.2	-4.3
04:05 AM - 04:10 AM	42.9	42.1	0.8	7.0	-	38.9	41.6	-2.7
04:10 AM - 04:15 AM	42.4	42.5	-0.1	7.0	-	38.4	41.8	-3.4
04:15 AM - 04:20 AM	41.9	42.5	-0.6	7.0	-	37.9	41.8	-3.9
04:20 AM - 04:25 AM	41.4	42.5	-1.1	7.0	-	37.4	41.7	-4.3
04:25 AM - 04:30 AM	41.2	42.3	-1.1	7.0	-	37.2	41.7	-4.5
04:30 AM - 04:35 AM	42.2	44.9	-2.7	7.0	-	38.2	41.8	-3.6
04:35 AM - 04:40 AM	41.5	53.5	-12.0	7.0	-	37.5	44.4	-6.9
04:40 AM - 04:45 AM	42.0	49.3	-7.3	7.0	-	38.0	44.9	-6.9
04:45 AM - 04:50 AM	41.7	51.6	-9.9	7.0	-	37.7	46.3	-8.6
04:50 AM - 04:55 AM	41.2	53.8	-12.6	7.0	-	37.2	48.6	-11.4
04:55 AM - 05:00 AM	41.4	50.8	-9.4	7.0	-	37.4	47.2	-9.8
05:00 AM - 05:05 AM	41.5	51.3	-9.8	7.0	-	37.5	48.5	-11.0
05:05 AM - 05:10 AM	43.2	51.5	-8.3	7.0	-	39.2	47.7	-8.5
05:10 AM - 05:15 AM	41.4	48.4	-7.0	7.0	-	37.4	46.5	-9.1
05:15 AM - 05:20 AM	41.9	48.7	-6.8	7.0	-	37.9	47.9	-10.0
05:20 AM - 05:25 AM	41.9	51.6	-9.7	7.0	-	37.9	47.8	-9.9
05:25 AM - 05:30 AM	44.3	54.9	-10.6	7.0	-	40.3	48.8	-8.5
05:30 AM - 05:35 AM	44.6	52.0	-7.4	7.0	-	40.6	47.6	-7.0
05:35 AM - 05:40 AM	43.8	54.2	-10.4	7.0	-	39.8	48.4	-8.6
05:40 AM - 05:45 AM	45.4	53.1	-7.7	7.0	-	41.4	48.7	-7.3
05:45 AM - 05:50 AM	45.5	53.7	-8.2	7.0	-	41.5	48.5	-7.0
05:50 AM - 05:55 AM	43.9	53.4	-9.5	7.0	-	39.9	48.4	-8.5
05:55 AM - 06:00 AM	44.7	53.1	-8.4	7.0	-	40.7	48.2	-7.5
06:00 AM - 07:00 AM	60.9	51.4	9.5	0.5	60.4	-	46.7	13.7
07:00 AM - 08:00 AM	62.3	50.8	11.5	0.5	61.8	-	46.2	15.6
08:00 AM - 09:00 AM	53.7	51.9	1.8	4.5	49.2	-	46.2	3.0
09:00 AM - 10:00 AM	50.1	51.9	-1.8	7.0	43.1	-	47.1	-4.0
10:00 AM - 11:00 AM	48.4	52.0	-3.6	7.0	41.4	-	47.2	-5.8
11:00 AM - 12:00 PM	48.9	51.3	-2.4	7.0	41.9	-	45.9	-4.0

ค่ามาตรฐาน

≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 22-23 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142087-3 วันที่ตรวจวัด 29-30 มิถุนายน 2565)

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager





# Analysis / Test Report

## TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142073  
Date Received : Dec 29, 2022  
Date Reported : Jan 07, 2023  
Report Number : 2537994-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142073-4  
Parameter เสียงรบกวน  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945)  
Measurement Date Dec 23 - 24, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 610207

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (B)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:00 PM - 01:00 PM	49.9	50.0	-0.1	7.0	42.9	-	46.9	-4.0
01:00 PM - 02:00 PM	47.8	50.1	-2.3	7.0	40.8	-	48.1	-7.3
02:00 PM - 03:00 PM	45.7	50.3	-4.6	7.0	38.7	-	48.4	-9.7
03:00 PM - 04:00 PM	48.9	50.4	-1.5	7.0	41.9	-	49.2	-7.3
04:00 PM - 05:00 PM	49.9	49.7	0.2	7.0	42.9	-	48.7	-5.8
05:00 PM - 06:00 PM	51.0	50.2	0.8	7.0	44.0	-	49.0	-5.0
06:00 PM - 07:00 PM	50.1	50.3	-0.2	7.0	43.1	-	49.6	-6.5
07:00 PM - 08:00 PM	48.0	49.8	-1.8	7.0	41.0	-	49.2	-8.2
08:00 PM - 09:00 PM	48.1	49.9	-1.8	7.0	41.1	-	48.7	-7.6
09:00 PM - 10:00 PM	47.2	50.3	-3.1	7.0	40.2	-	48.9	-8.7
10:00 PM - 10:05 PM	48.9	48.5	0.4	7.0	-	44.9	45.8	-0.9
10:05 PM - 10:10 PM	48.1	48.7	-0.6	7.0	-	44.1	48.4	-4.3
10:10 PM - 10:15 PM	47.7	49.6	-1.9	7.0	-	43.7	48.9	-5.2
10:15 PM - 10:20 PM	49.1	49.9	-0.8	7.0	-	45.1	48.6	-3.5
10:20 PM - 10:25 PM	51.7	50.3	1.4	7.0	-	47.7	49.4	-1.7
10:25 PM - 10:30 PM	51.3	49.9	1.4	7.0	-	47.3	49.2	-1.9
10:30 PM - 10:35 PM	48.2	50.8	-2.6	7.0	-	44.2	50.5	-6.3
10:35 PM - 10:40 PM	47.5	48.5	-1.0	7.0	-	43.5	48.0	-4.5
10:40 PM - 10:45 PM	47.8	48.8	-1.0	7.0	-	43.8	48.3	-4.5
10:45 PM - 10:50 PM	47.6	49.9	-2.3	7.0	-	43.6	47.6	-4.0
10:50 PM - 10:55 PM	48.0	50.9	-2.9	7.0	-	44.0	50.4	-6.4
10:55 PM - 11:00 PM	48.0	50.5	-2.5	7.0	-	44.0	47.6	-3.6
11:00 PM - 11:05 PM	48.3	48.8	-0.5	7.0	-	44.3	48.4	-4.1
11:05 PM - 11:10 PM	47.5	49.1	-1.6	7.0	-	43.5	48.6	-5.1
11:10 PM - 11:15 PM	46.5	49.4	-2.9	7.0	-	42.5	49.0	-6.5
11:15 PM - 11:20 PM	47.2	49.5	-2.3	7.0	-	43.2	49.0	-5.8
11:20 PM - 11:25 PM	46.9	48.8	-1.9	7.0	-	42.9	48.2	-5.3
11:25 PM - 11:30 PM	47.5	50.1	-2.6	7.0	-	43.5	47.2	-3.7
11:30 PM - 11:35 PM	59.3	48.8	10.5	0.5	-	61.8	48.2	13.6
11:35 PM - 11:40 PM	48.9	48.6	0.3	7.0	-	44.9	48.0	-3.1
11:40 PM - 11:45 PM	47.2	50.9	-3.7	7.0	-	43.2	50.4	-7.2
11:45 PM - 11:50 PM	46.3	50.5	-4.2	7.0	-	42.3	47.6	-5.3
11:50 PM - 11:55 PM	45.5	47.4	-1.9	7.0	-	41.5	47.0	-5.5
11:55 PM - 12:00 AM	45.9	48.1	-2.2	7.0	-	41.9	47.4	-5.5
12:00 AM - 12:05 AM	46.1	50.9	-4.8	7.0	-	42.1	50.4	-8.3
12:05 AM - 12:10 AM	45.6	50.1	-4.5	7.0	-	41.6	47.2	-5.6
12:10 AM - 12:15 AM	48.6	50.8	-2.2	7.0	-	44.6	50.4	-5.8
12:15 AM - 12:20 AM	45.5	49.8	-4.3	7.0	-	41.5	47.7	-6.2
12:20 AM - 12:25 AM	45.2	49.0	-3.8	7.0	-	41.2	48.2	-7.0
12:25 AM - 12:30 AM	47.7	48.2	-0.5	7.0	-	43.7	47.8	-4.1

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

Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142073  
Date Received : Dec 29, 2022  
Date Reported : Jan 07, 2023  
Report Number : 2537994-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142073-4  
Parameter เสียงรบกวน  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945)  
Measurement Date Dec 23 - 24, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 610207

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:30 AM - 12:35 AM	45.6	48.5	-2.9	7.0	-	41.6	48.0	-6.4
12:35 AM - 12:40 AM	46.1	48.9	-2.8	7.0	-	42.1	48.4	-6.3
12:40 AM - 12:45 AM	46.2	48.6	-2.4	7.0	-	42.2	48.2	-6.0
12:45 AM - 12:50 AM	46.1	50.8	-4.7	7.0	-	42.1	50.4	-8.3
12:50 AM - 12:55 AM	46.0	50.8	-4.8	7.0	-	42.0	50.5	-8.5
12:55 AM - 01:00 AM	47.6	49.9	-2.3	7.0	-	43.6	49.4	-5.8
01:00 AM - 01:05 AM	46.2	49.9	-3.7	7.0	-	42.2	49.6	-7.4
01:05 AM - 01:10 AM	46.0	49.7	-3.7	7.0	-	42.0	49.3	-7.3
01:10 AM - 01:15 AM	47.0	49.6	-2.6	7.0	-	43.0	49.2	-6.2
01:15 AM - 01:20 AM	46.7	50.1	-3.4	7.0	-	42.7	47.2	-4.5
01:20 AM - 01:25 AM	46.0	50.8	-4.8	7.0	-	42.0	50.4	-8.4
01:25 AM - 01:30 AM	45.9	49.0	-3.1	7.0	-	41.9	48.4	-6.5
01:30 AM - 01:35 AM	49.0	48.7	0.3	7.0	-	45.0	48.4	-3.4
01:35 AM - 01:40 AM	45.4	48.8	-3.4	7.0	-	41.4	48.4	-7.0
01:40 AM - 01:45 AM	44.8	49.1	-4.3	7.0	-	40.8	48.6	-7.8
01:45 AM - 01:50 AM	45.0	49.0	-4.0	7.0	-	41.0	48.6	-7.6
01:50 AM - 01:55 AM	45.5	49.2	-3.7	7.0	-	41.5	48.8	-7.3
01:55 AM - 02:00 AM	47.4	49.1	-1.7	7.0	-	43.4	48.7	-5.3
02:00 AM - 02:05 AM	46.7	49.0	-2.3	7.0	-	42.7	48.6	-5.9
02:05 AM - 02:10 AM	46.5	49.1	-2.6	7.0	-	42.5	48.7	-6.2
02:10 AM - 02:15 AM	49.0	48.2	0.8	7.0	-	45.0	47.8	-2.8
02:15 AM - 02:20 AM	52.5	48.5	4.0	2.0	-	53.5	48.0	5.5
02:20 AM - 02:25 AM	47.9	47.4	0.5	7.0	-	43.9	47.0	-3.1
02:25 AM - 02:30 AM	46.8	48.8	-2.0	7.0	-	42.8	48.2	-5.4
02:30 AM - 02:35 AM	49.2	48.6	0.6	7.0	-	45.2	48.0	-2.8
02:35 AM - 02:40 AM	49.2	50.1	-0.9	7.0	-	45.2	47.2	-2.0
02:40 AM - 02:45 AM	49.1	49.9	-0.8	7.0	-	45.1	49.2	-4.1
02:45 AM - 02:50 AM	48.7	48.9	-0.2	7.0	-	44.7	48.4	-3.7
02:50 AM - 02:55 AM	54.3	47.5	6.8	1.0	-	56.3	47.0	9.3
02:55 AM - 03:00 AM	47.7	47.5	0.2	7.0	-	43.7	47.0	-3.3
03:00 AM - 03:05 AM	47.2	47.4	-0.2	7.0	-	43.2	46.9	-3.7
03:05 AM - 03:10 AM	46.7	47.5	-0.8	7.0	-	42.7	47.0	-4.3
03:10 AM - 03:15 AM	50.3	47.5	2.8	3.0	-	50.3	46.9	3.4
03:15 AM - 03:20 AM	45.7	47.5	-1.8	7.0	-	41.7	47.1	-5.4
03:20 AM - 03:25 AM	45.7	47.4	-1.7	7.0	-	41.7	47.0	-5.3
03:25 AM - 03:30 AM	45.1	48.1	-3.0	7.0	-	41.1	47.4	-6.3
03:30 AM - 03:35 AM	45.0	48.5	-3.5	7.0	-	41.0	48.0	-7.0
03:35 AM - 03:40 AM	45.6	48.3	-2.7	7.0	-	41.6	48.0	-6.4
03:40 AM - 03:45 AM	45.3	48.1	-2.8	7.0	-	41.3	47.5	-6.2
03:45 AM - 03:50 AM	46.9	50.8	-3.9	7.0	-	42.9	50.4	-7.5

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142073  
Date Received : Dec 29, 2022  
Date Reported : Jan 07, 2023  
Report Number : 2537994-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142073-4  
Parameter เสียงรบกวน  
Location วัดศาล้าย (GPS 48Q 276877, 1887945)  
Measurement Date Dec 23 - 24, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 610207

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับการรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
03:50 AM - 03:55 AM	63.5	49.8	13.7	0.0	-	66.5	47.7	18.8
03:55 AM - 04:00 AM	56.6	49.0	7.6	0.5	-	59.1	48.2	10.9
04:00 AM - 04:05 AM	53.2	48.2	5.0	1.5	-	54.7	47.8	6.9
04:05 AM - 04:10 AM	49.6	48.5	1.1	7.0	-	45.6	48.0	-2.4
04:10 AM - 04:15 AM	46.9	48.9	-2.0	7.0	-	42.9	48.4	-5.5
04:15 AM - 04:20 AM	45.1	48.6	-3.5	7.0	-	41.1	48.2	-7.1
04:20 AM - 04:25 AM	52.3	48.6	3.7	2.0	-	53.3	48.2	5.1
04:25 AM - 04:30 AM	60.8	48.7	12.1	0.5	-	63.3	47.7	15.6
04:30 AM - 04:35 AM	54.7	48.9	5.8	1.5	-	56.2	48.0	8.2
04:35 AM - 04:40 AM	44.4	48.3	-3.9	7.0	-	40.4	47.4	-7.0
04:40 AM - 04:45 AM	44.5	48.1	-3.6	7.0	-	40.5	47.4	-6.9
04:45 AM - 04:50 AM	44.5	48.3	-3.8	7.0	-	40.5	47.6	-7.1
04:50 AM - 04:55 AM	44.7	47.7	-3.0	7.0	-	40.7	46.8	-6.1
04:55 AM - 05:00 AM	44.6	49.9	-5.3	7.0	-	40.6	49.2	-8.6
05:00 AM - 05:05 AM	45.3	48.2	-2.9	7.0	-	41.3	46.9	-5.6
05:05 AM - 05:10 AM	45.2	47.4	-2.2	7.0	-	41.2	46.1	-4.9
05:10 AM - 05:15 AM	45.4	47.6	-2.2	7.0	-	41.4	46.4	-5.0
05:15 AM - 05:20 AM	44.8	47.8	-3.0	7.0	-	40.8	46.4	-5.6
05:20 AM - 05:25 AM	45.0	47.4	-2.4	7.0	-	41.0	47.0	-6.0
05:25 AM - 05:30 AM	44.5	48.2	-3.7	7.0	-	40.5	47.8	-7.3
05:30 AM - 05:35 AM	47.6	48.5	-0.9	7.0	-	43.6	48.0	-4.4
05:35 AM - 05:40 AM	45.2	49.9	-4.7	7.0	-	41.2	49.3	-8.1
05:40 AM - 05:45 AM	46.0	49.2	-3.2	7.0	-	42.0	48.4	-6.4
05:45 AM - 05:50 AM	45.6	48.7	-3.1	7.0	-	41.6	48.2	-6.6
05:50 AM - 05:55 AM	48.0	49.8	-1.8	7.0	-	44.0	47.7	-3.7
05:55 AM - 06:00 AM	45.9	50.8	-4.9	7.0	-	41.9	50.5	-8.6
06:00 AM - 07:00 AM	50.9	49.9	1.0	7.0	43.9	-	49.2	-5.3
07:00 AM - 08:00 AM	53.8	50.2	3.6	2.0	51.8	-	47.4	4.4
08:00 AM - 09:00 AM	52.1	50.5	1.6	4.5	47.6	-	48.6	-1.0
09:00 AM - 10:00 AM	49.6	50.5	-0.9	7.0	42.6	-	48.2	-5.6
10:00 AM - 11:00 AM	50.4	49.9	0.5	7.0	43.4	-	47.5	-4.1
11:00 AM - 12:00 PM	50.2	50.4	-0.2	7.0	43.2	-	47.7	-4.5

ค่ามาตรฐาน

≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 23-24 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142087-4 วันที่ตรวจวัด มิถุนายน 30-01 กรกฎาคม 2565)

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



# Analysis / Test Report

## TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142073  
Date Received : Dec 29, 2022  
Date Reported : Jan 07, 2023  
Report Number : 2537995-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142073-5  
Parameter เสียงรบกวน  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945)  
Measurement Date Dec 24 - 25, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 610207

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (B)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:00 PM - 01:00 PM	50.3	49.4	0.9	7.0	43.3	-	46.5	-3.2
01:00 PM - 02:00 PM	48.7	50.1	-1.4	7.0	41.7	-	48.3	-6.6
02:00 PM - 03:00 PM	47.1	50.3	-3.2	7.0	40.1	-	48.1	-8.0
03:00 PM - 04:00 PM	48.6	50.4	-1.8	7.0	41.6	-	48.6	-7.0
04:00 PM - 05:00 PM	48.6	51.1	-2.5	7.0	41.6	-	49.6	-8.0
05:00 PM - 06:00 PM	53.2	50.0	3.2	3.0	50.2	-	49.0	1.2
06:00 PM - 07:00 PM	54.7	49.7	5.0	1.5	53.2	-	48.4	4.8
07:00 PM - 08:00 PM	49.0	50.4	-1.4	7.0	42.0	-	49.7	-7.7
08:00 PM - 09:00 PM	48.1	49.8	-1.7	7.0	41.1	-	49.0	-7.9
09:00 PM - 10:00 PM	47.4	50.2	-2.8	7.0	40.4	-	49.7	-9.3
10:00 PM - 10:05 PM	47.9	50.2	-2.3	7.0	-	43.9	49.6	-5.7
10:05 PM - 10:10 PM	44.1	50.5	-6.4	7.0	-	40.1	50.1	-10.0
10:10 PM - 10:15 PM	44.6	51.4	-6.8	7.0	-	40.6	50.2	-9.6
10:15 PM - 10:20 PM	44.8	52.0	-7.2	7.0	-	40.8	51.4	-10.6
10:20 PM - 10:25 PM	44.7	49.3	-4.6	7.0	-	40.7	48.0	-7.3
10:25 PM - 10:30 PM	44.7	51.1	-6.4	7.0	-	40.7	50.4	-9.7
10:30 PM - 10:35 PM	45.6	50.5	-4.9	7.0	-	41.6	50.0	-8.4
10:35 PM - 10:40 PM	44.8	49.7	-4.9	7.0	-	40.8	49.0	-8.2
10:40 PM - 10:45 PM	44.9	49.2	-4.3	7.0	-	40.9	48.6	-7.7
10:45 PM - 10:50 PM	44.7	49.8	-5.1	7.0	-	40.7	49.1	-8.4
10:50 PM - 10:55 PM	44.8	50.2	-5.4	7.0	-	40.8	49.2	-8.4
10:55 PM - 11:00 PM	45.4	49.7	-4.3	7.0	-	41.4	49.2	-7.8
11:00 PM - 11:05 PM	46.6	50.3	-3.7	7.0	-	42.6	48.9	-6.3
11:05 PM - 11:10 PM	45.8	50.5	-4.7	7.0	-	41.8	49.8	-8.0
11:10 PM - 11:15 PM	44.8	49.4	-4.6	7.0	-	40.8	48.9	-8.1
11:15 PM - 11:20 PM	44.6	49.2	-4.6	7.0	-	40.6	48.7	-8.1
11:20 PM - 11:25 PM	44.4	49.4	-5.0	7.0	-	40.4	48.8	-8.4
11:25 PM - 11:30 PM	43.8	49.3	-5.5	7.0	-	39.8	48.6	-8.8
11:30 PM - 11:35 PM	43.8	50.6	-6.8	7.0	-	39.8	48.9	-9.1
11:35 PM - 11:40 PM	45.2	51.4	-6.2	7.0	-	41.2	50.2	-9.0
11:40 PM - 11:45 PM	43.3	49.8	-6.5	7.0	-	39.3	48.8	-9.5
11:45 PM - 11:50 PM	44.1	49.3	-5.2	7.0	-	40.1	48.0	-7.9
11:50 PM - 11:55 PM	45.3	48.7	-3.4	7.0	-	41.3	48.0	-6.7
11:55 PM - 12:00 AM	43.5	50.0	-6.5	7.0	-	39.5	49.6	-10.1
12:00 AM - 12:05 AM	43.6	50.2	-6.6	7.0	-	39.6	49.2	-9.6
12:05 AM - 12:10 AM	43.5	48.8	-5.3	7.0	-	39.5	48.3	-8.8
12:10 AM - 12:15 AM	43.5	48.8	-5.3	7.0	-	39.5	48.3	-8.8
12:15 AM - 12:20 AM	43.2	50.5	-7.3	7.0	-	39.2	49.3	-10.1
12:20 AM - 12:25 AM	46.3	48.8	-2.5	7.0	-	42.3	48.3	-6.0
12:25 AM - 12:30 AM	48.1	49.1	-1.0	7.0	-	44.1	48.5	-4.4

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142073  
Date Received : Dec 29, 2022  
Date Reported : Jan 07, 2023  
Report Number : 2537995-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142073-5  
Parameter เสียงรบกวน  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945)  
Measurement Date Dec 24 - 25, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 610207

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด	เสียงขณะ ไม่มีการรบกวน	ผลต่าง ระดับเสียง	ตัวปรับค่า	ปรับค่าเสียงจากแหล่งกำเนิด		เสียงพื้นฐาน	ค่าระดับ การรบกวน
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:30 AM - 12:35 AM	46.9	50.1	-3.2	7.0	-	42.9	49.5	-6.6
12:35 AM - 12:40 AM	50.4	49.6	0.8	7.0	-	46.4	49.1	-2.7
12:40 AM - 12:45 AM	42.9	49.4	-6.5	7.0	-	38.9	49.0	-10.1
12:45 AM - 12:50 AM	46.0	49.4	-3.4	7.0	-	42.0	48.9	-6.9
12:50 AM - 12:55 AM	45.5	50.3	-4.8	7.0	-	41.5	48.9	-7.4
12:55 AM - 01:00 AM	42.6	49.8	-7.2	7.0	-	38.6	49.3	-10.7
01:00 AM - 01:05 AM	43.0	49.3	-6.3	7.0	-	39.0	48.0	-9.0
01:05 AM - 01:10 AM	47.6	51.1	-3.5	7.0	-	43.6	50.4	-6.8
01:10 AM - 01:15 AM	47.2	50.5	-3.3	7.0	-	43.2	50.0	-6.8
01:15 AM - 01:20 AM	42.2	51.3	-9.1	7.0	-	38.2	50.6	-12.4
01:20 AM - 01:25 AM	42.8	50.6	-7.8	7.0	-	38.8	50.1	-11.3
01:25 AM - 01:30 AM	42.8	49.8	-7.0	7.0	-	38.8	48.8	-10.0
01:30 AM - 01:35 AM	42.8	51.1	-8.3	7.0	-	38.8	50.4	-11.6
01:35 AM - 01:40 AM	43.3	50.5	-7.2	7.0	-	39.3	50.0	-10.7
01:40 AM - 01:45 AM	43.4	49.7	-6.3	7.0	-	39.4	49.0	-9.6
01:45 AM - 01:50 AM	43.8	49.2	-5.4	7.0	-	39.8	48.6	-8.8
01:50 AM - 01:55 AM	43.3	49.8	-6.5	7.0	-	39.3	49.1	-9.8
01:55 AM - 02:00 AM	44.4	50.2	-5.8	7.0	-	40.4	49.2	-8.8
02:00 AM - 02:05 AM	45.0	49.7	-4.7	7.0	-	41.0	49.2	-8.2
02:05 AM - 02:10 AM	49.5	49.9	-0.4	7.0	-	45.5	49.4	-3.9
02:10 AM - 02:15 AM	47.4	50.0	-2.6	7.0	-	43.4	49.6	-6.2
02:15 AM - 02:20 AM	44.9	50.0	-5.1	7.0	-	40.9	49.5	-8.6
02:20 AM - 02:25 AM	44.9	49.7	-4.8	7.0	-	40.9	49.2	-8.3
02:25 AM - 02:30 AM	43.0	49.6	-6.6	7.0	-	39.0	49.1	-10.1
02:30 AM - 02:35 AM	42.8	49.2	-6.4	7.0	-	38.8	48.7	-9.9
02:35 AM - 02:40 AM	42.1	49.6	-7.5	7.0	-	38.1	49.2	-11.1
02:40 AM - 02:45 AM	41.8	49.3	-7.5	7.0	-	37.8	48.8	-11.0
02:45 AM - 02:50 AM	42.7	49.4	-6.7	7.0	-	38.7	48.9	-10.2
02:50 AM - 02:55 AM	43.3	49.4	-6.1	7.0	-	39.3	49.0	-9.7
02:55 AM - 03:00 AM	43.0	49.5	-6.5	7.0	-	39.0	49.0	-10.0
03:00 AM - 03:05 AM	42.7	49.8	-7.1	7.0	-	38.7	49.3	-10.6
03:05 AM - 03:10 AM	43.5	50.0	-6.5	7.0	-	39.5	49.5	-10.0
03:10 AM - 03:15 AM	42.7	49.2	-6.5	7.0	-	38.7	48.7	-10.0
03:15 AM - 03:20 AM	42.9	50.2	-7.3	7.0	-	38.9	49.6	-10.7
03:20 AM - 03:25 AM	42.1	50.0	-7.9	7.0	-	38.1	49.3	-11.2
03:25 AM - 03:30 AM	42.3	50.1	-7.8	7.0	-	38.3	49.3	-11.0
03:30 AM - 03:35 AM	47.7	50.2	-2.5	7.0	-	43.7	49.2	-5.5
03:35 AM - 03:40 AM	45.4	50.5	-5.1	7.0	-	41.4	50.0	-8.6
03:40 AM - 03:45 AM	43.6	49.5	-5.9	7.0	-	39.6	49.0	-9.4
03:45 AM - 03:50 AM	44.4	50.2	-5.8	7.0	-	40.4	49.2	-8.8

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



# Analysis / Test Report

## TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142073  
Date Received : Dec 29, 2022  
Date Reported : Jan 07, 2023  
Report Number : 2537995-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142073-5  
Parameter เสียงรบกวน  
Location วัดศาล้าย (GPS 48Q 276877, 1887945)  
Measurement Date Dec 24 - 25, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 610207

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B) (C)	ตัวปรับค่า (D)	ปรับค่าเสียงจากแหล่งกำเนิด (E)		เสียงพื้นฐาน (F)	ค่าระดับการรบกวน (G-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
03:50 AM - 03:55 AM	55.6	49.7	5.9	1.5	-	57.1	49.2	7.9
03:55 AM - 04:00 AM	44.9	51.3	-6.4	7.0	-	40.9	50.6	-9.7
04:00 AM - 04:05 AM	44.9	50.6	-5.7	7.0	-	40.9	50.1	-9.2
04:05 AM - 04:10 AM	45.3	50.3	-5.0	7.0	-	41.3	49.8	-8.5
04:10 AM - 04:15 AM	45.4	50.0	-4.6	7.0	-	41.4	49.5	-8.1
04:15 AM - 04:20 AM	45.6	49.9	-4.3	7.0	-	41.6	49.3	-7.7
04:20 AM - 04:25 AM	44.6	49.2	-4.6	7.0	-	40.6	48.4	-7.8
04:25 AM - 04:30 AM	45.1	48.7	-3.6	7.0	-	41.1	48.2	-7.1
04:30 AM - 04:35 AM	45.9	50.9	-5.0	7.0	-	41.9	48.9	-7.0
04:35 AM - 04:40 AM	46.7	49.7	-3.0	7.0	-	42.7	49.2	-6.5
04:40 AM - 04:45 AM	46.9	50.0	-3.1	7.0	-	42.9	49.3	-6.4
04:45 AM - 04:50 AM	46.2	50.1	-3.9	7.0	-	42.2	49.3	-7.1
04:50 AM - 04:55 AM	47.3	50.2	-2.9	7.0	-	43.3	49.2	-5.9
04:55 AM - 05:00 AM	48.2	49.7	-1.5	7.0	-	44.2	49.2	-5.0
05:00 AM - 05:05 AM	46.7	50.2	-3.5	7.0	-	42.7	49.2	-6.5
05:05 AM - 05:10 AM	47.0	48.7	-1.7	7.0	-	43.0	48.0	-5.0
05:10 AM - 05:15 AM	46.6	49.1	-2.5	7.0	-	42.6	48.5	-5.9
05:15 AM - 05:20 AM	47.3	49.8	-2.5	7.0	-	43.3	48.8	-5.5
05:20 AM - 05:25 AM	46.7	49.6	-2.9	7.0	-	42.7	49.0	-6.3
05:25 AM - 05:30 AM	48.2	49.5	-1.3	7.0	-	44.2	49.0	-4.8
05:30 AM - 05:35 AM	47.1	49.2	-2.1	7.0	-	43.1	48.6	-5.5
05:35 AM - 05:40 AM	46.6	49.8	-3.2	7.0	-	42.6	49.1	-6.5
05:40 AM - 05:45 AM	47.3	49.3	-2.0	7.0	-	43.3	48.0	-4.7
05:45 AM - 05:50 AM	50.4	49.2	1.2	7.0	-	46.4	48.7	-2.3
05:50 AM - 05:55 AM	48.4	50.5	-2.1	7.0	-	44.4	50.0	-5.6
05:55 AM - 06:00 AM	48.8	50.0	-1.2	7.0	-	44.8	49.3	-4.5
06:00 AM - 07:00 AM	59.7	50.2	9.5	0.5	59.2	-	49.3	9.9
07:00 AM - 08:00 AM	53.1	50.2	2.9	3.0	50.1	-	48.9	1.2
08:00 AM - 09:00 AM	53.5	50.0	3.5	2.0	51.5	-	48.6	2.9
09:00 AM - 10:00 AM	51.0	50.1	0.9	7.0	44.0	-	49.0	-5.0
10:00 AM - 11:00 AM	49.3	50.4	-1.1	7.0	42.3	-	48.2	-5.9
11:00 AM - 12:00 PM	49.1	50.5	-1.4	7.0	42.1	-	48.0	-5.9
ค่ามาตรฐาน								≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
- ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
- ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561

ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 24-25 ธันวาคม 2565

ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142087-5 วันที่ตรวจวัด 01-02 กรกฎาคม 2565)

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



# Analysis / Test Report

## TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142073  
Date Received : Dec 29, 2022  
Date Reported : Jan 07, 2023  
Report Number : 2537996-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142073-6  
Parameter เสียงรบกวน  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945)  
Measurement Date Dec 25 - 26, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 610207

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า ระดับเสียง (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:00 PM - 01:00 PM	48.5	51.0	-2.5	7.0	41.5	-	47.2	-5.7
01:00 PM - 02:00 PM	49.3	51.7	-2.4	7.0	42.3	-	47.6	-5.3
02:00 PM - 03:00 PM	47.4	50.6	-3.2	7.0	40.4	-	47.1	-6.7
03:00 PM - 04:00 PM	53.7	51.8	1.9	4.5	49.2	-	47.5	1.7
04:00 PM - 05:00 PM	53.1	50.8	2.3	4.5	48.6	-	47.3	1.3
05:00 PM - 06:00 PM	52.1	51.9	0.2	7.0	45.1	-	47.9	-2.8
06:00 PM - 07:00 PM	48.8	50.3	-1.5	7.0	41.8	-	48.2	-6.4
07:00 PM - 08:00 PM	47.8	51.7	-3.9	7.0	40.8	-	50.0	-9.2
08:00 PM - 09:00 PM	47.7	53.0	-5.3	7.0	40.7	-	50.8	-10.1
09:00 PM - 10:00 PM	53.3	53.2	0.1	7.0	46.3	-	51.1	-4.8
10:00 PM - 10:05 PM	46.8	55.6	-8.8	7.0	-	42.8	50.3	-7.5
10:05 PM - 10:10 PM	47.0	55.3	-8.3	7.0	-	43.0	50.3	-7.3
10:10 PM - 10:15 PM	48.5	50.5	-2.0	7.0	-	44.5	50.2	-5.7
10:15 PM - 10:20 PM	48.4	51.5	-3.1	7.0	-	44.4	46.5	-2.1
10:20 PM - 10:25 PM	46.3	52.0	-5.7	7.0	-	42.3	50.6	-8.3
10:25 PM - 10:30 PM	46.7	52.2	-5.5	7.0	-	42.7	51.4	-8.7
10:30 PM - 10:35 PM	45.5	53.0	-7.5	7.0	-	41.5	51.3	-9.8
10:35 PM - 10:40 PM	46.6	52.3	-5.7	7.0	-	42.6	51.4	-8.8
10:40 PM - 10:45 PM	46.4	52.4	-6.0	7.0	-	42.4	51.5	-9.1
10:45 PM - 10:50 PM	47.6	52.3	-4.7	7.0	-	43.6	51.5	-7.9
10:50 PM - 10:55 PM	46.6	51.3	-4.7	7.0	-	42.6	50.9	-8.3
10:55 PM - 11:00 PM	46.2	51.3	-5.1	7.0	-	42.2	50.6	-8.4
11:00 PM - 11:05 PM	47.6	50.4	-2.8	7.0	-	43.6	50.0	-6.4
11:05 PM - 11:10 PM	47.4	50.6	-3.2	7.0	-	43.4	50.0	-6.6
11:10 PM - 11:15 PM	46.7	50.7	-4.0	7.0	-	42.7	50.4	-7.7
11:15 PM - 11:20 PM	46.9	50.6	-3.7	7.0	-	42.9	50.2	-7.3
11:20 PM - 11:25 PM	47.7	50.4	-2.7	7.0	-	43.7	50.0	-6.3
11:25 PM - 11:30 PM	48.9	50.5	-1.6	7.0	-	44.9	50.0	-5.1
11:30 PM - 11:35 PM	47.5	52.0	-4.5	7.0	-	43.5	50.3	-6.8
11:35 PM - 11:40 PM	47.3	51.3	-4.0	7.0	-	43.3	50.5	-7.2
11:40 PM - 11:45 PM	48.3	50.8	-2.5	7.0	-	44.3	50.4	-6.1
11:45 PM - 11:50 PM	60.8	50.8	10.0	0.5	-	63.3	50.4	12.9
11:50 PM - 11:55 PM	47.7	50.9	-3.2	7.0	-	43.7	50.6	-6.9
11:55 PM - 12:00 AM	49.5	51.6	-2.1	7.0	-	45.5	50.5	-5.0
12:00 AM - 12:05 AM	51.9	50.7	1.2	7.0	-	47.9	50.3	-2.4
12:05 AM - 12:10 AM	52.5	50.6	1.9	4.5	-	51.0	50.2	0.8
12:10 AM - 12:15 AM	51.7	50.5	1.2	7.0	-	47.7	50.1	-2.4
12:15 AM - 12:20 AM	47.0	50.4	-3.4	7.0	-	43.0	50.0	-7.0
12:20 AM - 12:25 AM	45.3	50.4	-5.1	7.0	-	41.3	50.1	-8.8
12:25 AM - 12:30 AM	50.0	50.4	-0.4	7.0	-	46.0	49.9	-3.9

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142073  
Date Received : Dec 29, 2022  
Date Reported : Jan 07, 2023  
Report Number : 2537996-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142073-6  
Parameter เสียงรบกวน  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945)  
Measurement Date Dec 25 - 26, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 610207

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:30 AM - 12:35 AM	47.8	50.3	-2.5	7.0	-	43.8	49.9	-6.1
12:35 AM - 12:40 AM	46.0	50.1	-4.1	7.0	-	42.0	49.7	-7.7
12:40 AM - 12:45 AM	46.6	52.0	-5.4	7.0	-	42.6	50.1	-7.5
12:45 AM - 12:50 AM	55.5	51.9	3.6	2.0	-	56.5	50.7	5.8
12:50 AM - 12:55 AM	45.7	51.6	-5.9	7.0	-	41.7	50.4	-8.7
12:55 AM - 01:00 AM	45.1	51.7	-6.6	7.0	-	41.1	50.5	-9.4
01:00 AM - 01:05 AM	47.0	51.5	-4.5	7.0	-	43.0	50.2	-7.2
01:05 AM - 01:10 AM	48.1	50.7	-2.6	7.0	-	44.1	49.7	-5.6
01:10 AM - 01:15 AM	45.6	49.9	-4.3	7.0	-	41.6	49.5	-7.9
01:15 AM - 01:20 AM	47.6	50.0	-2.4	7.0	-	43.6	49.6	-6.0
01:20 AM - 01:25 AM	47.7	49.9	-2.2	7.0	-	43.7	49.4	-5.7
01:25 AM - 01:30 AM	47.8	50.3	-2.5	7.0	-	43.8	49.6	-5.8
01:30 AM - 01:35 AM	45.3	49.5	-4.2	7.0	-	41.3	48.8	-7.5
01:35 AM - 01:40 AM	45.0	49.1	-4.1	7.0	-	41.0	48.7	-7.7
01:40 AM - 01:45 AM	45.1	49.2	-4.1	7.0	-	41.1	48.7	-7.6
01:45 AM - 01:50 AM	45.3	49.3	-4.0	7.0	-	41.3	48.7	-7.4
01:50 AM - 01:55 AM	45.6	49.5	-3.9	7.0	-	41.6	48.9	-7.3
01:55 AM - 02:00 AM	46.4	49.5	-3.1	7.0	-	42.4	48.6	-6.2
02:00 AM - 02:05 AM	45.7	49.6	-3.9	7.0	-	41.7	48.9	-7.2
02:05 AM - 02:10 AM	46.0	49.0	-3.0	7.0	-	42.0	48.1	-6.1
02:10 AM - 02:15 AM	44.9	49.2	-4.3	7.0	-	40.9	48.4	-7.5
02:15 AM - 02:20 AM	45.5	49.0	-3.5	7.0	-	41.5	48.2	-6.7
02:20 AM - 02:25 AM	45.3	49.1	-3.8	7.0	-	41.3	48.2	-6.9
02:25 AM - 02:30 AM	47.8	48.7	-0.9	7.0	-	43.8	48.0	-4.2
02:30 AM - 02:35 AM	46.1	48.5	-2.4	7.0	-	42.1	47.7	-5.6
02:35 AM - 02:40 AM	46.7	48.7	-2.0	7.0	-	42.7	47.8	-5.1
02:40 AM - 02:45 AM	46.1	48.2	-2.1	7.0	-	42.1	47.6	-5.5
02:45 AM - 02:50 AM	44.9	50.7	-5.8	7.0	-	40.9	50.4	-9.5
02:50 AM - 02:55 AM	44.6	51.5	-6.9	7.0	-	40.6	50.2	-9.6
02:55 AM - 03:00 AM	44.7	48.0	-3.3	7.0	-	40.7	47.6	-6.9
03:00 AM - 03:05 AM	46.6	47.9	-1.3	7.0	-	42.6	47.4	-4.8
03:05 AM - 03:10 AM	44.0	57.5	-13.5	7.0	-	40.0	47.4	-7.4
03:10 AM - 03:15 AM	43.3	50.6	-7.3	7.0	-	39.3	47.2	-7.9
03:15 AM - 03:20 AM	42.5	53.8	-11.3	7.0	-	38.5	47.1	-8.6
03:20 AM - 03:25 AM	44.1	50.4	-6.3	7.0	-	40.1	50.0	-9.9
03:25 AM - 03:30 AM	43.6	50.3	-6.7	7.0	-	39.6	46.9	-7.3
03:30 AM - 03:35 AM	43.4	51.3	-7.9	7.0	-	39.4	46.9	-7.5
03:35 AM - 03:40 AM	42.5	47.3	-4.8	7.0	-	38.5	46.9	-8.4
03:40 AM - 03:45 AM	42.7	47.5	-4.8	7.0	-	38.7	47.0	-8.3
03:45 AM - 03:50 AM	44.6	47.4	-2.8	7.0	-	40.6	47.0	-6.4

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

Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142073  
Date Received : Dec 29, 2022  
Date Reported : Jan 07, 2023  
Report Number : 2537996-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142073-6  
Parameter เสียงรบกวน  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945)  
Measurement Date Dec 25 - 26, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 610207

### ระดับเสียง (dB(A))

เวลา	เสียงจากแหล่งกำเนิด (A)	เสียงขณะไม่มีการรบกวน (B)	ผลต่างระดับเสียง (A-B) (C)	ตัวปรับค่า (D)	ปรับค่าเสียงจากแหล่งกำเนิด (E)		เสียงพื้นฐาน (F)	ค่าระดับการรบกวน (G-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
03:50 AM - 03:55 AM	43.5	47.3	-3.8	7.0	-	39.5	46.9	-7.4
03:55 AM - 04:00 AM	43.3	55.1	-11.8	7.0	-	39.3	46.9	-7.6
04:00 AM - 04:05 AM	43.4	47.2	-3.8	7.0	-	39.4	46.7	-7.3
04:05 AM - 04:10 AM	44.7	50.1	-5.4	7.0	-	40.7	49.7	-9.0
04:10 AM - 04:15 AM	44.0	47.3	-3.3	7.0	-	40.0	46.8	-6.8
04:15 AM - 04:20 AM	42.4	50.3	-7.9	7.0	-	38.4	47.8	-9.4
04:20 AM - 04:25 AM	44.2	50.8	-6.6	7.0	-	40.2	50.4	-10.2
04:25 AM - 04:30 AM	43.8	49.1	-5.3	7.0	-	39.8	47.0	-7.2
04:30 AM - 04:35 AM	43.1	56.4	-13.3	7.0	-	39.1	47.0	-7.9
04:35 AM - 04:40 AM	44.6	48.1	-3.5	7.0	-	40.6	47.3	-6.7
04:40 AM - 04:45 AM	45.1	55.5	-10.4	7.0	-	41.1	47.8	-6.7
04:45 AM - 04:50 AM	45.2	56.7	-11.5	7.0	-	41.2	51.4	-10.2
04:50 AM - 04:55 AM	45.1	53.8	-8.7	7.0	-	41.1	50.1	-9.0
04:55 AM - 05:00 AM	54.7	56.4	-1.7	7.0	-	50.7	50.1	0.6
05:00 AM - 05:05 AM	46.3	51.5	-5.2	7.0	-	42.3	50.2	-7.9
05:05 AM - 05:10 AM	45.7	50.7	-5.0	7.0	-	41.7	49.7	-8.0
05:10 AM - 05:15 AM	45.3	49.6	-4.3	7.0	-	41.3	48.9	-7.6
05:15 AM - 05:20 AM	44.1	54.3	-10.2	7.0	-	40.1	50.3	-10.2
05:20 AM - 05:25 AM	45.1	54.1	-9.0	7.0	-	41.1	49.8	-8.7
05:25 AM - 05:30 AM	45.9	54.5	-8.6	7.0	-	41.9	49.9	-8.0
05:30 AM - 05:35 AM	45.6	52.8	-7.2	7.0	-	41.6	49.3	-7.7
05:35 AM - 05:40 AM	46.3	54.5	-8.2	7.0	-	42.3	49.2	-6.9
05:40 AM - 05:45 AM	45.8	54.1	-8.3	7.0	-	41.8	49.5	-7.7
05:45 AM - 05:50 AM	46.7	51.3	-4.6	7.0	-	42.7	50.6	-7.9
05:50 AM - 05:55 AM	64.7	50.4	14.3	0.0	-	67.7	50.0	17.7
05:55 AM - 06:00 AM	46.1	54.2	-8.1	7.0	-	42.1	50.5	-8.4
06:00 AM - 07:00 AM	58.6	52.0	6.6	1.0	57.6	-	49.5	8.1
07:00 AM - 08:00 AM	52.1	53.2	-1.1	7.0	45.1	-	49.3	-4.2
08:00 AM - 09:00 AM	51.6	53.0	-1.4	7.0	44.6	-	49.3	-4.7
09:00 AM - 10:00 AM	50.9	54.2	-3.3	7.0	43.9	-	50.5	-6.6
10:00 AM - 11:00 AM	51.0	52.1	-1.1	7.0	44.0	-	47.8	-3.8
11:00 AM - 12:00 PM	47.3	51.5	-4.2	7.0	40.3	-	47.6	-7.3

ค่ามาตรฐาน

≤ 10

Reference Method : Based on ISO 1996-1 and ISO 1996-2

### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 25-26 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142087-6 วันที่ตรวจวัด 02-03 กรกฎาคม 2565)

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Approved by

Kanokkorn Anek  
Senior Manager



# Analysis / Test Report

## TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142073  
Date Received : Dec 29, 2022  
Date Reported : Jan 07, 2023  
Report Number : 2537997-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142073-7  
Parameter เสียงรบกวน  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945)  
Measurement Date Dec 26 - 27, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 610207

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (B)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:00 PM - 01:00 PM	46.7	52.9	-6.2	7.0	39.7	-	48.6	-8.9
01:00 PM - 02:00 PM	47.4	52.6	-5.2	7.0	40.4	-	48.3	-7.9
02:00 PM - 03:00 PM	47.0	52.3	-5.3	7.0	40.0	-	47.8	-7.8
03:00 PM - 04:00 PM	48.9	53.5	-4.6	7.0	41.9	-	49.2	-7.3
04:00 PM - 05:00 PM	49.9	51.8	-1.9	7.0	42.9	-	47.2	-4.3
05:00 PM - 06:00 PM	49.5	52.6	-3.1	7.0	42.5	-	46.7	-4.2
06:00 PM - 07:00 PM	46.6	51.1	-4.5	7.0	39.6	-	46.1	-6.5
07:00 PM - 08:00 PM	53.6	50.4	3.2	3.0	50.6	-	48.5	2.1
08:00 PM - 09:00 PM	49.4	52.3	-2.9	7.0	42.4	-	49.8	-7.4
09:00 PM - 10:00 PM	50.1	52.2	-2.1	7.0	43.1	-	50.2	-7.1
10:00 PM - 10:05 PM	49.5	51.0	-1.5	7.0	-	45.5	49.5	-4.0
10:05 PM - 10:10 PM	50.6	52.2	-1.6	7.0	-	46.6	49.9	-3.3
10:10 PM - 10:15 PM	48.9	54.2	-5.3	7.0	-	44.9	50.5	-5.6
10:15 PM - 10:20 PM	54.4	54.5	-0.1	7.0	-	50.4	50.6	-0.2
10:20 PM - 10:25 PM	48.6	52.4	-3.8	7.0	-	44.6	49.9	-5.3
10:25 PM - 10:30 PM	48.3	52.2	-3.9	7.0	-	44.3	49.3	-5.0
10:30 PM - 10:35 PM	48.0	50.9	-2.9	7.0	-	44.0	48.7	-4.7
10:35 PM - 10:40 PM	48.6	51.5	-2.9	7.0	-	44.6	49.4	-4.8
10:40 PM - 10:45 PM	48.6	51.7	-3.1	7.0	-	44.6	50.1	-5.5
10:45 PM - 10:50 PM	48.4	50.7	-2.3	7.0	-	44.4	49.2	-4.8
10:50 PM - 10:55 PM	47.5	49.3	-1.8	7.0	-	43.5	48.0	-4.5
10:55 PM - 11:00 PM	45.4	48.7	-3.3	7.0	-	41.4	48.1	-6.7
11:00 PM - 11:05 PM	44.6	51.2	-6.6	7.0	-	40.6	45.9	-5.3
11:05 PM - 11:10 PM	44.3	49.0	-4.7	7.0	-	40.3	48.3	-8.0
11:10 PM - 11:15 PM	46.2	53.7	-7.5	7.0	-	42.2	48.5	-6.3
11:15 PM - 11:20 PM	47.0	50.4	-3.4	7.0	-	43.0	48.9	-5.9
11:20 PM - 11:25 PM	46.6	51.2	-4.6	7.0	-	42.6	50.7	-8.1
11:25 PM - 11:30 PM	47.3	50.0	-2.7	7.0	-	43.3	49.6	-6.3
11:30 PM - 11:35 PM	47.8	52.8	-5.0	7.0	-	43.8	49.4	-5.6
11:35 PM - 11:40 PM	47.9	56.2	-8.3	7.0	-	43.9	49.3	-5.4
11:40 PM - 11:45 PM	47.9	49.7	-1.8	7.0	-	43.9	49.2	-5.3
11:45 PM - 11:50 PM	47.8	49.4	-1.6	7.0	-	43.8	48.7	-4.9
11:50 PM - 11:55 PM	48.1	49.7	-1.6	7.0	-	44.1	49.1	-5.0
11:55 PM - 12:00 AM	47.2	50.2	-3.0	7.0	-	43.2	49.2	-6.0
12:00 AM - 12:05 AM	56.1	50.3	5.8	1.5	-	57.6	49.8	7.8
12:05 AM - 12:10 AM	46.8	50.7	-3.9	7.0	-	42.8	50.1	-7.3
12:10 AM - 12:15 AM	53.7	50.6	3.1	3.0	-	53.7	50.1	3.6
12:15 AM - 12:20 AM	46.9	50.9	-4.0	7.0	-	42.9	50.3	-7.4
12:20 AM - 12:25 AM	46.6	51.4	-4.8	7.0	-	42.6	50.9	-8.3
12:25 AM - 12:30 AM	46.7	51.3	-4.6	7.0	-	42.7	50.9	-8.2

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*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142073  
Date Received : Dec 29, 2022  
Date Reported : Jan 07, 2023  
Report Number : 2537997-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142073-7  
Parameter เสียงรบกวน  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945)  
Measurement Date Dec 26 - 27, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 610207

ระดับเสียง (dB(A))								
เวลา	เสียงจาก แหล่งกำเนิด (A)	เสียงขณะ ไม่มีการรบกวน (B)	ผลต่าง ระดับเสียง (A-B)	ตัวปรับค่า (C)	ปรับค่าเสียงจากแหล่งกำเนิด (D)		เสียงพื้นฐาน (E)	ค่าระดับ การรบกวน (D-E)
					กลางวัน (A-C)	กลางคืน (A-C)+3		
12:30 AM - 12:35 AM	47.9	50.5	-2.6	7.0	-	43.9	49.2	-5.3
12:35 AM - 12:40 AM	58.6	49.4	9.2	0.5	-	61.1	49.0	12.1
12:40 AM - 12:45 AM	46.6	49.4	-2.8	7.0	-	42.6	49.0	-6.4
12:45 AM - 12:50 AM	48.9	49.3	-0.4	7.0	-	44.9	48.9	-4.0
12:50 AM - 12:55 AM	46.6	49.7	-3.1	7.0	-	42.6	49.1	-6.5
12:55 AM - 01:00 AM	45.7	49.9	-4.2	7.0	-	41.7	49.5	-7.8
01:00 AM - 01:05 AM	45.3	49.9	-4.6	7.0	-	41.3	49.4	-8.1
01:05 AM - 01:10 AM	45.3	49.1	-3.8	7.0	-	41.3	48.6	-7.3
01:10 AM - 01:15 AM	44.6	48.7	-4.1	7.0	-	40.6	48.3	-7.7
01:15 AM - 01:20 AM	45.4	48.9	-3.5	7.0	-	41.4	48.4	-7.0
01:20 AM - 01:25 AM	45.2	48.5	-3.3	7.0	-	41.2	48.0	-6.8
01:25 AM - 01:30 AM	44.7	48.5	-3.8	7.0	-	40.7	48.1	-7.4
01:30 AM - 01:35 AM	45.3	48.2	-2.9	7.0	-	41.3	47.7	-6.4
01:35 AM - 01:40 AM	45.3	48.2	-2.9	7.0	-	41.3	47.7	-6.4
01:40 AM - 01:45 AM	47.7	53.4	-5.7	7.0	-	43.7	48.1	-4.4
01:45 AM - 01:50 AM	43.9	47.8	-3.9	7.0	-	39.9	47.3	-7.4
01:50 AM - 01:55 AM	44.6	54.7	-10.1	7.0	-	40.6	45.9	-5.3
01:55 AM - 02:00 AM	43.9	46.5	-2.6	7.0	-	39.9	46.1	-6.2
02:00 AM - 02:05 AM	44.9	46.3	-1.4	7.0	-	40.9	45.7	-4.8
02:05 AM - 02:10 AM	47.3	46.7	0.6	7.0	-	43.3	45.9	-2.6
02:10 AM - 02:15 AM	45.7	47.1	-1.4	7.0	-	41.7	46.4	-4.7
02:15 AM - 02:20 AM	43.7	45.6	-1.9	7.0	-	39.7	45.0	-5.3
02:20 AM - 02:25 AM	44.6	45.8	-1.2	7.0	-	40.6	45.0	-4.4
02:25 AM - 02:30 AM	45.1	46.3	-1.2	7.0	-	41.1	45.7	-4.6
02:30 AM - 02:35 AM	45.4	46.7	-1.3	7.0	-	41.4	46.2	-4.8
02:35 AM - 02:40 AM	54.3	47.3	7.0	1.0	-	56.3	46.6	9.7
02:40 AM - 02:45 AM	51.0	48.7	2.3	4.5	-	49.5	46.9	2.6
02:45 AM - 02:50 AM	45.6	46.9	-1.3	7.0	-	41.6	46.5	-4.9
02:50 AM - 02:55 AM	45.9	46.7	-0.8	7.0	-	41.9	46.2	-4.3
02:55 AM - 03:00 AM	44.8	46.8	-2.0	7.0	-	40.8	46.3	-5.5
03:00 AM - 03:05 AM	63.9	50.3	13.6	0.0	-	66.9	49.7	17.2
03:05 AM - 03:10 AM	52.7	47.0	5.7	1.5	-	54.2	46.1	8.1
03:10 AM - 03:15 AM	44.8	46.6	-1.8	7.0	-	40.8	45.8	-5.0
03:15 AM - 03:20 AM	54.5	52.3	2.2	4.5	-	53.0	45.7	7.3
03:20 AM - 03:25 AM	42.9	46.6	-3.7	7.0	-	38.9	45.7	-6.8
03:25 AM - 03:30 AM	43.8	46.1	-2.3	7.0	-	39.8	45.3	-5.5
03:30 AM - 03:35 AM	44.2	46.0	-1.8	7.0	-	40.2	45.2	-5.0
03:35 AM - 03:40 AM	44.6	46.0	-1.4	7.0	-	40.6	45.3	-4.7
03:40 AM - 03:45 AM	44.4	46.2	-1.8	7.0	-	40.4	45.5	-5.1
03:45 AM - 03:50 AM	44.2	45.5	-1.3	7.0	-	40.2	44.6	-4.4

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

### TESTING

No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142073  
Date Received : Dec 29, 2022  
Date Reported : Jan 07, 2023  
Report Number : 2537997-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142073-7  
Parameter เสียงรบกวน  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945)  
Measurement Date Dec 26 - 27, 2022  
Measurement by Jatsarawut Pattama  
Sound Level Meter 610207

### ระดับเสียง (dB(A))

ระดับเสียง (dB(A))								
เวลา	(A) เสียงจาก แหล่งกำเนิด	(B) เสียงขณะ ไม่มีการรบกวน	(A-B) ผลต่าง ระดับเสียง	(C) ตัวปรับค่า	(D) ปรับค่าเสียงจากแหล่งกำเนิด		(E) เสียงพื้นฐาน	(D-E) ค่าระดับ การรบกวน
					(A-C) กลางวัน	(A-C)+3 กลางคืน		
03:50 AM - 03:55 AM	43.8	44.8	-1.0	7.0	-	39.8	44.2	-4.4
03:55 AM - 04:00 AM	43.6	45.3	-1.7	7.0	-	39.6	44.2	-4.6
04:00 AM - 04:05 AM	44.0	44.6	-0.6	7.0	-	40.0	44.0	-4.0
04:05 AM - 04:10 AM	43.8	45.4	-1.6	7.0	-	39.8	44.1	-4.3
04:10 AM - 04:15 AM	45.2	46.6	-1.4	7.0	-	41.2	44.2	-3.0
04:15 AM - 04:20 AM	44.8	45.3	-0.5	7.0	-	40.8	44.0	-3.2
04:20 AM - 04:25 AM	44.5	45.2	-0.7	7.0	-	40.5	44.1	-3.6
04:25 AM - 04:30 AM	46.7	51.7	-5.0	7.0	-	42.7	50.1	-7.4
04:30 AM - 04:35 AM	45.2	53.0	-7.8	7.0	-	41.2	44.6	-3.4
04:35 AM - 04:40 AM	45.0	53.5	-8.5	7.0	-	41.0	50.1	-9.1
04:40 AM - 04:45 AM	44.6	50.9	-6.3	7.0	-	40.6	50.3	-9.7
04:45 AM - 04:50 AM	44.2	51.4	-7.2	7.0	-	40.2	50.9	-10.7
04:50 AM - 04:55 AM	43.8	49.3	-5.5	7.0	-	39.8	45.9	-6.1
04:55 AM - 05:00 AM	44.0	50.1	-6.1	7.0	-	40.0	46.4	-6.4
05:00 AM - 05:05 AM	44.1	51.4	-7.3	7.0	-	40.1	49.9	-9.8
05:05 AM - 05:10 AM	44.1	53.3	-9.2	7.0	-	40.1	48.7	-8.6
05:10 AM - 05:15 AM	44.4	53.1	-8.7	7.0	-	40.4	47.5	-7.1
05:15 AM - 05:20 AM	44.1	52.0	-7.9	7.0	-	40.1	48.2	-8.1
05:20 AM - 05:25 AM	45.4	56.5	-11.1	7.0	-	41.4	50.1	-8.7
05:25 AM - 05:30 AM	44.4	54.9	-10.5	7.0	-	40.4	50.3	-9.9
05:30 AM - 05:35 AM	44.7	53.6	-8.9	7.0	-	40.7	50.3	-9.6
05:35 AM - 05:40 AM	46.0	57.8	-11.8	7.0	-	42.0	50.7	-8.7
05:40 AM - 05:45 AM	44.4	53.6	-9.2	7.0	-	40.4	49.8	-9.4
05:45 AM - 05:50 AM	44.1	52.4	-8.3	7.0	-	40.1	48.6	-8.5
05:50 AM - 05:55 AM	45.6	53.4	-7.8	7.0	-	41.6	48.1	-6.5
05:55 AM - 06:00 AM	45.2	53.7	-8.5	7.0	-	41.2	49.7	-8.5
06:00 AM - 07:00 AM	59.1	53.5	5.6	1.5	57.6	-	49.3	8.3
07:00 AM - 08:00 AM	53.3	52.9	0.4	7.0	46.3	-	48.8	-2.5
08:00 AM - 09:00 AM	53.6	52.4	1.2	7.0	46.6	-	48.2	-1.6
09:00 AM - 10:00 AM	50.8	53.2	-2.4	7.0	43.8	-	49.1	-5.3
10:00 AM - 11:00 AM	50.7	52.6	-1.9	7.0	43.7	-	48.5	-4.8
11:00 AM - 12:00 PM	48.0	51.9	-3.9	7.0	41.0	-	47.2	-6.2
ค่ามาตรฐาน	≤ 10							

Reference Method : Based on ISO 1996-1 and ISO 1996-2

#### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
  - ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
  - ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
- ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 26-27 ธันวาคม 2565
- ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22142087-7 วันที่ตรวจวัด 03-04 กรกฎาคม 2565)

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142075  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537180-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142075-1  
Parameter Noise  
Location ร่มรังกุลมบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169) (Shut down)  
Measurement Date Jun 27 - 28, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173613

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	54.6	74.1	50.2
12:00 PM - 01:00 PM	52.6	75.0	49.8
01:00 PM - 02:00 PM	56.2	81.0	51.4
02:00 PM - 03:00 PM	53.1	75.3	49.7
03:00 PM - 04:00 PM	53.5	81.1	50.2
04:00 PM - 05:00 PM	53.3	74.3	50.6
05:00 PM - 06:00 PM	54.0	84.1	51.0
06:00 PM - 07:00 PM	54.8	75.2	51.7
07:00 PM - 08:00 PM	53.4	65.9	51.9
08:00 PM - 09:00 PM	55.1	76.2	53.5
09:00 PM - 10:00 PM	53.8	70.1	52.3
10:00 PM - 10:05 PM	53.3	57.4	52.1
10:05 PM - 10:10 PM	53.5	58.2	52.2
10:10 PM - 10:15 PM	53.2	55.5	51.7
10:15 PM - 10:20 PM	53.4	56.0	52.1
10:20 PM - 10:25 PM	52.9	56.8	51.4
10:25 PM - 10:30 PM	52.7	60.1	49.8
10:30 PM - 10:35 PM	51.2	58.9	49.3
10:35 PM - 10:40 PM	51.4	58.5	49.5
10:40 PM - 10:45 PM	52.7	56.3	51.2
10:45 PM - 10:50 PM	52.6	60.9	50.7
10:50 PM - 10:55 PM	52.6	55.5	50.9
10:55 PM - 11:00 PM	52.0	58.8	49.9
11:00 PM - 11:05 PM	50.8	55.2	49.1
11:05 PM - 11:10 PM	50.9	54.9	49.6
11:10 PM - 11:15 PM	51.9	57.9	49.8
11:15 PM - 11:20 PM	51.1	64.9	49.1
11:20 PM - 11:25 PM	50.5	54.9	49.1
11:25 PM - 11:30 PM	49.8	52.1	48.4
11:30 PM - 11:35 PM	50.1	52.8	48.7
11:35 PM - 11:40 PM	50.2	53.1	48.9
11:40 PM - 11:45 PM	51.1	58.4	49.5
11:45 PM - 11:50 PM	51.6	56.4	49.7
11:50 PM - 11:55 PM	51.1	55.9	49.6
11:55 PM - 12:00 AM	50.9	55.0	49.1
12:00 AM - 12:05 AM	50.3	52.7	49.1
12:05 AM - 12:10 AM	50.2	52.5	48.6
12:10 AM - 12:15 AM	50.3	57.6	48.6
12:15 AM - 12:20 AM	50.7	54.4	49.1
12:20 AM - 12:25 AM	50.4	53.1	48.8

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142075  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537180-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142075-1  
Parameter Noise  
Location รื่นรักกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169) (Shut down)  
Measurement Date Jun 27 - 28, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173613

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:25 AM - 12:30 AM	49.7	52.2	48.1
12:30 AM - 12:35 AM	50.3	54.7	48.5
12:35 AM - 12:40 AM	51.5	55.8	49.3
12:40 AM - 12:45 AM	48.8	53.6	47.6
12:45 AM - 12:50 AM	49.3	54.3	47.5
12:50 AM - 12:55 AM	49.9	54.6	47.8
12:55 AM - 01:00 AM	50.9	54.5	49.2
01:00 AM - 01:05 AM	51.2	55.5	49.6
01:05 AM - 01:10 AM	52.6	56.8	50.9
01:10 AM - 01:15 AM	51.0	57.5	49.2
01:15 AM - 01:20 AM	49.4	55.1	47.5
01:20 AM - 01:25 AM	51.9	55.7	48.8
01:25 AM - 01:30 AM	52.1	55.0	50.8
01:30 AM - 01:35 AM	52.4	55.8	50.9
01:35 AM - 01:40 AM	52.8	56.2	51.1
01:40 AM - 01:45 AM	53.1	56.1	51.8
01:45 AM - 01:50 AM	53.4	56.0	52.2
01:50 AM - 01:55 AM	52.6	56.9	50.6
01:55 AM - 02:00 AM	53.6	58.1	51.9
02:00 AM - 02:05 AM	51.7	57.8	49.9
02:05 AM - 02:10 AM	50.2	55.6	47.2
02:10 AM - 02:15 AM	47.2	50.6	45.7
02:15 AM - 02:20 AM	47.5	50.5	46.8
02:20 AM - 02:25 AM	47.6	50.8	46.9
02:25 AM - 02:30 AM	47.0	49.3	46.1
02:30 AM - 02:35 AM	47.0	49.7	46.1
02:35 AM - 02:40 AM	46.9	51.7	45.8
02:40 AM - 02:45 AM	47.6	51.9	46.0
02:45 AM - 02:50 AM	49.2	52.0	46.3
02:50 AM - 02:55 AM	50.0	52.9	48.0
02:55 AM - 03:00 AM	47.5	52.8	46.1
03:00 AM - 03:05 AM	46.9	54.5	46.1
03:05 AM - 03:10 AM	46.1	51.9	45.1
03:10 AM - 03:15 AM	49.7	54.4	47.7
03:15 AM - 03:20 AM	49.4	52.8	48.3
03:20 AM - 03:25 AM	50.7	54.6	49.2
03:25 AM - 03:30 AM	51.0	55.9	49.3
03:30 AM - 03:35 AM	50.5	56.0	48.2
03:35 AM - 03:40 AM	50.5	57.9	48.0
03:40 AM - 03:45 AM	50.5	56.1	48.5

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142075  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537180-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142075-1  
Parameter Noise  
Location ร่มรักกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169) (Shut down)  
Measurement Date Jun 27 - 28, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173613

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:45 AM - 03:50 AM	52.5	55.5	50.5
03:50 AM - 03:55 AM	53.0	57.4	50.9
03:55 AM - 04:00 AM	52.2	57.9	50.3
04:00 AM - 04:05 AM	53.4	68.9	50.4
04:05 AM - 04:10 AM	52.2	62.1	50.1
04:10 AM - 04:15 AM	52.0	55.0	50.3
04:15 AM - 04:20 AM	52.9	59.1	50.5
04:20 AM - 04:25 AM	53.1	58.2	50.8
04:25 AM - 04:30 AM	53.0	60.7	50.4
04:30 AM - 04:35 AM	54.3	60.8	52.1
04:35 AM - 04:40 AM	54.9	71.3	52.7
04:40 AM - 04:45 AM	51.4	56.0	49.6
04:45 AM - 04:50 AM	51.5	55.7	50.0
04:50 AM - 04:55 AM	52.0	54.8	50.7
04:55 AM - 05:00 AM	52.3	55.9	50.0
05:00 AM - 05:05 AM	53.2	72.6	50.2
05:05 AM - 05:10 AM	52.8	59.2	51.1
05:10 AM - 05:15 AM	52.9	68.2	50.0
05:15 AM - 05:20 AM	50.8	63.3	49.1
05:20 AM - 05:25 AM	50.1	65.5	48.2
05:25 AM - 05:30 AM	50.4	59.2	48.2
05:30 AM - 05:35 AM	51.5	76.4	48.4
05:35 AM - 05:40 AM	51.6	56.1	48.7
05:40 AM - 05:45 AM	51.5	56.8	49.5
05:45 AM - 05:50 AM	51.9	57.8	49.5
05:50 AM - 05:55 AM	52.2	56.6	50.4
05:55 AM - 06:00 AM	52.5	58.9	51.1
06:00 AM - 07:00 AM	54.7	70.1	51.4
07:00 AM - 08:00 AM	53.4	73.8	50.3
08:00 AM - 09:00 AM	55.4	85.7	49.8
09:00 AM - 10:00 AM	52.6	73.5	49.2
10:00 AM - 11:00 AM	54.2	73.8	49.9

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142075  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537181-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142075-2  
Parameter Noise  
Location รื่นรักลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169) (Shut down)  
Measurement Date Jun 28 - 29, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173613

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	52.8	75.4	49.1
12:00 PM - 01:00 PM	51.4	68.0	48.9
01:00 PM - 02:00 PM	54.2	76.7	50.6
02:00 PM - 03:00 PM	54.2	73.2	50.3
03:00 PM - 04:00 PM	55.1	75.5	51.6
04:00 PM - 05:00 PM	55.2	72.8	52.2
05:00 PM - 06:00 PM	54.5	69.4	52.3
06:00 PM - 07:00 PM	53.8	68.2	50.3
07:00 PM - 08:00 PM	49.5	64.3	48.1
08:00 PM - 09:00 PM	50.0	70.9	48.3
09:00 PM - 10:00 PM	51.5	64.8	49.9
10:00 PM - 10:05 PM	52.0	59.2	50.8
10:05 PM - 10:10 PM	51.9	61.2	50.6
10:10 PM - 10:15 PM	51.6	58.2	50.5
10:15 PM - 10:20 PM	51.2	55.1	50.0
10:20 PM - 10:25 PM	51.9	55.8	50.7
10:25 PM - 10:30 PM	51.6	53.6	50.5
10:30 PM - 10:35 PM	51.6	58.6	50.4
10:35 PM - 10:40 PM	51.2	54.4	50.0
10:40 PM - 10:45 PM	51.1	53.8	48.2
10:45 PM - 10:50 PM	49.1	59.0	47.4
10:50 PM - 10:55 PM	47.9	51.8	46.9
10:55 PM - 11:00 PM	50.4	55.2	47.4
11:00 PM - 11:05 PM	52.0	58.2	49.8
11:05 PM - 11:10 PM	52.0	56.9	50.8
11:10 PM - 11:15 PM	52.0	58.7	50.7
11:15 PM - 11:20 PM	51.4	54.1	50.1
11:20 PM - 11:25 PM	51.6	54.7	50.1
11:25 PM - 11:30 PM	51.3	53.7	49.8
11:30 PM - 11:35 PM	51.4	54.9	49.8
11:35 PM - 11:40 PM	51.6	54.2	50.4
11:40 PM - 11:45 PM	51.2	55.0	49.8
11:45 PM - 11:50 PM	51.0	54.5	49.8
11:50 PM - 11:55 PM	51.2	55.0	48.5
11:55 PM - 12:00 AM	51.9	71.8	49.9
12:00 AM - 12:05 AM	51.2	56.2	49.5
12:05 AM - 12:10 AM	51.4	54.1	49.9
12:10 AM - 12:15 AM	51.8	55.0	50.1
12:15 AM - 12:20 AM	50.1	54.8	46.7
12:20 AM - 12:25 AM	50.7	59.3	47.1

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142075  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537181-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142075-2  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169) (Shut down)  
Measurement Date Jun 28 - 29, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173613

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:25 AM - 12:30 AM	52.2	58.2	50.0
12:30 AM - 12:35 AM	50.9	55.1	49.4
12:35 AM - 12:40 AM	50.7	53.5	49.0
12:40 AM - 12:45 AM	51.7	60.5	50.0
12:45 AM - 12:50 AM	51.2	54.2	49.6
12:50 AM - 12:55 AM	51.3	56.3	49.9
12:55 AM - 01:00 AM	51.8	54.4	50.5
01:00 AM - 01:05 AM	51.9	55.1	50.4
01:05 AM - 01:10 AM	51.7	54.6	50.3
01:10 AM - 01:15 AM	51.7	54.3	50.3
01:15 AM - 01:20 AM	51.8	55.8	50.4
01:20 AM - 01:25 AM	51.9	54.3	50.6
01:25 AM - 01:30 AM	52.0	54.7	50.6
01:30 AM - 01:35 AM	52.2	54.7	50.9
01:35 AM - 01:40 AM	52.1	58.5	50.7
01:40 AM - 01:45 AM	51.8	54.5	50.4
01:45 AM - 01:50 AM	51.6	54.6	50.0
01:50 AM - 01:55 AM	50.9	53.3	49.1
01:55 AM - 02:00 AM	51.4	54.1	50.2
02:00 AM - 02:05 AM	51.3	53.7	50.0
02:05 AM - 02:10 AM	51.2	60.3	49.9
02:10 AM - 02:15 AM	51.0	53.4	49.6
02:15 AM - 02:20 AM	51.2	54.1	49.4
02:20 AM - 02:25 AM	51.1	53.8	49.7
02:25 AM - 02:30 AM	50.7	53.4	49.3
02:30 AM - 02:35 AM	50.7	53.7	49.2
02:35 AM - 02:40 AM	51.0	53.5	49.7
02:40 AM - 02:45 AM	50.9	54.4	49.5
02:45 AM - 02:50 AM	51.4	55.3	49.9
02:50 AM - 02:55 AM	50.1	54.2	46.8
02:55 AM - 03:00 AM	47.7	51.9	46.4
03:00 AM - 03:05 AM	47.2	50.6	46.2
03:05 AM - 03:10 AM	48.1	52.5	46.9
03:10 AM - 03:15 AM	48.0	51.2	46.9
03:15 AM - 03:20 AM	47.4	53.7	46.1
03:20 AM - 03:25 AM	49.4	65.3	46.9
03:25 AM - 03:30 AM	49.3	61.8	46.6
03:30 AM - 03:35 AM	47.3	51.1	46.1
03:35 AM - 03:40 AM	48.2	53.8	46.2
03:40 AM - 03:45 AM	51.7	54.4	50.1

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142075  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537181-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142075-2  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169) (Shut down)  
Measurement Date Jun 28 - 29, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173613

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:45 AM - 03:50 AM	51.9	55.4	50.3
03:50 AM - 03:55 AM	53.3	73.3	49.6
03:55 AM - 04:00 AM	54.1	72.0	49.7
04:00 AM - 04:05 AM	51.6	55.2	49.9
04:05 AM - 04:10 AM	51.2	54.2	49.6
04:10 AM - 04:15 AM	50.8	54.4	48.6
04:15 AM - 04:20 AM	51.1	55.1	49.5
04:20 AM - 04:25 AM	51.4	54.3	49.9
04:25 AM - 04:30 AM	51.1	54.5	49.5
04:30 AM - 04:35 AM	51.0	54.4	49.3
04:35 AM - 04:40 AM	51.3	56.5	49.5
04:40 AM - 04:45 AM	51.5	58.6	49.8
04:45 AM - 04:50 AM	50.5	54.7	47.8
04:50 AM - 04:55 AM	52.1	56.2	50.1
04:55 AM - 05:00 AM	51.5	55.8	49.8
05:00 AM - 05:05 AM	51.6	58.2	49.1
05:05 AM - 05:10 AM	51.2	58.0	49.0
05:10 AM - 05:15 AM	50.6	65.1	47.4
05:15 AM - 05:20 AM	52.0	64.4	48.4
05:20 AM - 05:25 AM	49.0	55.7	47.4
05:25 AM - 05:30 AM	49.1	59.5	47.6
05:30 AM - 05:35 AM	49.2	57.4	47.5
05:35 AM - 05:40 AM	48.4	56.6	47.0
05:40 AM - 05:45 AM	50.3	62.3	47.6
05:45 AM - 05:50 AM	49.9	61.9	48.0
05:50 AM - 05:55 AM	49.9	57.3	47.9
05:55 AM - 06:00 AM	51.7	61.9	49.6
06:00 AM - 07:00 AM	55.7	68.2	51.2
07:00 AM - 08:00 AM	55.7	71.9	52.5
08:00 AM - 09:00 AM	54.9	75.4	51.5
09:00 AM - 10:00 AM	54.7	82.0	51.8
10:00 AM - 11:00 AM	54.6	82.6	51.2

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142075  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537182-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142075-3  
Parameter Noise  
Location รันรังกุลมบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169) (Shut down)  
Measurement Date Jun 29 - 30, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173613

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	54.2	76.1	50.6
12:00 PM - 01:00 PM	51.3	74.5	48.0
01:00 PM - 02:00 PM	54.5	74.7	51.4
02:00 PM - 03:00 PM	55.1	76.0	51.8
03:00 PM - 04:00 PM	54.6	72.3	51.2
04:00 PM - 05:00 PM	55.5	73.7	52.4
05:00 PM - 06:00 PM	55.0	75.3	52.0
06:00 PM - 07:00 PM	54.4	74.1	50.9
07:00 PM - 08:00 PM	52.9	75.7	51.3
08:00 PM - 09:00 PM	53.3	71.3	51.9
09:00 PM - 10:00 PM	52.9	64.5	51.8
10:00 PM - 10:05 PM	51.7	55.8	50.7
10:05 PM - 10:10 PM	51.7	54.1	50.5
10:10 PM - 10:15 PM	51.9	54.4	50.9
10:15 PM - 10:20 PM	51.8	54.7	49.5
10:20 PM - 10:25 PM	48.8	51.2	48.1
10:25 PM - 10:30 PM	49.4	53.7	48.4
10:30 PM - 10:35 PM	48.8	51.1	48.1
10:35 PM - 10:40 PM	47.8	51.1	46.7
10:40 PM - 10:45 PM	46.5	52.0	45.1
10:45 PM - 10:50 PM	46.9	53.1	45.7
10:50 PM - 10:55 PM	48.1	54.1	46.0
10:55 PM - 11:00 PM	49.0	52.7	47.9
11:00 PM - 11:05 PM	48.6	52.9	47.3
11:05 PM - 11:10 PM	47.5	56.2	46.5
11:10 PM - 11:15 PM	48.1	69.3	45.9
11:15 PM - 11:20 PM	47.4	53.4	46.1
11:20 PM - 11:25 PM	47.5	51.9	46.2
11:25 PM - 11:30 PM	48.0	58.1	46.5
11:30 PM - 11:35 PM	49.1	71.6	46.9
11:35 PM - 11:40 PM	51.2	61.2	48.0
11:40 PM - 11:45 PM	53.6	73.4	50.5
11:45 PM - 11:50 PM	52.3	60.8	50.1
11:50 PM - 11:55 PM	51.3	54.4	49.5
11:55 PM - 12:00 AM	51.3	54.4	49.8
12:00 AM - 12:05 AM	50.5	58.4	46.4
12:05 AM - 12:10 AM	51.6	59.2	50.2
12:10 AM - 12:15 AM	50.2	54.5	46.4
12:15 AM - 12:20 AM	51.0	53.8	49.1
12:20 AM - 12:25 AM	51.4	53.7	50.0

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142075  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537182-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142075-3  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169) (Shut down)  
Measurement Date Jun 29 - 30, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173613

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:25 AM - 12:30 AM	51.1	54.0	49.5
12:30 AM - 12:35 AM	51.2	54.1	49.7
12:35 AM - 12:40 AM	51.3	54.6	49.9
12:40 AM - 12:45 AM	51.4	54.2	50.0
12:45 AM - 12:50 AM	51.3	54.0	49.9
12:50 AM - 12:55 AM	51.8	56.8	50.3
12:55 AM - 01:00 AM	50.4	54.6	47.4
01:00 AM - 01:05 AM	50.0	55.4	47.4
01:05 AM - 01:10 AM	51.3	62.1	49.9
01:10 AM - 01:15 AM	50.4	52.9	49.3
01:15 AM - 01:20 AM	50.5	53.5	49.2
01:20 AM - 01:25 AM	51.9	54.8	50.5
01:25 AM - 01:30 AM	51.8	54.4	50.4
01:30 AM - 01:35 AM	51.7	54.6	49.7
01:35 AM - 01:40 AM	54.1	57.3	52.4
01:40 AM - 01:45 AM	53.4	56.4	51.8
01:45 AM - 01:50 AM	53.5	59.6	51.8
01:50 AM - 01:55 AM	51.4	59.3	48.1
01:55 AM - 02:00 AM	51.6	55.8	49.9
02:00 AM - 02:05 AM	51.3	67.8	49.6
02:05 AM - 02:10 AM	51.7	54.5	50.1
02:10 AM - 02:15 AM	52.6	59.2	50.5
02:15 AM - 02:20 AM	52.0	59.0	50.4
02:20 AM - 02:25 AM	51.4	54.2	49.9
02:25 AM - 02:30 AM	51.8	54.4	50.2
02:30 AM - 02:35 AM	52.2	61.5	50.3
02:35 AM - 02:40 AM	51.6	63.0	49.6
02:40 AM - 02:45 AM	51.8	54.5	50.2
02:45 AM - 02:50 AM	51.8	55.0	50.2
02:50 AM - 02:55 AM	51.4	55.1	49.7
02:55 AM - 03:00 AM	51.4	53.8	49.9
03:00 AM - 03:05 AM	51.1	54.1	49.3
03:05 AM - 03:10 AM	51.0	53.9	49.7
03:10 AM - 03:15 AM	50.8	55.6	49.2
03:15 AM - 03:20 AM	51.0	54.3	49.5
03:20 AM - 03:25 AM	51.2	54.4	49.6
03:25 AM - 03:30 AM	48.0	53.7	46.2
03:30 AM - 03:35 AM	46.8	53.0	44.8
03:35 AM - 03:40 AM	47.9	57.4	46.3
03:40 AM - 03:45 AM	48.0	51.7	46.6

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142075  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537182-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142075-3  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169) (Shut down)  
Measurement Date Jun 29 - 30, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173613

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:45 AM - 03:50 AM	48.4	52.4	46.9
03:50 AM - 03:55 AM	48.3	52.5	46.6
03:55 AM - 04:00 AM	48.6	52.2	47.3
04:00 AM - 04:05 AM	48.6	52.7	46.4
04:05 AM - 04:10 AM	47.5	51.1	46.2
04:10 AM - 04:15 AM	47.9	52.3	46.8
04:15 AM - 04:20 AM	48.5	54.4	47.2
04:20 AM - 04:25 AM	48.4	52.0	47.2
04:25 AM - 04:30 AM	50.0	53.8	47.6
04:30 AM - 04:35 AM	52.2	55.0	50.7
04:35 AM - 04:40 AM	52.0	54.8	50.6
04:40 AM - 04:45 AM	51.9	55.8	50.5
04:45 AM - 04:50 AM	52.4	55.9	50.1
04:50 AM - 04:55 AM	52.6	56.5	51.0
04:55 AM - 05:00 AM	51.4	58.5	49.9
05:00 AM - 05:05 AM	52.3	56.3	50.8
05:05 AM - 05:10 AM	49.8	57.9	48.0
05:10 AM - 05:15 AM	49.5	58.8	47.7
05:15 AM - 05:20 AM	50.4	62.9	48.2
05:20 AM - 05:25 AM	50.9	60.5	48.8
05:25 AM - 05:30 AM	52.5	68.6	48.7
05:30 AM - 05:35 AM	49.5	61.1	47.6
05:35 AM - 05:40 AM	49.8	64.2	47.7
05:40 AM - 05:45 AM	49.7	63.8	48.0
05:45 AM - 05:50 AM	50.4	58.7	48.3
05:50 AM - 05:55 AM	51.2	59.0	48.7
05:55 AM - 06:00 AM	51.7	68.4	48.7
06:00 AM - 07:00 AM	54.2	72.2	51.2
07:00 AM - 08:00 AM	54.9	72.5	51.4
08:00 AM - 09:00 AM	53.6	73.9	50.8
09:00 AM - 10:00 AM	53.5	73.7	50.6
10:00 AM - 11:00 AM	53.9	72.1	50.3

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142075  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537183-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142075-4  
Parameter Noise  
Location **บริเวณกลุ่มบริษัทด้านทิศเหนือ** (GPS 48Q 279384, 1889169) (Shut down)  
Measurement Date Jun 30 - Jul 01, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173613

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	52.7	70.6	49.7
12:00 PM - 01:00 PM	50.9	66.7	49.3
01:00 PM - 02:00 PM	55.3	85.6	51.5
02:00 PM - 03:00 PM	52.1	67.9	50.5
03:00 PM - 04:00 PM	53.7	76.4	50.7
04:00 PM - 05:00 PM	52.5	79.7	48.5
05:00 PM - 06:00 PM	53.6	71.7	50.6
06:00 PM - 07:00 PM	53.7	72.1	50.2
07:00 PM - 08:00 PM	50.2	68.8	48.5
08:00 PM - 09:00 PM	50.3	68.9	48.2
09:00 PM - 10:00 PM	51.3	66.6	48.2
10:00 PM - 10:05 PM	49.1	54.2	47.3
10:05 PM - 10:10 PM	53.1	61.0	49.5
10:10 PM - 10:15 PM	53.0	66.3	49.1
10:15 PM - 10:20 PM	50.1	56.9	48.8
10:20 PM - 10:25 PM	50.3	58.0	49.0
10:25 PM - 10:30 PM	53.0	59.7	48.7
10:30 PM - 10:35 PM	52.2	70.0	48.6
10:35 PM - 10:40 PM	49.7	55.5	47.9
10:40 PM - 10:45 PM	50.9	57.6	48.4
10:45 PM - 10:50 PM	51.9	63.3	48.7
10:50 PM - 10:55 PM	51.5	63.2	47.9
10:55 PM - 11:00 PM	51.8	60.6	49.1
11:00 PM - 11:05 PM	48.6	56.6	47.2
11:05 PM - 11:10 PM	47.9	52.1	47.1
11:10 PM - 11:15 PM	48.2	53.2	46.9
11:15 PM - 11:20 PM	48.4	52.2	47.3
11:20 PM - 11:25 PM	49.5	59.5	47.7
11:25 PM - 11:30 PM	47.7	51.2	46.8
11:30 PM - 11:35 PM	48.5	51.7	47.4
11:35 PM - 11:40 PM	48.1	51.8	47.1
11:40 PM - 11:45 PM	48.0	57.6	46.8
11:45 PM - 11:50 PM	48.5	56.6	47.1
11:50 PM - 11:55 PM	48.1	52.5	47.1
11:55 PM - 12:00 AM	54.2	74.9	47.2
12:00 AM - 12:05 AM	47.8	51.2	47.0
12:05 AM - 12:10 AM	48.2	63.1	46.6
12:10 AM - 12:15 AM	48.1	50.6	47.2
12:15 AM - 12:20 AM	48.5	51.1	47.6
12:20 AM - 12:25 AM	48.3	51.3	47.5

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

Approved by

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142075  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537183-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142075-4  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169) (Shut down)  
Measurement Date Jun 30 - Jul 01, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173613

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:25 AM - 12:30 AM	48.9	53.3	48.1
12:30 AM - 12:35 AM	49.4	56.3	48.1
12:35 AM - 12:40 AM	48.3	50.7	47.6
12:40 AM - 12:45 AM	52.3	59.3	48.7
12:45 AM - 12:50 AM	50.4	54.5	49.5
12:50 AM - 12:55 AM	52.7	61.1	49.1
12:55 AM - 01:00 AM	55.7	64.5	53.8
01:00 AM - 01:05 AM	55.2	58.4	53.3
01:05 AM - 01:10 AM	55.3	58.9	53.6
01:10 AM - 01:15 AM	54.9	61.2	52.2
01:15 AM - 01:20 AM	53.2	57.6	48.0
01:20 AM - 01:25 AM	54.8	58.2	53.0
01:25 AM - 01:30 AM	55.0	62.2	53.1
01:30 AM - 01:35 AM	54.9	58.2	53.1
01:35 AM - 01:40 AM	55.0	58.6	53.2
01:40 AM - 01:45 AM	54.9	58.5	53.0
01:45 AM - 01:50 AM	54.9	58.7	52.7
01:50 AM - 01:55 AM	54.5	58.8	51.1
01:55 AM - 02:00 AM	55.4	58.6	53.3
02:00 AM - 02:05 AM	53.6	58.9	47.9
02:05 AM - 02:10 AM	48.3	54.1	46.6
02:10 AM - 02:15 AM	47.7	53.8	46.1
02:15 AM - 02:20 AM	51.0	65.9	47.2
02:20 AM - 02:25 AM	48.6	56.5	47.0
02:25 AM - 02:30 AM	54.5	58.1	52.3
02:30 AM - 02:35 AM	54.4	58.3	52.1
02:35 AM - 02:40 AM	54.9	60.1	52.6
02:40 AM - 02:45 AM	55.4	66.9	52.9
02:45 AM - 02:50 AM	55.1	58.9	52.9
02:50 AM - 02:55 AM	54.7	59.5	52.6
02:55 AM - 03:00 AM	54.6	58.0	52.4
03:00 AM - 03:05 AM	54.8	58.7	52.6
03:05 AM - 03:10 AM	54.7	58.3	52.5
03:10 AM - 03:15 AM	54.4	58.8	52.1
03:15 AM - 03:20 AM	54.1	58.6	51.7
03:20 AM - 03:25 AM	54.1	57.7	52.0
03:25 AM - 03:30 AM	54.7	63.4	52.2
03:30 AM - 03:35 AM	54.8	59.1	52.7
03:35 AM - 03:40 AM	54.8	62.5	52.5
03:40 AM - 03:45 AM	54.4	59.0	52.1

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142075  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537183-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142075-4  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169) (Shut down)  
Measurement Date Jun 30 - Jul 01, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173613

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:45 AM - 03:50 AM	54.0	58.3	51.7
03:50 AM - 03:55 AM	52.8	58.2	47.7
03:55 AM - 04:00 AM	53.7	58.3	47.8
04:00 AM - 04:05 AM	54.3	58.5	52.1
04:05 AM - 04:10 AM	54.6	58.1	52.6
04:10 AM - 04:15 AM	54.6	58.1	52.5
04:15 AM - 04:20 AM	54.9	59.4	52.8
04:20 AM - 04:25 AM	55.1	58.8	52.9
04:25 AM - 04:30 AM	54.9	58.6	52.7
04:30 AM - 04:35 AM	54.7	58.0	52.6
04:35 AM - 04:40 AM	54.9	58.6	52.3
04:40 AM - 04:45 AM	55.5	61.5	52.9
04:45 AM - 04:50 AM	54.3	58.1	52.2
04:50 AM - 04:55 AM	55.5	63.0	52.9
04:55 AM - 05:00 AM	54.2	58.1	49.1
05:00 AM - 05:05 AM	50.8	57.8	47.4
05:05 AM - 05:10 AM	48.7	61.7	46.9
05:10 AM - 05:15 AM	48.9	56.3	46.9
05:15 AM - 05:20 AM	51.7	67.2	48.8
05:20 AM - 05:25 AM	50.3	55.8	48.3
05:25 AM - 05:30 AM	55.2	79.5	49.2
05:30 AM - 05:35 AM	55.5	63.2	51.2
05:35 AM - 05:40 AM	54.9	58.6	52.3
05:40 AM - 05:45 AM	52.4	63.1	50.0
05:45 AM - 05:50 AM	51.8	61.4	49.4
05:50 AM - 05:55 AM	51.9	66.0	49.6
05:55 AM - 06:00 AM	53.9	68.0	50.6
06:00 AM - 07:00 AM	54.8	69.5	51.7
07:00 AM - 08:00 AM	55.1	76.8	51.5
08:00 AM - 09:00 AM	55.7	74.1	52.7
09:00 AM - 10:00 AM	55.3	76.2	52.3
10:00 AM - 11:00 AM	55.5	74.7	52.5

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142075  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537184-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142075-5  
Parameter Noise  
Location รื่นรักลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169) (Shut down)  
Measurement Date Jul 01 - 02, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173613

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	54.3	74.0	51.9
12:00 PM - 01:00 PM	54.5	73.9	51.7
01:00 PM - 02:00 PM	57.9	87.6	52.8
02:00 PM - 03:00 PM	56.5	78.5	52.6
03:00 PM - 04:00 PM	57.4	83.8	53.5
04:00 PM - 05:00 PM	54.6	79.9	51.4
05:00 PM - 06:00 PM	54.1	72.7	51.2
06:00 PM - 07:00 PM	54.8	69.5	51.9
07:00 PM - 08:00 PM	52.7	67.9	51.0
08:00 PM - 09:00 PM	53.0	73.2	49.7
09:00 PM - 10:00 PM	52.2	69.2	50.2
10:00 PM - 10:05 PM	51.0	53.4	49.7
10:05 PM - 10:10 PM	51.2	55.1	49.7
10:10 PM - 10:15 PM	51.8	57.6	50.3
10:15 PM - 10:20 PM	51.2	54.0	49.9
10:20 PM - 10:25 PM	49.5	52.9	48.5
10:25 PM - 10:30 PM	48.7	57.2	47.7
10:30 PM - 10:35 PM	47.7	49.9	46.9
10:35 PM - 10:40 PM	56.2	70.7	47.9
10:40 PM - 10:45 PM	62.7	70.4	53.7
10:45 PM - 10:50 PM	68.8	73.5	62.0
10:50 PM - 10:55 PM	59.4	63.5	57.0
10:55 PM - 11:00 PM	62.2	68.7	54.6
11:00 PM - 11:05 PM	69.1	72.6	66.0
11:05 PM - 11:10 PM	66.9	72.0	59.9
11:10 PM - 11:15 PM	60.4	64.0	57.0
11:15 PM - 11:20 PM	65.3	70.2	59.5
11:20 PM - 11:25 PM	65.0	68.9	61.3
11:25 PM - 11:30 PM	55.2	62.7	52.0
11:30 PM - 11:35 PM	55.1	63.7	52.1
11:35 PM - 11:40 PM	54.3	59.7	51.8
11:40 PM - 11:45 PM	53.9	58.7	52.2
11:45 PM - 11:50 PM	54.5	63.2	52.3
11:50 PM - 11:55 PM	54.2	59.2	52.2
11:55 PM - 12:00 AM	54.0	59.3	51.7
12:00 AM - 12:05 AM	53.6	59.9	52.1
12:05 AM - 12:10 AM	53.5	58.0	52.1
12:10 AM - 12:15 AM	53.2	56.9	51.8
12:15 AM - 12:20 AM	53.3	62.9	52.0
12:20 AM - 12:25 AM	52.8	56.9	51.4

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142075  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537184-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142075-5  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169) (Shut down)  
Measurement Date Jul 01 - 02, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173613

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:25 AM - 12:30 AM	52.9	58.2	51.7
12:30 AM - 12:35 AM	52.7	57.0	51.4
12:35 AM - 12:40 AM	52.9	57.7	51.7
12:40 AM - 12:45 AM	52.6	57.2	51.4
12:45 AM - 12:50 AM	50.7	56.3	49.4
12:50 AM - 12:55 AM	50.4	55.1	48.9
12:55 AM - 01:00 AM	49.2	53.9	48.0
01:00 AM - 01:05 AM	49.1	55.3	47.4
01:05 AM - 01:10 AM	49.1	53.3	47.9
01:10 AM - 01:15 AM	49.9	52.7	49.0
01:15 AM - 01:20 AM	52.7	67.1	50.4
01:20 AM - 01:25 AM	56.9	59.7	55.3
01:25 AM - 01:30 AM	53.9	59.3	52.2
01:30 AM - 01:35 AM	57.1	60.3	55.2
01:35 AM - 01:40 AM	58.3	60.8	57.0
01:40 AM - 01:45 AM	55.5	58.5	54.5
01:45 AM - 01:50 AM	54.3	56.8	53.2
01:50 AM - 01:55 AM	52.0	55.2	50.5
01:55 AM - 02:00 AM	49.9	53.8	48.7
02:00 AM - 02:05 AM	49.7	54.8	48.6
02:05 AM - 02:10 AM	49.3	53.2	47.9
02:10 AM - 02:15 AM	49.2	54.7	48.3
02:15 AM - 02:20 AM	50.8	56.7	49.3
02:20 AM - 02:25 AM	49.8	54.9	48.9
02:25 AM - 02:30 AM	50.2	56.4	49.1
02:30 AM - 02:35 AM	50.1	52.5	48.9
02:35 AM - 02:40 AM	49.3	54.3	48.4
02:40 AM - 02:45 AM	48.6	52.6	47.8
02:45 AM - 02:50 AM	50.3	57.5	48.5
02:50 AM - 02:55 AM	50.4	57.5	49.3
02:55 AM - 03:00 AM	49.0	53.0	48.0
03:00 AM - 03:05 AM	51.6	65.9	47.8
03:05 AM - 03:10 AM	48.9	50.7	48.2
03:10 AM - 03:15 AM	50.4	59.3	48.9
03:15 AM - 03:20 AM	50.5	59.2	48.8
03:20 AM - 03:25 AM	48.9	56.2	47.5
03:25 AM - 03:30 AM	49.2	52.6	47.9
03:30 AM - 03:35 AM	50.4	54.5	48.8
03:35 AM - 03:40 AM	49.0	53.1	47.8
03:40 AM - 03:45 AM	49.7	56.8	48.2

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

Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142075  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537184-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142075-5  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169) (Shut down)  
Measurement Date Jul 01 - 02, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173613

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:45 AM - 03:50 AM	50.9	54.4	48.9
03:50 AM - 03:55 AM	52.4	56.1	51.7
03:55 AM - 04:00 AM	52.9	56.6	52.0
04:00 AM - 04:05 AM	52.7	56.8	52.1
04:05 AM - 04:10 AM	52.5	55.8	52.0
04:10 AM - 04:15 AM	53.4	56.1	52.7
04:15 AM - 04:20 AM	53.0	55.5	51.9
04:20 AM - 04:25 AM	52.5	55.3	51.6
04:25 AM - 04:30 AM	51.7	54.8	50.8
04:30 AM - 04:35 AM	51.2	54.2	50.3
04:35 AM - 04:40 AM	50.6	57.3	49.8
04:40 AM - 04:45 AM	49.8	54.0	48.8
04:45 AM - 04:50 AM	50.1	59.2	48.9
04:50 AM - 04:55 AM	53.8	66.3	48.1
04:55 AM - 05:00 AM	56.5	67.7	48.8
05:00 AM - 05:05 AM	50.3	53.7	48.6
05:05 AM - 05:10 AM	52.6	66.8	50.1
05:10 AM - 05:15 AM	51.3	54.6	50.3
05:15 AM - 05:20 AM	51.5	55.4	50.4
05:20 AM - 05:25 AM	52.6	58.4	51.6
05:25 AM - 05:30 AM	51.9	62.7	50.7
05:30 AM - 05:35 AM	53.1	67.1	50.8
05:35 AM - 05:40 AM	52.5	62.4	50.2
05:40 AM - 05:45 AM	52.7	61.5	50.2
05:45 AM - 05:50 AM	50.9	56.4	49.3
05:50 AM - 05:55 AM	51.8	61.5	50.0
05:55 AM - 06:00 AM	53.3	64.5	49.5
06:00 AM - 07:00 AM	55.7	77.2	52.0
07:00 AM - 08:00 AM	53.5	69.3	50.6
08:00 AM - 09:00 AM	53.9	76.5	50.0
09:00 AM - 10:00 AM	54.2	75.0	50.7
10:00 AM - 11:00 AM	54.9	83.3	50.6

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142075  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537185-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142075-6  
Parameter Noise  
Location รื่นรักกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169) (Shut down)  
Measurement Date Jul 02 - 03, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173613

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	55.2	85.1	50.8
12:00 PM - 01:00 PM	52.3	78.3	48.8
01:00 PM - 02:00 PM	55.8	78.6	50.8
02:00 PM - 03:00 PM	53.8	71.9	50.4
03:00 PM - 04:00 PM	54.1	72.6	49.5
04:00 PM - 05:00 PM	54.5	73.9	50.3
05:00 PM - 06:00 PM	54.5	70.5	51.0
06:00 PM - 07:00 PM	54.9	68.6	51.7
07:00 PM - 08:00 PM	52.5	65.6	50.8
08:00 PM - 09:00 PM	52.3	72.9	50.9
09:00 PM - 10:00 PM	51.2	62.1	49.8
10:00 PM - 10:05 PM	50.1	55.3	48.6
10:05 PM - 10:10 PM	50.7	58.9	49.0
10:10 PM - 10:15 PM	50.5	56.1	48.9
10:15 PM - 10:20 PM	50.8	55.3	49.3
10:20 PM - 10:25 PM	50.9	56.4	49.0
10:25 PM - 10:30 PM	50.2	55.6	48.6
10:30 PM - 10:35 PM	49.9	61.3	48.1
10:35 PM - 10:40 PM	50.9	55.8	49.0
10:40 PM - 10:45 PM	49.1	53.2	47.1
10:45 PM - 10:50 PM	49.2	52.9	47.8
10:50 PM - 10:55 PM	49.5	55.8	48.1
10:55 PM - 11:00 PM	50.0	53.4	48.6
11:00 PM - 11:05 PM	49.7	53.7	47.7
11:05 PM - 11:10 PM	49.2	53.9	47.5
11:10 PM - 11:15 PM	49.7	52.8	48.6
11:15 PM - 11:20 PM	50.4	55.5	49.0
11:20 PM - 11:25 PM	49.8	53.3	48.4
11:25 PM - 11:30 PM	50.7	55.4	49.3
11:30 PM - 11:35 PM	50.5	54.5	49.2
11:35 PM - 11:40 PM	49.9	52.6	48.5
11:40 PM - 11:45 PM	50.1	52.9	48.9
11:45 PM - 11:50 PM	50.4	55.6	48.5
11:50 PM - 11:55 PM	49.6	55.0	47.5
11:55 PM - 12:00 AM	48.3	53.2	46.4
12:00 AM - 12:05 AM	49.5	54.0	47.6
12:05 AM - 12:10 AM	49.4	57.8	47.7
12:10 AM - 12:15 AM	49.1	54.8	47.2
12:15 AM - 12:20 AM	49.0	54.4	47.1
12:20 AM - 12:25 AM	49.2	55.5	47.3

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142075  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537185-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142075-6  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169) (Shut down)  
Measurement Date Jul 02 - 03, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173613

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:25 AM - 12:30 AM	49.2	55.2	47.2
12:30 AM - 12:35 AM	49.1	54.2	47.4
12:35 AM - 12:40 AM	49.4	57.3	47.5
12:40 AM - 12:45 AM	49.9	55.6	48.1
12:45 AM - 12:50 AM	50.1	56.7	47.7
12:50 AM - 12:55 AM	49.3	57.6	47.0
12:55 AM - 01:00 AM	49.6	58.3	46.4
01:00 AM - 01:05 AM	48.9	54.9	45.6
01:05 AM - 01:10 AM	48.0	56.2	45.9
01:10 AM - 01:15 AM	47.7	55.5	45.7
01:15 AM - 01:20 AM	47.9	54.0	45.8
01:20 AM - 01:25 AM	47.8	57.4	45.8
01:25 AM - 01:30 AM	48.3	54.7	45.6
01:30 AM - 01:35 AM	50.9	56.2	49.3
01:35 AM - 01:40 AM	50.7	55.0	49.0
01:40 AM - 01:45 AM	51.1	54.7	49.6
01:45 AM - 01:50 AM	51.3	56.4	49.6
01:50 AM - 01:55 AM	52.3	56.1	50.4
01:55 AM - 02:00 AM	47.0	54.7	45.2
02:00 AM - 02:05 AM	48.9	55.9	47.1
02:05 AM - 02:10 AM	52.2	61.2	49.2
02:10 AM - 02:15 AM	51.9	56.3	49.6
02:15 AM - 02:20 AM	52.3	56.1	50.6
02:20 AM - 02:25 AM	52.3	55.7	50.6
02:25 AM - 02:30 AM	50.8	56.3	46.9
02:30 AM - 02:35 AM	50.9	56.2	49.3
02:35 AM - 02:40 AM	50.7	55.0	49.0
02:40 AM - 02:45 AM	51.1	54.7	49.6
02:45 AM - 02:50 AM	51.3	56.4	49.6
02:50 AM - 02:55 AM	52.3	56.1	50.4
02:55 AM - 03:00 AM	54.6	63.6	51.6
03:00 AM - 03:05 AM	54.3	58.7	52.0
03:05 AM - 03:10 AM	54.7	58.5	53.0
03:10 AM - 03:15 AM	54.7	58.1	53.0
03:15 AM - 03:20 AM	53.2	58.7	49.3
03:20 AM - 03:25 AM	50.0	53.9	48.6
03:25 AM - 03:30 AM	49.8	55.3	48.2
03:30 AM - 03:35 AM	49.2	53.4	47.7
03:35 AM - 03:40 AM	48.8	53.1	47.3
03:40 AM - 03:45 AM	48.9	52.3	47.2

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

Approved by

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142075  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537185-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142075-6  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169) (Shut down)  
Measurement Date Jul 02 - 03, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173613

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:45 AM - 03:50 AM	48.7	52.5	47.3
03:50 AM - 03:55 AM	49.0	52.4	47.4
03:55 AM - 04:00 AM	48.5	52.7	46.6
04:00 AM - 04:05 AM	47.2	50.6	45.7
04:05 AM - 04:10 AM	47.3	51.0	45.8
04:10 AM - 04:15 AM	47.0	52.9	45.2
04:15 AM - 04:20 AM	48.4	53.0	46.7
04:20 AM - 04:25 AM	49.0	56.0	47.3
04:25 AM - 04:30 AM	47.9	52.8	45.1
04:30 AM - 04:35 AM	46.4	55.3	44.7
04:35 AM - 04:40 AM	46.3	50.6	44.7
04:40 AM - 04:45 AM	46.7	52.3	45.3
04:45 AM - 04:50 AM	47.0	50.6	45.3
04:50 AM - 04:55 AM	45.9	50.7	44.4
04:55 AM - 05:00 AM	45.7	49.8	44.2
05:00 AM - 05:05 AM	46.7	55.3	44.6
05:05 AM - 05:10 AM	48.2	55.0	44.2
05:10 AM - 05:15 AM	50.7	56.4	48.5
05:15 AM - 05:20 AM	51.3	62.4	48.7
05:20 AM - 05:25 AM	51.4	60.5	47.8
05:25 AM - 05:30 AM	48.7	57.7	46.8
05:30 AM - 05:35 AM	49.4	64.6	47.0
05:35 AM - 05:40 AM	48.8	62.4	46.4
05:40 AM - 05:45 AM	49.6	62.1	46.4
05:45 AM - 05:50 AM	48.4	63.2	45.7
05:50 AM - 05:55 AM	46.9	56.7	44.8
05:55 AM - 06:00 AM	47.5	58.7	45.2
06:00 AM - 07:00 AM	51.0	63.4	47.6
07:00 AM - 08:00 AM	50.9	72.4	47.6
08:00 AM - 09:00 AM	51.4	76.3	48.8
09:00 AM - 10:00 AM	51.8	71.4	49.5
10:00 AM - 11:00 AM	51.4	67.9	49.4

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142075  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537186-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142075-7  
Parameter Noise  
Location รื่นรักกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169) (Shut down)  
Measurement Date Jul 03 - 04, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173613

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	53.0	70.4	50.1
12:00 PM - 01:00 PM	51.9	66.7	49.0
01:00 PM - 02:00 PM	51.3	71.9	48.6
02:00 PM - 03:00 PM	51.4	67.2	48.9
03:00 PM - 04:00 PM	51.5	65.1	48.8
04:00 PM - 05:00 PM	53.0	75.5	49.9
05:00 PM - 06:00 PM	52.7	74.8	50.4
06:00 PM - 07:00 PM	55.0	78.9	52.3
07:00 PM - 08:00 PM	52.5	60.5	50.7
08:00 PM - 09:00 PM	54.6	68.7	53.1
09:00 PM - 10:00 PM	54.9	63.8	53.4
10:00 PM - 10:05 PM	51.5	55.5	50.1
10:05 PM - 10:10 PM	51.6	56.0	49.6
10:10 PM - 10:15 PM	51.4	54.9	50.0
10:15 PM - 10:20 PM	51.5	56.3	49.9
10:20 PM - 10:25 PM	51.4	54.8	49.8
10:25 PM - 10:30 PM	51.4	54.8	49.8
10:30 PM - 10:35 PM	50.5	57.9	48.5
10:35 PM - 10:40 PM	49.5	53.3	47.7
10:40 PM - 10:45 PM	49.7	55.8	48.3
10:45 PM - 10:50 PM	49.7	53.1	48.2
10:50 PM - 10:55 PM	50.2	56.1	48.5
10:55 PM - 11:00 PM	50.8	54.4	49.3
11:00 PM - 11:05 PM	50.7	54.4	49.1
11:05 PM - 11:10 PM	51.5	55.6	49.9
11:10 PM - 11:15 PM	51.4	55.2	49.8
11:15 PM - 11:20 PM	51.2	54.8	49.5
11:20 PM - 11:25 PM	50.8	54.4	48.9
11:25 PM - 11:30 PM	51.2	54.9	49.5
11:30 PM - 11:35 PM	51.9	54.8	50.4
11:35 PM - 11:40 PM	52.1	56.3	50.7
11:40 PM - 11:45 PM	51.9	55.4	50.3
11:45 PM - 11:50 PM	52.0	55.0	50.5
11:50 PM - 11:55 PM	51.8	56.0	50.1
11:55 PM - 12:00 AM	51.1	54.3	49.4
12:00 AM - 12:05 AM	51.0	61.1	49.3
12:05 AM - 12:10 AM	53.4	59.8	50.9
12:10 AM - 12:15 AM	53.7	56.9	52.3
12:15 AM - 12:20 AM	53.8	56.8	51.9
12:20 AM - 12:25 AM	53.8	56.7	52.3

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142075  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537186-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142075-7  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169) (Shut down)  
Measurement Date Jul 03 - 04, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173613

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:25 AM - 12:30 AM	54.1	56.9	52.6
12:30 AM - 12:35 AM	51.8	56.5	50.1
12:35 AM - 12:40 AM	51.5	54.8	49.4
12:40 AM - 12:45 AM	51.5	55.1	49.9
12:45 AM - 12:50 AM	52.1	59.2	49.9
12:50 AM - 12:55 AM	51.2	54.4	50.0
12:55 AM - 01:00 AM	51.0	53.9	49.9
01:00 AM - 01:05 AM	51.2	53.9	50.1
01:05 AM - 01:10 AM	50.3	55.6	45.4
01:10 AM - 01:15 AM	50.6	56.1	45.6
01:15 AM - 01:20 AM	51.3	53.9	50.1
01:20 AM - 01:25 AM	51.8	54.8	50.8
01:25 AM - 01:30 AM	50.7	55.8	46.9
01:30 AM - 01:35 AM	53.7	63.1	50.6
01:35 AM - 01:40 AM	51.2	55.8	46.6
01:40 AM - 01:45 AM	51.6	56.1	48.8
01:45 AM - 01:50 AM	53.7	60.8	50.4
01:50 AM - 01:55 AM	51.3	59.0	49.9
01:55 AM - 02:00 AM	51.6	59.8	50.5
02:00 AM - 02:05 AM	52.0	65.9	50.0
02:05 AM - 02:10 AM	51.0	54.1	49.8
02:10 AM - 02:15 AM	50.3	57.6	49.0
02:15 AM - 02:20 AM	50.3	58.0	49.2
02:20 AM - 02:25 AM	50.4	53.2	49.2
02:25 AM - 02:30 AM	50.4	54.2	49.3
02:30 AM - 02:35 AM	49.7	54.2	48.6
02:35 AM - 02:40 AM	50.5	56.1	44.9
02:40 AM - 02:45 AM	52.0	61.7	48.1
02:45 AM - 02:50 AM	49.2	51.6	48.2
02:50 AM - 02:55 AM	49.5	59.7	47.6
02:55 AM - 03:00 AM	53.9	59.6	48.5
03:00 AM - 03:05 AM	52.2	55.5	49.6
03:05 AM - 03:10 AM	52.5	55.6	50.4
03:10 AM - 03:15 AM	52.3	55.6	50.1
03:15 AM - 03:20 AM	52.6	55.4	50.4
03:20 AM - 03:25 AM	53.6	59.9	48.8
03:25 AM - 03:30 AM	53.9	66.7	48.6
03:30 AM - 03:35 AM	52.8	60.8	48.5
03:35 AM - 03:40 AM	52.7	56.6	49.6
03:40 AM - 03:45 AM	53.3	57.1	50.3

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142075  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537186-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142075-7  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศเหนือ (GPS 48Q 279384, 1889169) (Shut down)  
Measurement Date Jul 03 - 04, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173613

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:45 AM - 03:50 AM	51.7	56.8	44.7
03:50 AM - 03:55 AM	50.2	56.0	44.4
03:55 AM - 04:00 AM	52.8	56.3	50.5
04:00 AM - 04:05 AM	52.5	55.9	50.2
04:05 AM - 04:10 AM	52.6	62.9	50.3
04:10 AM - 04:15 AM	52.3	55.6	50.1
04:15 AM - 04:20 AM	52.6	55.4	50.4
04:20 AM - 04:25 AM	49.1	55.4	44.3
04:25 AM - 04:30 AM	49.4	62.2	44.1
04:30 AM - 04:35 AM	51.9	59.6	48.2
04:35 AM - 04:40 AM	48.2	51.6	47.1
04:40 AM - 04:45 AM	48.7	52.2	47.6
04:45 AM - 04:50 AM	48.9	55.0	47.5
04:50 AM - 04:55 AM	50.9	57.3	48.6
04:55 AM - 05:00 AM	51.9	57.5	47.5
05:00 AM - 05:05 AM	53.6	59.4	50.8
05:05 AM - 05:10 AM	49.7	54.4	48.4
05:10 AM - 05:15 AM	50.7	59.2	48.9
05:15 AM - 05:20 AM	51.4	61.8	49.7
05:20 AM - 05:25 AM	52.7	60.4	49.6
05:25 AM - 05:30 AM	54.3	66.9	50.0
05:30 AM - 05:35 AM	53.4	70.5	49.5
05:35 AM - 05:40 AM	54.2	63.2	50.4
05:40 AM - 05:45 AM	51.9	64.3	50.1
05:45 AM - 05:50 AM	51.3	63.1	49.8
05:50 AM - 05:55 AM	52.2	63.0	49.5
05:55 AM - 06:00 AM	53.3	64.5	50.3
06:00 AM - 07:00 AM	54.9	75.6	51.9
07:00 AM - 08:00 AM	54.4	81.6	51.6
08:00 AM - 09:00 AM	53.7	77.0	51.1
09:00 AM - 10:00 AM	54.3	76.6	51.0
10:00 AM - 11:00 AM	53.4	79.2	50.4

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142077  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537192-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142077-1  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633) (Shut down)  
Measurement Date Jun 27 - 28, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472123

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	54.1	77.1	48.3
12:00 PM - 01:00 PM	52.7	73.8	48.1
01:00 PM - 02:00 PM	52.2	66.6	49.1
02:00 PM - 03:00 PM	51.9	76.7	48.1
03:00 PM - 04:00 PM	53.5	75.2	49.3
04:00 PM - 05:00 PM	51.6	76.1	48.5
05:00 PM - 06:00 PM	53.8	83.4	50.0
06:00 PM - 07:00 PM	52.1	72.3	49.7
07:00 PM - 08:00 PM	53.7	72.4	50.4
08:00 PM - 09:00 PM	52.8	74.7	50.4
09:00 PM - 10:00 PM	52.5	66.2	51.2
10:00 PM - 10:05 PM	52.5	55.4	50.8
10:05 PM - 10:10 PM	51.0	54.1	49.3
10:10 PM - 10:15 PM	51.3	55.2	49.8
10:15 PM - 10:20 PM	51.2	56.3	50.3
10:20 PM - 10:25 PM	50.7	55.1	49.3
10:25 PM - 10:30 PM	52.3	60.3	50.4
10:30 PM - 10:35 PM	51.4	56.1	49.4
10:35 PM - 10:40 PM	51.7	56.9	49.8
10:40 PM - 10:45 PM	52.9	57.7	51.0
10:45 PM - 10:50 PM	52.2	56.7	50.8
10:50 PM - 10:55 PM	51.9	55.5	50.3
10:55 PM - 11:00 PM	50.8	56.4	49.0
11:00 PM - 11:05 PM	50.1	54.4	48.6
11:05 PM - 11:10 PM	51.5	57.3	49.7
11:10 PM - 11:15 PM	50.3	56.3	49.3
11:15 PM - 11:20 PM	51.3	56.5	49.9
11:20 PM - 11:25 PM	51.1	58.3	49.0
11:25 PM - 11:30 PM	52.0	57.5	50.0
11:30 PM - 11:35 PM	51.7	56.1	49.6
11:35 PM - 11:40 PM	51.3	58.2	49.9
11:40 PM - 11:45 PM	50.2	52.4	49.6
11:45 PM - 11:50 PM	50.1	53.4	49.3
11:50 PM - 11:55 PM	50.9	53.9	50.3
11:55 PM - 12:00 AM	50.9	54.3	50.1
12:00 AM - 12:05 AM	52.0	58.6	50.5
12:05 AM - 12:10 AM	51.1	53.3	50.4
12:10 AM - 12:15 AM	50.8	53.6	50.2
12:15 AM - 12:20 AM	50.7	54.6	50.2
12:20 AM - 12:25 AM	50.3	55.7	49.8

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142077  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537192-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142077-1  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633) (Shut down)  
Measurement Date Jun 27 - 28, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472123

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:25 AM - 12:30 AM	50.0	64.4	49.0
12:30 AM - 12:35 AM	49.5	55.2	48.8
12:35 AM - 12:40 AM	50.2	52.4	49.5
12:40 AM - 12:45 AM	50.0	53.3	49.2
12:45 AM - 12:50 AM	49.7	51.2	49.2
12:50 AM - 12:55 AM	50.2	53.5	49.5
12:55 AM - 01:00 AM	49.6	52.0	48.9
01:00 AM - 01:05 AM	52.0	60.0	50.6
01:05 AM - 01:10 AM	52.8	55.5	52.2
01:10 AM - 01:15 AM	51.8	59.9	51.0
01:15 AM - 01:20 AM	51.1	52.9	50.6
01:20 AM - 01:25 AM	51.2	53.3	50.6
01:25 AM - 01:30 AM	51.5	53.6	51.0
01:30 AM - 01:35 AM	51.1	52.8	50.6
01:35 AM - 01:40 AM	51.0	52.9	50.4
01:40 AM - 01:45 AM	51.2	54.9	50.4
01:45 AM - 01:50 AM	51.5	53.9	50.8
01:50 AM - 01:55 AM	51.6	55.4	51.1
01:55 AM - 02:00 AM	51.2	54.4	50.5
02:00 AM - 02:05 AM	51.4	60.6	50.4
02:05 AM - 02:10 AM	50.9	53.8	50.2
02:10 AM - 02:15 AM	51.1	55.7	50.5
02:15 AM - 02:20 AM	51.0	53.3	50.3
02:20 AM - 02:25 AM	51.0	53.1	50.4
02:25 AM - 02:30 AM	50.9	53.4	50.4
02:30 AM - 02:35 AM	50.4	52.1	49.9
02:35 AM - 02:40 AM	50.5	54.5	49.8
02:40 AM - 02:45 AM	50.4	53.0	49.7
02:45 AM - 02:50 AM	50.6	52.7	50.0
02:50 AM - 02:55 AM	50.3	52.6	49.5
02:55 AM - 03:00 AM	50.6	54.4	49.8
03:00 AM - 03:05 AM	50.3	55.8	49.3
03:05 AM - 03:10 AM	49.9	52.2	49.2
03:10 AM - 03:15 AM	50.3	52.7	49.5
03:15 AM - 03:20 AM	50.2	53.2	49.5
03:20 AM - 03:25 AM	50.1	52.6	49.5
03:25 AM - 03:30 AM	50.3	52.9	49.7
03:30 AM - 03:35 AM	50.4	55.3	49.3
03:35 AM - 03:40 AM	50.4	54.9	49.5
03:40 AM - 03:45 AM	50.7	58.3	49.6

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142077  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537192-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142077-1  
Parameter Noise  
Location ร่มร้วกกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633) (Shut down)  
Measurement Date Jun 27 - 28, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472123

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:45 AM - 03:50 AM	50.3	54.4	49.6
03:50 AM - 03:55 AM	50.0	51.6	49.4
03:55 AM - 04:00 AM	49.8	52.9	49.2
04:00 AM - 04:05 AM	49.8	51.7	49.1
04:05 AM - 04:10 AM	50.3	52.1	49.8
04:10 AM - 04:15 AM	50.0	53.0	49.5
04:15 AM - 04:20 AM	50.3	52.1	49.7
04:20 AM - 04:25 AM	50.2	52.3	49.6
04:25 AM - 04:30 AM	50.0	51.7	49.4
04:30 AM - 04:35 AM	50.0	53.2	49.4
04:35 AM - 04:40 AM	50.3	53.9	49.6
04:40 AM - 04:45 AM	50.4	62.0	49.6
04:45 AM - 04:50 AM	50.8	65.2	49.5
04:50 AM - 04:55 AM	50.7	59.7	49.8
04:55 AM - 05:00 AM	50.9	57.0	49.9
05:00 AM - 05:05 AM	49.3	52.5	48.6
05:05 AM - 05:10 AM	50.1	56.2	48.8
05:10 AM - 05:15 AM	49.7	60.5	48.3
05:15 AM - 05:20 AM	50.1	57.5	48.6
05:20 AM - 05:25 AM	52.3	67.9	48.4
05:25 AM - 05:30 AM	51.8	66.2	48.3
05:30 AM - 05:35 AM	54.3	65.7	49.2
05:35 AM - 05:40 AM	54.0	62.8	48.8
05:40 AM - 05:45 AM	52.4	63.9	48.7
05:45 AM - 05:50 AM	52.2	64.1	49.2
05:50 AM - 05:55 AM	51.9	62.9	48.8
05:55 AM - 06:00 AM	49.6	57.6	47.8
06:00 AM - 07:00 AM	51.3	70.4	47.9
07:00 AM - 08:00 AM	52.6	69.5	49.1
08:00 AM - 09:00 AM	52.5	73.6	49.1
09:00 AM - 10:00 AM	52.7	75.2	49.4
10:00 AM - 11:00 AM	55.0	74.0	49.5

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142077  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537193-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142077-2  
Parameter Noise  
Location รื่นรักลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633) (Shut down)  
Measurement Date Jun 28 - 29, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472123

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	55.2	75.0	48.7
12:00 PM - 01:00 PM	52.4	72.7	48.0
01:00 PM - 02:00 PM	53.1	69.0	49.0
02:00 PM - 03:00 PM	53.1	76.3	49.5
03:00 PM - 04:00 PM	54.0	70.8	50.5
04:00 PM - 05:00 PM	56.0	84.2	49.1
05:00 PM - 06:00 PM	54.9	81.6	49.0
06:00 PM - 07:00 PM	53.0	73.1	49.9
07:00 PM - 08:00 PM	53.3	77.1	51.2
08:00 PM - 09:00 PM	53.4	79.2	51.2
09:00 PM - 10:00 PM	51.1	71.9	49.6
10:00 PM - 10:05 PM	50.1	52.3	49.1
10:05 PM - 10:10 PM	51.9	60.4	49.4
10:10 PM - 10:15 PM	49.8	54.4	48.7
10:15 PM - 10:20 PM	50.8	54.6	49.5
10:20 PM - 10:25 PM	51.1	54.1	49.9
10:25 PM - 10:30 PM	51.4	57.7	49.7
10:30 PM - 10:35 PM	51.7	57.8	50.2
10:35 PM - 10:40 PM	51.0	57.0	48.8
10:40 PM - 10:45 PM	49.6	53.9	48.8
10:45 PM - 10:50 PM	49.8	53.8	48.5
10:50 PM - 10:55 PM	50.1	53.9	48.9
10:55 PM - 11:00 PM	50.3	54.5	49.3
11:00 PM - 11:05 PM	50.1	54.6	49.2
11:05 PM - 11:10 PM	50.7	57.1	49.5
11:10 PM - 11:15 PM	50.2	53.8	48.8
11:15 PM - 11:20 PM	49.6	53.6	48.8
11:20 PM - 11:25 PM	49.7	54.2	48.6
11:25 PM - 11:30 PM	49.6	53.9	48.7
11:30 PM - 11:35 PM	50.1	53.4	49.1
11:35 PM - 11:40 PM	50.4	54.0	49.1
11:40 PM - 11:45 PM	50.0	53.6	48.4
11:45 PM - 11:50 PM	50.3	55.2	48.7
11:50 PM - 11:55 PM	49.5	56.8	48.5
11:55 PM - 12:00 AM	48.8	51.7	48.0
12:00 AM - 12:05 AM	49.5	52.3	48.6
12:05 AM - 12:10 AM	49.2	52.7	48.2
12:10 AM - 12:15 AM	49.6	52.6	48.9
12:15 AM - 12:20 AM	49.1	51.6	48.2
12:20 AM - 12:25 AM	48.3	51.1	47.1

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142077  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537193-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142077-2  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633) (Shut down)  
Measurement Date Jun 28 - 29, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472123

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:25 AM - 12:30 AM	49.6	56.1	48.5
12:30 AM - 12:35 AM	48.8	51.5	48.2
12:35 AM - 12:40 AM	48.2	54.1	47.4
12:40 AM - 12:45 AM	48.2	50.2	47.6
12:45 AM - 12:50 AM	49.3	52.8	48.0
12:50 AM - 12:55 AM	49.9	53.4	49.2
12:55 AM - 01:00 AM	50.0	53.4	48.7
01:00 AM - 01:05 AM	49.6	52.3	48.4
01:05 AM - 01:10 AM	49.1	50.9	48.3
01:10 AM - 01:15 AM	49.5	53.3	47.9
01:15 AM - 01:20 AM	51.0	60.6	48.4
01:20 AM - 01:25 AM	50.2	54.1	49.0
01:25 AM - 01:30 AM	49.5	52.6	48.4
01:30 AM - 01:35 AM	50.4	54.9	48.6
01:35 AM - 01:40 AM	48.8	51.8	48.0
01:40 AM - 01:45 AM	49.4	53.7	48.4
01:45 AM - 01:50 AM	50.1	52.7	49.1
01:50 AM - 01:55 AM	50.4	56.9	49.1
01:55 AM - 02:00 AM	50.2	53.5	48.9
02:00 AM - 02:05 AM	50.3	57.4	48.5
02:05 AM - 02:10 AM	51.1	56.1	49.9
02:10 AM - 02:15 AM	50.7	56.2	49.4
02:15 AM - 02:20 AM	49.6	52.0	48.8
02:20 AM - 02:25 AM	50.5	54.9	49.1
02:25 AM - 02:30 AM	50.3	55.4	48.4
02:30 AM - 02:35 AM	50.8	55.8	48.9
02:35 AM - 02:40 AM	50.2	54.1	48.7
02:40 AM - 02:45 AM	49.9	57.6	48.4
02:45 AM - 02:50 AM	50.0	57.6	48.5
02:50 AM - 02:55 AM	50.4	52.7	49.5
02:55 AM - 03:00 AM	49.7	52.8	48.6
03:00 AM - 03:05 AM	49.9	55.9	48.2
03:05 AM - 03:10 AM	50.1	55.2	48.5
03:10 AM - 03:15 AM	49.8	53.8	48.7
03:15 AM - 03:20 AM	50.0	53.7	49.0
03:20 AM - 03:25 AM	49.8	52.9	48.5
03:25 AM - 03:30 AM	50.9	55.8	49.3
03:30 AM - 03:35 AM	51.2	58.5	49.7
03:35 AM - 03:40 AM	50.8	56.7	49.6
03:40 AM - 03:45 AM	50.6	55.0	48.9

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142077  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537193-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142077-2  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633) (Shut down)  
Measurement Date Jun 28 - 29, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472123

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:45 AM - 03:50 AM	50.6	56.3	49.0
03:50 AM - 03:55 AM	50.4	54.6	49.2
03:55 AM - 04:00 AM	51.2	55.5	49.5
04:00 AM - 04:05 AM	51.1	54.8	49.6
04:05 AM - 04:10 AM	50.8	56.0	49.4
04:10 AM - 04:15 AM	51.2	54.4	50.1
04:15 AM - 04:20 AM	50.3	52.9	49.6
04:20 AM - 04:25 AM	50.3	54.4	49.3
04:25 AM - 04:30 AM	51.2	54.9	50.1
04:30 AM - 04:35 AM	51.1	59.7	48.9
04:35 AM - 04:40 AM	51.3	56.6	49.6
04:40 AM - 04:45 AM	50.5	54.6	48.6
04:45 AM - 04:50 AM	50.5	55.0	49.2
04:50 AM - 04:55 AM	50.7	60.5	49.4
04:55 AM - 05:00 AM	51.5	66.1	50.1
05:00 AM - 05:05 AM	50.8	55.4	50.0
05:05 AM - 05:10 AM	51.7	63.9	50.3
05:10 AM - 05:15 AM	51.6	56.0	50.4
05:15 AM - 05:20 AM	50.8	55.6	49.8
05:20 AM - 05:25 AM	50.0	53.4	48.5
05:25 AM - 05:30 AM	48.9	56.3	47.9
05:30 AM - 05:35 AM	51.1	56.7	48.8
05:35 AM - 05:40 AM	52.9	67.8	46.9
05:40 AM - 05:45 AM	52.1	61.0	47.0
05:45 AM - 05:50 AM	50.0	56.6	46.8
05:50 AM - 05:55 AM	51.6	56.2	49.6
05:55 AM - 06:00 AM	50.1	58.0	47.2
06:00 AM - 07:00 AM	51.7	75.9	46.3
07:00 AM - 08:00 AM	52.8	65.4	47.5
08:00 AM - 09:00 AM	54.8	81.0	49.7
09:00 AM - 10:00 AM	53.2	72.4	49.2
10:00 AM - 11:00 AM	54.0	74.9	48.3

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142077  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537194-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142077-3  
Parameter Noise  
Location รันรังกุลมบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633) (Shut down)  
Measurement Date Jun 29 - 30, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472123

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	53.1	81.4	47.6
12:00 PM - 01:00 PM	50.0	70.7	46.2
01:00 PM - 02:00 PM	53.1	72.4	47.5
02:00 PM - 03:00 PM	51.1	65.2	47.8
03:00 PM - 04:00 PM	54.0	71.8	47.2
04:00 PM - 05:00 PM	51.5	71.4	47.2
05:00 PM - 06:00 PM	51.6	78.8	47.2
06:00 PM - 07:00 PM	51.2	78.6	47.6
07:00 PM - 08:00 PM	52.5	69.4	51.1
08:00 PM - 09:00 PM	50.8	64.5	49.4
09:00 PM - 10:00 PM	51.7	64.3	50.5
10:00 PM - 10:05 PM	51.2	58.3	50.3
10:05 PM - 10:10 PM	50.0	53.7	49.2
10:10 PM - 10:15 PM	50.5	54.2	49.2
10:15 PM - 10:20 PM	49.8	53.6	48.6
10:20 PM - 10:25 PM	51.2	54.8	49.9
10:25 PM - 10:30 PM	50.7	54.0	50.0
10:30 PM - 10:35 PM	50.7	55.1	49.5
10:35 PM - 10:40 PM	51.4	56.2	49.3
10:40 PM - 10:45 PM	51.4	59.1	49.8
10:45 PM - 10:50 PM	51.6	55.6	50.0
10:50 PM - 10:55 PM	51.7	55.0	50.1
10:55 PM - 11:00 PM	51.3	54.4	50.1
11:00 PM - 11:05 PM	50.8	53.6	49.9
11:05 PM - 11:10 PM	50.5	59.6	49.5
11:10 PM - 11:15 PM	49.2	55.8	48.0
11:15 PM - 11:20 PM	49.7	53.4	48.9
11:20 PM - 11:25 PM	50.0	53.9	49.1
11:25 PM - 11:30 PM	51.1	55.5	50.1
11:30 PM - 11:35 PM	51.1	57.5	49.2
11:35 PM - 11:40 PM	51.4	53.3	50.9
11:40 PM - 11:45 PM	51.2	53.9	50.4
11:45 PM - 11:50 PM	51.1	60.8	50.2
11:50 PM - 11:55 PM	50.9	53.2	49.9
11:55 PM - 12:00 AM	50.7	54.5	49.8
12:00 AM - 12:05 AM	51.1	54.9	50.3
12:05 AM - 12:10 AM	51.2	53.6	50.2
12:10 AM - 12:15 AM	52.3	55.5	51.3
12:15 AM - 12:20 AM	51.5	55.5	50.9
12:20 AM - 12:25 AM	51.3	53.6	50.7

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142077  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537194-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142077-3  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633) (Shut down)  
Measurement Date Jun 29 - 30, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472123

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:25 AM - 12:30 AM	51.5	58.7	50.6
12:30 AM - 12:35 AM	51.5	53.8	50.8
12:35 AM - 12:40 AM	51.5	57.9	50.8
12:40 AM - 12:45 AM	51.4	54.5	50.8
12:45 AM - 12:50 AM	51.7	53.6	51.1
12:50 AM - 12:55 AM	51.5	53.5	50.8
12:55 AM - 01:00 AM	51.1	53.8	50.6
01:00 AM - 01:05 AM	51.2	55.0	50.6
01:05 AM - 01:10 AM	50.9	53.7	50.3
01:10 AM - 01:15 AM	50.9	53.9	50.2
01:15 AM - 01:20 AM	50.9	53.5	49.6
01:20 AM - 01:25 AM	50.7	53.0	50.2
01:25 AM - 01:30 AM	50.9	54.6	50.1
01:30 AM - 01:35 AM	50.5	52.2	49.9
01:35 AM - 01:40 AM	50.5	55.3	49.3
01:40 AM - 01:45 AM	49.3	52.1	48.5
01:45 AM - 01:50 AM	49.0	52.7	48.4
01:50 AM - 01:55 AM	49.4	52.5	48.8
01:55 AM - 02:00 AM	49.7	52.2	49.2
02:00 AM - 02:05 AM	49.9	51.4	49.3
02:05 AM - 02:10 AM	50.0	53.8	49.2
02:10 AM - 02:15 AM	51.3	54.5	49.8
02:15 AM - 02:20 AM	49.6	53.7	48.9
02:20 AM - 02:25 AM	49.5	52.0	48.9
02:25 AM - 02:30 AM	49.5	51.4	48.9
02:30 AM - 02:35 AM	49.7	52.5	48.9
02:35 AM - 02:40 AM	50.2	53.0	49.6
02:40 AM - 02:45 AM	49.9	58.0	49.3
02:45 AM - 02:50 AM	50.7	55.4	49.9
02:50 AM - 02:55 AM	50.0	52.6	49.4
02:55 AM - 03:00 AM	50.2	53.1	49.6
03:00 AM - 03:05 AM	50.2	55.3	49.4
03:05 AM - 03:10 AM	50.1	52.8	49.5
03:10 AM - 03:15 AM	49.4	51.3	48.7
03:15 AM - 03:20 AM	49.3	51.8	48.8
03:20 AM - 03:25 AM	50.0	53.5	49.3
03:25 AM - 03:30 AM	50.4	52.4	49.8
03:30 AM - 03:35 AM	50.1	53.9	49.5
03:35 AM - 03:40 AM	50.1	52.7	49.4
03:40 AM - 03:45 AM	50.2	53.2	49.6

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142077  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537194-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142077-3  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633) (Shut down)  
Measurement Date Jun 29 - 30, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472123

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:45 AM - 03:50 AM	50.9	54.5	50.1
03:50 AM - 03:55 AM	50.8	53.2	50.1
03:55 AM - 04:00 AM	50.2	52.6	49.6
04:00 AM - 04:05 AM	50.0	53.1	49.4
04:05 AM - 04:10 AM	49.5	52.2	48.9
04:10 AM - 04:15 AM	49.7	51.1	49.3
04:15 AM - 04:20 AM	49.8	52.5	49.3
04:20 AM - 04:25 AM	50.6	53.5	49.7
04:25 AM - 04:30 AM	50.6	53.2	49.8
04:30 AM - 04:35 AM	50.6	55.4	50.0
04:35 AM - 04:40 AM	50.1	57.3	49.6
04:40 AM - 04:45 AM	50.4	67.4	49.3
04:45 AM - 04:50 AM	50.1	59.6	49.3
04:50 AM - 04:55 AM	50.3	69.1	49.1
04:55 AM - 05:00 AM	50.5	66.4	49.5
05:00 AM - 05:05 AM	51.1	64.0	48.9
05:05 AM - 05:10 AM	59.2	72.4	49.7
05:10 AM - 05:15 AM	50.6	60.8	49.3
05:15 AM - 05:20 AM	51.0	59.8	48.8
05:20 AM - 05:25 AM	50.0	66.4	48.6
05:25 AM - 05:30 AM	50.7	59.0	48.8
05:30 AM - 05:35 AM	50.4	64.2	48.5
05:35 AM - 05:40 AM	50.5	58.6	48.4
05:40 AM - 05:45 AM	51.3	61.4	48.5
05:45 AM - 05:50 AM	50.4	56.8	48.2
05:50 AM - 05:55 AM	49.7	58.1	47.8
05:55 AM - 06:00 AM	50.0	59.5	48.0
06:00 AM - 07:00 AM	50.6	66.8	46.1
07:00 AM - 08:00 AM	52.5	69.1	46.4
08:00 AM - 09:00 AM	51.6	67.4	46.8
09:00 AM - 10:00 AM	57.8	72.4	48.6
10:00 AM - 11:00 AM	58.1	77.5	49.5

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142077  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537195-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142077-4  
Parameter Noise  
Location รื่นไร่กลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633) (Shut down)  
Measurement Date Jun 30 - Jul 01, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472123

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	56.6	73.1	47.9
12:00 PM - 01:00 PM	57.0	88.9	46.7
01:00 PM - 02:00 PM	56.6	88.9	48.8
02:00 PM - 03:00 PM	53.8	77.1	51.0
03:00 PM - 04:00 PM	54.3	76.7	50.1
04:00 PM - 05:00 PM	57.7	77.1	54.4
05:00 PM - 06:00 PM	55.0	76.8	52.1
06:00 PM - 07:00 PM	51.7	66.9	50.7
07:00 PM - 08:00 PM	53.4	66.6	52.3
08:00 PM - 09:00 PM	54.0	66.2	52.7
09:00 PM - 10:00 PM	52.8	63.3	52.0
10:00 PM - 10:05 PM	52.2	54.5	51.3
10:05 PM - 10:10 PM	52.9	54.7	51.9
10:10 PM - 10:15 PM	60.1	73.8	52.2
10:15 PM - 10:20 PM	59.8	73.7	52.1
10:20 PM - 10:25 PM	53.2	55.8	52.2
10:25 PM - 10:30 PM	52.8	55.0	52.0
10:30 PM - 10:35 PM	53.3	58.1	52.4
10:35 PM - 10:40 PM	53.0	57.0	51.8
10:40 PM - 10:45 PM	52.8	58.7	51.8
10:45 PM - 10:50 PM	52.6	54.3	51.9
10:50 PM - 10:55 PM	52.3	54.5	51.4
10:55 PM - 11:00 PM	52.4	54.6	51.4
11:00 PM - 11:05 PM	52.7	55.6	51.7
11:05 PM - 11:10 PM	52.4	60.1	50.9
11:10 PM - 11:15 PM	52.2	56.1	51.2
11:15 PM - 11:20 PM	51.7	58.7	50.9
11:20 PM - 11:25 PM	52.0	54.2	51.3
11:25 PM - 11:30 PM	52.2	59.5	51.1
11:30 PM - 11:35 PM	52.3	59.8	50.9
11:35 PM - 11:40 PM	52.0	55.3	50.1
11:40 PM - 11:45 PM	51.6	56.1	50.7
11:45 PM - 11:50 PM	50.4	55.5	49.3
11:50 PM - 11:55 PM	51.0	59.1	49.4
11:55 PM - 12:00 AM	50.5	54.6	49.3
12:00 AM - 12:05 AM	50.2	53.3	49.3
12:05 AM - 12:10 AM	50.3	53.6	49.4
12:10 AM - 12:15 AM	51.0	59.0	49.2
12:15 AM - 12:20 AM	50.5	56.0	49.2
12:20 AM - 12:25 AM	50.0	53.1	49.2

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142077  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537195-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142077-4  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633) (Shut down)  
Measurement Date Jun 30 - Jul 01, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472123

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:25 AM - 12:30 AM	49.6	54.0	48.4
12:30 AM - 12:35 AM	50.0	55.6	48.3
12:35 AM - 12:40 AM	49.9	52.8	48.2
12:40 AM - 12:45 AM	48.1	51.6	47.0
12:45 AM - 12:50 AM	49.6	52.9	48.0
12:50 AM - 12:55 AM	51.0	56.0	48.9
12:55 AM - 01:00 AM	50.6	54.5	48.8
01:00 AM - 01:05 AM	50.5	53.8	48.9
01:05 AM - 01:10 AM	50.5	57.1	48.4
01:10 AM - 01:15 AM	50.2	53.8	48.7
01:15 AM - 01:20 AM	50.1	59.5	49.0
01:20 AM - 01:25 AM	51.2	54.5	49.7
01:25 AM - 01:30 AM	50.6	54.0	49.2
01:30 AM - 01:35 AM	51.0	53.9	49.4
01:35 AM - 01:40 AM	50.9	53.2	49.2
01:40 AM - 01:45 AM	51.3	56.7	48.7
01:45 AM - 01:50 AM	52.5	56.8	48.4
01:50 AM - 01:55 AM	50.2	57.0	48.3
01:55 AM - 02:00 AM	49.5	55.3	47.5
02:00 AM - 02:05 AM	50.6	59.8	46.3
02:05 AM - 02:10 AM	48.6	53.1	47.0
02:10 AM - 02:15 AM	49.4	53.6	47.3
02:15 AM - 02:20 AM	50.3	53.9	48.2
02:20 AM - 02:25 AM	49.8	53.7	47.9
02:25 AM - 02:30 AM	49.7	54.9	47.4
02:30 AM - 02:35 AM	50.0	53.5	48.4
02:35 AM - 02:40 AM	50.2	54.1	49.1
02:40 AM - 02:45 AM	49.7	52.7	48.3
02:45 AM - 02:50 AM	50.2	53.5	48.8
02:50 AM - 02:55 AM	50.4	55.1	48.6
02:55 AM - 03:00 AM	50.0	53.7	48.4
03:00 AM - 03:05 AM	50.1	53.1	48.9
03:05 AM - 03:10 AM	50.0	52.8	48.7
03:10 AM - 03:15 AM	49.8	54.1	48.2
03:15 AM - 03:20 AM	49.9	55.8	48.3
03:20 AM - 03:25 AM	51.0	53.9	49.7
03:25 AM - 03:30 AM	50.4	52.5	49.6
03:30 AM - 03:35 AM	49.5	51.7	48.6
03:35 AM - 03:40 AM	49.7	52.3	48.8
03:40 AM - 03:45 AM	50.0	52.2	49.1

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142077  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537195-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142077-4  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633) (Shut down)  
Measurement Date Jun 30 - Jul 01, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472123

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:45 AM - 03:50 AM	50.3	53.3	48.9
03:50 AM - 03:55 AM	49.9	52.2	49.2
03:55 AM - 04:00 AM	50.5	56.3	49.3
04:00 AM - 04:05 AM	49.7	52.7	48.7
04:05 AM - 04:10 AM	50.4	56.9	49.3
04:10 AM - 04:15 AM	50.2	54.8	48.9
04:15 AM - 04:20 AM	50.6	53.3	49.3
04:20 AM - 04:25 AM	50.2	53.1	48.8
04:25 AM - 04:30 AM	50.3	53.3	49.5
04:30 AM - 04:35 AM	50.4	53.5	48.9
04:35 AM - 04:40 AM	50.7	57.3	49.0
04:40 AM - 04:45 AM	50.5	54.8	49.3
04:45 AM - 04:50 AM	49.3	56.0	48.4
04:50 AM - 04:55 AM	49.7	56.0	48.5
04:55 AM - 05:00 AM	50.2	56.4	49.0
05:00 AM - 05:05 AM	51.9	61.6	50.2
05:05 AM - 05:10 AM	51.2	63.2	49.6
05:10 AM - 05:15 AM	49.3	56.1	48.1
05:15 AM - 05:20 AM	51.2	70.2	48.0
05:20 AM - 05:25 AM	53.3	61.8	50.0
05:25 AM - 05:30 AM	51.3	61.6	49.8
05:30 AM - 05:35 AM	50.6	59.9	48.5
05:35 AM - 05:40 AM	50.5	59.8	48.5
05:40 AM - 05:45 AM	52.2	70.6	48.4
05:45 AM - 05:50 AM	49.7	57.2	47.9
05:50 AM - 05:55 AM	51.0	62.0	47.7
05:55 AM - 06:00 AM	48.9	56.9	47.3
06:00 AM - 07:00 AM	52.7	86.4	48.0
07:00 AM - 08:00 AM	52.3	73.6	49.2
08:00 AM - 09:00 AM	54.3	81.3	50.4
09:00 AM - 10:00 AM	54.4	80.0	50.1
10:00 AM - 11:00 AM	58.6	81.1	48.7

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142077  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537196-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142077-5  
Parameter Noise  
Location รื่นรุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633) (Shut down)  
Measurement Date Jul 01 - 02, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472123

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	55.0	73.6	52.3
12:00 PM - 01:00 PM	54.3	80.5	50.9
01:00 PM - 02:00 PM	55.6	76.3	51.7
02:00 PM - 03:00 PM	57.2	83.3	51.9
03:00 PM - 04:00 PM	56.3	75.2	52.2
04:00 PM - 05:00 PM	56.3	75.9	53.4
05:00 PM - 06:00 PM	53.6	66.9	51.2
06:00 PM - 07:00 PM	54.6	78.3	52.4
07:00 PM - 08:00 PM	54.3	78.0	51.4
08:00 PM - 09:00 PM	53.3	73.1	50.3
09:00 PM - 10:00 PM	51.6	80.2	49.3
10:00 PM - 10:05 PM	49.2	53.6	48.2
10:05 PM - 10:10 PM	48.9	53.1	48.1
10:10 PM - 10:15 PM	49.9	57.6	48.6
10:15 PM - 10:20 PM	50.1	59.3	48.7
10:20 PM - 10:25 PM	54.2	63.5	50.0
10:25 PM - 10:30 PM	55.8	62.9	51.8
10:30 PM - 10:35 PM	54.8	65.8	52.3
10:35 PM - 10:40 PM	53.4	61.7	51.6
10:40 PM - 10:45 PM	52.4	56.0	51.2
10:45 PM - 10:50 PM	52.1	59.5	50.9
10:50 PM - 10:55 PM	51.8	55.4	50.8
10:55 PM - 11:00 PM	51.6	56.0	50.6
11:00 PM - 11:05 PM	51.3	55.5	50.5
11:05 PM - 11:10 PM	52.3	60.0	51.0
11:10 PM - 11:15 PM	52.5	61.7	51.1
11:15 PM - 11:20 PM	53.6	64.0	51.3
11:20 PM - 11:25 PM	56.6	68.3	54.0
11:25 PM - 11:30 PM	55.7	68.5	52.5
11:30 PM - 11:35 PM	52.8	62.6	50.9
11:35 PM - 11:40 PM	53.1	60.4	50.4
11:40 PM - 11:45 PM	51.2	61.6	48.9
11:45 PM - 11:50 PM	50.4	62.7	48.8
11:50 PM - 11:55 PM	50.7	61.4	49.0
11:55 PM - 12:00 AM	50.2	59.6	48.5
12:00 AM - 12:05 AM	51.6	64.5	49.7
12:05 AM - 12:10 AM	50.8	58.7	49.2
12:10 AM - 12:15 AM	50.3	61.5	48.6
12:15 AM - 12:20 AM	51.1	59.8	49.1
12:20 AM - 12:25 AM	51.0	68.1	48.5

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142077  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537196-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142077-5  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633) (Shut down)  
Measurement Date Jul 01 - 02, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472123

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:25 AM - 12:30 AM	54.2	64.6	52.5
12:30 AM - 12:35 AM	55.0	67.3	53.6
12:35 AM - 12:40 AM	53.6	67.1	52.1
12:40 AM - 12:45 AM	52.5	65.9	50.2
12:45 AM - 12:50 AM	51.3	63.4	49.1
12:50 AM - 12:55 AM	50.0	64.1	48.2
12:55 AM - 01:00 AM	51.0	61.4	48.8
01:00 AM - 01:05 AM	52.6	65.0	48.8
01:05 AM - 01:10 AM	53.8	71.7	51.7
01:10 AM - 01:15 AM	53.0	68.1	51.0
01:15 AM - 01:20 AM	52.9	63.1	50.9
01:20 AM - 01:25 AM	53.0	66.9	50.9
01:25 AM - 01:30 AM	52.2	68.3	50.3
01:30 AM - 01:35 AM	51.9	63.8	50.1
01:35 AM - 01:40 AM	52.1	64.1	50.1
01:40 AM - 01:45 AM	51.7	71.2	50.0
01:45 AM - 01:50 AM	51.5	63.4	49.8
01:50 AM - 01:55 AM	54.9	69.1	50.2
01:55 AM - 02:00 AM	52.3	66.7	50.2
02:00 AM - 02:05 AM	51.4	69.3	49.3
02:05 AM - 02:10 AM	50.6	65.7	48.6
02:10 AM - 02:15 AM	50.5	60.7	48.5
02:15 AM - 02:20 AM	50.6	64.5	48.5
02:20 AM - 02:25 AM	49.8	65.9	47.9
02:25 AM - 02:30 AM	49.5	61.4	47.7
02:30 AM - 02:35 AM	49.7	61.7	47.7
02:35 AM - 02:40 AM	49.3	68.8	47.6
02:40 AM - 02:45 AM	49.1	61.0	47.4
02:45 AM - 02:50 AM	52.5	66.7	47.8
02:50 AM - 02:55 AM	49.9	64.3	47.8
02:55 AM - 03:00 AM	50.4	62.5	47.8
03:00 AM - 03:05 AM	49.0	58.9	47.5
03:05 AM - 03:10 AM	49.9	61.4	47.8
03:10 AM - 03:15 AM	51.1	61.8	49.2
03:15 AM - 03:20 AM	52.1	60.9	50.5
03:20 AM - 03:25 AM	52.4	65.1	50.8
03:25 AM - 03:30 AM	52.6	68.3	51.3
03:30 AM - 03:35 AM	54.1	67.0	53.0
03:35 AM - 03:40 AM	55.8	65.6	54.9
03:40 AM - 03:45 AM	56.1	64.6	54.9

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142077  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537196-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142077-5  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633) (Shut down)  
Measurement Date Jul 01 - 02, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472123

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:45 AM - 03:50 AM	58.1	71.0	57.0
03:50 AM - 03:55 AM	58.5	68.6	57.5
03:55 AM - 04:00 AM	58.3	69.3	57.2
04:00 AM - 04:05 AM	58.5	69.5	57.4
04:05 AM - 04:10 AM	58.0	70.4	56.7
04:10 AM - 04:15 AM	57.4	69.7	55.5
04:15 AM - 04:20 AM	55.6	65.7	54.1
04:20 AM - 04:25 AM	54.8	68.3	53.1
04:25 AM - 04:30 AM	54.5	65.6	52.7
04:30 AM - 04:35 AM	54.4	63.8	52.3
04:35 AM - 04:40 AM	54.4	66.8	52.2
04:40 AM - 04:45 AM	54.6	69.0	52.0
04:45 AM - 04:50 AM	55.1	70.3	52.6
04:50 AM - 04:55 AM	55.6	68.5	53.1
04:55 AM - 05:00 AM	55.9	69.4	53.3
05:00 AM - 05:05 AM	56.1	70.9	53.5
05:05 AM - 05:10 AM	56.3	68.8	54.0
05:10 AM - 05:15 AM	57.2	73.2	55.5
05:15 AM - 05:20 AM	57.0	72.8	55.4
05:20 AM - 05:25 AM	56.3	68.7	54.6
05:25 AM - 05:30 AM	56.2	68.0	54.5
05:30 AM - 05:35 AM	56.0	70.6	53.5
05:35 AM - 05:40 AM	56.3	68.9	53.2
05:40 AM - 05:45 AM	54.9	65.4	52.9
05:45 AM - 05:50 AM	54.8	65.0	52.5
05:50 AM - 05:55 AM	53.6	68.9	51.4
05:55 AM - 06:00 AM	52.5	62.4	50.6
06:00 AM - 07:00 AM	54.6	76.2	51.8
07:00 AM - 08:00 AM	54.6	71.5	52.1
08:00 AM - 09:00 AM	55.4	81.2	52.6
09:00 AM - 10:00 AM	55.6	71.2	52.9
10:00 AM - 11:00 AM	53.6	68.5	51.2

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142077  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537197-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142077-6  
Parameter Noise  
Location รื่นรักลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633) (Shut down)  
Measurement Date Jul 02 - 03, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472123

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	49.4	62.7	47.1
12:00 PM - 01:00 PM	50.0	77.9	47.1
01:00 PM - 02:00 PM	52.6	69.9	49.0
02:00 PM - 03:00 PM	52.1	69.4	48.5
03:00 PM - 04:00 PM	53.7	70.9	47.3
04:00 PM - 05:00 PM	49.7	72.2	45.8
05:00 PM - 06:00 PM	50.8	71.0	47.5
06:00 PM - 07:00 PM	54.9	74.9	52.3
07:00 PM - 08:00 PM	54.8	61.9	53.0
08:00 PM - 09:00 PM	51.1	63.5	48.9
09:00 PM - 10:00 PM	51.2	61.0	49.7
10:00 PM - 10:05 PM	51.1	57.8	48.8
10:05 PM - 10:10 PM	50.1	54.2	47.8
10:10 PM - 10:15 PM	49.8	61.5	47.2
10:15 PM - 10:20 PM	49.8	56.3	47.7
10:20 PM - 10:25 PM	51.0	57.8	48.6
10:25 PM - 10:30 PM	50.6	60.9	48.1
10:30 PM - 10:35 PM	50.2	53.8	48.0
10:35 PM - 10:40 PM	49.3	55.8	46.7
10:40 PM - 10:45 PM	49.5	55.2	46.8
10:45 PM - 10:50 PM	49.4	55.8	46.6
10:50 PM - 10:55 PM	47.7	55.8	45.3
10:55 PM - 11:00 PM	47.5	53.0	45.7
11:00 PM - 11:05 PM	50.2	65.0	46.0
11:05 PM - 11:10 PM	50.0	58.4	46.5
11:10 PM - 11:15 PM	49.6	53.4	47.1
11:15 PM - 11:20 PM	49.9	57.3	46.3
11:20 PM - 11:25 PM	49.4	54.5	45.8
11:25 PM - 11:30 PM	50.5	56.6	46.0
11:30 PM - 11:35 PM	48.3	51.9	45.3
11:35 PM - 11:40 PM	49.2	54.2	46.4
11:40 PM - 11:45 PM	48.6	51.8	45.8
11:45 PM - 11:50 PM	48.3	52.6	45.7
11:50 PM - 11:55 PM	48.5	54.9	45.5
11:55 PM - 12:00 AM	48.3	54.4	44.2
12:00 AM - 12:05 AM	48.7	55.3	44.5
12:05 AM - 12:10 AM	49.1	54.2	45.6
12:10 AM - 12:15 AM	48.6	53.2	45.2
12:15 AM - 12:20 AM	48.0	52.7	44.9
12:20 AM - 12:25 AM	48.2	55.0	45.6

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142077  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537197-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142077-6  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633) (Shut down)  
Measurement Date Jul 02 - 03, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472123

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:25 AM - 12:30 AM	48.5	53.6	46.0
12:30 AM - 12:35 AM	47.9	54.2	45.7
12:35 AM - 12:40 AM	49.1	54.7	45.3
12:40 AM - 12:45 AM	48.2	54.1	45.5
12:45 AM - 12:50 AM	48.7	54.7	46.2
12:50 AM - 12:55 AM	48.4	53.7	46.2
12:55 AM - 01:00 AM	48.0	54.1	45.3
01:00 AM - 01:05 AM	48.9	54.4	46.0
01:05 AM - 01:10 AM	47.5	52.0	45.2
01:10 AM - 01:15 AM	47.7	52.3	45.7
01:15 AM - 01:20 AM	48.1	64.3	45.9
01:20 AM - 01:25 AM	47.5	51.7	45.9
01:25 AM - 01:30 AM	47.1	54.2	45.0
01:30 AM - 01:35 AM	47.3	52.8	45.5
01:35 AM - 01:40 AM	48.2	56.0	45.6
01:40 AM - 01:45 AM	48.5	56.3	46.2
01:45 AM - 01:50 AM	48.7	56.0	45.4
01:50 AM - 01:55 AM	47.9	56.6	44.7
01:55 AM - 02:00 AM	46.5	52.4	44.1
02:00 AM - 02:05 AM	48.2	52.9	45.5
02:05 AM - 02:10 AM	49.0	55.2	46.7
02:10 AM - 02:15 AM	47.8	53.9	45.3
02:15 AM - 02:20 AM	46.9	51.4	44.9
02:20 AM - 02:25 AM	48.5	53.7	45.7
02:25 AM - 02:30 AM	48.3	55.2	45.7
02:30 AM - 02:35 AM	47.1	54.1	44.4
02:35 AM - 02:40 AM	47.0	51.7	45.0
02:40 AM - 02:45 AM	48.1	61.5	45.4
02:45 AM - 02:50 AM	49.9	62.3	45.3
02:50 AM - 02:55 AM	47.9	54.0	45.9
02:55 AM - 03:00 AM	48.1	54.3	45.9
03:00 AM - 03:05 AM	47.1	54.2	44.7
03:05 AM - 03:10 AM	48.0	55.0	45.8
03:10 AM - 03:15 AM	47.2	53.0	45.9
03:15 AM - 03:20 AM	46.9	52.4	45.7
03:20 AM - 03:25 AM	48.4	54.0	45.3
03:25 AM - 03:30 AM	47.3	54.7	45.7
03:30 AM - 03:35 AM	47.4	54.8	45.3
03:35 AM - 03:40 AM	49.2	55.4	45.4
03:40 AM - 03:45 AM	49.2	55.2	45.4

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Approved by

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142077  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537197-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142077-6  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633) (Shut down)  
Measurement Date Jul 02 - 03, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472123

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:45 AM - 03:50 AM	49.7	57.1	45.1
03:50 AM - 03:55 AM	50.5	58.7	45.4
03:55 AM - 04:00 AM	50.2	56.3	46.4
04:00 AM - 04:05 AM	50.7	55.8	46.7
04:05 AM - 04:10 AM	52.2	58.0	47.4
04:10 AM - 04:15 AM	51.8	56.1	47.9
04:15 AM - 04:20 AM	51.7	56.0	47.6
04:20 AM - 04:25 AM	52.6	56.8	49.1
04:25 AM - 04:30 AM	52.4	57.8	48.1
04:30 AM - 04:35 AM	52.7	56.2	47.6
04:35 AM - 04:40 AM	52.6	56.2	47.1
04:40 AM - 04:45 AM	52.0	57.8	47.0
04:45 AM - 04:50 AM	52.7	57.3	47.7
04:50 AM - 04:55 AM	53.5	56.4	49.1
04:55 AM - 05:00 AM	53.7	63.8	49.2
05:00 AM - 05:05 AM	53.8	58.3	48.6
05:05 AM - 05:10 AM	54.0	57.5	50.4
05:10 AM - 05:15 AM	54.5	68.7	50.4
05:15 AM - 05:20 AM	53.9	59.0	50.6
05:20 AM - 05:25 AM	52.9	58.2	50.5
05:25 AM - 05:30 AM	52.2	57.2	49.7
05:30 AM - 05:35 AM	52.5	60.2	50.4
05:35 AM - 05:40 AM	53.3	58.6	51.2
05:40 AM - 05:45 AM	51.1	55.9	48.1
05:45 AM - 05:50 AM	51.6	63.3	48.1
05:50 AM - 05:55 AM	54.2	61.0	51.9
05:55 AM - 06:00 AM	53.6	60.4	50.8
06:00 AM - 07:00 AM	52.7	71.8	49.3
07:00 AM - 08:00 AM	53.8	76.1	49.2
08:00 AM - 09:00 AM	51.8	66.4	47.6
09:00 AM - 10:00 AM	60.2	77.2	52.1
10:00 AM - 11:00 AM	56.7	77.3	50.2

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142077  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537198-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142077-7  
Parameter Noise  
Location รื่นรำกุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633) (Shut down)  
Measurement Date Jul 03 - 04, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472123

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	54.7	77.4	50.1
12:00 PM - 01:00 PM	52.7	64.2	48.1
01:00 PM - 02:00 PM	53.9	72.9	48.3
02:00 PM - 03:00 PM	54.3	72.7	48.1
03:00 PM - 04:00 PM	52.8	78.7	49.8
04:00 PM - 05:00 PM	52.6	78.8	49.0
05:00 PM - 06:00 PM	54.6	80.6	49.7
06:00 PM - 07:00 PM	53.2	64.7	50.5
07:00 PM - 08:00 PM	57.8	65.3	56.3
08:00 PM - 09:00 PM	58.1	63.7	56.7
09:00 PM - 10:00 PM	55.7	61.1	53.5
10:00 PM - 10:05 PM	55.8	59.3	53.0
10:05 PM - 10:10 PM	55.6	59.1	51.1
10:10 PM - 10:15 PM	55.7	59.1	51.3
10:15 PM - 10:20 PM	55.9	59.5	53.6
10:20 PM - 10:25 PM	55.8	59.7	53.2
10:25 PM - 10:30 PM	54.0	59.8	48.0
10:30 PM - 10:35 PM	53.8	59.3	48.4
10:35 PM - 10:40 PM	51.1	58.5	48.7
10:40 PM - 10:45 PM	50.0	56.0	47.2
10:45 PM - 10:50 PM	49.7	56.1	47.0
10:50 PM - 10:55 PM	51.8	60.2	48.5
10:55 PM - 11:00 PM	51.4	58.4	48.2
11:00 PM - 11:05 PM	51.1	58.3	47.5
11:05 PM - 11:10 PM	50.3	58.1	48.0
11:10 PM - 11:15 PM	49.8	56.3	47.5
11:15 PM - 11:20 PM	47.9	56.2	45.9
11:20 PM - 11:25 PM	51.4	58.0	48.4
11:25 PM - 11:30 PM	50.6	66.3	46.8
11:30 PM - 11:35 PM	48.4	53.5	46.7
11:35 PM - 11:40 PM	48.8	56.7	46.5
11:40 PM - 11:45 PM	48.2	53.1	46.2
11:45 PM - 11:50 PM	49.1	55.4	46.9
11:50 PM - 11:55 PM	49.4	58.6	46.5
11:55 PM - 12:00 AM	50.1	55.7	47.5
12:00 AM - 12:05 AM	49.0	55.9	46.5
12:05 AM - 12:10 AM	48.4	52.6	45.6
12:10 AM - 12:15 AM	48.7	54.0	45.9
12:15 AM - 12:20 AM	50.3	59.7	47.0
12:20 AM - 12:25 AM	49.1	57.5	45.2

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142077  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537198-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142077-7  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633) (Shut down)  
Measurement Date Jul 03 - 04, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472123

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:25 AM - 12:30 AM	48.1	52.0	46.1
12:30 AM - 12:35 AM	49.1	54.2	46.3
12:35 AM - 12:40 AM	48.0	52.7	45.3
12:40 AM - 12:45 AM	47.5	57.2	45.9
12:45 AM - 12:50 AM	48.2	52.5	46.6
12:50 AM - 12:55 AM	48.0	57.1	46.2
12:55 AM - 01:00 AM	46.7	53.6	45.3
01:00 AM - 01:05 AM	46.4	51.1	44.8
01:05 AM - 01:10 AM	48.3	55.2	46.3
01:10 AM - 01:15 AM	48.2	57.0	46.1
01:15 AM - 01:20 AM	47.9	53.3	45.9
01:20 AM - 01:25 AM	47.3	52.9	45.4
01:25 AM - 01:30 AM	47.4	54.5	45.1
01:30 AM - 01:35 AM	46.5	50.9	44.7
01:35 AM - 01:40 AM	48.2	52.9	45.8
01:40 AM - 01:45 AM	47.5	52.6	45.2
01:45 AM - 01:50 AM	47.2	55.9	45.4
01:50 AM - 01:55 AM	48.3	54.0	45.9
01:55 AM - 02:00 AM	47.9	54.8	45.4
02:00 AM - 02:05 AM	48.4	54.7	46.7
02:05 AM - 02:10 AM	48.1	53.4	45.8
02:10 AM - 02:15 AM	47.4	53.2	45.2
02:15 AM - 02:20 AM	47.2	52.6	45.4
02:20 AM - 02:25 AM	47.5	51.8	45.8
02:25 AM - 02:30 AM	46.8	51.9	45.4
02:30 AM - 02:35 AM	46.7	51.1	45.3
02:35 AM - 02:40 AM	46.6	51.8	45.4
02:40 AM - 02:45 AM	47.1	51.6	45.5
02:45 AM - 02:50 AM	47.4	51.5	45.7
02:50 AM - 02:55 AM	47.4	51.7	46.0
02:55 AM - 03:00 AM	47.0	52.7	45.1
03:00 AM - 03:05 AM	47.6	52.1	45.9
03:05 AM - 03:10 AM	47.2	56.7	45.8
03:10 AM - 03:15 AM	47.1	52.8	45.7
03:15 AM - 03:20 AM	48.3	52.1	46.5
03:20 AM - 03:25 AM	47.8	51.5	46.0
03:25 AM - 03:30 AM	48.5	54.1	46.6
03:30 AM - 03:35 AM	47.9	51.8	46.2
03:35 AM - 03:40 AM	49.6	53.3	47.3
03:40 AM - 03:45 AM	48.3	54.0	46.5

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142077  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537198-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142077-7  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศใต้ (GPS 48Q 279216, 1888633) (Shut down)  
Measurement Date Jul 03 - 04, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472123

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:45 AM - 03:50 AM	49.2	53.4	47.3
03:50 AM - 03:55 AM	48.6	52.8	46.6
03:55 AM - 04:00 AM	48.7	52.0	47.2
04:00 AM - 04:05 AM	48.6	51.9	47.0
04:05 AM - 04:10 AM	48.8	52.4	47.3
04:10 AM - 04:15 AM	49.2	53.4	47.8
04:15 AM - 04:20 AM	49.8	53.8	48.1
04:20 AM - 04:25 AM	49.4	52.9	47.6
04:25 AM - 04:30 AM	49.7	54.0	47.8
04:30 AM - 04:35 AM	50.0	53.9	48.3
04:35 AM - 04:40 AM	50.2	54.3	48.3
04:40 AM - 04:45 AM	51.0	55.2	49.4
04:45 AM - 04:50 AM	50.9	54.8	48.9
04:50 AM - 04:55 AM	51.8	60.5	49.9
04:55 AM - 05:00 AM	51.7	59.9	49.6
05:00 AM - 05:05 AM	51.6	62.3	50.1
05:05 AM - 05:10 AM	52.6	68.0	50.8
05:10 AM - 05:15 AM	51.5	59.9	49.9
05:15 AM - 05:20 AM	52.5	61.1	50.0
05:20 AM - 05:25 AM	52.0	59.1	49.8
05:25 AM - 05:30 AM	53.0	56.8	51.3
05:30 AM - 05:35 AM	52.4	61.8	50.2
05:35 AM - 05:40 AM	51.7	58.0	49.4
05:40 AM - 05:45 AM	51.4	58.3	49.6
05:45 AM - 05:50 AM	52.4	61.9	50.6
05:50 AM - 05:55 AM	51.4	59.7	49.3
05:55 AM - 06:00 AM	53.6	57.9	52.6
06:00 AM - 07:00 AM	52.0	66.0	49.7
07:00 AM - 08:00 AM	52.5	73.8	49.2
08:00 AM - 09:00 AM	53.9	69.0	50.4
09:00 AM - 10:00 AM	55.0	77.7	50.2
10:00 AM - 11:00 AM	53.2	75.1	49.6

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142078  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537206-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142078-1  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929) (Shut down)  
Measurement Date Jun 27 - 28, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 900075

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	57.7	88.3	50.2
12:00 PM - 01:00 PM	54.0	71.8	48.0
01:00 PM - 02:00 PM	58.1	90.0	48.5
02:00 PM - 03:00 PM	54.2	73.4	48.1
03:00 PM - 04:00 PM	56.2	83.9	49.7
04:00 PM - 05:00 PM	57.3	86.9	49.4
05:00 PM - 06:00 PM	55.4	73.7	49.9
06:00 PM - 07:00 PM	56.3	76.9	49.1
07:00 PM - 08:00 PM	55.7	74.8	48.8
08:00 PM - 09:00 PM	54.2	75.3	46.8
09:00 PM - 10:00 PM	53.0	75.8	45.2
10:00 PM - 10:05 PM	52.0	62.4	44.9
10:05 PM - 10:10 PM	51.2	60.4	44.9
10:10 PM - 10:15 PM	56.1	70.5	45.3
10:15 PM - 10:20 PM	49.4	57.6	41.2
10:20 PM - 10:25 PM	52.4	62.4	44.5
10:25 PM - 10:30 PM	50.8	59.7	43.6
10:30 PM - 10:35 PM	50.8	62.0	40.9
10:35 PM - 10:40 PM	50.2	59.6	43.8
10:40 PM - 10:45 PM	50.4	60.7	42.5
10:45 PM - 10:50 PM	51.7	69.6	40.2
10:50 PM - 10:55 PM	51.1	60.1	42.7
10:55 PM - 11:00 PM	45.6	58.4	39.5
11:00 PM - 11:05 PM	49.5	59.4	39.2
11:05 PM - 11:10 PM	52.3	63.0	43.7
11:10 PM - 11:15 PM	50.2	62.0	42.3
11:15 PM - 11:20 PM	54.1	67.8	40.3
11:20 PM - 11:25 PM	55.3	68.1	42.3
11:25 PM - 11:30 PM	53.0	68.6	44.1
11:30 PM - 11:35 PM	54.6	66.9	45.7
11:35 PM - 11:40 PM	50.1	60.2	44.2
11:40 PM - 11:45 PM	51.1	63.5	42.9
11:45 PM - 11:50 PM	52.7	65.5	42.0
11:50 PM - 11:55 PM	50.3	66.0	40.9
11:55 PM - 12:00 AM	54.2	69.9	42.9
12:00 AM - 12:05 AM	48.9	58.2	39.5
12:05 AM - 12:10 AM	49.4	58.9	40.8
12:10 AM - 12:15 AM	49.1	64.0	40.5
12:15 AM - 12:20 AM	48.9	60.0	39.2
12:20 AM - 12:25 AM	52.2	69.1	41.4

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142078  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537206-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142078-1  
Parameter Noise  
Location รื่นรักกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929) (Shut down)  
Measurement Date Jun 27 - 28, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 900075

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:25 AM - 12:30 AM	50.6	61.6	42.6
12:30 AM - 12:35 AM	46.5	57.6	41.7
12:35 AM - 12:40 AM	47.8	62.1	41.7
12:40 AM - 12:45 AM	49.6	61.9	42.0
12:45 AM - 12:50 AM	54.2	68.5	43.8
12:50 AM - 12:55 AM	52.2	66.8	39.8
12:55 AM - 01:00 AM	50.7	61.8	41.8
01:00 AM - 01:05 AM	48.4	60.2	39.4
01:05 AM - 01:10 AM	46.9	62.5	38.8
01:10 AM - 01:15 AM	47.7	63.7	38.6
01:15 AM - 01:20 AM	50.2	63.2	39.7
01:20 AM - 01:25 AM	45.9	62.4	39.7
01:25 AM - 01:30 AM	50.2	63.2	40.6
01:30 AM - 01:35 AM	49.1	60.4	39.2
01:35 AM - 01:40 AM	49.0	59.3	39.1
01:40 AM - 01:45 AM	48.8	61.4	38.9
01:45 AM - 01:50 AM	50.2	62.2	39.4
01:50 AM - 01:55 AM	49.5	58.9	40.7
01:55 AM - 02:00 AM	49.8	60.6	40.5
02:00 AM - 02:05 AM	51.4	70.4	39.5
02:05 AM - 02:10 AM	50.6	68.8	40.2
02:10 AM - 02:15 AM	49.9	60.8	40.8
02:15 AM - 02:20 AM	49.6	62.3	40.4
02:20 AM - 02:25 AM	49.0	60.5	39.6
02:25 AM - 02:30 AM	50.2	61.6	41.2
02:30 AM - 02:35 AM	47.5	59.7	39.9
02:35 AM - 02:40 AM	48.4	58.6	40.0
02:40 AM - 02:45 AM	50.2	65.2	40.4
02:45 AM - 02:50 AM	46.6	59.9	39.8
02:50 AM - 02:55 AM	47.4	58.1	39.9
02:55 AM - 03:00 AM	47.7	58.4	40.7
03:00 AM - 03:05 AM	47.6	60.6	41.4
03:05 AM - 03:10 AM	48.0	61.6	41.7
03:10 AM - 03:15 AM	49.0	59.6	41.5
03:15 AM - 03:20 AM	49.5	60.2	41.0
03:20 AM - 03:25 AM	51.3	68.7	41.9
03:25 AM - 03:30 AM	50.9	68.4	41.2
03:30 AM - 03:35 AM	48.8	59.7	40.8
03:35 AM - 03:40 AM	50.8	63.2	41.0
03:40 AM - 03:45 AM	49.9	65.9	38.7

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142078  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537206-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142078-1  
Parameter Noise  
Location ร่มรังกุลมบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929) (Shut down)  
Measurement Date Jun 27 - 28, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 900075

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:45 AM - 03:50 AM	48.9	61.5	38.6
03:50 AM - 03:55 AM	55.4	71.7	41.3
03:55 AM - 04:00 AM	51.1	65.1	40.5
04:00 AM - 04:05 AM	54.2	72.1	44.7
04:05 AM - 04:10 AM	50.7	60.3	43.1
04:10 AM - 04:15 AM	51.8	61.8	44.2
04:15 AM - 04:20 AM	51.8	60.2	43.9
04:20 AM - 04:25 AM	51.1	60.4	43.1
04:25 AM - 04:30 AM	51.4	61.7	44.7
04:30 AM - 04:35 AM	51.9	65.7	44.6
04:35 AM - 04:40 AM	50.9	61.9	44.2
04:40 AM - 04:45 AM	52.2	66.5	44.6
04:45 AM - 04:50 AM	52.8	61.2	46.7
04:50 AM - 04:55 AM	53.1	62.9	44.2
04:55 AM - 05:00 AM	52.0	67.3	43.8
05:00 AM - 05:05 AM	54.6	67.6	46.3
05:05 AM - 05:10 AM	53.2	64.3	47.4
05:10 AM - 05:15 AM	55.1	69.3	47.8
05:15 AM - 05:20 AM	54.9	68.7	45.1
05:20 AM - 05:25 AM	53.8	64.1	46.5
05:25 AM - 05:30 AM	54.2	63.9	47.6
05:30 AM - 05:35 AM	55.4	64.3	47.7
05:35 AM - 05:40 AM	51.9	62.8	43.1
05:40 AM - 05:45 AM	51.1	59.5	43.6
05:45 AM - 05:50 AM	53.6	64.9	45.2
05:50 AM - 05:55 AM	53.0	67.5	44.9
05:55 AM - 06:00 AM	53.4	63.5	45.1
06:00 AM - 07:00 AM	55.3	71.8	49.1
07:00 AM - 08:00 AM	55.9	76.9	50.4
08:00 AM - 09:00 AM	56.4	74.9	49.5
09:00 AM - 10:00 AM	57.1	81.4	49.6
10:00 AM - 11:00 AM	57.4	79.9	49.7

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142078  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537207-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142078-2  
Parameter Noise  
Location รื่นรุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929) (Shut down)  
Measurement Date Jun 28 - 29, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 900075

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	55.8	79.3	49.3
12:00 PM - 01:00 PM	54.4	70.4	48.4
01:00 PM - 02:00 PM	56.0	78.5	49.6
02:00 PM - 03:00 PM	56.8	80.3	49.0
03:00 PM - 04:00 PM	55.4	82.2	49.3
04:00 PM - 05:00 PM	55.7	76.5	49.3
05:00 PM - 06:00 PM	54.6	72.8	48.9
06:00 PM - 07:00 PM	56.8	85.3	50.1
07:00 PM - 08:00 PM	55.5	77.7	47.5
08:00 PM - 09:00 PM	52.3	72.8	44.9
09:00 PM - 10:00 PM	52.7	76.2	44.5
10:00 PM - 10:05 PM	51.5	59.4	43.2
10:05 PM - 10:10 PM	54.6	74.3	42.4
10:10 PM - 10:15 PM	50.4	61.5	40.3
10:15 PM - 10:20 PM	53.7	63.9	46.3
10:20 PM - 10:25 PM	49.7	57.1	42.5
10:25 PM - 10:30 PM	54.1	73.3	42.5
10:30 PM - 10:35 PM	53.5	68.4	46.3
10:35 PM - 10:40 PM	51.9	64.1	46.3
10:40 PM - 10:45 PM	51.7	62.4	46.4
10:45 PM - 10:50 PM	48.9	59.0	41.8
10:50 PM - 10:55 PM	51.5	62.2	44.2
10:55 PM - 11:00 PM	53.4	65.4	45.6
11:00 PM - 11:05 PM	51.3	65.3	43.9
11:05 PM - 11:10 PM	51.0	59.8	43.6
11:10 PM - 11:15 PM	51.9	63.9	43.5
11:15 PM - 11:20 PM	52.1	66.6	42.8
11:20 PM - 11:25 PM	52.1	62.3	44.3
11:25 PM - 11:30 PM	49.8	62.3	41.9
11:30 PM - 11:35 PM	51.8	66.2	40.7
11:35 PM - 11:40 PM	49.2	59.4	40.8
11:40 PM - 11:45 PM	49.7	59.6	40.3
11:45 PM - 11:50 PM	50.2	61.2	42.0
11:50 PM - 11:55 PM	50.0	67.1	41.8
11:55 PM - 12:00 AM	51.3	62.3	40.8
12:00 AM - 12:05 AM	48.8	60.8	42.0
12:05 AM - 12:10 AM	52.5	62.8	44.8
12:10 AM - 12:15 AM	49.1	62.1	42.4
12:15 AM - 12:20 AM	48.6	59.3	40.9
12:20 AM - 12:25 AM	50.7	63.7	43.0

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142078  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537207-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142078-2  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929) (Shut down)  
Measurement Date Jun 28 - 29, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 900075

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:25 AM - 12:30 AM	50.7	62.9	41.7
12:30 AM - 12:35 AM	51.7	63.7	44.9
12:35 AM - 12:40 AM	52.7	63.7	46.1
12:40 AM - 12:45 AM	49.9	62.2	45.2
12:45 AM - 12:50 AM	50.1	61.9	45.4
12:50 AM - 12:55 AM	53.6	69.6	45.1
12:55 AM - 01:00 AM	52.6	61.6	45.7
01:00 AM - 01:05 AM	49.5	61.9	45.1
01:05 AM - 01:10 AM	50.6	65.6	45.5
01:10 AM - 01:15 AM	53.5	67.4	46.2
01:15 AM - 01:20 AM	48.9	57.0	45.0
01:20 AM - 01:25 AM	50.7	62.0	45.3
01:25 AM - 01:30 AM	51.1	61.1	44.9
01:30 AM - 01:35 AM	52.6	65.4	45.4
01:35 AM - 01:40 AM	51.2	63.4	45.1
01:40 AM - 01:45 AM	50.4	59.4	45.1
01:45 AM - 01:50 AM	50.3	64.7	45.3
01:50 AM - 01:55 AM	52.5	63.6	45.6
01:55 AM - 02:00 AM	51.7	68.7	44.9
02:00 AM - 02:05 AM	49.7	61.6	44.4
02:05 AM - 02:10 AM	51.4	61.4	46.0
02:10 AM - 02:15 AM	52.6	62.9	46.2
02:15 AM - 02:20 AM	50.2	60.1	45.6
02:20 AM - 02:25 AM	51.4	66.1	45.6
02:25 AM - 02:30 AM	49.0	61.1	45.3
02:30 AM - 02:35 AM	50.7	61.2	45.4
02:35 AM - 02:40 AM	50.2	60.7	44.7
02:40 AM - 02:45 AM	49.5	63.6	45.4
02:45 AM - 02:50 AM	52.3	62.5	47.1
02:50 AM - 02:55 AM	51.5	62.5	45.6
02:55 AM - 03:00 AM	55.8	66.2	47.4
03:00 AM - 03:05 AM	50.5	63.0	44.9
03:05 AM - 03:10 AM	48.9	60.5	44.5
03:10 AM - 03:15 AM	50.3	62.1	45.6
03:15 AM - 03:20 AM	52.6	67.1	45.3
03:20 AM - 03:25 AM	51.1	63.3	44.8
03:25 AM - 03:30 AM	50.9	64.9	45.3
03:30 AM - 03:35 AM	50.1	61.6	45.0
03:35 AM - 03:40 AM	52.3	60.8	46.2
03:40 AM - 03:45 AM	50.7	60.5	45.1

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142078  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537207-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142078-2  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929) (Shut down)  
Measurement Date Jun 28 - 29, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 900075

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:45 AM - 03:50 AM	51.5	61.8	46.1
03:50 AM - 03:55 AM	52.0	61.2	47.1
03:55 AM - 04:00 AM	52.9	61.2	48.0
04:00 AM - 04:05 AM	52.0	62.3	47.0
04:05 AM - 04:10 AM	51.0	59.4	46.2
04:10 AM - 04:15 AM	52.9	62.4	47.4
04:15 AM - 04:20 AM	52.6	59.7	47.9
04:20 AM - 04:25 AM	55.6	67.3	49.7
04:25 AM - 04:30 AM	53.0	60.7	47.7
04:30 AM - 04:35 AM	53.8	61.6	48.1
04:35 AM - 04:40 AM	53.9	62.3	49.0
04:40 AM - 04:45 AM	53.2	61.5	47.5
04:45 AM - 04:50 AM	52.2	60.6	47.2
04:50 AM - 04:55 AM	52.4	64.4	45.8
04:55 AM - 05:00 AM	52.2	69.6	44.9
05:00 AM - 05:05 AM	53.0	60.9	46.7
05:05 AM - 05:10 AM	51.9	61.4	46.0
05:10 AM - 05:15 AM	52.1	61.9	44.5
05:15 AM - 05:20 AM	52.9	63.0	47.0
05:20 AM - 05:25 AM	54.2	64.2	46.3
05:25 AM - 05:30 AM	53.7	63.2	45.8
05:30 AM - 05:35 AM	53.9	68.1	44.9
05:35 AM - 05:40 AM	54.8	63.3	46.1
05:40 AM - 05:45 AM	55.5	63.2	48.6
05:45 AM - 05:50 AM	54.7	63.9	48.7
05:50 AM - 05:55 AM	54.1	63.4	45.8
05:55 AM - 06:00 AM	54.3	70.2	45.3
06:00 AM - 07:00 AM	56.6	77.4	50.1
07:00 AM - 08:00 AM	56.4	74.5	51.1
08:00 AM - 09:00 AM	57.8	79.3	49.9
09:00 AM - 10:00 AM	56.7	72.8	50.4
10:00 AM - 11:00 AM	56.4	82.1	49.8

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142078  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537208-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142078-3  
Parameter Noise  
Location รื่นร่ำกุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929) (Shut down)  
Measurement Date Jun 29 - 30, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 900075

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	56.4	81.4	49.5
12:00 PM - 01:00 PM	53.9	72.7	48.6
01:00 PM - 02:00 PM	56.8	84.6	49.0
02:00 PM - 03:00 PM	55.6	83.9	49.4
03:00 PM - 04:00 PM	56.8	86.1	49.5
04:00 PM - 05:00 PM	55.9	76.0	49.1
05:00 PM - 06:00 PM	55.4	85.0	49.6
06:00 PM - 07:00 PM	56.1	82.6	48.7
07:00 PM - 08:00 PM	54.1	79.8	46.4
08:00 PM - 09:00 PM	53.8	72.8	46.6
09:00 PM - 10:00 PM	52.0	71.8	44.4
10:00 PM - 10:05 PM	51.5	62.5	43.6
10:05 PM - 10:10 PM	53.3	65.2	44.0
10:10 PM - 10:15 PM	51.6	58.9	44.7
10:15 PM - 10:20 PM	51.2	60.5	43.5
10:20 PM - 10:25 PM	48.7	59.1	42.8
10:25 PM - 10:30 PM	51.2	64.6	43.8
10:30 PM - 10:35 PM	49.4	60.3	43.0
10:35 PM - 10:40 PM	52.3	65.1	43.9
10:40 PM - 10:45 PM	50.0	59.0	41.9
10:45 PM - 10:50 PM	51.8	70.6	42.7
10:50 PM - 10:55 PM	53.1	75.8	43.5
10:55 PM - 11:00 PM	50.6	62.1	41.7
11:00 PM - 11:05 PM	52.5	63.6	43.6
11:05 PM - 11:10 PM	51.1	64.3	42.7
11:10 PM - 11:15 PM	52.8	62.9	46.4
11:15 PM - 11:20 PM	51.6	62.3	42.2
11:20 PM - 11:25 PM	50.7	60.3	40.7
11:25 PM - 11:30 PM	51.5	64.0	43.1
11:30 PM - 11:35 PM	50.2	60.0	41.3
11:35 PM - 11:40 PM	50.1	61.0	39.2
11:40 PM - 11:45 PM	47.1	57.9	40.2
11:45 PM - 11:50 PM	48.3	59.0	39.2
11:50 PM - 11:55 PM	49.0	63.3	42.5
11:55 PM - 12:00 AM	49.9	60.8	41.8
12:00 AM - 12:05 AM	50.2	61.9	41.9
12:05 AM - 12:10 AM	48.3	60.7	41.3
12:10 AM - 12:15 AM	50.6	61.9	46.6
12:15 AM - 12:20 AM	49.7	61.9	46.1
12:20 AM - 12:25 AM	50.4	61.7	45.7

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142078  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537208-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142078-3  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929) (Shut down)  
Measurement Date Jun 29 - 30, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 900075

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:25 AM - 12:30 AM	49.4	61.9	45.0
12:30 AM - 12:35 AM	52.1	64.9	46.4
12:35 AM - 12:40 AM	49.2	60.8	45.3
12:40 AM - 12:45 AM	49.4	63.8	45.7
12:45 AM - 12:50 AM	49.2	59.5	45.4
12:50 AM - 12:55 AM	50.5	62.7	45.6
12:55 AM - 01:00 AM	49.5	65.8	45.1
01:00 AM - 01:05 AM	52.4	70.2	45.7
01:05 AM - 01:10 AM	49.8	59.9	45.4
01:10 AM - 01:15 AM	52.2	64.2	45.7
01:15 AM - 01:20 AM	49.1	62.8	45.5
01:20 AM - 01:25 AM	49.6	62.5	45.6
01:25 AM - 01:30 AM	49.1	58.4	45.8
01:30 AM - 01:35 AM	49.5	62.9	45.7
01:35 AM - 01:40 AM	50.0	66.3	45.5
01:40 AM - 01:45 AM	50.2	62.3	46.4
01:45 AM - 01:50 AM	50.4	61.3	46.7
01:50 AM - 01:55 AM	49.6	65.0	45.9
01:55 AM - 02:00 AM	49.3	59.1	45.9
02:00 AM - 02:05 AM	51.1	60.8	46.7
02:05 AM - 02:10 AM	50.9	62.6	46.1
02:10 AM - 02:15 AM	49.1	58.4	46.1
02:15 AM - 02:20 AM	50.7	61.0	45.9
02:20 AM - 02:25 AM	49.1	59.5	45.9
02:25 AM - 02:30 AM	51.2	61.6	46.3
02:30 AM - 02:35 AM	49.7	59.6	46.0
02:35 AM - 02:40 AM	49.8	61.0	45.9
02:40 AM - 02:45 AM	53.5	65.9	46.6
02:45 AM - 02:50 AM	51.8	61.5	46.4
02:50 AM - 02:55 AM	49.0	59.1	45.9
02:55 AM - 03:00 AM	51.5	63.7	46.0
03:00 AM - 03:05 AM	51.9	61.5	46.4
03:05 AM - 03:10 AM	49.8	60.8	38.8
03:10 AM - 03:15 AM	50.5	62.3	39.6
03:15 AM - 03:20 AM	47.6	59.1	38.5
03:20 AM - 03:25 AM	50.9	64.3	41.6
03:25 AM - 03:30 AM	54.8	72.9	40.6
03:30 AM - 03:35 AM	49.7	62.3	39.8
03:35 AM - 03:40 AM	53.8	67.4	43.2
03:40 AM - 03:45 AM	50.0	64.3	39.9

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142078  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537208-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142078-3  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929) (Shut down)  
Measurement Date Jun 29 - 30, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 900075

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:45 AM - 03:50 AM	51.7	61.8	42.1
03:50 AM - 03:55 AM	52.3	65.8	42.6
03:55 AM - 04:00 AM	50.8	61.7	41.4
04:00 AM - 04:05 AM	51.0	61.9	41.2
04:05 AM - 04:10 AM	52.2	70.3	42.8
04:10 AM - 04:15 AM	52.3	65.7	44.1
04:15 AM - 04:20 AM	51.7	62.5	44.4
04:20 AM - 04:25 AM	51.1	63.7	44.8
04:25 AM - 04:30 AM	49.8	58.5	44.8
04:30 AM - 04:35 AM	51.2	61.5	45.8
04:35 AM - 04:40 AM	50.2	60.4	44.5
04:40 AM - 04:45 AM	49.4	58.0	43.9
04:45 AM - 04:50 AM	50.9	60.1	44.2
04:50 AM - 04:55 AM	52.9	63.7	44.6
04:55 AM - 05:00 AM	53.5	63.3	46.0
05:00 AM - 05:05 AM	52.3	64.9	43.7
05:05 AM - 05:10 AM	52.9	70.3	42.6
05:10 AM - 05:15 AM	51.7	63.2	44.9
05:15 AM - 05:20 AM	53.8	71.9	44.9
05:20 AM - 05:25 AM	54.6	70.1	45.4
05:25 AM - 05:30 AM	53.2	62.4	44.2
05:30 AM - 05:35 AM	53.5	62.6	44.7
05:35 AM - 05:40 AM	54.2	64.2	43.3
05:40 AM - 05:45 AM	53.7	61.4	46.7
05:45 AM - 05:50 AM	54.0	61.5	47.6
05:50 AM - 05:55 AM	54.5	64.4	47.8
05:55 AM - 06:00 AM	53.9	65.8	45.4
06:00 AM - 07:00 AM	56.0	73.9	49.3
07:00 AM - 08:00 AM	57.0	76.7	51.4
08:00 AM - 09:00 AM	55.4	71.5	49.5
09:00 AM - 10:00 AM	59.2	92.9	49.2
10:00 AM - 11:00 AM	55.8	79.4	49.3

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142078  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537209-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142078-4  
Parameter Noise  
Location รื่นร่ำกุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929) (Shut down)  
Measurement Date Jun 30 - Jul 01, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 900075

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	56.2	84.7	49.8
12:00 PM - 01:00 PM	54.7	75.9	48.7
01:00 PM - 02:00 PM	55.5	75.1	49.0
02:00 PM - 03:00 PM	58.6	84.7	51.3
03:00 PM - 04:00 PM	59.1	86.2	54.2
04:00 PM - 05:00 PM	59.6	86.2	54.7
05:00 PM - 06:00 PM	58.9	77.4	54.1
06:00 PM - 07:00 PM	56.4	79.8	50.0
07:00 PM - 08:00 PM	54.6	71.7	48.5
08:00 PM - 09:00 PM	55.2	75.7	47.6
09:00 PM - 10:00 PM	53.5	68.9	46.0
10:00 PM - 10:05 PM	54.6	71.3	45.8
10:05 PM - 10:10 PM	51.9	61.5	44.3
10:10 PM - 10:15 PM	51.9	60.8	44.8
10:15 PM - 10:20 PM	51.8	62.5	45.1
10:20 PM - 10:25 PM	52.7	64.2	43.3
10:25 PM - 10:30 PM	49.1	60.2	42.2
10:30 PM - 10:35 PM	52.1	64.1	44.3
10:35 PM - 10:40 PM	53.1	63.4	42.8
10:40 PM - 10:45 PM	52.3	66.2	43.7
10:45 PM - 10:50 PM	50.3	61.4	42.7
10:50 PM - 10:55 PM	51.6	60.3	43.4
10:55 PM - 11:00 PM	51.1	62.8	42.8
11:00 PM - 11:05 PM	50.9	62.2	43.5
11:05 PM - 11:10 PM	52.8	76.1	43.1
11:10 PM - 11:15 PM	49.8	61.8	41.9
11:15 PM - 11:20 PM	49.5	59.9	42.2
11:20 PM - 11:25 PM	52.7	64.0	44.7
11:25 PM - 11:30 PM	50.8	62.5	43.4
11:30 PM - 11:35 PM	50.9	60.8	43.8
11:35 PM - 11:40 PM	50.5	59.0	44.4
11:40 PM - 11:45 PM	55.7	79.9	44.2
11:45 PM - 11:50 PM	50.1	58.7	43.3
11:50 PM - 11:55 PM	52.4	64.6	45.0
11:55 PM - 12:00 AM	52.7	68.6	43.2
12:00 AM - 12:05 AM	53.1	69.2	42.9
12:05 AM - 12:10 AM	51.0	63.7	42.1
12:10 AM - 12:15 AM	48.9	60.2	41.7
12:15 AM - 12:20 AM	51.6	65.6	42.1
12:20 AM - 12:25 AM	50.8	61.7	41.2

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

Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142078  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537209-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142078-4  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929) (Shut down)  
Measurement Date Jun 30 - Jul 01, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 900075

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:25 AM - 12:30 AM	51.2	62.7	41.6
12:30 AM - 12:35 AM	51.4	68.1	41.5
12:35 AM - 12:40 AM	51.7	67.7	44.5
12:40 AM - 12:45 AM	52.7	65.0	43.0
12:45 AM - 12:50 AM	47.2	58.4	40.6
12:50 AM - 12:55 AM	52.2	65.0	43.2
12:55 AM - 01:00 AM	49.9	61.7	41.7
01:00 AM - 01:05 AM	50.7	62.9	40.1
01:05 AM - 01:10 AM	49.4	61.8	42.0
01:10 AM - 01:15 AM	46.1	57.6	40.7
01:15 AM - 01:20 AM	55.0	71.0	44.4
01:20 AM - 01:25 AM	49.0	60.8	39.9
01:25 AM - 01:30 AM	50.1	65.6	40.4
01:30 AM - 01:35 AM	54.4	72.7	43.9
01:35 AM - 01:40 AM	53.0	66.2	42.3
01:40 AM - 01:45 AM	50.8	60.8	41.3
01:45 AM - 01:50 AM	52.3	64.1	42.3
01:50 AM - 01:55 AM	53.9	67.3	45.3
01:55 AM - 02:00 AM	49.6	60.2	41.7
02:00 AM - 02:05 AM	51.7	61.6	45.1
02:05 AM - 02:10 AM	50.3	61.6	40.1
02:10 AM - 02:15 AM	50.0	61.1	41.3
02:15 AM - 02:20 AM	51.0	63.8	41.3
02:20 AM - 02:25 AM	49.3	62.6	40.8
02:25 AM - 02:30 AM	64.5	88.7	42.4
02:30 AM - 02:35 AM	50.8	62.4	39.6
02:35 AM - 02:40 AM	51.4	62.3	42.5
02:40 AM - 02:45 AM	52.1	64.7	43.1
02:45 AM - 02:50 AM	50.3	62.1	40.9
02:50 AM - 02:55 AM	61.6	74.7	46.0
02:55 AM - 03:00 AM	51.0	62.8	43.6
03:00 AM - 03:05 AM	52.0	62.4	42.0
03:05 AM - 03:10 AM	50.0	63.4	41.8
03:10 AM - 03:15 AM	50.2	62.1	42.6
03:15 AM - 03:20 AM	51.4	65.8	43.4
03:20 AM - 03:25 AM	52.0	62.5	43.8
03:25 AM - 03:30 AM	50.3	62.3	41.3
03:30 AM - 03:35 AM	59.6	77.8	43.5
03:35 AM - 03:40 AM	54.3	73.7	41.2
03:40 AM - 03:45 AM	53.2	64.6	45.2

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142078  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537209-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142078-4  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929) (Shut down)  
Measurement Date Jun 30 - Jul 01, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 900075

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:45 AM - 03:50 AM	54.9	64.9	45.2
03:50 AM - 03:55 AM	52.0	61.9	42.8
03:55 AM - 04:00 AM	51.0	63.9	41.4
04:00 AM - 04:05 AM	52.0	63.3	41.8
04:05 AM - 04:10 AM	51.7	65.9	42.4
04:10 AM - 04:15 AM	52.7	64.9	42.4
04:15 AM - 04:20 AM	55.0	65.7	44.6
04:20 AM - 04:25 AM	54.1	66.7	45.3
04:25 AM - 04:30 AM	54.4	65.9	45.9
04:30 AM - 04:35 AM	53.4	62.7	45.8
04:35 AM - 04:40 AM	52.1	63.6	45.3
04:40 AM - 04:45 AM	54.2	62.6	45.7
04:45 AM - 04:50 AM	60.0	74.9	48.2
04:50 AM - 04:55 AM	54.4	64.8	45.4
04:55 AM - 05:00 AM	54.4	63.8	47.7
05:00 AM - 05:05 AM	54.5	70.6	46.6
05:05 AM - 05:10 AM	53.9	65.0	45.6
05:10 AM - 05:15 AM	54.8	71.0	47.0
05:15 AM - 05:20 AM	51.4	61.6	44.3
05:20 AM - 05:25 AM	53.7	64.0	44.1
05:25 AM - 05:30 AM	53.6	65.7	44.1
05:30 AM - 05:35 AM	53.5	61.8	46.7
05:35 AM - 05:40 AM	55.1	68.2	47.1
05:40 AM - 05:45 AM	55.8	62.4	48.5
05:45 AM - 05:50 AM	61.2	74.4	52.3
05:50 AM - 05:55 AM	55.5	63.8	46.7
05:55 AM - 06:00 AM	54.5	63.8	48.0
06:00 AM - 07:00 AM	57.3	81.5	50.1
07:00 AM - 08:00 AM	57.6	75.5	51.5
08:00 AM - 09:00 AM	60.1	87.7	51.5
09:00 AM - 10:00 AM	58.7	79.8	51.5
10:00 AM - 11:00 AM	57.9	79.7	51.4

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142078  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537210-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142078-5  
Parameter Noise  
Location รื่นรุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929) (Shut down)  
Measurement Date Jul 01 - 02, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 900075

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	57.8	87.2	50.3
12:00 PM - 01:00 PM	55.9	74.1	49.8
01:00 PM - 02:00 PM	58.1	87.2	49.6
02:00 PM - 03:00 PM	57.4	75.0	51.7
03:00 PM - 04:00 PM	58.0	88.9	51.2
04:00 PM - 05:00 PM	59.0	86.5	51.9
05:00 PM - 06:00 PM	57.0	77.4	51.7
06:00 PM - 07:00 PM	56.2	80.8	49.8
07:00 PM - 08:00 PM	54.7	74.1	49.1
08:00 PM - 09:00 PM	55.2	78.9	47.6
09:00 PM - 10:00 PM	53.9	69.5	45.4
10:00 PM - 10:05 PM	53.3	70.9	44.0
10:05 PM - 10:10 PM	53.1	68.5	45.0
10:10 PM - 10:15 PM	56.2	71.6	44.4
10:15 PM - 10:20 PM	53.6	62.0	44.0
10:20 PM - 10:25 PM	50.9	61.6	43.0
10:25 PM - 10:30 PM	48.6	60.8	41.1
10:30 PM - 10:35 PM	50.4	61.6	41.0
10:35 PM - 10:40 PM	49.7	60.1	41.5
10:40 PM - 10:45 PM	48.8	59.0	44.2
10:45 PM - 10:50 PM	49.1	60.1	42.0
10:50 PM - 10:55 PM	51.5	62.1	44.0
10:55 PM - 11:00 PM	53.4	61.9	47.8
11:00 PM - 11:05 PM	59.8	66.6	53.2
11:05 PM - 11:10 PM	57.8	64.6	52.2
11:10 PM - 11:15 PM	52.9	59.5	48.8
11:15 PM - 11:20 PM	59.5	64.2	52.4
11:20 PM - 11:25 PM	62.6	66.7	61.0
11:25 PM - 11:30 PM	57.5	62.1	54.2
11:30 PM - 11:35 PM	56.6	61.4	54.0
11:35 PM - 11:40 PM	62.6	65.6	56.1
11:40 PM - 11:45 PM	59.8	65.2	50.8
11:45 PM - 11:50 PM	57.6	68.8	47.5
11:50 PM - 11:55 PM	51.7	61.2	45.9
11:55 PM - 12:00 AM	50.2	61.1	42.7
12:00 AM - 12:05 AM	51.7	62.9	42.8
12:05 AM - 12:10 AM	52.2	66.1	43.2
12:10 AM - 12:15 AM	50.6	61.2	40.1
12:15 AM - 12:20 AM	48.6	60.5	40.5
12:20 AM - 12:25 AM	52.9	62.7	41.8

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142078  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537210-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142078-5  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929) (Shut down)  
Measurement Date Jul 01 - 02, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 900075

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:25 AM - 12:30 AM	47.5	60.4	39.6
12:30 AM - 12:35 AM	53.2	73.6	39.8
12:35 AM - 12:40 AM	48.4	57.9	41.9
12:40 AM - 12:45 AM	49.1	64.2	41.6
12:45 AM - 12:50 AM	50.9	62.5	41.7
12:50 AM - 12:55 AM	48.6	62.5	40.6
12:55 AM - 01:00 AM	52.5	62.0	45.4
01:00 AM - 01:05 AM	50.1	60.8	44.5
01:05 AM - 01:10 AM	50.0	59.1	42.8
01:10 AM - 01:15 AM	50.1	60.9	41.7
01:15 AM - 01:20 AM	47.1	60.9	40.3
01:20 AM - 01:25 AM	48.2	57.7	40.5
01:25 AM - 01:30 AM	51.5	61.9	42.4
01:30 AM - 01:35 AM	48.5	60.4	41.9
01:35 AM - 01:40 AM	54.7	73.8	49.2
01:40 AM - 01:45 AM	54.1	58.4	50.1
01:45 AM - 01:50 AM	52.0	58.9	47.8
01:50 AM - 01:55 AM	55.3	59.3	52.7
01:55 AM - 02:00 AM	55.0	61.9	52.8
02:00 AM - 02:05 AM	53.4	61.6	50.9
02:05 AM - 02:10 AM	51.9	61.8	48.9
02:10 AM - 02:15 AM	49.9	60.4	45.0
02:15 AM - 02:20 AM	50.3	65.8	42.7
02:20 AM - 02:25 AM	49.3	59.6	41.4
02:25 AM - 02:30 AM	50.6	63.2	41.4
02:30 AM - 02:35 AM	55.8	65.8	41.2
02:35 AM - 02:40 AM	49.8	61.0	40.0
02:40 AM - 02:45 AM	52.9	65.9	41.6
02:45 AM - 02:50 AM	51.7	61.4	40.3
02:50 AM - 02:55 AM	49.6	63.1	39.1
02:55 AM - 03:00 AM	48.1	67.5	38.7
03:00 AM - 03:05 AM	52.1	66.2	39.7
03:05 AM - 03:10 AM	53.0	63.4	42.7
03:10 AM - 03:15 AM	50.9	60.4	40.9
03:15 AM - 03:20 AM	57.6	78.1	41.9
03:20 AM - 03:25 AM	51.2	64.2	41.8
03:25 AM - 03:30 AM	51.4	59.0	41.8
03:30 AM - 03:35 AM	50.6	63.2	39.2
03:35 AM - 03:40 AM	52.9	67.5	42.2
03:40 AM - 03:45 AM	51.3	61.7	40.5

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142078  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537210-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142078-5  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929) (Shut down)  
Measurement Date Jul 01 - 02, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 900075

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:45 AM - 03:50 AM	51.6	61.7	39.8
03:50 AM - 03:55 AM	51.9	63.0	39.5
03:55 AM - 04:00 AM	50.7	62.4	41.7
04:00 AM - 04:05 AM	54.9	72.7	43.6
04:05 AM - 04:10 AM	52.4	62.2	46.7
04:10 AM - 04:15 AM	52.3	65.4	46.2
04:15 AM - 04:20 AM	52.3	64.9	47.4
04:20 AM - 04:25 AM	51.5	65.2	47.6
04:25 AM - 04:30 AM	52.3	61.4	47.8
04:30 AM - 04:35 AM	53.3	61.8	47.8
04:35 AM - 04:40 AM	51.4	61.3	45.7
04:40 AM - 04:45 AM	51.3	62.9	43.7
04:45 AM - 04:50 AM	51.1	60.2	45.2
04:50 AM - 04:55 AM	53.9	64.5	46.4
04:55 AM - 05:00 AM	50.6	59.9	42.7
05:00 AM - 05:05 AM	52.1	60.3	43.4
05:05 AM - 05:10 AM	52.9	61.1	44.2
05:10 AM - 05:15 AM	51.7	61.5	41.8
05:15 AM - 05:20 AM	51.1	61.8	42.5
05:20 AM - 05:25 AM	52.9	67.7	44.2
05:25 AM - 05:30 AM	54.7	73.7	44.2
05:30 AM - 05:35 AM	52.8	60.6	45.9
05:35 AM - 05:40 AM	54.6	63.4	48.2
05:40 AM - 05:45 AM	54.0	64.6	46.4
05:45 AM - 05:50 AM	53.5	63.1	46.9
05:50 AM - 05:55 AM	54.0	62.1	47.0
05:55 AM - 06:00 AM	53.6	62.6	45.5
06:00 AM - 07:00 AM	56.5	74.6	49.3
07:00 AM - 08:00 AM	57.4	76.0	51.3
08:00 AM - 09:00 AM	57.4	75.9	50.8
09:00 AM - 10:00 AM	57.4	71.3	51.6
10:00 AM - 11:00 AM	57.5	79.1	51.5

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142078  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537211-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142078-6  
Parameter Noise  
Location รื่นรักลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929) (Shut down)  
Measurement Date Jul 02 - 03, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 900075

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	54.1	75.9	48.1
12:00 PM - 01:00 PM	53.9	75.6	48.2
01:00 PM - 02:00 PM	51.5	69.5	46.1
02:00 PM - 03:00 PM	50.5	67.2	44.5
03:00 PM - 04:00 PM	51.7	75.5	45.0
04:00 PM - 05:00 PM	51.2	73.8	44.7
05:00 PM - 06:00 PM	52.5	76.0	45.7
06:00 PM - 07:00 PM	50.9	69.4	44.8
07:00 PM - 08:00 PM	50.8	69.6	43.9
08:00 PM - 09:00 PM	49.9	70.2	42.1
09:00 PM - 10:00 PM	49.0	71.5	40.8
10:00 PM - 10:05 PM	46.6	57.8	40.1
10:05 PM - 10:10 PM	48.5	59.7	41.4
10:10 PM - 10:15 PM	49.1	58.4	42.6
10:15 PM - 10:20 PM	48.2	59.0	40.6
10:20 PM - 10:25 PM	54.8	70.1	43.4
10:25 PM - 10:30 PM	51.9	69.5	42.9
10:30 PM - 10:35 PM	51.6	68.4	40.0
10:35 PM - 10:40 PM	49.3	59.6	39.3
10:40 PM - 10:45 PM	48.5	61.5	38.1
10:45 PM - 10:50 PM	48.1	59.6	40.5
10:50 PM - 10:55 PM	48.3	60.2	40.1
10:55 PM - 11:00 PM	48.7	60.1	39.8
11:00 PM - 11:05 PM	48.5	56.8	42.0
11:05 PM - 11:10 PM	46.3	57.8	38.9
11:10 PM - 11:15 PM	50.3	68.2	37.9
11:15 PM - 11:20 PM	48.8	62.1	39.4
11:20 PM - 11:25 PM	46.6	56.6	39.4
11:25 PM - 11:30 PM	44.0	56.1	37.2
11:30 PM - 11:35 PM	46.0	60.0	38.5
11:35 PM - 11:40 PM	48.2	58.4	40.5
11:40 PM - 11:45 PM	48.3	58.4	41.1
11:45 PM - 11:50 PM	49.1	59.6	40.5
11:50 PM - 11:55 PM	47.4	64.5	37.8
11:55 PM - 12:00 AM	44.9	57.2	38.4
12:00 AM - 12:05 AM	45.6	58.7	37.0
12:05 AM - 12:10 AM	47.3	58.1	39.1
12:10 AM - 12:15 AM	47.2	58.1	36.6
12:15 AM - 12:20 AM	46.5	59.0	37.0
12:20 AM - 12:25 AM	45.9	57.5	37.5

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142078  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537211-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142078-6  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929) (Shut down)  
Measurement Date Jul 02 - 03, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 900075

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:25 AM - 12:30 AM	46.5	56.8	35.7
12:30 AM - 12:35 AM	46.2	56.5	36.3
12:35 AM - 12:40 AM	47.3	60.1	38.5
12:40 AM - 12:45 AM	46.4	58.6	35.7
12:45 AM - 12:50 AM	45.5	57.8	36.8
12:50 AM - 12:55 AM	45.2	56.4	37.1
12:55 AM - 01:00 AM	48.7	60.3	38.0
01:00 AM - 01:05 AM	45.8	58.6	37.6
01:05 AM - 01:10 AM	45.4	54.7	38.4
01:10 AM - 01:15 AM	44.0	59.4	36.8
01:15 AM - 01:20 AM	47.0	58.0	38.3
01:20 AM - 01:25 AM	48.7	60.6	40.6
01:25 AM - 01:30 AM	46.5	60.7	39.3
01:30 AM - 01:35 AM	47.2	58.0	38.7
01:35 AM - 01:40 AM	45.9	58.1	37.3
01:40 AM - 01:45 AM	47.0	58.7	37.8
01:45 AM - 01:50 AM	48.0	63.4	37.4
01:50 AM - 01:55 AM	46.4	58.1	37.9
01:55 AM - 02:00 AM	46.6	58.7	35.2
02:00 AM - 02:05 AM	45.0	55.2	35.8
02:05 AM - 02:10 AM	46.7	59.6	38.8
02:10 AM - 02:15 AM	47.9	61.1	38.8
02:15 AM - 02:20 AM	47.0	57.8	38.0
02:20 AM - 02:25 AM	48.7	62.3	38.6
02:25 AM - 02:30 AM	42.4	56.6	35.5
02:30 AM - 02:35 AM	46.6	57.7	37.4
02:35 AM - 02:40 AM	49.5	60.2	42.9
02:40 AM - 02:45 AM	47.9	59.3	39.0
02:45 AM - 02:50 AM	47.1	57.0	38.5
02:50 AM - 02:55 AM	48.2	59.6	35.6
02:55 AM - 03:00 AM	49.2	59.3	39.4
03:00 AM - 03:05 AM	46.5	59.9	34.9
03:05 AM - 03:10 AM	48.5	59.7	35.6
03:10 AM - 03:15 AM	47.3	61.4	37.4
03:15 AM - 03:20 AM	52.9	71.0	40.2
03:20 AM - 03:25 AM	45.9	57.5	38.0
03:25 AM - 03:30 AM	48.0	60.6	39.3
03:30 AM - 03:35 AM	45.3	60.6	36.4
03:35 AM - 03:40 AM	47.9	65.4	37.0
03:40 AM - 03:45 AM	47.3	58.8	37.5

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Approved by

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142078  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537211-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142078-6  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929) (Shut down)  
Measurement Date Jul 02 - 03, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 900075

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:45 AM - 03:50 AM	45.3	55.8	36.5
03:50 AM - 03:55 AM	47.8	57.7	37.7
03:55 AM - 04:00 AM	49.0	61.3	36.5
04:00 AM - 04:05 AM	45.6	57.5	36.5
04:05 AM - 04:10 AM	47.5	59.6	36.8
04:10 AM - 04:15 AM	50.3	64.0	39.2
04:15 AM - 04:20 AM	47.0	58.6	38.8
04:20 AM - 04:25 AM	47.9	61.7	38.5
04:25 AM - 04:30 AM	51.2	66.6	38.6
04:30 AM - 04:35 AM	48.9	60.3	39.0
04:35 AM - 04:40 AM	50.3	61.2	40.5
04:40 AM - 04:45 AM	50.0	66.2	40.6
04:45 AM - 04:50 AM	48.9	61.9	39.9
04:50 AM - 04:55 AM	49.2	59.9	39.8
04:55 AM - 05:00 AM	49.0	60.5	39.4
05:00 AM - 05:05 AM	50.1	62.1	40.5
05:05 AM - 05:10 AM	47.7	57.5	38.9
05:10 AM - 05:15 AM	47.0	56.7	40.3
05:15 AM - 05:20 AM	48.2	59.1	40.3
05:20 AM - 05:25 AM	49.1	61.4	41.1
05:25 AM - 05:30 AM	51.3	60.1	43.6
05:30 AM - 05:35 AM	50.5	64.4	40.9
05:35 AM - 05:40 AM	52.2	69.1	41.2
05:40 AM - 05:45 AM	52.5	63.1	43.5
05:45 AM - 05:50 AM	50.6	65.4	42.5
05:50 AM - 05:55 AM	53.1	62.2	46.1
05:55 AM - 06:00 AM	51.0	61.0	44.2
06:00 AM - 07:00 AM	52.2	66.5	44.8
07:00 AM - 08:00 AM	54.9	71.5	48.1
08:00 AM - 09:00 AM	55.1	70.0	49.0
09:00 AM - 10:00 AM	55.1	73.7	49.4
10:00 AM - 11:00 AM	53.5	73.1	48.4

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142078  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537212-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142078-7  
Parameter Noise  
Location รื่นรำกุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929) (Shut down)  
Measurement Date Jul 03 - 04, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 900075

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	55.9	73.3	51.2
12:00 PM - 01:00 PM	54.7	69.4	49.9
01:00 PM - 02:00 PM	54.1	66.7	49.3
02:00 PM - 03:00 PM	55.5	74.3	49.7
03:00 PM - 04:00 PM	55.8	74.3	50.2
04:00 PM - 05:00 PM	56.1	69.1	51.4
05:00 PM - 06:00 PM	57.2	76.4	52.2
06:00 PM - 07:00 PM	56.3	71.6	50.7
07:00 PM - 08:00 PM	55.4	75.4	49.5
08:00 PM - 09:00 PM	54.3	70.2	47.6
09:00 PM - 10:00 PM	53.8	74.3	47.4
10:00 PM - 10:05 PM	52.4	66.2	44.4
10:05 PM - 10:10 PM	53.0	61.6	45.5
10:10 PM - 10:15 PM	53.0	67.2	46.7
10:15 PM - 10:20 PM	51.3	62.2	43.5
10:20 PM - 10:25 PM	52.6	66.7	44.3
10:25 PM - 10:30 PM	51.5	60.5	45.7
10:30 PM - 10:35 PM	50.3	61.5	42.9
10:35 PM - 10:40 PM	52.0	64.6	43.6
10:40 PM - 10:45 PM	52.3	69.9	44.6
10:45 PM - 10:50 PM	52.5	62.4	44.1
10:50 PM - 10:55 PM	50.9	62.1	41.7
10:55 PM - 11:00 PM	49.8	59.4	41.8
11:00 PM - 11:05 PM	51.0	63.3	43.2
11:05 PM - 11:10 PM	53.1	65.7	44.4
11:10 PM - 11:15 PM	51.5	64.8	43.4
11:15 PM - 11:20 PM	50.4	62.8	42.2
11:20 PM - 11:25 PM	52.4	64.1	42.7
11:25 PM - 11:30 PM	50.9	63.0	42.7
11:30 PM - 11:35 PM	51.4	64.8	42.6
11:35 PM - 11:40 PM	50.6	60.0	43.1
11:40 PM - 11:45 PM	52.3	67.6	42.7
11:45 PM - 11:50 PM	49.6	63.7	41.2
11:50 PM - 11:55 PM	53.1	65.7	42.9
11:55 PM - 12:00 AM	53.6	66.3	42.3
12:00 AM - 12:05 AM	49.4	59.8	43.0
12:05 AM - 12:10 AM	50.0	62.4	41.9
12:10 AM - 12:15 AM	46.9	62.3	40.5
12:15 AM - 12:20 AM	49.3	60.3	42.5
12:20 AM - 12:25 AM	49.1	58.3	41.5

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142078  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537212-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142078-7  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929) (Shut down)  
Measurement Date Jul 03 - 04, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 900075

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:25 AM - 12:30 AM	50.9	62.7	43.3
12:30 AM - 12:35 AM	51.6	63.8	42.0
12:35 AM - 12:40 AM	50.6	62.1	38.9
12:40 AM - 12:45 AM	50.3	62.5	39.7
12:45 AM - 12:50 AM	51.2	64.6	42.5
12:50 AM - 12:55 AM	52.8	71.3	40.8
12:55 AM - 01:00 AM	48.9	60.4	38.1
01:00 AM - 01:05 AM	50.8	63.8	40.6
01:05 AM - 01:10 AM	51.1	62.3	42.3
01:10 AM - 01:15 AM	48.3	59.2	38.6
01:15 AM - 01:20 AM	48.7	58.4	41.7
01:20 AM - 01:25 AM	49.8	60.8	41.9
01:25 AM - 01:30 AM	50.1	68.0	40.5
01:30 AM - 01:35 AM	44.9	56.8	37.8
01:35 AM - 01:40 AM	48.0	59.6	40.4
01:40 AM - 01:45 AM	49.8	62.8	40.6
01:45 AM - 01:50 AM	50.9	59.9	42.6
01:50 AM - 01:55 AM	48.6	61.0	38.9
01:55 AM - 02:00 AM	49.4	63.0	40.9
02:00 AM - 02:05 AM	48.1	59.0	39.6
02:05 AM - 02:10 AM	50.3	61.1	41.4
02:10 AM - 02:15 AM	50.9	68.2	39.6
02:15 AM - 02:20 AM	48.9	62.2	39.8
02:20 AM - 02:25 AM	50.1	61.9	41.0
02:25 AM - 02:30 AM	47.4	59.2	39.3
02:30 AM - 02:35 AM	51.1	64.4	42.8
02:35 AM - 02:40 AM	50.7	60.8	41.1
02:40 AM - 02:45 AM	46.8	57.5	37.7
02:45 AM - 02:50 AM	50.7	65.1	41.0
02:50 AM - 02:55 AM	51.7	68.7	41.1
02:55 AM - 03:00 AM	50.3	61.0	41.2
03:00 AM - 03:05 AM	50.0	64.2	39.9
03:05 AM - 03:10 AM	49.5	60.9	40.7
03:10 AM - 03:15 AM	52.1	66.9	39.9
03:15 AM - 03:20 AM	50.3	61.6	42.1
03:20 AM - 03:25 AM	51.6	62.2	41.7
03:25 AM - 03:30 AM	49.9	59.3	39.9
03:30 AM - 03:35 AM	48.2	59.3	38.7
03:35 AM - 03:40 AM	50.8	61.0	41.3
03:40 AM - 03:45 AM	49.6	60.2	41.2

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142078  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537212-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142078-7  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันออก (GPS 48Q 279462, 1888929) (Shut down)  
Measurement Date Jul 03 - 04, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 900075

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:45 AM - 03:50 AM	50.6	62.0	41.0
03:50 AM - 03:55 AM	50.9	63.1	40.5
03:55 AM - 04:00 AM	52.1	64.8	42.0
04:00 AM - 04:05 AM	51.2	60.9	42.6
04:05 AM - 04:10 AM	53.1	64.7	42.2
04:10 AM - 04:15 AM	51.9	62.9	41.1
04:15 AM - 04:20 AM	51.7	62.4	41.6
04:20 AM - 04:25 AM	50.1	60.1	40.6
04:25 AM - 04:30 AM	52.0	63.0	41.4
04:30 AM - 04:35 AM	49.5	59.6	40.5
04:35 AM - 04:40 AM	49.1	60.7	42.0
04:40 AM - 04:45 AM	52.2	63.3	43.2
04:45 AM - 04:50 AM	50.8	60.9	43.3
04:50 AM - 04:55 AM	52.1	64.0	43.5
04:55 AM - 05:00 AM	50.5	64.2	42.1
05:00 AM - 05:05 AM	51.9	62.0	44.5
05:05 AM - 05:10 AM	50.4	61.2	40.7
05:10 AM - 05:15 AM	52.5	62.0	42.9
05:15 AM - 05:20 AM	55.1	68.0	44.7
05:20 AM - 05:25 AM	54.1	64.2	46.6
05:25 AM - 05:30 AM	52.9	63.4	44.7
05:30 AM - 05:35 AM	53.7	64.6	47.4
05:35 AM - 05:40 AM	54.6	64.9	49.0
05:40 AM - 05:45 AM	52.6	61.5	46.3
05:45 AM - 05:50 AM	53.6	61.1	47.4
05:50 AM - 05:55 AM	54.5	64.7	47.9
05:55 AM - 06:00 AM	55.9	70.2	50.2
06:00 AM - 07:00 AM	57.3	82.2	50.0
07:00 AM - 08:00 AM	56.9	74.0	51.7
08:00 AM - 09:00 AM	56.2	81.6	50.7
09:00 AM - 10:00 AM	55.8	77.4	50.3
10:00 AM - 11:00 AM	56.6	78.2	50.7

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142082  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537214-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142082-1  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277658, 1888884) (Shut down)  
Measurement Date Jun 27 - 28, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00371914

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	54.0	58.9	52.8
01:00 PM - 02:00 PM	53.2	58.3	51.9
02:00 PM - 03:00 PM	53.2	60.0	51.7
03:00 PM - 04:00 PM	49.6	54.7	47.3
04:00 PM - 05:00 PM	44.1	64.6	40.2
05:00 PM - 06:00 PM	46.9	75.9	40.5
06:00 PM - 07:00 PM	45.2	64.4	42.8
07:00 PM - 08:00 PM	43.7	65.6	39.6
08:00 PM - 09:00 PM	42.8	67.1	38.1
09:00 PM - 10:00 PM	44.6	68.5	37.7
10:00 PM - 10:05 PM	39.7	51.5	36.7
10:05 PM - 10:10 PM	37.8	50.8	35.7
10:10 PM - 10:15 PM	39.7	54.5	37.0
10:15 PM - 10:20 PM	39.4	54.7	36.8
10:20 PM - 10:25 PM	40.2	52.4	36.3
10:25 PM - 10:30 PM	38.4	55.6	35.6
10:30 PM - 10:35 PM	39.4	50.2	37.3
10:35 PM - 10:40 PM	40.6	59.7	37.8
10:40 PM - 10:45 PM	45.1	61.4	37.8
10:45 PM - 10:50 PM	42.6	63.0	37.4
10:50 PM - 10:55 PM	38.8	52.8	36.4
10:55 PM - 11:00 PM	45.1	58.5	36.7
11:00 PM - 11:05 PM	44.4	67.6	41.4
11:05 PM - 11:10 PM	42.6	64.3	39.2
11:10 PM - 11:15 PM	43.2	62.5	40.7
11:15 PM - 11:20 PM	41.5	52.0	38.4
11:20 PM - 11:25 PM	42.5	61.5	38.9
11:25 PM - 11:30 PM	43.7	64.2	40.6
11:30 PM - 11:35 PM	42.9	63.1	39.2
11:35 PM - 11:40 PM	41.6	55.4	38.1
11:40 PM - 11:45 PM	44.4	67.6	41.4
11:45 PM - 11:50 PM	41.8	55.6	38.1
11:50 PM - 11:55 PM	43.3	67.9	37.5
11:55 PM - 12:00 AM	39.6	57.1	35.2
12:00 AM - 12:05 AM	39.2	52.7	35.5
12:05 AM - 12:10 AM	41.2	63.0	35.5
12:10 AM - 12:15 AM	42.4	67.5	35.4
12:15 AM - 12:20 AM	42.0	64.5	37.1
12:20 AM - 12:25 AM	43.1	62.7	37.4
12:25 AM - 12:30 AM	45.7	56.0	36.9

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142082  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537214-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142082-1  
Parameter Noise  
Location ร่มรักกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277658, 1888884) (Shut down)  
Measurement Date Jun 27 - 28, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00371914

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:30 AM - 12:35 AM	40.0	59.9	36.6
12:35 AM - 12:40 AM	46.3	68.4	37.5
12:40 AM - 12:45 AM	49.7	67.9	35.9
12:45 AM - 12:50 AM	46.7	67.6	37.0
12:50 AM - 12:55 AM	41.2	55.1	36.5
12:55 AM - 01:00 AM	40.9	54.1	36.2
01:00 AM - 01:05 AM	41.3	57.7	36.4
01:05 AM - 01:10 AM	39.7	64.3	36.2
01:10 AM - 01:15 AM	38.0	51.0	35.2
01:15 AM - 01:20 AM	45.1	63.4	35.1
01:20 AM - 01:25 AM	40.9	62.7	35.7
01:25 AM - 01:30 AM	42.6	59.6	35.5
01:30 AM - 01:35 AM	41.2	60.0	35.9
01:35 AM - 01:40 AM	42.4	61.5	35.7
01:40 AM - 01:45 AM	47.3	63.6	36.1
01:45 AM - 01:50 AM	44.8	63.2	36.9
01:50 AM - 01:55 AM	39.4	51.1	36.4
01:55 AM - 02:00 AM	40.9	52.3	37.1
02:00 AM - 02:05 AM	38.8	46.4	36.3
02:05 AM - 02:10 AM	38.7	60.6	35.8
02:10 AM - 02:15 AM	39.2	49.8	36.7
02:15 AM - 02:20 AM	39.2	58.9	36.2
02:20 AM - 02:25 AM	40.1	46.5	38.0
02:25 AM - 02:30 AM	42.5	61.5	37.7
02:30 AM - 02:35 AM	45.5	61.8	38.3
02:35 AM - 02:40 AM	41.0	48.5	38.3
02:40 AM - 02:45 AM	40.8	49.5	38.2
02:45 AM - 02:50 AM	41.5	51.9	38.4
02:50 AM - 02:55 AM	40.8	50.8	37.2
02:55 AM - 03:00 AM	41.4	51.7	37.6
03:00 AM - 03:05 AM	46.4	54.9	43.8
03:05 AM - 03:10 AM	52.3	56.9	44.6
03:10 AM - 03:15 AM	52.8	57.0	46.5
03:15 AM - 03:20 AM	47.4	51.9	45.1
03:20 AM - 03:25 AM	47.5	51.9	45.1
03:25 AM - 03:30 AM	47.3	57.3	45.2
03:30 AM - 03:35 AM	47.6	55.2	44.8
03:35 AM - 03:40 AM	47.6	51.7	44.5
03:40 AM - 03:45 AM	44.8	53.1	43.1
03:45 AM - 03:50 AM	46.4	52.0	43.6

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142082  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537214-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142082-1  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277658, 1888884) (Shut down)  
Measurement Date Jun 27 - 28, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00371914

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:50 AM - 03:55 AM	48.1	53.9	44.0
03:55 AM - 04:00 AM	47.8	52.6	44.7
04:00 AM - 04:05 AM	47.8	53.1	44.2
04:05 AM - 04:10 AM	45.9	51.8	43.2
04:10 AM - 04:15 AM	44.9	51.6	42.9
04:15 AM - 04:20 AM	43.6	52.9	42.6
04:20 AM - 04:25 AM	43.3	58.4	42.0
04:25 AM - 04:30 AM	43.9	57.1	42.1
04:30 AM - 04:35 AM	43.5	51.0	42.0
04:35 AM - 04:40 AM	44.1	50.4	42.5
04:40 AM - 04:45 AM	44.4	55.3	42.2
04:45 AM - 04:50 AM	43.3	51.3	40.6
04:50 AM - 04:55 AM	41.6	53.1	40.3
04:55 AM - 05:00 AM	42.3	59.2	40.7
05:00 AM - 05:05 AM	42.5	53.8	41.1
05:05 AM - 05:10 AM	43.0	54.2	41.1
05:10 AM - 05:15 AM	42.6	52.3	40.8
05:15 AM - 05:20 AM	48.1	59.8	41.8
05:20 AM - 05:25 AM	45.0	56.8	41.6
05:25 AM - 05:30 AM	43.9	54.6	41.4
05:30 AM - 05:35 AM	43.4	54.3	41.6
05:35 AM - 05:40 AM	48.1	55.1	42.3
05:40 AM - 05:45 AM	49.2	57.5	43.5
05:45 AM - 05:50 AM	48.5	57.0	44.3
05:50 AM - 05:55 AM	49.1	56.8	44.8
05:55 AM - 06:00 AM	45.9	62.6	41.7
06:00 AM - 07:00 AM	46.8	70.8	40.8
07:00 AM - 08:00 AM	43.1	63.5	37.2
08:00 AM - 09:00 AM	52.1	58.4	50.9
09:00 AM - 10:00 AM	54.0	57.8	52.9
10:00 AM - 11:00 AM	54.5	61.9	53.3
11:00 AM - 12:00 PM	54.0	62.5	52.7

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142082  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537215-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142082-2  
Parameter Noise  
Location รื่นร่ำกุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277658, 1888884) (Shut down)  
Measurement Date Jun 28 - 29, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00371914

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	55.1	60.2	53.4
01:00 PM - 02:00 PM	52.9	60.9	51.1
02:00 PM - 03:00 PM	48.9	60.9	46.8
03:00 PM - 04:00 PM	47.4	58.0	45.8
04:00 PM - 05:00 PM	43.6	68.8	38.8
05:00 PM - 06:00 PM	42.7	60.2	39.0
06:00 PM - 07:00 PM	45.7	68.6	42.4
07:00 PM - 08:00 PM	47.5	68.0	40.3
08:00 PM - 09:00 PM	45.5	64.8	39.5
09:00 PM - 10:00 PM	44.7	60.9	38.7
10:00 PM - 10:05 PM	44.4	65.7	38.7
10:05 PM - 10:10 PM	42.9	65.0	36.8
10:10 PM - 10:15 PM	38.4	55.4	36.1
10:15 PM - 10:20 PM	42.9	63.4	37.1
10:20 PM - 10:25 PM	42.2	61.8	37.6
10:25 PM - 10:30 PM	43.3	59.7	37.7
10:30 PM - 10:35 PM	41.3	62.3	37.3
10:35 PM - 10:40 PM	43.1	64.9	37.6
10:40 PM - 10:45 PM	48.9	67.2	37.4
10:45 PM - 10:50 PM	39.3	57.8	36.9
10:50 PM - 10:55 PM	41.0	58.4	37.6
10:55 PM - 11:00 PM	38.6	50.1	36.2
11:00 PM - 11:05 PM	42.0	60.4	36.7
11:05 PM - 11:10 PM	39.6	55.2	36.5
11:10 PM - 11:15 PM	41.0	55.2	36.4
11:15 PM - 11:20 PM	39.6	57.3	36.0
11:20 PM - 11:25 PM	38.7	54.7	35.9
11:25 PM - 11:30 PM	38.7	57.1	35.9
11:30 PM - 11:35 PM	42.2	58.0	37.2
11:35 PM - 11:40 PM	41.3	60.2	37.2
11:40 PM - 11:45 PM	40.6	53.5	37.2
11:45 PM - 11:50 PM	41.2	61.8	36.7
11:50 PM - 11:55 PM	42.9	65.6	36.2
11:55 PM - 12:00 AM	37.9	48.5	35.4
12:00 AM - 12:05 AM	41.5	53.8	37.3
12:05 AM - 12:10 AM	41.8	60.4	38.6
12:10 AM - 12:15 AM	42.3	58.3	37.5
12:15 AM - 12:20 AM	42.9	58.5	38.3
12:20 AM - 12:25 AM	47.5	64.7	39.0
12:25 AM - 12:30 AM	39.7	58.1	37.6

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142082  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537215-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142082-2  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277658, 1888884) (Shut down)  
Measurement Date Jun 28 - 29, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00371914

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:30 AM - 12:35 AM	43.5	57.4	36.7
12:35 AM - 12:40 AM	41.4	54.5	38.3
12:40 AM - 12:45 AM	39.2	50.4	36.3
12:45 AM - 12:50 AM	41.8	57.5	36.7
12:50 AM - 12:55 AM	39.6	58.2	38.0
12:55 AM - 01:00 AM	39.1	52.8	37.4
01:00 AM - 01:05 AM	40.1	57.8	38.1
01:05 AM - 01:10 AM	38.2	49.0	36.2
01:10 AM - 01:15 AM	39.5	53.3	35.6
01:15 AM - 01:20 AM	44.0	57.0	36.7
01:20 AM - 01:25 AM	40.6	53.4	38.2
01:25 AM - 01:30 AM	40.5	56.2	37.7
01:30 AM - 01:35 AM	40.9	53.3	37.9
01:35 AM - 01:40 AM	40.5	62.8	37.5
01:40 AM - 01:45 AM	39.0	49.5	36.5
01:45 AM - 01:50 AM	47.2	65.7	37.0
01:50 AM - 01:55 AM	38.3	57.7	35.2
01:55 AM - 02:00 AM	41.5	56.7	35.7
02:00 AM - 02:05 AM	41.4	59.5	37.7
02:05 AM - 02:10 AM	39.5	64.1	35.9
02:10 AM - 02:15 AM	39.9	56.2	36.0
02:15 AM - 02:20 AM	42.4	58.4	36.4
02:20 AM - 02:25 AM	42.5	59.8	35.4
02:25 AM - 02:30 AM	47.6	66.8	36.8
02:30 AM - 02:35 AM	41.5	64.0	38.2
02:35 AM - 02:40 AM	49.2	66.4	39.5
02:40 AM - 02:45 AM	44.8	62.2	37.9
02:45 AM - 02:50 AM	48.2	68.0	37.9
02:50 AM - 02:55 AM	40.8	47.5	38.7
02:55 AM - 03:00 AM	41.2	50.4	39.3
03:00 AM - 03:05 AM	40.9	56.4	38.5
03:05 AM - 03:10 AM	42.0	56.3	38.7
03:10 AM - 03:15 AM	39.8	49.8	37.3
03:15 AM - 03:20 AM	41.6	54.5	38.5
03:20 AM - 03:25 AM	39.8	52.1	37.1
03:25 AM - 03:30 AM	38.9	51.0	37.2
03:30 AM - 03:35 AM	40.1	51.1	37.9
03:35 AM - 03:40 AM	38.7	48.6	36.1
03:40 AM - 03:45 AM	38.6	55.3	36.8
03:45 AM - 03:50 AM	38.8	59.3	36.9

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142082  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537215-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142082-2  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277658, 1888884) (Shut down)  
Measurement Date Jun 28 - 29, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00371914

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:50 AM - 03:55 AM	40.0	60.8	37.3
03:55 AM - 04:00 AM	40.9	56.1	37.9
04:00 AM - 04:05 AM	47.0	53.9	44.8
04:05 AM - 04:10 AM	46.2	54.8	43.5
04:10 AM - 04:15 AM	44.6	54.4	42.4
04:15 AM - 04:20 AM	46.0	53.7	42.8
04:20 AM - 04:25 AM	44.2	54.0	42.3
04:25 AM - 04:30 AM	45.3	55.6	42.7
04:30 AM - 04:35 AM	44.4	52.3	42.5
04:35 AM - 04:40 AM	45.0	52.4	42.6
04:40 AM - 04:45 AM	43.9	59.4	41.8
04:45 AM - 04:50 AM	42.6	55.3	41.5
04:50 AM - 04:55 AM	43.1	51.0	41.9
04:55 AM - 05:00 AM	43.3	51.6	41.9
05:00 AM - 05:05 AM	43.5	53.6	41.7
05:05 AM - 05:10 AM	44.3	55.0	41.6
05:10 AM - 05:15 AM	45.2	56.1	42.0
05:15 AM - 05:20 AM	46.5	63.5	42.0
05:20 AM - 05:25 AM	48.7	61.8	42.7
05:25 AM - 05:30 AM	46.9	55.3	43.2
05:30 AM - 05:35 AM	47.7	58.2	44.3
05:35 AM - 05:40 AM	50.3	61.2	45.3
05:40 AM - 05:45 AM	45.9	58.6	43.6
05:45 AM - 05:50 AM	46.8	57.1	44.1
05:50 AM - 05:55 AM	47.9	60.5	44.4
05:55 AM - 06:00 AM	46.2	63.0	42.5
06:00 AM - 07:00 AM	46.0	64.4	42.9
07:00 AM - 08:00 AM	55.2	61.8	53.8
08:00 AM - 09:00 AM	57.4	67.1	55.7
09:00 AM - 10:00 AM	55.4	59.8	54.0
10:00 AM - 11:00 AM	55.2	63.0	53.6
11:00 AM - 12:00 PM	55.1	60.6	53.6

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142082  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537216-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142082-3  
Parameter Noise  
Location **บริเวณกลุ่มบริษัทด้านทิศตะวันตก** (GPS 48Q 277658, 1888884) (Shut down)  
Measurement Date Jun 29 - 30, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00371914

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	54.5	61.5	51.5
01:00 PM - 02:00 PM	54.0	60.5	51.0
02:00 PM - 03:00 PM	48.0	59.0	45.7
03:00 PM - 04:00 PM	47.0	59.2	43.8
04:00 PM - 05:00 PM	42.2	56.3	39.6
05:00 PM - 06:00 PM	41.1	63.2	36.1
06:00 PM - 07:00 PM	42.0	64.8	39.1
07:00 PM - 08:00 PM	47.6	64.4	39.5
08:00 PM - 09:00 PM	40.4	62.3	35.4
09:00 PM - 10:00 PM	38.3	64.2	33.7
10:00 PM - 10:05 PM	40.2	56.0	34.6
10:05 PM - 10:10 PM	37.4	56.3	33.7
10:10 PM - 10:15 PM	35.9	53.4	33.0
10:15 PM - 10:20 PM	40.5	56.6	33.8
10:20 PM - 10:25 PM	38.4	52.7	33.9
10:25 PM - 10:30 PM	36.7	55.1	33.7
10:30 PM - 10:35 PM	38.8	58.2	34.4
10:35 PM - 10:40 PM	36.7	51.6	33.4
10:40 PM - 10:45 PM	40.1	54.3	33.2
10:45 PM - 10:50 PM	39.8	54.9	34.2
10:50 PM - 10:55 PM	39.6	55.8	33.9
10:55 PM - 11:00 PM	39.1	52.5	33.8
11:00 PM - 11:05 PM	39.9	61.4	35.4
11:05 PM - 11:10 PM	38.8	52.1	35.5
11:10 PM - 11:15 PM	40.6	55.2	35.9
11:15 PM - 11:20 PM	41.6	57.3	34.6
11:20 PM - 11:25 PM	39.2	54.4	33.4
11:25 PM - 11:30 PM	40.1	54.9	32.6
11:30 PM - 11:35 PM	41.1	64.3	33.3
11:35 PM - 11:40 PM	43.7	61.2	34.5
11:40 PM - 11:45 PM	43.2	55.9	34.4
11:45 PM - 11:50 PM	42.8	54.1	36.5
11:50 PM - 11:55 PM	45.5	57.8	35.5
11:55 PM - 12:00 AM	41.1	55.3	33.6
12:00 AM - 12:05 AM	38.2	54.9	34.4
12:05 AM - 12:10 AM	35.2	45.2	33.9
12:10 AM - 12:15 AM	36.8	53.9	33.4
12:15 AM - 12:20 AM	38.5	54.3	34.6
12:20 AM - 12:25 AM	38.2	55.4	35.2
12:25 AM - 12:30 AM	37.8	58.1	34.6

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

Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142082  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537216-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142082-3  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277658, 1888884) (Shut down)  
Measurement Date Jun 29 - 30, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00371914

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:30 AM - 12:35 AM	36.1	53.6	33.1
12:35 AM - 12:40 AM	39.7	63.7	33.6
12:40 AM - 12:45 AM	38.5	54.2	32.5
12:45 AM - 12:50 AM	35.5	52.4	32.0
12:50 AM - 12:55 AM	35.7	48.4	33.5
12:55 AM - 01:00 AM	42.3	67.4	34.1
01:00 AM - 01:05 AM	37.2	53.5	34.0
01:05 AM - 01:10 AM	36.8	54.0	34.3
01:10 AM - 01:15 AM	46.8	67.9	33.7
01:15 AM - 01:20 AM	35.0	49.7	32.5
01:20 AM - 01:25 AM	43.7	59.3	33.6
01:25 AM - 01:30 AM	40.4	55.9	33.1
01:30 AM - 01:35 AM	36.8	44.9	35.2
01:35 AM - 01:40 AM	42.7	65.4	34.7
01:40 AM - 01:45 AM	40.2	57.9	32.8
01:45 AM - 01:50 AM	41.4	58.9	32.8
01:50 AM - 01:55 AM	39.4	52.4	36.5
01:55 AM - 02:00 AM	39.2	62.4	36.0
02:00 AM - 02:05 AM	38.9	55.6	36.2
02:05 AM - 02:10 AM	39.3	54.3	35.4
02:10 AM - 02:15 AM	42.7	57.1	35.2
02:15 AM - 02:20 AM	37.8	52.5	33.7
02:20 AM - 02:25 AM	38.3	62.0	33.3
02:25 AM - 02:30 AM	40.0	52.2	33.1
02:30 AM - 02:35 AM	40.9	55.5	34.3
02:35 AM - 02:40 AM	37.8	57.1	34.6
02:40 AM - 02:45 AM	38.8	56.0	33.8
02:45 AM - 02:50 AM	40.3	55.5	34.8
02:50 AM - 02:55 AM	41.9	57.8	35.2
02:55 AM - 03:00 AM	42.0	56.1	36.6
03:00 AM - 03:05 AM	38.8	56.4	36.3
03:05 AM - 03:10 AM	43.1	59.6	36.5
03:10 AM - 03:15 AM	43.0	57.0	34.5
03:15 AM - 03:20 AM	42.0	56.0	37.6
03:20 AM - 03:25 AM	39.5	61.7	35.7
03:25 AM - 03:30 AM	44.1	61.2	35.3
03:30 AM - 03:35 AM	37.4	53.1	34.7
03:35 AM - 03:40 AM	35.6	49.0	33.2
03:40 AM - 03:45 AM	36.5	51.5	33.4
03:45 AM - 03:50 AM	37.0	58.7	33.4

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142082  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537216-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142082-3  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277658, 1888884) (Shut down)  
Measurement Date Jun 29 - 30, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00371914

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:50 AM - 03:55 AM	36.7	53.2	33.7
03:55 AM - 04:00 AM	37.9	51.3	36.4
04:00 AM - 04:05 AM	39.7	56.8	35.4
04:05 AM - 04:10 AM	41.8	59.3	37.7
04:10 AM - 04:15 AM	41.2	62.8	36.3
04:15 AM - 04:20 AM	36.2	46.4	33.9
04:20 AM - 04:25 AM	36.7	54.0	33.1
04:25 AM - 04:30 AM	43.4	66.4	32.3
04:30 AM - 04:35 AM	37.9	51.6	33.4
04:35 AM - 04:40 AM	34.3	49.5	32.2
04:40 AM - 04:45 AM	36.4	50.6	34.6
04:45 AM - 04:50 AM	42.5	65.1	35.7
04:50 AM - 04:55 AM	38.6	58.1	35.4
04:55 AM - 05:00 AM	37.3	45.7	35.4
05:00 AM - 05:05 AM	43.7	46.6	42.7
05:05 AM - 05:10 AM	43.3	54.8	42.4
05:10 AM - 05:15 AM	43.1	51.8	41.7
05:15 AM - 05:20 AM	44.1	62.2	42.4
05:20 AM - 05:25 AM	43.9	54.7	41.8
05:25 AM - 05:30 AM	46.7	60.1	41.5
05:30 AM - 05:35 AM	45.7	63.2	41.8
05:35 AM - 05:40 AM	48.7	62.8	43.3
05:40 AM - 05:45 AM	46.6	57.1	42.9
05:45 AM - 05:50 AM	53.7	67.4	43.1
05:50 AM - 05:55 AM	44.9	55.4	42.6
05:55 AM - 06:00 AM	45.6	57.3	42.2
06:00 AM - 07:00 AM	45.2	65.7	39.7
07:00 AM - 08:00 AM	54.0	60.2	52.8
08:00 AM - 09:00 AM	56.6	62.5	53.8
09:00 AM - 10:00 AM	56.4	63.0	53.5
10:00 AM - 11:00 AM	52.4	61.7	50.0
11:00 AM - 12:00 PM	51.9	60.5	50.5

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142082  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537217-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142082-4  
Parameter Noise  
Location รื่นรุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277658, 1888884) (Shut down)  
Measurement Date Jun 30 - Jul 01, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00371914

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	52.9	60.3	51.6
01:00 PM - 02:00 PM	52.1	66.8	50.2
02:00 PM - 03:00 PM	51.8	59.2	50.7
03:00 PM - 04:00 PM	51.7	59.6	50.0
04:00 PM - 05:00 PM	51.1	61.9	49.2
05:00 PM - 06:00 PM	52.3	57.4	48.9
06:00 PM - 07:00 PM	51.9	57.2	49.6
07:00 PM - 08:00 PM	53.6	61.0	51.5
08:00 PM - 09:00 PM	53.1	58.8	51.9
09:00 PM - 10:00 PM	47.5	67.1	44.2
10:00 PM - 10:05 PM	44.2	61.6	42.1
10:05 PM - 10:10 PM	43.2	59.1	41.6
10:10 PM - 10:15 PM	43.2	62.8	40.7
10:15 PM - 10:20 PM	44.4	56.0	41.7
10:20 PM - 10:25 PM	44.2	67.4	41.1
10:25 PM - 10:30 PM	45.5	62.7	41.4
10:30 PM - 10:35 PM	44.3	57.5	42.5
10:35 PM - 10:40 PM	47.6	60.7	42.8
10:40 PM - 10:45 PM	46.7	57.9	42.8
10:45 PM - 10:50 PM	44.2	62.8	41.3
10:50 PM - 10:55 PM	44.0	58.5	41.0
10:55 PM - 11:00 PM	51.4	66.9	41.4
11:00 PM - 11:05 PM	42.7	57.8	40.9
11:05 PM - 11:10 PM	45.3	63.2	40.7
11:10 PM - 11:15 PM	46.9	62.0	41.1
11:15 PM - 11:20 PM	51.0	70.0	40.1
11:20 PM - 11:25 PM	42.4	51.2	40.5
11:25 PM - 11:30 PM	51.0	62.9	40.7
11:30 PM - 11:35 PM	42.3	50.9	40.2
11:35 PM - 11:40 PM	42.9	56.6	40.3
11:40 PM - 11:45 PM	43.2	52.5	40.0
11:45 PM - 11:50 PM	44.3	61.6	41.0
11:50 PM - 11:55 PM	46.1	60.0	39.7
11:55 PM - 12:00 AM	46.8	59.3	39.1
12:00 AM - 12:05 AM	43.8	56.1	39.8
12:05 AM - 12:10 AM	44.2	65.7	40.1
12:10 AM - 12:15 AM	46.4	58.6	40.5
12:15 AM - 12:20 AM	46.5	58.3	41.0
12:20 AM - 12:25 AM	43.9	64.9	41.3
12:25 AM - 12:30 AM	44.1	63.0	39.5

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142082  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537217-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142082-4  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277658, 1888884) (Shut down)  
Measurement Date Jun 30 - Jul 01, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00371914

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:30 AM - 12:35 AM	47.6	57.3	39.9
12:35 AM - 12:40 AM	46.2	61.9	39.1
12:40 AM - 12:45 AM	44.1	57.1	38.7
12:45 AM - 12:50 AM	46.7	62.1	39.7
12:50 AM - 12:55 AM	42.3	53.7	39.6
12:55 AM - 01:00 AM	43.9	55.6	39.7
01:00 AM - 01:05 AM	42.3	58.2	38.7
01:05 AM - 01:10 AM	43.8	58.7	40.3
01:10 AM - 01:15 AM	44.9	57.0	41.0
01:15 AM - 01:20 AM	42.8	54.9	40.0
01:20 AM - 01:25 AM	43.1	57.4	39.4
01:25 AM - 01:30 AM	44.5	60.3	39.7
01:30 AM - 01:35 AM	47.8	72.2	39.2
01:35 AM - 01:40 AM	42.7	59.9	39.7
01:40 AM - 01:45 AM	42.0	55.3	38.7
01:45 AM - 01:50 AM	44.0	59.4	38.9
01:50 AM - 01:55 AM	47.4	62.0	41.0
01:55 AM - 02:00 AM	44.6	58.1	39.2
02:00 AM - 02:05 AM	46.0	63.9	33.1
02:05 AM - 02:10 AM	36.9	55.5	33.2
02:10 AM - 02:15 AM	38.7	60.3	35.2
02:15 AM - 02:20 AM	39.2	63.6	36.2
02:20 AM - 02:25 AM	40.4	55.0	36.1
02:25 AM - 02:30 AM	41.1	59.2	35.2
02:30 AM - 02:35 AM	41.1	64.6	35.9
02:35 AM - 02:40 AM	43.1	59.5	35.5
02:40 AM - 02:45 AM	42.5	57.7	35.0
02:45 AM - 02:50 AM	40.7	60.1	36.3
02:50 AM - 02:55 AM	44.5	56.4	36.1
02:55 AM - 03:00 AM	49.3	60.8	36.5
03:00 AM - 03:05 AM	44.3	58.6	34.7
03:05 AM - 03:10 AM	36.7	54.7	32.2
03:10 AM - 03:15 AM	37.2	48.0	35.5
03:15 AM - 03:20 AM	39.8	54.0	36.8
03:20 AM - 03:25 AM	39.8	53.5	34.4
03:25 AM - 03:30 AM	38.1	52.1	34.4
03:30 AM - 03:35 AM	37.6	55.9	34.9
03:35 AM - 03:40 AM	42.2	59.5	35.1
03:40 AM - 03:45 AM	44.0	64.2	37.2
03:45 AM - 03:50 AM	49.6	65.8	37.2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142082  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537217-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142082-4  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277658, 1888884) (Shut down)  
Measurement Date Jun 30 - Jul 01, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00371914

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:50 AM - 03:55 AM	44.2	60.0	37.4
03:55 AM - 04:00 AM	45.5	64.4	37.4
04:00 AM - 04:05 AM	48.5	54.0	45.5
04:05 AM - 04:10 AM	46.7	52.7	43.9
04:10 AM - 04:15 AM	47.2	53.7	44.3
04:15 AM - 04:20 AM	45.6	51.6	43.3
04:20 AM - 04:25 AM	44.8	50.0	43.0
04:25 AM - 04:30 AM	45.0	51.8	42.9
04:30 AM - 04:35 AM	44.4	63.1	42.8
04:35 AM - 04:40 AM	43.8	51.7	42.6
04:40 AM - 04:45 AM	43.5	49.9	42.5
04:45 AM - 04:50 AM	44.8	53.5	42.1
04:50 AM - 04:55 AM	43.4	50.0	41.8
04:55 AM - 05:00 AM	44.9	53.2	43.4
05:00 AM - 05:05 AM	44.8	52.4	43.1
05:05 AM - 05:10 AM	44.4	50.7	42.5
05:10 AM - 05:15 AM	44.1	50.0	42.3
05:15 AM - 05:20 AM	48.8	61.8	44.0
05:20 AM - 05:25 AM	46.1	61.6	43.7
05:25 AM - 05:30 AM	47.1	62.1	44.2
05:30 AM - 05:35 AM	48.0	56.6	44.5
05:35 AM - 05:40 AM	48.7	61.4	46.2
05:40 AM - 05:45 AM	48.7	66.2	45.2
05:45 AM - 05:50 AM	48.6	60.9	45.1
05:50 AM - 05:55 AM	60.7	69.1	50.6
05:55 AM - 06:00 AM	54.7	66.2	44.2
06:00 AM - 07:00 AM	50.2	69.9	45.4
07:00 AM - 08:00 AM	57.3	77.1	52.3
08:00 AM - 09:00 AM	55.4	80.7	49.5
09:00 AM - 10:00 AM	50.7	65.1	49.0
10:00 AM - 11:00 AM	53.6	61.0	51.5
11:00 AM - 12:00 PM	53.1	58.8	51.9

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142082  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537218-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142082-5  
Parameter Noise  
Location รื่นร่ำกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277658, 1888884) (Shut down)  
Measurement Date Jul 01 - 02, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00371914

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	52.7	62.8	49.4
01:00 PM - 02:00 PM	50.7	59.5	47.8
02:00 PM - 03:00 PM	50.7	57.9	47.5
03:00 PM - 04:00 PM	50.1	57.4	46.4
04:00 PM - 05:00 PM	48.5	75.0	44.3
05:00 PM - 06:00 PM	46.9	73.4	44.6
06:00 PM - 07:00 PM	48.4	71.5	46.1
07:00 PM - 08:00 PM	47.5	65.9	43.3
08:00 PM - 09:00 PM	48.4	68.4	43.7
09:00 PM - 10:00 PM	47.1	69.1	42.8
10:00 PM - 10:05 PM	43.7	57.0	41.7
10:05 PM - 10:10 PM	45.9	58.4	42.4
10:10 PM - 10:15 PM	43.8	61.0	41.1
10:15 PM - 10:20 PM	46.0	71.8	41.0
10:20 PM - 10:25 PM	45.9	61.3	41.6
10:25 PM - 10:30 PM	45.0	61.0	40.7
10:30 PM - 10:35 PM	46.3	64.4	40.5
10:35 PM - 10:40 PM	42.4	53.6	40.6
10:40 PM - 10:45 PM	43.9	57.2	40.5
10:45 PM - 10:50 PM	46.7	59.2	41.3
10:50 PM - 10:55 PM	51.2	71.0	40.5
10:55 PM - 11:00 PM	51.4	72.0	39.9
11:00 PM - 11:05 PM	42.7	61.9	40.7
11:05 PM - 11:10 PM	44.0	56.0	40.8
11:10 PM - 11:15 PM	43.7	62.6	40.2
11:15 PM - 11:20 PM	44.9	63.3	39.2
11:20 PM - 11:25 PM	45.8	68.0	39.1
11:25 PM - 11:30 PM	41.7	56.9	38.7
11:30 PM - 11:35 PM	41.1	47.7	39.5
11:35 PM - 11:40 PM	40.8	54.8	38.5
11:40 PM - 11:45 PM	45.0	59.1	38.8
11:45 PM - 11:50 PM	44.9	58.0	38.0
11:50 PM - 11:55 PM	43.4	63.8	37.7
11:55 PM - 12:00 AM	41.3	54.9	38.4
12:00 AM - 12:05 AM	42.9	55.6	39.6
12:05 AM - 12:10 AM	47.1	59.7	39.7
12:10 AM - 12:15 AM	45.5	59.9	40.3
12:15 AM - 12:20 AM	46.5	68.8	40.8
12:20 AM - 12:25 AM	42.2	56.4	38.7
12:25 AM - 12:30 AM	46.1	63.8	39.6

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142082  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537218-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142082-5  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277658, 1888884) (Shut down)  
Measurement Date Jul 01 - 02, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00371914

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:30 AM - 12:35 AM	45.5	57.0	39.5
12:35 AM - 12:40 AM	50.9	65.4	39.9
12:40 AM - 12:45 AM	44.9	57.9	41.5
12:45 AM - 12:50 AM	48.9	58.3	43.0
12:50 AM - 12:55 AM	45.4	56.4	39.6
12:55 AM - 01:00 AM	43.1	63.9	40.2
01:00 AM - 01:05 AM	43.3	65.6	40.1
01:05 AM - 01:10 AM	46.5	65.0	41.7
01:10 AM - 01:15 AM	46.4	59.2	43.8
01:15 AM - 01:20 AM	46.6	67.1	43.8
01:20 AM - 01:25 AM	50.6	68.6	43.5
01:25 AM - 01:30 AM	46.4	56.9	44.2
01:30 AM - 01:35 AM	47.2	60.7	44.8
01:35 AM - 01:40 AM	46.7	66.3	43.4
01:40 AM - 01:45 AM	46.4	66.1	44.1
01:45 AM - 01:50 AM	48.1	64.6	45.8
01:50 AM - 01:55 AM	51.0	61.2	46.1
01:55 AM - 02:00 AM	50.4	63.7	44.3
02:00 AM - 02:05 AM	50.9	68.0	45.7
02:05 AM - 02:10 AM	49.1	57.0	42.8
02:10 AM - 02:15 AM	44.9	54.8	43.2
02:15 AM - 02:20 AM	45.6	49.9	44.1
02:20 AM - 02:25 AM	47.3	54.8	45.6
02:25 AM - 02:30 AM	46.6	57.5	45.4
02:30 AM - 02:35 AM	46.5	56.8	44.8
02:35 AM - 02:40 AM	45.8	61.2	43.8
02:40 AM - 02:45 AM	47.2	58.3	44.4
02:45 AM - 02:50 AM	48.5	60.6	44.9
02:50 AM - 02:55 AM	48.7	64.7	44.0
02:55 AM - 03:00 AM	49.6	63.7	44.0
03:00 AM - 03:05 AM	49.6	64.4	44.8
03:05 AM - 03:10 AM	45.4	50.2	44.5
03:10 AM - 03:15 AM	46.3	51.9	45.3
03:15 AM - 03:20 AM	47.7	60.1	44.6
03:20 AM - 03:25 AM	46.6	55.1	44.6
03:25 AM - 03:30 AM	44.8	57.4	43.0
03:30 AM - 03:35 AM	43.9	51.7	42.5
03:35 AM - 03:40 AM	46.7	53.8	45.7
03:40 AM - 03:45 AM	45.0	54.5	44.1
03:45 AM - 03:50 AM	46.4	63.2	42.7

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142082  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537218-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142082-5  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277658, 1888884) (Shut down)  
Measurement Date Jul 01 - 02, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00371914

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:50 AM - 03:55 AM	44.0	60.3	42.3
03:55 AM - 04:00 AM	46.7	53.8	45.7
04:00 AM - 04:05 AM	44.6	50.3	43.7
04:05 AM - 04:10 AM	45.0	54.5	44.1
04:10 AM - 04:15 AM	45.4	50.2	44.5
04:15 AM - 04:20 AM	46.3	51.9	45.3
04:20 AM - 04:25 AM	46.8	51.5	45.9
04:25 AM - 04:30 AM	46.8	53.4	45.8
04:30 AM - 04:35 AM	46.7	53.8	45.7
04:35 AM - 04:40 AM	47.2	53.9	46.4
04:40 AM - 04:45 AM	46.0	51.2	44.8
04:45 AM - 04:50 AM	44.7	51.3	44.0
04:50 AM - 04:55 AM	44.0	49.0	43.3
04:55 AM - 05:00 AM	43.6	53.0	43.0
05:00 AM - 05:05 AM	43.3	50.4	42.5
05:05 AM - 05:10 AM	43.3	53.3	42.6
05:10 AM - 05:15 AM	43.3	56.6	42.6
05:15 AM - 05:20 AM	43.5	50.6	42.7
05:20 AM - 05:25 AM	44.3	52.2	43.1
05:25 AM - 05:30 AM	45.1	59.2	43.1
05:30 AM - 05:35 AM	55.4	68.8	46.1
05:35 AM - 05:40 AM	52.9	70.1	44.8
05:40 AM - 05:45 AM	46.4	61.3	44.5
05:45 AM - 05:50 AM	47.1	55.0	45.2
05:50 AM - 05:55 AM	48.2	63.2	45.7
05:55 AM - 06:00 AM	47.4	69.8	45.7
06:00 AM - 07:00 AM	49.1	71.9	44.3
07:00 AM - 08:00 AM	54.9	62.5	53.4
08:00 AM - 09:00 AM	57.8	66.4	55.9
09:00 AM - 10:00 AM	54.1	66.9	51.6
10:00 AM - 11:00 AM	54.6	66.4	52.2
11:00 AM - 12:00 PM	57.7	85.4	54.5

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142082  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537219-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142082-6  
Parameter Noise  
Location รื่นร่ำกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277658, 1888884) (Shut down)  
Measurement Date Jul 02 - 03, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00371914

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	52.4	73.3	51.1
01:00 PM - 02:00 PM	53.9	59.5	52.6
02:00 PM - 03:00 PM	54.1	62.6	52.5
03:00 PM - 04:00 PM	53.1	60.9	51.7
04:00 PM - 05:00 PM	50.6	56.6	49.4
05:00 PM - 06:00 PM	52.8	56.7	50.7
06:00 PM - 07:00 PM	53.0	57.7	51.0
07:00 PM - 08:00 PM	44.7	63.4	41.6
08:00 PM - 09:00 PM	45.6	73.3	37.2
09:00 PM - 10:00 PM	47.1	69.5	38.4
10:00 PM - 10:05 PM	44.6	60.7	37.8
10:05 PM - 10:10 PM	46.7	65.8	38.6
10:10 PM - 10:15 PM	48.4	60.7	39.9
10:15 PM - 10:20 PM	41.3	53.3	38.7
10:20 PM - 10:25 PM	46.4	57.9	39.3
10:25 PM - 10:30 PM	41.2	55.8	38.5
10:30 PM - 10:35 PM	47.6	60.7	39.7
10:35 PM - 10:40 PM	41.5	59.2	39.2
10:40 PM - 10:45 PM	41.5	55.0	38.9
10:45 PM - 10:50 PM	41.6	54.3	39.2
10:50 PM - 10:55 PM	45.6	63.3	38.9
10:55 PM - 11:00 PM	47.6	67.0	38.6
11:00 PM - 11:05 PM	45.7	69.8	39.2
11:05 PM - 11:10 PM	41.1	54.5	38.9
11:10 PM - 11:15 PM	42.8	56.8	39.1
11:15 PM - 11:20 PM	44.8	63.3	38.9
11:20 PM - 11:25 PM	42.0	57.0	39.8
11:25 PM - 11:30 PM	41.9	56.0	40.3
11:30 PM - 11:35 PM	42.4	59.1	40.1
11:35 PM - 11:40 PM	42.2	57.5	39.9
11:40 PM - 11:45 PM	43.1	53.9	39.9
11:45 PM - 11:50 PM	43.9	50.8	41.4
11:50 PM - 11:55 PM	43.0	57.2	41.0
11:55 PM - 12:00 AM	43.7	61.3	40.1
12:00 AM - 12:05 AM	46.5	58.7	40.6
12:05 AM - 12:10 AM	41.5	50.1	39.1
12:10 AM - 12:15 AM	41.1	58.0	38.8
12:15 AM - 12:20 AM	43.7	59.8	38.8
12:20 AM - 12:25 AM	42.5	60.8	39.1
12:25 AM - 12:30 AM	42.7	50.7	40.4

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142082  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537219-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142082-6  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277658, 1888884) (Shut down)  
Measurement Date Jul 02 - 03, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00371914

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:30 AM - 12:35 AM	44.6	61.9	41.6
12:35 AM - 12:40 AM	53.1	71.7	40.7
12:40 AM - 12:45 AM	45.4	63.6	41.3
12:45 AM - 12:50 AM	47.1	60.9	40.9
12:50 AM - 12:55 AM	42.2	55.2	39.4
12:55 AM - 01:00 AM	45.5	60.1	39.9
01:00 AM - 01:05 AM	48.1	63.5	41.3
01:05 AM - 01:10 AM	45.3	69.4	41.7
01:10 AM - 01:15 AM	52.5	66.1	41.8
01:15 AM - 01:20 AM	46.6	64.7	42.4
01:20 AM - 01:25 AM	45.8	59.3	42.5
01:25 AM - 01:30 AM	45.5	60.4	42.4
01:30 AM - 01:35 AM	45.9	57.3	43.4
01:35 AM - 01:40 AM	46.5	58.2	44.3
01:40 AM - 01:45 AM	46.7	62.6	44.1
01:45 AM - 01:50 AM	45.7	58.7	44.1
01:50 AM - 01:55 AM	46.5	57.2	44.1
01:55 AM - 02:00 AM	46.1	58.7	43.8
02:00 AM - 02:05 AM	47.5	62.1	41.6
02:05 AM - 02:10 AM	45.1	64.3	41.9
02:10 AM - 02:15 AM	45.0	56.3	40.9
02:15 AM - 02:20 AM	46.5	63.1	41.2
02:20 AM - 02:25 AM	46.2	63.3	41.1
02:25 AM - 02:30 AM	44.1	56.6	41.4
02:30 AM - 02:35 AM	44.4	56.6	41.3
02:35 AM - 02:40 AM	43.6	57.1	40.3
02:40 AM - 02:45 AM	47.6	64.1	40.8
02:45 AM - 02:50 AM	54.4	65.1	40.7
02:50 AM - 02:55 AM	52.3	67.8	41.7
02:55 AM - 03:00 AM	43.5	58.6	41.1
03:00 AM - 03:05 AM	45.5	66.7	41.4
03:05 AM - 03:10 AM	43.9	57.8	41.5
03:10 AM - 03:15 AM	44.1	60.0	40.4
03:15 AM - 03:20 AM	43.7	64.1	40.0
03:20 AM - 03:25 AM	47.8	66.8	41.0
03:25 AM - 03:30 AM	46.5	63.7	41.6
03:30 AM - 03:35 AM	45.4	70.4	39.9
03:35 AM - 03:40 AM	42.5	56.3	40.4
03:40 AM - 03:45 AM	44.0	64.2	41.4
03:45 AM - 03:50 AM	47.8	58.4	41.7

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Approved by

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142082  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537219-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142082-6  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277658, 1888884) (Shut down)  
Measurement Date Jul 02 - 03, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00371914

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:50 AM - 03:55 AM	45.6	67.1	40.6
03:55 AM - 04:00 AM	47.2	60.8	41.7
04:00 AM - 04:05 AM	49.8	54.0	45.9
04:05 AM - 04:10 AM	50.0	55.5	46.6
04:10 AM - 04:15 AM	48.5	54.2	45.4
04:15 AM - 04:20 AM	47.2	53.1	44.7
04:20 AM - 04:25 AM	47.8	61.5	44.2
04:25 AM - 04:30 AM	45.9	55.1	43.5
04:30 AM - 04:35 AM	44.3	55.8	43.1
04:35 AM - 04:40 AM	43.9	53.2	42.9
04:40 AM - 04:45 AM	45.2	56.0	41.7
04:45 AM - 04:50 AM	44.7	55.6	42.2
04:50 AM - 04:55 AM	42.9	51.1	41.6
04:55 AM - 05:00 AM	42.8	52.6	41.3
05:00 AM - 05:05 AM	43.8	53.5	41.2
05:05 AM - 05:10 AM	42.7	50.8	41.0
05:10 AM - 05:15 AM	41.2	47.6	40.1
05:15 AM - 05:20 AM	42.0	54.5	40.1
05:20 AM - 05:25 AM	45.4	56.6	41.4
05:25 AM - 05:30 AM	45.0	57.9	41.9
05:30 AM - 05:35 AM	46.2	60.1	42.9
05:35 AM - 05:40 AM	46.1	64.9	42.9
05:40 AM - 05:45 AM	46.5	57.6	43.7
05:45 AM - 05:50 AM	46.6	67.1	43.2
05:50 AM - 05:55 AM	49.1	58.1	44.1
05:55 AM - 06:00 AM	47.9	57.5	44.3
06:00 AM - 07:00 AM	46.3	64.8	42.5
07:00 AM - 08:00 AM	53.7	63.1	51.7
08:00 AM - 09:00 AM	51.2	59.5	48.8
09:00 AM - 10:00 AM	43.7	69.5	39.6
10:00 AM - 11:00 AM	45.6	68.2	39.6
11:00 AM - 12:00 PM	45.4	69.4	39.6

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142082  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537220-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142082-7  
Parameter Noise  
Location รื่นร่ำกุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277658, 1888884) (Shut down)  
Measurement Date Jul 03 - 04, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00371914

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:00 PM - 01:00 PM	56.8	63.2	54.9
01:00 PM - 02:00 PM	55.4	60.5	53.6
02:00 PM - 03:00 PM	55.6	60.8	53.0
03:00 PM - 04:00 PM	53.7	60.3	49.8
04:00 PM - 05:00 PM	48.6	76.2	40.2
05:00 PM - 06:00 PM	46.1	65.6	41.1
06:00 PM - 07:00 PM	45.3	63.6	43.0
07:00 PM - 08:00 PM	45.9	64.8	41.1
08:00 PM - 09:00 PM	49.1	72.3	40.8
09:00 PM - 10:00 PM	44.7	65.5	39.3
10:00 PM - 10:05 PM	39.1	54.2	36.6
10:05 PM - 10:10 PM	40.3	50.5	37.9
10:10 PM - 10:15 PM	40.6	60.1	38.2
10:15 PM - 10:20 PM	38.6	48.9	36.7
10:20 PM - 10:25 PM	43.5	62.0	35.7
10:25 PM - 10:30 PM	46.7	62.0	37.6
10:30 PM - 10:35 PM	42.4	61.6	37.3
10:35 PM - 10:40 PM	43.0	64.5	37.7
10:40 PM - 10:45 PM	40.7	50.5	38.3
10:45 PM - 10:50 PM	40.3	55.8	37.5
10:50 PM - 10:55 PM	41.5	61.0	37.4
10:55 PM - 11:00 PM	38.8	50.6	36.8
11:00 PM - 11:05 PM	46.0	61.7	38.1
11:05 PM - 11:10 PM	39.5	58.2	37.6
11:10 PM - 11:15 PM	42.3	56.5	37.8
11:15 PM - 11:20 PM	43.4	59.1	37.3
11:20 PM - 11:25 PM	43.8	57.0	37.5
11:25 PM - 11:30 PM	40.1	54.6	37.1
11:30 PM - 11:35 PM	41.7	56.0	39.1
11:35 PM - 11:40 PM	41.0	57.9	37.1
11:40 PM - 11:45 PM	40.8	55.1	38.1
11:45 PM - 11:50 PM	41.8	49.8	39.4
11:50 PM - 11:55 PM	41.5	61.0	37.4
11:55 PM - 12:00 AM	38.8	50.6	36.8
12:00 AM - 12:05 AM	40.7	50.5	37.9
12:05 AM - 12:10 AM	40.6	54.1	38.4
12:10 AM - 12:15 AM	41.3	55.4	38.4
12:15 AM - 12:20 AM	41.6	66.3	38.4
12:20 AM - 12:25 AM	41.9	52.4	39.7
12:25 AM - 12:30 AM	47.4	63.3	39.1

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142082  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537220-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142082-7  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277658, 1888884) (Shut down)  
Measurement Date Jul 03 - 04, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00371914

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:30 AM - 12:35 AM	49.3	67.0	38.7
12:35 AM - 12:40 AM	41.2	55.7	38.9
12:40 AM - 12:45 AM	42.7	53.1	40.0
12:45 AM - 12:50 AM	44.1	60.3	41.2
12:50 AM - 12:55 AM	43.4	56.9	39.8
12:55 AM - 01:00 AM	44.2	69.2	39.6
01:00 AM - 01:05 AM	47.6	69.7	38.6
01:05 AM - 01:10 AM	47.3	67.9	39.6
01:10 AM - 01:15 AM	42.0	50.2	39.6
01:15 AM - 01:20 AM	42.8	69.5	39.3
01:20 AM - 01:25 AM	42.9	52.5	39.7
01:25 AM - 01:30 AM	43.7	59.6	39.7
01:30 AM - 01:35 AM	41.3	54.7	38.9
01:35 AM - 01:40 AM	41.7	56.9	39.2
01:40 AM - 01:45 AM	40.8	49.7	38.9
01:45 AM - 01:50 AM	43.4	65.6	39.6
01:50 AM - 01:55 AM	43.2	61.1	39.6
01:55 AM - 02:00 AM	40.5	52.8	38.6
02:00 AM - 02:05 AM	42.1	62.9	37.4
02:05 AM - 02:10 AM	46.1	60.9	38.9
02:10 AM - 02:15 AM	45.1	73.5	39.9
02:15 AM - 02:20 AM	41.5	57.4	39.0
02:20 AM - 02:25 AM	41.3	51.6	39.2
02:25 AM - 02:30 AM	44.0	60.8	40.4
02:30 AM - 02:35 AM	42.9	53.1	40.5
02:35 AM - 02:40 AM	44.6	60.0	40.8
02:40 AM - 02:45 AM	43.5	55.6	39.7
02:45 AM - 02:50 AM	42.4	55.8	39.5
02:50 AM - 02:55 AM	41.1	58.0	38.0
02:55 AM - 03:00 AM	41.7	56.7	38.6
03:00 AM - 03:05 AM	43.9	59.4	40.0
03:05 AM - 03:10 AM	44.0	61.6	39.4
03:10 AM - 03:15 AM	41.2	57.2	39.0
03:15 AM - 03:20 AM	42.2	61.7	39.1
03:20 AM - 03:25 AM	42.4	66.7	39.3
03:25 AM - 03:30 AM	45.0	62.7	39.3
03:30 AM - 03:35 AM	43.2	60.6	40.2
03:35 AM - 03:40 AM	43.0	60.8	40.9
03:40 AM - 03:45 AM	42.8	56.1	40.0
03:45 AM - 03:50 AM	42.4	60.9	39.5

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142082  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537220-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142082-7  
Parameter Noise  
Location ร่มรั้วกลุ่มบริษัทด้านทิศตะวันตก (GPS 48Q 277658, 1888884) (Shut down)  
Measurement Date Jul 03 - 04, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00371914

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:50 AM - 03:55 AM	41.7	58.9	39.6
03:55 AM - 04:00 AM	43.1	61.6	39.0
04:00 AM - 04:05 AM	48.6	54.2	44.3
04:05 AM - 04:10 AM	45.7	54.6	43.0
04:10 AM - 04:15 AM	44.7	52.8	42.9
04:15 AM - 04:20 AM	46.0	51.9	43.8
04:20 AM - 04:25 AM	45.5	56.1	43.1
04:25 AM - 04:30 AM	44.9	48.9	42.7
04:30 AM - 04:35 AM	45.0	50.7	42.6
04:35 AM - 04:40 AM	45.8	50.9	42.6
04:40 AM - 04:45 AM	44.9	53.0	42.8
04:45 AM - 04:50 AM	45.2	50.0	42.4
04:50 AM - 04:55 AM	44.6	49.6	42.0
04:55 AM - 05:00 AM	45.4	49.4	42.4
05:00 AM - 05:05 AM	44.7	54.0	42.2
05:05 AM - 05:10 AM	44.0	51.6	42.0
05:10 AM - 05:15 AM	42.6	50.5	41.3
05:15 AM - 05:20 AM	44.9	59.6	41.9
05:20 AM - 05:25 AM	50.6	60.9	42.7
05:25 AM - 05:30 AM	48.3	57.8	42.7
05:30 AM - 05:35 AM	46.4	59.7	42.5
05:35 AM - 05:40 AM	45.5	56.7	42.9
05:40 AM - 05:45 AM	47.3	56.0	43.1
05:45 AM - 05:50 AM	49.4	64.0	42.8
05:50 AM - 05:55 AM	50.6	64.2	42.7
05:55 AM - 06:00 AM	46.5	67.6	42.7
06:00 AM - 07:00 AM	45.2	71.7	42.1
07:00 AM - 08:00 AM	52.6	60.9	51.6
08:00 AM - 09:00 AM	54.7	59.6	53.5
09:00 AM - 10:00 AM	53.9	73.1	52.2
10:00 AM - 11:00 AM	54.6	69.0	52.6
11:00 AM - 12:00 PM	56.5	72.8	54.3

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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.

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Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142086  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537340-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

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Sample No. 22142086-1  
Parameter Noise  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320) (Shut down)  
Measurement Date Jun 27 - 28, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472124

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	50.4	75.8	44.6
02:00 PM - 03:00 PM	51.6	76.9	45.5
03:00 PM - 04:00 PM	51.2	76.1	45.4
04:00 PM - 05:00 PM	56.9	94.6	46.6
05:00 PM - 06:00 PM	53.5	75.5	46.2
06:00 PM - 07:00 PM	51.7	66.3	48.5
07:00 PM - 08:00 PM	49.2	64.1	46.8
08:00 PM - 09:00 PM	48.5	66.3	45.2
09:00 PM - 10:00 PM	47.1	59.7	45.0
10:00 PM - 10:05 PM	46.4	51.4	44.4
10:05 PM - 10:10 PM	47.0	50.7	45.1
10:10 PM - 10:15 PM	46.3	52.9	45.3
10:15 PM - 10:20 PM	46.3	51.1	45.1
10:20 PM - 10:25 PM	46.4	51.5	44.7
10:25 PM - 10:30 PM	46.1	53.3	44.6
10:30 PM - 10:35 PM	46.5	51.3	44.8
10:35 PM - 10:40 PM	45.4	57.4	43.6
10:40 PM - 10:45 PM	45.6	54.0	43.6
10:45 PM - 10:50 PM	47.2	55.5	43.5
10:50 PM - 10:55 PM	44.9	52.9	43.1
10:55 PM - 11:00 PM	47.1	56.3	44.0
11:00 PM - 11:05 PM	46.1	57.4	42.8
11:05 PM - 11:10 PM	45.3	52.9	43.0
11:10 PM - 11:15 PM	45.6	58.2	43.1
11:15 PM - 11:20 PM	45.5	53.2	43.2
11:20 PM - 11:25 PM	46.8	55.4	43.4
11:25 PM - 11:30 PM	47.0	57.4	43.3
11:30 PM - 11:35 PM	45.7	54.8	43.5
11:35 PM - 11:40 PM	45.6	54.6	42.8
11:40 PM - 11:45 PM	46.4	54.6	43.1
11:45 PM - 11:50 PM	44.8	51.7	42.7
11:50 PM - 11:55 PM	46.4	55.9	42.6
11:55 PM - 12:00 AM	46.9	54.2	43.1
12:00 AM - 12:05 AM	45.7	55.7	43.1
12:05 AM - 12:10 AM	44.5	49.8	42.5
12:10 AM - 12:15 AM	46.2	59.4	42.9
12:15 AM - 12:20 AM	45.7	51.5	43.4
12:20 AM - 12:25 AM	44.4	48.4	42.6
12:25 AM - 12:30 AM	45.5	55.3	42.7
12:30 AM - 12:35 AM	44.8	53.0	42.3

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142086  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537340-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142086-1  
Parameter Noise  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320) (Shut down)  
Measurement Date Jun 27 - 28, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472124

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:35 AM - 12:40 AM	44.4	49.4	42.6
12:40 AM - 12:45 AM	44.1	50.9	42.0
12:45 AM - 12:50 AM	45.6	50.3	43.2
12:50 AM - 12:55 AM	46.3	54.4	43.2
12:55 AM - 01:00 AM	45.4	50.8	43.1
01:00 AM - 01:05 AM	49.6	67.3	43.0
01:05 AM - 01:10 AM	44.8	52.0	42.1
01:10 AM - 01:15 AM	46.2	54.1	43.4
01:15 AM - 01:20 AM	45.4	53.8	42.9
01:20 AM - 01:25 AM	45.6	59.8	42.5
01:25 AM - 01:30 AM	45.8	56.6	43.1
01:30 AM - 01:35 AM	45.0	54.2	42.1
01:35 AM - 01:40 AM	45.4	52.0	42.8
01:40 AM - 01:45 AM	45.8	53.8	42.7
01:45 AM - 01:50 AM	44.8	52.9	43.1
01:50 AM - 01:55 AM	45.3	53.1	42.9
01:55 AM - 02:00 AM	45.0	50.0	42.6
02:00 AM - 02:05 AM	44.3	50.4	42.3
02:05 AM - 02:10 AM	45.4	52.0	42.5
02:10 AM - 02:15 AM	44.5	49.1	42.4
02:15 AM - 02:20 AM	45.0	54.9	41.3
02:20 AM - 02:25 AM	46.7	58.1	42.5
02:25 AM - 02:30 AM	45.6	51.6	43.0
02:30 AM - 02:35 AM	45.0	52.9	42.2
02:35 AM - 02:40 AM	45.4	56.9	42.0
02:40 AM - 02:45 AM	45.3	53.8	41.7
02:45 AM - 02:50 AM	44.7	53.4	41.0
02:50 AM - 02:55 AM	46.4	58.4	41.4
02:55 AM - 03:00 AM	46.1	53.5	42.1
03:00 AM - 03:05 AM	47.4	60.9	42.6
03:05 AM - 03:10 AM	45.2	61.8	40.9
03:10 AM - 03:15 AM	50.5	65.8	40.7
03:15 AM - 03:20 AM	50.9	65.6	40.8
03:20 AM - 03:25 AM	48.1	64.2	40.8
03:25 AM - 03:30 AM	49.3	65.1	42.3
03:30 AM - 03:35 AM	47.1	60.5	41.5
03:35 AM - 03:40 AM	46.7	61.8	41.3
03:40 AM - 03:45 AM	47.6	60.9	42.3
03:45 AM - 03:50 AM	48.0	60.4	41.9
03:50 AM - 03:55 AM	49.0	61.5	41.6

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142086  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537340-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142086-1  
Parameter Noise  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320) (Shut down)  
Measurement Date Jun 27 - 28, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472124

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:55 AM - 04:00 AM	49.2	64.8	41.1
04:00 AM - 04:05 AM	50.5	62.5	44.2
04:05 AM - 04:10 AM	53.0	64.3	44.3
04:10 AM - 04:15 AM	53.3	63.3	46.2
04:15 AM - 04:20 AM	53.6	64.1	46.5
04:20 AM - 04:25 AM	54.2	64.6	45.8
04:25 AM - 04:30 AM	52.6	68.1	46.7
04:30 AM - 04:35 AM	51.9	64.6	46.7
04:35 AM - 04:40 AM	51.5	60.8	45.5
04:40 AM - 04:45 AM	49.7	58.5	44.3
04:45 AM - 04:50 AM	51.0	59.4	46.4
04:50 AM - 04:55 AM	54.7	68.0	45.3
04:55 AM - 05:00 AM	57.8	69.2	46.9
05:00 AM - 05:05 AM	51.8	67.3	46.6
05:05 AM - 05:10 AM	51.3	69.9	45.3
05:10 AM - 05:15 AM	49.1	58.3	44.7
05:15 AM - 05:20 AM	50.7	63.2	45.6
05:20 AM - 05:25 AM	50.3	63.0	45.8
05:25 AM - 05:30 AM	49.7	58.6	45.6
05:30 AM - 05:35 AM	51.0	64.2	46.1
05:35 AM - 05:40 AM	51.0	60.4	46.0
05:40 AM - 05:45 AM	54.3	66.6	46.5
05:45 AM - 05:50 AM	51.1	66.4	45.7
05:50 AM - 05:55 AM	49.4	57.8	45.2
05:55 AM - 06:00 AM	53.4	67.6	46.4
06:00 AM - 07:00 AM	51.9	69.0	47.0
07:00 AM - 08:00 AM	56.5	95.1	45.3
08:00 AM - 09:00 AM	51.1	69.1	46.7
09:00 AM - 10:00 AM	50.2	65.1	45.4
10:00 AM - 11:00 AM	50.7	74.9	45.9
11:00 AM - 12:00 PM	48.5	64.3	44.0
12:00 PM - 01:00 PM	48.7	64.6	44.3

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142086  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537341-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142086-2  
Parameter Noise  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320) (Shut down)  
Measurement Date Jun 28 - 29, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472124

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	49.7	67.3	45.1
02:00 PM - 03:00 PM	51.7	83.3	46.1
03:00 PM - 04:00 PM	52.4	77.7	46.1
04:00 PM - 05:00 PM	54.5	83.9	46.7
05:00 PM - 06:00 PM	53.9	80.1	46.1
06:00 PM - 07:00 PM	49.3	67.1	45.3
07:00 PM - 08:00 PM	49.2	68.0	45.8
08:00 PM - 09:00 PM	48.8	66.4	45.3
09:00 PM - 10:00 PM	47.4	62.5	45.2
10:00 PM - 10:05 PM	46.8	52.8	45.1
10:05 PM - 10:10 PM	47.8	57.7	45.7
10:10 PM - 10:15 PM	46.9	55.6	44.6
10:15 PM - 10:20 PM	46.2	52.8	43.7
10:20 PM - 10:25 PM	46.6	59.7	44.1
10:25 PM - 10:30 PM	45.4	53.2	43.3
10:30 PM - 10:35 PM	46.1	51.5	44.0
10:35 PM - 10:40 PM	45.9	51.3	43.7
10:40 PM - 10:45 PM	45.7	51.3	43.5
10:45 PM - 10:50 PM	45.7	53.7	43.7
10:50 PM - 10:55 PM	45.9	52.4	43.8
10:55 PM - 11:00 PM	46.2	51.9	43.2
11:00 PM - 11:05 PM	45.8	50.2	42.9
11:05 PM - 11:10 PM	46.8	58.5	43.1
11:10 PM - 11:15 PM	46.5	52.9	44.3
11:15 PM - 11:20 PM	46.4	53.3	43.7
11:20 PM - 11:25 PM	46.9	54.7	44.0
11:25 PM - 11:30 PM	46.3	52.8	44.0
11:30 PM - 11:35 PM	46.1	53.2	43.2
11:35 PM - 11:40 PM	45.3	52.0	42.1
11:40 PM - 11:45 PM	43.9	52.2	42.2
11:45 PM - 11:50 PM	44.0	51.1	41.8
11:50 PM - 11:55 PM	45.8	57.8	42.5
11:55 PM - 12:00 AM	45.0	49.9	42.9
12:00 AM - 12:05 AM	45.9	51.5	42.8
12:05 AM - 12:10 AM	45.2	53.4	42.7
12:10 AM - 12:15 AM	46.5	53.2	43.3
12:15 AM - 12:20 AM	44.2	49.0	42.6
12:20 AM - 12:25 AM	45.2	51.0	43.4
12:25 AM - 12:30 AM	45.8	51.3	43.5
12:30 AM - 12:35 AM	45.7	50.8	43.8

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142086  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537341-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142086-2  
Parameter Noise  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320) (Shut down)  
Measurement Date Jun 28 - 29, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472124

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:35 AM - 12:40 AM	45.2	53.9	43.0
12:40 AM - 12:45 AM	46.4	54.4	43.3
12:45 AM - 12:50 AM	44.3	51.7	41.7
12:50 AM - 12:55 AM	45.8	52.1	43.2
12:55 AM - 01:00 AM	45.6	54.0	43.2
01:00 AM - 01:05 AM	44.5	49.6	42.3
01:05 AM - 01:10 AM	46.4	52.3	44.1
01:10 AM - 01:15 AM	47.0	52.2	45.1
01:15 AM - 01:20 AM	46.4	51.6	44.0
01:20 AM - 01:25 AM	45.9	51.6	43.3
01:25 AM - 01:30 AM	44.7	51.9	42.8
01:30 AM - 01:35 AM	45.0	52.1	42.8
01:35 AM - 01:40 AM	45.1	49.3	42.9
01:40 AM - 01:45 AM	44.8	50.6	43.0
01:45 AM - 01:50 AM	46.5	53.1	44.1
01:50 AM - 01:55 AM	45.5	53.4	42.7
01:55 AM - 02:00 AM	47.3	53.9	44.6
02:00 AM - 02:05 AM	45.3	52.9	43.3
02:05 AM - 02:10 AM	45.0	54.9	42.5
02:10 AM - 02:15 AM	45.4	50.2	43.4
02:15 AM - 02:20 AM	46.1	53.4	42.6
02:20 AM - 02:25 AM	46.0	50.1	43.4
02:25 AM - 02:30 AM	46.4	57.0	43.1
02:30 AM - 02:35 AM	45.2	49.8	43.1
02:35 AM - 02:40 AM	46.1	54.0	43.5
02:40 AM - 02:45 AM	44.9	49.4	42.9
02:45 AM - 02:50 AM	45.3	52.5	41.9
02:50 AM - 02:55 AM	46.0	54.6	42.4
02:55 AM - 03:00 AM	46.8	53.5	44.3
03:00 AM - 03:05 AM	45.8	52.9	43.3
03:05 AM - 03:10 AM	46.1	53.3	42.8
03:10 AM - 03:15 AM	46.9	51.7	43.7
03:15 AM - 03:20 AM	47.0	53.4	44.4
03:20 AM - 03:25 AM	47.4	58.8	44.0
03:25 AM - 03:30 AM	46.4	53.7	43.6
03:30 AM - 03:35 AM	47.0	53.7	42.5
03:35 AM - 03:40 AM	46.9	53.3	43.7
03:40 AM - 03:45 AM	46.7	61.3	43.4
03:45 AM - 03:50 AM	48.0	62.5	42.0
03:50 AM - 03:55 AM	48.5	62.0	43.7

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142086  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537341-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142086-2  
Parameter Noise  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320) (Shut down)  
Measurement Date Jun 28 - 29, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472124

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:55 AM - 04:00 AM	50.0	62.7	44.1
04:00 AM - 04:05 AM	49.9	61.1	44.7
04:05 AM - 04:10 AM	50.1	61.7	43.6
04:10 AM - 04:15 AM	53.2	64.1	46.2
04:15 AM - 04:20 AM	53.8	63.6	47.9
04:20 AM - 04:25 AM	51.8	63.8	45.8
04:25 AM - 04:30 AM	51.6	61.5	48.1
04:30 AM - 04:35 AM	53.3	62.1	47.2
04:35 AM - 04:40 AM	49.3	59.6	45.4
04:40 AM - 04:45 AM	49.9	60.4	45.9
04:45 AM - 04:50 AM	50.1	66.8	45.3
04:50 AM - 04:55 AM	50.8	62.0	47.2
04:55 AM - 05:00 AM	49.1	56.7	45.4
05:00 AM - 05:05 AM	49.4	60.4	45.3
05:05 AM - 05:10 AM	51.2	63.5	47.1
05:10 AM - 05:15 AM	49.9	63.9	45.3
05:15 AM - 05:20 AM	50.8	66.7	45.6
05:20 AM - 05:25 AM	51.4	63.7	46.4
05:25 AM - 05:30 AM	52.6	65.4	47.2
05:30 AM - 05:35 AM	49.9	63.9	45.7
05:35 AM - 05:40 AM	50.8	64.2	46.1
05:40 AM - 05:45 AM	53.2	65.4	47.6
05:45 AM - 05:50 AM	52.2	67.9	45.0
05:50 AM - 05:55 AM	51.3	67.0	45.3
05:55 AM - 06:00 AM	52.1	70.3	47.0
06:00 AM - 07:00 AM	52.3	69.6	47.5
07:00 AM - 08:00 AM	51.4	79.8	45.9
08:00 AM - 09:00 AM	48.7	61.6	44.7
09:00 AM - 10:00 AM	52.0	65.6	45.2
10:00 AM - 11:00 AM	49.3	72.0	44.6
11:00 AM - 12:00 PM	49.2	73.0	44.7
12:00 PM - 01:00 PM	47.9	60.5	43.6

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142086  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537342-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142086-3  
Parameter Noise  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320) (Shut down)  
Measurement Date Jun 29 - 30, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472124

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	50.2	68.7	45.5
02:00 PM - 03:00 PM	51.2	75.4	45.2
03:00 PM - 04:00 PM	50.6	72.2	45.8
04:00 PM - 05:00 PM	50.5	67.1	45.4
05:00 PM - 06:00 PM	51.7	75.9	44.9
06:00 PM - 07:00 PM	48.8	63.4	46.3
07:00 PM - 08:00 PM	48.8	60.9	46.6
08:00 PM - 09:00 PM	48.7	60.2	46.3
09:00 PM - 10:00 PM	48.9	62.4	45.3
10:00 PM - 10:05 PM	48.7	65.7	44.1
10:05 PM - 10:10 PM	46.0	52.3	43.9
10:10 PM - 10:15 PM	47.5	54.1	44.9
10:15 PM - 10:20 PM	47.3	53.8	44.6
10:20 PM - 10:25 PM	46.8	59.5	43.2
10:25 PM - 10:30 PM	46.6	55.0	44.0
10:30 PM - 10:35 PM	46.5	56.0	44.6
10:35 PM - 10:40 PM	47.7	58.9	44.5
10:40 PM - 10:45 PM	46.8	59.2	43.8
10:45 PM - 10:50 PM	46.0	52.6	44.1
10:50 PM - 10:55 PM	45.9	59.4	43.7
10:55 PM - 11:00 PM	45.1	51.2	43.5
11:00 PM - 11:05 PM	45.9	52.5	43.7
11:05 PM - 11:10 PM	45.2	52.2	43.3
11:10 PM - 11:15 PM	45.1	56.7	43.0
11:15 PM - 11:20 PM	44.2	58.2	42.0
11:20 PM - 11:25 PM	45.0	51.5	42.8
11:25 PM - 11:30 PM	45.6	55.0	42.8
11:30 PM - 11:35 PM	46.7	57.1	43.0
11:35 PM - 11:40 PM	45.7	55.8	42.8
11:40 PM - 11:45 PM	46.4	54.5	42.7
11:45 PM - 11:50 PM	46.9	55.0	43.2
11:50 PM - 11:55 PM	45.7	51.3	43.1
11:55 PM - 12:00 AM	45.9	52.1	43.8
12:00 AM - 12:05 AM	46.5	57.4	44.1
12:05 AM - 12:10 AM	46.5	54.7	44.0
12:10 AM - 12:15 AM	46.4	56.2	44.0
12:15 AM - 12:20 AM	44.9	52.3	43.0
12:20 AM - 12:25 AM	45.3	52.7	43.2
12:25 AM - 12:30 AM	45.4	54.4	43.3
12:30 AM - 12:35 AM	46.0	57.5	43.6

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142086  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537342-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142086-3  
Parameter Noise  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320) (Shut down)  
Measurement Date Jun 29 - 30, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472124

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:35 AM - 12:40 AM	45.8	54.8	43.5
12:40 AM - 12:45 AM	45.5	53.3	42.8
12:45 AM - 12:50 AM	45.7	54.8	42.6
12:50 AM - 12:55 AM	44.7	51.6	42.1
12:55 AM - 01:00 AM	44.4	52.2	42.3
01:00 AM - 01:05 AM	46.1	51.9	43.8
01:05 AM - 01:10 AM	45.9	50.6	43.7
01:10 AM - 01:15 AM	45.0	57.1	42.2
01:15 AM - 01:20 AM	45.7	52.3	41.6
01:20 AM - 01:25 AM	45.0	51.3	42.7
01:25 AM - 01:30 AM	45.7	51.2	42.3
01:30 AM - 01:35 AM	44.4	49.0	42.7
01:35 AM - 01:40 AM	44.5	52.4	42.7
01:40 AM - 01:45 AM	45.1	51.4	43.0
01:45 AM - 01:50 AM	50.2	67.4	42.6
01:50 AM - 01:55 AM	44.7	49.5	42.4
01:55 AM - 02:00 AM	45.6	52.1	42.8
02:00 AM - 02:05 AM	45.3	50.8	42.7
02:05 AM - 02:10 AM	45.1	51.7	42.3
02:10 AM - 02:15 AM	44.5	50.5	41.6
02:15 AM - 02:20 AM	44.3	52.6	41.4
02:20 AM - 02:25 AM	45.5	52.9	41.9
02:25 AM - 02:30 AM	45.7	58.1	42.9
02:30 AM - 02:35 AM	45.0	52.1	42.1
02:35 AM - 02:40 AM	45.5	52.1	42.2
02:40 AM - 02:45 AM	44.9	57.7	41.5
02:45 AM - 02:50 AM	45.8	52.3	42.2
02:50 AM - 02:55 AM	46.1	53.5	42.5
02:55 AM - 03:00 AM	46.1	53.6	42.3
03:00 AM - 03:05 AM	45.0	52.7	42.2
03:05 AM - 03:10 AM	46.0	53.0	42.2
03:10 AM - 03:15 AM	45.5	51.4	41.9
03:15 AM - 03:20 AM	46.0	53.7	42.6
03:20 AM - 03:25 AM	46.4	53.3	42.9
03:25 AM - 03:30 AM	45.9	51.8	43.3
03:30 AM - 03:35 AM	46.4	50.7	43.3
03:35 AM - 03:40 AM	46.8	52.2	44.3
03:40 AM - 03:45 AM	45.5	51.9	43.0
03:45 AM - 03:50 AM	45.6	54.5	43.2
03:50 AM - 03:55 AM	46.9	55.4	43.2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

**TESTING**  
**No.0009**

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142086  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537342-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142086-3  
Parameter Noise  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320) (Shut down)  
Measurement Date Jun 29 - 30, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472124

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:55 AM - 04:00 AM	47.1	53.1	43.5
04:00 AM - 04:05 AM	46.8	57.3	42.1
04:05 AM - 04:10 AM	50.4	62.1	44.7
04:10 AM - 04:15 AM	50.9	61.7	44.9
04:15 AM - 04:20 AM	50.5	59.6	46.3
04:20 AM - 04:25 AM	51.2	73.1	45.2
04:25 AM - 04:30 AM	50.5	65.4	45.1
04:30 AM - 04:35 AM	50.0	61.8	45.1
04:35 AM - 04:40 AM	50.7	61.3	46.1
04:40 AM - 04:45 AM	51.1	65.8	46.1
04:45 AM - 04:50 AM	52.0	65.4	46.8
04:50 AM - 04:55 AM	49.8	64.4	43.2
04:55 AM - 05:00 AM	50.2	67.4	42.6
05:00 AM - 05:05 AM	49.4	57.5	46.9
05:05 AM - 05:10 AM	49.4	64.8	44.5
05:10 AM - 05:15 AM	48.2	57.2	43.9
05:15 AM - 05:20 AM	50.2	63.5	44.0
05:20 AM - 05:25 AM	48.6	61.0	43.3
05:25 AM - 05:30 AM	50.8	62.9	46.9
05:30 AM - 05:35 AM	50.1	62.5	44.2
05:35 AM - 05:40 AM	49.8	64.4	43.2
05:40 AM - 05:45 AM	54.2	68.5	46.1
05:45 AM - 05:50 AM	50.6	58.7	45.5
05:50 AM - 05:55 AM	51.1	60.7	46.3
05:55 AM - 06:00 AM	53.1	68.7	45.0
06:00 AM - 07:00 AM	51.5	72.7	46.1
07:00 AM - 08:00 AM	50.3	64.9	45.1
08:00 AM - 09:00 AM	50.2	68.0	45.4
09:00 AM - 10:00 AM	50.9	67.5	45.0
10:00 AM - 11:00 AM	50.5	72.0	45.1
11:00 AM - 12:00 PM	49.7	66.9	43.4
12:00 PM - 01:00 PM	49.1	61.9	44.1

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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

Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142086  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537343-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142086-4  
Parameter Noise  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320) (Shut down)  
Measurement Date Jun 30 - Jul 01, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472124

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	50.2	62.5	46.4
02:00 PM - 03:00 PM	50.1	68.4	45.3
03:00 PM - 04:00 PM	50.2	72.0	45.9
04:00 PM - 05:00 PM	50.3	70.7	47.5
05:00 PM - 06:00 PM	49.1	72.0	44.1
06:00 PM - 07:00 PM	49.8	67.7	47.2
07:00 PM - 08:00 PM	49.9	61.2	48.0
08:00 PM - 09:00 PM	49.7	61.4	47.8
09:00 PM - 10:00 PM	49.8	62.8	47.1
10:00 PM - 10:05 PM	48.1	57.6	46.0
10:05 PM - 10:10 PM	48.3	53.5	46.2
10:10 PM - 10:15 PM	48.4	59.6	46.6
10:15 PM - 10:20 PM	50.9	60.2	48.0
10:20 PM - 10:25 PM	49.8	59.7	47.9
10:25 PM - 10:30 PM	48.0	51.9	46.4
10:30 PM - 10:35 PM	49.7	55.9	48.2
10:35 PM - 10:40 PM	50.8	62.2	47.4
10:40 PM - 10:45 PM	50.4	57.0	49.0
10:45 PM - 10:50 PM	50.3	53.1	49.0
10:50 PM - 10:55 PM	50.7	54.8	49.1
10:55 PM - 11:00 PM	50.3	57.7	47.6
11:00 PM - 11:05 PM	51.6	61.0	49.5
11:05 PM - 11:10 PM	49.8	52.9	47.0
11:10 PM - 11:15 PM	50.9	54.1	49.4
11:15 PM - 11:20 PM	49.6	56.3	48.0
11:20 PM - 11:25 PM	49.2	53.6	47.5
11:25 PM - 11:30 PM	49.3	55.4	47.4
11:30 PM - 11:35 PM	49.2	53.5	45.4
11:35 PM - 11:40 PM	50.4	54.7	48.3
11:40 PM - 11:45 PM	48.3	53.5	46.2
11:45 PM - 11:50 PM	50.9	53.9	49.5
11:50 PM - 11:55 PM	48.8	55.1	45.6
11:55 PM - 12:00 AM	50.7	53.7	48.5
12:00 AM - 12:05 AM	49.1	60.0	47.1
12:05 AM - 12:10 AM	51.1	54.2	49.7
12:10 AM - 12:15 AM	49.8	54.2	45.6
12:15 AM - 12:20 AM	47.0	54.3	45.0
12:20 AM - 12:25 AM	45.3	51.0	43.6
12:25 AM - 12:30 AM	49.2	53.5	45.4
12:30 AM - 12:35 AM	50.3	58.3	48.1

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142086  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537343-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142086-4  
Parameter Noise  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320) (Shut down)  
Measurement Date Jun 30 - Jul 01, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472124

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:35 AM - 12:40 AM	48.9	58.5	45.1
12:40 AM - 12:45 AM	46.2	52.2	44.6
12:45 AM - 12:50 AM	45.8	57.7	44.0
12:50 AM - 12:55 AM	47.5	57.2	45.1
12:55 AM - 01:00 AM	46.4	54.5	44.1
01:00 AM - 01:05 AM	45.8	55.4	43.2
01:05 AM - 01:10 AM	46.3	54.0	43.6
01:10 AM - 01:15 AM	45.6	50.2	43.5
01:15 AM - 01:20 AM	46.7	51.5	44.9
01:20 AM - 01:25 AM	46.3	50.9	44.2
01:25 AM - 01:30 AM	47.2	55.5	45.0
01:30 AM - 01:35 AM	47.7	51.1	46.1
01:35 AM - 01:40 AM	46.9	52.7	44.8
01:40 AM - 01:45 AM	47.3	51.4	45.3
01:45 AM - 01:50 AM	48.4	62.2	45.3
01:50 AM - 01:55 AM	48.6	60.5	46.0
01:55 AM - 02:00 AM	48.2	55.1	45.9
02:00 AM - 02:05 AM	48.4	51.6	46.0
02:05 AM - 02:10 AM	48.0	52.7	45.6
02:10 AM - 02:15 AM	47.6	51.0	44.6
02:15 AM - 02:20 AM	46.6	52.2	43.8
02:20 AM - 02:25 AM	47.1	51.7	44.0
02:25 AM - 02:30 AM	46.6	51.8	43.6
02:30 AM - 02:35 AM	47.3	56.9	43.6
02:35 AM - 02:40 AM	45.7	50.7	41.9
02:40 AM - 02:45 AM	47.8	53.2	44.5
02:45 AM - 02:50 AM	48.8	55.1	45.6
02:50 AM - 02:55 AM	45.7	49.9	43.1
02:55 AM - 03:00 AM	45.3	52.4	43.4
03:00 AM - 03:05 AM	47.0	53.4	43.9
03:05 AM - 03:10 AM	45.9	53.7	43.6
03:10 AM - 03:15 AM	45.8	54.1	42.4
03:15 AM - 03:20 AM	45.8	50.4	43.2
03:20 AM - 03:25 AM	46.4	55.0	42.4
03:25 AM - 03:30 AM	47.3	60.9	42.8
03:30 AM - 03:35 AM	45.6	52.0	42.2
03:35 AM - 03:40 AM	46.4	52.8	43.0
03:40 AM - 03:45 AM	46.8	53.0	44.1
03:45 AM - 03:50 AM	46.1	54.1	43.2
03:50 AM - 03:55 AM	50.3	53.1	49.0

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142086  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537343-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142086-4  
Parameter Noise  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320) (Shut down)  
Measurement Date Jun 30 - Jul 01, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472124

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:55 AM - 04:00 AM	50.7	54.8	49.1
04:00 AM - 04:05 AM	50.3	57.7	47.6
04:05 AM - 04:10 AM	49.7	55.9	48.2
04:10 AM - 04:15 AM	50.3	57.7	47.6
04:15 AM - 04:20 AM	51.6	61.0	49.5
04:20 AM - 04:25 AM	49.8	52.9	47.0
04:25 AM - 04:30 AM	50.9	54.1	49.4
04:30 AM - 04:35 AM	49.1	60.0	47.1
04:35 AM - 04:40 AM	50.0	61.3	45.0
04:40 AM - 04:45 AM	52.4	60.8	49.1
04:45 AM - 04:50 AM	49.0	55.2	47.1
04:50 AM - 04:55 AM	48.8	52.6	47.6
04:55 AM - 05:00 AM	50.9	53.9	49.5
05:00 AM - 05:05 AM	49.2	53.5	47.2
05:05 AM - 05:10 AM	47.8	53.2	44.5
05:10 AM - 05:15 AM	48.8	55.1	45.6
05:15 AM - 05:20 AM	47.3	60.9	42.8
05:20 AM - 05:25 AM	48.8	54.6	45.1
05:25 AM - 05:30 AM	50.0	59.8	44.1
05:30 AM - 05:35 AM	48.6	55.5	44.5
05:35 AM - 05:40 AM	48.0	56.2	45.1
05:40 AM - 05:45 AM	49.8	71.8	45.3
05:45 AM - 05:50 AM	48.7	56.6	45.4
05:50 AM - 05:55 AM	48.9	56.7	44.9
05:55 AM - 06:00 AM	48.7	59.7	44.5
06:00 AM - 07:00 AM	49.6	68.0	45.8
07:00 AM - 08:00 AM	50.2	69.2	44.6
08:00 AM - 09:00 AM	50.9	65.9	44.5
09:00 AM - 10:00 AM	50.4	68.7	44.5
10:00 AM - 11:00 AM	49.6	69.2	44.4
11:00 AM - 12:00 PM	49.0	68.5	44.5
12:00 PM - 01:00 PM	50.4	65.6	46.4

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

**TESTING**  
**No.0009**

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142086  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537344-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142086-5  
Parameter Noise  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320) (Shut down)  
Measurement Date Jul 01 - 02, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472124

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	50.4	67.9	45.7
02:00 PM - 03:00 PM	49.9	69.2	45.6
03:00 PM - 04:00 PM	49.4	65.6	45.4
04:00 PM - 05:00 PM	50.1	73.7	45.6
05:00 PM - 06:00 PM	49.2	64.6	45.1
06:00 PM - 07:00 PM	49.7	67.9	46.4
07:00 PM - 08:00 PM	49.5	69.2	46.5
08:00 PM - 09:00 PM	49.4	69.2	45.2
09:00 PM - 10:00 PM	49.5	64.6	46.7
10:00 PM - 10:05 PM	50.0	60.0	47.2
10:05 PM - 10:10 PM	49.2	54.1	46.4
10:10 PM - 10:15 PM	50.7	56.7	46.7
10:15 PM - 10:20 PM	49.4	64.2	45.5
10:20 PM - 10:25 PM	50.6	64.6	44.1
10:25 PM - 10:30 PM	49.9	66.1	45.2
10:30 PM - 10:35 PM	47.9	62.2	44.0
10:35 PM - 10:40 PM	49.6	64.5	43.9
10:40 PM - 10:45 PM	50.8	58.8	46.7
10:45 PM - 10:50 PM	50.6	64.6	44.1
10:50 PM - 10:55 PM	48.4	57.4	45.8
10:55 PM - 11:00 PM	47.7	54.1	44.9
11:00 PM - 11:05 PM	47.6	56.2	45.4
11:05 PM - 11:10 PM	45.7	52.3	44.1
11:10 PM - 11:15 PM	48.0	57.6	44.9
11:15 PM - 11:20 PM	50.3	55.3	44.9
11:20 PM - 11:25 PM	52.5	56.0	49.3
11:25 PM - 11:30 PM	47.6	56.0	44.3
11:30 PM - 11:35 PM	46.1	53.5	44.3
11:35 PM - 11:40 PM	46.6	53.7	45.0
11:40 PM - 11:45 PM	46.3	54.8	45.0
11:45 PM - 11:50 PM	48.5	54.0	45.6
11:50 PM - 11:55 PM	49.8	57.2	47.3
11:55 PM - 12:00 AM	47.8	54.0	46.3
12:00 AM - 12:05 AM	46.9	51.5	44.8
12:05 AM - 12:10 AM	47.3	53.9	45.3
12:10 AM - 12:15 AM	46.9	50.6	44.8
12:15 AM - 12:20 AM	47.9	53.5	45.2
12:20 AM - 12:25 AM	48.1	53.6	44.6
12:25 AM - 12:30 AM	53.0	58.7	48.5
12:30 AM - 12:35 AM	51.9	62.2	44.9

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

Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142086  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537344-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142086-5  
Parameter Noise  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320) (Shut down)  
Measurement Date Jul 01 - 02, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472124

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:35 AM - 12:40 AM	47.4	62.6	43.9
12:40 AM - 12:45 AM	47.2	61.4	43.9
12:45 AM - 12:50 AM	50.4	65.6	45.2
12:50 AM - 12:55 AM	48.9	54.0	47.4
12:55 AM - 01:00 AM	49.0	54.4	47.4
01:00 AM - 01:05 AM	52.4	55.5	50.9
01:05 AM - 01:10 AM	50.0	56.4	48.3
01:10 AM - 01:15 AM	48.3	52.2	47.0
01:15 AM - 01:20 AM	48.1	55.6	46.2
01:20 AM - 01:25 AM	46.3	50.8	44.7
01:25 AM - 01:30 AM	46.7	54.1	44.7
01:30 AM - 01:35 AM	46.4	50.9	44.6
01:35 AM - 01:40 AM	46.9	53.1	44.0
01:40 AM - 01:45 AM	46.8	53.6	44.3
01:45 AM - 01:50 AM	46.0	55.0	43.9
01:50 AM - 01:55 AM	46.2	51.1	44.7
01:55 AM - 02:00 AM	47.2	53.8	45.1
02:00 AM - 02:05 AM	47.5	54.9	44.7
02:05 AM - 02:10 AM	46.3	50.9	44.4
02:10 AM - 02:15 AM	51.0	67.0	44.7
02:15 AM - 02:20 AM	45.8	50.2	43.8
02:20 AM - 02:25 AM	46.3	55.0	44.1
02:25 AM - 02:30 AM	47.3	55.6	44.2
02:30 AM - 02:35 AM	46.7	51.9	44.9
02:35 AM - 02:40 AM	47.4	54.0	45.0
02:40 AM - 02:45 AM	47.4	56.1	44.9
02:45 AM - 02:50 AM	48.0	51.6	46.5
02:50 AM - 02:55 AM	49.2	61.6	47.3
02:55 AM - 03:00 AM	50.3	57.4	49.0
03:00 AM - 03:05 AM	48.3	52.2	47.0
03:05 AM - 03:10 AM	48.6	58.6	44.9
03:10 AM - 03:15 AM	48.0	55.0	44.5
03:15 AM - 03:20 AM	49.8	57.2	47.3
03:20 AM - 03:25 AM	49.9	60.4	45.4
03:25 AM - 03:30 AM	48.9	62.1	43.5
03:30 AM - 03:35 AM	50.4	66.2	42.5
03:35 AM - 03:40 AM	49.4	64.8	44.6
03:40 AM - 03:45 AM	50.1	64.2	45.1
03:45 AM - 03:50 AM	49.9	66.1	45.2
03:50 AM - 03:55 AM	50.3	62.6	44.3

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142086  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537344-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142086-5  
Parameter Noise  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320) (Shut down)  
Measurement Date Jul 01 - 02, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472124

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:55 AM - 04:00 AM	50.2	69.2	43.8
04:00 AM - 04:05 AM	49.0	54.4	47.4
04:05 AM - 04:10 AM	49.0	59.2	47.1
04:10 AM - 04:15 AM	50.8	63.2	48.1
04:15 AM - 04:20 AM	51.8	65.2	48.1
04:20 AM - 04:25 AM	48.1	55.6	46.2
04:25 AM - 04:30 AM	50.2	63.6	44.9
04:30 AM - 04:35 AM	49.9	62.5	47.0
04:35 AM - 04:40 AM	49.4	64.2	45.5
04:40 AM - 04:45 AM	50.6	64.6	44.1
04:45 AM - 04:50 AM	50.6	64.6	44.1
04:50 AM - 04:55 AM	48.6	55.1	45.8
04:55 AM - 05:00 AM	50.8	69.2	44.3
05:00 AM - 05:05 AM	49.4	64.2	45.5
05:05 AM - 05:10 AM	49.0	54.4	47.4
05:10 AM - 05:15 AM	48.9	54.0	47.4
05:15 AM - 05:20 AM	50.6	64.6	44.1
05:20 AM - 05:25 AM	48.6	55.1	45.8
05:25 AM - 05:30 AM	49.2	61.6	47.3
05:30 AM - 05:35 AM	49.8	65.4	46.0
05:35 AM - 05:40 AM	47.7	54.1	44.9
05:40 AM - 05:45 AM	47.6	56.2	45.4
05:45 AM - 05:50 AM	48.9	54.0	47.4
05:50 AM - 05:55 AM	49.0	54.4	47.4
05:55 AM - 06:00 AM	49.8	57.2	47.3
06:00 AM - 07:00 AM	49.7	66.4	46.1
07:00 AM - 08:00 AM	50.2	67.3	45.9
08:00 AM - 09:00 AM	49.9	65.6	46.2
09:00 AM - 10:00 AM	48.9	66.6	45.1
10:00 AM - 11:00 AM	49.1	74.0	45.0
11:00 AM - 12:00 PM	48.8	65.6	45.4
12:00 PM - 01:00 PM	50.2	65.9	46.2

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142086  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537345-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142086-6  
Parameter Noise  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320) (Shut down)  
Measurement Date Jul 02 - 03, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472124

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	50.4	68.9	46.4
02:00 PM - 03:00 PM	51.6	71.2	46.3
03:00 PM - 04:00 PM	53.7	75.5	46.7
04:00 PM - 05:00 PM	55.6	75.4	47.2
05:00 PM - 06:00 PM	48.8	73.8	44.6
06:00 PM - 07:00 PM	51.7	65.7	49.9
07:00 PM - 08:00 PM	52.4	64.2	51.3
08:00 PM - 09:00 PM	51.4	64.9	49.8
09:00 PM - 10:00 PM	50.0	56.5	48.4
10:00 PM - 10:05 PM	52.7	55.6	51.3
10:05 PM - 10:10 PM	52.8	56.1	51.4
10:10 PM - 10:15 PM	52.6	56.0	51.3
10:15 PM - 10:20 PM	52.5	56.9	51.0
10:20 PM - 10:25 PM	51.4	55.9	49.2
10:25 PM - 10:30 PM	51.0	55.2	49.8
10:30 PM - 10:35 PM	50.7	53.9	49.7
10:35 PM - 10:40 PM	51.1	53.5	50.1
10:40 PM - 10:45 PM	49.7	54.6	46.3
10:45 PM - 10:50 PM	47.1	52.8	46.0
10:50 PM - 10:55 PM	47.0	55.6	45.5
10:55 PM - 11:00 PM	50.3	53.4	47.0
11:00 PM - 11:05 PM	50.7	53.5	48.8
11:05 PM - 11:10 PM	52.1	55.4	50.4
11:10 PM - 11:15 PM	52.7	55.3	51.2
11:15 PM - 11:20 PM	48.9	55.2	45.3
11:20 PM - 11:25 PM	46.4	51.3	45.2
11:25 PM - 11:30 PM	46.8	50.9	45.1
11:30 PM - 11:35 PM	46.9	52.6	45.5
11:35 PM - 11:40 PM	46.4	54.5	45.3
11:40 PM - 11:45 PM	47.4	59.4	45.5
11:45 PM - 11:50 PM	49.1	54.4	46.7
11:50 PM - 11:55 PM	48.1	53.9	46.0
11:55 PM - 12:00 AM	47.9	53.8	45.9
12:00 AM - 12:05 AM	47.1	58.0	45.1
12:05 AM - 12:10 AM	46.1	53.7	44.4
12:10 AM - 12:15 AM	46.8	58.8	44.5
12:15 AM - 12:20 AM	46.1	52.9	44.1
12:20 AM - 12:25 AM	46.1	50.3	44.1
12:25 AM - 12:30 AM	45.2	49.0	43.8
12:30 AM - 12:35 AM	46.4	55.0	45.0

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142086  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537345-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142086-6  
Parameter Noise  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320) (Shut down)  
Measurement Date Jul 02 - 03, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472124

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:35 AM - 12:40 AM	46.9	51.7	45.3
12:40 AM - 12:45 AM	47.1	52.3	45.7
12:45 AM - 12:50 AM	48.0	57.0	45.8
12:50 AM - 12:55 AM	46.3	49.9	45.3
12:55 AM - 01:00 AM	46.1	61.6	44.8
01:00 AM - 01:05 AM	47.1	50.5	45.9
01:05 AM - 01:10 AM	47.4	53.0	45.8
01:10 AM - 01:15 AM	46.2	50.7	44.8
01:15 AM - 01:20 AM	47.0	53.4	45.0
01:20 AM - 01:25 AM	46.7	50.9	44.8
01:25 AM - 01:30 AM	49.0	55.0	45.7
01:30 AM - 01:35 AM	51.3	56.2	45.1
01:35 AM - 01:40 AM	45.6	53.4	44.4
01:40 AM - 01:45 AM	47.4	58.1	43.9
01:45 AM - 01:50 AM	45.0	56.0	43.3
01:50 AM - 01:55 AM	46.1	55.6	43.7
01:55 AM - 02:00 AM	44.9	50.4	43.1
02:00 AM - 02:05 AM	46.2	57.4	43.0
02:05 AM - 02:10 AM	45.5	50.1	43.8
02:10 AM - 02:15 AM	45.7	52.3	43.4
02:15 AM - 02:20 AM	44.9	49.4	43.0
02:20 AM - 02:25 AM	46.5	53.1	44.1
02:25 AM - 02:30 AM	45.2	50.3	43.2
02:30 AM - 02:35 AM	43.9	48.7	42.2
02:35 AM - 02:40 AM	46.0	52.3	43.1
02:40 AM - 02:45 AM	45.3	51.8	42.5
02:45 AM - 02:50 AM	45.0	50.6	42.2
02:50 AM - 02:55 AM	46.5	55.7	43.2
02:55 AM - 03:00 AM	45.9	53.4	42.8
03:00 AM - 03:05 AM	45.3	53.1	41.6
03:05 AM - 03:10 AM	46.2	59.3	42.8
03:10 AM - 03:15 AM	46.0	50.8	43.6
03:15 AM - 03:20 AM	45.6	51.0	42.9
03:20 AM - 03:25 AM	48.1	53.1	45.0
03:25 AM - 03:30 AM	47.9	63.3	44.6
03:30 AM - 03:35 AM	50.0	63.6	44.1
03:35 AM - 03:40 AM	50.7	63.7	45.2
03:40 AM - 03:45 AM	49.8	63.1	44.9
03:45 AM - 03:50 AM	53.5	63.0	46.4
03:50 AM - 03:55 AM	56.0	63.7	50.0

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Approved by

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142086  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537345-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142086-6  
Parameter Noise  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320) (Shut down)  
Measurement Date Jul 02 - 03, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472124

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:55 AM - 04:00 AM	54.5	63.1	47.8
04:00 AM - 04:05 AM	52.1	63.1	44.9
04:05 AM - 04:10 AM	51.4	64.5	46.4
04:10 AM - 04:15 AM	50.8	64.7	45.9
04:15 AM - 04:20 AM	52.9	66.6	46.3
04:20 AM - 04:25 AM	52.0	65.1	46.0
04:25 AM - 04:30 AM	49.2	57.7	45.8
04:30 AM - 04:35 AM	52.6	63.0	46.4
04:35 AM - 04:40 AM	51.8	65.1	45.3
04:40 AM - 04:45 AM	51.7	72.7	44.4
04:45 AM - 04:50 AM	51.6	63.0	44.7
04:50 AM - 04:55 AM	49.6	62.6	45.3
04:55 AM - 05:00 AM	50.4	61.3	45.8
05:00 AM - 05:05 AM	49.0	57.3	44.6
05:05 AM - 05:10 AM	48.8	55.2	45.3
05:10 AM - 05:15 AM	47.4	59.3	43.4
05:15 AM - 05:20 AM	51.4	66.0	45.7
05:20 AM - 05:25 AM	50.5	60.8	46.2
05:25 AM - 05:30 AM	49.3	69.2	44.5
05:30 AM - 05:35 AM	48.9	59.6	45.1
05:35 AM - 05:40 AM	49.8	61.6	45.9
05:40 AM - 05:45 AM	49.9	63.2	46.2
05:45 AM - 05:50 AM	50.8	65.0	46.0
05:50 AM - 05:55 AM	49.8	66.4	45.7
05:55 AM - 06:00 AM	52.9	66.8	47.5
06:00 AM - 07:00 AM	51.6	65.6	43.2
07:00 AM - 08:00 AM	52.0	76.4	49.0
08:00 AM - 09:00 AM	53.7	67.6	52.1
09:00 AM - 10:00 AM	52.9	64.2	51.7
10:00 AM - 11:00 AM	56.4	79.7	51.1
11:00 AM - 12:00 PM	53.7	84.1	46.8
12:00 PM - 01:00 PM	51.0	64.1	46.4

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142086  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537346-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142086-7  
Parameter Noise  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320) (Shut down)  
Measurement Date Jul 03 - 04, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472124

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
01:00 PM - 02:00 PM	51.4	75.5	45.9
02:00 PM - 03:00 PM	51.1	71.7	46.8
03:00 PM - 04:00 PM	52.6	74.3	47.2
04:00 PM - 05:00 PM	52.3	70.7	47.2
05:00 PM - 06:00 PM	49.9	68.1	47.0
06:00 PM - 07:00 PM	49.5	75.5	44.8
07:00 PM - 08:00 PM	50.9	73.6	47.3
08:00 PM - 09:00 PM	49.8	69.1	46.1
09:00 PM - 10:00 PM	48.7	57.7	46.2
10:00 PM - 10:05 PM	46.9	51.8	45.0
10:05 PM - 10:10 PM	48.6	55.2	45.9
10:10 PM - 10:15 PM	47.9	56.7	45.7
10:15 PM - 10:20 PM	46.3	52.7	44.5
10:20 PM - 10:25 PM	49.2	57.0	46.6
10:25 PM - 10:30 PM	47.3	52.4	45.8
10:30 PM - 10:35 PM	47.3	52.7	45.2
10:35 PM - 10:40 PM	49.2	52.3	48.0
10:40 PM - 10:45 PM	49.7	53.5	48.4
10:45 PM - 10:50 PM	49.7	54.2	48.4
10:50 PM - 10:55 PM	49.9	54.2	48.4
10:55 PM - 11:00 PM	49.9	54.3	46.2
11:00 PM - 11:05 PM	51.3	54.1	50.1
11:05 PM - 11:10 PM	50.7	54.2	47.6
11:10 PM - 11:15 PM	51.6	55.7	49.6
11:15 PM - 11:20 PM	48.1	57.7	45.6
11:20 PM - 11:25 PM	46.9	52.3	44.6
11:25 PM - 11:30 PM	46.1	53.0	44.1
11:30 PM - 11:35 PM	47.0	56.0	44.6
11:35 PM - 11:40 PM	46.0	51.6	44.3
11:40 PM - 11:45 PM	45.9	50.1	44.4
11:45 PM - 11:50 PM	46.1	50.7	44.5
11:50 PM - 11:55 PM	44.4	51.3	42.5
11:55 PM - 12:00 AM	44.5	51.8	42.8
12:00 AM - 12:05 AM	44.2	49.1	42.6
12:05 AM - 12:10 AM	45.3	58.1	43.1
12:10 AM - 12:15 AM	45.1	52.2	42.9
12:15 AM - 12:20 AM	45.6	54.0	43.3
12:20 AM - 12:25 AM	44.8	48.9	42.9
12:25 AM - 12:30 AM	45.5	51.2	43.9
12:30 AM - 12:35 AM	45.6	53.2	43.8

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142086  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537346-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142086-7  
Parameter Noise  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320) (Shut down)  
Measurement Date Jul 03 - 04, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472124

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:35 AM - 12:40 AM	46.7	55.0	44.6
12:40 AM - 12:45 AM	45.6	53.2	43.5
12:45 AM - 12:50 AM	44.4	49.2	43.0
12:50 AM - 12:55 AM	45.6	52.6	43.0
12:55 AM - 01:00 AM	45.0	52.3	42.0
01:00 AM - 01:05 AM	44.9	49.7	42.5
01:05 AM - 01:10 AM	44.5	52.6	42.0
01:10 AM - 01:15 AM	43.3	51.7	41.0
01:15 AM - 01:20 AM	44.4	51.3	42.1
01:20 AM - 01:25 AM	45.2	51.9	43.2
01:25 AM - 01:30 AM	44.9	49.4	43.3
01:30 AM - 01:35 AM	45.1	53.0	43.1
01:35 AM - 01:40 AM	44.1	48.8	42.5
01:40 AM - 01:45 AM	45.3	53.5	42.9
01:45 AM - 01:50 AM	46.0	51.4	43.6
01:50 AM - 01:55 AM	45.4	49.6	43.1
01:55 AM - 02:00 AM	45.3	48.6	43.8
02:00 AM - 02:05 AM	45.7	58.5	43.7
02:05 AM - 02:10 AM	45.0	51.8	43.2
02:10 AM - 02:15 AM	45.4	49.2	44.0
02:15 AM - 02:20 AM	45.9	54.7	43.9
02:20 AM - 02:25 AM	45.2	52.2	41.8
02:25 AM - 02:30 AM	45.7	50.6	43.6
02:30 AM - 02:35 AM	44.6	50.8	41.3
02:35 AM - 02:40 AM	46.0	51.7	41.7
02:40 AM - 02:45 AM	44.6	58.4	41.3
02:45 AM - 02:50 AM	44.9	50.0	42.9
02:50 AM - 02:55 AM	44.3	50.5	41.3
02:55 AM - 03:00 AM	44.5	50.2	41.7
03:00 AM - 03:05 AM	44.9	59.8	41.8
03:05 AM - 03:10 AM	44.8	50.9	41.7
03:10 AM - 03:15 AM	44.8	50.1	42.2
03:15 AM - 03:20 AM	44.4	49.9	42.2
03:20 AM - 03:25 AM	45.2	52.8	42.1
03:25 AM - 03:30 AM	44.9	49.7	42.3
03:30 AM - 03:35 AM	44.3	51.7	41.1
03:35 AM - 03:40 AM	45.6	62.3	40.5
03:40 AM - 03:45 AM	50.6	63.3	44.2
03:45 AM - 03:50 AM	49.3	63.4	42.8
03:50 AM - 03:55 AM	54.7	62.6	48.7

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142086  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537346-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142086-7  
Parameter Noise  
Location โรงเรียนบ้านห้วยกองสี (GPS 48Q 279854, 1889320) (Shut down)  
Measurement Date Jul 03 - 04, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 00472124

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:55 AM - 04:00 AM	54.2	65.7	47.1
04:00 AM - 04:05 AM	52.8	60.8	46.6
04:05 AM - 04:10 AM	51.4	67.0	46.5
04:10 AM - 04:15 AM	53.0	66.2	45.4
04:15 AM - 04:20 AM	53.7	67.0	46.8
04:20 AM - 04:25 AM	51.2	65.9	46.0
04:25 AM - 04:30 AM	51.8	60.1	48.3
04:30 AM - 04:35 AM	50.2	62.0	47.1
04:35 AM - 04:40 AM	51.8	69.6	45.9
04:40 AM - 04:45 AM	50.2	63.1	47.1
04:45 AM - 04:50 AM	50.6	59.1	46.5
04:50 AM - 04:55 AM	49.7	60.0	45.5
04:55 AM - 05:00 AM	49.5	60.7	46.8
05:00 AM - 05:05 AM	50.0	64.2	45.9
05:05 AM - 05:10 AM	51.1	60.0	45.5
05:10 AM - 05:15 AM	51.1	60.9	47.0
05:15 AM - 05:20 AM	50.0	59.5	46.7
05:20 AM - 05:25 AM	50.7	63.0	47.5
05:25 AM - 05:30 AM	50.0	66.0	46.5
05:30 AM - 05:35 AM	50.4	66.2	47.0
05:35 AM - 05:40 AM	52.5	65.6	47.0
05:40 AM - 05:45 AM	49.8	63.3	46.6
05:45 AM - 05:50 AM	49.9	60.7	47.3
05:50 AM - 05:55 AM	50.7	60.6	47.6
05:55 AM - 06:00 AM	51.7	70.6	47.6
06:00 AM - 07:00 AM	52.2	74.2	47.4
07:00 AM - 08:00 AM	51.3	75.5	45.8
08:00 AM - 09:00 AM	50.4	65.1	45.4
09:00 AM - 10:00 AM	49.1	75.5	45.3
10:00 AM - 11:00 AM	49.1	73.9	45.1
11:00 AM - 12:00 PM	48.1	55.0	47.2
12:00 PM - 01:00 PM	47.5	55.1	46.6

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142087  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537384-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142087-1  
Parameter Noise  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945) (Shut down)  
Measurement Date Jun 27 - 28, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173614

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	52.4	69.8	46.8
11:00 AM - 12:00 PM	52.3	71.2	47.0
12:00 PM - 01:00 PM	51.3	73.7	44.9
01:00 PM - 02:00 PM	51.4	70.7	46.5
02:00 PM - 03:00 PM	51.4	74.0	45.0
03:00 PM - 04:00 PM	52.1	72.4	45.3
04:00 PM - 05:00 PM	53.5	76.5	45.8
05:00 PM - 06:00 PM	51.3	74.2	45.1
06:00 PM - 07:00 PM	51.5	79.7	43.5
07:00 PM - 08:00 PM	48.6	70.0	45.4
08:00 PM - 09:00 PM	49.9	72.8	47.3
09:00 PM - 10:00 PM	49.0	72.3	48.0
10:00 PM - 10:05 PM	48.1	55.6	47.4
10:05 PM - 10:10 PM	48.4	57.2	47.4
10:10 PM - 10:15 PM	48.1	61.8	47.1
10:15 PM - 10:20 PM	47.4	53.3	46.4
10:20 PM - 10:25 PM	50.2	62.9	49.3
10:25 PM - 10:30 PM	53.1	75.5	45.6
10:30 PM - 10:35 PM	47.6	55.5	45.6
10:35 PM - 10:40 PM	47.5	53.1	45.9
10:40 PM - 10:45 PM	46.6	66.9	45.2
10:45 PM - 10:50 PM	45.5	50.7	45.0
10:50 PM - 10:55 PM	45.6	50.7	45.0
10:55 PM - 11:00 PM	48.1	53.9	45.3
11:00 PM - 11:05 PM	52.6	54.7	51.8
11:05 PM - 11:10 PM	52.6	54.1	52.0
11:10 PM - 11:15 PM	52.6	55.2	51.8
11:15 PM - 11:20 PM	52.8	66.2	51.8
11:20 PM - 11:25 PM	54.2	71.1	51.7
11:25 PM - 11:30 PM	51.4	56.5	46.9
11:30 PM - 11:35 PM	52.3	54.9	49.9
11:35 PM - 11:40 PM	53.0	55.0	52.3
11:40 PM - 11:45 PM	53.0	54.9	52.2
11:45 PM - 11:50 PM	53.0	55.4	52.2
11:50 PM - 11:55 PM	52.9	54.8	52.1
11:55 PM - 12:00 AM	49.0	61.6	44.2
12:00 AM - 12:05 AM	50.3	63.4	44.9
12:05 AM - 12:10 AM	46.2	53.9	44.7
12:10 AM - 12:15 AM	48.3	56.1	46.1
12:15 AM - 12:20 AM	47.4	52.4	46.2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

**TESTING**  
**No.0009**

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142087  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537384-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142087-1  
Parameter Noise  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945) (Shut down)  
Measurement Date Jun 27 - 28, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173614

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:20 AM - 12:25 AM	52.8	63.7	51.7
12:25 AM - 12:30 AM	52.8	55.2	51.0
12:30 AM - 12:35 AM	53.2	56.4	52.5
12:35 AM - 12:40 AM	53.0	57.5	52.3
12:40 AM - 12:45 AM	52.4	54.6	48.2
12:45 AM - 12:50 AM	48.1	49.4	47.6
12:50 AM - 12:55 AM	47.5	55.1	46.7
12:55 AM - 01:00 AM	47.4	60.7	46.8
01:00 AM - 01:05 AM	45.2	49.1	44.5
01:05 AM - 01:10 AM	45.2	54.5	44.5
01:10 AM - 01:15 AM	45.3	54.5	44.8
01:15 AM - 01:20 AM	45.5	51.2	44.7
01:20 AM - 01:25 AM	47.3	71.3	44.6
01:25 AM - 01:30 AM	46.1	49.1	44.5
01:30 AM - 01:35 AM	46.6	49.7	44.5
01:35 AM - 01:40 AM	43.9	46.1	43.2
01:40 AM - 01:45 AM	43.1	48.1	42.7
01:45 AM - 01:50 AM	43.1	44.7	42.7
01:50 AM - 01:55 AM	42.8	45.3	42.3
01:55 AM - 02:00 AM	43.4	51.1	42.9
02:00 AM - 02:05 AM	46.5	54.2	42.8
02:05 AM - 02:10 AM	51.6	54.4	43.9
02:10 AM - 02:15 AM	43.5	45.6	43.1
02:15 AM - 02:20 AM	46.3	52.8	42.6
02:20 AM - 02:25 AM	45.8	53.6	42.5
02:25 AM - 02:30 AM	51.8	54.4	43.4
02:30 AM - 02:35 AM	42.9	48.7	42.3
02:35 AM - 02:40 AM	43.2	47.5	42.7
02:40 AM - 02:45 AM	42.5	44.3	42.0
02:45 AM - 02:50 AM	47.9	53.4	42.1
02:50 AM - 02:55 AM	46.8	51.3	43.1
02:55 AM - 03:00 AM	47.2	54.0	43.1
03:00 AM - 03:05 AM	51.9	54.0	51.0
03:05 AM - 03:10 AM	47.8	50.2	47.1
03:10 AM - 03:15 AM	48.1	49.6	47.5
03:15 AM - 03:20 AM	49.4	67.3	47.8
03:20 AM - 03:25 AM	51.4	54.6	43.6
03:25 AM - 03:30 AM	43.2	51.2	42.6
03:30 AM - 03:35 AM	42.4	49.3	41.8
03:35 AM - 03:40 AM	42.4	48.2	41.7

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142087  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537384-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142087-1  
Parameter Noise  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945) (Shut down)  
Measurement Date Jun 27 - 28, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173614

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:40 AM - 03:45 AM	41.8	45.9	41.4
03:45 AM - 03:50 AM	41.9	48.7	41.4
03:50 AM - 03:55 AM	41.9	45.7	41.4
03:55 AM - 04:00 AM	42.1	45.5	41.6
04:00 AM - 04:05 AM	46.9	62.4	41.7
04:05 AM - 04:10 AM	45.5	70.2	41.9
04:10 AM - 04:15 AM	42.6	49.5	42.2
04:15 AM - 04:20 AM	43.3	54.1	42.5
04:20 AM - 04:25 AM	44.1	56.2	42.6
04:25 AM - 04:30 AM	48.1	49.4	47.6
04:30 AM - 04:35 AM	51.9	64.4	42.6
04:35 AM - 04:40 AM	48.6	62.1	48.0
04:40 AM - 04:45 AM	48.1	52.3	47.6
04:45 AM - 04:50 AM	47.8	50.2	47.1
04:50 AM - 04:55 AM	48.1	49.6	47.5
04:55 AM - 05:00 AM	48.0	55.6	47.2
05:00 AM - 05:05 AM	48.1	55.6	47.4
05:05 AM - 05:10 AM	53.8	65.4	48.4
05:10 AM - 05:15 AM	53.4	65.3	47.5
05:15 AM - 05:20 AM	47.5	55.1	46.7
05:20 AM - 05:25 AM	47.4	60.7	46.8
05:25 AM - 05:30 AM	45.2	49.1	44.5
05:30 AM - 05:35 AM	48.3	56.1	46.1
05:35 AM - 05:40 AM	47.4	52.4	46.2
05:40 AM - 05:45 AM	51.5	69.8	44.6
05:45 AM - 05:50 AM	50.9	64.3	44.5
05:50 AM - 05:55 AM	49.0	61.6	44.2
05:55 AM - 06:00 AM	50.3	63.4	44.9
06:00 AM - 07:00 AM	50.6	72.4	45.9
07:00 AM - 08:00 AM	50.6	65.4	46.0
08:00 AM - 09:00 AM	51.0	70.6	45.5
09:00 AM - 10:00 AM	52.0	79.0	45.1

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142087  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537385-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142087-2  
Parameter Noise  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945) (Shut down)  
Measurement Date Jun 28 - 29, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173614

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	52.0	77.4	45.2
11:00 AM - 12:00 PM	50.0	66.1	44.7
12:00 PM - 01:00 PM	49.5	68.2	44.4
01:00 PM - 02:00 PM	48.5	72.7	44.3
02:00 PM - 03:00 PM	50.8	72.0	45.3
03:00 PM - 04:00 PM	50.7	72.7	46.4
04:00 PM - 05:00 PM	51.0	68.1	47.5
05:00 PM - 06:00 PM	51.4	66.0	47.9
06:00 PM - 07:00 PM	50.3	67.5	46.3
07:00 PM - 08:00 PM	50.8	81.5	45.6
08:00 PM - 09:00 PM	50.3	78.3	45.8
09:00 PM - 10:00 PM	49.1	75.7	47.3
10:00 PM - 10:05 PM	47.6	61.7	47.0
10:05 PM - 10:10 PM	47.8	55.6	47.2
10:10 PM - 10:15 PM	49.6	67.9	47.5
10:15 PM - 10:20 PM	48.1	64.5	47.4
10:20 PM - 10:25 PM	49.6	75.0	47.3
10:25 PM - 10:30 PM	47.2	55.7	46.3
10:30 PM - 10:35 PM	47.6	63.8	46.4
10:35 PM - 10:40 PM	47.3	49.5	46.8
10:40 PM - 10:45 PM	50.4	72.8	47.2
10:45 PM - 10:50 PM	47.2	49.0	46.6
10:50 PM - 10:55 PM	47.9	59.0	46.8
10:55 PM - 11:00 PM	47.5	59.0	46.5
11:00 PM - 11:05 PM	47.6	50.0	47.1
11:05 PM - 11:10 PM	47.5	50.1	46.9
11:10 PM - 11:15 PM	47.4	50.7	46.5
11:15 PM - 11:20 PM	47.8	67.2	46.3
11:20 PM - 11:25 PM	53.8	77.3	46.1
11:25 PM - 11:30 PM	49.6	71.9	45.5
11:30 PM - 11:35 PM	46.8	50.7	45.7
11:35 PM - 11:40 PM	47.3	49.3	46.6
11:40 PM - 11:45 PM	47.0	50.8	45.3
11:45 PM - 11:50 PM	46.7	64.5	45.6
11:50 PM - 11:55 PM	47.5	60.1	46.4
11:55 PM - 12:00 AM	46.5	58.1	44.6
12:00 AM - 12:05 AM	44.6	47.7	43.6
12:05 AM - 12:10 AM	45.2	47.5	44.8
12:10 AM - 12:15 AM	45.1	47.9	44.3
12:15 AM - 12:20 AM	45.0	50.9	44.1

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142087  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537385-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142087-2  
Parameter Noise  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945) (Shut down)  
Measurement Date Jun 28 - 29, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173614

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:20 AM - 12:25 AM	50.5	67.7	44.7
12:25 AM - 12:30 AM	50.4	72.8	47.2
12:30 AM - 12:35 AM	44.8	46.7	43.7
12:35 AM - 12:40 AM	45.2	47.2	43.7
12:40 AM - 12:45 AM	46.5	48.8	45.8
12:45 AM - 12:50 AM	46.1	49.4	45.0
12:50 AM - 12:55 AM	44.8	46.7	44.3
12:55 AM - 01:00 AM	44.9	46.0	44.4
01:00 AM - 01:05 AM	44.7	57.1	43.9
01:05 AM - 01:10 AM	46.2	48.2	45.4
01:10 AM - 01:15 AM	44.9	47.2	44.2
01:15 AM - 01:20 AM	45.4	46.9	44.8
01:20 AM - 01:25 AM	45.5	50.6	44.9
01:25 AM - 01:30 AM	46.7	48.9	46.0
01:30 AM - 01:35 AM	45.5	48.2	44.0
01:35 AM - 01:40 AM	45.4	48.2	43.9
01:40 AM - 01:45 AM	45.2	48.5	44.6
01:45 AM - 01:50 AM	45.1	48.2	44.4
01:50 AM - 01:55 AM	46.1	49.9	44.2
01:55 AM - 02:00 AM	48.2	51.0	47.3
02:00 AM - 02:05 AM	47.3	51.1	45.0
02:05 AM - 02:10 AM	47.4	50.8	44.0
02:10 AM - 02:15 AM	45.9	50.2	43.6
02:15 AM - 02:20 AM	50.7	69.9	43.7
02:20 AM - 02:25 AM	58.5	84.3	43.4
02:25 AM - 02:30 AM	46.5	51.0	45.5
02:30 AM - 02:35 AM	45.1	55.3	43.0
02:35 AM - 02:40 AM	43.4	51.2	42.9
02:40 AM - 02:45 AM	43.7	58.9	42.9
02:45 AM - 02:50 AM	43.5	54.5	42.9
02:50 AM - 02:55 AM	44.7	71.5	42.5
02:55 AM - 03:00 AM	43.0	49.4	42.4
03:00 AM - 03:05 AM	43.1	48.3	42.1
03:05 AM - 03:10 AM	42.7	46.4	41.9
03:10 AM - 03:15 AM	43.7	56.1	41.9
03:15 AM - 03:20 AM	42.8	46.2	42.0
03:20 AM - 03:25 AM	42.4	46.1	41.6
03:25 AM - 03:30 AM	42.3	52.0	41.7
03:30 AM - 03:35 AM	42.2	44.8	41.5
03:35 AM - 03:40 AM	42.4	48.2	41.7

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Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142087  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537385-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142087-2  
Parameter Noise  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945) (Shut down)  
Measurement Date Jun 28 - 29, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173614

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:40 AM - 03:45 AM	43.0	46.4	41.7
03:45 AM - 03:50 AM	44.6	64.8	41.6
03:50 AM - 03:55 AM	47.0	61.1	41.7
03:55 AM - 04:00 AM	45.0	48.8	41.8
04:00 AM - 04:05 AM	44.1	53.7	42.4
04:05 AM - 04:10 AM	52.0	75.3	43.5
04:10 AM - 04:15 AM	43.2	62.3	41.6
04:15 AM - 04:20 AM	42.1	47.1	41.5
04:20 AM - 04:25 AM	42.7	53.2	41.7
04:25 AM - 04:30 AM	44.3	69.4	41.6
04:30 AM - 04:35 AM	45.5	58.7	41.9
04:35 AM - 04:40 AM	54.1	66.1	45.2
04:40 AM - 04:45 AM	55.4	69.0	49.5
04:45 AM - 04:50 AM	54.7	66.8	47.9
04:50 AM - 04:55 AM	52.1	62.5	48.2
04:55 AM - 05:00 AM	54.7	70.2	48.8
05:00 AM - 05:05 AM	53.1	70.4	48.6
05:05 AM - 05:10 AM	54.4	74.6	49.1
05:10 AM - 05:15 AM	53.1	63.0	48.4
05:15 AM - 05:20 AM	52.2	63.5	47.8
05:20 AM - 05:25 AM	50.5	67.7	44.7
05:25 AM - 05:30 AM	53.6	67.3	47.8
05:30 AM - 05:35 AM	49.9	63.3	45.8
05:35 AM - 05:40 AM	51.0	67.5	46.8
05:40 AM - 05:45 AM	51.3	62.3	47.4
05:45 AM - 05:50 AM	55.8	81.5	48.1
05:50 AM - 05:55 AM	50.4	72.8	47.2
05:55 AM - 06:00 AM	50.1	58.3	45.9
06:00 AM - 07:00 AM	50.9	69.2	46.6
07:00 AM - 08:00 AM	51.6	64.2	47.5
08:00 AM - 09:00 AM	51.8	66.8	47.4
09:00 AM - 10:00 AM	50.2	75.0	46.0

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142087  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537386-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142087-3  
Parameter Noise  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945) (Shut down)  
Measurement Date Jun 29 - 30, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173614

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	52.0	71.3	47.2
11:00 AM - 12:00 PM	51.3	70.6	45.9
12:00 PM - 01:00 PM	50.6	69.8	45.5
01:00 PM - 02:00 PM	51.7	67.4	45.7
02:00 PM - 03:00 PM	50.5	71.3	45.3
03:00 PM - 04:00 PM	50.6	71.2	45.3
04:00 PM - 05:00 PM	52.0	71.2	46.3
05:00 PM - 06:00 PM	50.8	70.1	45.3
06:00 PM - 07:00 PM	50.5	80.4	45.5
07:00 PM - 08:00 PM	50.8	80.5	44.2
08:00 PM - 09:00 PM	49.9	79.6	44.1
09:00 PM - 10:00 PM	46.6	70.1	45.2
10:00 PM - 10:05 PM	46.6	49.0	46.2
10:05 PM - 10:10 PM	47.2	50.5	45.7
10:10 PM - 10:15 PM	48.3	56.7	47.7
10:15 PM - 10:20 PM	48.5	50.1	48.0
10:20 PM - 10:25 PM	46.0	49.8	44.8
10:25 PM - 10:30 PM	45.0	49.1	44.3
10:30 PM - 10:35 PM	45.7	48.7	44.5
10:35 PM - 10:40 PM	46.4	47.9	46.0
10:40 PM - 10:45 PM	46.8	49.4	46.5
10:45 PM - 10:50 PM	46.9	49.2	46.3
10:50 PM - 10:55 PM	47.1	49.7	46.5
10:55 PM - 11:00 PM	47.9	49.4	47.5
11:00 PM - 11:05 PM	47.7	56.4	46.9
11:05 PM - 11:10 PM	51.4	77.2	44.2
11:10 PM - 11:15 PM	50.2	71.7	44.1
11:15 PM - 11:20 PM	50.8	71.4	47.2
11:20 PM - 11:25 PM	47.1	48.7	46.2
11:25 PM - 11:30 PM	47.5	48.9	46.9
11:30 PM - 11:35 PM	48.0	50.9	46.5
11:35 PM - 11:40 PM	54.9	82.7	48.7
11:40 PM - 11:45 PM	51.3	68.2	48.5
11:45 PM - 11:50 PM	51.6	62.5	46.3
11:50 PM - 11:55 PM	52.3	68.1	44.6
11:55 PM - 12:00 AM	49.4	58.3	45.0
12:00 AM - 12:05 AM	50.8	71.4	47.2
12:05 AM - 12:10 AM	48.8	68.1	46.9
12:10 AM - 12:15 AM	49.3	71.9	46.9
12:15 AM - 12:20 AM	47.0	63.7	44.3

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142087  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537386-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142087-3  
Parameter Noise  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945) (Shut down)  
Measurement Date Jun 29 - 30, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173614

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:20 AM - 12:25 AM	50.6	67.8	42.3
12:25 AM - 12:30 AM	48.6	51.0	47.1
12:30 AM - 12:35 AM	49.3	52.0	48.6
12:35 AM - 12:40 AM	49.6	51.4	49.0
12:40 AM - 12:45 AM	47.5	52.2	44.1
12:45 AM - 12:50 AM	48.9	66.5	47.8
12:50 AM - 12:55 AM	48.5	50.0	47.7
12:55 AM - 01:00 AM	48.6	50.3	48.0
01:00 AM - 01:05 AM	47.9	49.9	46.5
01:05 AM - 01:10 AM	48.0	49.9	47.1
01:10 AM - 01:15 AM	48.4	50.8	46.5
01:15 AM - 01:20 AM	48.7	51.0	47.9
01:20 AM - 01:25 AM	49.5	51.3	48.9
01:25 AM - 01:30 AM	49.1	50.8	48.5
01:30 AM - 01:35 AM	48.5	50.9	48.0
01:35 AM - 01:40 AM	48.6	50.9	48.1
01:40 AM - 01:45 AM	48.8	50.8	48.0
01:45 AM - 01:50 AM	47.6	50.6	43.8
01:50 AM - 01:55 AM	46.7	50.4	43.3
01:55 AM - 02:00 AM	47.0	49.6	46.2
02:00 AM - 02:05 AM	46.9	50.3	46.2
02:05 AM - 02:10 AM	46.7	49.1	45.9
02:10 AM - 02:15 AM	46.1	49.1	43.9
02:15 AM - 02:20 AM	44.2	55.1	43.5
02:20 AM - 02:25 AM	44.3	46.9	43.3
02:25 AM - 02:30 AM	45.9	48.2	44.2
02:30 AM - 02:35 AM	46.5	49.7	45.8
02:35 AM - 02:40 AM	46.7	48.2	46.0
02:40 AM - 02:45 AM	45.4	49.5	42.2
02:45 AM - 02:50 AM	42.7	47.2	42.4
02:50 AM - 02:55 AM	42.9	43.9	42.6
02:55 AM - 03:00 AM	43.0	47.1	42.5
03:00 AM - 03:05 AM	44.2	46.8	42.9
03:05 AM - 03:10 AM	45.7	47.2	45.2
03:10 AM - 03:15 AM	46.1	53.5	45.0
03:15 AM - 03:20 AM	45.1	48.1	43.3
03:20 AM - 03:25 AM	42.9	45.6	42.4
03:25 AM - 03:30 AM	42.7	49.5	42.2
03:30 AM - 03:35 AM	44.1	46.5	42.9
03:35 AM - 03:40 AM	45.1	48.5	44.6

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142087  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537386-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142087-3  
Parameter Noise  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945) (Shut down)  
Measurement Date Jun 29 - 30, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173614

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:40 AM - 03:45 AM	44.6	50.3	43.8
03:45 AM - 03:50 AM	47.5	52.2	44.1
03:50 AM - 03:55 AM	48.9	66.5	47.8
03:55 AM - 04:00 AM	48.1	70.6	43.7
04:00 AM - 04:05 AM	44.1	49.5	43.2
04:05 AM - 04:10 AM	42.1	45.2	41.6
04:10 AM - 04:15 AM	42.5	46.0	41.8
04:15 AM - 04:20 AM	42.5	48.8	41.8
04:20 AM - 04:25 AM	42.5	50.9	41.7
04:25 AM - 04:30 AM	42.3	48.3	41.7
04:30 AM - 04:35 AM	44.9	66.7	41.8
04:35 AM - 04:40 AM	53.5	66.5	44.4
04:40 AM - 04:45 AM	49.3	59.4	44.9
04:45 AM - 04:50 AM	51.6	62.5	46.3
04:50 AM - 04:55 AM	53.8	70.5	48.6
04:55 AM - 05:00 AM	50.8	71.4	47.2
05:00 AM - 05:05 AM	51.3	68.2	48.5
05:05 AM - 05:10 AM	51.5	63.5	47.7
05:10 AM - 05:15 AM	48.4	50.8	46.5
05:15 AM - 05:20 AM	48.7	51.0	47.9
05:20 AM - 05:25 AM	51.6	63.8	47.8
05:25 AM - 05:30 AM	54.9	69.4	48.8
05:30 AM - 05:35 AM	52.0	67.7	47.6
05:35 AM - 05:40 AM	54.2	71.6	48.4
05:40 AM - 05:45 AM	53.1	69.9	48.7
05:45 AM - 05:50 AM	53.7	67.0	48.5
05:50 AM - 05:55 AM	53.4	65.6	48.4
05:55 AM - 06:00 AM	53.1	62.4	48.2
06:00 AM - 07:00 AM	51.4	73.7	46.7
07:00 AM - 08:00 AM	50.8	68.1	46.2
08:00 AM - 09:00 AM	51.9	69.6	46.2
09:00 AM - 10:00 AM	51.9	75.3	47.1

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142087  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537387-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142087-4  
Parameter Noise  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945) (Shut down)  
Measurement Date Jun 30 - Jul 01, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173614

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	49.9	69.3	47.5
11:00 AM - 12:00 PM	50.4	64.2	47.7
12:00 PM - 01:00 PM	50.0	69.9	46.9
01:00 PM - 02:00 PM	50.1	69.3	48.1
02:00 PM - 03:00 PM	50.3	66.4	48.4
03:00 PM - 04:00 PM	50.4	62.5	49.2
04:00 PM - 05:00 PM	49.7	75.6	48.7
05:00 PM - 06:00 PM	50.2	69.4	49.0
06:00 PM - 07:00 PM	50.3	66.4	49.6
07:00 PM - 08:00 PM	49.8	59.9	49.2
08:00 PM - 09:00 PM	49.9	75.6	48.7
09:00 PM - 10:00 PM	50.3	63.0	48.9
10:00 PM - 10:05 PM	48.5	57.5	45.8
10:05 PM - 10:10 PM	48.7	50.8	48.4
10:10 PM - 10:15 PM	49.6	56.4	48.9
10:15 PM - 10:20 PM	49.9	58.1	48.6
10:20 PM - 10:25 PM	50.3	61.5	49.4
10:25 PM - 10:30 PM	49.9	66.4	49.2
10:30 PM - 10:35 PM	50.8	52.0	50.5
10:35 PM - 10:40 PM	48.5	50.6	48.0
10:40 PM - 10:45 PM	48.8	53.7	48.3
10:45 PM - 10:50 PM	49.9	58.4	47.6
10:50 PM - 10:55 PM	50.9	52.3	50.4
10:55 PM - 11:00 PM	50.5	59.0	47.6
11:00 PM - 11:05 PM	48.8	50.6	48.4
11:05 PM - 11:10 PM	49.1	54.7	48.6
11:10 PM - 11:15 PM	49.4	51.1	49.0
11:15 PM - 11:20 PM	49.5	50.8	49.0
11:20 PM - 11:25 PM	48.8	52.0	48.2
11:25 PM - 11:30 PM	50.1	61.0	47.2
11:30 PM - 11:35 PM	48.8	52.0	48.2
11:35 PM - 11:40 PM	48.6	51.2	48.0
11:40 PM - 11:45 PM	50.9	52.3	50.4
11:45 PM - 11:50 PM	50.5	59.0	47.6
11:50 PM - 11:55 PM	47.4	49.3	47.0
11:55 PM - 12:00 AM	48.1	51.0	47.4
12:00 AM - 12:05 AM	50.9	52.2	50.4
12:05 AM - 12:10 AM	50.1	61.0	47.2
12:10 AM - 12:15 AM	50.8	52.1	50.4
12:15 AM - 12:20 AM	49.8	75.6	47.7

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

Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142087  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537387-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142087-4  
Parameter Noise  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945) (Shut down)  
Measurement Date Jun 30 - Jul 01, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173614

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:20 AM - 12:25 AM	49.0	64.5	48.2
12:25 AM - 12:30 AM	48.2	49.4	47.8
12:30 AM - 12:35 AM	48.5	50.1	48.0
12:35 AM - 12:40 AM	48.9	51.4	48.4
12:40 AM - 12:45 AM	48.6	50.0	48.2
12:45 AM - 12:50 AM	50.8	52.1	50.4
12:50 AM - 12:55 AM	50.8	52.0	50.5
12:55 AM - 01:00 AM	49.9	51.4	49.4
01:00 AM - 01:05 AM	49.9	51.2	49.6
01:05 AM - 01:10 AM	49.7	51.0	49.3
01:10 AM - 01:15 AM	49.6	52.0	49.2
01:15 AM - 01:20 AM	50.1	61.0	47.2
01:20 AM - 01:25 AM	50.8	52.1	50.4
01:25 AM - 01:30 AM	49.0	50.2	48.4
01:30 AM - 01:35 AM	48.7	50.8	48.4
01:35 AM - 01:40 AM	48.8	50.6	48.4
01:40 AM - 01:45 AM	49.1	54.7	48.6
01:45 AM - 01:50 AM	49.0	51.4	48.6
01:50 AM - 01:55 AM	49.2	53.7	48.8
01:55 AM - 02:00 AM	49.1	50.5	48.7
02:00 AM - 02:05 AM	49.0	50.1	48.6
02:05 AM - 02:10 AM	49.1	50.3	48.7
02:10 AM - 02:15 AM	48.2	49.4	47.8
02:15 AM - 02:20 AM	48.5	50.1	48.0
02:20 AM - 02:25 AM	47.4	49.3	47.0
02:25 AM - 02:30 AM	48.8	52.0	48.2
02:30 AM - 02:35 AM	48.6	51.2	48.0
02:35 AM - 02:40 AM	50.1	61.0	47.2
02:40 AM - 02:45 AM	49.9	66.4	49.2
02:45 AM - 02:50 AM	48.9	51.4	48.4
02:50 AM - 02:55 AM	47.5	49.0	47.0
02:55 AM - 03:00 AM	47.5	49.9	47.0
03:00 AM - 03:05 AM	47.4	50.9	46.9
03:05 AM - 03:10 AM	47.5	51.1	47.0
03:10 AM - 03:15 AM	47.5	58.9	46.9
03:15 AM - 03:20 AM	47.5	58.7	47.1
03:20 AM - 03:25 AM	47.4	49.3	47.0
03:25 AM - 03:30 AM	48.1	51.0	47.4
03:30 AM - 03:35 AM	48.5	51.4	48.0
03:35 AM - 03:40 AM	48.3	49.9	48.0

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142087  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537387-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142087-4  
Parameter Noise  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945) (Shut down)  
Measurement Date Jun 30 - Jul 01, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173614

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:40 AM - 03:45 AM	48.1	49.5	47.5
03:45 AM - 03:50 AM	50.8	52.1	50.4
03:50 AM - 03:55 AM	49.8	75.6	47.7
03:55 AM - 04:00 AM	49.0	64.5	48.2
04:00 AM - 04:05 AM	48.2	49.4	47.8
04:05 AM - 04:10 AM	48.5	50.1	48.0
04:10 AM - 04:15 AM	48.9	51.4	48.4
04:15 AM - 04:20 AM	48.6	50.0	48.2
04:20 AM - 04:25 AM	48.6	49.7	48.2
04:25 AM - 04:30 AM	48.7	51.6	47.7
04:30 AM - 04:35 AM	48.9	51.2	48.0
04:35 AM - 04:40 AM	48.3	50.7	47.4
04:40 AM - 04:45 AM	48.1	50.7	47.4
04:45 AM - 04:50 AM	48.3	50.3	47.6
04:50 AM - 04:55 AM	47.7	49.7	46.8
04:55 AM - 05:00 AM	49.9	66.4	49.2
05:00 AM - 05:05 AM	48.2	56.2	46.9
05:05 AM - 05:10 AM	47.4	50.2	46.1
05:10 AM - 05:15 AM	47.6	50.6	46.4
05:15 AM - 05:20 AM	47.8	51.3	46.4
05:20 AM - 05:25 AM	47.4	49.3	47.0
05:25 AM - 05:30 AM	48.2	49.4	47.8
05:30 AM - 05:35 AM	48.5	50.1	48.0
05:35 AM - 05:40 AM	49.9	59.6	49.3
05:40 AM - 05:45 AM	49.2	51.0	48.4
05:45 AM - 05:50 AM	48.7	52.8	48.2
05:50 AM - 05:55 AM	49.8	75.6	47.7
05:55 AM - 06:00 AM	50.8	52.0	50.5
06:00 AM - 07:00 AM	49.9	75.6	49.2
07:00 AM - 08:00 AM	50.2	69.9	47.4
08:00 AM - 09:00 AM	50.5	75.6	48.6
09:00 AM - 10:00 AM	50.5	69.9	48.2

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142087  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537388-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142087-5  
Parameter Noise  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945) (Shut down)  
Measurement Date Jul 01 - 02, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173614

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	50.4	66.3	48.2
11:00 AM - 12:00 PM	50.5	65.7	48.0
12:00 PM - 01:00 PM	49.4	73.9	46.5
01:00 PM - 02:00 PM	50.1	66.3	48.3
02:00 PM - 03:00 PM	50.3	75.6	48.1
03:00 PM - 04:00 PM	50.4	66.3	48.6
04:00 PM - 05:00 PM	51.1	69.2	49.6
05:00 PM - 06:00 PM	50.0	75.6	49.0
06:00 PM - 07:00 PM	49.7	66.3	48.4
07:00 PM - 08:00 PM	50.4	67.6	49.7
08:00 PM - 09:00 PM	49.8	75.6	49.0
09:00 PM - 10:00 PM	50.2	66.3	49.7
10:00 PM - 10:05 PM	50.2	52.1	49.6
10:05 PM - 10:10 PM	50.5	55.4	50.1
10:10 PM - 10:15 PM	51.4	58.9	50.2
10:15 PM - 10:20 PM	52.0	60.0	51.4
10:20 PM - 10:25 PM	49.3	56.8	48.0
10:25 PM - 10:30 PM	51.1	53.2	50.4
10:30 PM - 10:35 PM	50.5	51.9	50.0
10:35 PM - 10:40 PM	49.7	51.8	49.0
10:40 PM - 10:45 PM	49.2	50.6	48.6
10:45 PM - 10:50 PM	49.8	57.7	49.1
10:50 PM - 10:55 PM	50.2	58.2	49.2
10:55 PM - 11:00 PM	49.7	51.1	49.2
11:00 PM - 11:05 PM	50.3	54.8	48.9
11:05 PM - 11:10 PM	50.5	52.9	49.8
11:10 PM - 11:15 PM	49.4	51.3	48.9
11:15 PM - 11:20 PM	49.2	51.3	48.7
11:20 PM - 11:25 PM	49.4	52.4	48.8
11:25 PM - 11:30 PM	49.3	51.5	48.6
11:30 PM - 11:35 PM	50.6	52.9	48.9
11:35 PM - 11:40 PM	51.4	58.9	50.2
11:40 PM - 11:45 PM	49.8	66.3	48.8
11:45 PM - 11:50 PM	49.3	56.8	48.0
11:50 PM - 11:55 PM	48.7	56.0	48.0
11:55 PM - 12:00 AM	50.0	51.7	49.6
12:00 AM - 12:05 AM	50.2	58.2	49.2
12:05 AM - 12:10 AM	48.8	53.1	48.3
12:10 AM - 12:15 AM	48.8	50.7	48.3
12:15 AM - 12:20 AM	50.5	52.6	49.3

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142087  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537388-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142087-5  
Parameter Noise  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945) (Shut down)  
Measurement Date Jul 01 - 02, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173614

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:20 AM - 12:25 AM	48.8	52.4	48.3
12:25 AM - 12:30 AM	49.1	56.1	48.5
12:30 AM - 12:35 AM	50.1	52.2	49.5
12:35 AM - 12:40 AM	49.6	51.7	49.1
12:40 AM - 12:45 AM	49.4	50.5	49.0
12:45 AM - 12:50 AM	49.4	51.6	48.9
12:50 AM - 12:55 AM	50.3	54.8	48.9
12:55 AM - 01:00 AM	49.8	51.1	49.3
01:00 AM - 01:05 AM	49.3	56.8	48.0
01:05 AM - 01:10 AM	51.1	53.2	50.4
01:10 AM - 01:15 AM	50.5	51.9	50.0
01:15 AM - 01:20 AM	51.3	55.5	50.6
01:20 AM - 01:25 AM	50.6	52.0	50.1
01:25 AM - 01:30 AM	49.8	66.3	48.8
01:30 AM - 01:35 AM	51.1	53.2	50.4
01:35 AM - 01:40 AM	50.5	51.9	50.0
01:40 AM - 01:45 AM	49.7	51.8	49.0
01:45 AM - 01:50 AM	49.2	50.6	48.6
01:50 AM - 01:55 AM	49.8	57.7	49.1
01:55 AM - 02:00 AM	50.2	58.2	49.2
02:00 AM - 02:05 AM	49.7	51.1	49.2
02:05 AM - 02:10 AM	49.9	51.3	49.4
02:10 AM - 02:15 AM	50.0	51.7	49.6
02:15 AM - 02:20 AM	50.0	51.5	49.5
02:20 AM - 02:25 AM	49.7	53.8	49.2
02:25 AM - 02:30 AM	49.6	51.3	49.1
02:30 AM - 02:35 AM	49.2	50.7	48.7
02:35 AM - 02:40 AM	49.6	51.0	49.2
02:40 AM - 02:45 AM	49.3	51.1	48.8
02:45 AM - 02:50 AM	49.4	51.2	48.9
02:50 AM - 02:55 AM	49.4	51.1	49.0
02:55 AM - 03:00 AM	49.5	50.8	49.0
03:00 AM - 03:05 AM	49.8	51.1	49.3
03:05 AM - 03:10 AM	50.0	52.0	49.5
03:10 AM - 03:15 AM	49.2	50.7	48.7
03:15 AM - 03:20 AM	50.2	52.1	49.6
03:20 AM - 03:25 AM	50.0	54.8	49.3
03:25 AM - 03:30 AM	50.1	56.2	49.3
03:30 AM - 03:35 AM	50.2	58.2	49.2
03:35 AM - 03:40 AM	50.5	51.9	50.0

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Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142087  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537388-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142087-5  
Parameter Noise  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945) (Shut down)  
Measurement Date Jul 01 - 02, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173614

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:40 AM - 03:45 AM	49.5	50.8	49.0
03:45 AM - 03:50 AM	50.2	58.2	49.2
03:50 AM - 03:55 AM	49.7	51.1	49.2
03:55 AM - 04:00 AM	51.3	55.5	50.6
04:00 AM - 04:05 AM	50.6	52.0	50.1
04:05 AM - 04:10 AM	50.3	51.5	49.8
04:10 AM - 04:15 AM	50.0	51.4	49.5
04:15 AM - 04:20 AM	49.9	59.6	49.3
04:20 AM - 04:25 AM	49.2	51.0	48.4
04:25 AM - 04:30 AM	48.7	52.8	48.2
04:30 AM - 04:35 AM	50.9	63.0	48.9
04:35 AM - 04:40 AM	49.7	51.4	49.2
04:40 AM - 04:45 AM	50.0	54.8	49.3
04:45 AM - 04:50 AM	50.1	56.2	49.3
04:50 AM - 04:55 AM	50.2	58.2	49.2
04:55 AM - 05:00 AM	49.7	51.1	49.2
05:00 AM - 05:05 AM	50.2	58.2	49.2
05:05 AM - 05:10 AM	48.7	56.0	48.0
05:10 AM - 05:15 AM	49.1	56.1	48.5
05:15 AM - 05:20 AM	49.8	66.3	48.8
05:20 AM - 05:25 AM	49.6	65.7	49.0
05:25 AM - 05:30 AM	49.5	50.8	49.0
05:30 AM - 05:35 AM	49.2	50.6	48.6
05:35 AM - 05:40 AM	49.8	57.7	49.1
05:40 AM - 05:45 AM	49.3	56.8	48.0
05:45 AM - 05:50 AM	49.2	50.7	48.7
05:50 AM - 05:55 AM	50.5	51.9	50.0
05:55 AM - 06:00 AM	50.0	54.8	49.3
06:00 AM - 07:00 AM	50.2	66.3	49.3
07:00 AM - 08:00 AM	50.2	63.8	48.9
08:00 AM - 09:00 AM	50.0	66.3	48.6
09:00 AM - 10:00 AM	50.1	67.2	49.0

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142087  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537389-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142087-6  
Parameter Noise  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945) (Shut down)  
Measurement Date Jul 02 - 03, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173614

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	52.1	66.9	47.8
11:00 AM - 12:00 PM	51.5	72.5	47.6
12:00 PM - 01:00 PM	51.0	78.5	47.2
01:00 PM - 02:00 PM	51.7	71.2	47.6
02:00 PM - 03:00 PM	50.6	76.9	47.1
03:00 PM - 04:00 PM	51.8	75.9	47.5
04:00 PM - 05:00 PM	50.8	79.1	47.3
05:00 PM - 06:00 PM	51.9	71.3	47.9
06:00 PM - 07:00 PM	50.3	79.1	48.2
07:00 PM - 08:00 PM	51.7	79.0	50.0
08:00 PM - 09:00 PM	53.0	76.9	50.8
09:00 PM - 10:00 PM	53.2	76.2	51.1
10:00 PM - 10:05 PM	55.6	75.3	50.3
10:05 PM - 10:10 PM	55.3	80.1	50.3
10:10 PM - 10:15 PM	50.5	51.6	50.2
10:15 PM - 10:20 PM	51.5	79.1	46.5
10:20 PM - 10:25 PM	52.0	56.9	50.6
10:25 PM - 10:30 PM	52.2	60.3	51.4
10:30 PM - 10:35 PM	53.0	73.0	51.3
10:35 PM - 10:40 PM	52.3	59.0	51.4
10:40 PM - 10:45 PM	52.4	56.2	51.5
10:45 PM - 10:50 PM	52.3	54.0	51.5
10:50 PM - 10:55 PM	51.3	54.1	50.9
10:55 PM - 11:00 PM	51.3	57.6	50.6
11:00 PM - 11:05 PM	50.4	52.3	50.0
11:05 PM - 11:10 PM	50.6	52.9	50.0
11:10 PM - 11:15 PM	50.7	51.9	50.4
11:15 PM - 11:20 PM	50.6	51.8	50.2
11:20 PM - 11:25 PM	50.4	51.6	50.0
11:25 PM - 11:30 PM	50.5	51.9	50.0
11:30 PM - 11:35 PM	52.0	72.0	50.3
11:35 PM - 11:40 PM	51.3	62.7	50.5
11:40 PM - 11:45 PM	50.8	59.2	50.4
11:45 PM - 11:50 PM	50.8	51.8	50.4
11:50 PM - 11:55 PM	50.9	51.9	50.6
11:55 PM - 12:00 AM	51.6	67.8	50.5
12:00 AM - 12:05 AM	50.7	51.7	50.3
12:05 AM - 12:10 AM	50.6	51.7	50.2
12:10 AM - 12:15 AM	50.5	51.6	50.1
12:15 AM - 12:20 AM	50.4	51.8	50.0

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142087  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537389-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142087-6  
Parameter Noise  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945) (Shut down)  
Measurement Date Jul 02 - 03, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173614

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:20 AM - 12:25 AM	50.4	51.6	50.1
12:25 AM - 12:30 AM	50.4	52.3	49.9
12:30 AM - 12:35 AM	50.3	54.2	49.9
12:35 AM - 12:40 AM	50.1	52.0	49.7
12:40 AM - 12:45 AM	52.0	55.0	50.1
12:45 AM - 12:50 AM	51.9	54.4	50.7
12:50 AM - 12:55 AM	51.6	54.0	50.4
12:55 AM - 01:00 AM	51.7	54.1	50.5
01:00 AM - 01:05 AM	51.5	53.7	50.2
01:05 AM - 01:10 AM	50.7	53.6	49.7
01:10 AM - 01:15 AM	49.9	51.6	49.5
01:15 AM - 01:20 AM	50.0	51.2	49.6
01:20 AM - 01:25 AM	49.9	51.1	49.4
01:25 AM - 01:30 AM	50.3	57.0	49.6
01:30 AM - 01:35 AM	49.5	53.4	48.8
01:35 AM - 01:40 AM	49.1	50.4	48.7
01:40 AM - 01:45 AM	49.2	50.6	48.7
01:45 AM - 01:50 AM	49.3	51.5	48.7
01:50 AM - 01:55 AM	49.5	52.1	48.9
01:55 AM - 02:00 AM	49.5	52.1	48.6
02:00 AM - 02:05 AM	49.6	53.4	48.9
02:05 AM - 02:10 AM	49.0	51.6	48.1
02:10 AM - 02:15 AM	49.2	51.8	48.4
02:15 AM - 02:20 AM	49.0	52.4	48.2
02:20 AM - 02:25 AM	49.1	51.3	48.2
02:25 AM - 02:30 AM	48.7	50.7	48.0
02:30 AM - 02:35 AM	48.5	51.8	47.7
02:35 AM - 02:40 AM	48.7	51.3	47.8
02:40 AM - 02:45 AM	48.2	50.8	47.6
02:45 AM - 02:50 AM	50.7	51.9	50.4
02:50 AM - 02:55 AM	51.5	53.7	50.2
02:55 AM - 03:00 AM	48.0	53.3	47.6
03:00 AM - 03:05 AM	47.9	58.3	47.4
03:05 AM - 03:10 AM	57.5	82.2	47.4
03:10 AM - 03:15 AM	50.6	70.4	47.2
03:15 AM - 03:20 AM	53.8	70.5	47.1
03:20 AM - 03:25 AM	50.4	52.3	50.0
03:25 AM - 03:30 AM	50.3	74.1	46.9
03:30 AM - 03:35 AM	51.3	71.1	46.9
03:35 AM - 03:40 AM	47.3	51.8	46.9

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Approved by

Kanokkorn Anek  
Senior Manager





## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142087  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537389-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142087-6  
Parameter Noise  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945) (Shut down)  
Measurement Date Jul 02 - 03, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173614

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:40 AM - 03:45 AM	47.5	49.4	47.0
03:45 AM - 03:50 AM	47.4	49.4	47.0
03:50 AM - 03:55 AM	47.3	48.5	46.9
03:55 AM - 04:00 AM	55.1	69.7	46.9
04:00 AM - 04:05 AM	47.2	53.7	46.7
04:05 AM - 04:10 AM	50.1	52.0	49.7
04:10 AM - 04:15 AM	47.3	52.2	46.8
04:15 AM - 04:20 AM	50.3	58.8	47.8
04:20 AM - 04:25 AM	50.8	59.2	50.4
04:25 AM - 04:30 AM	49.1	60.5	47.0
04:30 AM - 04:35 AM	56.4	75.7	47.0
04:35 AM - 04:40 AM	48.1	54.3	47.3
04:40 AM - 04:45 AM	55.5	75.3	47.8
04:45 AM - 04:50 AM	56.7	68.8	51.4
04:50 AM - 04:55 AM	53.8	65.4	50.1
04:55 AM - 05:00 AM	56.4	72.3	50.1
05:00 AM - 05:05 AM	51.5	53.7	50.2
05:05 AM - 05:10 AM	50.7	53.6	49.7
05:10 AM - 05:15 AM	49.6	53.4	48.9
05:15 AM - 05:20 AM	54.3	66.9	50.3
05:20 AM - 05:25 AM	54.1	69.2	49.8
05:25 AM - 05:30 AM	54.5	71.6	49.9
05:30 AM - 05:35 AM	52.8	70.3	49.3
05:35 AM - 05:40 AM	54.5	71.6	49.2
05:40 AM - 05:45 AM	54.1	67.3	49.5
05:45 AM - 05:50 AM	51.3	57.6	50.6
05:50 AM - 05:55 AM	50.4	52.3	50.0
05:55 AM - 06:00 AM	54.2	65.6	50.5
06:00 AM - 07:00 AM	52.0	74.3	49.5
07:00 AM - 08:00 AM	53.2	75.7	49.3
08:00 AM - 09:00 AM	53.0	70.1	49.3
09:00 AM - 10:00 AM	54.2	70.9	50.5

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142087  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537390-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 1 of 3

Sample No. 22142087-7  
Parameter Noise  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945) (Shut down)  
Measurement Date Jul 03 - 04, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173614

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	52.6	71.8	48.5
11:00 AM - 12:00 PM	51.9	70.5	47.2
12:00 PM - 01:00 PM	52.9	71.9	48.6
01:00 PM - 02:00 PM	52.6	67.5	48.3
02:00 PM - 03:00 PM	52.3	71.8	47.8
03:00 PM - 04:00 PM	53.5	78.7	49.2
04:00 PM - 05:00 PM	51.8	69.4	47.2
05:00 PM - 06:00 PM	52.6	84.5	46.7
06:00 PM - 07:00 PM	51.1	77.2	46.1
07:00 PM - 08:00 PM	50.4	74.3	48.5
08:00 PM - 09:00 PM	52.3	73.6	49.8
09:00 PM - 10:00 PM	52.2	71.1	50.2
10:00 PM - 10:05 PM	51.0	55.9	49.5
10:05 PM - 10:10 PM	52.2	57.0	49.9
10:10 PM - 10:15 PM	54.2	59.9	50.5
10:15 PM - 10:20 PM	54.5	60.2	50.6
10:20 PM - 10:25 PM	52.4	56.5	49.9
10:25 PM - 10:30 PM	52.2	59.7	49.3
10:30 PM - 10:35 PM	50.9	57.0	48.7
10:35 PM - 10:40 PM	51.5	55.6	49.4
10:40 PM - 10:45 PM	51.7	55.1	50.1
10:45 PM - 10:50 PM	50.7	60.2	49.2
10:50 PM - 10:55 PM	49.3	57.2	48.0
10:55 PM - 11:00 PM	48.7	51.8	48.1
11:00 PM - 11:05 PM	51.2	66.7	45.9
11:05 PM - 11:10 PM	49.0	56.8	48.3
11:10 PM - 11:15 PM	53.7	72.6	48.5
11:15 PM - 11:20 PM	50.4	71.2	48.9
11:20 PM - 11:25 PM	51.2	52.9	50.7
11:25 PM - 11:30 PM	50.0	51.4	49.6
11:30 PM - 11:35 PM	52.8	68.3	49.4
11:35 PM - 11:40 PM	56.2	73.6	49.3
11:40 PM - 11:45 PM	49.7	51.6	49.2
11:45 PM - 11:50 PM	49.4	52.7	48.7
11:50 PM - 11:55 PM	49.7	52.3	49.1
11:55 PM - 12:00 AM	50.2	56.5	49.2
12:00 AM - 12:05 AM	50.3	58.6	49.8
12:05 AM - 12:10 AM	50.7	53.9	50.1
12:10 AM - 12:15 AM	50.6	52.4	50.1
12:15 AM - 12:20 AM	50.9	52.8	50.3

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Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142087  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537390-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 2 of 3

Sample No. 22142087-7  
Parameter Noise  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945) (Shut down)  
Measurement Date Jul 03 - 04, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173614

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
12:20 AM - 12:25 AM	51.4	54.0	50.9
12:25 AM - 12:30 AM	51.3	52.9	50.9
12:30 AM - 12:35 AM	50.5	54.4	49.2
12:35 AM - 12:40 AM	49.4	50.8	49.0
12:40 AM - 12:45 AM	49.4	50.7	49.0
12:45 AM - 12:50 AM	49.3	50.6	48.9
12:50 AM - 12:55 AM	49.7	51.9	49.1
12:55 AM - 01:00 AM	49.9	51.5	49.5
01:00 AM - 01:05 AM	49.9	51.8	49.4
01:05 AM - 01:10 AM	49.1	52.6	48.6
01:10 AM - 01:15 AM	48.7	51.3	48.3
01:15 AM - 01:20 AM	48.9	50.3	48.4
01:20 AM - 01:25 AM	48.5	49.9	48.0
01:25 AM - 01:30 AM	48.5	51.6	48.1
01:30 AM - 01:35 AM	48.2	49.8	47.7
01:35 AM - 01:40 AM	48.2	55.2	47.7
01:40 AM - 01:45 AM	53.4	71.7	48.1
01:45 AM - 01:50 AM	47.8	49.8	47.3
01:50 AM - 01:55 AM	54.7	74.4	45.9
01:55 AM - 02:00 AM	46.5	48.9	46.1
02:00 AM - 02:05 AM	46.3	49.2	45.7
02:05 AM - 02:10 AM	46.7	54.2	45.9
02:10 AM - 02:15 AM	47.1	53.8	46.4
02:15 AM - 02:20 AM	45.6	48.7	45.0
02:20 AM - 02:25 AM	45.8	48.2	45.0
02:25 AM - 02:30 AM	46.3	47.5	45.7
02:30 AM - 02:35 AM	46.7	53.7	46.2
02:35 AM - 02:40 AM	47.3	52.2	46.6
02:40 AM - 02:45 AM	48.7	70.4	46.9
02:45 AM - 02:50 AM	46.9	50.5	46.5
02:50 AM - 02:55 AM	46.7	48.1	46.2
02:55 AM - 03:00 AM	46.8	50.8	46.3
03:00 AM - 03:05 AM	50.3	51.9	49.7
03:05 AM - 03:10 AM	47.0	59.5	46.1
03:10 AM - 03:15 AM	46.6	65.6	45.8
03:15 AM - 03:20 AM	52.3	72.1	45.7
03:20 AM - 03:25 AM	46.6	52.0	45.7
03:25 AM - 03:30 AM	46.1	48.0	45.3
03:30 AM - 03:35 AM	46.0	48.3	45.2
03:35 AM - 03:40 AM	46.0	49.1	45.3

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

Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

Client : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

Lot ID: 22142087  
Date Received : Dec 29, 2022  
Date Reported : Jan 06, 2023  
Report No. : 2537390-1

P/O :  
Project Name : EIA Monitoring  
Project Location :

Page 3 of 3

Sample No. 22142087-7  
Parameter Noise  
Location วัดสุราษฎร์ (GPS 48Q 276877, 1887945) (Shut down)  
Measurement Date Jul 03 - 04, 2022  
Measurement by Sangtawan Natasat  
Sound Level Meter 01173614

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
03:40 AM - 03:45 AM	46.2	48.6	45.5
03:45 AM - 03:50 AM	45.5	47.9	44.6
03:50 AM - 03:55 AM	44.8	49.0	44.2
03:55 AM - 04:00 AM	45.3	63.9	44.2
04:00 AM - 04:05 AM	44.6	51.0	44.0
04:05 AM - 04:10 AM	45.4	53.8	44.1
04:10 AM - 04:15 AM	46.6	54.1	44.2
04:15 AM - 04:20 AM	45.3	53.8	44.0
04:20 AM - 04:25 AM	45.2	53.5	44.1
04:25 AM - 04:30 AM	51.7	55.1	50.1
04:30 AM - 04:35 AM	53.0	72.9	44.6
04:35 AM - 04:40 AM	53.5	73.6	50.1
04:40 AM - 04:45 AM	50.9	52.8	50.3
04:45 AM - 04:50 AM	51.4	54.0	50.9
04:50 AM - 04:55 AM	49.3	61.7	45.9
04:55 AM - 05:00 AM	50.1	63.5	46.4
05:00 AM - 05:05 AM	51.4	54.3	49.9
05:05 AM - 05:10 AM	53.3	66.5	48.7
05:10 AM - 05:15 AM	53.1	68.3	47.5
05:15 AM - 05:20 AM	52.0	63.2	48.2
05:20 AM - 05:25 AM	56.5	80.3	50.1
05:25 AM - 05:30 AM	54.9	66.8	50.3
05:30 AM - 05:35 AM	53.6	63.2	50.3
05:35 AM - 05:40 AM	57.8	74.4	50.7
05:40 AM - 05:45 AM	53.6	64.1	49.8
05:45 AM - 05:50 AM	52.4	63.7	48.6
05:50 AM - 05:55 AM	53.4	71.7	48.1
05:55 AM - 06:00 AM	53.7	74.4	49.7
06:00 AM - 07:00 AM	53.5	75.6	49.3
07:00 AM - 08:00 AM	52.9	73.3	48.8
08:00 AM - 09:00 AM	52.4	70.9	48.2
09:00 AM - 10:00 AM	53.2	68.8	49.1

Reference Method : Based on ISO 1996-1 and ISO 1996-2

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Approved by

Kanokkorn Anek  
Senior Manager

# ภาคผนวก ค-7

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ผลการตรวจวิเคราะห์คุณภาพน้ำผิวดิน



## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2287458**

Date Received : Aug 18, 2022

Date Reported : Aug 24, 2022

Report Number : 2377310-1

Page 1 of 8

<b>Sample Number</b>	2287458-1
<b>Sampled Date</b>	Aug 17, 2022 10:20 AM
<b>Sample Description</b>	Surface Water
<b>Location</b>	ลำห้วยกองสี ก่อนจุดผันน้ำของโครงการประมาณ 1,000 เมตร
<b>Date Analysis Commenced</b>	Aug 19, 2022
<b>Condition of Sample</b>	Contained in two BOD bottles, two glass vials and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Metals Testing</b>						
Arsenic	mg/L	0.0003	0.0005	0.002	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	Based on APHA (2017), 3125	Bangkok
Calcium	mg/L	0.03	0.05	8.93	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Lead	mg/L	0.0003	0.0005	0.008	Based on APHA (2017), 3125	Bangkok
Magnesium	mg/L	0.03	0.05	1.55	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Manganese	mg/L	0.0003	0.0005	0.33	Based on APHA (2017), 3125	Bangkok
Mercury	mg/L	0.0001	0.0005	Not Detected	Based on US EPA, Method 1631 Revision E	Bangkok
SAR *		-	0.10	0.18	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Sodium	mg/L	0.03	0.05	2.15	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
<b>Water Testing</b>						
Ammonia Nitrogen *	mg/L	-	0.06	<0.06	Based on APHA (2017), 4500-NH3 (B), (F)	Bangkok
BOD (5 days at 20 degree C) *	mg/L	-	2	<2	Based on APHA (2017), 5210 B	Bangkok
Chloride as Cl *	mg/L	0.06	0.2	5.9	Based on APHA (2017), 4110 B	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	75	Based on APHA (2017), 2510 B	Bangkok
Dissolved Oxygen *	mg/L	-	0.1	5.6	Based on APHA (2017), 4500-O (C)	Bangkok
Nitrate as N	mg/L	0.06	0.2	0.2	Based on APHA (2017), 4110 B	Bangkok
pH at 25 degree C		-	-	6.9	Based on APHA (2017), 4500-H (B)	Bangkok
Temperature *	Degree C	-	-	29.1	Based on APHA (2017), 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C *	mg/L	-	5	344	Based on APHA (2017), 2540 C	Bangkok

**Sampled By :** Adisak Phomphai

Remark :

Approved by

*Sawitree N.*

Sawitree Noisangiam  
Manager

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2287458**

Date Received : Aug 18, 2022

Date Reported : Aug 24, 2022

Report Number : 2377310-1

Page 2 of 8

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

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## Analysis / Test Report

TESTING  
No.0009

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : EIA Monitoring

**Project Location** :

**Lot ID: 2287458**

Date Received : Aug 18, 2022

Date Reported : Aug 24, 2022

Report Number : 2377310-1

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<b>Sample Number</b>	2287458-2
<b>Sampled Date</b>	Aug 17, 2022 10:00 AM
<b>Sample Description</b>	Surface Water
<b>Location</b>	ลำห้วยกองสี บริเวณจุดผันน้ำของโครงการ
<b>Date Analysis Commenced</b>	Aug 19, 2022
<b>Condition of Sample</b>	Contained in two BOD bottles, two glass vials and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Metals Testing</b>						
Arsenic	mg/L	0.0003	0.0005	0.002	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	Based on APHA (2017), 3125	Bangkok
Calcium	mg/L	0.03	0.05	9.39	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Lead	mg/L	0.0003	0.0005	0.007	Based on APHA (2017), 3125	Bangkok
Magnesium	mg/L	0.03	0.05	1.62	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Manganese	mg/L	0.0003	0.0005	0.32	Based on APHA (2017), 3125	Bangkok
Mercury	mg/L	0.0001	0.0005	Not Detected	Based on US EPA, Method 1631 Revision E	Bangkok
SAR *		-	0.10	0.17	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Sodium	mg/L	0.03	0.05	2.12	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
<b>Water Testing</b>						
Ammonia Nitrogen *	mg/L	-	0.06	<0.06	Based on APHA (2017), 4500-NH3 (B), (F)	Bangkok
BOD (5 days at 20 degree C) *	mg/L	-	2	<2	Based on APHA (2017), 5210 B	Bangkok
Chloride as Cl *	mg/L	0.06	0.2	6.3	Based on APHA (2017), 4110 B	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	79	Based on APHA (2017), 2510 B	Bangkok
Dissolved Oxygen *	mg/L	-	0.1	6.8	Based on APHA (2017), 4500-O (C)	Bangkok
Nitrate as N	mg/L	0.06	0.2	0.2	Based on APHA (2017), 4110 B	Bangkok
pH at 25 degree C		-	-	7.0	Based on APHA (2017), 4500-H (B)	Bangkok
Temperature *	Degree C	-	-	29.6	Based on APHA (2017), 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C *	mg/L	-	5	256	Based on APHA (2017), 2540 C	Bangkok

**Sampled By** : Adisak Phomphai

Remark :

Approved by

*Sawitree N.*

Sawitree Noisangiam  
Manager

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2287458**

Date Received : Aug 18, 2022

Date Reported : Aug 24, 2022

Report Number : 2377310-1

Page 4 of 8

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

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2287458**

Date Received : Aug 18, 2022

Date Reported : Aug 24, 2022

Report Number : 2377310-1

Page 5 of 8

<b>Sample Number</b>	2287458-3
<b>Sampled Date</b>	Aug 17, 2022 10:40 AM
<b>Sample Description</b>	Surface Water
<b>Location</b>	ลำห้วยกองสี หลังจุดผันน้ำของโครงการประมาณ 1,000 เมตร
<b>Date Analysis Commenced</b>	Aug 19, 2022
<b>Condition of Sample</b>	Contained in two BOD bottles, two glass vials and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Metals Testing</b>						
Arsenic	mg/L	0.0003	0.0005	0.002	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	Based on APHA (2017), 3125	Bangkok
Calcium	mg/L	0.03	0.05	10.3	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Lead	mg/L	0.0003	0.0005	0.007	Based on APHA (2017), 3125	Bangkok
Magnesium	mg/L	0.03	0.05	1.75	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Manganese	mg/L	0.0003	0.0005	0.29	Based on APHA (2017), 3125	Bangkok
Mercury	mg/L	0.0001	0.0005	Not Detected	Based on US EPA, Method 1631 Revision E	Bangkok
SAR *		-	0.10	0.22	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Sodium	mg/L	0.03	0.05	2.88	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
<b>Water Testing</b>						
Ammonia Nitrogen *	mg/L	-	0.06	<0.06	Based on APHA (2017), 4500-NH3 (B), (F)	Bangkok
BOD (5 days at 20 degree C) *	mg/L	-	2	<2	Based on APHA (2017), 5210 B	Bangkok
Chloride as Cl *	mg/L	0.06	0.2	7.8	Based on APHA (2017), 4110 B	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	85	Based on APHA (2017), 2510 B	Bangkok
Dissolved Oxygen *	mg/L	-	0.1	6.1	Based on APHA (2017), 4500-O (C)	Bangkok
Nitrate as N	mg/L	0.06	0.2	0.2	Based on APHA (2017), 4110 B	Bangkok
pH at 25 degree C		-	-	7.1	Based on APHA (2017), 4500-H (B)	Bangkok
Temperature *	Degree C	-	-	29.2	Based on APHA (2017), 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C *	mg/L	-	5	204	Based on APHA (2017), 2540 C	Bangkok

**Sampled By :** Adisak Phomphai

Remark :

Approved by

*Sawitree N.*

Sawitree Noisangiam  
Manager

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2287458**

Date Received : Aug 18, 2022

Date Reported : Aug 24, 2022

Report Number : 2377310-1

Page 6 of 8

- LOD : Limit of Detection
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Manager

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2287458**

Date Received : Aug 18, 2022

Date Reported : Aug 24, 2022

Report Number : 2377310-1

Page 7 of 8

<b>Sample Number</b>	2287458-4
<b>Sampled Date</b>	Aug 17, 2022 11:00 AM
<b>Sample Description</b>	Surface Water
<b>Location</b>	ลำน้ำปาว บริเวณจุดตัดของลำน้ำก่อนไหลลงสู่หนองหาร
<b>Date Analysis Commenced</b>	Aug 19, 2022
<b>Condition of Sample</b>	Contained in two BOD bottles, two glass vials and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Metals Testing</b>						
Arsenic	mg/L	0.0003	0.0005	0.002	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	Based on APHA (2017), 3125	Bangkok
Calcium	mg/L	0.03	0.05	11.1	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Lead	mg/L	0.0003	0.0005	0.007	Based on APHA (2017), 3125	Bangkok
Magnesium	mg/L	0.03	0.05	1.95	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Manganese	mg/L	0.0003	0.0005	0.25	Based on APHA (2017), 3125	Bangkok
Mercury	mg/L	0.0001	0.0005	Not Detected	Based on US EPA, Method 1631 Revision E	Bangkok
SAR *		-	0.10	0.29	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Sodium	mg/L	0.03	0.05	3.98	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
<b>Water Testing</b>						
Ammonia Nitrogen *	mg/L	-	0.06	<0.06	Based on APHA (2017), 4500-NH3 (B), (F)	Bangkok
BOD (5 days at 20 degree C) *	mg/L	-	2	<2	Based on APHA (2017), 5210 B	Bangkok
Chloride as Cl *	mg/L	0.06	0.2	9.0	Based on APHA (2017), 4110 B	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	92	Based on APHA (2017), 2510 B	Bangkok
Dissolved Oxygen *	mg/L	-	0.1	4.4	Based on APHA (2017), 4500-O (C)	Bangkok
Nitrate as N	mg/L	0.06	0.2	0.3	Based on APHA (2017), 4110 B	Bangkok
pH at 25 degree C		-	-	7.0	Based on APHA (2017), 4500-H (B)	Bangkok
Temperature *	Degree C	-	-	29.8	Based on APHA (2017), 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C *	mg/L	-	5	232	Based on APHA (2017), 2540 C	Bangkok

**Sampled By :** Adisak Phomphai

Remark :

Approved by

*Sawitree N.*

Sawitree Noisangiam  
Manager

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2287458**

Date Received : Aug 18, 2022

Date Reported : Aug 24, 2022

Report Number : 2377310-1

Page 8 of 8

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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Sawitree Noisangiam  
Manager

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# ภาคผนวก ค-8

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ผลการตรวจวิเคราะห์คุณภาพน้ำเสีย





## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2276841**

Date Received : Jul 04, 2022

Date Reported : Jul 11, 2022

Report Number : 2371676-1

Page 1 of 1

<b>Sample Number</b>	2276841-1
<b>Sampled Date</b>	Jul 02, 2022 10:15 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : บ่อปรับสภาพน้ำ (Equalization Pound)
<b>Date Analysis Commenced</b>	Jul 05, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Metals Testing</b>						
Arsenic	mg/L	0.0003	0.0005	0.005	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	Based on APHA (2017), 3125	Bangkok
Chromium	mg/L	0.0003	0.0005	0.003	Based on APHA (2017), 3125	Bangkok
Lead	mg/L	0.0003	0.0005	0.007	Based on APHA (2017), 3125	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	Based on APHA (2017), 3112	Bangkok
<b>Water Testing</b>						
BOD (5 days at 20 degree C)	mg/L	-	2	1554	Based on APHA (2017), 5210 B	Bangkok
COD	mg/L	1.5	5	3339	Based on APHA (2017), 5220 D	Bangkok
pH at 25 degree C		-	-	4.9	Based on APHA (2017), 4500-H (B)	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	Based on APHA (2017), 4500-S2(C), (F)	Bangkok
Temperature *	Degree C	-	-	30.8	Based on APHA (2017), 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	1876	Based on APHA (2017), 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	11.1	Based on APHA (2017), 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	177	Based on APHA (2017), 2540 D	Bangkok

**Sampled By :** Adisak Phomphai

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Technical Management

*Sawitree N.*

Sawitree Noisangiam  
Manager

ทะเบียนเลขที่ ว-204-จ-4709

Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2276841**

Date Received : Jul 04, 2022

Date Reported : Jul 11, 2022

Report Number : 2371676-2

Page 1 of 1

<b>Sample Number</b>	2276841-1
<b>Sampled Date</b>	Jul 02, 2022 10:15 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : บ่อปรับสภาพน้ำ (Equalization Pond)
<b>Date Analysis Commenced</b>	Jul 05, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Metals Testing</b>						
Calcium	mg/L	0.03	0.05	120	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Magnesium	mg/L	0.03	0.05	29.3	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
SAR		-	0.10	5.45	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Sodium	mg/L	0.03	0.05	257	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
<b>Water Testing</b>						
Ammonia Nitrogen	mg/L	-	0.06	0.16	Based on APHA (2017), 4500-NH3 (B), (F)	Bangkok
Conductivity at 25 degree C	micromhos/cm	-	0.5	2196	Based on APHA (2017), 2510 B	Bangkok
Nitrate as N	mg/L	0.06	0.2	Not Detected	Based on APHA (2017), 4500-NO3 (E)	Bangkok

**Sampled By :** Adisak Phomphai

Remark :

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Approved by

*Sawitree N.*

Sawitree Noisangiam  
Manager

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2287456**

Date Received : Aug 15, 2022

Date Reported : Aug 26, 2022

Report Number : 2411444-1

Page 1 of 1

<b>Sample Number</b>	2287456-3
<b>Sampled Date</b>	Aug 13, 2022 3:20 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : บ่อปรับสภาพน้ำ (Equalization Pound)
<b>Date Analysis Commenced</b>	Aug 16, 2022
<b>Condition of Sample</b>	Contained in two glass vials and five plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.0003	0.0005	0.003	≤0.25	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok
Chromium	mg/L	0.0003	0.0005	0.03	No Standard	Based on APHA (2017), 3125	Bangkok
Lead	mg/L	0.0003	0.0005	0.06	≤0.2	Based on APHA (2017), 3125	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Based on APHA (2017), 3112	Bangkok
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	3117	≤20	Based on APHA (2017), 5210 B	Bangkok
COD	mg/L	1.5	5	9016	≤120	Based on APHA (2017), 5220 D	Bangkok
pH at 25 degree C		-	-	4.4	5.5-9.0	Based on APHA (2017), 4500-H (B)	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Based on APHA (2017), 4500-S2(C), (F)	Bangkok
Temperature *	Degree C	-	-	32.5	≤40	Based on APHA (2017), 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	5500	≤3000	Based on APHA (2017), 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	12.6	≤100	Based on APHA (2017), 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	238	≤50	Based on APHA (2017), 2540 D	Bangkok

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

**Sampled By :** Adisak Phomphai

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**Technical Management**

Siriluk P.

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

**Approved by**

Kanok Korn Anek

Kanok Korn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 2287456**

Date Received : Aug 15, 2022

Date Reported : Aug 26, 2022

Report Number : 2411444-2

Page 1 of 1

<b>Sample Number</b>	2287456-3
<b>Sampled Date</b>	Aug 13, 2022 3:20 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : บ่อปรับสภาพน้ำ (Equalization Pound)
<b>Date Analysis Commenced</b>	Aug 16, 2022
<b>Condition of Sample</b>	Contained in two glass vials and five plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Calcium	mg/L	0.03	0.05	179	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Magnesium	mg/L	0.03	0.05	19.5	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
SAR *		-	0.10	13.5	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Sodium	mg/L	0.03	0.05	712	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
<b>Water Testing</b>							
Ammonia Nitrogen *	mg/L	-	0.06	<0.06	No Standard	Based on APHA (2017), 4500-NH3 (B), (F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	4404	No Standard	Based on APHA (2017), 2510 B	Bangkok
Nitrate as N *	mg/L	0.06	0.2	Not Detected	No Standard	Based on APHA (2017), 4500-NO3 (E)	Bangkok

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

**Sampled By :** Adisak Phomphai

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Approved by

Siriluk P.

Siriluk Puengpang  
Supervisor



## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22102056**

Date Received : Sep 06, 2022

Date Reported : Sep 12, 2022

Report Number : 2431952-1

Page 1 of 1

<b>Sample Number</b>	22102056-3
<b>Sampled Date</b>	Sep 05, 2022 1:10 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : บ่อปรับสภาพน้ำ (Equalization Pound)
<b>Date Analysis Commenced</b>	Sep 06, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Metals Testing</b>						
Arsenic	mg/L	0.0003	0.0005	0.004	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	Based on APHA (2017), 3125	Bangkok
Chromium	mg/L	0.0003	0.0005	0.02	Based on APHA (2017), 3125	Bangkok
Lead	mg/L	0.0003	0.0005	0.006	Based on APHA (2017), 3125	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	Based on APHA (2017), 3112	Bangkok
<b>Water Testing</b>						
BOD (5 days at 20 degree C) *	mg/L	-	2	7755	Based on APHA (2017), 5210 B	Bangkok
COD	mg/L	1.5	5	10292	Based on APHA (2017), 5220 D	Bangkok
pH at 25 degree C		-	-	5.0	Based on APHA (2017), 4500-H (B)	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	Based on APHA (2017), 4500-S2(C), (F)	Bangkok
Temperature *	Degree C	-	-	32.7	Based on APHA (2017), 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	5500	Based on APHA (2017), 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	7.5	Based on APHA (2017), 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	340	Based on APHA (2017), 2540 D	Bangkok

**Sampled By :** Adisak Phomphai

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Technical Management

*Sawitree N.*

Sawitree Noisangiam  
Manager

ทะเบียนเลขที่ ว-204-จ-4709

Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22102056**

Date Received : Sep 06, 2022

Date Reported : Sep 12, 2022

Report Number : 2431952-2

Page 1 of 1

<b>Sample Number</b>	22102056-3
<b>Sampled Date</b>	Sep 05, 2022 1:10 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : บ่อปรับสภาพน้ำ (Equalization Pound)
<b>Date Analysis Commenced</b>	Sep 06, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Metals Testing</b>						
Calcium	mg/L	0.03	0.05	306	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Magnesium	mg/L	0.03	0.05	35.9	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
SAR *		-	0.10	3.48	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Sodium	mg/L	0.03	0.05	242	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
<b>Water Testing</b>						
Ammonia Nitrogen *	mg/L	-	0.06	<0.06	Based on APHA (2017), 4500-NH3 (B), (F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	2385	Based on APHA (2017), 2510 B	Bangkok
Nitrate as N *	mg/L	0.06	0.2	Not Detected	Based on APHA (2017), 4500-NO3 (E)	Bangkok

**Sampled By :** Adisak Phomphai

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*Sawitree N.*

Sawitree Noisangiam  
Manager

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## Analysis / Test Report

TESTING  
No.0009

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : EIA Monitoring

**Project Location** :

**Lot ID: 22117584**

Date Received : Oct 13, 2022

Date Reported : Oct 20, 2022

Report Number : 2469092-1

Page 1 of 1

<b>Sample Number</b>	22117584-3
<b>Sampled Date</b>	Oct 12, 2022 10:00 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : บ่อปรับสภาพน้ำ (Equalization Pound)
<b>Date Analysis Commenced</b>	Oct 14, 2022
<b>Condition of Sample</b>	Contained in two glass vials and five plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Metals Testing</b>						
Arsenic	mg/L	0.0003	0.0005	0.003	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	Based on APHA (2017), 3125	Bangkok
Chromium	mg/L	0.0003	0.0005	0.005	Based on APHA (2017), 3125	Bangkok
Lead	mg/L	0.0003	0.0005	0.002	Based on APHA (2017), 3125	Bangkok
Mercury	mg/L	0.0001	0.0005	Not Detected	Based on US EPA, Method 1631 Revision E	Bangkok
<b>Water Testing</b>						
BOD (5 days at 20 degree C)	mg/L	-	2	135	Based on APHA (2017), 5210 B	Bangkok
COD	mg/L	1.5	5	641	Based on APHA (2017), 5220 D	Bangkok
pH at 25 degree C		-	-	7.2	Based on APHA (2017), 4500-H (B)	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	Based on APHA (2017), 4500-S2(C), (F)	Bangkok
Temperature *	Degree C	-	-	30.2	Based on APHA (2017), 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	1828	Based on APHA (2017), 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	9.2	Based on APHA (2017), 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	86	Based on APHA (2017), 2540 D	Bangkok

**Sampled By** : Adisak Phomphai

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Technical Management

*Sawitree N.*

Sawitree Noisangiam  
Manager

ทะเบียนเลขที่ ว-204-จ-4709

Approved by

*Kanokkorn Anek*

Kanokkorn Anek  
Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22117584**

Date Received : Oct 13, 2022

Date Reported : Oct 20, 2022

Report Number : 2469092-2

Page 1 of 1

<b>Sample Number</b>	22117584-3
<b>Sampled Date</b>	Oct 12, 2022 10:00 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : บ่อปรับสภาพน้ำ (Equalization Pound)
<b>Date Analysis Commenced</b>	Oct 14, 2022
<b>Condition of Sample</b>	Contained in two glass vials and five plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Metals Testing</b>						
Calcium	mg/L	0.03	0.05	142	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Magnesium	mg/L	0.03	0.05	19.3	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
SAR *		-	0.10	6.88	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Sodium	mg/L	0.03	0.05	329	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
<b>Water Testing</b>						
Ammonia Nitrogen *	mg/L	-	0.06	2.57	Based on APHA (2017), 4500-NH3 (B), (F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	2345	Based on APHA (2017), 2510 B	Bangkok
Nitrate as N *	mg/L	0.06	0.2	Not Detected	Based on APHA (2017), 4500-NO3 (E)	Bangkok

**Sampled By :** Adisak Phomphai

Remark :

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Approved by

*Sawitree N.*

Sawitree Noisangiam  
Manager

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**  
**Project Name :** EIA Monitoring  
**Project Location :**

**Lot ID: 22128712**

Date Received : Dec 01, 2022  
Date Reported : Dec 08, 2022  
Report Number : 2514875-1

Page 1 of 2

<b>Sample Number</b>	22128712-3
<b>Sampled Date</b>	Nov 30, 2022 10:40 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : บ่อปรับสภาพน้ำ (Equalization Pound)
<b>Date Analysis Commenced</b>	Dec 01, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Metals Testing</b>						
Arsenic	mg/L	0.0003	0.0005	0.004	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Chromium	mg/L	0.0003	0.0005	0.03	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Lead	mg/L	0.0003	0.0005	0.008	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3112	Bangkok
<b>Water Testing</b>						
BOD (5 days at 20 degree C)	mg/L	-	2	573	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O C	Bangkok
COD	mg/L	1.5	5	3282	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *		-	-	5.2	In - house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Temperature *	Degree C	-	-	29.7	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	1940	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok

Technical Management

*Sawitree N.*

Sawitree Noisangiam  
Manager

ทะเบียนเลขที่ ว-204-จ-4709

Approved by

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22128712**

Date Received : Dec 01, 2022

Date Reported : Dec 08, 2022

Report Number : 2514875-1

Page 2 of 2

<b>Sample Number</b>	22128712-3
<b>Sampled Date</b>	Nov 30, 2022 10:40 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : บ่อปรับสภาพน้ำ (Equalization Pound)
<b>Date Analysis Commenced</b>	Dec 01, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Water Testing</b>						
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	16.9	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	204	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

**Sampled By :** Adisak Phomphai

Remark :

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

Technical Management

*Sawitree N.*

Sawitree Noisangiam  
Manager

ทะเบียนเลขที่ ว-204-จ-4709

Approved by

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22128712**

Date Received : Dec 01, 2022

Date Reported : Dec 08, 2022

Report Number : 2514875-2

Page 1 of 1

<b>Sample Number</b>	22128712-3
<b>Sampled Date</b>	Nov 30, 2022 10:40 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : บ่อปรับสภาพน้ำ (Equalization Pound)
<b>Date Analysis Commenced</b>	Dec 01, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Metals Testing</b>						
Calcium	mg/L	0.03	0.05	337	In-house method : STM 05-014 based on United States Environmental Protection Agency, 1994, EPA Method 200.7	Bangkok
Magnesium	mg/L	0.03	0.05	40.3	In-house method : STM 05-014 based on United States Environmental Protection Agency, 1994, EPA Method 200.7	Bangkok
SAR		-	0.10	2.57	In-house method : STM 05-014 based on United States Environmental Protection Agency, 1994, EPA Method 200.7	Bangkok
Sodium	mg/L	0.03	0.05	187	In-house method : STM 05-014 based on United States Environmental Protection Agency, 1994, EPA Method 200.7	Bangkok
<b>Water Testing</b>						
Ammonia Nitrogen	mg/L	-	0.06	0.17	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C	micromhos/cm	-	0.5	2565	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Nitrate as N	mg/L	0.06	0.2	Not Detected	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok

**Sampled By :** Adisak Phomphai

Remark :

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Approved by

*Sawitree N.*

Sawitree Noisangiam  
Manager

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**  
**Project Name :** EIA Monitoring  
**Project Location :**

**Lot ID: 22139712**

Date Received : Dec 16, 2022  
Date Reported : Dec 29, 2022  
Report Number : 2527794-1

Page 1 of 2

<b>Sample Number</b>	22139712-3
<b>Sampled Date</b>	Dec 15, 2022 2:40 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : บ่อปรับสภาพน้ำ (Equalization Pound)
<b>Date Analysis Commenced</b>	Dec 16, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Metals Testing</b>						
Arsenic	mg/L	0.0003	0.0005	0.007	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Cadmium	mg/L	0.0003	0.0005	<0.0005	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Chromium	mg/L	0.0003	0.0005	0.10	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Lead	mg/L	0.0003	0.0005	0.08	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3112	Bangkok
<b>Water Testing</b>						
BOD (5 days at 20 degree C)	mg/L	-	2	1446	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O C	Bangkok
COD	mg/L	1.5	5	3567	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *		-	-	6.7	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Temperature *	Degree C	-	-	41.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	1944	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	21.4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

Technical Management

Siriluk P.

Siriluk Puengpang  
Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

Approved by

Kanokkorn Anek

Kanokkorn Anek  
Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22139712**

Date Received : Dec 16, 2022

Date Reported : Dec 29, 2022

Report Number : 2527794-1

Page 2 of 2

<b>Sample Number</b>	22139712-3
<b>Sampled Date</b>	Dec 15, 2022 2:40 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : บ่อปรับสภาพน้ำ (Equalization Pound)
<b>Date Analysis Commenced</b>	Dec 16, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Water Testing</b>						
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	337	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

**Sampling By :** Adisak Phomphai ทะเบียนเลขที่ ว-204-จ-8605

Remark :

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

Technical Management

Siriluk P.

Siriluk Puengpang  
Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

Approved by

Kanokkorn Anek

Kanokkorn Anek  
Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22139712**

Date Received : Dec 16, 2022

Date Reported : Dec 29, 2022

Report Number : 2527794-2

Page 1 of 1

<b>Sample Number</b>	22139712-3
<b>Sampled Date</b>	Dec 15, 2022 2:40 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : บ่อปรับสภาพน้ำ (Equalization Pound)
<b>Date Analysis Commenced</b>	Dec 16, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Metals Testing</b>						
Calcium	mg/L	0.03	0.05	142	In-house method : STM 05-014 based on United States Environmental Protection Agency, 1994, EPA Method 200.7	Bangkok
Magnesium	mg/L	0.03	0.05	36.3	In-house method : STM 05-014 based on United States Environmental Protection Agency, 1994, EPA Method 200.7	Bangkok
SAR *		-	0.10	5.31	In-house method : STM 05-014 based on United States Environmental Protection Agency, 1994, EPA Method 200.7	Bangkok
Sodium	mg/L	0.03	0.05	274	In-house method : STM 05-014 based on United States Environmental Protection Agency, 1994, EPA Method 200.7	Bangkok
<b>Water Testing</b>						
Ammonia Nitrogen *	mg/L	-	0.06	5.30	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	2484	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Nitrate as N *	mg/L	0.06	0.2	0.89	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok

**Sampling By :** Adisak Phomphai ทะเบียนเลขที่ ว-204-จ-8605

Remark :

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

Siriluk P.

Siriluk Puengpang  
Supervisor

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**  
**Project Name :** Water Testing\_KSP  
**Project Location :**

**Lot ID: 2276792**

Date Received : Jul 02, 2022  
Date Reported : Jul 08, 2022  
Report Number : 2369935-1

Page 1 of 1

<b>Sample Number</b>	2276792-14
<b>Sampled Date</b>	Jul 01, 2022 1:50 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	FP2 KSP
<b>Date Analysis Commenced</b>	Jul 02, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Metals Testing</b>						
Lead	mg/L	0.0003	0.0005	0.0006	Based on APHA (2017), 3125	Bangkok
<b>Water Testing</b>						
BOD (5 days at 20 degree C)	mg/L	-	2	184	Based on APHA (2017), 5210 B	Bangkok
COD	mg/L	1.5	5	623	Based on APHA (2017), 5220 D	Bangkok
Oil & Grease	mg/L	-	3	4	Based on APHA (2017), 5520 B	Bangkok
pH at 25 degree C		-	-	7.7	Based on APHA (2017), 4500-H (B)	Bangkok
Temperature *	Degree C	-	-	32.1	Based on APHA (2017), 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	2076	Based on APHA (2017), 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	14.1	Based on APHA (2017), 4500-Norg (C)	Bangkok

**Sampled By :** Adisak Phomphai

Remark :

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Technical Management

*Chanatt L.*

Chanattagarn Imchom  
Supervisor  
ทะเบียนเลขที่ ว-204-จ-4710

Approved by

*Kanokkorn Anek*

Kanokkorn Anek  
Senior Manager  
ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0009

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : Water Testing\_KSP

**Project Location** :

**Lot ID: 2276792**

Date Received : Jul 02, 2022

Date Reported : Jul 08, 2022

Report Number : 2369935-2

Page 1 of 1

<b>Sample Number</b>	2276792-14
<b>Sampled Date</b>	Jul 01, 2022 1:50 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	FP2 KSP
<b>Date Analysis Commenced</b>	Jul 04, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Metals Testing</b>						
Calcium	mg/L	0.03	0.05	235	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Magnesium	mg/L	0.03	0.05	21.7	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
SAR *		-	0.10	6.80	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Sodium	mg/L	0.03	0.05	406	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
<b>Water Testing</b>						
Conductivity at 25 degree C *	micromhos/cm	-	0.5	3098	Based on APHA (2017), 2510 B	Bangkok

**Sampled By** : Adisak Phomphai

Remark :

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Approved by

*Chanatt L.*

Chanattagarn Imchom  
Supervisor

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2287456**

Date Received : Aug 15, 2022

Date Reported : Aug 26, 2022

Report Number : 2411445-1

Page 1 of 1

<b>Sample Number</b>	2287456-4
<b>Sampled Date</b>	Aug 13, 2022 3:00 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : ถังตรวจสภาพน้ำ (Inspection Tank)
<b>Date Analysis Commenced</b>	Aug 16, 2022
<b>Condition of Sample</b>	Contained in two glass vials and five plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.0003	0.0005	0.003	≤0.25	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok
Chromium	mg/L	0.0003	0.0005	0.004	No Standard	Based on APHA (2017), 3125	Bangkok
Lead	mg/L	0.0003	0.0005	0.0008	≤0.2	Based on APHA (2017), 3125	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Based on APHA (2017), 3112	Bangkok
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	33	≤20	Based on APHA (2017), 5210 B	Bangkok
COD	mg/L	1.5	5	193	≤120	Based on APHA (2017), 5220 D	Bangkok
pH at 25 degree C		-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Based on APHA (2017), 4500-S2(C), (F)	Bangkok
Temperature *	Degree C	-	-	34.9	≤40	Based on APHA (2017), 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	1764	≤3000	Based on APHA (2017), 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	14.4	≤100	Based on APHA (2017), 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	90	≤50	Based on APHA (2017), 2540 D	Bangkok

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

**Sampled By :** Adisak Phomphai

Remark :

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**Technical Management**

*Siriluk P.*

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

**Approved by**

*Kanok Korn Anek*

Kanok Korn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2287456**

Date Received : Aug 15, 2022

Date Reported : Aug 26, 2022

Report Number : 2411445-2

Page 1 of 1

<b>Sample Number</b>	2287456-4
<b>Sampled Date</b>	Aug 13, 2022 3:00 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : ถังตรวจสอบสภาพน้ำ (Inspection Tank)
<b>Date Analysis Commenced</b>	Aug 16, 2022
<b>Condition of Sample</b>	Contained in two glass vials and five plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Calcium	mg/L	0.03	0.05	220	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Magnesium	mg/L	0.03	0.05	21.6	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
SAR *		-	0.10	6.78	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Sodium	mg/L	0.03	0.05	394	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
<b>Water Testing</b>							
Ammonia Nitrogen *	mg/L	-	0.06	7.95	No Standard	Based on APHA (2017), 4500-NH3 (B), (F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	3177	No Standard	Based on APHA (2017), 2510 B	Bangkok
Nitrate as N *	mg/L	0.06	0.2	Not Detected	No Standard	Based on APHA (2017), 4500-NO3 (E)	Bangkok

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

**Sampled By :** Adisak Phomphai

Remark :

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Approved by

Siriluk P.

Siriluk Puengpang  
Supervisor



## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 22102056**

Date Received : Sep 06, 2022

Date Reported : Sep 12, 2022

Report Number : 2431953-1

Page 1 of 1

<b>Sample Number</b>	22102056-4
<b>Sampled Date</b>	Sep 05, 2022 1:30 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : ถังตรวจสภาพน้ำ (Inspection Tank)
<b>Date Analysis Commenced</b>	Sep 06, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.0003	0.0005	0.003	≤0.25	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok
Chromium	mg/L	0.0003	0.0005	0.0005	No Standard	Based on APHA (2017), 3125	Bangkok
Lead	mg/L	0.0003	0.0005	Not Detected	≤0.2	Based on APHA (2017), 3125	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Based on APHA (2017), 3112	Bangkok
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	5	≤20	Based on APHA (2017), 5210 B	Bangkok
COD	mg/L	1.5	5	88	≤120	Based on APHA (2017), 5220 D	Bangkok
pH at 25 degree C		-	-	8.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Based on APHA (2017), 4500-S2(C), (F)	Bangkok
Temperature *	Degree C	-	-	32.3	≤40	Based on APHA (2017), 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	1440	≤3000	Based on APHA (2017), 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	9.8	≤100	Based on APHA (2017), 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	6	≤50	Based on APHA (2017), 2540 D	Bangkok

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

**Sampled By :** Adisak Phomphai

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**Technical Management**

*Sawitree N.*

Sawitree Noisangiam  
Manager

ทะเบียนเลขที่ ว-204-จ-4709

**Approved by**

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 22102056**

Date Received : Sep 06, 2022

Date Reported : Sep 12, 2022

Report Number : 2431953-2

Page 1 of 1

<b>Sample Number</b>	22102056-4
<b>Sampled Date</b>	Sep 05, 2022 1:30 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : ถังตรวจสอบสภาพน้ำ (Inspection Tank)
<b>Date Analysis Commenced</b>	Sep 06, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Calcium	mg/L	0.03	0.05	116	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Magnesium	mg/L	0.03	0.05	20.7	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
SAR *		-	0.10	9.34	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Sodium	mg/L	0.03	0.05	416	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
<b>Water Testing</b>							
Ammonia Nitrogen *	mg/L	-	0.06	6.62	No Standard	Based on APHA (2017), 4500-NH3 (B), (F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	2652	No Standard	Based on APHA (2017), 2510 B	Bangkok
Nitrate as N *	mg/L	0.06	0.2	Not Detected	No Standard	Based on APHA (2017), 4500-NO3 (E)	Bangkok

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

**Sampled By :** Adisak Phomphai

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Approved by

*Sawitree N.*

Sawitree Noisangiam  
Manager

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 22117584**

Date Received : Oct 13, 2022

Date Reported : Oct 21, 2022

Report Number : 2469093-1

Page 1 of 1

<b>Sample Number</b>	22117584-4
<b>Sampled Date</b>	Oct 12, 2022 10:20 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : ถังตรวจสอบสภาพน้ำ (Inspection Tank)
<b>Date Analysis Commenced</b>	Oct 14, 2022
<b>Condition of Sample</b>	Contained in two glass vials and five plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.0003	0.0005	0.002	≤0.25	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok
Chromium	mg/L	0.0003	0.0005	0.003	No Standard	Based on APHA (2017), 3125	Bangkok
Lead	mg/L	0.0003	0.0005	Not Detected	≤0.2	Based on APHA (2017), 3125	Bangkok
Mercury	mg/L	0.0001	0.0005	Not Detected	≤0.005	Based on US EPA, Method 1631 Revision E	Bangkok
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	6	≤20	Based on APHA (2017), 5210 B	Bangkok
COD	mg/L	1.5	5	119	≤120	Based on APHA (2017), 5220 D	Bangkok
pH at 25 degree C		-	-	7.8	5.5-9.0	Based on APHA (2017), 4500-H (B)	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Based on APHA (2017), 4500-S2(C), (F)	Bangkok
Temperature *	Degree C	-	-	29.1	≤40	Based on APHA (2017), 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	1440	≤3000	Based on APHA (2017), 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	8.8	≤100	Based on APHA (2017), 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	37	≤50	Based on APHA (2017), 2540 D	Bangkok

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

**Sampled By :** Adisak Phomphai

**Remark :**

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**Technical Management**

*Sawitree N.*

Sawitree Noisangiam  
Manager

ทะเบียนเลขที่ ว-204-จ-4709

**Approved by**

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 22117584**

Date Received : Oct 13, 2022

Date Reported : Oct 20, 2022

Report Number : 2469093-2

Page 1 of 1

<b>Sample Number</b>	22117584-4
<b>Sampled Date</b>	Oct 12, 2022 10:20 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : ถังตรวจสอบสภาพน้ำ (Inspection Tank)
<b>Date Analysis Commenced</b>	Oct 14, 2022
<b>Condition of Sample</b>	Contained in two glass vials and five plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Calcium	mg/L	0.03	0.05	104	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Magnesium	mg/L	0.03	0.05	18.7	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
SAR *		-	0.10	8.34	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Sodium	mg/L	0.03	0.05	352	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
<b>Water Testing</b>							
Ammonia Nitrogen *	mg/L	-	0.06	5.38	No Standard	Based on APHA (2017), 4500-NH3 (B), (F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	2447	No Standard	Based on APHA (2017), 2510 B	Bangkok
Nitrate as N *	mg/L	0.06	0.2	Not Detected	No Standard	Based on APHA (2017), 4500-NO3 (E)	Bangkok

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

**Sampled By :** Adisak Phomphai

Remark :

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Approved by

*Sawitree N.*

Sawitree Noisangiam  
Manager

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 22128712**

Date Received : Dec 01, 2022

Date Reported : Dec 08, 2022

Report Number : 2514876-1

Page 1 of 2

<b>Sample Number</b>	22128712-4
<b>Sampled Date</b>	Nov 30, 2022 11:00 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : ถังตรวจสอบสภาพน้ำ (Inspection Tank)
<b>Date Analysis Commenced</b>	Dec 01, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.0003	0.0005	0.002	≤0.25	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Chromium	mg/L	0.0003	0.0005	0.0006	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Lead	mg/L	0.0003	0.0005	Not Detected	≤0.2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3112	Bangkok
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	18	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O C	Bangkok
COD	mg/L	1.5	5	103	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *		-	-	7.9	5.5-9.0	In - house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok

**Technical Management**

*Sawitree N.*

Sawitree Noisangiam  
Manager

ทะเบียนเลขที่ ว-204-จ-4709

**Approved by**

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : EIA Monitoring

**Project Location** :

**TESTING**

**No.0009**

**Lot ID: 22128712**

Date Received : Dec 01, 2022

Date Reported : Dec 08, 2022

Report Number : 2514876-1

Page 2 of 2

<b>Sample Number</b>	22128712-4
<b>Sampled Date</b>	Nov 30, 2022 11:00 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : ถังตรวจสอบสภาพน้ำ (Inspection Tank)
<b>Date Analysis Commenced</b>	Dec 01, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Temperature *	Degree C	-	-	30.6	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	1528	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	10.5	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	25	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

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

**Sampled By** : Adisak Phomphai

Remark :

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

**Technical Management**

*Savitree N.*

Savitree Noisangiam  
Manager

ทะเบียนเลขที่ ว-204-จ-4709

**Approved by**

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : EIA Monitoring

**Project Location** :

**Lot ID: 22128712**

Date Received : Dec 01, 2022

Date Reported : Dec 08, 2022

Report Number : 2514876-2

Page 1 of 1

<b>Sample Number</b>	22128712-4
<b>Sampled Date</b>	Nov 30, 2022 11:00 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : ถังตรวจสอบสภาพน้ำ (Inspection Tank)
<b>Date Analysis Commenced</b>	Dec 01, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Calcium	mg/L	0.03	0.05	77.4	No Standard	In-house method : STM 05-014 based on United States Environmental Protection Agency, 1994, EPA Method 200.7	Bangkok
Magnesium	mg/L	0.03	0.05	21.1	No Standard	In-house method : STM 05-014 based on United States Environmental Protection Agency, 1994, EPA Method 200.7	Bangkok
SAR		-	0.10	11.2	No Standard	In-house method : STM 05-014 based on United States Environmental Protection Agency, 1994, EPA Method 200.7	Bangkok
Sodium	mg/L	0.03	0.05	432	No Standard	In-house method : STM 05-014 based on United States Environmental Protection Agency, 1994, EPA Method 200.7	Bangkok
<b>Water Testing</b>							
Ammonia Nitrogen	mg/L	-	0.06	6.08	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C	micromhos/cm	-	0.5	2802	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Nitrate as N	mg/L	0.06	0.2	Not Detected	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok

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

**Sampled By** : Adisak Phomphai

Remark :

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

Approved by

*Sawitree N.*

Sawitree Noisangiam  
Manager

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 22139712**

Date Received : Dec 16, 2022

Date Reported : Dec 29, 2022

Report Number : 2527795-1

Page 1 of 2

<b>Sample Number</b>	22139712-4
<b>Sampled Date</b>	Dec 15, 2022 2:20 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : ถังตรวจสอบสภาพน้ำ (Inspection Tank)
<b>Date Analysis Commenced</b>	Dec 16, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.0003	0.0005	0.002	≤0.25	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Chromium	mg/L	0.0003	0.0005	0.001	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Lead	mg/L	0.0003	0.0005	<0.0005	≤0.2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3112	Bangkok
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	43	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O C	Bangkok
COD	mg/L	1.5	5	147	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
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)	Bangkok

**Technical Management**

*Siriluk P.*

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

**Approved by**

*Kanokkorn Anek*

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 22139712**

Date Received : Dec 16, 2022

Date Reported : Dec 29, 2022

Report Number : 2527795-1

Page 2 of 2

<b>Sample Number</b>	22139712-4
<b>Sampled Date</b>	Dec 15, 2022 2:20 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : ถังตรวจสอบสภาพน้ำ (Inspection Tank)
<b>Date Analysis Commenced</b>	Dec 16, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
Sulfide *	mg/L	-	0.5	0.6	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Temperature *	Degree C	-	-	27.1	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	1444	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	12.9	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	44	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

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

**Sampling By :** Adisak Phomphai ทะเบียนเลขที่ ว-204-จ-8605

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**Technical Management**

*Siriluk P.*

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

**Approved by**

*Kanok Korn Anek*

Kanok Korn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 22139712**

Date Received : Dec 16, 2022

Date Reported : Dec 29, 2022

Report Number : 2527795-2

Page 1 of 1

<b>Sample Number</b>	22139712-4
<b>Sampled Date</b>	Dec 15, 2022 2:20 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	ระบบบำบัดน้ำเสียความสกปรกสูง : ถังตรวจสอบสภาพน้ำ (Inspection Tank)
<b>Date Analysis Commenced</b>	Dec 16, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Calcium	mg/L	0.03	0.05	106	No Standard	In-house method : STM 05-014 based on United States Environmental Protection Agency, 1994, EPA Method 200.7	Bangkok
Magnesium	mg/L	0.03	0.05	20.8	No Standard	In-house method : STM 05-014 based on United States Environmental Protection Agency, 1994, EPA Method 200.7	Bangkok
SAR *		-	0.10	10.1	No Standard	In-house method : STM 05-014 based on United States Environmental Protection Agency, 1994, EPA Method 200.7	Bangkok
Sodium	mg/L	0.03	0.05	433	No Standard	In-house method : STM 05-014 based on United States Environmental Protection Agency, 1994, EPA Method 200.7	Bangkok
<b>Water Testing</b>							
Ammonia Nitrogen *	mg/L	-	0.06	7.59	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	2878	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Nitrate as N *	mg/L	0.06	0.2	Not Detected	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok

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

**Sampling By :** Adisak Phomphai ทะเบียนเลขที่ ว-204-จ-8605

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Approved by

Siriluk P.

Siriluk Puengpang  
Supervisor

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** Water Testing\_KSP

**Project Location :**

**Lot ID: 2276792**

Date Received : Jul 02, 2022

Date Reported : Jul 08, 2022

Report Number : 2369937-1

Page 1 of 1

<b>Sample Number</b>	2276792-16
<b>Sampled Date</b>	Jul 01, 2022 2:10 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	บ่อกักน้ำทิ้ง Low BOD KSP
<b>Date Analysis Commenced</b>	Jul 02, 2022
<b>Condition of Sample</b>	Contained in three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Water Testing</b>						
BOD (5 days at 20 degree C)	mg/L	-	2	4	Based on APHA (2017), 5210 B	Bangkok
COD	mg/L	1.5	5	57	Based on APHA (2017), 5220 D	Bangkok
pH at 25 degree C		-	-	8.5	Based on APHA (2017), 4500-H (B)	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	1064	Based on APHA (2017), 2540 C	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	6	Based on APHA (2017), 2540 D	Bangkok

**Sampled By :** Adisak Phomphai

Remark :

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Technical Management

Siriluk P.

Siriluk Puengpang  
Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

Approved by

Kanokkorn Anek

Kanokkorn Anek  
Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2287456**

Date Received : Aug 15, 2022

Date Reported : Aug 26, 2022

Report Number : 2411442-1

Page 1 of 1

**Sample Number** 2287456-1  
**Sampled Date** Aug 13, 2022 1:30 PM  
**Sample Description** Wastewater  
**Location** น้ำความสกปรกต่ำ : ถังตรวจสภาพน้ำ (Inspection Tank)  
**Date Analysis Commenced** Aug 16, 2022  
**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
<b>Water Testing</b>							
pH at 25 degree C *		-	-	8.0	5.5-9.0	Based on APHA (2017), 4500-H (B)	Bangkok
Temperature *	Degree C	-	-	29.0	≤40	Based on APHA (2017), 2550 B	Bangkok

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

**Sampled By :** Adisak Phomphai

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Technical Management

Siriluk P.

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

Approved by

Kanokkorn Anek

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2287456**

Date Received : Aug 15, 2022

Date Reported : Aug 26, 2022

Report Number : 2411442-2

Page 1 of 1

**Sample Number** 2287456-1  
**Sampled Date** Aug 13, 2022 1:30 PM  
**Sample Description** Wastewater  
**Location** น้ำความสกปรกต่ำ : ถังตรวจสภาพน้ำ (Inspection Tank)  
**Date Analysis Commenced** Aug 16, 2022  
**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
<b>Water Testing</b>							
Conductivity at 25 degree C	micromhos/cm	-	0.5	2230	No Standard	Based on APHA (2017), 2510 B	Bangkok

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

**Sampled By :** Adisak Phomphai

Remark :

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

Approved by

Siriluk P.

Siriluk Puengpang  
Supervisor

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.

9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 22102056**

Date Received : Sep 06, 2022

Date Reported : Sep 12, 2022

Report Number : 2431950-1

Page 1 of 1

<b>Sample Number</b>	22102056-1
<b>Sampled Date</b>	Sep 05, 2022 1:45 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำความสกปรกต่ำ : ถังตรวจสภาพน้ำ (Inspection Tank)
<b>Date Analysis Commenced</b>	Sep 07, 2022
<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>							
pH at 25 degree C		-	-	7.8	5.5-9.0	Based on APHA (2017), 4500-H (B)	Bangkok
Temperature *	Degree C	-	-	31.0	≤40	Based on APHA (2017), 2550 B	Bangkok

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

**Sampled By :** Adisak Phomphai

Remark :

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**Technical Management**

*Siriluk P.*

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

**Approved by**

*Kanokkorn Anek*

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22102056**

Date Received : Sep 06, 2022

Date Reported : Sep 12, 2022

Report Number : 2431950-2

Page 1 of 1

**Sample Number** 22102056-1  
**Sampled Date** Sep 05, 2022 1:45 PM  
**Sample Description** Wastewater  
**Location** น้ำความสกปรกต่ำ : ถังตรวจสภาพน้ำ (Inspection Tank)  
**Date Analysis Commenced** Sep 07, 2022  
**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
<b>Water Testing</b>							
Conductivity at 25 degree C	micromhos/cm	-	0.5	2276	No Standard	Based on APHA (2017), 2510 B	Bangkok

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

**Sampled By :** Adisak Phomphai

Remark :

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

Approved by

Siriluk P.

Siriluk Puenggang  
Supervisor

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 22117584**

Date Received : Oct 13, 2022

Date Reported : Oct 20, 2022

Report Number : 2469090-1

Page 1 of 1

**Sample Number** 22117584-1  
**Sampled Date** Oct 12, 2022 10:30 AM  
**Sample Description** Wastewater  
**Location** น้ำความสกปรกต่ำ : ถังตรวจสภาพน้ำ (Inspection Tank)  
**Date Analysis Commenced** Oct 14, 2022  
**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
<b>Water Testing</b>							
pH at 25 degree C		-	-	8.0	5.5-9.0	Based on APHA (2017), 4500-H (B)	Bangkok
Temperature *	Degree C	-	-	30.8	≤40	Based on APHA (2017), 2550 B	Bangkok

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

**Sampled By :** Adisak Phomphai

Remark :

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

**Technical Management**

*Siriluk P.*

Siriluk Puengpang  
Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

**Approved by**

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : EIA Monitoring

**Project Location** :

**Lot ID: 22117584**

Date Received : Oct 13, 2022

Date Reported : Oct 20, 2022

Report Number : 2469090-2

Page 1 of 1

<b>Sample Number</b>	22117584-1
<b>Sampled Date</b>	Oct 12, 2022 10:30 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำความสกปรกต่ำ : ถังตรวจสภาพน้ำ (Inspection Tank)
<b>Date Analysis Commenced</b>	Oct 14, 2022
<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>							
Conductivity at 25 degree C	micromhos/cm	-	0.5	1938	No Standard	Based on APHA (2017), 2510 B	Bangkok

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

**Sampled By** : Adisak Phomphai

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Siriluk P.

Siriluk Puengpang  
Supervisor





## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22128712**

Date Received : Dec 01, 2022

Date Reported : Dec 08, 2022

Report Number : 2514873-1

Page 1 of 1

**Sample Number** 22128712-1  
**Sampled Date** Nov 30, 2022 11:15 AM  
**Sample Description** Wastewater  
**Location** น้ำความสกปรกต่ำ : ถังตรวจสอบสภาพน้ำ (Inspection Tank)  
**Date Analysis Commenced** Dec 02, 2022  
**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
<b>Water Testing</b>							
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)	Bangkok
Temperature	Degree C	-	-	29.7	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok

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

**Sampled By :** Adisak Phomphai

Remark :

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Technical Management

Siriluk P.

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

Approved by

Kanokkorn Anek

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22128712**

Date Received : Dec 01, 2022

Date Reported : Dec 08, 2022

Report Number : 2514873-2

Page 1 of 1

**Sample Number** 22128712-1  
**Sampled Date** Nov 30, 2022 11:15 AM  
**Sample Description** Wastewater  
**Location** น้ำความสกปรกต่ำ : ถังตรวจสภาพน้ำ (Inspection Tank)  
**Date Analysis Commenced** Dec 07, 2022  
**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
<b>Water Testing</b>							
Conductivity at 25 degree C	micromhos/cm	-	0.5	2023	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok

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

**Sampled By :** Adisak Phomphai

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.

9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22139712**

Date Received : Dec 16, 2022

Date Reported : Dec 29, 2022

Report Number : 2527792-1

Page 1 of 1

<b>Sample Number</b>	22139712-1
<b>Sampled Date</b>	Dec 15, 2022 2:15 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำความสกปรกต่ำ : ถังตรวจสภาพน้ำ (Inspection Tank)
<b>Date Analysis Commenced</b>	Dec 17, 2022
<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>							
pH at 25 degree C		-	-	8.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Temperature	Degree C	-	-	27.1	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok

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

**Sampling By :** Adisak Phomphai ทะเบียนเลขที่ ว-204-จ-8605

Remark :

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

**Technical Management**

*Siriluk P.*

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

**Approved by**

*Kanokkorn Anek*

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

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9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22139712**

Date Received : Dec 16, 2022

Date Reported : Dec 29, 2022

Report Number : 2527792-2

Page 1 of 1

**Sample Number** 22139712-1  
**Sampled Date** Dec 15, 2022 2:15 PM  
**Sample Description** Wastewater  
**Location** น้ำความสกปรกต่ำ : ถังตรวจสภาพน้ำ (Inspection Tank)  
**Date Analysis Commenced** Dec 19, 2022  
**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
<b>Water Testing</b>							
Conductivity at 25 degree C	micromhos/cm	-	0.5	1942	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok

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

**Sampling By :** Adisak Phomphai ทะเบียนเลขที่ ว-204-จ-8605

Remark :

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Approved by

Siriluk P.

Siriluk Puengpang  
Supervisor

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2276841**

Date Received : Jul 04, 2022

Date Reported : Jul 11, 2022

Report Number : 2371679-1

Page 1 of 2

<b>Sample Number</b>	2276841-4
<b>Sampled Date</b>	Jul 02, 2022 11:50 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	Retention Pound
<b>Date Analysis Commenced</b>	Jul 05, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Metals Testing</b>						
Arsenic	mg/L	0.0003	0.0005	0.002	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	Based on APHA (2017), 3125	Bangkok
Calcium	mg/L	0.03	0.05	67.2	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Chromium	mg/L	0.0003	0.0005	0.0006	Based on APHA (2017), 3125	Bangkok
Lead	mg/L	0.0003	0.0005	Not Detected	Based on APHA (2017), 3125	Bangkok
Magnesium	mg/L	0.03	0.05	14.6	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	Based on APHA (2017), 3112	Bangkok
SAR *		-	0.10	9.32	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Sodium	mg/L	0.03	0.05	323	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
<b>Water Testing</b>						
BOD (5 days at 20 degree C)	mg/L	-	2	35	Based on APHA (2017), 5210 B	Bangkok
COD	mg/L	1.5	5	104	Based on APHA (2017), 5220 D	Bangkok
pH at 25 degree C		-	-	7.6	Based on APHA (2017), 4500-H (B)	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	Based on APHA (2017), 4500-S2(C), (F)	Bangkok
Temperature *	Degree C	-	-	32.9	Based on APHA (2017), 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	1216	Based on APHA (2017), 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	8.5	Based on APHA (2017), 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	49	Based on APHA (2017), 2540 D	Bangkok

**Sampled By :** Adisak Phomphai

Remark :

- LOD : Limit of Detection

**Technical Management**

*Sawitree N.*

Sawitree Noisangiam  
Manager

ทะเบียนเลขที่ ว-204-จ-4709

**Approved by**

*Kanokkorn Anek*

Kanokkorn Anek  
Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2276841**

Date Received : Jul 04, 2022

Date Reported : Jul 11, 2022

Report Number : 2371679-1

Page 2 of 2

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

Technical Management

*Sawitree N.*

Sawitree Noisangiam  
Manager

ทะเบียนเลขที่ ว-204-จ-4709

Approved by

*Kanokkorn Anek*

Kanokkorn Anek  
Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : EIA Monitoring

**Project Location** :

**Lot ID: 2276841**

Date Received : Jul 04, 2022

Date Reported : Jul 11, 2022

Report Number : 2371679-2

Page 1 of 1

<b>Sample Number</b>	2276841-4
<b>Sampled Date</b>	Jul 02, 2022 11:50 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	Retention Pound
<b>Date Analysis Commenced</b>	Jul 05, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Water Testing</b>						
Ammonia Nitrogen	mg/L	-	0.06	0.33	Based on APHA (2017), 4500-NH3 (B), (F)	Bangkok
Conductivity at 25 degree C	micromhos/cm	-	0.5	2234	Based on APHA (2017), 2510 B	Bangkok
Nitrate as N	mg/L	0.06	0.2	Not Detected	Based on APHA (2017), 4500-NO3 (E)	Bangkok

**Sampled By** : Adisak Phomphai

Remark :

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Approved by

Siriluk P.

Siriluk Puengpang  
Supervisor

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2287456**

Date Received : Aug 15, 2022

Date Reported : Aug 26, 2022

Report Number : 2411443-1

Page 1 of 1

<b>Sample Number</b>	2287456-2
<b>Sampled Date</b>	Aug 13, 2022 3:40 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	Retention Pound
<b>Date Analysis Commenced</b>	Aug 16, 2022
<b>Condition of Sample</b>	Contained in two glass vials and five plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.0003	0.0005	0.002	≤0.25	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok
Chromium	mg/L	0.0003	0.0005	0.0007	No Standard	Based on APHA (2017), 3125	Bangkok
Lead	mg/L	0.0003	0.0005	Not Detected	≤0.2	Based on APHA (2017), 3125	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Based on APHA (2017), 3112	Bangkok
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	5	≤20	Based on APHA (2017), 5210 B	Bangkok
COD	mg/L	1.5	5	99	≤120	Based on APHA (2017), 5220 D	Bangkok
pH at 25 degree C		-	-	8.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Based on APHA (2017), 4500-S2(C), (F)	Bangkok
Temperature *	Degree C	-	-	34.6	≤40	Based on APHA (2017), 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	1468	≤3000	Based on APHA (2017), 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	7.4	≤100	Based on APHA (2017), 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	26	≤50	Based on APHA (2017), 2540 D	Bangkok

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

**Sampled By :** Adisak Phomphai

Remark :

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

**Technical Management**

Siriluk P.

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

**Approved by**

Kanokkorn Anek

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2287456**

Date Received : Aug 15, 2022

Date Reported : Aug 26, 2022

Report Number : 2411443-2

Page 1 of 1

<b>Sample Number</b>	2287456-2						
<b>Sampled Date</b>	Aug 13, 2022 3:40 PM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	Retention Pound						
<b>Date Analysis Commenced</b>	Aug 16, 2022						
<b>Condition of Sample</b>	Contained in two glass vials and five plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Calcium	mg/L	0.03	0.05	114	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Magnesium	mg/L	0.03	0.05	15.9	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
SAR *		-	0.10	8.05	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Sodium	mg/L	0.03	0.05	347	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
<b>Water Testing</b>							
Ammonia Nitrogen *	mg/L	-	0.06	4.24	No Standard	Based on APHA (2017), 4500-NH3 (B), (F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	2526	No Standard	Based on APHA (2017), 2510 B	Bangkok
Nitrate as N *	mg/L	0.06	0.2	Not Detected	No Standard	Based on APHA (2017), 4500-NO3 (E)	Bangkok

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

**Sampled By :** Adisak Phomphai

Remark :

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Approved by

Siriluk P.

Siriluk Puengpang  
Supervisor



## Analysis / Test Report

TESTING

No.0009

Lot ID: 22102056

Date Received : Sep 06, 2022

Date Reported : Sep 12, 2022

Report Number : 2431951-1

Client : Kaset Phol Sugar Co., Ltd.

9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

P/O :

Project Name : EIA Monitoring

Project Location :

Page 1 of 1

Sample Number	22102056-2
Sampled Date	Sep 05, 2022 3:30 PM
Sample Description	Wastewater
Location	Retention Pound
Date Analysis Commenced	Sep 06, 2022
Condition of Sample	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.0003	0.0005	0.002	≤0.25	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok
Chromium	mg/L	0.0003	0.0005	0.002	No Standard	Based on APHA (2017), 3125	Bangkok
Lead	mg/L	0.0003	0.0005	Not Detected	≤0.2	Based on APHA (2017), 3125	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Based on APHA (2017), 3112	Bangkok
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	14	≤20	Based on APHA (2017), 5210 B	Bangkok
COD	mg/L	1.5	5	86	≤120	Based on APHA (2017), 5220 D	Bangkok
pH at 25 degree C		-	-	8.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Based on APHA (2017), 4500-S2(C), (F)	Bangkok
Temperature *	Degree C	-	-	32.9	≤40	Based on APHA (2017), 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	1208	≤3000	Based on APHA (2017), 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	7.4	≤100	Based on APHA (2017), 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	26	≤50	Based on APHA (2017), 2540 D	Bangkok

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

**Sampled By** : Adisak Phomphai

Remark :

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Technical Management

*Sawitree N.*

Sawitree Noisangiam

Manager

ทะเบียนเลขที่ ว-204-จ-4709

Approved by

*Kanok Korn Anek*

Kanok Korn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 22102056**

Date Received : Sep 06, 2022

Date Reported : Sep 12, 2022

Report Number : 2431951-2

Page 1 of 1

<b>Sample Number</b>	22102056-2						
<b>Sampled Date</b>	Sep 05, 2022 3:30 PM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	Retention Pound						
<b>Date Analysis Commenced</b>	Sep 06, 2022						
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Calcium	mg/L	0.03	0.05	40.8	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Magnesium	mg/L	0.03	0.05	14.0	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
SAR *		-	0.10	14.4	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Sodium	mg/L	0.03	0.05	417	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
<b>Water Testing</b>							
Ammonia Nitrogen *	mg/L	-	0.06	4.19	No Standard	Based on APHA (2017), 4500-NH3 (B), (F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	2235	No Standard	Based on APHA (2017), 2510 B	Bangkok
Nitrate as N *	mg/L	0.06	0.2	Not Detected	No Standard	Based on APHA (2017), 4500-NO3 (E)	Bangkok

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

**Sampled By :** Adisak Phomphai

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Approved by

*Sawitree N.*

Sawitree Noisangiam  
Manager



## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 22117584**

Date Received : Oct 13, 2022

Date Reported : Oct 21, 2022

Report Number : 2469091-1

Page 1 of 1

<b>Sample Number</b>	22117584-2
<b>Sampled Date</b>	Oct 12, 2022 11:45 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	Retention Pound
<b>Date Analysis Commenced</b>	Oct 14, 2022
<b>Condition of Sample</b>	Contained in two glass vials and five plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.0003	0.0005	0.002	≤0.25	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok
Chromium	mg/L	0.0003	0.0005	0.0006	No Standard	Based on APHA (2017), 3125	Bangkok
Lead	mg/L	0.0003	0.0005	Not Detected	≤0.2	Based on APHA (2017), 3125	Bangkok
Mercury	mg/L	0.0001	0.0005	Not Detected	≤0.005	Based on US EPA, Method 1631 Revision E	Bangkok
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	5	≤20	Based on APHA (2017), 5210 B	Bangkok
COD	mg/L	1.5	5	103	≤120	Based on APHA (2017), 5220 D	Bangkok
pH at 25 degree C		-	-	8.3	5.5-9.0	Based on APHA (2017), 4500-H (B)	Bangkok
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Based on APHA (2017), 4500-S2(C), (F)	Bangkok
Temperature *	Degree C	-	-	32.3	≤40	Based on APHA (2017), 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	1228	≤3000	Based on APHA (2017), 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	6.5	≤100	Based on APHA (2017), 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	27	≤50	Based on APHA (2017), 2540 D	Bangkok

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

**Sampled By :** Adisak Phomphai

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**Technical Management**

*Sawitree N.*

Sawitree Noisangiam  
Manager

ทะเบียนเลขที่ ว-204-จ-4709

**Approved by**

*Kanok Korn Anek*

Kanok Korn Anek  
Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 22117584**

Date Received : Oct 13, 2022

Date Reported : Oct 20, 2022

Report Number : 2469091-2

Page 1 of 1

<b>Sample Number</b>	22117584-2						
<b>Sampled Date</b>	Oct 12, 2022 11:45 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	Retention Pound						
<b>Date Analysis Commenced</b>	Oct 14, 2022						
<b>Condition of Sample</b>	Contained in two glass vials and five plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Calcium	mg/L	0.03	0.05	52.0	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Magnesium	mg/L	0.03	0.05	15.3	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
SAR *		-	0.10	10.5	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Sodium	mg/L	0.03	0.05	335	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
<b>Water Testing</b>							
Ammonia Nitrogen *	mg/L	-	0.06	3.13	No Standard	Based on APHA (2017), 4500-NH3 (B), (F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	2186	No Standard	Based on APHA (2017), 2510 B	Bangkok
Nitrate as N *	mg/L	0.06	0.2	Not Detected	No Standard	Based on APHA (2017), 4500-NO3 (E)	Bangkok

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

**Sampled By :** Adisak Phomphai

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Approved by

*Sawitree N.*

Sawitree Noisangiam  
Manager

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 22128712**

Date Received : Dec 01, 2022

Date Reported : Dec 08, 2022

Report Number : 2514874-1

Page 1 of 2

<b>Sample Number</b>	22128712-2
<b>Sampled Date</b>	Nov 30, 2022 12:00 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	Retention Pound
<b>Date Analysis Commenced</b>	Dec 01, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.0003	0.0005	0.001	≤0.25	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Chromium	mg/L	0.0003	0.0005	Not Detected	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Lead	mg/L	0.0003	0.0005	Not Detected	≤0.2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3112	Bangkok
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	4	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O C	Bangkok
COD	mg/L	1.5	5	87	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *		-	-	8.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok

**Technical Management**

*Savitree N.*

Savitree Noisangiam  
Manager

ทะเบียนเลขที่ ว-204-จ-4709

**Approved by**

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 22128712**

Date Received : Dec 01, 2022

Date Reported : Dec 08, 2022

Report Number : 2514874-1

Page 2 of 2

<b>Sample Number</b>	22128712-2
<b>Sampled Date</b>	Nov 30, 2022 12:00 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	Retention Pound
<b>Date Analysis Commenced</b>	Dec 01, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Temperature *	Degree C	-	-	32.3	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	1216	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	7.4	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	20	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

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

**Sampled By :** Adisak Phomphai

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**Technical Management**

*Savitree N.*

Savitree Noisangiam  
Manager

ทะเบียนเลขที่ ว-204-จ-4709

**Approved by**

*Kanok Korn Anek*

Kanokkorn Anek  
Senior Manager

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22128712**

Date Received : Dec 01, 2022

Date Reported : Dec 08, 2022

Report Number : 2514874-2

Page 1 of 1

<b>Sample Number</b>	22128712-2
<b>Sampled Date</b>	Nov 30, 2022 12:00 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	Retention Pound
<b>Date Analysis Commenced</b>	Dec 01, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Calcium	mg/L	0.03	0.05	37.4	No Standard	In-house method : STM 05-014 based on United States Environmental Protection Agency, 1994, EPA Method 200.7	Bangkok
Magnesium	mg/L	0.03	0.05	16.2	No Standard	In-house method : STM 05-014 based on United States Environmental Protection Agency, 1994, EPA Method 200.7	Bangkok
SAR		-	0.10	13.1	No Standard	In-house method : STM 05-014 based on United States Environmental Protection Agency, 1994, EPA Method 200.7	Bangkok
Sodium	mg/L	0.03	0.05	380	No Standard	In-house method : STM 05-014 based on United States Environmental Protection Agency, 1994, EPA Method 200.7	Bangkok
<b>Water Testing</b>							
Ammonia Nitrogen	mg/L	-	0.06	3.89	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C	micromhos/cm	-	0.5	2320	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Nitrate as N	mg/L	0.06	0.2	Not Detected	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok

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

**Sampled By :** Adisak Phomphai

Remark :

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

Approved by

*Sawitree N.*

Sawitree Noisangiam  
Manager

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 22139712**

Date Received : Dec 16, 2022

Date Reported : Dec 29, 2022

Report Number : 2527793-1

Page 1 of 2

<b>Sample Number</b>	22139712-2
<b>Sampled Date</b>	Dec 15, 2022 3:00 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	Retention Pound
<b>Date Analysis Commenced</b>	Dec 16, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.0003	0.0005	0.001	≤0.25	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Chromium	mg/L	0.0003	0.0005	0.001	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Lead	mg/L	0.0003	0.0005	<0.0005	≤0.2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3112	Bangkok
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	4	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O C	Bangkok
COD	mg/L	1.5	5	104	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Bangkok
pH at 25 degree C *		-	-	8.3	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok

**Technical Management**

*Siriluk P.*

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

**Approved by**

*Kanokkorn Anek*

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : EIA Monitoring

**Project Location** :

**TESTING**

**No.0009**

**Lot ID: 22139712**

Date Received : Dec 16, 2022

Date Reported : Dec 29, 2022

Report Number : 2527793-1

Page 2 of 2

<b>Sample Number</b>	22139712-2
<b>Sampled Date</b>	Dec 15, 2022 3:00 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	Retention Pound
<b>Date Analysis Commenced</b>	Dec 16, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
Sulfide *	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Bangkok
Temperature *	Degree C	-	-	28.7	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Bangkok
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	1244	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	8.4	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	30	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Bangkok

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

**Sampling By** : Adisak Phomphai ทะเบียนเลขที่ ว-204-จ-8605

Remark :

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

**Technical Management**

*Siriluk P.*

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

**Approved by**

*Kanok Korn Anek*

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 22139712**

Date Received : Dec 16, 2022

Date Reported : Dec 29, 2022

Report Number : 2527793-2

Page 1 of 1

<b>Sample Number</b>	22139712-2
<b>Sampled Date</b>	Dec 15, 2022 3:00 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	Retention Pound
<b>Date Analysis Commenced</b>	Dec 16, 2022
<b>Condition of Sample</b>	Contained in five plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Calcium	mg/L	0.03	0.05	61.4	No Standard	In-house method : STM 05-014 based on United States Environmental Protection Agency, 1994, EPA Method 200.7	Bangkok
Magnesium	mg/L	0.03	0.05	17.0	No Standard	In-house method : STM 05-014 based on United States Environmental Protection Agency, 1994, EPA Method 200.7	Bangkok
SAR *		-	0.10	11.0	No Standard	In-house method : STM 05-014 based on United States Environmental Protection Agency, 1994, EPA Method 200.7	Bangkok
Sodium	mg/L	0.03	0.05	378	No Standard	In-house method : STM 05-014 based on United States Environmental Protection Agency, 1994, EPA Method 200.7	Bangkok
<b>Water Testing</b>							
Ammonia Nitrogen *	mg/L	-	0.06	4.24	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	2422	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Nitrate as N *	mg/L	0.06	0.2	Not Detected	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NO3 E	Bangkok

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

**Sampling By :** Adisak Phomphai ทะเบียนเลขที่ ว-204-จ-8605

**Remark :**

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

Approved by

*Siriluk P.*

Siriluk Puengpang  
Supervisor

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## ภาคผนวก ค-9

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ผลการตรวจวิเคราะห์กากตะกอนหม้อกรองและเถ้าก่อนนำไปทำปุ๋ย



## Analysis / Test Report

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : EIA Monitoring

**Project Location** :

**Lot ID: 22139718**

Date Received : Dec 23, 2022

Date Reported : Dec 29, 2022

Report Number : 2494966-1

Page 1 of 3

<b>Sample Number</b>	22139718-1
<b>Sampled Date</b>	Dec 22, 2022
<b>Sample Description</b>	กากตะกอนหม้อกรองและเส้ก่อนนำไปผลิตปุ๋ยหมัก
<b>Location</b>	กากตะกอนหม้อกรองและเส้ 1
<b>Date Analysis Commenced</b>	Dec 24, 2022
<b>Condition of Sample</b>	Packed in one glass bottle and one plastic bag, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Chemical Testing</b>						
Conductivity aqueous phase 20% (w/v)	micromhos/cm	-	-	2560	Soil Chemical Methods - Australasia (2011)	Bangkok
<b>Metals Testing</b>						
SAR		-	1.00	<1.00	Soil Test Methods - Southern Cooperative Series Bulletin No. 419 (2014)	Bangkok
Soluble Calcium	mg/kg	-	20.0	5602	Soil Test Methods - Southern Cooperative Series Bulletin No. 419 (2014)	Bangkok
Soluble Magnesium	mg/kg	-	20.0	1337	Soil Test Methods - Southern Cooperative Series Bulletin No. 419 (2014)	Bangkok
Soluble Sodium	mg/kg	-	20.0	25.7	Soil Test Methods - Southern Cooperative Series Bulletin No. 419 (2014)	Bangkok
<b>Soil Testing</b>						
pH aqueous phase 50% (w/v)		-	-	5.6	United States Environmental Protection Agency, EPA Method 9045 D	Bangkok

Remark :

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

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Approved by

Nanthawadee Somboon  
Specialist 1





## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.

9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22139735**

Date Received : Dec 23, 2022

Date Reported : Dec 30, 2022

Report Number : 2494974-1

Page 1 of 3

<b>Sample Number</b>	22139735-1
<b>Sampled Date</b>	Dec 22, 2022
<b>Sample Description</b>	กากตะกอนหม้อกรองและเส้กาก่อนนำไปผลิตปุ๋ยหมัก
<b>Location</b>	กากตะกอนหม้อกรองและเส้ 1
<b>Date Analysis Commenced</b>	Dec 24, 2022
<b>Condition of Sample</b>	Packed in one plastic bag, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Total Concentration Test (TTLC) : Metals</b>							
Arsenic	mg/kg	-	0.50	<0.50	<500	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Cadmium	mg/kg	-	0.50	<0.50	<100	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Lead	mg/kg	-	1.00	1.33	<1000	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Manganese	mg/kg	-	1.00	478	No Standard	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Mercury	mg/kg	-	0.10	<0.10	<20	United States Environmental Protection Agency, EPA Method 7471B	Bangkok

**Guideline :** Notification of the Ministry of Industry regarding Waste or Used Material Disposal, published in the Royal Government Gazette, Vol.123, Special Part 11D, dated January 25, B.E. 2549 (2006).

Remark :

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Approved by

*Chanatt L.*

Chanattagarn Imchom  
Supervisor



## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22139718**

Date Received : Dec 23, 2022

Date Reported : Dec 29, 2022

Report Number : 2494966-1

Page 2 of 3

<b>Sample Number</b>	22139718-2
<b>Sampled Date</b>	Dec 22, 2022
<b>Sample Description</b>	กากตะกอนหม้อกรองและเส้ก่อนนำไปผลิตปุ๋ยหมัก
<b>Location</b>	กากตะกอนหม้อกรองและเส้ 2
<b>Date Analysis Commenced</b>	Dec 24, 2022
<b>Condition of Sample</b>	Packed in one glass bottle and one plastic bag, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Chemical Testing</b>						
Conductivity aqueous phase 20% (w/v)	micromhos/cm	-	-	3227	Soil Chemical Methods - Australasia (2011)	Bangkok
<b>Metals Testing</b>						
SAR		-	1.00	<1.00	Soil Test Methods - Southern Cooperative Series Bulletin No. 419 (2014)	Bangkok
Soluble Calcium	mg/kg	-	20.0	6504	Soil Test Methods - Southern Cooperative Series Bulletin No. 419 (2014)	Bangkok
Soluble Magnesium	mg/kg	-	20.0	1568	Soil Test Methods - Southern Cooperative Series Bulletin No. 419 (2014)	Bangkok
Soluble Sodium	mg/kg	-	20.0	26.5	Soil Test Methods - Southern Cooperative Series Bulletin No. 419 (2014)	Bangkok
<b>Soil Testing</b>						
pH aqueous phase 50% (w/v)		-	-	5.6	United States Environmental Protection Agency, EPA Method 9045 D	Bangkok

Remark :

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

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Approved by

Nanthawadee Somboon  
Specialist 1



## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22139735**

Date Received : Dec 23, 2022

Date Reported : Dec 30, 2022

Report Number : 2494974-1

Page 2 of 3

<b>Sample Number</b>	22139735-2
<b>Sampled Date</b>	Dec 22, 2022
<b>Sample Description</b>	กากตะกอนหม้อกรองและเส้กาก่อนนำไปผลิตปุ๋ยหมัก
<b>Location</b>	กากตะกอนหม้อกรองและเส้ 2
<b>Date Analysis Commenced</b>	Dec 24, 2022
<b>Condition of Sample</b>	Packed in one plastic bag, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Total Concentration Test (TTLC) : Metals</b>							
Arsenic	mg/kg	-	0.50	<0.50	<500	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Cadmium	mg/kg	-	0.50	<0.50	<100	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Lead	mg/kg	-	1.00	1.21	<1000	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Manganese	mg/kg	-	1.00	476	No Standard	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Mercury	mg/kg	-	0.10	<0.10	<20	United States Environmental Protection Agency, EPA Method 7471B	Bangkok

**Guideline :** Notification of the Ministry of Industry regarding Waste or Used Material Disposal, published in the Royal Government Gazette, Vol.123, Special Part 11D, dated January 25, B.E. 2549 (2006).

Remark :

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Approved by

*Chanatt L.*

Chanattagarn Imchom  
Supervisor



## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22139718**

Date Received : Dec 23, 2022

Date Reported : Dec 29, 2022

Report Number : 2494966-1

Page 3 of 3

<b>Sample Number</b>	22139718-3
<b>Sampled Date</b>	Dec 22, 2022
<b>Sample Description</b>	กากตะกอนหม้อกรองและเถ้าก่อนนำไปผลิตปุ๋ยหมัก
<b>Location</b>	กากตะกอนหม้อกรองและเถ้า 3
<b>Date Analysis Commenced</b>	Dec 24, 2022
<b>Condition of Sample</b>	Packed in one glass bottle and one plastic bag, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Chemical Testing</b>						
Conductivity aqueous phase 20% (w/v)	micromhos/cm	-	-	2245	Soil Chemical Methods - Australasia (2011)	Bangkok
<b>Metals Testing</b>						
SAR		-	1.00	<1.00	Soil Test Methods - Southern Cooperative Series Bulletin No. 419 (2014)	Bangkok
Soluble Calcium	mg/kg	-	20.0	6046	Soil Test Methods - Southern Cooperative Series Bulletin No. 419 (2014)	Bangkok
Soluble Magnesium	mg/kg	-	20.0	1514	Soil Test Methods - Southern Cooperative Series Bulletin No. 419 (2014)	Bangkok
Soluble Sodium	mg/kg	-	20.0	24.3	Soil Test Methods - Southern Cooperative Series Bulletin No. 419 (2014)	Bangkok
<b>Soil Testing</b>						
pH aqueous phase 50% (w/v)		-	-	5.6	United States Environmental Protection Agency, EPA Method 9045 D	Bangkok

Remark :

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

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Approved by

Nanthawadee Somboon  
Specialist 1



## Analysis / Test Report

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : EIA Monitoring

**Project Location** :

**Lot ID: 22139735**

Date Received : Dec 23, 2022

Date Reported : Dec 30, 2022

Report Number : 2494974-1

Page 3 of 3

**Sample Number** 22139735-3  
**Sampled Date** Dec 22, 2022  
**Sample Description** ภาคตะกอนหม้อกรองและเส้าก่อนนำไปผลิตปุ๋ยหมัก  
**Location** ภาคตะกอนหม้อกรองและเส้า 3  
**Date Analysis Commenced** Dec 24, 2022  
**Condition of Sample** Packed in one plastic bag, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Total Concentration Test (TTLC) : Metals</b>							
Arsenic	mg/kg	-	0.50	<0.50	<500	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Cadmium	mg/kg	-	0.50	<0.50	<100	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Lead	mg/kg	-	1.00	1.37	<1000	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Manganese	mg/kg	-	1.00	471	No Standard	United States Environmental Protection Agency, EPA Method 3050B and 6010D	Bangkok
Mercury	mg/kg	-	0.10	<0.10	<20	United States Environmental Protection Agency, EPA Method 7471B	Bangkok

**Guideline** : Notification of the Ministry of Industry regarding Waste or Used Material Disposal, published in the Royal Government Gazette, Vol.123, Special Part 11D, dated January 25, B.E. 2549 (2006).

Remark :

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

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Chanattagarn Imchom  
Supervisor

## ภาคผนวก ค-10

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ผลการตรวจวิเคราะห์คุณภาพดินบริเวณพื้นที่ที่  
นำกากตะกอนหม้อกรองและนำไปใช้ประโยชน์



## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22117587**

Date Received : Dec 05, 2022

Date Reported : Jan 25, 2023

Report Number : 2443748-1

Page 1 of 8

<b>Sample Number</b>	22117587-1						
<b>Sampled Date</b>	Dec 04, 2022 11:30 AM						
<b>Sample Description</b>	Soil						
<b>Location</b>	เนื้อดินหยาบ 1 (GPS 48Q 278650.11, 1889026.04)						
<b>Date Analysis Commenced</b>	Dec 06, 2022						
<b>Condition of Sample</b>	Packed in one porosity tube, four plastic bag and two glass bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Chemical Testing</b>							
Carbon/Nitrogen	%	-	-	8.10	No Standard	Base on US EPA, Calculated	Bangkok
Conductivity aqueous phase 20% (w/v)	micromhos/cm	-	-	70.2	No Standard	Soil Chemical Methods - Australasia (2011)	Bangkok
Nitrate as N	mg/kg	-	1.0	7.8	No Standard	Soil Chemical Methods - Australasia (2011)	Bangkok
Organic matter	%	-	0.05	0.18	No Standard	Soil Chemical Methods - Australasia (2011)	Bangkok
<b>Metals Testing</b>							
Arsenic	mg/kg	-	0.50	<0.50	≤25	US EPA, Method 3050B and 6010D	Bangkok
Cadmium	mg/kg	-	0.50	<0.50	≤762	US EPA, Method 3050B and 6010D	Bangkok
Chromium	mg/kg	-	1.00	11.5	No Standard	US EPA, Method 3050B and 6010D	Bangkok
Lead	mg/kg	-	1.00	11.7	≤800	US EPA, Method 3050B and 6010D	Bangkok
Manganese	mg/kg	-	1.00	209	≤19640	US EPA, Method 3050B and 6010D	Bangkok
Mercury	mg/kg	-	0.10	<0.10	≤263	US EPA (2007), Method 7473	Bangkok
<b>Physical Parameters</b>							
Moisture	%	-	0.1	11.7	No Standard	Based on APHA (2017), 2540 G	Bangkok
Soil particle density	g/cm <sup>3</sup>	-	-	2.69	No Standard	Method of Soil Analysis	Bangkok
<b>Soil Testing</b>							
Bulk Density	g/cm <sup>3</sup>	-	-	1.70	No Standard	Method of Soil Analysis part I, Core Method	Bangkok
pH aqueous phase 50% (w/v)		-	-	8.0	No Standard	Based on US EPA, Method 9045D	Bangkok
Porosity	%	-	-	36.95	No Standard	Method of Soil Analysis part I, Physical and Mineralogical Methods Second Edition, SSSA	Bangkok

**Guideline :** Notification of National Environmental Board B.E. 2564 (2021), published in the Royal Government Gazette No. 138 Special Part 54 D dated March 11, B.E.2564

Class 2: Soil usage for commercial, agricultural and others.

**Note :** Analysis Results expressed on dry basis.

Approved by

Siriluk P.

Siriluk Puengpang  
Supervisor

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22117587**

Date Received : Dec 05, 2022

Date Reported : Jan 25, 2023

Report Number : 2443748-1

Page 2 of 8

### Sampling By :

Remark :

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

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Approved by

*Siriluk P.*

Siriluk Puengpang  
Supervisor

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22117587**

Date Received : Dec 05, 2022

Date Reported : Jan 25, 2023

Report Number : 2443748-1

Page 3 of 8

<b>Sample Number</b>	22117587-2						
<b>Sampled Date</b>	Dec 04, 2022 1:40 PM						
<b>Sample Description</b>	Soil						
<b>Location</b>	เนื้อดินหยาบ 1 (GPS 48Q 278587.73, 1888767.66)						
<b>Date Analysis Commenced</b>	Dec 06, 2022						
<b>Condition of Sample</b>	Packed in one porosity tube, four plastic bag and two glass bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Chemical Testing</b>							
Carbon/Nitrogen	%	-	-	9.20	No Standard	Base on US EPA, Calculated	Bangkok
Conductivity aqueous phase 20% (w/v)	micromhos/cm	-	-	50.6	No Standard	Soil Chemical Methods - Australasia (2011)	Bangkok
Nitrate as N	mg/kg	-	1.0	2.8	No Standard	Soil Chemical Methods - Australasia (2011)	Bangkok
Organic matter	%	-	0.05	0.18	No Standard	Soil Chemical Methods - Australasia (2011)	Bangkok
<b>Metals Testing</b>							
Arsenic	mg/kg	-	0.50	<0.50	≤25	US EPA, Method 3050B and 6010D	Bangkok
Cadmium	mg/kg	-	0.50	<0.50	≤762	US EPA, Method 3050B and 6010D	Bangkok
Chromium	mg/kg	-	1.00	20.5	No Standard	US EPA, Method 3050B and 6010D	Bangkok
Lead	mg/kg	-	1.00	10.7	≤800	US EPA, Method 3050B and 6010D	Bangkok
Manganese	mg/kg	-	1.00	313	≤19640	US EPA, Method 3050B and 6010D	Bangkok
Mercury	mg/kg	-	0.10	<0.10	≤263	US EPA (2007), Method 7473	Bangkok
<b>Physical Parameters</b>							
Moisture	%	-	0.1	20.0	No Standard	Based on APHA (2017), 2540 G	Bangkok
Soil particle density	g/cm <sup>3</sup>	-	-	2.71	No Standard	Method of Soil Analysis	Bangkok
<b>Soil Testing</b>							
Bulk Density	g/cm <sup>3</sup>	-	-	1.61	No Standard	Method of Soil Analysis part I, Core Method	Bangkok
pH aqueous phase 50% (w/v)		-	-	8.2	No Standard	Based on US EPA, Method 9045D	Bangkok
Porosity	%	-	-	40.74	No Standard	Method of Soil Analysis part I, Physical and Mineralogical Methods Second Edition, SSSA	Bangkok

**Guideline :** Notification of National Environmental Board B.E. 2564 (2021), published in the Royal Government Gazette No. 138 Special Part 54 D dated March 11, B.E.2564

Class 2: Soil usage for commercial, agricultural and others.

**Note :** Analysis Results expressed on dry basis.

Approved by

Siriluk P.

Siriluk Puengpang  
Supervisor

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22117587**

Date Received : Dec 05, 2022

Date Reported : Jan 25, 2023

Report Number : 2443748-1

Page 4 of 8

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### Sampling By :

Remark :

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

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## Analysis / Test Report

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : EIA Monitoring

**Project Location** :

**Lot ID: 22117587**

Date Received : Dec 05, 2022

Date Reported : Jan 25, 2023

Report Number : 2443748-1

Page 5 of 8

<b>Sample Number</b>	22117587-3						
<b>Sampled Date</b>	Dec 04, 2022 10:10 AM						
<b>Sample Description</b>	Soil						
<b>Location</b>	เนื้อดินหยาบ 1 (GPS 48Q 277671.61, 1889997.59)						
<b>Date Analysis Commenced</b>	Dec 06, 2022						
<b>Condition of Sample</b>	Packed in one porosity tube, four plastic bag and two glass bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Chemical Testing</b>							
Carbon/Nitrogen	%	-	-	9.20	No Standard	Base on US EPA, Calculated	Bangkok
Conductivity aqueous phase 20% (w/v)	micromhos/cm	-	-	24.8	No Standard	Soil Chemical Methods - Australasia (2011)	Bangkok
Nitrate as N	mg/kg	-	1.0	2.7	No Standard	Soil Chemical Methods - Australasia (2011)	Bangkok
Organic matter	%	-	0.05	0.62	No Standard	Soil Chemical Methods - Australasia (2011)	Bangkok
<b>Metals Testing</b>							
Arsenic	mg/kg	-	0.50	<0.50	≤25	US EPA, Method 3050B and 6010D	Bangkok
Cadmium	mg/kg	-	0.50	<0.50	≤762	US EPA, Method 3050B and 6010D	Bangkok
Chromium	mg/kg	-	1.00	4.32	No Standard	US EPA, Method 3050B and 6010D	Bangkok
Lead	mg/kg	-	1.00	9.71	≤800	US EPA, Method 3050B and 6010D	Bangkok
Manganese	mg/kg	-	1.00	66.7	≤19640	US EPA, Method 3050B and 6010D	Bangkok
Mercury	mg/kg	-	0.10	<0.10	≤263	US EPA (2007), Method 7473	Bangkok
<b>Physical Parameters</b>							
Moisture	%	-	0.1	7.6	No Standard	Based on APHA (2017), 2540 G	Bangkok
Soil particle density	g/cm <sup>3</sup>	-	-	2.73	No Standard	Method of Soil Analysis	Bangkok
<b>Soil Testing</b>							
Bulk Density	g/cm <sup>3</sup>	-	-	1.46	No Standard	Method of Soil Analysis part I, Core Method	Bangkok
pH aqueous phase 50% (w/v)		-	-	7.1	No Standard	Based on US EPA, Method 9045D	Bangkok
Porosity	%	-	-	46.47	No Standard	Method of Soil Analysis part I, Physical and Mineralogical Methods Second Edition, SSSA	Bangkok

**Guideline** : Notification of National Environmental Board B.E. 2564 (2021), published in the Royal Government Gazette No. 138 Special Part 54 D dated March 11, B.E.2564

Class 2: Soil usage for commercial, agricultural and others.

**Note** : Analysis Results expressed on dry basis.

Approved by

Siriluk P.

Siriluk Puengpang  
Supervisor

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22117587**

Date Received : Dec 05, 2022

Date Reported : Jan 25, 2023

Report Number : 2443748-1

Page 6 of 8

### Sampling By :

Remark :

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22117587**

Date Received : Dec 05, 2022

Date Reported : Jan 25, 2023

Report Number : 2443748-1

Page 7 of 8

<b>Sample Number</b>	22117587-4						
<b>Sampled Date</b>	Dec 04, 2022 10:50 AM						
<b>Sample Description</b>	Soil						
<b>Location</b>	เนื้อดินหยาบ 1 (GPS 48Q 277748.65, 1890103.48)						
<b>Date Analysis Commenced</b>	Dec 06, 2022						
<b>Condition of Sample</b>	Packed in one porosity tube, four plastic bag and two glass bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Chemical Testing</b>							
Carbon/Nitrogen	%	-	-	8.70	No Standard	Base on US EPA, Calculated	Bangkok
Conductivity aqueous phase 20% (w/v)	micromhos/cm	-	-	7.6	No Standard	Soil Chemical Methods - Australasia (2011)	Bangkok
Nitrate as N	mg/kg	-	1.0	5.1	No Standard	Soil Chemical Methods - Australasia (2011)	Bangkok
Organic matter	%	-	0.05	0.13	No Standard	Soil Chemical Methods - Australasia (2011)	Bangkok
<b>Metals Testing</b>							
Arsenic	mg/kg	-	0.50	<0.50	≤25	US EPA, Method 3050B and 6010D	Bangkok
Cadmium	mg/kg	-	0.50	<0.50	≤762	US EPA, Method 3050B and 6010D	Bangkok
Chromium	mg/kg	-	1.00	4.87	No Standard	US EPA, Method 3050B and 6010D	Bangkok
Lead	mg/kg	-	1.00	44.7	≤800	US EPA, Method 3050B and 6010D	Bangkok
Manganese	mg/kg	-	1.00	6.15	≤19640	US EPA, Method 3050B and 6010D	Bangkok
Mercury	mg/kg	-	0.10	<0.10	≤263	US EPA (2007), Method 7473	Bangkok
<b>Physical Parameters</b>							
Moisture	%	-	0.1	11.5	No Standard	Based on APHA (2017), 2540 G	Bangkok
Soil particle density	g/cm <sup>3</sup>	-	-	2.71	No Standard	Method of Soil Analysis	Bangkok
<b>Soil Testing</b>							
Bulk Density	g/cm <sup>3</sup>	-	-	1.63	No Standard	Method of Soil Analysis part I, Core Method	Bangkok
pH aqueous phase 50% (w/v)		-	-	5.6	No Standard	Based on US EPA, Method 9045D	Bangkok
Porosity	%	-	-	39.88	No Standard	Method of Soil Analysis part I, Physical and Mineralogical Methods Second Edition, SSSA	Bangkok

**Guideline :** Notification of National Environmental Board B.E. 2564 (2021), published in the Royal Government Gazette No. 138 Special Part 54 D dated March 11, B.E.2564

Class 2: Soil usage for commercial, agricultural and others.

**Note :** Analysis Results expressed on dry basis.

Approved by

Siriluk P.

Siriluk Puengpang  
Supervisor

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.

9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22117587**

Date Received : Dec 05, 2022

Date Reported : Jan 25, 2023

Report Number : 2443748-1

Page 8 of 8

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**Sampling By :**

Remark :

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Siriluk Puengpang  
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## ภาคผนวก ค-11

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ผลการตรวจวิเคราะห์คุณภาพน้ำใต้ดินบริเวณพื้นที่  
ที่นำกากตะกอนหมักกรองและนำไปใช้ประโยชน์



## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 22102057**

Date Received : Dec 29, 2022

Date Reported : Jan 04, 2023

Report Number : 2528588-1

Page 1 of 8

<b>Sample Number</b>	22102057-1
<b>Sampled Date</b>	Dec 28, 2022 11:00 AM
<b>Sample Description</b>	Underground Water
<b>Location</b>	บ่อน้ำใต้ดินบริเวณใกล้เคียงพื้นที่ที่นำปุ๋ยหมักที่ผลิตจากเส้าและกากตะกอนหมักกรองไปใช้ (บ่อป่ายาง 1)
<b>Date Analysis Commenced</b>	Dec 30, 2022
<b>Condition of Sample</b>	Contained in two glass vials and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Metals Testing</b>								
Arsenic	mg/L	0.0003	0.0005	0.002	Not Detected	≤0.05	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	Not Detected	≤0.01	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Chromium	mg/L	0.0003	0.0005	0.0009	No Standard	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Lead	mg/L	0.0003	0.0005	0.004	Not Detected	≤0.05	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Mercury	mg/L	0.0001	0.0005	Not Detected	Not Detected	≤0.001	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3112	Bangkok
<b>Water Testing</b>								
Ammonia Nitrogen *	mg/L	-	0.06	1.36	No Standard	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	2247	No Standard	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Nitrate as NO3	mg/L	0.3	1	<1	≤45	≤45	In - house method : STM 04-004 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4110 B	Bangkok

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## Analysis / Test Report

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9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 22102057**

Date Received : Dec 29, 2022

Date Reported : Jan 04, 2023

Report Number : 2528588-1

Page 2 of 8

<b>Sample Number</b>	22102057-1
<b>Sampled Date</b>	Dec 28, 2022 11:00 AM
<b>Sample Description</b>	Underground Water
<b>Location</b>	บ่อน้ำใต้ดินบริเวณใกล้เคียงพื้นที่ที่นำปุ๋ยหมักที่ผลิตจากเส้าและกากตะกอนหมักกรองไปใช้ (บ่อน้ำยาว 1)
<b>Date Analysis Commenced</b>	Dec 30, 2022
<b>Condition of Sample</b>	Contained in two glass vials and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Water Testing</b>								
pH at 25 degree C		-	-	8.2	7.0-8.5	6.5-9.2	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	4.8	No Standard	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

**Guideline :** Notification of the Ministry of Natural Resource and Environment, dated March 24, B.E.2551 (2008), published in the Royal Government Gazette, Vol. 125, Part 85 D, dated May 21, B.E.2551 (2008).  
(1) Suitable Allowance, (2) Maximum allowable.

**Sampling By :** Adisak Phomphai ทะเบียนเลขที่ ว-204-จ-8605

**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.

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Supervisor

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## Analysis / Test Report

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9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 22102057**

Date Received : Dec 29, 2022

Date Reported : Jan 04, 2023

Report Number : 2528588-1

Page 3 of 8

<b>Sample Number</b>	22102057-2
<b>Sampled Date</b>	Dec 28, 2022 11:10 AM
<b>Sample Description</b>	Underground Water
<b>Location</b>	บ่อน้ำใต้ดินบริเวณใกล้เคียงพื้นที่ที่นำปุ๋ยหมักที่ผลิตจากเส้าและกากตะกอนหมักกรองไปใช้ (บ่อป่ายาง 2)
<b>Date Analysis Commenced</b>	Dec 30, 2022
<b>Condition of Sample</b>	Contained in two glass vials and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Metals Testing</b>								
Arsenic	mg/L	0.0003	0.0005	0.002	Not Detected	≤0.05	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	Not Detected	≤0.01	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Chromium	mg/L	0.0003	0.0005	<0.0005	No Standard	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Lead	mg/L	0.0003	0.0005	<0.0005	Not Detected	≤0.05	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Mercury	mg/L	0.0001	0.0005	Not Detected	Not Detected	≤0.001	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3112	Bangkok
<b>Water Testing</b>								
Ammonia Nitrogen *	mg/L	-	0.06	0.68	No Standard	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	2052	No Standard	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Nitrate as NO3	mg/L	0.3	1	<1	≤45	≤45	In - house method : STM 04-004 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4110 B	Bangkok

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 22102057**

Date Received : Dec 29, 2022

Date Reported : Jan 04, 2023

Report Number : 2528588-1

Page 4 of 8

<b>Sample Number</b>	22102057-2
<b>Sampled Date</b>	Dec 28, 2022 11:10 AM
<b>Sample Description</b>	Underground Water
<b>Location</b>	บ่อน้ำใต้ดินบริเวณใกล้เคียงพื้นที่ที่นำปุ๋ยหมักที่ผลิตจากเส้าและกากตะกอนหมักกรองไปใช้ (บ่อน้ำยาง 2)
<b>Date Analysis Commenced</b>	Dec 30, 2022
<b>Condition of Sample</b>	Contained in two glass vials and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Water Testing</b>								
pH at 25 degree C		-	-	8.5	7.0-8.5	6.5-9.2	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	3.9	No Standard	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

**Guideline :** Notification of the Ministry of Natural Resource and Environment, dated March 24, B.E.2551 (2008), published in the Royal Government Gazette, Vol. 125, Part 85 D, dated May 21, B.E.2551 (2008).  
(1) Suitable Allowance, (2) Maximum allowable.

**Sampling By :** Adisak Phomphai ทะเบียนเลขที่ ว-204-จ-8605

**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.
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*Siriluk P.*

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 22102057**

Date Received : Dec 29, 2022

Date Reported : Jan 04, 2023

Report Number : 2528588-1

Page 5 of 8

<b>Sample Number</b>	22102057-3
<b>Sampled Date</b>	Dec 28, 2022 10:50 AM
<b>Sample Description</b>	Underground Water
<b>Location</b>	บ่อน้ำใต้ดินบริเวณใกล้เคียงพื้นที่ที่นำปุ๋ยหมักที่ผลิตจากเส้าและกากตะกอนหมักกรองไปใช้ (บ่อน้ำยาว 3)
<b>Date Analysis Commenced</b>	Dec 30, 2022
<b>Condition of Sample</b>	Contained in two glass vials and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Metals Testing</b>								
Arsenic	mg/L	0.0003	0.0005	0.002	Not Detected	≤0.05	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	Not Detected	≤0.01	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Chromium	mg/L	0.0003	0.0005	0.0007	No Standard	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Lead	mg/L	0.0003	0.0005	0.001	Not Detected	≤0.05	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Mercury	mg/L	0.0001	0.0005	Not Detected	Not Detected	≤0.001	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3112	Bangkok
<b>Water Testing</b>								
Ammonia Nitrogen *	mg/L	-	0.06	0.54	No Standard	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	2005	No Standard	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Nitrate as NO3	mg/L	0.3	1	Not Detected	≤45	≤45	In - house method : STM 04-004 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4110 B	Bangkok

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 22102057**

Date Received : Dec 29, 2022

Date Reported : Jan 04, 2023

Report Number : 2528588-1

Page 6 of 8

<b>Sample Number</b>	22102057-3
<b>Sampled Date</b>	Dec 28, 2022 10:50 AM
<b>Sample Description</b>	Underground Water
<b>Location</b>	บ่อน้ำใต้ดินบริเวณใกล้เคียงพื้นที่ที่นำปุ๋ยหมักที่ผลิตจากเส้าและกากตะกอนหมักกรองไปใช้ (บ่อป่ายาง 3)
<b>Date Analysis Commenced</b>	Dec 30, 2022
<b>Condition of Sample</b>	Contained in two glass vials and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Water Testing</b>								
pH at 25 degree C		-	-	8.2	7.0-8.5	6.5-9.2	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	3.1	No Standard	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

**Guideline :** Notification of the Ministry of Natural Resource and Environment, dated March 24, B.E.2551 (2008), published in the Royal Government Gazette, Vol. 125, Part 85 D, dated May 21, B.E.2551 (2008).  
(1) Suitable Allowance, (2) Maximum allowable.

**Sampling By :** Adisak Phomphai ทะเบียนเลขที่ ว-204-จ-8605

Remark :

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

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 22102057**

Date Received : Dec 29, 2022

Date Reported : Jan 04, 2023

Report Number : 2528588-1

Page 7 of 8

<b>Sample Number</b>	22102057-4
<b>Sampled Date</b>	Dec 28, 2022 10:40 AM
<b>Sample Description</b>	Underground Water
<b>Location</b>	บ่อน้ำใต้ดินบริเวณใกล้เคียงพื้นที่ที่นำปุ๋ยหมักที่ผลิตจากเส้าและกากตะกอนหมักกรองไปใช้ (บ่อน้ำยาว 4)
<b>Date Analysis Commenced</b>	Dec 30, 2022
<b>Condition of Sample</b>	Contained in two glass vials and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Metals Testing</b>								
Arsenic	mg/L	0.0003	0.0005	0.002	Not Detected	≤0.05	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	Not Detected	≤0.01	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Chromium	mg/L	0.0003	0.0005	Not Detected	No Standard	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Lead	mg/L	0.0003	0.0005	Not Detected	Not Detected	≤0.05	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Bangkok
Mercury	mg/L	0.0001	0.0005	Not Detected	Not Detected	≤0.001	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3112	Bangkok
<b>Water Testing</b>								
Ammonia Nitrogen *	mg/L	-	0.06	0.38	No Standard	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-NH3 (B, F)	Bangkok
Conductivity at 25 degree C *	micromhos/cm	-	0.5	1819	No Standard	No Standard	Based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Bangkok
Nitrate as NO3	mg/L	0.3	1	Not Detected	≤45	≤45	In - house method : STM 04-004 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4110 B	Bangkok

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**TESTING**

**No.0009**

**Lot ID: 22102057**

Date Received : Dec 29, 2022

Date Reported : Jan 04, 2023

Report Number : 2528588-1

Page 8 of 8

<b>Sample Number</b>	22102057-4
<b>Sampled Date</b>	Dec 28, 2022 10:40 AM
<b>Sample Description</b>	Underground Water
<b>Location</b>	บ่อน้ำใต้ดินบริเวณใกล้เคียงพื้นที่ที่นำปุ๋ยหมักที่ผลิตจากเส้าและกากตะกอนหมักกรองไปใช้ (บ่อน้ำอย่าง 4)
<b>Date Analysis Commenced</b>	Dec 30, 2022
<b>Condition of Sample</b>	Contained in two glass vials and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
<b>Water Testing</b>								
pH at 25 degree C		-	-	8.2	7.0-8.5	6.5-9.2	In-house method : STM 04-003 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Bangkok
Total Kjeldahl Nitrogen as N *	mg/L	0.15	1.0	2.7	No Standard	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

**Guideline :** Notification of the Ministry of Natural Resource and Environment, dated March 24, B.E.2551 (2008), published in the Royal Government Gazette, Vol. 125, Part 85 D, dated May 21, B.E.2551 (2008).  
(1) Suitable Allowance, (2) Maximum allowable.

**Sampling By :** Adisak Phomphai ทะเบียนเลขที่ ว-204-จ-8605

**Remark :**

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



## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2296769**

Date Received : Oct 20, 2022

Date Reported : Oct 25, 2022

Report Number: 2472570-1

Page 1 of 1

**Sample Number** 2296769-1  
**Parameter** Noise (Leq 8 hrs.)  
**Location** บริเวณเขตหีบ  
**Measurement Date** Oct 19, 2022  
**Measurement by** Jessadin Kongsukdithai

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:53 AM - 09:53 AM	76.3	96.2	67.5
09:53 AM - 10:53 AM	72.2	87.2	60.1
10:53 AM - 11:53 AM	61.6	76.4	59.5
11:53 AM - 12:53 PM	73.5	90.3	60.6
12:53 PM - 01:53 PM	78.6	92.2	65.6
01:53 PM - 02:53 PM	75.2	87.1	65.4
02:53 PM - 03:53 PM	72.3	92.8	62.7
03:53 PM - 04:53 PM	71.9	97.0	53.2

Leq Average 8 hrs. (dB(A))

74.4

Lmax (dB(A))

97.0

Standard (dB(A))

90

140

Reference Method : Based on ISO1996-1 and 1996-2

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย  
ในการประกอบกิจการโรงงานเกี่ยวกับสภาวะแวดล้อมในการทำงาน พ.ศ. ๒๕๔๖

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2296769**

Date Received : Oct 20, 2022

Date Reported : Oct 25, 2022

Report Number: 2472571-1

Page 1 of 1

**Sample Number** 2296769-2  
**Parameter** Noise (Leq 8 hrs.)  
**Location** บริเวณอาคารหม้อต้ม  
**Measurement Date** Oct 19, 2022  
**Measurement by** Jessadin Kongsukdithai

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:15 AM - 10:15 AM	78.8	95.5	69.5
10:15 AM - 11:15 AM	58.9	84.4	40.5
11:15 AM - 12:15 PM	67.4	85.4	44.9
12:15 PM - 01:15 PM	77.3	96.8	72.8
01:15 PM - 02:15 PM	77.2	101.0	73.2
02:15 PM - 03:15 PM	80.8	98.6	73.3
03:15 PM - 04:15 PM	81.7	92.5	72.7
04:15 PM - 05:15 PM	66.0	86.1	52.1

Leq Average 8 hrs. (dB(A))

77.6

Lmax (dB(A))

101.0

Standard (dB(A))

90

140

Reference Method : Based on ISO1996-1 and 1996-2

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย  
ในการประกอบกิจการโรงงานเกี่ยวกับสภาวะแวดล้อมในการทำงาน พ.ศ. ๒๕๔๖

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2296769**

Date Received : Oct 20, 2022

Date Reported : Oct 25, 2022

Report Number: 2472572-1

Page 1 of 1

**Sample Number** 2296769-3  
**Parameter** Noise (Leq 8 hrs.)  
**Location** บริเวณอาคารหม้อเคียวและหม้อปั่น  
**Measurement Date** Oct 19, 2022  
**Measurement by** Jessadin Kongsukdithai

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:13 AM - 10:13 AM	77.1	96.1	63.2
10:13 AM - 11:13 AM	69.0	90.9	57.6
11:13 AM - 12:13 PM	62.1	92.5	57.1
12:13 PM - 01:13 PM	69.7	88.2	61.1
01:13 PM - 02:13 PM	67.5	79.6	60.5
02:13 PM - 03:13 PM	67.4	83.5	60.5
03:13 PM - 04:13 PM	63.6	81.6	59.3
04:13 PM - 05:13 PM	64.8	84.9	52.4

Leq Average 8 hrs. (dB(A))

70.3

Lmax (dB(A))

96.1

Standard (dB(A))

90

140

Reference Method : Based on ISO1996-1 and 1996-2

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย  
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**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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14025-23/ EMAIL

S:\Reports\\_Air Noise.rpt (12:19PM)



## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2296769**

Date Received : Oct 20, 2022

Date Reported : Oct 25, 2022

Report Number: 2472573-1

Page 1 of 1

**Sample Number** 2296769-4  
**Parameter** Noise (Leq 8 hrs.)  
**Location** บริเวณอาคารหม้อไอน้ำ  
**Measurement Date** Oct 19, 2022  
**Measurement by** Jessadin Kongsukdithai

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:33 AM - 10:33 AM	73.1	94.0	55.2
10:33 AM - 11:33 AM	66.3	71.9	56.1
11:33 AM - 12:33 PM	78.0	93.4	58.4
12:33 PM - 01:33 PM	83.2	100.6	58.4
01:33 PM - 02:33 PM	83.5	88.1	60.1
02:33 PM - 03:33 PM	79.8	96.3	58.1
03:33 PM - 04:33 PM	63.8	91.4	52.2
04:33 PM - 05:33 PM	63.9	83.3	53.9

Leq Average 8 hrs. (dB(A))

78.9

Lmax (dB(A))

100.6

Standard (dB(A))

90

140

Reference Method : Based on ISO1996-1 and 1996-2

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย  
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**Technical Management**

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Saranya Chalermthamrong  
Scientist (4)

**Approved by**

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Supot Salamteh  
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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2296769**

Date Received : Oct 20, 2022

Date Reported : Oct 25, 2022

Report Number: 2472574-1

Page 1 of 1

**Sample Number** 2296769-5  
**Parameter** Noise (Leq 8 hrs.)  
**Location** บริเวณอาคารกำเนิดไฟฟ้า  
**Measurement Date** Oct 19, 2022  
**Measurement by** Jessadin Kongsukdithai

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:36 AM - 10:36 AM	68.9	93.8	59.9
10:36 AM - 11:36 AM	65.1	71.6	62.8
11:36 AM - 12:36 PM	74.2	93.5	65.4
12:36 PM - 01:36 PM	74.9	93.3	66.6
01:36 PM - 02:36 PM	76.7	90.6	67.1
02:36 PM - 03:36 PM	71.6	86.8	64.4
03:36 PM - 04:36 PM	69.0	90.9	52.7
04:36 PM - 05:36 PM	64.1	83.4	54.5

Leq Average 8 hrs. (dB(A))

72.4

Lmax (dB(A))

93.8

Standard (dB(A))

90

140

Reference Method : Based on ISO1996-1 and 1996-2

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย  
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**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2296765**

Date Received : Dec 26, 2022

Date Reported : Dec 29, 2022

Report Number: 2532799-1

Page 1 of 1

**Sample Number** 2296765-1  
**Parameter** Noise (Leq 8 hrs.)  
**Location** บริเวณเขตหีบ  
**Measurement Date** Dec 23, 2022  
**Measurement by** Jessadin Kongsukdithai

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:34 AM - 10:34 AM	86.8	92.8	81.6
10:34 AM - 11:34 AM	89.6	91.5	89.0
11:34 AM - 12:34 PM	89.3	90.8	88.8
12:34 PM - 01:34 PM	89.3	91.1	88.7
01:34 PM - 02:34 PM	88.6	90.7	83.1
02:34 PM - 03:34 PM	85.4	92.1	78.1
03:34 PM - 04:34 PM	88.9	91.8	83.5
04:34 PM - 05:34 PM	87.7	91.8	74.7

Leq Average 8 hrs. (dB(A))

88.4

Lmax (dB(A))

92.8

Standard (dB(A))

90

140

Reference Method : Based on ISO1996-1 and 1996-2

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย  
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**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
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14025-23/ EMAIL

S:\Reports\\_Air Noise.rpt (10:05AM)



## Analysis / Test Report

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9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2296765**

Date Received : Dec 26, 2022

Date Reported : Dec 29, 2022

Report Number: 2532800-1

Page 1 of 1

**Sample Number** 2296765-2  
**Parameter** Noise (Leq 8 hrs.)  
**Location** บริเวณอาคารหม้อต้ม  
**Measurement Date** Dec 23, 2022  
**Measurement by** Jessadin Kongsukdithai

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:10 AM - 10:10 AM	70.4	84.0	69.3
10:10 AM - 11:10 AM	76.3	79.8	73.1
11:10 AM - 12:10 PM	77.4	80.6	76.8
12:10 PM - 01:10 PM	76.4	81.1	72.2
01:10 PM - 02:10 PM	74.2	80.5	72.8
02:10 PM - 03:10 PM	74.8	79.8	73.6
03:10 PM - 04:10 PM	74.4	83.3	73.2
04:10 PM - 05:10 PM	74.7	78.2	72.7

Leq Average 8 hrs. (dB(A))

75.2

Lmax (dB(A))

84.0

Standard (dB(A))

90

140

Reference Method : Based on ISO1996-1 and 1996-2

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย  
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**Technical Management**

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**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2296765**

Date Received : Dec 26, 2022

Date Reported : Dec 29, 2022

Report Number: 2532801-1

Page 1 of 1

**Sample Number** 2296765-3  
**Parameter** Noise (Leq 8 hrs.)  
**Location** บริเวณอาคารหม้อเคียวและหม้อปั่น  
**Measurement Date** Dec 23, 2022  
**Measurement by** Jessadin Kongsukdithai

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:21 AM - 10:21 AM	87.2	97.3	85.2
10:21 AM - 11:21 AM	86.8	97.0	85.0
11:21 AM - 12:21 PM	86.6	97.9	85.0
12:21 PM - 01:21 PM	81.7	89.5	80.2
01:21 PM - 02:21 PM	80.2	89.4	77.8
02:21 PM - 03:21 PM	84.6	98.0	77.7
03:21 PM - 04:21 PM	87.6	98.4	85.3
04:21 PM - 05:21 PM	87.3	97.5	85.1

Leq Average 8 hrs. (dB(A))

85.9

Lmax (dB(A))

98.4

Standard (dB(A))

90

140

Reference Method : Based on ISO1996-1 and 1996-2

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย  
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**Approved by**

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**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2296765**

Date Received : Dec 26, 2022

Date Reported : Dec 29, 2022

Report Number: 2532802-1

Page 1 of 1

**Sample Number** 2296765-4  
**Parameter** Noise (Leq 8 hrs.)  
**Location** บริเวณอาคารหม้อไอน้ำ  
**Measurement Date** Dec 24, 2022  
**Measurement by** Jessadin Kongsukdithai

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:51 AM - 09:51 AM	82.8	86.4	82.0
09:51 AM - 10:51 AM	83.3	86.7	82.4
10:51 AM - 11:51 AM	83.1	98.5	82.0
11:51 AM - 12:51 PM	84.4	93.5	82.6
12:51 PM - 01:51 PM	84.6	99.2	81.4
01:51 PM - 02:51 PM	84.8	87.9	82.7
02:51 PM - 03:51 PM	84.3	100.9	81.8
03:51 PM - 04:51 PM	85.2	102.1	82.2

Leq Average 8 hrs. (dB(A))

84.1

Lmax (dB(A))

102.1

Standard (dB(A))

90

140

Reference Method : Based on ISO1996-1 and 1996-2

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย  
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## Analysis / Test Report

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9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2296765**

Date Received : Dec 26, 2022

Date Reported : Dec 29, 2022

Report Number: 2532803-1

Page 1 of 1

**Sample Number** 2296765-5  
**Parameter** Noise (Leq 8 hrs.)  
**Location** บริเวณอาคารกำเนิดไฟฟ้า  
**Measurement Date** Dec 24, 2022  
**Measurement by** Jessadin Kongsukdithai

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	91.8	94.6	91.0
10:00 AM - 11:00 AM	92.4	94.9	91.6
11:00 AM - 12:00 PM	92.1	96.7	91.2
12:00 PM - 01:00 PM	91.7	94.3	90.6
01:00 PM - 02:00 PM	91.6	101.9	90.0
02:00 PM - 03:00 PM	91.8	95.2	90.4
03:00 PM - 04:00 PM	91.9	94.9	90.9
04:00 PM - 05:00 PM	91.7	94.8	91.0

Leq Average 8 hrs. (dB(A))

91.9

Lmax (dB(A))

101.9

Standard (dB(A))

90

140

Reference Method : Based on ISO1996-1 and 1996-2

Standard : ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรการคุ้มครองความปลอดภัย  
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Saranya Chalermthamrong  
Scientist (4)

**Approved by**

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Supot Salamteh  
Section Head

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## ภาคผนวก ค-13

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ผลการตรวจวัดระดับเสียงเฉลี่ยตลอดระยะเวลาการทำงาน





## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2296761**

Date Received : Oct 20, 2022

Date Reported : Oct 21, 2022

Report Number : 2428531-1

Page 1 of 5

**Sample Number** 2296761-1  
**Sampled Date** Oct 19, 2022  
**Sample Description** Noise Dose  
**Location** บริเวณเขตหีบ  
**Personal Sampling** คุณสมจิตร เรืองฤทธิ์หาญ  
**Date Analysis Commenced** Oct 21, 2022

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Noise Dose (8 hrs.)	09:00 AM - 05:00 PM	%	-	1	562	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (8 hrs.)	09:00 AM - 05:00 PM	dB(A)	-	-	92.5	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)

**Sampled By :** Jessadin Kongsukdithai

Remark :

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

Approved by

Wichan Choonharat  
Assistant Manager

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2296761**

Date Received : Oct 20, 2022

Date Reported : Oct 21, 2022

Report Number : 2428531-1

Page 2 of 5

**Sample Number** 2296761-2  
**Sampled Date** Oct 19, 2022  
**Sample Description** Noise Dose  
**Location** บริเวณอาคารหม้อต้ม  
**Personal Sampling** คุณฐาณิษฐ์ คำลาภ  
**Date Analysis Commenced** Oct 21, 2022

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Noise Dose (8 hrs.)	09:00 AM - 05:00 PM	%	-	1	38.9	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (8 hrs.)	09:00 AM - 05:00 PM	dB(A)	-	-	80.9	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)

**Sampled By :** Jessadin Kongsukdithai

Remark :

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

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Approved by

Wichan Choonharat  
Assistant Manager



## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2296761**

Date Received : Oct 20, 2022

Date Reported : Oct 21, 2022

Report Number : 2428531-1

Page 3 of 5

**Sample Number** 2296761-3  
**Sampled Date** Oct 19, 2022  
**Sample Description** Noise Dose  
**Location** บริเวณอาคารหม้อเคี่ยวและหม้อปั้น  
**Personal Sampling** คุณทิวา บัวพันธ์  
**Date Analysis Commenced** Oct 21, 2022

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Noise Dose (8 hrs.)	09:00 AM - 05:00 PM	%	-	1	43.6	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (8 hrs.)	09:00 AM - 05:00 PM	dB(A)	-	-	81.4	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)

**Sampled By :** Jessadin Kongsukdithai

Remark :

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

Approved by

Wichan Choonharat  
Assistant Manager

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2296761**

Date Received : Oct 20, 2022

Date Reported : Oct 21, 2022

Report Number : 2428531-1

Page 4 of 5

**Sample Number** 2296761-4  
**Sampled Date** Oct 19, 2022  
**Sample Description** Noise Dose  
**Location** บริเวณอาคารหม้อไอน้ำ  
**Personal Sampling** คุณสมยศ แก้วนนท์เฮาส์  
**Date Analysis Commenced** Oct 21, 2022

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Noise Dose (8 hrs.)	09:00 AM - 05:00 PM	%	-	1	27.5	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (8 hrs.)	09:00 AM - 05:00 PM	dB(A)	-	-	79.4	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)

**Sampled By :** Jessadin Kongsukdithai

Remark :

- LOD : Limit of Detection
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Approved by

Wichan Choonharat  
Assistant Manager



## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2296761**

Date Received : Oct 20, 2022

Date Reported : Oct 21, 2022

Report Number : 2428531-1

Page 5 of 5

**Sample Number** 2296761-5  
**Sampled Date** Oct 19, 2022  
**Sample Description** Noise Dose  
**Location** บริเวณอาคารกำเนิดไฟฟ้า  
**Personal Sampling** คุณประจักษ์ ประทักษ์กุลวงศา  
**Date Analysis Commenced** Oct 21, 2022

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Noise Dose (8 hrs.)	09:00 AM - 05:00 PM	%	-	1	3.6	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (8 hrs.)	09:00 AM - 05:00 PM	dB(A)	-	-	70.5	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)

**Sampled By :** Jessadin Kongsukdithai

Remark :

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

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Wichan Choonharat  
Assistant Manager



## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2296764**

Date Received : Dec 26, 2022

Date Reported : Dec 28, 2022

Report Number : 2499769-1

Page 1 of 5

**Sample Number** 2296764-1  
**Sampled Date** Dec 23, 2022  
**Sample Description** Noise Dose  
**Location** บริเวณเขตหีบ  
**Personal Sampling** คุณรัตติกาล ทองจันทร์  
**Date Analysis Commenced** Dec 27, 2022

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Noise Dose (8 hrs.)	08:30 AM - 04:30 PM	%	-	1	91.2	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (8 hrs.)	08:30 AM - 04:30 PM	dB(A)	-	-	84.6	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)

**Sampled By :** Jessadin Kongsukdithai

Remark :

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

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Wichan Choonharat  
Assistant Manager



## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2296764**

Date Received : Dec 26, 2022

Date Reported : Dec 28, 2022

Report Number : 2499769-1

Page 2 of 5

**Sample Number** 2296764-2  
**Sampled Date** Dec 23, 2022  
**Sample Description** Noise Dose  
**Location** บริเวณอาคารหม้อต้ม  
**Personal Sampling** คุณสมชาย เข้มชม  
**Date Analysis Commenced** Dec 27, 2022

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Noise Dose (8 hrs.)	08:30 AM - 04:30 PM	%	-	1	24.6	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (8 hrs.)	08:30 AM - 04:30 PM	dB(A)	-	-	78.9	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)

**Sampled By :** Jessadin Kongsukdithai

Remark :

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

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Wichan Choonharat  
Assistant Manager





## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2296764**

Date Received : Dec 26, 2022

Date Reported : Dec 28, 2022

Report Number : 2499769-1

Page 3 of 5

**Sample Number** 2296764-3  
**Sampled Date** Dec 23, 2022  
**Sample Description** Noise Dose  
**Location** บริเวณอาคารหม้อเคี่ยวและหม้อปั้น  
**Personal Sampling** คุณเจสสิยา จีกระโทก  
**Date Analysis Commenced** Dec 27, 2022

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Noise Dose (8 hrs.)	08:30 AM - 04:30 PM	%	-	1	151	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (8 hrs.)	08:30 AM - 04:30 PM	dB(A)	-	-	86.8	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)

**Sampled By :** Jessadin Kongsukdithai

Remark :

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

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Wichan Choonharat  
Assistant Manager



## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2296764**

Date Received : Dec 26, 2022

Date Reported : Dec 28, 2022

Report Number : 2499769-1

Page 4 of 5

**Sample Number** 2296764-4  
**Sampled Date** Dec 24, 2022  
**Sample Description** Noise Dose  
**Location** บริเวณอาคารหม้อไอน้ำ  
**Personal Sampling** คุณสำราญ รวมออม  
**Date Analysis Commenced** Dec 27, 2022

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Noise Dose (8 hrs.)	08:30 AM - 04:30 PM	%	-	1	57.5	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (8 hrs.)	08:30 AM - 04:30 PM	dB(A)	-	-	82.6	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)

**Sampled By :** Jessadin Kongsukdithai

Remark :

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

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Approved by

Wichan Choonharat  
Assistant Manager



## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 2296764**

Date Received : Dec 26, 2022

Date Reported : Dec 28, 2022

Report Number : 2499769-1

Page 5 of 5

**Sample Number** 2296764-5  
**Sampled Date** Dec 24, 2022  
**Sample Description** Noise Dose  
**Location** บริเวณอาคารกำเนิดไฟฟ้า  
**Personal Sampling** คุณเชิดศักดิ์ ศรีพันดอน  
**Date Analysis Commenced** Dec 27, 2022

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Noise Dose (8 hrs.)	08:30 AM - 04:30 PM	%	-	1	135	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (8 hrs.)	08:30 AM - 04:30 PM	dB(A)	-	-	86.3	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)

**Sampled By :** Jessadin Kongsukdithai

Remark :

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

Approved by

Wichan Choonharat  
Assistant Manager

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## ภาคผนวก ค-14

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ผลการตรวจวัดฝุ่นละอองรวมในพื้นที่ทำงาน



## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142091**

Date Received : Dec 26, 2022

Date Reported : Jan 03, 2023

Report Number : 2499845-1

Page 1 of 3

**Sample Number** 22142091-2  
**Sampled Date** Dec 24, 2022  
**Sample Description** Air Quality  
**Location** ลานจอดรถรพท.ก้อชัย  
**Date Analysis Commenced** Dec 27, 2022  
**Condition of Sample** Drawn into two filter papers placed in each cassette  
**Barometric Pressure** 743 mmHg  
**Atmospheric Temperature** 25.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Respirable Dust	09:00 AM - 11:00 AM	mg/m3	-	0.15	<0.15	5	Based on NIOSH (1998), OSHA 0600	OSHA	Bangkok
Total dust	09:00 AM - 11:00 AM	mg/m3	-	0.15	<0.15	15	Based on NIOSH (1994), OSHA 0501	OSHA	Bangkok

**Guideline :**

OSHA : Occupational Safety and Health Administration

**Sampled By :** Jessadin Kongsukdithai

Remark :

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

Approved by

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142091**

Date Received : Dec 26, 2022

Date Reported : Jan 03, 2023

Report Number : 2499845-1

Page 2 of 3

<b>Sample Number</b>	22142091-3
<b>Sampled Date</b>	Dec 24, 2022
<b>Sample Description</b>	Air Quality
<b>Location</b>	บริเวณเขตปลูกหีบ
<b>Personal Sampling</b>	คุณสุวิมล วิชา (Respirable dust)
<b>Date Analysis Commenced</b>	Dec 27, 2022
<b>Condition of Sample</b>	Drawn into two filter papers placed in each cassette
<b>Barometric Pressure</b>	743 mmHg
<b>Atmospheric Temperature</b>	25.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Respirable Dust	11:30 AM - 01:30 PM	mg/m3	-	0.15	0.47	5	Based on NIOSH (1998), 0600	OSHA	Bangkok
Total dust	11:30 AM - 01:30 PM	mg/m3	-	0.15	0.89	15	Based on NIOSH (1994), 0501	OSHA	Bangkok

**Guideline :**

OSHA : Occupational Safety and Health Administration

**Sampled By :** Jessadin Kongsukdithai

Remark :

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

Approved by

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142091**

Date Received : Dec 26, 2022

Date Reported : Jan 03, 2023

Report Number : 2499845-1

Page 3 of 3

<b>Sample Number</b>	22142091-4
<b>Sampled Date</b>	Dec 24, 2022
<b>Sample Description</b>	Air Quality
<b>Location</b>	บริเวณจัดเก็บและเตรียมปูนขาว
<b>Personal Sampling</b>	คุณภัทรพล คำเครือ(Respirable dust)
<b>Date Analysis Commenced</b>	Dec 27, 2022
<b>Condition of Sample</b>	Drawn into two filter papers placed in each cassette
<b>Barometric Pressure</b>	743 mmHg
<b>Atmospheric Temperature</b>	25.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Respirable Dust	09:00 AM - 11:00 AM	mg/m3	-	0.15	<0.15	5	Based on NIOSH (1998), 0600	OSHA	Bangkok
Total dust	09:00 AM - 11:00 AM	mg/m3	-	0.15	0.53	15	Based on NIOSH (1994), 0501	OSHA	Bangkok

### Guideline :

OSHA : Occupational Safety and Health Administration

**Sampled By :** Jessadin Kongsukdithai

Remark :

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

Approved by

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

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## Analysis / Test Report

TESTING  
No.0009

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142571**

Date Received : Dec 26, 2022

Date Reported : Jan 03, 2023

Report Number : 2501092-1

Page 4 of 4

**Sample Number** 22142571-4  
**Sampled Date** Dec 23, 2022  
**Sample Description** Air Quality  
**Location** ลานกองกากตะกอนหมักกรองและเก็บ  
**Date Analysis Commenced** Dec 27, 2022  
**Condition of Sample** Contained in two filter papers placed in each cassette  
**Barometric Pressure** 743 mmHg  
**Atmospheric Temperature** 25.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Respirable Dust	11:00 AM - 01:00 PM	mg/m3	-	0.15	<0.15	5	Based on NIOSH (1998), OSHA 0600	OSHA	Bangkok
Total dust	11:00 AM - 01:00 PM	mg/m3	-	0.15	0.40	15	Based on NIOSH (1994), OSHA 0501	OSHA	Bangkok

**Guideline :**

OSHA : Occupational Safety and Health Administration

**Sampled By :** Jessadin Kongsukdithai

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.

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Approved by

Sararat Mongkonjirawut  
Supervisor

# ภาคผนวก ค-15

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ผลการตรวจวัดความร้อนในที่ทำงาน



## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142529**

Date Received : Dec 26, 2022

Date Reported : Dec 28, 2022

Report Number: 2501047-1

Page 1 of 2

**Sample Number** 22142529-1  
**Parameter** Heat Stress (Sampling Time : 12.00 PM - 02.00 PM)  
**Measurement Date** Dec 23, 2022  
**Measurement by** Jessadin Kongsukdithai  
**Location** ปฏิบัติงาน 1 พื้นที่ (ชื่อ-นามสกุล ผู้ปฏิบัติงาน : - แผนก : -)

Location	Duration (min)	WBGT (°C)	NWB (°C)	GT (°C)	DB (°C)
บริเวณชุดลูกหีบ	120	24.1	22.4	28.1	27.8
Average (WBGT)		24.1			
Guideline WBGT (°C)		34.0			

**Reference Method :** Wet Bulb Globe Temperature

**Guideline:**

1. Notification of Department Labour Protection and Welfare on the Criteria and Procedures for Measurement and Analysis of Working Conditions in relation to Heat, Light or Noise Levels, including Duration and Types of Business that must perform (B.E. 2561)
2. Ministerial Regulation on Prescribing of Standard for Administration and Management of Occupational Safety, Health and Environment in relation to Heat, Light and Noise, B.E.2559

**Technical Management**

  
Supot Salamteh  
Section Head

**Approved by**

  
Wichan Choonharat  
Assistant Manager

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142529**

Date Received : Dec 26, 2022

Date Reported : Dec 28, 2022

Report Number: 2501047-1

Page 2 of 2

**Sample Number** 22142529-2  
**Parameter** Heat Stress (Sampling Time : 12.00 PM - 02.00 PM)  
**Measurement Date** Dec 23, 2022  
**Measurement by** Jessadin Kongsukdithai  
**Location** ปฏิบัติงาน 1 พื้นที่ (ชื่อ-นามสกุล ผู้ปฏิบัติงาน : - แผนก : -)

Location	Duration (min)	WBGT (°C)	NWB (°C)	GT (°C)	DB (°C)
บริเวณแผนกหม้อต้ม	120	26.1	22.8	33.8	33.2
Average (WBGT)		26.1			
Guideline WBGT (°C)		34.0			

**Reference Method :** Wet Bulb Globe Temperature

**Guideline:**

1. Notification of Department Labour Protection and Welfare on the Criteria and Procedures for Measurement and Analysis of Working Conditions in relation to Heat, Light or Noise Levels, including Duration and Types of Business that must perform (B.E. 2561)
2. Ministerial Regulation on Prescribing of Standard for Administration and Management of Occupational Safety, Health and Environment in relation to Heat, Light and Noise, B.E.2559

**Technical Management**

  
Supot Salamteh  
Section Head

**Approved by**

  
Wichan Choonharat  
Assistant Manager

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142531**

Date Received : Dec 26, 2022

Date Reported : Dec 28, 2022

Report Number: 2501048-1

Page 1 of 1

**Sample Number** 22142531-1  
**Parameter** Heat Stress (Sampling Time : 12.00 PM - 02.00 PM)  
**Measurement Date** Dec 23, 2022  
**Measurement by** Jessadin Kongsukdithai  
**Location** ปฏิบัติงาน 1 พื้นที่ (ชื่อ-นามสกุล ผู้ปฏิบัติงาน : - แผนก : - )

Location	Duration (min)	WBGT (°C)	NWB (°C)	GT (°C)	DB (°C)
บริเวณอาคารหม้อเคียวและหม้อปั่น	120	26.1	23.0	33.4	32.8
Average (WBGT)		26.1			
Guideline WBGT (°C)		34.0			

**Reference Method :** Wet Bulb Globe Temperature

**Guideline:**

1. Notification of Department Labour Protection and Welfare on the Criteria and Procedures for Measurement and Analysis of Working Conditions in relation to Heat, Light or Noise Levels, including Duration and Types of Business that must perform (B.E. 2561)
2. Ministerial Regulation on Prescribing of Standard for Administration and Management of Occupational Safety, Health and Environment in relation to Heat, Light and Noise, B.E.2559

**Technical Management**

  
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## ภาคผนวก ค-16

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ผลการตรวจวัดความเข้มของแสงสว่างในบริเวณการทำงาน



## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142533**

Date Received : Jan 05, 2023

Date Reported : Jan 07, 2023

Report Number : 2537227-1

Page 1 of 1

Lay out No.	Reference Number	Measurement Date	Measurement Time	Spot /Area No.	Illuminance (Lux)		Guideline Limit		Comment
					Spot	Average	Spot/Min	Average	
	Spot - อาคารวิศวกรรม : 1st Floor : ห้องพยาบาล : จุดปฐมพยาบาล								
1	22142533-1	23 Dec 2022	Day time	1	607	-	400-500	-	Pass
1	22142533-2	23 Dec 2022	Night time	1	490	-	400-500	-	Pass
	Spot - อาคารวิศวกรรม : 1st Floor : แผนก QC : จุดใดเดรท								
2	22142533-3	23 Dec 2022	Day time	1	698	-	400-500	-	Pass
2	22142533-4	23 Dec 2022	Night time	1	462	-	400-500	-	Pass
	Spot - อาคารวิศวกรรม : 1st Floor : ห้องเตรียมสารเคมี : หน้า Hood								
3	22142533-5	23 Dec 2022	Day time	1	792	-	400-500	-	Pass
3	22142533-6	23 Dec 2022	Night time	1	727	-	400-500	-	Pass
	Spot - อาคารวิศวกรรม : 1st Floor : ห้องวิเคราะห์สิ่งแปลกปลอม (แผนก QA) : งานเอกสาร								
4	22142533-7	23 Dec 2022	Day time	1	735	-	400-500	-	Pass
4	22142533-8	23 Dec 2022	Night time	1	725	-	400-500	-	Pass
	Spot - อาคารวิศวกรรม : 1st Floor : แผนก QC : ห้อง POL Analysis : จุดวิเคราะห์ตัวอย่าง								
5	22142533-9	23 Dec 2022	Day time	1	499	-	400-500	-	Pass
5	22142533-10	23 Dec 2022	Night time	1	475	-	400-500	-	Pass
	Spot - อาคารวิศวกรรม : 1st Floor : สำนักงาน : โต๊ะคุณสำราญ (QA)								
6	22142533-11	23 Dec 2022	Day time	1	601	-	400-500	-	Pass
6	22142533-12	23 Dec 2022	Night time	1	501	-	400-500	-	Pass
	Spot - อาคารวิศวกรรม : 1st Floor : สำนักงาน : โต๊ะคุณเพ็ญ								
7	22142533-13	23 Dec 2022	Day time	1	521	-	400-500	-	Pass
7	22142533-14	23 Dec 2022	Night time	1	544	-	400-500	-	Pass
	Spot - อาคารวิศวกรรม : 1st Floor : ห้อง Safety : โต๊ะคุณอภัยสิทธิ์								
8	22142533-15	23 Dec 2022	Day time	1	608	-	400-500	-	Pass
8	22142533-16	23 Dec 2022	Night time	1	492	-	400-500	-	Pass

**Measurement by :** Jessadin Kongsukdithai Personnel of ALS Laboratory Group (Thailand) Co., Ltd.

**Guideline :** Notification of Department of Labour Protection and Welfare, B.E.2560 (2017) dated November 27, B.E.2560 (2017), and published in the Royal Government Gazette, Vol.135, Part 39D dated February 21 B.E.2561 (2018)

Technical Management

Supot Salamteh  
Section Head

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Assistant Manager

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142534**

Date Received : Jan 05, 2023

Date Reported : Jan 07, 2023

Report Number : 2537230-1

Page 1 of 1

Lay out No.	Reference Number	Measurement Date	Measurement Time	Spot /Area No.	Illuminance (Lux)		Guideline Limit		Comment
					Spot	Average	Spot/Min	Average	
Area - อาคารวิศวกรรม : 2nd Floor : Meeting Room 1									
1.1	22142534-1	23 Dec 2022	Day time	1	359	594.3	150	300	Pass
1.2	22142534-2	23 Dec 2022	Day time	2	737				
1.3	22142534-3	23 Dec 2022	Day time	3	435				
1.4	22142534-4	23 Dec 2022	Day time	4	452				
1.5	22142534-5	23 Dec 2022	Day time	5	446				
1.6	22142534-6	23 Dec 2022	Day time	6	419				
1.7	22142534-7	23 Dec 2022	Day time	7	543				
1.8	22142534-8	23 Dec 2022	Day time	8	517				
1.9	22142534-9	23 Dec 2022	Day time	9	561				
1.10	22142534-10	23 Dec 2022	Day time	10	530				
1.11	22142534-11	23 Dec 2022	Day time	11	718				
1.12	22142534-12	23 Dec 2022	Day time	12	685				
1.13	22142534-13	23 Dec 2022	Day time	13	702				
1.14	22142534-14	23 Dec 2022	Day time	14	768				
1.15	22142534-15	23 Dec 2022	Day time	15	683				
1.16	22142534-16	23 Dec 2022	Day time	16	679				
1.17	22142534-17	23 Dec 2022	Day time	17	653				
1.18	22142534-18	23 Dec 2022	Day time	18	651				
Spot - อาคารวิศวกรรม : 2nd Floor : Factory Room : โต๊ะคุณเอววรรณ									
2	22142534-19	23 Dec 2022	Day time	1	434	-	400-500	-	Pass
Spot - อาคารวิศวกรรม : 2nd Floor : Factory Room : โต๊ะคุณเปรมกมล									
3	22142534-20	23 Dec 2022	Day time	1	498	-	400-500	-	Pass
Spot - อาคารวิศวกรรม : 2nd Floor : Factory Room : โต๊ะคุณวิษกร									
4	22142534-21	23 Dec 2022	Day time	1	483	-	400-500	-	Pass
Spot - อาคารวิศวกรรม : 2nd Floor : Factory Room : โต๊ะคุณฉันทกร									
5	22142534-22	23 Dec 2022	Day time	1	523	-	400-500	-	Pass

**Measurement by :** Jessadin Kongsukdithai Personnel of ALS Laboratory Group (Thailand) Co., Ltd.

**Guideline :** Notification of Department of Labour Protection and Welfare, B.E.2560 (2017) dated November 27, B.E.2560 (2017), and published in the Royal Government Gazette, Vol.135, Part 39D dated February 21 B.E.2561 (2018)

Technical Management

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**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142535**

Date Received : Jan 05, 2023

Date Reported : Jan 07, 2023

Report Number : 2537234-1

Page 1 of 1

Lay out No.	Reference Number	Measurement Date	Measurement Time	Spot /Area No.	Illuminance (Lux)		Guideline Limit		Comment
					Spot	Average	Spot/Min	Average	
1	Spot - อาคารสำนักงาน : 1st Floor : แผนก HR : โต๊ะคุณสุสิทธิ์ 22142535-1	23 Dec 2022	Day time	1	605	-	400-500	-	Pass
2	Spot - อาคารสำนักงาน : 1st Floor : แผนก HR : โต๊ะคุณคุณวันวิสา 22142535-2	23 Dec 2022	Day time	1	649	-	400-500	-	Pass
3	Spot - อาคารสำนักงาน : 1st Floor : แผนกบัญชี : โต๊ะคุณสุภาวดี 22142535-3	23 Dec 2022	Day time	1	758	-	400-500	-	Pass
4	Spot - อาคารสำนักงาน : 1st Floor : แผนกบัญชี : โต๊ะคุณอำนาจ 22142535-4	23 Dec 2022	Day time	1	786	-	400-500	-	Pass
5	Spot - อาคารสำนักงาน : 1st Floor : แผนก Admin : โต๊ะคุณชลิตา 22142535-5	23 Dec 2022	Day time	1	522	-	400-500	-	Pass
6	Spot - อาคารสำนักงาน : 1st Floor : แผนก Admin : โต๊ะคุณโยธิน 22142535-6	23 Dec 2022	Day time	1	500	-	400-500	-	Pass
7	Spot - อาคารสำนักงาน : 1st Floor : สำนักงานไร่ : โต๊ะรับเอกสารชาวไร่ 22142535-7	23 Dec 2022	Day time	1	787	-	400-500	-	Pass

**Measurement by :** Jessadin Kongsukdithai Personnel of ALS Laboratory Group (Thailand) Co., Ltd.

**Guideline :** Notification of Department of Labour Protection and Welfare, B.E.2560 (2017) dated November 27, B.E.2560 (2017), and published in the Royal Government Gazette, Vol.135, Part 39D dated February 21 B.E.2561 (2018)

Technical Management

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Assistant Manager

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142536**

Date Received : Jan 05, 2023

Date Reported : Jan 07, 2023

Report Number : 2537237-1

Page 1 of 1

Lay out No.	Reference Number	Measurement Date	Measurement Time	Spot /Area No.	Illuminance (Lux)		Guideline Limit		Comment
					Spot	Average	Spot/Min	Average	
	Spot - อาคารสำนักงาน : 2nd Floor : แผนก IT : โต๊ะคุณเอ็ดดี้ศักดิ์								
1	22142536-1	23 Dec 2022	Day time	1	527	-	400-500	-	Pass
1	22142536-2	23 Dec 2022	Night time	1	512	-	400-500	-	Pass
	Spot - อาคารสำนักงาน : 2nd Floor : แผนก IT : โต๊ะคุณสุรชาติ								
2	22142536-3	23 Dec 2022	Day time	1	747	-	400-500	-	Pass
2	22142536-4	23 Dec 2022	Night time	1	632	-	400-500	-	Pass
	Spot - อาคารสำนักงาน : 2nd Floor : แผนก CP : โต๊ะคุณจิราพร								
3	22142536-5	23 Dec 2022	Day time	1	574	-	400-500	-	Pass
	Spot - อาคารสำนักงาน : 2nd Floor : แผนก CP : โต๊ะคุณไพบูรณ์								
4	22142536-6	23 Dec 2022	Day time	1	452	-	400-500	-	Pass

**Measurement by :** Jessadin Kongsukdithai Personnel of ALS Laboratory Group (Thailand) Co., Ltd.

**Guideline :** Notification of Department of Labour Protection and Welfare, B.E.2560 (2017) dated November 27, B.E.2560 (2017), and published in the Royal Government Gazette, Vol.135, Part 39D dated February 21 B.E.2561 (2018)

Technical Management

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**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142537**

Date Received : Jan 05, 2023

Date Reported : Jan 07, 2023

Report Number : 2537242-1

Page 1 of 1

Lay out No.	Reference Number	Measurement Date	Measurement Time	Spot /Area No.	Illuminance (Lux)		Guideline Limit		Comment
					Spot	Average	Spot/Min	Average	
2	22142537-1	23 Dec 2022	Day time	1	835	-	400-500	-	Pass
<b>Spot - อาคาร Warehouse : 1st Floor : Office : โต๊ะคุณสุวรรณ</b>									
3	22142537-2	23 Dec 2022	Day time	1	800	-	400-500	-	Pass
<b>Spot - อาคาร Warehouse : 1st Floor : Office : โต๊ะคุณประภากร</b>									

**Measurement by :** Jessadin Kongsukdithai Personnel of ALS Laboratory Group (Thailand) Co., Ltd.

**Guideline :** Notification of Department of Labour Protection and Welfare, B.E.2560 (2017) dated November 27, B.E.2560 (2017), and published in the Royal Government Gazette, Vol.135, Part 39D dated February 21 B.E.2561 (2018)

Technical Management

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142538**

Date Received : Jan 05, 2023

Date Reported : Jan 07, 2023

Report Number : 2537248-1

Page 1 of 1

Lay out No.	Reference Number	Measurement Date	Measurement Time	Spot /Area No.	Illuminance (Lux)		Guideline Limit		Comment
					Spot	Average	Spot/Min	Average	
1	Spot - แผนกช่างผลิตภัณฑ์ : 1st Floor : แผนกช่างผลิตภัณฑ์ : ห้องซังสินค้า : โต๊ะซังน้ำหนัก								
	22142538-1	23 Dec 2022	Day time	1	739	-	400-500	-	Pass
2	Spot - แผนกช่างผลิตภัณฑ์ : 1st Floor : แผนกช่างผลิตภัณฑ์ : ห้องซังสินค้า : โต๊ะคุณวัชรพงษ์ (สอน.)								
	22142538-2	23 Dec 2022	Day time	1	452	-	400-500	-	Pass

**Measurement by :** Jessadin Kongsukdithai Personnel of ALS Laboratory Group (Thailand) Co., Ltd.

**Guideline :** Notification of Department of Labour Protection and Welfare, B.E.2560 (2017) dated November 27, B.E.2560 (2017), and published in the Royal Government Gazette, Vol.135, Part 39D dated February 21 B.E.2561 (2018)

Technical Management

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## Analysis / Test Report

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : EIA Monitoring

**Project Location** :

**Lot ID: 22142539**

Date Received : Jan 05, 2023

Date Reported : Jan 07, 2023

Report Number : 2537250-1

Page 1 of 2

Page 2 of 3

Lay out No.	Reference Number	Measurement Date	Measurement Time	Spot /Area No.	Illuminance (Lux)		Guideline Limit		Comment
					Spot	Average	Spot/Min	Average	
Area - Mill 3 : 3rd Floor : Control Room #1									
1.1	22142539-1	23 Dec 2022	Day time	1	473	511.0	100	200	Pass
1.2	22142539-2	23 Dec 2022	Day time	2	509				
1.3	22142539-3	23 Dec 2022	Day time	3	532				
1.4	22142539-4	23 Dec 2022	Day time	4	523				
1.5	22142539-5	23 Dec 2022	Day time	5	516				
1.6	22142539-6	23 Dec 2022	Day time	6	513				
1.1	22142539-7	23 Dec 2022	Night time	1	426	487.2	100	200	Pass
1.2	22142539-8	23 Dec 2022	Night time	2	439				
1.3	22142539-9	23 Dec 2022	Night time	3	509				
1.4	22142539-10	23 Dec 2022	Night time	4	504				
1.5	22142539-11	23 Dec 2022	Night time	5	546				
1.6	22142539-12	23 Dec 2022	Night time	6	499				

Technical Management

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9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142539**

Date Received : Jan 05, 2023

Date Reported : Jan 07, 2023

Report Number : 2537250-1

Page 2 of 2

Lay out No.	Reference Number	Measurement Date	Measurement Time	Spot / Area No.	Illuminance (Lux)		Guideline Limit		Comment
					Spot	Average	Spot/Min	Average	
Area - Mill 3 : 3rd Floor : Control Room #2									
2.1	22142539-13	23 Dec 2022	Day time	1	437	1,630	100	200	Pass
2.2	22142539-14	23 Dec 2022	Day time	2	2,350				
2.3	22142539-15	23 Dec 2022	Day time	3	891				
2.4	22142539-16	23 Dec 2022	Day time	4	2,200				
2.5	22142539-17	23 Dec 2022	Day time	5	564				
2.6	22142539-18	23 Dec 2022	Day time	6	1,294				
2.7	22142539-19	23 Dec 2022	Day time	7	973				
2.8	22142539-20	23 Dec 2022	Day time	8	1,160				
2.9	22142539-21	23 Dec 2022	Day time	9	849				
2.10	22142539-22	23 Dec 2022	Day time	10	1,411				
2.1	22142539-23	23 Dec 2022	Night time	1	259	327.7	100	200	Pass
2.2	22142539-24	23 Dec 2022	Night time	2	363				
2.3	22142539-25	23 Dec 2022	Night time	3	323				
2.4	22142539-26	23 Dec 2022	Night time	4	364				
2.5	22142539-27	23 Dec 2022	Night time	5	262				
2.6	22142539-28	23 Dec 2022	Night time	6	288				
2.7	22142539-29	23 Dec 2022	Night time	7	374				
2.8	22142539-30	23 Dec 2022	Night time	8	476				
2.9	22142539-31	23 Dec 2022	Night time	9	347				
2.10	22142539-32	23 Dec 2022	Night time	10	322				

**Measurement by :** Jessadin Kongsukdithai Personnel of ALS Laboratory Group (Thailand) Co., Ltd.

**Guideline :** Notification of Department of Labour Protection and Welfare, B.E.2560 (2017) dated November 27, B.E.2560 (2017), and published in the Royal Government Gazette, Vol.135, Part 39D dated February 21 B.E.2561 (2018)

Technical Management

Supot Salamteh  
Section Head

Approved by

Wichan Choonharat  
Assistant Manager

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## Analysis / Test Report

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : EIA Monitoring

**Project Location** :

**Lot ID: 22142540**

Date Received : Jan 05, 2023

Date Reported : Jan 07, 2023

Report Number : 2537252-1

Page 1 of 2

Lay out No.	Reference Number	Measurement Date	Measurement Time	Spot /Area No.	Illuminance (Lux)		Guideline Limit		Comment
					Spot	Average	Spot/Min	Average	
Area - Evaporator House : 3rd Floor : Evap DCS Control Room									
1.1	22142540-1	23 Dec 2022	Day time	1	355	349.4	150	300	Pass
1.2	22142540-2	23 Dec 2022	Day time	2	239				
1.3	22142540-3	23 Dec 2022	Day time	3	236				
1.4	22142540-4	23 Dec 2022	Day time	4	276				
1.5	22142540-5	23 Dec 2022	Day time	5	300				
1.6	22142540-6	23 Dec 2022	Day time	6	278				
1.7	22142540-7	23 Dec 2022	Day time	7	365				
1.8	22142540-8	23 Dec 2022	Day time	8	399				
1.9	22142540-9	23 Dec 2022	Day time	9	451				
1.10	22142540-10	23 Dec 2022	Day time	10	457				
1.11	22142540-11	23 Dec 2022	Day time	11	328				
1.12	22142540-12	23 Dec 2022	Day time	12	434				
1.13	22142540-13	23 Dec 2022	Day time	13	362				
1.14	22142540-14	23 Dec 2022	Day time	14	284				
1.15	22142540-15	23 Dec 2022	Day time	15	316				
1.16	22142540-16	23 Dec 2022	Day time	16	511				
1.1	22142540-17	23 Dec 2022	Night time	1	340	353.3	150	300	Pass
1.2	22142540-18	23 Dec 2022	Night time	2	230				
1.3	22142540-19	23 Dec 2022	Night time	3	231				
1.4	22142540-20	23 Dec 2022	Night time	4	279				
1.5	22142540-21	23 Dec 2022	Night time	5	331				
1.6	22142540-22	23 Dec 2022	Night time	6	281				
1.7	22142540-23	23 Dec 2022	Night time	7	452				
1.8	22142540-24	23 Dec 2022	Night time	8	500				
1.9	22142540-25	23 Dec 2022	Night time	9	508				
1.10	22142540-26	23 Dec 2022	Night time	10	313				
1.11	22142540-27	23 Dec 2022	Night time	11	438				
1.12	22142540-28	23 Dec 2022	Night time	12	411				
1.13	22142540-29	23 Dec 2022	Night time	13	341				
1.14	22142540-30	23 Dec 2022	Night time	14	230				
1.15	22142540-31	23 Dec 2022	Night time	15	326				
1.16	22142540-32	23 Dec 2022	Night time	16	441				

Technical Management

Supot Salamteh  
Section Head

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Wichan Choonharat  
Assistant Manager

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142540**

Date Received : Jan 05, 2023

Date Reported : Jan 07, 2023

Report Number : 2537252-1

Page 2 of 2

Page 2 of 3

Lay out No.	Reference Number	Measurement Date	Measurement Time	Spot /Area No.	Illuminance (Lux)		Guideline Limit		Comment
					Spot	Average	Spot/Min	Average	
Area - Evaporator House : 3rd Floor : Evap MCC Room									
2.1	22142540-33	23 Dec 2022	Day time	1	319	283.8	100	200	Pass
2.2	22142540-34	23 Dec 2022	Day time	2	384				
2.3	22142540-35	23 Dec 2022	Day time	3	393				
2.4	22142540-36	23 Dec 2022	Day time	4	386				
2.5	22142540-37	23 Dec 2022	Day time	5	132				
2.6	22142540-38	23 Dec 2022	Day time	6	186				
2.7	22142540-39	23 Dec 2022	Day time	7	200				
2.8	22142540-40	23 Dec 2022	Day time	8	219				
2.9	22142540-41	23 Dec 2022	Day time	9	260				
2.10	22142540-42	23 Dec 2022	Day time	10	374				
2.11	22142540-43	23 Dec 2022	Day time	11	365				
2.12	22142540-44	23 Dec 2022	Day time	12	187				
2.1	22142540-45	23 Dec 2022	Night time	1	441	344.9	100	200	Pass
2.2	22142540-46	23 Dec 2022	Night time	2	488				
2.3	22142540-47	23 Dec 2022	Night time	3	226				
2.4	22142540-48	23 Dec 2022	Night time	4	150				
2.5	22142540-49	23 Dec 2022	Night time	5	234				
2.6	22142540-50	23 Dec 2022	Night time	6	306				
2.7	22142540-51	23 Dec 2022	Night time	7	480				
2.8	22142540-52	23 Dec 2022	Night time	8	476				
2.9	22142540-53	23 Dec 2022	Night time	9	436				
2.10	22142540-54	23 Dec 2022	Night time	10	380				
2.11	22142540-55	23 Dec 2022	Night time	11	345				
2.12	22142540-56	23 Dec 2022	Night time	12	177				

**Measurement by :** Jessadin Kongsukdithai Personnel of ALS Laboratory Group (Thailand) Co., Ltd.

**Guideline :** Notification of Department of Labour Protection and Welfare, B.E.2560 (2017) dated November 27, B.E.2560 (2017), and published in the Royal Government Gazette, Vol.135, Part 39D dated February 21 B.E.2561 (2018)

**Technical Management**

Supot Salamteh  
Section Head

**Approved by**

Wichan Choonharat  
Assistant Manager

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## Analysis / Test Report

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : EIA Monitoring

**Project Location** :

**Lot ID: 22142542**

Date Received : Jan 05, 2023

Date Reported : Jan 07, 2023

Report Number : 2537256-1

Page 1 of 2

Lay out No.	Reference Number	Measurement Date	Measurement Time	Spot / Area No.	Illuminance (Lux)		Guideline Limit		Comment
					Spot	Average	Spot/Min	Average	
Area - Boiling House : 4th Floor : Control Room (DCS)									
1.1	22142542-1	23 Dec 2022	Day time	1	342	386.2	150	300	Pass
1.2	22142542-2	23 Dec 2022	Day time	2	443				
1.3	22142542-3	23 Dec 2022	Day time	3	363				
1.4	22142542-4	23 Dec 2022	Day time	4	354				
1.5	22142542-5	23 Dec 2022	Day time	5	361				
1.6	22142542-6	23 Dec 2022	Day time	6	422				
1.7	22142542-7	23 Dec 2022	Day time	7	459				
1.8	22142542-8	23 Dec 2022	Day time	8	399				
1.9	22142542-9	23 Dec 2022	Day time	9	359				
1.10	22142542-10	23 Dec 2022	Day time	10	360				
1.1	22142542-11	23 Dec 2022	Night time	1	409	417.9	150	300	Pass
1.2	22142542-12	23 Dec 2022	Night time	2	393				
1.3	22142542-13	23 Dec 2022	Night time	3	410				
1.4	22142542-14	23 Dec 2022	Night time	4	505				
1.5	22142542-15	23 Dec 2022	Night time	5	408				
1.6	22142542-16	23 Dec 2022	Night time	6	422				
1.7	22142542-17	23 Dec 2022	Night time	7	483				
1.8	22142542-18	23 Dec 2022	Night time	8	420				
1.9	22142542-19	23 Dec 2022	Night time	9	340				
1.10	22142542-20	23 Dec 2022	Night time	10	389				

Technical Management

Supot Salamteh  
Section Head

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Wichan Choonharat  
Assistant Manager

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142542**

Date Received : Jan 05, 2023

Date Reported : Jan 07, 2023

Report Number : 2537256-1

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Lay out No.	Reference Number	Measurement Date	Measurement Time	Spot / Area No.	Illuminance (Lux)		Guideline Limit		Comment
					Spot	Average	Spot/Min	Average	
	Area - Boiling House : 4th Floor : Control Room (MDB)								
2.1	22142542-21	23 Dec 2022	Day time	1	407	451.5	100	200	Pass
2.2	22142542-22	23 Dec 2022	Day time	2	426				
2.3	22142542-23	23 Dec 2022	Day time	3	408				
2.4	22142542-24	23 Dec 2022	Day time	4	336				
2.5	22142542-25	23 Dec 2022	Day time	5	506				
2.6	22142542-26	23 Dec 2022	Day time	6	595				
2.7	22142542-27	23 Dec 2022	Day time	7	571				
2.8	22142542-28	23 Dec 2022	Day time	8	363				
2.1	22142542-29	23 Dec 2022	Night time	1	409	416.4	100	200	Pass
2.2	22142542-30	23 Dec 2022	Night time	2	437				
2.3	22142542-31	23 Dec 2022	Night time	3	442				
2.4	22142542-32	23 Dec 2022	Night time	4	366				
2.5	22142542-33	23 Dec 2022	Night time	5	387				
2.6	22142542-34	23 Dec 2022	Night time	6	430				
2.7	22142542-35	23 Dec 2022	Night time	7	463				
2.8	22142542-36	23 Dec 2022	Night time	8	397				

**Measurement by :** Jessadin Kongsukdithai Personnel of ALS Laboratory Group (Thailand) Co., Ltd.

**Guideline :** Notification of Department of Labour Protection and Welfare, B.E.2560 (2017) dated November 27, B.E.2560 (2017), and published in the Royal Government Gazette, Vol.135, Part 39D dated February 21 B.E.2561 (2018)

**Technical Management**

Supot Salamteh  
Section Head

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Assistant Manager

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## Analysis / Test Report

**Client** : Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O** :

**Project Name** : EIA Monitoring

**Project Location** :

**Lot ID: 22142543**

Date Received : Jan 05, 2023

Date Reported : Jan 07, 2023

Report Number : 2537266-1

Page 1 of 2

Lay out No.	Reference Number	Measurement Date	Measurement Time	Spot /Area No.	Illuminance (Lux)		Guideline Limit		Comment
					Spot	Average	Spot/Min	Average	
Area - อาคาร Refinery : 5th Floor : Control Room									
1.1	22142543-1	23 Dec 2022	Day time	1	150	367.2	150	300	Pass
1.2	22142543-2	23 Dec 2022	Day time	2	394				
1.3	22142543-3	23 Dec 2022	Day time	3	354				
1.4	22142543-4	23 Dec 2022	Day time	4	428				
1.5	22142543-5	23 Dec 2022	Day time	5	335				
1.6	22142543-6	23 Dec 2022	Day time	6	419				
1.7	22142543-7	23 Dec 2022	Day time	7	401				
1.8	22142543-8	23 Dec 2022	Day time	8	321				
1.9	22142543-9	23 Dec 2022	Day time	9	436				
1.10	22142543-10	23 Dec 2022	Day time	10	320				
1.11	22142543-11	23 Dec 2022	Day time	11	465				
1.12	22142543-12	23 Dec 2022	Day time	12	252				
1.13	22142543-13	23 Dec 2022	Day time	13	321				
1.14	22142543-14	23 Dec 2022	Day time	14	400				
1.15	22142543-15	23 Dec 2022	Day time	15	442				
1.16	22142543-16	23 Dec 2022	Day time	16	330				
1.17	22142543-17	23 Dec 2022	Day time	17	309				
1.18	22142543-18	23 Dec 2022	Day time	18	533				
1.1	22142543-19	23 Dec 2022	Night time	1	214	368.6	150	300	Pass
1.2	22142543-20	23 Dec 2022	Night time	2	413				
1.3	22142543-21	23 Dec 2022	Night time	3	352				
1.4	22142543-22	23 Dec 2022	Night time	4	505				
1.5	22142543-23	23 Dec 2022	Night time	5	260				
1.6	22142543-24	23 Dec 2022	Night time	6	377				
1.7	22142543-25	23 Dec 2022	Night time	7	457				
1.8	22142543-26	23 Dec 2022	Night time	8	245				
1.9	22142543-27	23 Dec 2022	Night time	9	428				
1.10	22142543-28	23 Dec 2022	Night time	10	288				
1.11	22142543-29	23 Dec 2022	Night time	11	423				
1.12	22142543-30	23 Dec 2022	Night time	12	223				
1.13	22142543-31	23 Dec 2022	Night time	13	300				
1.14	22142543-32	23 Dec 2022	Night time	14	461				

Technical Management

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**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142543**

Date Received : Jan 05, 2023

Date Reported : Jan 07, 2023

Report Number : 2537266-1

Page 2 of 2

Lay out No.	Reference Number	Measurement Date	Measurement Time	Spot /Area No.	Illuminance (Lux)		Guideline Limit		Comment
					Spot	Average	Spot/Min	Average	
Area - อาคาร Refinery : 5th Floor : Control Room									
1.15	22142543-33	23 Dec 2022	Night time	15	290				
1.16	22142543-34	23 Dec 2022	Night time	16	463				
1.17	22142543-35	23 Dec 2022	Night time	17	471				
1.18	22142543-36	23 Dec 2022	Night time	18	464				
Area - อาคาร Refinery : 5th Floor : MDB Room									
2.1	22142543-37	23 Dec 2022	Day time	1	213	322.5	100	200	Pass
2.2	22142543-38	23 Dec 2022	Day time	2	573				
2.3	22142543-39	23 Dec 2022	Day time	3	317				
2.4	22142543-40	23 Dec 2022	Day time	4	144				
2.5	22142543-41	23 Dec 2022	Day time	5	183				
2.6	22142543-42	23 Dec 2022	Day time	6	508				
2.7	22142543-43	23 Dec 2022	Day time	7	220				
2.8	22142543-44	23 Dec 2022	Day time	8	579				
2.9	22142543-45	23 Dec 2022	Day time	9	202				
2.10	22142543-46	23 Dec 2022	Day time	10	120				
2.11	22142543-47	23 Dec 2022	Day time	11	489				
2.1	22142543-48	23 Dec 2022	Night time	1	257	339.1	100	200	Pass
2.2	22142543-49	23 Dec 2022	Night time	2	542				
2.3	22142543-50	23 Dec 2022	Night time	3	400				
2.4	22142543-51	23 Dec 2022	Night time	4	149				
2.5	22142543-52	23 Dec 2022	Night time	5	181				
2.6	22142543-53	23 Dec 2022	Night time	6	489				
2.7	22142543-54	23 Dec 2022	Night time	7	263				
2.8	22142543-55	23 Dec 2022	Night time	8	537				
2.9	22142543-56	23 Dec 2022	Night time	9	188				
2.10	22142543-57	23 Dec 2022	Night time	10	139				
2.11	22142543-58	23 Dec 2022	Night time	11	585				

**Measurement by :** Jessadin Kongsukdithai Personnel of ALS Laboratory Group (Thailand) Co., Ltd.

**Guideline :** Notification of Department of Labour Protection and Welfare, B.E.2560 (2017) dated November 27, B.E.2560 (2017), and published in the Royal Government Gazette, Vol.135, Part 39D dated February 21 B.E.2561 (2018)

**Technical Management**

Supot Salamteh  
Section Head

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Assistant Manager

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## Analysis / Test Report

**Client :** Kaset Phol Sugar Co., Ltd.  
9 Moo 9, Pa Kho, Kumphawapi, Udon Thani Thailand 41370

**P/O :**

**Project Name :** EIA Monitoring

**Project Location :**

**Lot ID: 22142544**

Date Received : Jan 05, 2023

Date Reported : Jan 07, 2023

Report Number : 2537265-1

Page 1 of 1

Lay out No.	Reference Number	Measurement Date	Measurement Time	Spot /Area No.	Illuminance (Lux)		Guideline Limit		Comment
					Spot	Average	Spot/Min	Average	
1	22142544-1	23 Dec 2022	Day time	1	677	-	400-500	-	Pass
2	22142544-2	23 Dec 2022	Day time	1	422	-	400-500	-	Pass
3	22142544-3	23 Dec 2022	Day time	1	405	-	400-500	-	Pass
4	22142544-4	23 Dec 2022	Day time	1	416	-	400-500	-	Pass
5	22142544-5	23 Dec 2022	Day time	1	418	-	400-500	-	Pass
6	22142544-6	23 Dec 2022	Day time	1	421	-	400-500	-	Pass

**Measurement by :** Jessadin Kongsukdithai Personnel of ALS Laboratory Group (Thailand) Co., Ltd.

**Guideline :** Notification of Department of Labour Protection and Welfare, B.E.2560 (2017) dated November 27, B.E.2560 (2017), and published in the Royal Government Gazette, Vol.135, Part 39D dated February 21 B.E.2561 (2018)

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# ภาคผนวก ง

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ใบรับรองการสอบเทียบเครื่องมือ

รายการเครื่องมือที่ใช้ในการวิเคราะห์ / ทดสอบ

Sample Name	Parameter	Equipment Name	ID No.	Calibrated Date	Next Cal	Freq. Calibrate (Months)
Stack	Carbon Monoxide	Console Control Unit	BKK_FS0547	12-Jul-22	12-Jan-23	6
Stack	Carbon Monoxide	CO Analyzer	BKK_EN0073	14-Oct-21	14-Apr-23	18
Stack	Oxides of Nitrogen	Console Control Unit	BKK_FS0547	12-Jul-22	12-Jan-23	6
Stack	Oxides of Nitrogen	Vacuum Gauge	BKK_FS0894	21-Jul-22	19-Jan-24	18
Stack	Oxides of Nitrogen	Spectrophotometer	BKK_EN0018	16-Sep-22	16-Sep-23	12
Stack	Sulfur Dioxide	Console Control Unit	BKK_FS0547	12-Jul-22	12-Jan-23	6
Stack	Sulfur Dioxide	Dry Gas	BKK_FS0424	3-Jul-22	3-Jan-23	6
Stack	Total Suspended Particulate	Console Control Unit	BKK_FS0547	12-Jul-22	12-Jan-23	6
Stack	Total Suspended Particulate	Digital Balance	BKK_EN0002	25-Feb-22	25-Feb-23	12
Ambient	Total Suspended Particulate	High Volume	BKK_FS0363	-	-	On site Calibration
Ambient	Total Suspended Particulate	High Volume	RYG_FS0173	-	-	On site Calibration
Ambient	Total Suspended Particulate	High Volume	RYG_FS0394	-	-	On site Calibration
Ambient	Total Suspended Particulate	High Volume	RYG_FS0292	-	-	On site Calibration
Ambient	Total Suspended Particulate	Digital Balance	BKK_EN0004	25-Feb-22	25-Feb-23	12
Ambient	Particulate Matter (PM-10)	High Volume	BKK_FS1060	-	-	On site Calibration
Ambient	Particulate Matter (PM-10)	High Volume	BKK_FS0382	-	-	On site Calibration
Ambient	Particulate Matter (PM-10)	High Volume	BKK_FS0377	-	-	On site Calibration
Ambient	Particulate Matter (PM-10)	High Volume	BKK_FS0374	-	-	On site Calibration
Ambient	Particulate Matter (PM-10)	Digital Balance	BKK_EN0004	25-Feb-22	25-Feb-23	12
Ambient	Nitrogen Dioxide	NO <sub>2</sub> Analyzer	BKK_FS1086	1-Jul-22	1-Jan-23	6
Ambient	Nitrogen Dioxide	NO <sub>2</sub> Analyzer	BKK_FS0728	1-Jul-22	1-Jan-23	6
Ambient	Nitrogen Dioxide	NO <sub>2</sub> Analyzer	BKK_FS1090	1-Jul-22	1-Jan-23	6
Ambient	Nitrogen Dioxide	NO <sub>2</sub> Analyzer	BKK_FS1092	1-Jul-22	1-Jan-23	6
Ambient	Sulfur Dioxide	SO <sub>2</sub> Analyzer	BKK_FS1085	1-Jul-22	1-Jan-23	6
Ambient	Sulfur Dioxide	SO <sub>2</sub> Analyzer	BKK_FS0727	1-Jul-22	1-Jan-23	6
Ambient	Sulfur Dioxide	SO <sub>2</sub> Analyzer	BKK_FS0802	1-Jul-22	1-Jan-23	6
Ambient	Sulfur Dioxide	SO <sub>2</sub> Analyzer	BKK_FS1091	1-Jul-22	1-Jan-23	6
Ambient	Wind Speed / Wind Direction	Wind Speed / Wind Direction	RYG_FS0435	26-Jan-22	27-Jul-23	18
Ambient	Hydrogen Sulfide	H <sub>2</sub> S Analyzer	BKK_FS1075	1-Jul-22	1-Jan-23	6
Noise	Leq 24 hrs	Sound Calibrator	BKK_FS0630	26-Apr-22	26-Apr-23	12
Noise	Leq 24 hrs	Sound Level Meter	BKK_FS0033	2-Nov-22	2-Nov-23	12
Noise	Leq 24 hrs	Sound Level Meter	BKK_FS0108	12-Jan-22	12-Jan-23	12
Noise	Leq 24 hrs	Sound Level Meter	BKK_FS0014	12-Jan-22	12-Jan-23	12
Noise	Leq 24 hrs	Sound Level Meter	BKK_FS0113	12-Jan-22	12-Jan-23	12
Noise	Leq 24 hrs	Sound Level Meter	BKK_FS0025	9-Jun-22	9-Jun-23	12
Noise	Leq 24 hrs	Sound Level Meter	BKK_FS0958	20-Jun-22	20-Jun-23	12
Noise	Noise Annoyance	Sound Calibrator	BKK_FS0630	26-Apr-22	26-Apr-23	12
Noise	Noise Annoyance	Sound Level Meter	BKK_FS0033	2-Nov-22	2-Nov-23	12
Noise	Noise Annoyance	Sound Level Meter	BKK_FS0108	12-Jan-22	12-Jan-23	12
Noise	Noise Annoyance	Sound Level Meter	BKK_FS0014	12-Jan-22	12-Jan-23	12
Noise	Noise Annoyance	Sound Level Meter	BKK_FS0113	12-Jan-22	12-Jan-23	12
Noise	Noise Annoyance	Sound Level Meter	BKK_FS0025	9-Jun-22	9-Jun-23	12
Noise	Noise Annoyance	Sound Level Meter	BKK_FS0958	20-Jun-22	20-Jun-23	12
Noise	Noise Annoyance	Sound Calibrator	NKH_FS0019	31-Aug-22	31-Aug-23	12
Noise	Noise Annoyance	Sound Level Meter	NKH_FS0001	3-May-22	3-May-23	12
Noise	Noise Annoyance	Sound Level Meter	NKH_FS0007	26-Aug-22	26-Aug-23	12
Noise	Noise Annoyance	Sound Level Meter	NKH_FS0008	26-Aug-22	26-Aug-23	12
Noise	Noise Annoyance	Sound Level Meter	NKH_FS0026	26-Aug-22	26-Aug-23	12
Noise	Noise Annoyance	Sound Level Meter	NNG_FS0013	22-Feb-22	22-Feb-23	12
Noise	Noise Annoyance	Sound Level Meter	NKH_FS0027	26-Aug-22	26-Aug-23	12

รายการเครื่องมือที่ใช้ในการวิเคราะห์ / ทดสอบ

Sample Name	Parameter	Equipment Name	ID No.	Calibrated Date	Next Cal	Freq. Calibrate (Months)
Noise	Leq 8 hrs	Sound Calibrator	NKH_FS0019	31-Aug-22	31-Aug-23	12
Noise	Leq 8 hrs	Sound Level Meter	NKH_FS0002	3-May-22	3-May-23	12
Noise	Leq 8 hrs	Sound Level Meter	NKH_FS0004	3-May-22	3-May-23	12
Noise	Leq 8 hrs	Sound Level Meter	NKH_FS0005	3-May-22	3-May-23	12
Noise	Leq 8 hrs	Sound Level Meter	NKH_FS0007	26-Aug-22	26-Aug-23	12
Noise	Leq 8 hrs	Sound Level Meter	NKH_FS0073	20-Jun-22	20-Jun-23	12
Noise	Leq 8 hrs	Sound Calibrator	NKH_FS0019	31-Aug-22	31-Aug-23	12
Noise	Leq 8 hrs	Sound Level Meter	NKH_FS0001	3-May-22	3-May-23	12
Noise	Leq 8 hrs	Sound Level Meter	NKH_FS0002	3-May-22	3-May-23	12
Noise	Leq 8 hrs	Sound Level Meter	NKH_FS0008	26-Aug-22	26-Aug-23	12
Noise	Leq 8 hrs	Sound Level Meter	NKH_FS0026	26-Aug-22	26-Aug-23	12
Noise	Leq 8 hrs	Sound Level Meter	NKH_FS0071	20-Jun-22	20-Jun-23	12
Noise	Noise Dose, TWA	Dose Badge Reader	CHM_FS0030	14-Mar-22	14-Mar-23	12
Noise	Noise Dose, TWA	Dose Badge Reader	NKH_FS0063	7-Oct-22	7-Oct-23	12
Workplace	Total Dust	Field Rotameter	BKK_FS1025	1-Oct-22	1-Jan-23	3
Workplace	Total Dust	Digital Balance	BKK_EN0004	25-Feb-22	25-Feb-23	12
Workplace	Respirable Dust	Field Rotameter	BKK_FS1025	1-Oct-22	1-Jan-23	3
Workplace	Respirable Dust	Digital Balance	BKK_EN0004	25-Feb-22	25-Feb-23	12
Heat	Heat Stress	Heat Stress Monitor	NKH_FS0100	10-Jun-22	10-Jun-23	12
Heat	Heat Stress	Heat Stress Monitor	NKH_FS0108	14-Jun-22	14-Jun-23	12
Heat	Heat Stress	Heat Stress Monitor	NKH_FS0104	13-Jun-22	13-Jun-23	12
Illuminance	Illuminance	Lux Meter	NKH_FS0020	17-Nov-22	17-Nov-23	12
Illuminance	Illuminance	Lux Meter	NKH_FS0086	07-Jan-22	7-Jan-23	12
Water Lab	pH at 25 oC	pH meter	BKK_EN0072	12-Sep-22	12-Mar-24	18
Water Lab	Ammonia Nitrogen	Discrete analyzer	BKK_EN0037	30-Jun-22	30-Jun-23	12
Water Lab	Sulfide	Burette	BKK_EN0171	30-Aug-22	1-Mar-24	18
Water Lab	Sulfide	Chamber (Cold Room)	BKK_EN0167	30-Jun-22	30-Dec-23	18
Water Lab	Nitrate	Discrete analyzer	BKK_EN0037	30-Jun-22	30-Jun-23	12
Water Lab	Nitrate	Ion Chromatography	BKK_EN0069	12-Jan-22	12-Jan-23	12
Water Lab	Chloride	Ion Chromatography	BKK_EN0069	12-Jan-22	12-Jan-23	12
Water Lab	Total Kjeldahl Nitrogen	Digestion Unit	BKK_EN0141	4-Aug-21	2-Feb-23	18
Water Lab	Total Kjeldahl Nitrogen	Discrete analyzer	BKK_EN0037	30-Jun-22	30-Jun-23	12
Water Lab	Total Suspended Solids	Electronic Top-Loading Balance	BKK_EN0002	25-Feb-22	25-Feb-23	12
Water Lab	Total Suspended Solids	Oven	BKK_EN0009	2-Sep-21	3-Mar-23	18
Water Lab	Total Dissolved Solids 180°C	Electronic Top-Loading Balance	BKK_EN0002	25-Feb-22	25-Feb-23	12
Water Lab	Total Dissolved Solids 180°C	Oven	BKK_EN0007	1-Dec-21	1-Jun-23	18
Water Lab	Conductivity	Conductivity meter	BKK_EN0065	19-Nov-21	20-May-23	18
Water Lab	Dissolved Oxygen	Burette	BKK_EN0171	30-Aug-22	1-Mar-24	18
Water Lab	Dissolved Oxygen	Chamber (Cold Room)	BKK_EN0167	30-Jun-22	30-Dec-23	18
Water Lab	BOD (5 days at 20°C)	DO Meter	BKK_EN0017	24-May-22	24-Nov-23	18
Water Lab	BOD (5 days at 20°C)	Incubator	BKK_EN0005	4-Oct-21	4-Apr-23	18
Water Lab	COD	Hot Block	BKK_EN0222	21-Mar-22	21-Mar-23	12
Water Lab	COD	Spectrophotometer	BKK_EN0018	16-Sep-22	16-Sep-23	12
Water Lab	Temperature	pH Meter	BKK_LG0004	10-Feb-22	10-Feb-23	12
Water Lab	Temperature	pH Meter	NNG_FS0002	9-Feb-22	9-Feb-23	12
Water Lab	Calcium	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Water Lab	Calcium	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Water Lab	Calcium	Chamber (Cold Room)	BKK_EN0167	30-Jun-22	30-Dec-23	18
Water Lab	Magnesium	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Water Lab	Magnesium	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Water Lab	Magnesium	Chamber (Cold Room)	BKK_EN0167	30-Jun-22	30-Dec-23	18
Water Lab	Sodium	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Water Lab	Sodium	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Water Lab	Sodium	Chamber (Cold Room)	BKK_EN0167	30-Jun-22	30-Dec-23	18

รายการเครื่องมือที่ใช้ในการวิเคราะห์ / ทดสอบ

Sample Name	Parameter	Equipment Name	ID No.	Calibrated Date	Next Cal	Freq. Calibrate (Months)
Water Lab	Lead	ICP-MS	BKK_EL0043	30-Sep-21	29-Mar-23	18
Water Lab	Lead	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Water Lab	Lead	Chamber (Cold Room)	BKK_EN0167	30-Jun-22	30-Dec-23	18
Water Lab	Chromium	ICP-MS	BKK_EL0043	30-Sep-21	29-Mar-23	18
Water Lab	Chromium	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Water Lab	Chromium	Chamber (Cold Room)	BKK_EN0167	30-Jun-22	30-Dec-23	18
Water Lab	Arsenic	ICP-MS	BKK_EL0043	30-Sep-21	29-Mar-23	18
Water Lab	Arsenic	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Water Lab	Arsenic	Chamber (Cold Room)	BKK_EN0167	30-Jun-22	30-Dec-23	18
Water Lab	Cadmium	ICP-MS	BKK_EL0043	30-Sep-21	29-Mar-23	18
Water Lab	Cadmium	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Water Lab	Cadmium	Chamber (Cold Room)	BKK_EN0167	30-Jun-22	30-Dec-23	18
Water Lab	Manganese	ICP-MS	BKK_EL0043	30-Sep-21	29-Mar-23	18
Water Lab	Manganese	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Water Lab	Manganese	Chamber (Cold Room)	BKK_EN0167	30-Jun-22	30-Dec-23	18
Water Lab	SAR	ICP-MS	BKK_EL0043	30-Sep-21	29-Mar-23	18
Water Lab	SAR	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Water Lab	SAR	Chamber (Cold Room)	BKK_EN0167	30-Jun-22	30-Dec-23	18
Water Lab	Mercury	DUO-CVAFS / CVAAS	BKK_EL0023	6-Jun-22	5-Jun-23	12
Water Lab	Sulfate	Ion Chromatography	BKK_EN0069	12-Jan-22	12-Jan-23	12
Soil	Moisture	Electronic Top-Loading Balance	BKK_EN0002	25-Feb-22	25-Feb-23	12
Soil	Conductivity aqueous phase 20% (W/V)	Conductivity meter	BKK_EN0065	19-Nov-21	20-May-23	18
Soil	Mercury	CVAFS	BKK_EL0011	7-Jun-22	6-Jun-23	12
Soil	Nitrate	Spectrophotometer	BKK_EN0356	21-Jan-22	21-Jan-23	12
Soil	Arsenic	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Soil	Arsenic	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Soil	Arsenic	Chamber (Cold Room)	BKK_EN0167	30-Jun-22	30-Dec-23	18
Soil	Cadmium	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Soil	Cadmium	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Soil	Cadmium	Chamber (Cold Room)	BKK_EN0167	30-Jun-22	30-Dec-23	18
Soil	Chromium	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Soil	Chromium	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Soil	Chromium	Chamber (Cold Room)	BKK_EN0167	30-Jun-22	30-Dec-23	18
Soil	Lead	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Soil	Lead	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Soil	Lead	Chamber (Cold Room)	BKK_EN0167	30-Jun-22	30-Dec-23	18
Soil	Magnesium	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Soil	Magnesium	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Soil	Magnesium	Chamber (Cold Room)	BKK_EN0167	30-Jun-22	30-Dec-23	18
Soil	pH aqueous phase 50% (w/v)	pH meter	BKK_EN0072	12-Sep-22	12-Mar-24	18
Sludge	Soluble Calcium	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Sludge	Soluble Calcium	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Sludge	Soluble Calcium	Chamber (Cold Room)	BKK_EN0167	30-Jun-22	30-Dec-23	18
Sludge	Soluble Magnesium	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Sludge	Soluble Magnesium	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Sludge	Soluble Magnesium	Chamber (Cold Room)	BKK_EN0167	30-Jun-22	30-Dec-23	18
Sludge	Soluble Sodium	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Sludge	Soluble Sodium	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Sludge	Soluble Sodium	Chamber (Cold Room)	BKK_EN0167	30-Jun-22	30-Dec-23	18
Sludge	SAR	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Sludge	SAR	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Sludge	SAR	Chamber (Cold Room)	BKK_EN0167	30-Jun-22	30-Dec-23	18
Sludge	pH aqueous phase 50% (w/v)	pH meter	BKK_EN0072	12-Sep-22	12-Mar-24	18
Sludge	Conductivity aqueous phase 20% (w/v)	Conductivity meter	BKK_EN0065	19-Nov-21	20-May-23	18



right solutions.  
right partner.

รายการเครื่องมือที่ใช้ในการวิเคราะห์ / ทดสอบ

Sample Name	Parameter	Equipment Name	ID No.	Calibrated Date	Next Cal	Freq. Calibrate (Months)
Sludge	Lead	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Sludge	Lead	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Sludge	Lead	Chamber (Cold Room)	BKK_EN0167	30-Jun-22	30-Dec-23	18
Sludge	Mercury	CVAFS	BKK_EL0011	7-Jun-22	6-Jun-23	12
Sludge	Manganese	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Sludge	Manganese	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Sludge	Manganese	Chamber (Cold Room)	BKK_EN0167	30-Jun-22	30-Dec-23	18
Sludge	Arsenic	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Sludge	Arsenic	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Sludge	Arsenic	Chamber (Cold Room)	BKK_EN0167	30-Jun-22	30-Dec-23	18
Sludge	Cadmium	ICP-OES	BKK_EL0037	13-Sep-21	12-Mar-23	18
Sludge	Cadmium	Hot Block	BKK_EL0054	7-Apr-22	7-Oct-23	18
Sludge	Cadmium	Chamber (Cold Room)	BKK_EN0167	30-Jun-22	30-Dec-23	18



## CONSOLE CONTROL UNIT CALIBRATION TEST REPORT

Calibration of Date : 12 Jul 22  
Next Calibration Date : 12 Jan 23  
Barometric Pressure (mm-Hg) : 754  
Relative Humidity (%) : 62.0  
Temperature (°C) : 31.0  
Reference Dry Gas Meter Data  
Reference Dry Gas Meter ID : BKK\_FS0629  
Serial No. : 1607009  
Correction Factor (Yr) : 1.0160  
Next Calibration Date : 25 Nov 23  
Console Control Meter Data  
Calibration No. : C-120722-BKK\_FS0547  
Dry Gas Meter No. : BKK\_FS0547  
Serial No. : 1606040  
Model No. : XC-572-V

ΔH (mm.H <sub>2</sub> O)	Θ Minutes	Reference Dry Gas Meter Calibration						Console Control Drygas Meter						Dry Gas Meter Correction Factor (Y)	Office Calibration Factor (Y)	ΔAvg
		Vr (Liters)			Tr (°C)			Vm (Liters)			Ti (°C)					
		Final	Initial	Total	Final	Initial	Total	Final	Initial	Total	Final	Initial	Total			
15	12.48	150.00	0.00	150.00	31.0	162606.8	162654.0	162654.0	32.0	32.0	32.0	32.0	32.0	0.9992	43.0274	
25	9.50	150.00	0.00	150.00	31.0	162770.2	162817.0	162817.0	32.0	32.0	32.0	32.0	32.0	0.9996	46.3827	
50	6.68	150.00	0.00	150.00	33.0	162936.4	162983.0	162983.0	34.0	34.0	34.0	34.0	34.0	0.9919	46.1686	
80	5.25	150.00	0.00	150.00	33.0	163102.2	163149.0	163149.0	34.0	34.0	34.0	34.0	34.0	0.9871	45.9275	
120	4.25	150.00	0.00	150.00	33.0	163272.0	163319.0	163319.0	34.0	34.0	34.0	34.0	34.0	0.9862	44.9989	
Avg:														0.9920	46.3011	

Y : Ratio of reading of reference to dry gas meter; tolerance for individual values ± 0.02 from average.

ΔAvg : Office pressure differential that equates to 21.24 in of air @ 25°C and 760 mm of mercury, mmH<sub>2</sub>O; tolerance for individual values ± 5.08 from average.

Procedure: 40 CFR 60.APP A, METH. SEC 5.3 &amp; 7

Calibrated by:

Prasert S.  
(Mr. Prasert Surakhnan)  
Field Scientist(3)

Approved by:

S.P.  
(Mr. Samart Roo-ngan)  
Specialist(1)

FORM NO. 7 04-007 REVISION NO. 1 ISSUE DATE: 24-05-02



## Stopwatch Calibration Test Report

Calibration Date : 3 Jul 22  
Next Cal. Date : 3 Jan 23  
Barometric Pressure (mm-Hg) : 756  
Temperature (°C) : 31.0  
Relative Humidity (%) : 62.0

## Reference Stopwatch Data

Stopwatch ID No. : E18061  
Model : F808  
Serial No. : -  
Calibration Date : 8 Sep 20  
Certificate No. : E-2009018

## Console Control Meter Data

Dry Gas Meter No. : BKK\_FS0547  
Model : XC-572-V  
Serial No. : 1606040

Run No.	Time Actual (m:ss.ms)	Time Reading (m:ss)	Diff. (ms)	Diff. (min)
1	5:00:12	5:00	12	0.00020
2	5:00:12	5:00	12	0.00020
3	5:00:12	5:00	12	0.00020
4	5:00:12	5:00	12	0.00020
5	5:00:12	5:00	12	0.00020
6	5:00:12	5:00	12	0.00020
7	5:00:12	5:00	10	0.00017
8	5:00:14	5:00	15	0.00025
9	5:00:14	5:00	14	0.00023
10	5:00:14	5:00	11	0.00018
Average			0.00020	
SD			0.00002	

Calibrate by:

Prasert S.  
Mr. Prasert Surakhnan  
Field Scientist (3)

Approved by:

S.P.  
Mr. Samart Roo-ngan  
Specialist (1)

## DIGITAL TEMPERATURE CALIBRATION DATA SHEET

Calibration Date : 3 Jul 22	Ambient Temperature (°C) : 31
Calibration sheet No. : C-030722-BKK_FS0548	Relative Humidity (%) : 62
Digital Temperature ID BKK_FS0548	Reference Temperature ID : BKK_FS1144
Console Serial No. : 1606040	Serial No. : 201090006013
Console Model : XC-572-V	Model : Digicon-CC-VT-MS
Next Calibrate : 31 Jan 23	

Location	Reference Temperature °C	Digital Temperature °C	Error °C	Remark
Stack	0	1	1	
	25	26	1	
	50	52	2	
	100	102	2	
	150	152	2	
	200	202	2	
	250	252	2	
	300	302	2	
	500	502	2	
	1000	1002	2	
Probe	1200	1202	2	
	100	101	1	
	125	126	1	
	150	151	1	
Oven	100	101	1	
	125	126	1	
	150	151	1	
Filter	100	101	1	
	125	126	1	
	150	151	1	
Exit	0	1	1	
	10	11	1	
	20	21	1	
Meter	0	2	2	
	25	27	2	
	50	52	2	
AUX	0	2	2	
	25	27	2	
	50	52	2	

Calibrated by:

Prasert S.

(Mr. Prasert Surakhnan)  
Field Scientist (3)

Approved by:

S.P.

(Mr. Samart Roo-ngan)  
Specialist (1)

FORM NO. 7 04-007 REVISION NO. 1 ISSUE DATE: 24-05-02



## Pitot Tube Calibration Data

Pitot Tube Identification Number : BKK\_FS0551  
Lab test duct Number : 258-1-13-01  
Calibration Sheet No. : C-030722-BKK\_FS0551  
Calibration Date : 3 Jul 22  
Standard Pitot ID : BKK\_FS0441  
Cp Standard : 0.99

Type S Pitot Tube Coefficient Data					
	Type s pitot tube Leg A,B	Standard pitot tube (ΔP, mm.H <sub>2</sub> O)	Type s pitot tube (ΔP, mm.H <sub>2</sub> O)	Cp (s) Leg A	Cp (s) Leg B
Test 1	A	12.00	16.60	0.842	-
	B	12.00	16.60	-	0.842
Test 2	A	12.00	16.60	0.842	-
	B	12.00	16.60	-	0.842
Test 3	A	12.00	16.60	0.842	-
	B	12.00	16.60	-	0.842
Cp				0.842	0.842

$$Cp(S) = Cp_{std} \sqrt{\frac{\Delta P(Std)}{\Delta P(S)}}$$

$$Cp_{(A)} - Cp_{(B)} \text{ must } BE \leq 0.01$$

$$Average \ deviation(A \ or \ B) = \frac{\sum [Cp(s) - Cp(A \ or \ B)]}{3} \text{ must } BE \leq 0.01$$

Calibrated by:

Prasert S.

Mr. Prasert Surakhnan  
Field Scientist (3)

Approved by:

S.P.

Mr. Samart Roo-ngan  
Specialist (1)

FORM NO. 7 04-007 REVISION NO. 1 ISSUE DATE: 24-05-02





### Pitot Tube Calibration Data

Pitot Tube Identification Number : BKK\_FS0552 Calibration Date : 3 Jul 22  
 Lab test duct Number : 258-1-13-01 Standard Pitot ID : BKK\_FS0441  
 Calibration Sheet No. : C-030722-BKK\_FS0552 Cp Standard : 0.99

Type S Pitot Tube Coefficient Data					
	Type s pitot tube Leg A,B	Standard pitot tube ( $\Delta P$ , mm.H <sub>2</sub> O)	Type s pitot tube ( $\Delta P$ , mm.H <sub>2</sub> O)	Cp (s) Leg A	Cp (s) Leg B
Test 1	A	12.00	16.60	0.842	-
	B	12.00	16.60	-	0.842
Test 2	A	12.00	16.60	0.842	-
	B	12.00	16.60	-	0.842
Test 3	A	12.00	16.60	0.842	-
	B	12.00	16.60	-	0.842
$\bar{C}_p$				0.842	0.842

$$C_p(s) = C_{p_{std}} \sqrt{\frac{\Delta P(s)}{\Delta P_{std}}}$$

$$\bar{C}_{p(A)} - \bar{C}_{p(B)} \text{ must BE } \leq 0.01$$

$$\text{Average deviation(A or B)} = \frac{\sum [C_p(s) - C_{p(A \text{ or } B)}]}{3} \text{ must BE } \leq 0.01$$

Calibrated by : Prasert S. Approved by : S.P.  
 Mr.Prasert Surakhon Field Scientist (3) Mr.Samart Roo-ngan Specialist (1)

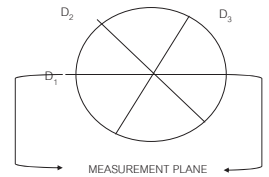
FORM NO. 7-04-005 REVISION NO. - ISSUE DATE: 10-08-00



### PROBE NOZZLE DIAMETER CALIBRATION DATA SHEET

Calibration Date : 3 Jul 22			Nozzle Set ID. : BKK_FS0553		
Calibration Sheet No. : C-030722-BKK_FS0553			Vernier Caliper ID. : BKK_FS0626		
Nozzle ID #	Nozzle Diameter (cm.)			$\Delta D$	$D_{avg} = (D_1 + D_2 + D_3) / 3$
	$D_1$	$D_2$	$D_3$		
1	0.310	0.310	0.310	0.000	0.310
2	0.450	0.450	0.450	0.000	0.450
3	0.635	0.635	0.635	0.000	0.635
4	0.790	0.790	0.790	0.000	0.790
5	0.950	0.950	0.950	0.000	0.950
6	1.110	1.110	1.110	0.000	1.110
7	1.270	1.270	1.270	0.000	1.270

Where :  
 $D_1, D_2, D_3$  = There different nozzle diameters at 60 degrees to each other, each measured the nearest 0.025 mm.  
 $\Delta D$  = Maximum distance between any two diameters, must be  $\leq 0.100$  mm.  
 $D_{avg}$  =  $(D_1 + D_2 + D_3) / 3$



Calibrated by : Prasert S. Approved by : S.P.  
 Mr.Prasert Surakhon Field Scientist (3) Mr.Samart Roo-ngan Specialist (1)

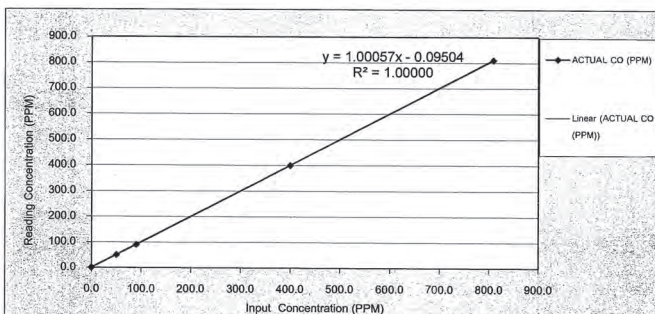
FORM NO. 7-04-006 REVISION NO. - ISSUE DATE: 10-08-00

### MULTI-POINT CALIBRATION REPORT

CUSTOMER NAME : ALS Laboratory Group (Thailand) CO.,Ltd.  
 EQUIPMENT NAME : CO Analyzer  
 MANUFACTURER : Teledyne API MODEL : T300 SERIAL NUMBER : 1756  
 STANDARD GAS CONCENTRATION (PPM) : 808.9 CYLINDER NO : CC739972  
 CYLINDER PRESSURE (PSIG) : 1530 CERTIFIED DATE : Nov 05, 2020  
 CERTIFIED BY : AIRGAS SPECIALTY GASES EXPIRED DATE : Nov 05, 2028

### CALIBRATION RESULTS

POINT NO	CALIBRATION RESULTS			
	IDEAL (PPM)	ACTUAL CO (PPM)	ERROR CO (PPM)	% ERROR CO
ZERO	0.00	0.00	0.00	-
1	50.00	50.20	0.20	0.40
2	90.00	90.10	0.10	0.11
3	400.30	399.50	-0.80	-0.20
4	808.90	809.70	0.80	0.10
AVERAGE (%)				0.20



**KINETICS**  
 บริษัท ไคเนติกส์ คอร์ปอเรชั่น จำกัด

CALIBRATED BY : คุณพรชัย ผาติวนาภิรักษ์ DATE : 14 ตุลาคม 2564

ต้องการข้อมูลทางด้านเทคนิคเพิ่มเติม : คุณพรชัย ผาติวนาภิรักษ์ โทรศัพท์: 02-515-8987

เลขที่ 388 ถนนรัชดาภิเษก แขวงจันทน์เกษม เขตจตุจักร กรุงเทพมหานคร 10900 โทรศัพท์: 0-2515-8989 โทรสาร: 0-2515-8988 E-Mail : info@kinetics.co.th



THAILAND INSTITUTE OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH (TISTR)  
 Mechanical Engineering Standards Laboratory Soi 1, Bangpoo Industrial Estate, Muang, Samutprakan 10280, Thailand.

Request No. 23-65/0497-02

MTC.No. 23-65/0497-02

Number of Page(s) 2

### CALIBRATION CERTIFICATE

Nomenclature : " P " VACUUM GAUGE

Model : F221AVD

Serial No. : VG04 ID. BKK\_FS0894

Range : -30 in Hg to 0 in Hg

Scale Interval : 0.5 in Hg

Submitted by : ALS Laboratory Group (Thailand) Co., Ltd.

104 Phatthanakan 40, Phatthanakan Rd.,  
 Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250, Thailand.

Calibration method : Normal

Received date : 7 June 2022

Calibration date : 21 July 2022

Standard : Reference Pressure Monitor, Serial 1950, Certificate no. 23-64/0581-01  
 Due Date 3 August 2022

The Standard used for the measurement is traceable to SI Unit through National Institute of Metrology (THAILAND).

CALIBRATED BY : Mr.Uthai Chaiyapatt  
 ( Mr.Uthai Chaiyapatt )

APPROVED BY : Ms.Kirana Luanghirun  
 ( Ms.Kirana Luanghirun )

Director  
 Mechanical Engineering Standards Laboratory

Ref. 2013265080702513002

Issued Date : 22 July 2022

The results relate only to the item(s) tested/calibrated or value assigned.  
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Head Office: 35 Mu 3 Tambon Khlong Ha, Amphoe Khlong Luang, Changwat Pathumthani 12120, Thailand  
 Tel. (66) 0 2577 9000  
 Fax. (66) 0 2577 9009  
 E-mail: rump@tistr.or.th Website: www.tistr.or.th

Office/Laboratory: Soi 1C, Bangpoo Industrial Estate, Sukhumvit Road, Amphoe Muang, Changwat Samutprakan 10280, Thailand  
 Tel. (66) 0 2323 1072-80 ext. 115, 116  
 Fax. (66) 0 2323 9165  
 E-mail: mtg@tistr.or.th

Office: 196 Phahonyothin Road, Chatuchak, Bangkok 10900, Thailand  
 Tel. (66) 0 2579 1121-30 ext. 5219, 5225, 5217  
 Fax. (66) 0 2579 8592  
 E-mail: sum@tistr.or.th

THAIL.MTC.002 Rev.4





THAILAND INSTITUTE OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH (TISTR)  
Mechanical Engineering Standards Laboratory Soi 1, Bangpoo Industrial Estate, Muang, Samutprakan 10280, Thailand.

Request 23-65/0497-02

2 / 2

MTC.No. 23-65/0497-02

Calibration range : -27 in Hg to 0 in Hg

Calibration method : The Vacuum Gauge Under Calibration (UUC) was calibrated by comparison method followed DAKKS-DKD-R 6-1: Calibration of Pressure Gauge, edition 03/2014

Calibration condition : Temperature (  $23.4 \pm 2$  ) °C , Relative Humidity (  $66 \pm 10$  ) %  
Atmospheric pressure (  $1001 \pm 10$  ) hPa,  
Local gravity (  $9.783003 \pm 0.000050$  ) m/s<sup>2</sup>

Measurement Data :

Gauge position : Vertical

Medium : Air

Reference level : Gauge inlet

Unit : in Hg

UUC Reading	Gauge Pressure	Error	(±) Uncertainty
0	0.00	0.00	0.12
-10	-9.82	-0.18	0.21
-20	-20.09	0.09	0.23
-26	-26.33	0.33	0.13
-27	-27.27	0.27	0.18
-28	-28.34	0.34	0.12

Note : 1. The reading taken after the gauge is lightly tapped.

2. Conversion factor : in Hg = 3.386384 kPa

The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor  $k = 2$ , providing a level of confidence of approximately 95 % .

The End of Calibration Certificate

The results relate only to the items tested/calibrated or value assigned.

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Head Office  
35 Mu 3 Tambon Khlong Ha, Amphoe Khlong Luang,  
Changwat Pathumthani 12120, Thailand.  
Tel. (66) 0 2577 9000  
Fax. (66) 0 2577 9009  
E-mail : rampak@tistr.or.th Website:www.tistr.or.th

Office/Laboratory  
Soi 1C, Bangpoo Industrial Estate, Subhumi Road,  
Amphoe Muang, Changwat Samutprakan 10280, Thailand  
Tel. (66) 0 2323 1672-80 ext. 115, 116  
Fax. (66) 0 2323 9165  
E-mail : mtc@tistr.or.th

Office  
194 Phahonyothin Road, Chulachak, Bangkok 10900,  
Thailand  
Tel. (66) 0 2579 1121-30 ext. 5219, 5225, 5217  
Fax. (66) 0 2579 8392  
E-mail : rursale@tistr.or.th

FM-BL-MTC-002 Rev.4



Bara Scientific Co., Ltd.  
968 U Chu Liang Building Floor7 Rama4 Road  
Silom Bangkok Bangkok Thailand 10500  
Tel : 02-6324300 Fax : 02-6375496-7  
www.barascientific.com



## Certificate of Calibration

Number of Page(s) 1 of 3

Certificate No. BSCC-UV-307/22  
Equipment UV/Vis Spectrophotometer  
Model UV-1800  
Manufacturer Shimadzu  
Serial No. A11454908533CD  
ID No. BKK\_EN0018  
Date of receipt 16 September 2022  
Date of calibration 16 September 2022  
Date of issue 23 September 2022

Customer name ALS Laboratory Group (Thailand) Co., Ltd.

Address 104 Soi Phatthanakan 40, Phatthanakan Road, Phatthanakan, Suan Luang, Bangkok 10250

Temperature (22.1-23.3) °C (On site)  
Humidity (58.8-63.2) %RH (On site)

Equipment condition Good Operation

Calibration Location Organic Prep

Calibration Procedure In-house method WI-UV-702-01 based on ASTM E275-01

Traceability  
Wavelength Accuracy is traceable to certificate No. 95917 and 95918  
Photometric Accuracy is traceable to certificate No. 95924 and 95937  
Stray Light is traceable to certificate No. 95908  
The above certificate are traceable to SI unit through Starna Scientific Ltd.  
(UKAS accredited calibration laboratory NO. 0659)

Calibrated by Mr.Waruth Jangphung

Approved by

Mr.Kanchit Choothep  
Technical Manager

The above results are valid exclusively for the calibrated item(s) as mention in this report / certificate.  
Advertising the report / Certificate and publicity of the results are prohibited and also shall not be reproduced  
except in full, without written approval of the Bara Scientific Co., Ltd.

FM-UV-708-02 Rev.01 (23/01/63)



Bara Scientific Co., Ltd.  
968 U Chu Liang Building Floor7 Rama4 Road  
Silom Bangkok Bangkok Thailand 10500  
Tel : 02-6324300 Fax : 02-6375496-7  
www.barascientific.com



## Certificate of Calibration

Certificate No. BSCC-UV-307/22 Number of Page(s) 2 of 3

Calibration Results:

1.Wavelength Accuracy

Certified Wavelength (nm)	UUC (nm)	Error (nm)	Uncertainty (±nm)
241.70	241.65	-0.05	0.18
334.02	333.92	-0.10	0.18
418.53	418.46	-0.07	0.18
572.99	572.96	-0.03	0.18
879.41	879.17	-0.24	0.18

2.Photometric Accuracy (UV)

Wavelength (nm)	Certified Absorbance (A)	UUC (A)	Error (A)	Uncertainty (±A)
235	0.0000	0.0000	0.0000	0.0075
	0.7467	0.7461	-0.0006	0.0075
257	0.0000	0.0000	0.0000	0.0075
	0.8662	0.8647	-0.0015	0.0075
313	0.0000	0.0000	0.0000	0.0075
	0.2904	0.2911	0.0007	0.0075
350	0.0000	0.0000	0.0000	0.0075
	0.6429	0.6426	-0.0003	0.0075

\*CNR = Customer not request

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FM-UV-708-02 Rev.01 (23/01/63)



Bara Scientific Co., Ltd.  
968 U Chu Liang Building Floor7 Rama4 Road  
Silom Bangkok Bangkok Thailand 10500  
Tel : 02-6324300 Fax : 02-6375496-7  
www.barascientific.com



## Certificate of Calibration

Certificate No. BSCC-UV-307/22 Number of Page(s) 3 of 3

Calibration Results:

3.Photometric Accuracy (Visible)

Wavelength (nm)	Certified Absorbance (A)	UUC (A)	Error (A)	Uncertainty (±A)
420.0	0.0000	0.0000	0.0000	0.0042
	0.5783	0.5777	-0.0006	0.0042
	0.7628	0.7635	0.0007	0.0046
	1.0206	1.0230	0.0024	0.0042
440.0	0.0000	0.0000	0.0000	0.0042
	0.5621	0.5618	-0.0003	0.0042
	0.7455	0.7460	0.0005	0.0048
	0.9985	1.0005	0.0020	0.0042
465.0	0.0000	0.0000	0.0000	0.0042
	0.5227	0.5219	-0.0008	0.0042
	0.6880	0.6884	0.0004	0.0051
	0.9487	0.9503	0.0016	0.0042
546.1	0.0000	0.0000	0.0000	0.0042
	0.5207	0.5199	-0.0008	0.0042
	0.6973	0.6971	-0.0002	0.0049
	0.9959	0.9964	0.0005	0.0042
590.0	0.0000	0.0000	0.0000	0.0042
	0.5544	0.5534	-0.0010	0.0042
	0.7253	0.7242	-0.0011	0.0050
	1.0942	1.0943	0.0001	0.0042
635.0	0.0000	0.0000	0.0000	0.0042
	0.5616	0.5606	-0.0010	0.0042
	0.6927	0.6921	-0.0006	0.0053
	1.0881	1.0885	0.0004	0.0042

\*CNR = Customer not request

4.Stray Light\*

Standard cut-off wavelength (nm)	Unit Under Calibration(UUC) Wavelength (nm)	Transmission (%T)	Absorbance (A)
200.95±0.11nm	200.30	0.9505	2.0229

The Stray light transmission reference is less than 1.0%T and Stray light absorbance reference is greater than 2.00A

\*Stray Light not NSC-ONSC Accredited.

The measurement uncertainty is base on a standard uncertainty multiplied by a coverage factor  $k=2$  providing a level of confidence of approximately 95%.

\*\*\*End of Certificate\*\*\*

The above results are valid exclusively for the calibrated item(s) as mention in this report / certificate.  
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FM-UV-708-02 Rev.01 (23/01/63)



### DRY GAS METER CALIBRATION TEST REPORT

Calibration of Date : 3 Jul 22  
Next Calibration Date : 3 Jan 23

Barometric Pressure ( mm.Hg ) : 757  
Relative Humidity (%) : 62.0  
Temperature ( °C ) : 31.0

#### Dry Gas Meter Data

Calibration sheet No.: C-030722-BKK\_FS0424  
Dry Gas Meter No.: BKK\_FS0424  
Serial No.: 6011003  
Model No.: XC-60B-V

#### Reference Dry Gas Meter Data

Reference Dry Gas Meter ID.: BKK\_FS1122  
Serial No.: A2003240  
Correction Factor (Yr) : 1.0160  
Next Calibration Date : 25 Nov 23

Reference Dry Gas Meter Calibration				Dry Gas Meter							Dry Gas Meter
Vr (Liters)			Tr (°C)	Vm (Liters)			Ti	To	Avg. Tm	Correction  Factor ( Y )	
Final	Initial	Total		Final	Initial	Total	(°C)	(°C)	(°C)		
30.00	0.00	30.00	34.0	6378.60	6348.00	30.60	34.0	34.0	34.0	0.9961	
30.00	0.00	30.00	34.0	6412.00	6381.00	31.00	34.0	34.0	34.0	0.9832	
60.00	0.00	60.00	34.0	6475.20	6414.00	61.20	35.0	35.0	35.0	0.9993	
60.00	0.00	60.00	34.0	6539.00	6477.00	62.00	35.0	35.0	35.0	0.9864	
90.00	0.00	90.00	34.0	6632.20	6540.00	92.20	35.0	35.0	35.0	0.9950	
90.00	0.00	90.00	34.0	6727.40	6635.00	92.40	35.0	35.0	35.0	0.9928	
Avg.										0.9921	

Y = Ratio of reading of reference dry gas meter to dry gas meter; tolerance for individual  $\pm 0.02$  from average.

Calibrate by:

Mr. Prasert Surakhian  
Field Scientist (2)

Approved by:

Mr. Samart Roo-ngan  
Specialist (1)

Form No. 281-022\_xls (08/02/02)



### Rotameter Calibration Report

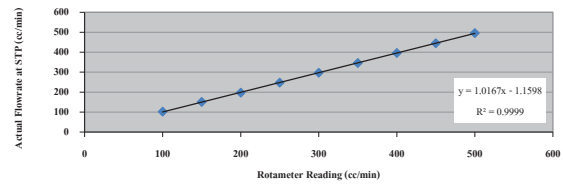
Calibration Date : 3 Jul 22  
Rotameter ID : BKK\_FS0425  
Calibration Sheet No : C-030722-BKK\_FS0425  
Relative Humidity (%) : 62.0  
Barometric Pressure (mmHg) : 757  
Temperature (°C) : 31.0

#### Primary Equipment Data

Brand : Bios  
Model : Defender 520 M  
Serial No. : 13780  
ID : BKK\_FS0614

#### Calibration Data

Rotameter Reading(cc/min)	Actual Flowrate (cc/min)				Actual Flowrate at STP (cc/min)
	1	2	3	Avg.	
100	105.3	103.9	104.2	104.5	102.0
150	154.2	155.1	155.3	154.9	151.2
200	201.8	202.7	201.5	202.0	197.2
250	253.5	253.6	253.2	253.4	247.4
300	303.9	305.1	304.5	304.5	297.3
350	354.1	354.2	353.9	354.1	345.7
400	405.8	406.3	405.6	405.9	396.3
450	455.4	456.2	455.8	455.8	445.0
500	508.7	506.9	508.2	507.9	495.9



Calibrated by:

(Mr. Samart Roo-ngan)

Enviro Field Services Specialist(1)

Approved By:

(Mr. Wichan Choonharat)

Enviro Field Services Assistant Manager

Form 281-022 (27/02/03)



### DIGITAL TEMPERATURE CALIBRATION DATA SHEET

Calibration of Date : 3 Jul 22		Ambient Temperature (°C) : 31		
Calibration sheet No. : C-030722-BKK_FS0426		Relative Humidity ( % ) : 62		
Digital Temperature ID BKK_FS0426		Reference Temperature ID BKK_FS1144		
Serial No. : 6011003		Serial No. : 2.0109E+11		
Model : XC-60B-V		Model : Digicon-CC-VT-MS		
Next Calibrate :		31 Jan 23		
Location	Reference Temperature °C	Digital Temperature °C	Error °C	Remark
1. Probe	115	115	0	
	120	121	1	
	125	126	1	
2. Remote	0	0	0	
	50	50	0	
	100	100	0	
3. Filter	115	115	0	
	120	120	0	
	125	126	1	
4. Remote	0	0	0	
	50	50	0	
	100	100	0	
5. Remote	0	0	0	
	50	50	0	
	100	100	0	
6. DGM IN	25	25	0	
	30	30	0	
	35	35	0	
7. DGM OUT	25	25	0	
	30	30	0	
	35	35	0	

Calibrated by:

Mr. Prasert Surakhian  
Field Scientist(3)

Approved by:

Mr. Samart Roo-ngan  
Specialist(1)

Form 281-049 (20-05-02)



**PENTA**  
CALIBRATION

**PENTA CALIBRATION CO., LTD.**  
66/124 The Connect 33 Village Kanchanaphisek Road  
Dokmai Praset Bangkok 10260  
Tel : +66 (0) 2069-9773  
www.pentacal.com

## Certificate of Calibration

Represent to Certificate of Calibration ,PTC/07/22071

Certificate No.: PTC/07/22071  
Equipment: Digital Balance  
Manufacturer: Sartorius  
Model: MSE224-100-DU  
Type of Balance: Single interval  
Page: 1 of 2  
Condition: Normal  
Serial No: 26207042  
ID No: BKK\_EN0002

Customer: ALS Laboratory Group (Thailand) Co.,Ltd.  
104 Phatthanakarn 40 Phatthanakarn Rd.,  
khwaeng Phatthanakarn, Khet Suan Luang, Bangkok 10250.

Environment Condition: Temperature 21.5 °C  $\pm$  0.7 °C  
Humidity 61.8 %RH  $\pm$  4.7 %RH  
Air density 1.19 kg/m<sup>3</sup>

Calibration Place: ALS Laboratory Group (Thailand) Co.,Ltd.  
104 Phatthanakarn 40 Phatthanakarn Rd.,  
khwaeng Phatthanakarn, Khet Suan Luang, Bangkok 10250.

The Method used: In house method, PTC-WI-07, base on Euramet cg. 16  
Traceability: This certificate is traceable to the SI units through Thai Calibration Service Co.,Ltd.  
, NSC-ONSAC Accreditation No.: Calibration 0189

Date Received: February 25, 2022

Calibration Date: February 25, 2022

Issued Date: March 01, 2022

Calibration By: Mr. Rungroje Metakul



(Mr. Kriangsak Kalasri)  
Reviewed by

Approved By :  
(Mr. Kattisak Kerdio)  
Laboratory Manager

This certificate is issued the units of measurement according to the International System of Units (SI). It provides traceability of measurement to international or national standard or other recognized national standard laboratories.

The measurement uncertainty stated is the expanded uncertainty which is obtained from the standard uncertainty multiplied by the coverage factor (k=2) to provide a level of confidence of approximately 95%. It is determined in accordance with the Guide to Expression of Uncertainty in Measurement (GUM). The effect that the results relate only to the items calibrated.

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PTC-PAC-01-02: 2 Feb 2020



Represent to Certificate of Calibration ,PTC/07/22071

Certificate No.: PTC/07/22071

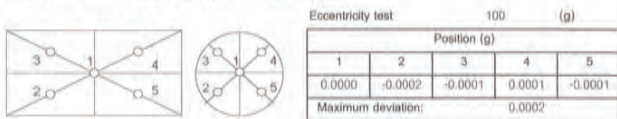
Page: 2 of 2

### Measurement Results:

Without Adjustment :

Function Calibration: Non Adjustment

Eccentric Error: Weight to be 1/3, 1/2 or of Maximum capacity



Repeatability Test : Weight to be  $1/2 \leq L_1 \leq$  Maximum capacity

Determination of the standard deviation of weighing balance, Readability 0.0001 (g)

Nominal test value (g)	Standard Deviation
200	0.00005

Error of indication : from nominal value, Readability 0.0001 (g)

Nominal Value (g)	Conventional Mass (g)	Indication (g)	Correction of Balance (g)	Uncertainty (g)	k
0	0.00000	0.0000	0.0000	0.00016	2.52
0.1	0.10000	0.1000	0.0000	0.00017	2.20
0.5	0.50000	0.5000	0.0000	0.00016	2.28
1	1.00001	1.0000	0.0000	0.00016	2.28
2	2.00001	2.0000	0.0000	0.00016	2.28
5	5.00001	5.0000	0.0000	0.00016	2.28
10	10.00002	10.0000	0.0000	0.00016	2.28
20	20.00002	20.0000	0.0000	0.00016	2.23
50	50.00001	50.0000	0.0000	0.00017	2.15
100	100.00002	99.9999	0.0001	0.00020	2.06
120	120.00004	120.0000	0.0000	0.00023	2.03
150	150.00003	150.0000	0.0000	0.00026	2.00
200	200.00003	199.9999	0.0001	0.00030	2.00

Note: Weight of adjust (g)

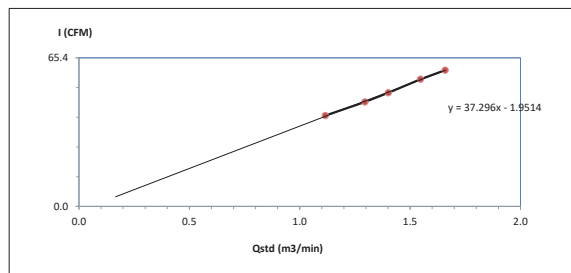
The End of Certificate

PTC-FMS-07-02-2 Feb 2020

### High Volume Air Sampler Calibration Worksheet

Project Site :	Kaset Phol Sugar Co., Ltd.	Barometric Pressure (mm Hg) :	760
Calibrate Location :	วัดสามัคคีวัฒนา	Temperature (°C) :	28
Calibrate Date :	20-Dec-22	High Volume ID :	BKK_FS0363
CalibrationSheet No.:	C-201222-BKK_FS0363	High Volume Model :	TE-5009X
Calibrator ID:	BKK_FS0625	High Volume S/N :	4160
Calibrator Model :	TE-5028A	Calibrator Slope :	1.67326
Calibrator S/N :	2585	Calibrator Intercept :	-0.01954

Test No.	Delta H <sub>2</sub> O (inch)	Q <sub>std</sub> (m <sup>3</sup> /min)	I : Chart (CFM)	Linear Regression
1	3.4	1.1160	40	Slope : 37.2959
2	4.6	1.2949	46	Intercept : -1.9514
3	5.4	1.4014	50	Correlation Coefficient : 0.9992
4	6.6	1.5472	56	
5	7.6	1.6589	60	



Calibrated by Jatsarawat  
( Mr.Jatsarawat Pattama )  
Field Scientist(1)

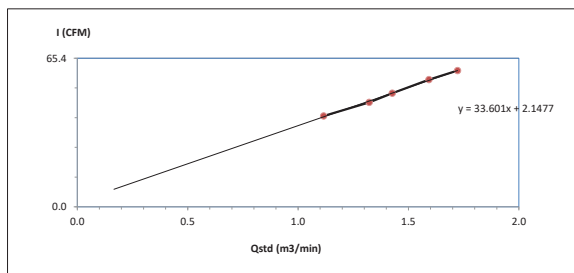
Approved by : Mr. Noppong Juntarupan  
Enviro Field Coordinator Scientist (3)

FORM NO.: F 06-073 REVISION NO.: - ISSUE DATE: 14/03/16

### High Volume Air Sampler Calibration Worksheet

Project Site :	Kaset Phol Sugar Co., Ltd.	Barometric Pressure (mm Hg) :	760
Calibrate Location :	วัดสามัคคีวัฒนา	Temperature (°C) :	28
Calibrate Date :	20-Dec-22	High Volume ID :	RYG_FS0173
CalibrationSheet No.:	C-201222-RYG_FS0173	High Volume Model :	TE-5170D
Calibrator ID:	BKK_FS0625	High Volume S/N :	4799
Calibrator Model :	TE-5028A	Calibrator Slope :	1.67326
Calibrator S/N :	2585	Calibrator Intercept :	-0.01954

Test No.	Delta H <sub>2</sub> O (inch)	Q <sub>std</sub> (m <sup>3</sup> /min)	I : Chart (CFM)	Linear Regression
1	3.4	1.1160	40	Slope : 33.6007
2	4.8	1.3223	46	Intercept : 2.1477
3	5.6	1.4267	50	Correlation Coefficient : 0.9988
4	7.0	1.5928	56	
5	8.2	1.7223	60	



Calibrated by Jatsarawat  
( Mr.Jatsarawat Pattama )  
Field Scientist(1)

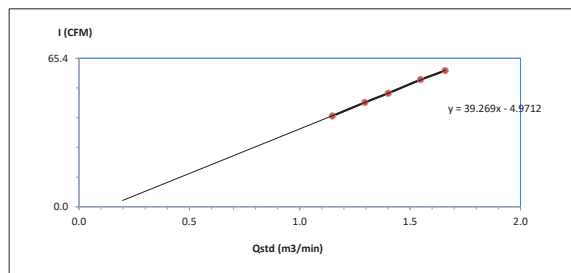
Approved by : Mr. Noppong Juntarupan  
Enviro Field Coordinator Scientist (3)

FORM NO.: F 06-073 REVISION NO.: - ISSUE DATE: 14/03/16

### High Volume Air Sampler Calibration Worksheet

Project Site :	Kaset Phol Sugar Co., Ltd.	Barometric Pressure (mm Hg) :	760
Calibrate Location :	วัดสามัคคี	Temperature (°C) :	28
Calibrate Date :	20-Dec-22	High Volume ID :	RYG_FS0394
CalibrationSheet No.:	C-201222-RYG_FS0394	High Volume Model :	TE-5170D
Calibrator ID:	BKK_FS0625	High Volume S/N :	5690
Calibrator Model :	TE-5028A	Calibrator Slope :	1.67326
Calibrator S/N :	2585	Calibrator Intercept :	-0.01954

Test No.	Delta H <sub>2</sub> O (inch)	Q <sub>std</sub> (m <sup>3</sup> /min)	I : Chart (CFM)	Linear Regression
1	3.6	1.1478	40	Slope : 39.2694
2	4.6	1.2949	46	Intercept : -4.9712
3	5.4	1.4014	50	Correlation Coefficient : 0.9998
4	6.6	1.5472	56	
5	7.6	1.6589	60	



Calibrated by Jatsarawat  
( Mr.Jatsarawat Pattama )  
Field Scientist(1)

Approved by : Mr. Noppong Juntarupan  
Enviro Field Coordinator Scientist (3)

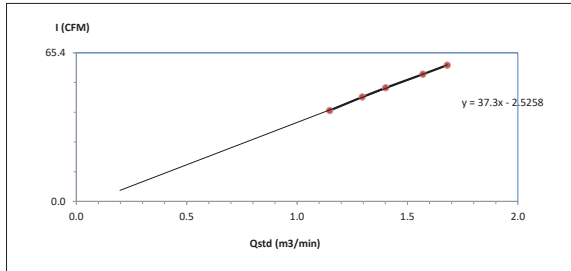
FORM NO.: F 06-073 REVISION NO.: - ISSUE DATE: 14/03/16



## High Volume Air Sampler Calibration Worksheet

Project Site :	Kaset Phol Sugar Co., Ltd.	Barometric Pressure (mm Hg) :	760
Calibrate Location :	วัดสวนแก้ว	Temperature (°C) :	28
Calibrate Date :	20-Dec-22	High Volume ID :	RYG_FS0292
Calibration Sheet No.:	C-201222-RYG_FS0292	High Volume Model :	TE-5170D
Calibrator ID:	BKK_FS0625	High Volume S/N :	5497
Calibrator Model :	TE-5028A	Calibrator Slope :	1.67326
Calibrator S/N :	2585	Calibrator Intercept :	-0.01954

Test No.	Delta H <sub>2</sub> O (inch)	Q <sub>std</sub> (m <sup>3</sup> /min)	I : Chart (CFM)	Linear Regression
1	3.6	1.1478	40	Slope : 37.3002 Intercept : -2.5258 Correlation Coefficient : 0.9996
2	4.6	1.2949	46	
3	5.4	1.4014	50	
4	6.8	1.5702	56	
5	7.8	1.6803	60	



Calibrated by Jatsarawut (Mr. Jatsarawut Pattama) Field Scientist(1)  
Approved by Mr. Noppong Juntarunpan (Mr. Noppong Juntarunpan) Enviro Field Coordinator Scientist (3)

FORM NO: F 06-073 REVISION NO.: ISSUE DATE: 14/03/16



PENTA CALIBRATION CO., LTD.  
66/124 The Connect 33 Village Kanchanaphisek Road  
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Tel: +66 (0) 2069-9773  
www.pentalcal.com

## Certificate of Calibration

Represent to Certificate of Calibration ,PTC/07/22072

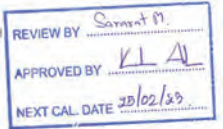
Certificate No.:	PTC/07/22072	Page:	1 of 3
Equipment:	Digital Balance	Condition:	Normal
Manufacturer:	METTLER TOLEDO	Serial No.:	1123091884
Model:	XP105	ID No.:	BKK_EN0004
Type of Balance:	Multi interval		

Customer: ALS Laboratory Group (Thailand) Co.,Ltd.  
104 Phatthanakarn 40 Phatthanakarn Rd.,  
khwaeng Phatthanakarn, Khet Suan Luang, Bangkok 10250.

Environment Condition:	Temperature	21.0 °C	± 0.4 °C
	Humidity	62.8 %RH	± 3.7 %RH
	Air density	1.20	kg/m <sup>3</sup>

Calibration Place: ALS Laboratory Group (Thailand) Co.,Ltd.  
104 Phatthanakarn 40 Phatthanakarn Rd.,  
khwaeng Phatthanakarn, Khet Suan Luang, Bangkok 10250.

The Method used: In house method, PTC-WI-07, base on Euramet cg. 18  
Traceability: This certificate is traceable to the SI Units through Thai Calibration Service Co.,Ltd.  
NSC-ONSC Accreditation No.: Calibration 0189  
Date Received: February 25, 2022  
Calibration Date: February 25, 2022  
Issued Date: March 01, 2022  
Calibration By: Mr. Rungroje Metakul



Approved By: Mr. Keittisak Kerdlo  
Laboratory Manager

This certificate is issued the units of measurement according to the International System of Units (SI). It provides traceability of measurement to international or national standard or other recognised national standard laboratories.  
The measurement uncertainty stated in this expanded uncertainty is obtained from the standard uncertainty multiplied by the coverage factor (k=2) to provide a level of confidence of approximately 95%. It is determined in accordance with the Guide to Expression of Uncertainty in Measurement (GUM). The effect that the results relate only to the items calibrated.  
This calibration certificate shall not be reproduced except in full only, without written approval from penta calibration co., ltd

PTC/FNC-02-R2: 2 Feb 2020



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Certificate No.: PTC/07/22072 Page: 2 of 3

### Measurement Results:

Without Adjustment:

Function Calibration: Non Adjustment

Eccentric Error: Weight to be 1/3, 1/2 or of Maximum capacity

Eccentricity test 30 (g)				
Position (g)				
1	2	3	4	5
0.0000	0.0000	0.0000	0.0000	0.0000
Maximum deviation: 0.0000				

Repeatability Test : Weight to be 1/2 ≤ L<sub>1</sub> ≤ Maximum capacity

Determination of the standard deviation of weighing balance., Readability 0.0001 (g)

Nominal test value (g)	Standard Deviation
100	0.00005

Error of Indication : from nominal value., Readability 0.0001 (g)

Nominal Value (g)	Conventional Mass (g)	Indication (g)	Correction of Balance (g)	Uncertainty (g)	k
40	40.00005	40.0000	0.0000	0.00016	2.11
50	50.00001	50.0000	0.0000	0.00015	2.13
60	60.00003	60.0000	0.0000	0.00016	2.08
70	70.00003	70.0000	0.0000	0.00017	2.07
80	80.00005	80.0001	-0.0001	0.00019	2.04
90	90.00006	90.0001	0.0000	0.00020	2.03
100	100.00002	99.9999	0.0001	0.00018	2.06

Note: Weight of adjust (g)

PTC/FNC-02-R2: 2 Feb 2020



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Certificate No.: PTC/07/22072 Page: 3 of 3

### Measurement Results:

Without Adjustment :

Function Calibration: Non Adjustment

Eccentric Error: Weight to be 1/3, 1/2 or of Maximum capacity

Eccentricity test 30 (g)				
Position (g)				
1	2	3	4	5
0.00000	-0.00001	-0.00002	0.00000	0.00000
Maximum deviation: 0.00002				

Repeatability Test : Weight to be 1/2 ≤ L<sub>1</sub> ≤ Maximum capacity

Determination of the standard deviation of weighing balance., Readability 0.00001 (g)

Nominal test value (g)	Standard Deviation
20	0.00005

Error of Indication : from nominal value., Readability 0.00001 (g)

Nominal Value (g)	Conventional Mass (g)	Indication (g)	Correction of Balance (g)	Uncertainty (g)	k
0	0.000000	0.00000	0.00000	0.000016	2.52
0.1	0.100000	0.10000	0.00000	0.000019	2.00
0.5	0.499999	0.50000	0.00000	0.000019	2.00
2	2.000010	1.99999	0.00002	0.000024	2.00
5	5.000005	5.00001	0.00000	0.000027	2.00
10	10.000015	10.00001	0.00000	0.000031	2.00
20	20.000019	20.00001	0.00001	0.000042	2.00
30	30.000034	30.00006	-0.00003	0.000069	2.00

Note: Weight of adjust (g)

The End of Certificate

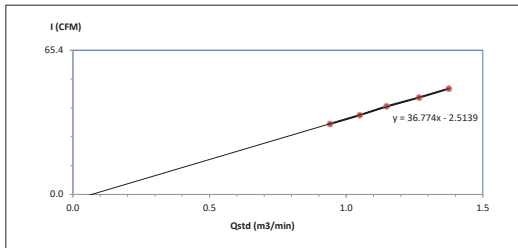
PTC/FNC-02-R2: 2 Feb 2020



### High Volume Air Sampler Calibration Worksheet

Project Site : Kaset Phol Sugar Co., Ltd. Barometric Pressure (mm Hg) : 760  
Calibrate Location : โรงสีน้ำตาลทรายขาว Barometric Pressure (mm Hg) : 760  
Calibrate Date : 20-Dec-22 Temperature (°C) : 28  
CalibrationSheet No.: C-201222-BKK\_FS1060 High Volume ID : BKK\_FS1060  
Calibrator ID: BKK\_FS0625 High Volume Model : TE-5009X  
Calibrator Model : TE-5028A High Volume S/N : 5503  
Calibrator S/N : 2585 Calibrator Slope : 1.67326  
Calibrator Intercept : -0.01954

Test No.	Delta H <sub>2</sub> O (inch)	Q <sub>std</sub> (m <sup>3</sup> /min)	I : Chart (CFM)	Linear Regression
1	2.4	0.9408	32	Slope : 36.7737 Intercept : -2.5139 Correlation Coefficient : 0.9996
2	3.0	1.0495	36	
3	3.6	1.1478	40	
4	4.4	1.2669	44	
5	5.2	1.3755	48	



Calibrated by Jatsarawut  
(Mr.Jatsarawut Pattama)  
Field Scientist(1)

Approved by :  
(Mr. Noppong Juntarupan)  
Enviro Field Coordinator Scientist (3)

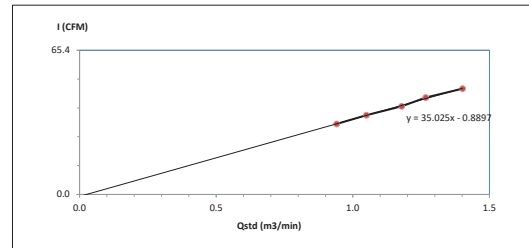
FORM NO.: F 06-074 REVISION NO.: - ISSUE DATE: 14/03/16



### High Volume Air Sampler Calibration Worksheet

Project Site : Kaset Phol Sugar Co., Ltd. Barometric Pressure (mm Hg) : 760  
Calibrate Location : โรงสีน้ำตาลทรายขาว Barometric Pressure (mm Hg) : 760  
Calibrate Date : 20-Dec-22 Temperature (°C) : 28  
CalibrationSheet No.: C-201222-BKK\_FS0382 High Volume ID : BKK\_FS0382  
Calibrator ID: BKK\_FS0625 High Volume Model : TE-5009X  
Calibrator Model : TE-5028A High Volume S/N : 4786  
Calibrator S/N : 2585 Calibrator Slope : 1.67326  
Calibrator Intercept : -0.01954

Test No.	Delta H <sub>2</sub> O (inch)	Q <sub>std</sub> (m <sup>3</sup> /min)	I : Chart (CFM)	Linear Regression
1	2.4	0.9408	32	Slope : 35.0250 Intercept : -0.8897 Correlation Coefficient : 0.9985
2	3.0	1.0495	36	
3	3.8	1.1787	40	
4	4.4	1.2669	44	
5	5.4	1.4014	48	



Calibrated by Jatsarawut  
(Mr.Jatsarawut Pattama)  
Field Scientist(1)

Approved by :  
(Mr. Noppong Juntarupan)  
Enviro Field Coordinator Scientist (3)

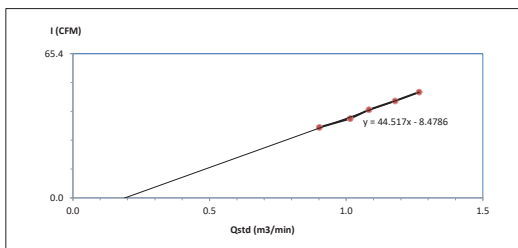
FORM NO.: F 06-074 REVISION NO.: - ISSUE DATE: 14/03/16



### High Volume Air Sampler Calibration Worksheet

Project Site : Kaset Phol Sugar Co., Ltd. Barometric Pressure (mm Hg) : 760  
Calibrate Location : โรงสีน้ำตาล Barometric Pressure (mm Hg) : 760  
Calibrate Date : 20-Dec-22 Temperature (°C) : 28  
CalibrationSheet No.: C-201222-BKK\_FS0377 High Volume ID : BKK\_FS0377  
Calibrator ID: BKK\_FS0625 High Volume Model : TE-5009X  
Calibrator Model : TE-5028A High Volume S/N : 5313  
Calibrator S/N : 2585 Calibrator Slope : 1.67326  
Calibrator Intercept : -0.01954

Test No.	Delta H <sub>2</sub> O (inch)	Q <sub>std</sub> (m <sup>3</sup> /min)	I : Chart (CFM)	Linear Regression
1	2.2	0.9015	32	Slope : 44.5167 Intercept : -8.4786 Correlation Coefficient : 0.9979
2	2.8	1.0146	36	
3	3.2	1.0833	40	
4	3.8	1.1787	44	
5	4.4	1.2669	48	



Calibrated by Jatsarawut  
(Mr.Jatsarawut Pattama)  
Field Scientist(1)

Approved by :  
(Mr. Noppong Juntarupan)  
Enviro Field Coordinator Scientist (3)

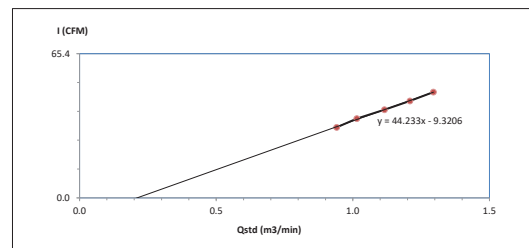
FORM NO.: F 06-074 REVISION NO.: - ISSUE DATE: 14/03/16



### High Volume Air Sampler Calibration Worksheet

Project Site : Kaset Phol Sugar Co., Ltd. Barometric Pressure (mm Hg) : 760  
Calibrate Location : โรงสีน้ำตาล Barometric Pressure (mm Hg) : 760  
Calibrate Date : 20-Dec-22 Temperature (°C) : 28  
CalibrationSheet No.: C-201222-BKK\_FS0374 High Volume ID : BKK\_FS0374  
Calibrator ID: BKK\_FS0625 High Volume Model : TE-5009X  
Calibrator Model : TE-5028A High Volume S/N : 5195  
Calibrator S/N : 2585 Calibrator Slope : 1.67326  
Calibrator Intercept : -0.01954

Test No.	Delta H <sub>2</sub> O (inch)	Q <sub>std</sub> (m <sup>3</sup> /min)	I : Chart (CFM)	Linear Regression
1	2.4	0.9408	32	Slope : 44.2330 Intercept : -9.3206 Correlation Coefficient : 0.9990
2	2.8	1.0146	36	
3	3.4	1.1160	40	
4	4.0	1.2088	44	
5	4.6	1.2949	48	



Calibrated by Jatsarawut  
(Mr.Jatsarawut Pattama)  
Field Scientist(1)

Approved by :  
(Mr. Noppong Juntarupan)  
Enviro Field Coordinator Scientist (3)

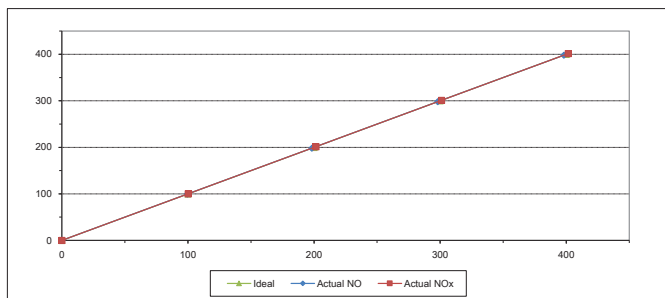
FORM NO.: F 06-074 REVISION NO.: - ISSUE DATE: 14/03/16



## MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	NOx Analyzer
Manufacturer	HORIBA	Model	APNA-370
Serial No.	30K16RHM	Equipment ID	BKK_FS1086
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.88	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS						
	Ideal	Actual NO	Error NO	%Error NO	Actual NOx	Error NOx	%Error NOx
ZERO	0.00	0.05	0.05	0.05	0.10	0.10	0.10
1	100.00	99.50	-0.50	-0.50	100.20	0.20	0.20
2	200.00	198.30	-1.70	-0.85	201.60	1.60	0.80
3	300.00	298.10	-1.90	-0.63	301.10	1.10	0.37
4	400.00	398.20	-1.80	-0.45	401.60	1.60	0.40
AVERAGE (%)				-0.48			0.37



Calibrated By

(Mr. Jirawut Sakam)  
Field Environmental Scientist (3)

Approved By

(Mr. Sarayuth Jitranont)  
Assistant General Manager

ALS Laboratory Group

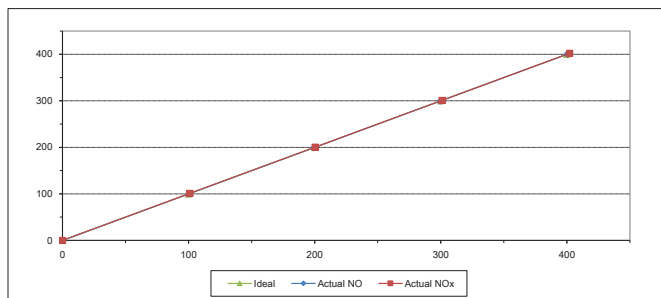
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



## MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	NOx Analyzer
Manufacturer	Teledyne API	Model	T200
Serial No.	1993	Equipment ID	BKK_FS0728
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.88	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS						
	Ideal	Actual NO	Error NO	%Error NO	Actual NOx	Error NOx	%Error NOx
ZERO	0.00	0.10	0.10	0.10	0.10	0.10	0.10
1	100.00	100.10	0.10	0.10	101.10	1.10	1.10
2	200.00	199.40	-0.60	-0.30	200.40	0.40	0.20
3	300.00	299.60	-0.40	-0.13	301.00	1.00	0.33
4	400.00	400.30	0.30	0.08	402.20	2.20	0.55
AVERAGE (%)				-0.03			0.46



Calibrated By

(Mr. Jirawut Sakam)  
Field Environmental Scientist (3)

Approved By

(Mr. Sarayuth Jitranont)  
Assistant General Manager

ALS Laboratory Group

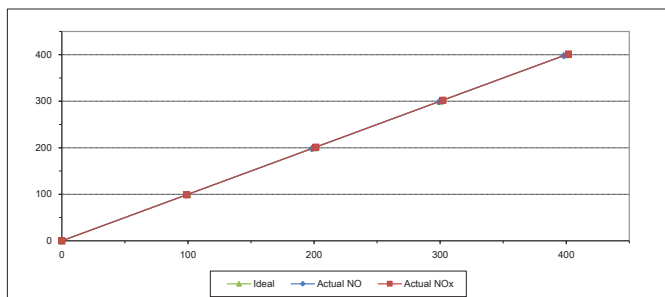
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



## MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	NOx Analyzer
Manufacturer	HORIBA	Model	APNA-370
Serial No.	SUDL58MU	Equipment ID	BKK_FS1090
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.88	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS						
	Ideal	Actual NO	Error NO	%Error NO	Actual NOx	Error NOx	%Error NOx
ZERO	0.00	0.10	0.10	0.10	0.10	0.10	0.10
1	100.00	98.70	-1.30	-1.30	99.10	-0.90	-0.90
2	200.00	198.30	-1.70	-0.85	201.50	1.50	0.75
3	300.00	299.30	-0.70	-0.23	302.20	2.20	0.73
4	400.00	398.00	-2.00	-0.50	401.70	1.70	0.42
AVERAGE (%)				-0.56			0.22



Calibrated By

(Mr. Jirawut Sakam)  
Field Environmental Scientist (3)

Approved By

(Mr. Sarayuth Jitranont)  
Assistant General Manager

ALS Laboratory Group

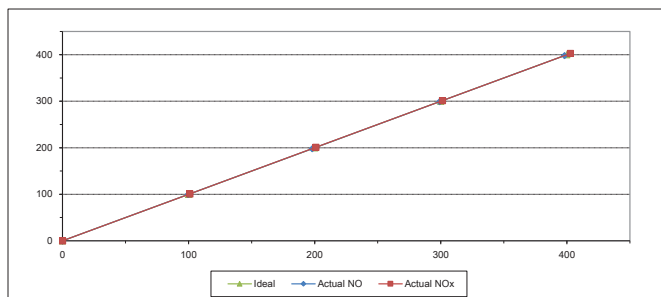
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



## MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	NOx Analyzer
Manufacturer	HORIBA	Model	APNA-370
Serial No.	XLTWBRSJ	Equipment ID	BKK_FS1092
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	55.88	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS						
	Ideal	Actual NO	Error NO	%Error NO	Actual NOx	Error NOx	%Error NOx
ZERO	0.00	0.10	0.10	0.10	0.10	0.10	0.10
1	100.00	99.70	-0.30	-0.30	101.00	1.00	1.00
2	200.00	198.10	-1.90	-0.95	201.00	1.00	0.50
3	300.00	299.10	-0.90	-0.30	301.40	1.40	0.47
4	400.00	398.20	-1.80	-0.45	402.80	2.80	0.70
AVERAGE (%)				-0.38			0.55



Calibrated By

(Mr. Jirawut Sakam)  
Field Environmental Scientist (3)

Approved By

(Mr. Sarayuth Jitranont)  
Assistant General Manager

ALS Laboratory Group

FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12

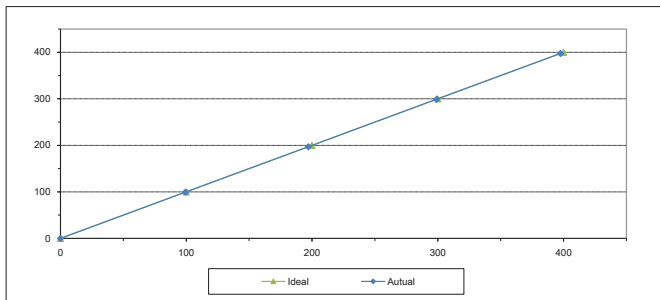




## MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	SO2 Analyzer
Manufacturer	HORIBA	Model	APSA-370
Serial No.	42B579RC	Equipment ID	BKK_FS1085
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	56.3	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS			
	Ideal	Actual	Error	%Error
ZERO	0.00	0.10	0.10	0.10
1	100.00	99.50	-0.50	-0.50
2	200.00	197.10	-2.90	-1.45
3	300.00	299.10	-0.90	-0.30
4	400.00	397.50	-2.50	-0.63
AVERAGE (%)				-0.55



Calibrated By

(Mr. Jirawut Sakarn)  
Field Environmental Scientist (3)

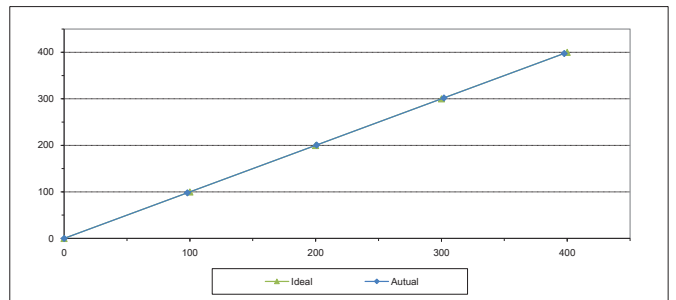
Approved By

(Mr. Sarayuth Jittrantorn)  
Assistant General ManagerALS Laboratory Group  
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12

## MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	SO2 Analyzer
Manufacturer	Teledyne API	Model	T100
Serial No.	1609	Equipment ID	BKK_FS0727
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	56.3	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS			
	Ideal	Actual	Error	%Error
ZERO	0.00	0.10	0.10	0.10
1	100.00	98.10	-1.90	-1.90
2	200.00	200.80	0.80	0.40
3	300.00	302.00	2.00	0.67
4	400.00	397.70	-2.30	-0.58
AVERAGE (%)				-0.26



Calibrated By

(Mr. Jirawut Sakarn)  
Field Environmental Scientist (3)

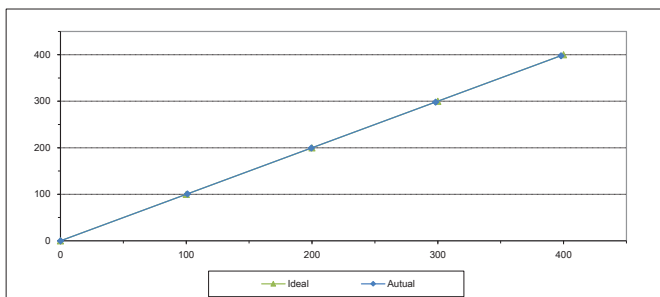
Approved By

(Mr. Sarayuth Jittrantorn)  
Assistant General ManagerALS Laboratory Group  
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12

## MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	SO2 Analyzer
Manufacturer	HORIBA	Model	APSA-370
Serial No.	2SSLA6G0	Equipment ID	BKK_FS0802
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	56.3	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS			
	Ideal	Actual	Error	%Error
ZERO	0.00	0.10	0.10	0.10
1	100.00	101.00	1.00	1.00
2	200.00	199.50	-0.50	-0.25
3	300.00	298.30	-1.70	-0.57
4	400.00	398.00	-2.00	-0.50
AVERAGE (%)				-0.04



Calibrated By

(Mr. Jirawut Sakarn)  
Field Environmental Scientist (3)

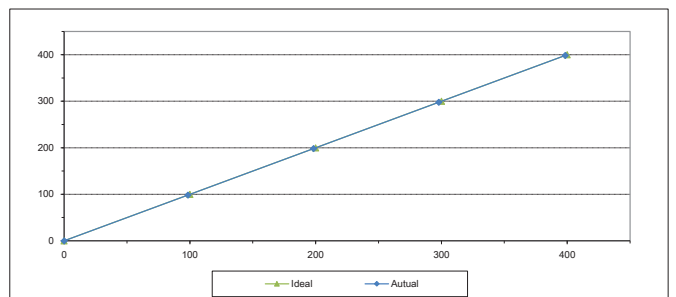
Approved By

(Mr. Sarayuth Jittrantorn)  
Assistant General ManagerALS Laboratory Group  
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12

## MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	SO2 Analyzer
Manufacturer	HORIBA	Model	APSA-370
Serial No.	6BVM9P1K	Equipment ID	BKK_FS1091
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	56.3	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Airgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS			
	Ideal	Actual	Error	%Error
ZERO	0.00	0.10	0.10	0.10
1	100.00	98.50	-1.50	-1.50
2	200.00	198.30	-1.70	-0.85
3	300.00	297.90	-2.10	-0.70
4	400.00	398.50	-1.50	-0.38
AVERAGE (%)				-0.67



Calibrated By

(Mr. Jirawut Sakarn)  
Field Environmental Scientist (3)

Approved By

(Mr. Sarayuth Jittrantorn)  
Assistant General ManagerALS Laboratory Group  
FORM NO.: F 06-056 REVISION NO.: - ISSUE DATE: 02/04/12



## CERTIFICATE OF CALIBRATION

Certificate No: WS-04012022  
Page 1 of 2 pages

Measurement Item : Cup anemometer with data logger.

Manufacturer : Data logger: Novolyne  
Cup anemometer: Novolyne

Model/Type : Data logger: 110-WS-25DL-D  
Cup anemometer: WS-02F

Serial Number : Data logger: A5444  
Cup anemometer: WSD-003

ID No : Data logger: RYD\_F80435  
Cup anemometer: -

Customer : AJS laboratory group (Thailand) Co., Ltd.  
104 Phathanahan 40, Phathanahan Rd, Khwaeng Suan Luang, Rhet Suan Luang, Bangkok 10250, Thailand.

Test Conditions : Wind tunnel, cross test section area 900 cm<sup>2</sup>  
Anemometer frontal area 100 cm<sup>2</sup>  
Diameter of mounting pipe - mm  
Blockage ratio of test subject 0.11 [-]

Test Conditions : Air temperature 24.4 ±0.5 °C  
Air pressure 1011.2 ±0.4 hPa  
Relative air humidity 55.6 ±3.5 %RH

Calibration Procedure : Calibration was carried out base on  
ISO 61400-12-1 (Ed.1): 2005-POWER Performance Measurements of Electricity Producing Wind  
Turbines.  
MBSNET Anemometer Calibration Procedure - Version 2, 2009.

Traceability : This calibration documents the traceable to national standard, which realize the unit of  
measurements according to the international system of units (SI) through National Institute of  
Metrology Thailand (NIMT).

Measurement Date : JAN 26, 2022  
Issued Date : JAN 31, 2022

Calibrated by  
☒ Mr. Soravit Thachatai  
☐ Miss Orathai Wivattavajay



Approved Signatory:   
Mr. Parinya Booncharoen  
Calibration Department Manager

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Continuation of Certificate of Calibration Number

Certificate No: WS-04012022  
Page 2 of 2 pages

Result of calibration: ☒ Without adjustment ☐ With adjustment

Calibration in the range of 1 ~ 16 m/s at a calibration interval of 1 m/s.  
The results of calibration and associated measurement uncertainties are reported in the table below.

V <sub>ref</sub> Reading m/s	V <sub>unc</sub> Reading m/s	Error (m/s)	Uncertainty (%)
2.070	2.0	-0.1	2.4
4.100	4.1	0.0	1.2
6.01	6.0	0.0	0.99
8.01	8.0	0.0	0.71
10.01	10.1	0.1	1.1
12.01	12.2	0.2	0.65
13.98	14.3	0.3	0.61
15.94	16.1	0.2	1.4
14.98	15.1	0.1	1.0
13.00	13.1	0.1	0.76
11.02	11.1	0.1	0.63
9.02	9.0	0.0	0.97
7.03	7.0	0.0	0.84
5.165	5.1	-0.1	1.2
2.995	3.0	0.0	1.6
1.029	0.9	-0.1	4.6

UUCS: Unit Under Calibration

The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%

### Appendix 1: Instruments

NO	Sensor	Manufacturer	Model/Type	Calibration Date	Certificate Report Number	Range
1	Pitot static	TD810 INC.	06302145	Aug 07, 2021	MW-0034-21	5 ~ 30 m/s
2	Precision Differential Pressure Meter	Zagiak	DPMS800	Aug 07, 2021	MW-0034-21	8 ~ 30 m/s
3	Air velocity transducer (hot wire)	TB INC.	8455-12	Aug 08, 2021	MW-0035-21	0 ~ 6 m/s
4	Temperature	Zagiak	DS18B1P	March 30, 2021	CB-027-24	-30 ~ 70 °C
5	Relative humidity	Zagiak	DSRH1P	March 30, 2021	BA-03032021	0 ~ 100 %RH
6	Atmospheric pressure	Zagiak	DSRH1P	March 30, 2021	BP-01032021	500 ~ 1100 hPa
7	Wind tunnel	CS&OM	MP3300	-	-	0 ~ 60 Hz

\*\*\*End of certificate of calibration\*\*\*



## CERTIFICATE OF CALIBRATION

Certificate No: WD-04012022  
Page 1 of 2 pages

Measurement Item : Wind direction sensor with data logger.

Manufacturer : Data logger: Novolyne  
Wind direction sensor: Novolyne

Model/Type : Data logger: 110-WS-25DL-D  
Wind direction sensor: WS-02F

Serial Number : Data logger: A5444  
Wind direction sensor: WSD-003

ID No : Data logger: RYD\_F80435  
Wind direction sensor: -

Customer : AJS laboratory group (Thailand) Co., Ltd.  
104 Phathanahan 40, Phathanahan Rd, Khwaeng Suan Luang, Rhet Suan Luang, Bangkok 10250, Thailand.

Environmental Condition : The measurement was carried out in an ambient temperature of (23±3) °C, and relative humidity of (40±10) %.

Measurement Method : The wind direction sensor calibration according to comparison method with reference angle measurement electronic theodolite and line laser is used for axis control. The measurement were taken at 45° intervals in clockwise and counter-clockwise directions.

Note: The UUC was warmed up for 1 hour prior to the calibration being performed

Traceability : The measurement results are traceable to the international system of units (SI) through Certificate No: Q21086014, Certificate No: RWS64/0025.

Measurement Date : JAN 25, 2022  
Issued Date : JAN 31, 2022

Performed by  
☒ Mr. Soravit Thachatai  
☐ Miss Orathai Wivattavajay



Approved Signatory:   
Mr. Parinya Booncharoen  
Calibration Department Manager

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OBTAINED IN WRITING FROM THE LABORATORY.

Continuation of Certificate of Calibration Number

Certificate No: WD-04012022  
Page 2 of 2 pages

Result of calibration: ☐ Without adjustment ☒ With adjustment.  
Calibration in the range of 0 ~ 360 ° at a calibration interval of 45°.

The results of calibration and associated measurement uncertainties are reported in table below.

NO	Turning Direction	Nominal Angle (°)	Standard Reading (°)	UUC <sup>*</sup> Reading (°)	Error (°)	Uncertainty at(°)
1	Clockwise	0/360	0	0	0	3.0
2		45	45	41	-4	3.0
3		90	90	87	-3	3.0
4		135	135	133	-2	3.0
5		180	180	180	0	3.0
6		225	225	227	2	3.0
7	Counter Clockwise	270	270	272	2	3.0
8		315	315	317	2	3.0
9		0/360	0	0	0	3.0
10		45	45	41	-4	3.0
11		90	90	87	-3	3.0
12		135	135	133	-2	3.0
13		180	180	180	0	3.0
14		225	225	227	2	3.0
15		270	270	272	2	3.0
16		315	315	317	2	3.0

UUC<sup>\*</sup>: Unit Under Calibration The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%

\*\*\*End of Certificate of Calibration\*\*\*



## CALIBRATION REPORT

Calibration No. : RH-04012022  
Page 1 of 1 Pages

Measurement Item : Relative humidity with data logger.

Manufacturer : Data logger: Novatynx.  
Relative humidity sensor: Novatynx.

Model/Type : Data logger: 110-WS-25DL-D  
Relative humidity sensor: HMP60

Serial Number : Data logger: A5444  
Relative humidity sensor: R1131112

ID No : Data logger: RYG\_F80435  
Relative humidity sensor: -

Customer : ALS laboratory group (Thailand) Co.,Ltd.  
104 Phatthanakan 40, Phatthanakan Rd,Khwaeng Suan Luang, Khet Suan Luang, Bangkok 10250 Thailand.

Environmental Condition:  
The measurement was carried out in an ambient temperature of (25±3)°C, and relative humidity of (50±15)%.

Measurement Method:  
The Relative humidity with data logger, Unit Under Calibration (UUC) was calibrated by comparison method with the equilibrium of standard salt solution CH<sub>3</sub>COOK: Potassium Acetate, Mg(NO<sub>3</sub>)<sub>2</sub>: Magnesium Nitrate, KCl: Potassium Chloride to determine the error.

Measurement Date : JAN 24, 2022  
Issued Date : JAN 25, 2022

Measurement Results:  
The results of calibration are reported in table below.

Standard salt solution	Standard (WRH)	UUC(Reading)	Error
CH <sub>3</sub> COOK: Potassium Acetate	22.51	22.3	-0.2
Mg(NO <sub>3</sub> ) <sub>2</sub> : Magnesium Nitrate	52.89	52.5	-0.4
KCl: Potassium Chloride	84.34	84.1	-0.2

Performed by  
☐ Mr. Sorawit Thachalad  
☒ Miss Orathai Wawatitaya



Approved Signatory:

*[Signature]*  
Mr. Panyia Booncharoen  
Calibration Department Manager

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## CALIBRATION REPORT

Calibration Number : RG-04012022  
Page 1 of 2 Pages

Measurement Item : Rain gauge with data logger.

Manufacturer : Data logger: Novatynx.  
Rain gauge: Novatynx.

Model/Type : Data logger: 110-WS-25DL-D  
Rain gauge: 110-WS-25RG

Serial Number : Data logger: A5444  
Rain gauge: RG-003

ID NO : RYG\_F80435

Customer : ALS laboratory group (Thailand) co., ltd.  
104 Phatthanakan 40, Phatthanakan Rd, Khwaeng Suan Luang, Khet Suan Luang, Bangkok 10250, Thailand.

Environmental Condition:  
The measurement was carried out in an ambient temperature of (25±3)°C, and relative humidity of (50±15)%.

Measurement Method:  
The Rain gauge, Unit Under Calibration (UUC) was calibrated by Precision reference bottle with flow adjuster at low rate 0.6 mm per minute or 1 tipping every 20 seconds. The tipping number was determined by procedures below.

- Obtain rain gauge inlet area:  
Rain gauge precise diameter in cm = Diameter/2 = R (radius)  
Rain gauge area=  $R^2 \times 3.14$  (UUC diameter=20.3 cm, UUC radius=10.15 cm)  
Rain gauge area= 323.6 cm<sup>2</sup>.
- Obtain theoretical correct rain gauge shaver (number of tipping) using 323.6 cm<sup>2</sup> inlet area and 0.5 L of rain.
  - 10,000 mm / 323.6 cm<sup>2</sup> inlet area = 30.90 (rain gauge area = 1/30.90 of square meter)
  - 30.90 \* 0.5 L volume=15.45 mm (mm of rain over 1 m<sup>2</sup> surface) 500 ml of rain volume on the rain gauge area = 15.45 mm of rain.
  - Number of tipping=15.45 / 0.25 mm= 62 (tippings).

Note: Rain gauge is fully cleaned and leveling prior the calibration performed.

Measurement Date : JAN 26, 2022  
Issued Date : JAN 31, 2022

Performed by  
☒ Mr. Sorawit Thachalad  
☐ Miss Orathai Wawatitaya



Approved Signatory:

*[Signature]*  
Mr. Panyia Booncharoen  
Calibration Department Manager

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Continuation of Calibration of Calibration Number

Calibration Number: RG-04012022  
Page 2 of 2 Pages

Result of Calibration: ☒ Without Adjustment ☐ With Adjustment.  
The results of calibration are reported in table below.

Quantity of H <sub>2</sub> O (ml)	Determined Tipping	Tipping count	Acceptable Tipping count
500	62	64	60 - 64
500	62	63	60 - 64
500	62	62	60 - 64
500	62	63	60 - 64
500	62	62	60 - 64

Remark: The procedure is made to verify the correct reading of the Unit Under Calibration rain gauge when a precise volume of water falls into its core. We suggest that the number of tipping should be within ±2% different from the 62 tipping (corrected 60-64 tipping) it means that the rain gauge meets the manufacturer acceptable limit.

\*\*\*End of calibration report\*\*\*



## J-NAC GROUP

Jiranate Associates Co.,Ltd  
63/14-15, 67/35-36  
Petchkasem 7,7/1, Rd  
Wathapra, Bangkokyal,  
Bangkok 10600(Thailand)  
Tel : +66(0)28680813  
Mobile : +66(0)3959453  
E-mail : jnac-calibration@jiranatee.com  
Web site : www.jiranatee.com

Accredited calibration laboratory  
ISO/IEC 17025:2017  
Pressure measurement laboratory  
NSC-TISI-TIS 17025  
CALIBRATION 0367

## CERTIFICATE OF CALIBRATION

Certificate No. : CL-005-65

Page 1 of 2 Pages

MEASUREMENT ITEM : Digital barometer  
MANUFACTURER : Novatynx  
MODEL/TYPE : 110-WS-25BP  
SERIAL NUMBER : A5444  
ID NUMBER : RYG\_F80435  
CUSTOMER : ALS laboratory group (Thailand) co., ltd.  
104 Phatthanakan 40, Phatthanakan Rd,  
Khwaeng Suan Luang, Khet Suan Luang,  
Bangkok 10250 Thailand.

RECEIVED DATE : 12 Jan 2022  
MEASUREMENT DATE : 29 Jan 2022  
ISSUE DATE : 31 Jan 2022

Calibration procedure:  
The pressure calibration was done by in-house calibration method as WI-CL-003 according to comparison method with Digital pressure calibrator based on DKO-R 6-1

Traceability:  
The measurement results are traceable to the international system of units (SI) through MHSOR which complies with the requirements of ISO/IEC17025:2017, ANSI/NCSL 2540-1 via Certificate number: 201479

The reported uncertainty is based on a standard uncertainty multiplied by a coverage k=2, providing a level of confidence of approximately 95%.

### CONDITION OF THIS RESULT OF CALIBRATION:

- Reference Standard Instrument:  

Instrument	Model	Serial No.	Certificate No.	Due Date
Absolute Pressure Transducer	CPQ2500	4100181	201479	18 Sep 2022
- The UUC\* was installed in vertical orientation above reference standard instrument and center of UUC\* was used as the reference level.
- Calibration conditions:  

Pressure transmitting medium	Air
p <sub>ref</sub> (20°C,1bar)	1.19 kg/m <sup>3</sup>
Δh	± 0.080 m
t <sub>ref</sub>	(23±2) °C
p <sub>atm</sub>	1009.5 mbar
- The certificate is valid only to the item calibrated on date and place of calibration.

Calibrated by:  
☒ Mr. Sorawit Thachalad  
☐ Miss Orathai Wawatitaya



Approved signatory:  
Mr. Panyia Booncharoen  
Calibration Department Manager

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MEASUREMENT RESULTS : ☒ Without adjustment ☐ With adjustment

CALIBRATION IN THE RANGE OF : 950 – 1050 mbar

The results of calibration and associated measurement uncertainties are reported in the table below.

STD (mbar)	UUC* (mbar)	Error (mbar)	Uncertainty(k=2) (mbar)
950.32	951.181	0.856	1.3
970.14	970.682	0.538	0.70
990.05	990.524	0.470	0.58
1009.95	1010.106	0.157	0.34
1029.84	1029.946	0.107	0.25
1049.78	1049.594	-0.190	0.35

Note: UUC\* Unit Under Calibration



## CERTIFICATE OF CALIBRATION

Certificate No.: CL-004-65  
Page 1 of 2

Equipment Name: Data Logger with Temperature  
Sensor  
Manufacturer: Novatynx  
Model: 110-WS 25DL-D  
Serial No.: A5444  
ID No.: RYG\_F50435

Customer  
Name: ALS laboratory group (Thailand) Co.,Ltd.  
Address: 104 Phatthanasak 40, Phatthanasak  
Rd., Khwaeng Suan Luang, Khet Suan Luang, Bangkok  
10250 Thailand.

Received date: 12 JAN 2022  
Calibration date: 24 JAN 2022  
Issue date: 25 JAN 2022

Reference Used During Calibration  
1. Standard Temperature Probe Model: STS-100 A500,  
Serial No.: 667682-00, Due date: 29 Mar 2022  
2. Digital Temperature Indicator Model: DTI-1000-A MK  
II, Serial No.: 671407-00591 Due date: 04 June 2022

Calibration Condition  
Temperature: (23±3) °C  
Relative Humidity: (55±15)%

Calibration Procedure  
The temperature calibration was done by In-House  
calibration method as WI-CL-001 according to  
comparison method with standard digital temperature  
indicator and standard temperature probe. The  
temperature scale use was based on ITS-90.

Traceability  
The measurement results are traceable to the  
international system of units (SI) through National  
Institute of Metrology Thailand (NIMT) Certificate  
number: TT-0036-21, Certificate number: ER-0032-  
21

Calibrated by  
☐ Mr. Sorawit Thachalad  
☒ Miss Orathai Wivattitayay



Approved Signatory:   
Mr. Parinya Booncharoen  
Calibration Department Manager

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Certificate No.: CL-004-65  
Page 2 of 2

Result of Calibration: ☒ Without Adjustment ☐ With Adjustment

Calibration Range: 20 - 40 °C

Function:

This equipment was connected with temperature sensor Model : HMP60 S/N : R1131114

Dimension : Diameter 12mm. Length 80 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
60	20.053	19.8	-0.3	0.099
60	25.005	24.5	-0.5	0.099
60	29.995	29.5	-0.5	0.099
60	34.976	34.4	-0.6	0.099
60	39.957	39.3	-0.7	0.099

UUC\*: Unit Under Calibration

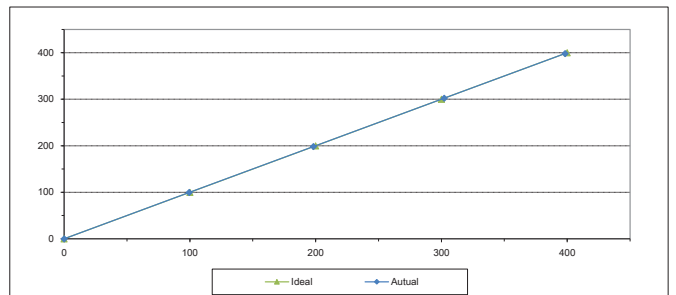
The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing a level of  
confidence of approximately 95%



## MULTIPOINT CALIBRATION REPORT

Calibration Date	1-Jul-22	Equipment Name	SO2 Analyzer
Manufacturer	HORIBA	Model	APSA-370
Serial No.	PL72R42G	Equipment ID	BKK_FS1075
Calibrator Manufacturer	Teledyne API	Model	700
Serial No.	947		
Std. Gas Concentration (PPM)	56.3	Cylinder No.	GN0027222
Cylinder Pressure (psi)	1800	Certified By	Alrgas Inc.
Certified Date	9-Feb-22	Expired Date	9-Feb-30

Point	CALIBRATION RESULTS			
	Ideal	Actual	Error	%Error
ZERO	0.00	0.10	0.10	0.10
1	100.00	99.50	-0.50	-0.50
2	200.00	198.20	-1.80	-0.90
3	300.00	302.20	2.20	0.73
4	400.00	398.30	-1.70	-0.42
AVERAGE (%)				-0.20



Calibrated By

(Mr. Jirawut Sakam)  
Field Environmental Scientist (3)

Approved By

(Mr. Sarayuth Jitranont)  
Assistant General Manager

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

451-451/1 Sirinthorn Rd.,Bangbunru, Bangplud Bangkok 10700 THAILAND.  
Tel.0-2435-8800 Fax.0-2435-1679 e-mail:cal-center@sithiporn.com http://www.sithiporn.com



Cert. No. : ACC22012  
Pages : 1 of 3

## Calibration Certificate

**Equipment :** SOUND CALIBRATOR  
**Manufacturer :** RION  
**Model :** NC-74  
**Serial No.:** 34178117  
**ID No.:** BKK\_PS0630

**Condition As Found :** GOOD

**Customer :** ALS LABORATORY GROUP (THAILAND) CO., LTD.  
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,  
KHWAENG PHATTHANAKAN, KHET SUAN LUANG,  
BANGKOK, 10250 THAILAND.

**Location :** -  
**Ambient Temperature :** ( 23.0 ± 3 ) °C  
**Pressure :** ( 101.3 ± 3 ) kPa  
**Relative Humidity :** ( 50.0 ± 20 ) %

**Received Date :** 22 APRIL 2022  
**Calibration Date :** 26 APRIL 2022  
**Date of Issue :** 29 APRIL 2022

**Calibrated by :** Nathakorn Pisutpaisan

**Approved by :**

*T. Petch*  
( Thanakul Petchurai )

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QP-TS12-04-04-020664

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACC22012  
Job No. : VC65AC0055  
Pages : 2 of 3

**Calibration Procedure :** CP-AC-03

### Calibration Method :

This equipment was calibrated by based on IEC-60942-2003 Standard.

The sound pressure level, frequency and total distortion of the sound calibrator was measured using the reference microphone.

### Condition of this result of calibration :

#### 1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33511B	MY52302742	EF-0008-22	04-Feb-23
Digital Multimeter	33461A	MY53220104	EEL_BP_04/0265	09-Feb-23
Digital Multimeter	33461A	MY53220076	EEL_BP_03/0265	09-Feb-23
Digital Multimeter	33461A	MY60024273	EEL_BP_05/0265	09-Feb-23
Programmable Attenuator	MAT-1070	62100114	EF-0009-22	07-Feb-23
Condenser Microphone	4180	2977900	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-42KAI	34560495	AA-3005-22	22-Feb-23
Audio Analyzer	AVR-3360A	V744B6069	EF-0010-22	07-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

QP-TS12-04-04-020664

*T. Petch*

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACC22012  
Job No. : VC65AC0055  
Pages : 3 of 3

### Result of calibration :

#### 1. Sound pressure level

Specified sound pressure level (dB)	Measured value (dB)	Deviated value (dB)	Uncertainty (dB)	Tolerance limit (dB)
94	94.13	0.13	0.14	0.40

#### 2. Frequency

Specified Frequency (Hz)	Measured value (Hz)	Deviated value (%)	Uncertainty (%)	Tolerance limit (%)
1000	1001.7	0.2	0.1	1.0

#### 3. Total distortion

Measured value (%)	Uncertainty (%)	Tolerance limit (%)
1.73	0.10	3.0

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$  or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

QP-TS12-04-04-020664

*T. Petch*

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

451-451/1 Sirinthorn Rd.,Bangbunru, Bangplud Bangkok 10700 THAILAND.  
Tel.0-2435-8800 Fax.0-2435-1679 e-mail:cal-center@sithiporn.com http://www.sithiporn.com



Cert. No. : ACL22253  
Pages : 1 of 8

## Calibration Certificate

**Equipment :** SOUND LEVEL METER  
**Manufacturer :** RION  
**Model :** NL-42/ Microphone UC-52 / Preamplifier NH-24  
**Serial No.:** 01122504 / 169436 / 72457  
**ID No.:** BKK\_PS0033

**Condition As Found :** GOOD

**Customer :** ALS LABORATORY GROUP (THAILAND) CO., LTD.  
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,  
KHWAENG PHATTHANAKAN, KHET SUAN LUANG,  
BANGKOK, 10250 THAILAND.

**Location :** -  
**Ambient Temperature :** ( 23.0 ± 3 ) °C  
**Pressure :** ( 101.3 ± 3 ) kPa  
**Relative Humidity :** ( 50.0 ± 20 ) %

**Received Date :** 01 NOVEMBER 2022  
**Calibration Date :** 02-03 NOVEMBER 2022  
**Date of Issue :** 04 NOVEMBER 2022

**Calibrated by :** Nathakorn Pisutpaisan

**Approved by :**

*T. Petch*  
( Thanakul Petchurai )

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QP-TS12-04-04-020664



## Continuation of Calibration Certificate

Cert. No. : ACL22253  
Job No. : VC66AC0004  
Pages : 2 of 8

Calibration Procedure : CP-AC-01

## Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.

For tests results of each items were made by observation of each Instruments display and also with SLM's display.

## Condition of this result of calibration :

## 1. Reference Standard Instruments :

Instrument	Model	Serial.No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0007-22	04-Feb-23
Waveform Generator	33511B	MY52302742	EF-0008-22	04-Feb-23
Digital Multimeter	33461A	MY53220104	EEL_BP_04/0265	09-Feb-23
Digital Multimeter	33461A	MY53220076	EEL_BP_03/0265	09-Feb-23
Digital Multimeter	34461A	MY60024273	EEL_BP_05/0265	09-Feb-23
Programmable Attenuator	MAT-1070	62100114	EF-0009-22	07-Feb-23
Condenser Microphone	4180	2977900	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-42KA1	34560495	AA-3005-22	22-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

QP-TS12-04-04-020664

## Continuation of Calibration Certificate

Cert. No. : ACL22253  
Job No. : VC66AC0004  
Pages : 3 of 8

## Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long - term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

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## Continuation of Calibration Certificate

Cert. No. : ACL22253  
Job No. : VC66AC0004  
Pages : 4 of 8

## Result of calibration :

## 1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.95)	93.9	0.0	±0.3

## 2. Self-generated noise

## 2.1 Normal test

Measured Value (dB)
16.4

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A - weight	13.8
C - weight	19.9
Flat	25.7

## 3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limits
125	0.4	0.4	0.4	± 1.5
1000	0.0	0.0	0.0	± 1.0
8000	-1.3	-1.2	-1.1	±5.0

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## Continuation of Calibration Certificate

Cert. No. : ACL22253  
Job No. : VC66AC0004  
Pages : 5 of 8

## 4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	0.0	-0.1	±2.0
125	0.0	0.0	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.0	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.1	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

## 5. Frequency and time weightings at 1 kHz

## 5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	0.0	-
C - weight	94.0	0.0	± 0.2
Flat	94.0	0.0	± 0.2

## 5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	-
Slow	94.0	0.0	± 0.1
Leq	94.0	0.0	± 0.1

## 6. Long - term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	94.0	0.0	± 0.3

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## Continuation of Calibration Certificate

Cert. No. : ACL22253  
Job No. : VC66AC0004  
Pages : 6 of 8

## 7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	±1.1
136.0	136.0	0.0	±1.1
135.0	135.0	0.0	±1.1
134.0	134.0	0.0	±1.1
133.0	133.0	0.0	±1.1
132.0	132.0	0.0	±1.1
131.0	131.0	0.0	±1.1
129.0	129.0	0.0	±1.1
124.0	124.0	0.0	±1.1
119.0	119.0	0.0	±1.1
114.0	114.0	0.0	±1.1
109.0	109.0	0.0	±1.1
104.0	104.0	0.0	±1.1
99.0	99.0	0.0	±1.1
94.0	94.0	0.0	±1.1
89.0	89.0	0.0	±1.1
84.0	84.0	0.0	±1.1
79.0	79.0	0.0	±1.1
74.0	74.0	0.0	±1.1
69.0	69.0	0.0	±1.1
64.0	64.0	0.0	±1.1
59.0	59.0	0.0	±1.1
54.0	54.0	0.0	±1.1
49.0	49.0	0.0	±1.1
44.0	44.0	0.0	±1.1
39.0	38.9	-0.1	±1.1
34.0	33.9	-0.1	±1.1
30.0	29.9	-0.1	±1.1
29.0	28.8	-0.2	±1.1
28.0	27.9	-0.1	±1.1
27.0	26.9	-0.1	±1.1
26.0	25.9	-0.1	±1.1
25.0	24.8	-0.2	±1.1

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T. Petchuraj

## Continuation of Calibration Certificate

Cert. No. : ACL22253  
Job No. : VC66AC0004  
Pages : 7 of 8

## 8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

## 9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.1	0.1	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.1	0.1	±1.0

## 10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, L <sub>peak</sub> (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
One	136.4	135.7	-0.7	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
Positive half cycle	135.4	135.2	-0.2	±2.0
Negative half cycle	135.4	135.2	-0.2	±2.0

QF-TS12-04-04-020604

T. Petchuraj

## Continuation of Calibration Certificate

Cert. No. : ACL22253  
Job No. : VC66AC0004  
Pages : 8 of 8

## 11. Overload indication

Measured value (dB)		Deviated Value	Acceptance Limits
Positive one-half cycle	Negative one-half cycle	(dB)	(dB)
89.6	89.7	0.1	±1.5

## 12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$  or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

QF-TS12-04-04-020604

T. Petchuraj

451-451/1 Sirinthorn Rd, Bangbunru, Bangplud Bangkok 10700 THAILAND.  
Tel: 0-2435-8800 Fax: 0-2433-1679 e-mail: cal-center@sithiporn.com http://www.sithiporn.comCert. No. : ACL22041  
Pages : 1 of 8

## Calibration Certificate

Equipment : SOUND LEVEL METER  
Manufacturer : RION  
Model : NL-42 / Microphone UC-52 / Preamplifier NH-24  
Serial No.: 00858518 / 158769 / 58770  
ID No.: BKK FS0108

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.  
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,  
KHUANG PHATTHANAKAN, KHUANG SUAN LUANG,  
BANGKOK, 10250 THAILAND.

Location : -  
Ambient Temperature : ( 23.0 ± 3 ) °C  
Pressure : ( 101.3 ± 3 ) kPa  
Relative Humidity : ( 50.0 ± 20 ) %

Received Date : 05 JANUARY 2022  
Calibration Date : 12-14 JANUARY 2022  
Date of Issue : 17 JANUARY 2022

Calibrated by : Naitakorn Pisuppaian

Approved by :

T. Petchuraj  
( Thanakul Petchuraj )

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Continuation of Calibration Certificate

Cert. No. : ACL22041  
Job No. : VC65AC0041  
Pages : 2 of 8

Calibration Procedure : CP-AC-01

**Calibration Method :**

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.

For tests results of each items were made by observation of each Instruments display and also with SLM's display.

**Condition of this result of calibration :**

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0012-21	10-Feb-22
Waveform Generator	33511B	MY52302742	EF-0011-21	10-Feb-22
Digital Multimeter	33461A	MY53220104	EEL.BP. 03/0264	10-Feb-22
Digital Multimeter	33461A	MY53220076	EEL.BP. 03/0264	08-Feb-22
Digital Multimeter	34461A	MY60024273	1-15180725251-1	15-Sep-22
Programmable Attenuator	MAT-1070	62100114	1500-07774E	08-Mar-22
Condenser Microphone	4180	2977900	AA-1008-21	05-Feb-22
Measuring Amplifier	NA-42KAI	34560495	AA-3003-21	16-Feb-22

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

- 3.1 National Institute of Metrology (Thailand).
- 3.2 Thailand Institute of Scientific and Technological Research (TISTR).

QF-TS12-04-04-020664

*T. Ratch*

Continuation of Calibration Certificate

Cert. No. : ACL22041  
Job No. : VC65AC0041  
Pages : 3 of 8

**Summary of Measurement Result :**

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long - term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

QF-TS12-04-04-020664

*T. Ratch*

Continuation of Calibration Certificate

Cert. No. : ACL22041  
Job No. : VC65AC0041  
Pages : 4 of 8

**Result of calibration :**

**1. Absolute sensitivity**

Reference Acoustic Signal ( dB )	Measured Value ( dB )	Deviation ( dB )	Acceptance Limit ( dB )
93.9 (93.96)	93.9	0.0	±0.3

**2. Self-generated noise**

**2.1 Normal test**

Measured Value ( dB )
16.7

**2.2 The microphone of the sound level meter was replaced by electrical signal input device.**

Frequency Weighting	Measured value ( dB )
A - weight	15.9
C - weight	22.3
Flat	27.7

**3. Acoustical signal tests of frequency weightings**

Meter free-field acoustic response at a level of 84 dB

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.3	0.3	0.3	± 1.5
1000	0.0	0.0	0.0	± 1.0
8000	-1.1	-1.0	-1.0	±5.0

QF-TS12-04-04-020664

*T. Ratch*

Continuation of Calibration Certificate

Cert. No. : ACL22041  
Job No. : VC65AC0041  
Pages : 5 of 8

**4. Electrical signal tests of frequency weightings**

Weighting network response with relative to 1 kHz.

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	-0.1	-0.1	±2.0
125	0.0	0.0	-0.1	±1.5
250	0.0	0.0	-0.1	±1.5
500	0.0	0.0	-0.1	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

**5. Frequency and time weightings at 1 kHz**

**5.1 Frequency weightings at 1 kHz**

Frequency Weighting	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	0.0	-
C - weight	94.0	0.0	± 0.2
Flat	94.0	0.0	± 0.2

**5.2 Time weighting at 1 kHz**

Frequency Weighting	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	94.0	0.0	-
Slow	94.0	0.0	± 0.1
Leq	94.0	0.0	± 0.1

**6. Long - term stability**

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.3

QF-TS12-04-04-020664

*T. Ratch*



## Continuation of Calibration Certificate

Cert. No. : ACL22041  
Job No. : VC65AC0041  
Pages : 6 of 8

## 7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	±1.1
136.0	136.0	0.0	±1.1
135.0	135.0	0.0	±1.1
134.0	134.0	0.0	±1.1
133.0	133.0	0.0	±1.1
132.0	132.0	0.0	±1.1
131.0	131.0	0.0	±1.1
129.0	129.0	0.0	±1.1
124.0	124.0	0.0	±1.1
119.0	119.0	0.0	±1.1
114.0	114.0	0.0	±1.1
109.0	109.0	0.0	±1.1
104.0	104.0	0.0	±1.1
99.0	99.0	0.0	±1.1
94.0	94.0	0.0	±1.1
89.0	89.0	0.0	±1.1
84.0	84.0	0.0	±1.1
79.0	79.0	0.0	±1.1
74.0	74.0	0.0	±1.1
69.0	69.0	0.0	±1.1
64.0	64.0	0.0	±1.1
59.0	59.0	0.0	±1.1
54.0	54.0	0.0	±1.1
49.0	49.0	0.0	±1.1
44.0	44.0	0.0	±1.1
39.0	39.0	0.0	±1.1
34.0	34.0	0.0	±1.1
30.0	29.9	-0.1	±1.1
29.0	29.0	0.0	±1.1
28.0	27.9	-0.1	±1.1
27.0	26.9	-0.1	±1.1
26.0	25.9	-0.1	±1.1
25.0	25.0	0.0	±1.1

QF-TS12-04-04-020664

T. Petchur

## Continuation of Calibration Certificate

Cert. No. : ACL22041  
Job No. : VC65AC0041  
Pages : 7 of 8

## 8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

## 9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
SEL	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.0	0.0	±1.0

## 10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, L <sub>peak</sub> (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
One	136.4	136.4	0.0	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
Positive half cycle	135.4	135.1	-0.3	±2.0
Negative half cycle	135.4	135.2	-0.2	±2.0

QF-TS12-04-04-020664

T. Petchur

## Continuation of Calibration Certificate

Cert. No. : ACL22041  
Job No. : VC65AC0041  
Pages : 8 of 8

## 11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle	-0.1	±1.5
89.6	89.5		

## 12. High level stability

Frequency Weighting	S.L.M Display at initial (dB)	S.L.M Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$  or any value following calculation, providing a level of confidence of approximately 95 %.

End of Calibration Certificate

QF-TS12-04-04-020664

T. Petchur

451-451/1 Sirinthorn Rd.,Bangbunru, Bangplud Bangkok 10700 THAILAND.  
Tel:0-2435-8800 Fax:0-2433-1679 e-mail:cal-center@sithiporn.com http://www.sithiporn.comCert. No. : ACL22033  
Pages : 1 of 9

## Calibration Certificate

Equipment : SOUND LEVEL METER  
Manufacturer : RION  
Model : NL-21/ Microphone UC-52/ Preamplifier NH-21  
Serial No.: 00610204 / 135208 / 32093  
ID No.: BKK\_PS0014

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.  
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,  
KHUANG PHATTHANAKAN, KHUANG SUAN LUANG,  
BANGKOK, 10250 THAILAND.

Location :  
Ambient Temperature : ( 23.0 ± 3 ) °C  
Pressure : ( 101.3 ± 3 ) kPa  
Relative Humidity : ( 50.0 ± 20 ) %

Received Date : 05 JANUARY 2022  
Calibration Date : 12-14 JANUARY 2022  
Date of Issue : 17 JANUARY 2022



Calibrated by : Natthakorn Pisutpaisan

Approved by :

T. Petchur  
( Thanakul Petchurai )

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## Continuation of Calibration Certificate

Cert. No. : ACL22033  
Job No. : VC65AC0041  
Pages : 2 of 9

Calibration Procedure : CP-AC-02

## Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.  
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

## Condition of this result of calibration :

## 1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EP-0012-21	10-Feb-22
Waveform Generator	33511B	MY52302742	EP-0011-21	10-Feb-22
Digital Multimeter	33461A	MY53220104	EEL.BP.03.0264	10-Feb-22
Digital Multimeter	33461A	MY53220076	EEL.BP.03.0264	08-Feb-22
Digital Multimeter	34461A	MY60024273	I-15180725251-1	15-Sep-22
Programmable Attenuator	MAT-1070	62100114	1500-07774E	08-Mar-22
Condenser Microphone	4180	2977900	AA-1008-21	05-Feb-22
Measuring Amplifier	NA-42KA1	34560495	AA-3003-21	16-Feb-22

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

QF-TS12-04-04-020664

T. R. Pich.

## Continuation of Calibration Certificate

Cert. No. : ACL22033  
Job No. : VC65AC0041  
Pages : 3 of 9

## Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long - term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

QF-TS12-04-04-020664

T. R. Pich.

## Continuation of Calibration Certificate

Cert. No. : ACL22033  
Job No. : VC65AC0041  
Pages : 4 of 9

## Result of calibration :

## 1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.96)	93.9	0.0	±0.3

## 2. Self-generated noise

## 2.1 Normal test

Measured Value (dB)
24.9

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A-weight	23.4
C-weight	25.4
Flat	30.3

## 3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.2	0.3	0.3	± 1.5
1000	0.0	0.0	0.0	± 1.0
8000	-0.1	0.0	0.0	±5.0

QF-TS12-04-04-020664

T. R. Pich.

## Continuation of Calibration Certificate

Cert. No. : ACL22033  
Job No. : VC65AC0041  
Pages : 5 of 9

## 4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	-0.1	-0.1	0.0	±2.0
125	-0.1	0.0	0.0	±1.5
250	0.0	0.0	-0.1	±1.5
500	0.0	0.0	-0.1	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.1	0.1	0.1	±2.0
4000	0.1	0.1	0.1	±3.0
8000	0.1	0.2	0.2	±5.0

## 5. Frequency and time weightings at 1 kHz

## 5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	0.0	-
C-weight	94.0	0.0	± 0.2
Flat	94.0	0.0	± 0.2

## 5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	-
Slow	94.0	0.0	± 0.1
Leq	94.0	0.0	± 0.1

## 6. Long - term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	94.0	0.0	± 0.3

QF-TS12-04-04-020664

T. R. Pich.



## Continuation of Calibration Certificate

Cert. No. : ACL22033  
Job No. : VC65AC0041  
Pages : 6 of 9

## 7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
135.0	134.9	-0.1	± 1.1
134.0	133.9	-0.1	± 1.1
133.0	132.9	-0.1	± 1.1
132.0	131.9	-0.1	± 1.1
131.0	130.9	-0.1	± 1.1
129.0	128.9	-0.1	± 1.1
124.0	123.9	-0.1	± 1.1
119.0	118.9	-0.1	± 1.1
114.0	113.9	-0.1	± 1.1
109.0	108.9	-0.1	± 1.1
104.0	103.9	-0.1	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	54.0	0.0	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	39.0	0.0	± 1.1

QF-TS12-04-04-020664

T. Reth...

## Continuation of Calibration Certificate

Cert. No. : ACL22033  
Job No. : VC65AC0041  
Pages : 7 of 9

## 8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
130	94.0	94.0	0.0	±0.5
120	94.0	94.0	0.0	±0.5
110	94.0	94.0	0.0	±0.5
100	94.0	94.0	0.0	±0.5
90	94.0	94.0	0.0	±0.5

## Level linearity on each level range

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
130	43.0	43.1	0.1	±0.5
120	33.0	32.7	-0.3	±0.5

## 9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.1	0.1	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.0	0.0	±1.0

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T. Reth...

## Continuation of Calibration Certificate

Cert. No. : ACL22033  
Job No. : VC65AC0041  
Pages : 8 of 9

## 10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, L <sub>peak</sub> (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
One	136.4	136.0	-0.4	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
Positive half cycle	135.4	135.1	-0.3	±2.0
Negative half cycle	135.4	135.1	-0.3	±2.0

## 11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle		
89.4	89.2	-0.2	±1.5

QF-TS12-04-04-020664

T. Reth...

## Continuation of Calibration Certificate

Cert. No. : ACL22033  
Job No. : VC65AC0041  
Pages : 9 of 9

## 12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$  or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

QF-TS12-04-04-020664

T. Reth...



# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

451-451/1 Sirinthorn Rd.,Bangbunru, Bangplud Bangkok 10700 THAILAND.  
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Cert. No. : ACL22042  
Pages : 1 of 8

## Calibration Certificate

**Equipment :** SOUND LEVEL METER  
**Manufacturer :** RION  
**Model :** NL-42/ Microphone UC-52 / Preamplifier NH-24  
**Serial No.:** 00858523 / 158774 / 58775  
**ID No.:** BKK\_FS0113

**Condition As Found :** GOOD

**Customer :** ALS LABORATORY GROUP (THAILAND) CO., LTD.  
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,  
KHWAENG PHATTHANAKAN, KHET SUAN LUANG,  
BANGKOK, 10250 THAILAND.

**Location :**  
**Ambient Temperature :** ( 23.0 ± 3 ) °C  
**Pressure :** ( 101.3 ± 3 ) kPa  
**Relative Humidity :** ( 50.0 ± 20 ) %

**Received Date :** 05 JANUARY 2022  
**Calibration Date :** 12-14 JANUARY 2022  
**Date of Issue :** 17 JANUARY 2022



**Calibrated by :** Natchakorn Pitsutpaisan

**Approved by :** *T. Petchumai*  
( Thanakul Petchumai )

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QF-TS12-04-04-020664

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL22042  
Job No. : VC65AC0041  
Pages : 2 of 8

**Calibration Procedure :** CP-AC-01

### Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.  
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

### Condition of this result of calibration :

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0012-21	10-Feb-22
Waveform Generator	33511B	MY52302742	EF-0011-21	10-Feb-22
Digital Multimeter	33461A	MY53220104	EEL-BP_05/0264	10-Feb-22
Digital Multimeter	33461A	MY53220076	EEL-BP_03/0264	08-Feb-22
Digital Multimeter	34461A	MY60024273	1-15180725251-1	15-Sep-22
Programmable Attenuator	MAT-1070	62100114	1500-07774E	08-Mar-22
Condenser Microphone	4180	2977900	AA-1008-21	05-Feb-22
Measuring Amplifier	NA-42KA1	34560495	AA-3003-21	16-Feb-22

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

- 3.1 National Institute of Metrology (Thailand),
- 3.2 Thailand Institute of Scientific and Technological Research (TISTR).

QF-TS12-04-04-020664

*T. Petchumai*

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL22042  
Job No. : VC65AC0041  
Pages : 3 of 8

### Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long-term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

QF-TS12-04-04-020664

*T. Petchumai*

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL22042  
Job No. : VC65AC0041  
Pages : 4 of 8

### Result of calibration :

#### 1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.96)	93.9	0.0	±0.3

#### 2. Self-generated noise

##### 2.1 Normal test

Measured Value (dB)
14.2

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A-weight	12.0
C-weight	18.7
Flat	24.2

#### 3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			Acceptance Limits
	Flat	C-weight	A-weight	
125	0.4	0.5	0.5	± 1.5
1000	0.0	0.0	0.0	± 1.0
8000	-1.3	-1.3	-1.3	± 5.0

QF-TS12-04-04-020664

*T. Petchumai*



## Continuation of Calibration Certificate

Cert. No. : ACL22042  
Job No. : VC65AC0041  
Pages : 5 of 8

## 4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	-0.1	-0.1	0.0	±2.0
125	0.0	0.0	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.0	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

## 5. Frequency and time weightings at 1 kHz

## 5.1 Frequency weightings at 1 kHz:

Frequency Weighting	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	0.0	-
C - weight	94.0	0.0	± 0.2
Flat	94.0	0.0	± 0.2

## 5.2 Time weighting at 1 kHz:

Frequency Weighting	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	94.0	0.0	-
Slow	94.0	0.0	± 0.1
Leq	94.0	0.0	± 0.1

## 6. Long - term stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.3

QF-TS12-04-04-020664

T. Btch.

## Continuation of Calibration Certificate

Cert. No. : ACL22042  
Job No. : VC65AC0041  
Pages : 6 of 8

## 7. Level linearity on the reference level range

Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.0	0.0	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.0	0.0	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	53.9	-0.1	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	38.9	-0.1	± 1.1
34.0	33.9	-0.1	± 1.1
30.0	29.9	-0.1	± 1.1
29.0	28.9	-0.1	± 1.1
28.0	27.9	-0.1	± 1.1
27.0	26.9	-0.1	± 1.1
26.0	25.9	-0.1	± 1.1
25.0	24.8	-0.2	± 1.1

QF-TS12-04-04-020664

T. Btch.

## Continuation of Calibration Certificate

Cert. No. : ACL22042  
Job No. : VC65AC0041  
Pages : 7 of 8

## 8. Level linearity including the level range control

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Auto	94.0	94.0	0.0	± 1.1

## 9. Tone burst response

Time Weighting	Tone burst duration, Tb ( ms )	Cycle	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.0	0.0	± 1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	± 1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.1	0.1	± 1.0

## 10. Peak C sound level

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value, L <sub>peak</sub> ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	-
One	136.4	136.3	-0.1	± 3.0

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	-
Positive half cycle	135.4	135.2	-0.2	± 2.0
Negative half cycle	135.4	135.2	-0.2	± 2.0

QF-TS12-04-04-020664

T. Btch.

## Continuation of Calibration Certificate

Cert. No. : ACL22042  
Job No. : VC65AC0041  
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## 11. Overload indication

Measured value ( dB )		Deviated Value ( dB )	Acceptance Limits ( dB )
Positive one-half cycle	Negative one-half cycle		
89.7	89.7	0.0	± 1.5

## 12. High level stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	137.0	137.0	0.0	± 0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$   
or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

QF-TS12-04-04-020664

T. Btch.



# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

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Cert. No. : ACL22137  
Pages : 1 of 8

## Calibration Certificate

**Equipment :** SOUND LEVEL METER  
**Manufacturer :** RION  
**Model :** NL-42/ Microphone UC-52 / Preamplifier NH-24  
**Serial No.:** 00710641 / 136960 / 10642  
**ID No.:** BKK\_PS0025

**Condition As Found :** GOOD

**Customer :** ALS LABORATORY GROUP (THAILAND) CO., LTD.  
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,  
KHWAENG PHATTHANAKAN, KHET SUAN LUANG,  
BANGKOK, 10250 THAILAND.

**Location :** -  
**Ambient Temperature :** ( 23.0 ± 3 ) °C  
**Pressure :** ( 101.3 ± 3 ) kPa  
**Relative Humidity :** ( 50.0 ± 20 ) %

**Received Date :** 26 MAY 2022  
**Calibration Date :** 09-10 JUNE 2022  
**Date of Issue :** 14 JUNE 2022



**Calibrated by :** Nathakorn Piatpaisan

**Approved by :**

*T. Petchuraj*  
( Thanakul Petchuraj )

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## Continuation of Calibration Certificate

Cert. No. : ACL22137  
Job No. : VC65AC0063  
Pages : 2 of 8

**Calibration Procedure :** CP-AC-01

### Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.  
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

### Condition of this result of calibration :

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0007-22	04-Feb-23
Waveform Generator	33511B	MY52302742	EF-0008-22	04-Feb-23
Digital Multimeter	33461A	MY53220104	EEL_BP_04/0265	09-Feb-23
Digital Multimeter	33461A	MY53220076	EEL_BP_03/0265	09-Feb-23
Digital Multimeter	34461A	MY60024273	EEL_BP_05/0265	09-Feb-23
Programmable Attenuator	MAT-1070	62100114	EF-0009-22	07-Feb-23
Condenser Microphone	4180	2977900	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-42KA1	34560495	AA-3005-22	22-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

- 3.1 National Institute of Metrology (Thailand).
- 3.2 Thailand Institute of Scientific and Technological Research (TISTR).

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*T. Petchuraj*

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL22137  
Job No. : VC65AC0063  
Pages : 3 of 8

### Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long-term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

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## Continuation of Calibration Certificate

Cert. No. : ACL22137  
Job No. : VC65AC0063  
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### Result of calibration :

#### 1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.95)	93.9	0.0	±0.3

#### 2. Self-generated noise

##### 2.1 Normal test

Measured Value (dB)
23.2

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A-weight	15.0
C-weight	20.9
Flat	26.7

#### 3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.0	0.0	0.1	±1.5
1000	-0.1	-0.1	-0.1	±1.0
8000	0.2	0.3	0.3	±5.0

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*T. Petchuraj*



Continuation of Calibration Certificate

Cert. No. : ACL22137  
Job No. : VC65AC0063  
Pages : 5 of 8

4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			Acceptance Limits ( dB )
	Flat	C-weight	A-weight	
63	0.0	-0.1	-0.1	±2.0
125	-0.1	0.0	0.0	±1.5
250	0.0	0.0	-0.1	±1.5
500	0.0	0.0	-0.1	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	0.0	-
C - weight	94.0	0.0	± 0.2
Flat	94.0	0.0	± 0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	94.0	0.0	-
Slow	94.0	0.0	± 0.1
Leq	94.0	0.0	± 0.1

6. Long - term stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.3

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T. Retan

Continuation of Calibration Certificate

Cert. No. : ACL22137  
Job No. : VC65AC0063  
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7. Level linearity on the reference level range

Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	132.9	-0.1	± 1.1
132.0	131.9	-0.1	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.0	0.0	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.0	0.0	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	54.0	0.0	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	39.0	0.0	± 1.1
34.0	34.0	0.0	± 1.1
30.0	30.0	0.0	± 1.1
29.0	28.9	-0.1	± 1.1
28.0	27.9	-0.1	± 1.1
27.0	27.0	0.0	± 1.1
26.0	25.9	-0.1	± 1.1
25.0	24.9	-0.1	± 1.1

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Continuation of Calibration Certificate

Cert. No. : ACL22137  
Job No. : VC65AC0063  
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8. Level linearity including the level range control

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Auto	94.0	94.0	0.0	±1.1

9. Tone burst response

Time Weighting	Tone burst duration, Tb ( ms )	Cycle	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.0	0.0	±1.0

10. Peak C' sound level

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value, L <sub>peak</sub> ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	-
One	136.4	135.6	-0.8	±3.0

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	-
Positive half cycle	135.4	135.1	-0.3	±2.0
Negative half cycle	135.4	135.1	-0.3	±2.0

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Continuation of Calibration Certificate

Cert. No. : ACL22137  
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11. Overload indication

Measured value ( dB )		Deviated Value ( dB )	Acceptance Limits ( dB )
Positive one-half cycle	Negative one-half cycle		
89.5	89.6	0.1	±1.5

12. High level stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$   
or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

QF-TS12-04-04-020664

T. Retan



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Cert. No. : ACL22148  
Pages : 1 of 9

## Calibration Certificate

**Equipment :** SOUND LEVEL METER  
**Manufacturer :** RION  
**Model :** NL-21/ Microphone UC-52 / Preamplifier N11-21  
**Serial No.:** 00610207 / 135219 / 35706  
**ID No.:** BKK\_FS0958

**Condition As Found :** GOOD

**Customer :** ALS LABORATORY GROUP (THAILAND) CO., LTD.  
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,  
KHWAENG PHATTHANAKAN, KHET SUAN LUANG,  
BANGKOK, 10250 THAILAND.

**Location :** °  
**Ambient Temperature :** ( 23.0 ± 3 ) °C  
**Pressure :** ( 101.3 ± 3 ) kPa  
**Relative Humidity :** ( 50.0 ± 20 ) %

**Received Date :** 17 JUNE 2022  
**Calibration Date :** 20-22 JUNE 2022  
**Date of Issue :** 27 JUNE 2022



**Calibrated by :** Nanthakorn Pisutpaisan

**Approved by :** T. Petchurakul  
( Thanakul Petchurakul )

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# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL22148  
Job No. : VC65AC0068  
Pages : 2 of 9

**Calibration Procedure :** CP-AC-02

### Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.

For tests results of each items were made by observation of each Instruments display and also with SLM's display.

### Condition of this result of calibration :

#### 1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0007-22	04-Feb-23
Waveform Generator	33511B	MY52302742	EF-0008-22	04-Feb-23
Digital Multimeter	33461A	MY53220104	EEL-BP_04/0265	09-Feb-23
Digital Multimeter	33461A	MY53220076	EEL-BP_03/0265	09-Feb-23
Digital Multimeter	8846A	MY60024273	EEL-BP_05/0265	09-Feb-23
Programmable Attenuator	MAT-1070	62100114	EF-0009-22	07-Feb-23
Condenser Microphone	4180	2977900	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-42KA1	34560495	AA-3005-22	22-Feb-23

#### 2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

#### 3. This certificate is traceable to the international system of unit maintained at :

- 3.1 National Institute of Metrology (Thailand).
- 3.2 Thailand Institute of Scientific and Technological Research (TISTR).

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T. Petchurakul

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL22148  
Job No. : VC65AC0068  
Pages : 3 of 9

### Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.4	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long-term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

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T. Petchurakul

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL22148  
Job No. : VC65AC0068  
Pages : 4 of 9

### Result of calibration :

#### 1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.95)	93.9	0.0	±0.3

#### 2. Self-generated noise

##### 2.1 Normal test

Measured Value (dB)
23.1

##### 2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A-weight	22.4
C-weight	23.6
Flat	26.5

#### 3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			Acceptance Limits
	Flat	C-weight	A-weight	
125	0.3	0.3	0.4	±1.5
1000	0.0	0.0	0.0	±1.0
8000	-1.3	-2.2	-1.3	±5.0

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T. Petchurakul



## Continuation of Calibration Certificate

Cert. No. : ACL22148  
Job No. : VC65AC0068  
Pages : 5 of 9

## 4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	-0.1	-0.1	0.0	±2.0
125	-0.1	0.0	0.0	±1.5
250	-0.1	-0.1	-0.1	±1.5
500	0.0	0.0	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.1	0.1	0.0	±2.0
4000	0.1	0.1	0.0	±3.0
8000	0.1	0.1	0.1	±5.0

## 5. Frequency and time weightings at 1 kHz

## 5.1. Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	0.0	-
C-weight	94.0	0.0	±0.2
Flat	94.0	0.0	±0.2

## 5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	-
Slow	94.0	0.0	±0.1
Leq	94.0	0.0	±0.1

## 6. Long-term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	94.0	0.0	±0.3

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## Continuation of Calibration Certificate

Cert. No. : ACL22148  
Job No. : VC65AC0068  
Pages : 6 of 9

## 7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
135.0	134.9	-0.1	±1.1
134.0	133.9	-0.1	±1.1
133.0	132.9	-0.1	±1.1
132.0	131.9	-0.1	±1.1
131.0	130.9	-0.1	±1.1
129.0	128.9	-0.1	±1.1
124.0	123.9	-0.1	±1.1
119.0	118.9	-0.1	±1.1
114.0	113.9	-0.1	±1.1
109.0	108.9	-0.1	±1.1
104.0	103.9	-0.1	±1.1
99.0	98.9	-0.1	±1.1
94.0	94.0	0.0	±1.1
89.0	88.9	-0.1	±1.1
84.0	83.9	-0.1	±1.1
79.0	78.9	-0.1	±1.1
74.0	73.9	-0.1	±1.1
69.0	68.9	-0.1	±1.1
64.0	63.9	-0.1	±1.1
59.0	58.9	-0.1	±1.1
54.0	53.9	-0.1	±1.1
49.0	49.0	0.0	±1.1
44.0	43.9	-0.1	±1.1
39.0	39.0	0.0	±1.1

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## Continuation of Calibration Certificate

Cert. No. : ACL22148  
Job No. : VC65AC0068  
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## 8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
130	94.0	94.0	0.0	±0.5
120	94.0	94.0	0.0	±0.5
110	94.0	94.0	0.0	±0.5
100	94.0	94.0	0.0	±0.5
90	94.0	94.1	0.1	±0.5

## Level linearity on each level range

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
130	43.0	43.0	0.0	±0.5
120	33.0	33.2	0.2	±0.5

## 9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.0	0.0	±1.0

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## Continuation of Calibration Certificate

Cert. No. : ACL22148  
Job No. : VC65AC0068  
Pages : 8 of 9

## 10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, Lepeak (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
One	136.4	136.0	-0.4	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
Positive half cycle	135.4	135.1	-0.3	±2.0
Negative half cycle	135.4	135.1	-0.3	±2.0

## 11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle		
89.3	89.2	-0.1	±1.5

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Continuation of Calibration Certificate

Cert. No. : ACL22148  
Job No. : VC65AC0068  
Pages : 9 of 9

12. High level stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$  or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

QF-TS12-04-04-020664



451-451/1 Sirinthorn Rd., Bangbunru, Bangplud Bangkok 10700 THAILAND.  
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Cert. No. : ACC22025  
Pages : 1 of 3

Calibration Certificate

Equipment : SOUND CALIBRATOR  
Manufacturer : RION  
Model : NC-74  
Serial No.: 34478385  
ID No.: NKH\_FS0019

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.  
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,  
KHWANG PHATTHANAKAN, KHET SUAN LUANG,  
BANGKOK, 10250 THAILAND.

Location :  
Ambient Temperature : ( 23.0 ± 3 ) °C  
Pressure : ( 101.3 ± 3 ) kPa  
Relative Humidity : ( 50.0 ± 20 ) %

Received Date : 22 AUGUST 2022  
Calibration Date : 31 AUGUST 2022  
Date of Issue : 02 SEPTEMBER 2022



Calibrated by : Nathakorn Pisutpaisan

Approved by :

*T. Petchurai*  
( Thanakul Petchurai )

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Continuation of Calibration Certificate

Cert. No. : ACC22025  
Job No. : VC65AC0077  
Pages : 2 of 3

Calibration Procedure : CP-AC-03

Calibration Method :

This equipment was calibrated by based on IEC-60942:2003 Standard.

The sound pressure level, frequency and total distortion of the sound calibrator was measured using the reference microphone.

Condition of this result of calibration :

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33511B	MY52302742	EF-0008-22	04-Feb-23
Digital Multimeter	33461A	MY53220104	EEH.BP. 04/0265	09-Feb-23
Digital Multimeter	33461A	MY53220076	EEH.BP. 03/0265	09-Feb-23
Digital Multimeter	33461A	MY60024273	EEH.BP. 05/0265	09-Feb-23
Programmable Attenuator	MAT-1070	62100114	EF-0009-22	07-Feb-23
Condenser Microphone	4180	2977900	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-42KA1	34560495	AA-3005-22	22-Feb-23
Audio Analyzer	AVR-3360A	V744B6069	EF-0010-22	07-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

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Continuation of Calibration Certificate

Cert. No. : ACC22025  
Job No. : VC65AC0077  
Pages : 3 of 3

Result of calibration :

1. Sound pressure level

Specified sound pressure level (dB)	Measured value (dB)	Deviated value (dB)	Uncertainty (dB)	Tolerance limit (dB)
94	94.06	0.06	0.14	0.40

2. Frequency

Specified Frequency (Hz)	Measured value (Hz)	Deviated value ( % )	Uncertainty ( % )	Tolerance limit ( % )
1000	1002.3	0.2	0.1	1.0

3. Total distortion

Measured value ( % )	Uncertainty ( % )	Tolerance limit ( % )
1.51	0.10	3.0

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$  or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

QF-TS12-04-04-020664



# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

451-451/1 Sirinthorn Rd.,Bangbunru, Bangplud Bangkok 10700 THAILAND.  
Tel:0-2435-8800 Fax:0-2433-1679 e-mail:cal-center@sithiporn.com http://www.sithiporn.com



Cert. No. : ACL22101  
Pages : 1 of 8

## Calibration Certificate

**Equipment :** SOUND LEVEL METER  
**Manufacturer :** RION  
**Model :** NL-42/ Microphone UC-52 / Preamplifier NH-24  
**Serial No.:** 00371914 / 169110 / 72255  
**ID No.:** NKH\_FS0001

**Condition As Found :** GOOD

**Customer :** ALS LABORATORY GROUP (THAILAND) CO., LTD.  
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,  
KHUANG PHATTHANAKAN, KHET SUAN LUANG,  
BANGKOK, 10250 THAILAND.

**Location :** -  
**Ambient Temperature :** ( 23.0 ± 3 ) °C  
**Pressure :** ( 101.3 ± 3 ) kPa  
**Relative Humidity :** ( 50.0 ± 20 ) %

**Received Date :** 22 APRIL 2022  
**Calibration Date :** 03-06 MAY 2022  
**Date of Issue :** 09 MAY 2022



**Calibrated by :** Nathakorn Pisutpaisan

**Approved by :**

*T. Petchur*  
( Thanakul Petchurai )

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# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL22101  
Job No. : VC65AC0051  
Pages : 2 of 8

**Calibration Procedure :** CP-AC-01

### Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.  
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

### Condition of this result of calibration :

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0007-22	04-Feb-23
Waveform Generator	33511B	MY53202742	EF-0008-22	04-Feb-23
Digital Multimeter	33461A	MY53220104	EEL-BP_04/0265	09-Feb-23
Digital Multimeter	33461A	MY53220076	EEL-BP_03/0265	09-Feb-23
Digital Multimeter	34461A	MY60024273	EEL-BP_05/0265	09-Feb-23
Programmable Attenuator	MAT-1070	62100114	ET-0009-22	07-Feb-23
Condenser Microphone	4180	2977900	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-42KAI	34560495	AA-3005-22	22-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

- 3.1 National Institute of Metrology (Thailand),
- 3.2 Thailand Institute of Scientific and Technological Research (TISTR).

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*T. Petchur*

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL22101  
Job No. : VC65AC0051  
Pages : 3 of 8

### Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long-term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

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*T. Petchur*

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL22101  
Job No. : VC65AC0051  
Pages : 4 of 8

### Result of calibration :

#### 1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.95)	93.9	0.0	±0.3

#### 2. Self-generated noise

##### 2.1 Normal test

Measured Value (dB)
14.2

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A-weight	9.9
C-weight	16.3
Flat	22.1

#### 3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.4	0.4	0.5	±1.5
1000	0.0	0.0	0.0	±1.0
8000	-1.1	-1.0	-1.0	±5.0

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*T. Petchur*



## Continuation of Calibration Certificate

Cert. No. : ACL22101  
Job No. : VC65AC0051  
Pages : 5 of 8

## 4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	-0.1	-0.1	±2.0
125	0.0	0.0	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.0	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

## 5. Frequency and time weightings at 1 kHz

## 5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	0.0	-
C - weight	94.0	0.0	± 0.2
Flat	94.0	0.0	± 0.2

## 5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	94.0	0.0	-
Slow	94.0	0.0	± 0.1
Leq	94.0	0.0	± 0.1

## 6. Long - term stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.3

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T. Petch

## Continuation of Calibration Certificate

Cert. No. : ACL22101  
Job No. : VC65AC0051  
Pages : 6 of 8

## 7. Level linearity on the reference level range

Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.0	0.0	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.0	0.0	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.1	0.1	± 1.1
69.0	69.1	0.1	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.1	0.1	± 1.1
54.0	54.0	0.0	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	39.0	0.0	± 1.1
34.0	34.0	0.0	± 1.1
30.0	30.1	0.1	± 1.1
29.0	29.1	0.1	± 1.1
28.0	28.1	0.1	± 1.1
27.0	27.1	0.1	± 1.1
26.0	26.2	0.2	± 1.1
25.0	25.2	0.2	± 1.1

QF-TS12-04-04-020604

T. Petch

## Continuation of Calibration Certificate

Cert. No. : ACL22101  
Job No. : VC65AC0051  
Pages : 7 of 8

## 8. Level linearity including the level range control

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Auto	94.0	94.0	0.0	±1.1

## 9. Tone burst response

Time Weighting	Tone burst duration, Tb ( ms )	Cycle	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.0	0.0	±1.0

## 10. Peak C sound level

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value, Lepeak ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	-
One	136.4	136.4	0.0	±3.0

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.1	0.1	-
Positive half cycle	135.4	135.3	-0.1	±2.0
Negative half cycle	135.4	135.3	-0.1	±2.0

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T. Petch

## Continuation of Calibration Certificate

Cert. No. : ACL22101  
Job No. : VC65AC0051  
Pages : 8 of 8

## 11. Overload indication

Measured value ( dB )		Deviated Value ( dB )	Acceptance Limits ( dB )
Positive one-half cycle	Negative one-half cycle		
89.5	89.6	0.1	±1.5

## 12. High level stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$   
or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

QF-TS12-04-04-020604

T. Petch



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Cert. No. : ACL22185  
Pages : 1 of 8

## Calibration Certificate

**Equipment :** SOUND LEVEL METER  
**Manufacturer :** RION  
**Model :** NL-42/ Microphone UC-52 / Preamplifier NH-24  
**Serial No.:** 00472123 / 142962 / 22541  
**ID No.:** NKH\_FS0007

**Condition As Found :** GOOD

**Customer :** ALS LABORATORY GROUP (THAILAND) CO., LTD.  
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,  
KHWAENG PHATTHANAKAN, KHET SUAN LUANG,  
BANGKOK, 10250 THAILAND.

**Location :** -  
**Ambient Temperature :** ( 23.0 ± 3 ) °C  
**Pressure :** ( 101.3 ± 3 ) kPa  
**Relative Humidity :** ( 50.0 ± 20 ) %

**Received Date :** 22 AUGUST 2022  
**Calibration Date :** 26-31 AUGUST 2022  
**Date of Issue :** 02 SEPTEMBER 2022



**Calibrated by :** Nathakorn Pisutpaisani

**Approved by :** T. Petchurai  
( Thanakul Petchurai )

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# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL22185  
Job No. : VC65AC0077  
Pages : 2 of 8

**Calibration Procedure :** CP-AC-01

### Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM). The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.

For tests results of each items were made by observation of each Instruments display and also with SLM's display.

### Condition of this result of calibration :

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0007-22	04-Feb-23
Waveform Generator	33511B	MY52302742	EF-0008-22	04-Feb-23
Digital Multimeter	33461A	MY53220104	EEL_BP_04/0265	09-Feb-23
Digital Multimeter	33461A	MY53220076	EEL_BP_03/0265	09-Feb-23
Digital Multimeter	34461A	MY60024273	EEL_BP_05/0265	09-Feb-23
Programmable Attenuator	MAT-1070	62100114	EF-0009-22	07-Feb-23
Condenser Microphone	4180	2977900	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-42KAI	34560495	AA-3005-22	22-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

- 3.1 National Institute of Metrology (Thailand).
- 3.2 Thailand Institute of Scientific and Technological Research (TISTR).

QP-TS12-04-04-020664

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL22185  
Job No. : VC65AC0077  
Pages : 3 of 8

### Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long-term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

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# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL22185  
Job No. : VC65AC0077  
Pages : 4 of 8

### Result of calibration :

#### 1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.95)	93.9	0.0	±0.3

#### 2. Self-generated noise

##### 2.1 Normal test

Measured Value (dB)
15.4

##### 2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A-weight	12.0
C-weight	18.2
Flat	24.0

#### 3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			Acceptance limits
	Flat	C-weight	A-weight	
125	0.2	0.2	0.2	± 1.5
1000	0.0	0.0	0.0	± 1.0
8000	-0.8	-0.7	-0.7	± 5.0

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Continuation of Calibration Certificate

Cert. No. : ACL22185  
Job No. : VC65AC0077  
Pages : 5 of 8

4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	-0,1	-0,1	0,0	±2,0
125	0,0	0,0	0,0	±1,5
250	0,0	0,0	0,0	±1,5
500	0,0	0,0	0,0	±1,5
1000	0,0	0,0	0,0	±1,0
2000	0,0	0,1	0,0	±2,0
4000	0,0	0,0	0,0	±3,0
8000	0,0	0,1	0,1	±5,0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94,0	0,0	-
C - weight	94,0	0,0	± 0,2
Flat	94,0	0,0	± 0,2

5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	94,0	0,0	-
Slow	94,0	0,0	± 0,1
Leq	94,0	0,0	± 0,1

6. Long-term stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94,0	94,0	0,0	± 0,3

QF-TS12-04-04-020664

T. P. Loh

Continuation of Calibration Certificate

Cert. No. : ACL22185  
Job No. : VC65AC0077  
Pages : 6 of 8

7. Level linearity on the reference level range

Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
137,0	137,0	0,0	± 1,1
136,0	136,0	0,0	± 1,1
135,0	135,0	0,0	± 1,1
134,0	134,0	0,0	± 1,1
133,0	133,0	0,0	± 1,1
132,0	132,0	0,0	± 1,1
131,0	131,0	0,0	± 1,1
129,0	129,0	0,0	± 1,1
124,0	124,0	0,0	± 1,1
119,0	119,0	0,0	± 1,1
114,0	114,0	0,0	± 1,1
109,0	109,0	0,0	± 1,1
104,0	104,0	0,0	± 1,1
99,0	99,0	0,0	± 1,1
94,0	94,0	0,0	± 1,1
89,0	89,0	0,0	± 1,1
84,0	84,0	0,0	± 1,1
79,0	79,0	0,0	± 1,1
74,0	74,0	0,0	± 1,1
69,0	69,0	0,0	± 1,1
64,0	64,0	0,0	± 1,1
59,0	59,0	0,0	± 1,1
54,0	54,0	0,0	± 1,1
49,0	49,0	0,0	± 1,1
44,0	44,0	0,0	± 1,1
39,0	39,0	0,0	± 1,1
34,0	34,0	0,0	± 1,1
30,0	29,9	-0,1	± 1,1
29,0	28,9	-0,1	± 1,1
28,0	27,9	-0,1	± 1,1
27,0	26,9	-0,1	± 1,1
26,0	25,9	-0,1	± 1,1
25,0	24,9	-0,1	± 1,1

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T. P. Loh

Continuation of Calibration Certificate

Cert. No. : ACL22185  
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8. Level linearity including the level range control

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Auto	94,0	94,0	0,0	±1,1

9. Tone burst response

Time Weighting	Tone burst duration, Tb ( ms )	Cycle	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	0,25	1	108,0	107,9	-0,1	1,5 ; -5,0
	2	8	117,0	117,0	0,0	1,0 ; -2,5
	200	800	134,0	134,1	0,1	±1,0
Slow	2	8	108,0	108,0	0,0	1,5 ; -5,0
	200	800	127,6	127,6	0,0	±1,0
SEL	0,25	1	99,0	98,9	-0,1	1,5 ; -5,0
	2	8	108,0	108,0	0,0	1,0 ; -2,5
	200	800	128,0	128,1	0,1	±1,0

10. Peak C sound level

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value, L <sub>peak</sub> ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133,0	133,0	0,0	-
One	136,4	136,1	-0,3	±3,0

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133,0	133,0	0,0	-
Positive half cycle	135,4	135,2	-0,2	±2,0
Negative half cycle	135,4	135,2	-0,2	±2,0

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T. P. Loh

Continuation of Calibration Certificate

Cert. No. : ACL22185  
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11. Overload indication

Measured value ( dB )		Deviated Value ( dB )	Acceptance Limits ( dB )
Positive one-half cycle	Negative one-half cycle		
89,6	89,5	-0,1	±1,5

12. High level stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	137,0	137,0	0,0	±0,3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$   
or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

QF-TS12-04-04-020664

T. P. Loh



# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

451-451/1 Sirinthorn Rd., Bangbunru, Bangplud Bangkok 10700 THAILAND  
Tel:0-2435-8800 Fax:0-2433-1679 e-mail:cal-center@sithiporn.com http://www.sithiporn.com



Cert. No. : ACL22186  
Pages : 1 of 8

## Calibration Certificate

**Equipment :** SOUND LEVEL METER  
**Manufacturer :** RION  
**Model :** NL-42 / Microphone UC-52 / Preamplifier NH-24  
**Serial No.:** 00472124 / 169437 / 72458  
**ID No.:** NKH\_FS0008

**Condition As Found :** GOOD

**Customer :** ALS LABORATORY GROUP (THAILAND) CO., LTD.  
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,  
KHUWAENG PHATTHANAKAN, KHUET SUAN LUANG,  
BANGKOK, 10250 THAILAND.

**Location :** -  
**Ambient Temperature :** ( 23.0 ± 3 ) °C  
**Pressure :** ( 101.3 ± 3 ) kPa  
**Relative Humidity :** ( 50.0 ± 20 ) %  
**Received Date :** 22 AUGUST 2022  
**Calibration Date :** 26-31 AUGUST 2022  
**Date of Issue :** 02 SEPTEMBER 2022



**Calibrated by :** Nathakorn Pisutpaisan

**Approved by :** *T. Petchum*  
( Thanakul Petchum )

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

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# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL22186  
Job No. : VC65AC0077  
Pages : 2 of 8

**Calibration Procedure :** CP-AC-01

### Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.  
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

### Condition of this result of calibration :

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert.No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0007-22	04-Feb-23
Waveform Generator	33511B	MY52302742	EF-0008-22	04-Feb-23
Digital Multimeter	33461A	MY53220104	EEL_BP_04/0265	09-Feb-23
Digital Multimeter	33461A	MY53220076	EEL_BP_03/0265	09-Feb-23
Digital Multimeter	34461A	MY60024273	EEL_BP_05/0265	09-Feb-23
Programmable Attenuator	MAT-1070	62100114	EF-0009-22	07-Feb-23
Condenser Microphone	4180	2977900	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-42KA1	34560495	AA-3005-22	22-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

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*T. Petchum*

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL22186  
Job No. : VC65AC0077  
Pages : 3 of 8

### Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.4	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long - term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

# SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

## Continuation of Calibration Certificate

Cert. No. : ACL22186  
Job No. : VC65AC0077  
Pages : 4 of 8

### Result of calibration :

#### 1. Absolute sensitivity

Reference Acoustic Signal ( dB )	Measured Value ( dB )	Deviation ( dB )	Acceptance Limit ( dB )
93.9 (93.95)	93.9	0.0	±0.3

#### 2. Self-generated noise

##### 2.1 Normal test

Measured Value ( dB )
15.8

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value ( dB )
A - weight	13.4
C - weight	19.5
Flat	25.2

#### 3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.2	0.2	0.2	± 1.5
1000	0.0	0.0	0.0	± 1.0
8000	-0.9	-0.8	-0.9	± 5.0

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*T. Petchum*

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*T. Petchum*



## Continuation of Calibration Certificate

Cert. No. : ACL22186  
Job No. : VC65AC0077  
Pages : 5 of 8

## 4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	0.0	0.0	±2.0
125	0.0	0.1	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.1	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.1	0.0	±2.0
4000	0.0	0.1	0.0	±3.0
8000	0.1	0.1	0.1	±5.0

## 5. Frequency and time weightings at 1 kHz

## 5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	0.0	-
C - weight	94.0	0.0	± 0.2
Flat	94.0	0.0	± 0.2

## 5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	94.0	0.0	-
Slow	94.0	0.0	± 0.1
Leq	94.0	0.0	± 0.1

## 6. Long - term stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.1	0.1	± 0.3

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T. Reth.

## Continuation of Calibration Certificate

Cert. No. : ACL22186  
Job No. : VC65AC0077  
Pages : 6 of 8

## 7. Level linearity on the reference level range

Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.1	0.1	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.1	0.1	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	54.0	0.0	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	39.0	0.0	± 1.1
34.0	34.0	0.0	± 1.1
30.0	30.0	0.0	± 1.1
29.0	28.9	-0.1	± 1.1
28.0	28.0	0.0	± 1.1
27.0	26.9	-0.1	± 1.1
26.0	25.9	-0.1	± 1.1
25.0	24.9	-0.1	± 1.1

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## Continuation of Calibration Certificate

Cert. No. : ACL22186  
Job No. : VC65AC0077  
Pages : 7 of 8

## 8. Level linearity including the level range control

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Auto	94.0	94.0	0.0	±1.1

## 9. Tone burst response

Time Weighting	Tone burst duration, Tb ( ms )	Cycle	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	0.25	1	108.0	108.0	0.0	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.1	0.1	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.1	0.1	±1.0

## 10. Peak C sound level

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value, L <sub>peak</sub> ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	-
One	136.4	135.5	-0.9	±3.0

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	-
Positive half cycle	135.4	135.1	-0.3	±2.0
Negative half cycle	135.4	135.1	-0.3	±2.0

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T. Reth.

## Continuation of Calibration Certificate

Cert. No. : ACL22186  
Job No. : VC65AC0077  
Pages : 8 of 8

## 11. Overload Indication

Measured value ( dB )		Deviated Value ( dB )	Acceptance Limits ( dB )
Positive one-half cycle	Negative one-half cycle		
89.6	89.7	0.1	±1.5

## 12. High level stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$   
or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

QF-TS12-04-04-020664

T. Reth.



Cert. No. : ACL22187  
Pages : 1 of 8

## Calibration Certificate

Equipment : SOUND LEVEL METER  
Manufacturer : RION  
Model : NL-42/ Microphone UC-52 / Preamplifier NH-24  
Serial No.: 01173613 / 172175 / 74025  
ID No.: NKH\_PS0026

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.  
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,  
KHWAENG PHATTHANAKAN, KHET SUAN LUANG,  
BANGKOK, 10250 THAILAND.

Location : -  
Ambient Temperature : ( 23.0 ± 3 ) °C  
Pressure : ( 101.3 ± 3 ) kPa  
Relative Humidity : ( 50.0 ± 20 ) %

Received Date : 22 AUGUST 2022  
Calibration Date : 26-31 AUGUST 2022  
Date of Issue : 02 SEPTEMBER 2022



Calibrated by : Nathakorn Pisutpaisan

Approved by :

*T. Petchurai*  
( Thanakul Petchurai )

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced  
other than in full, except with the prior written approval of the head of Calibration Laboratory.

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## Continuation of Calibration Certificate

Cert. No. : ACL22187  
Job No. : VC65AC0077  
Pages : 2 of 8

Calibration Procedure : CP-AC-01

## Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference  
Standard Instruments.  
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

## Condition of this result of calibration :

## 1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0007-22	04-Feb-23
Waveform Generator	33511B	MY52302742	EF-0008-22	04-Feb-23
Digital Multimeter	33461A	MY53220104	EEL_BP_04/0265	09-Feb-23
Digital Multimeter	33461A	MY53220076	EEL_BP_03/0265	09-Feb-23
Digital Multimeter	34461A	MY60024273	EEL_BP_05/0265	09-Feb-23
Programmable Attenuator	MAT-1070	62100114	EF-0009-22	07-Feb-23
Condenser Microphone	4180	2977900	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-42KAI	34560495	AA-3005-22	22-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

- 3.1 National Institute of Metrology (Thailand),  
3.2 Thailand Institute of Scientific and Technological Research (TISTR).

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*T. Petchurai*

## Continuation of Calibration Certificate

Cert. No. : ACL22187  
Job No. : VC65AC0077  
Pages : 3 of 8

## Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long - term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

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*T. Petchurai*

## Continuation of Calibration Certificate

Cert. No. : ACL22187  
Job No. : VC65AC0077  
Pages : 4 of 8

## Result of calibration :

## 1. Absolute sensitivity

Reference Acoustic Signal ( dB )	Measured Value ( dB )	Deviation ( dB )	Acceptance Limit ( dB )
93.9 (93.95)	93.9	0.0	±0.3

## 2. Self-generated noise

## 2.1 Normal test

Measured Value ( dB )
20.3

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value ( dB )
A - weight	12.6
C - weight	18.8
Flat	24.6

## 3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.1	0.1	0.1	± 1.5
1000	0.0	0.0	0.0	± 1.0
8000	0.7	0.8	0.8	±5.0

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*T. Petchurai*



Continuation of Calibration Certificate

Cert. No. : ACL22187  
Job No. : VC65AC0077  
Pages : 5 of 8

4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	-0.1	-0.1	±2.0
125	0.0	0.0	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.0	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	0.0	-
C - weight	94.0	0.0	± 0.2
Flat	94.0	0.0	± 0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	94.0	0.0	-
Slow	94.0	0.0	± 0.1
Leq	94.0	0.0	± 0.1

6. Long - term stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.3

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T. Reth

Continuation of Calibration Certificate

Cert. No. : ACL22187  
Job No. : VC65AC0077  
Pages : 6 of 8

7. Level linearity on the reference level range

Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.0	0.0	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.0	0.0	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	53.9	-0.1	± 1.1
49.0	49.0	0.0	± 1.1
44.0	43.9	-0.1	± 1.1
39.0	38.9	-0.1	± 1.1
34.0	33.9	-0.1	± 1.1
30.0	29.9	-0.1	± 1.1
29.0	28.9	-0.1	± 1.1
28.0	27.9	-0.1	± 1.1
27.0	26.9	-0.1	± 1.1
26.0	25.8	-0.2	± 1.1
25.0	24.9	-0.1	± 1.1

QF-TS12-04-04-020664

T. Reth

Continuation of Calibration Certificate

Cert. No. : ACL22187  
Job No. : VC65AC0077  
Pages : 7 of 8

8. Level linearity including the level range control

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Auto	94.0	94.0	0.0	±1.1

9. Tone burst response

Time Weighting	Tone burst duration, Tb ( ms )	Cycle	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
SEL	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.1	0.1	±1.0

10. Peak C sound level

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value, L <sub>peak</sub> ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	-
One	136.4	136.3	-0.1	±3.0

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	-
Positive half cycle	135.4	135.2	-0.2	±2.0
Negative half cycle	135.4	135.2	-0.2	±2.0

QF-TS12-04-04-020664

T. Reth

Continuation of Calibration Certificate

Cert. No. : ACL22187  
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11. Overload indication

Measured value ( dB )		Deviated Value ( dB )	Acceptance Limits ( dB )
Positive one-half cycle	Negative one-half cycle		
89.6	89.7	0.1	±1.5

12. High level stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$   
or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

QF-TS12-04-04-020664

T. Reth



### Certificate of Calibration

**Customer**  
Name : ALS Laboratory Group Thailand Co., Ltd.  
Address : 104 Soi Phatthanakan 40, Phatthanakan Road, Suan Luang, Bangkok 10250  
Certificate No : 22-ACT-127  
Request No : Req-2022-0260

#### Unit Under Calibration Details

Measurement Item : Sound Level Meter  
Manufacturer : RION  
Model : NL-42  
Serial Number : 0900075  
ID : NNG\_180013  
Resolution : 0.1 dB  
Microphone Class : 2  
Microphone Model : UC-52  
Microphone S/N : 188468  
Preamplifier Model : N11-24  
Preamplifier S/N : 01737  
Instrument Status : Used

#### Calibration Environment and Details


Temperature : 23 °C ± 2 °C  
Humidity : 50 %RH ± 20 %RH  
Barometric Pressure : 1013 hPa ± 10 hPa  
Received Date : 3 February 2022  
Calibrated Date : 22 February 2022  
Calibration Procedure : In-house method CP-SLM-01 based on IEC 61672-3 : 2013 Electroacoustics - Sound level meters - Part 3: Periodic tests  
Location of Calibration : Lab Acoustic


#### Reference Standard

Instrument	Brand	Model	SN	Due calibration	Traceability
Standard Microphone	GRAS	40AN	188273	15 September 2022	GRAS
Multifrequency Calibrator	Quest	Quest-cal	EFA000234	14 June 2022	TSI
Audio Generator	Svantek		131	18 October 2022	WK Electric

#### Note

The reported uncertainty is based on standard uncertainty multiplied by the Coverage Factor  $k = 2$ , providing a level of confidence approximately 95 %.

Calibrated By :   
Mr. Noppadon Luangrit  
Calibration Officer

Approved By :   
Mr. Pasi Mathavon  
Calibration Engineer Supervisor  
Issue Date : 22 February 2022

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.  
FM-708-SLM-01 Rev.0 Issue date 01/07/19

Certificate No : 22-ACT-127  
Request No : Req-2022-0260

#### 1. Indication at the calibration check frequency

UUC Setting	Nominal	Before Adjust	Adjust	UNCERTAINTY	Acceptance
FAST / A / 30-130	Level	UUC (dB)	ERR (dB)	UUC (dB)	ERR (dB)
Calibrator Setting				( ± dB)	( ± dB)
1000 Hz 114.00 dB	113.85	113.7	-0.15	113.9	+0.05
				0.20	0.3

Note : Absolute sensitivity was established by the use of Sound Calibrator Brand SVANTEK, Model SV 35A, SN: 58079.

#### 2. Self-generated noise, Microphone installed

UUC Setting	Measured	UNCERTAINTY
FAST / 30-130		
UUC Weighting	(dB)	( ± dB)
A	15.5	0.10

#### 3. Self-generated noise, Microphone replaced by the electrical input signal device

UUC Setting	Measured	UNCERTAINTY
FAST / 30-130		
UUC Weighting	(dB)	( ± dB)
A	12.0	0.10
C	16.4	0.10
Z	20.7	0.10

#### 4. Acoustic signal test of frequency weightings (Without Windscreen)

UUC Setting	Deviation from various Frequency Weighting Response curve	UNCERTAINTY	Acceptance
FAST / 30-130	A C Z	( ± dB)	Limit ( ± dB)
STD Setting	(dB) (dB) (dB)		
125 Hz	0.2 0.4 0.4	0.50	1.5
1000 Hz	0.0 0.0 0.0	0.60	1.0
4000 Hz	1.1 1.1 1.0	0.60	3.0
8000 Hz	-1.9 -1.8 -1.9	0.70	5.0

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.  
FM-708-SLM-01 Rev.0 Issue date 01/07/19

Certificate No : 22-ACT-127  
Request No : Req-2022-0260

#### 5. Electrical signal test of frequency weightings, Weighting network response with relative to 1 kHz

UUC Setting	Deviation from various Frequency Weighting Response curve	UNCERTAINTY	Acceptance
FAST / 30-130	A (dB) C (dB) Z (dB)	( ± dB)	Limit ( ± dB)
STD Setting			
63 Hz	-0.2 -0.1 0.0	0.2	2.0
125 Hz	-0.2 0.0 0.0		1.5
250 Hz	0.0 0.0 0.0		1.5
500 Hz	0.0 0.0 0.0		1.5
1000 Hz	0.0 0.0 0.0		1.0
2000 Hz	0.0 0.0 0.0		2.0
4000 Hz	0.0 0.0 0.0		3.0
8000 Hz	0.0 0.0 0.0		5
16000 Hz	-1.1 -1.0 0.0		>5, <INF

#### 6. Frequency and time weightings at 1kHz

UUC Setting	STD	Measured	UNCERTAINTY	Acceptance
FAST / 30-130	REF	UUC ERR	( ± dB)	Limit ( ± dB)
UUC Weighting	(dB)	(dB) (dB)		
A	114.00	114.0 0.0	0.2	0.2
C	114.00	114.0 0.0	0.2	0.2
Z	114.00	114.0 0.0	0.2	0.2

UUC Setting	STD	Measured	UNCERTAINTY	Acceptance
30-130 / A	REF	UUC ERR	( ± dB)	Limit ( ± dB)
UUC Time Response	(dB)	(dB) (dB)		
Fast	114.00	114.0 0.0	0.1	0.1
Slow	114.00	114.0 0.0	0.2	0.1
Log	114.00	114.0 0.0	0.1	0.1

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.  
FM-708-SLM-01 Rev.0 Issue date 01/07/19

Certificate No : 22-ACT-127  
Request No : Req-2022-0260

#### 7. Long Term Stability

UUC Setting	Measured	UNCERTAINTY	Acceptance
FAST / A / 30-130	UUC	( ± dB)	Limit ( ± dB)
STD Setting	(dB)		
Initial	114.0		
Final	114.0		
Deviated	0.0	0.1	0.3

#### 8. Level linearity on the reference level range

UUC Setting	Anticipated	Deviation	UNCERTAINTY	Acceptance
FAST / A / 30-130	REF	UUC ERR	( ± dB)	Limit ( ± dB)
STD dB	(dB)	(dB) (dB)		
130.00	130	130.0 0.0		1.1
129.00	129	129.0 0.0		1.1
124.00	124	124.0 0.0		1.1
119.00	119	119.0 0.0		1.1
114.00	114	114.0 0.0		1.1
109.00	109	109.0 0.0		1.1
104.00	104	104.0 0.0		1.1
99.00	99	99.0 0.0		1.1
94.00	94	94.0 0.0		1.1
89.00	89	89.0 0.0		1.1
84.00	84	84.0 0.0		1.1
79.00	79	79.0 0.0		1.1
74.00	74	74.0 0.0		1.1
69.00	69	69.0 0.0		1.1
64.00	64	64.0 0.0		1.1
59.00	59	59.0 0.0		1.1
54.00	54	54.0 0.0		1.1
49.00	49	49.0 0.0		1.1
44.00	44	44.0 0.0		1.1
39.00	39	39.0 0.0		1.1
34.00	34	34.0 0.0		1.1
29.00	29	29.1 0.1		1.1
24.00	24	23.9 -0.1		1.1

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.  
FM-708-SLM-01 Rev.0 Issue date 01/07/19



Certificate No : 22-ACT-127  
Request No : Req-2022-0260

9. Level linearity including the level range control

UUC Setting	STD	Measured	UNCERTAINTY	Acceptance
FAST / A	REF	UUC	ERR	Limit
UUC Range	(dB)	(dB)	(dB)	(± dB)
30-130	29.9	30.0	0.1	1.1
	114	114.0	0.0	1.1

10. Tone burst response

UUC Setting	STD	Anticipated	Measured	UNCERTAINTY	Acceptance
A / 30-130	Toneburst	Ref	UUC	ERR	Limit
UUC Time Response	(ms)	(dB)	(dB)	(dB)	(± dB)
Fast	200	126.0	126.0	0.0	1
	2	109.0	109.0	0.0	+1.0, -2.5
	0.25	100.0	99.9	-0.1	+1.5, -5.0
Slow	200	119.6	119.5	-0.1	1
	2	100.0	99.9	-0.1	+1.0, -5.0
SEL	200	120.0	120.0	0.0	1
	2	100.0	99.9	-0.1	+1.0, -2.5
	0.25	91.0	90.9	-0.1	+1.5, -5.0

11. Peak C Sound level

UUC Setting	Anticipated	Measured	UNCERTAINTY	Acceptance
FAST / C / 55-141	REF	UUC	ERR	Limit
STD Setting	(dB)	(dB)	(dB)	(± dB)
Complete cycle	136.4	136.1	-0.30	2.0
Positive half cycle	135.4	135.2	-0.20	2.0
Negative half cycle	135.4	135.2	-0.20	2.0

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.

PM-700-6134-01 Rev.0 Issue date 01/07/19

Certificate No : 22-ACT-127  
Request No : Req-2022-0260

12. Overload indication

UUC Setting	Measured	UNCERTAINTY	Acceptance
FAST / A / 30-130	UUC	(± dB)	Limit
STD Setting	(dB)	(± dB)	(± dB)
Positive one-half cycle	139.1		
Negative one-half cycle	139.0		
Deviated	0.1	0.2	1.5

13. High Level Stability

UUC Setting	Measured	UNCERTAINTY	Acceptance
FAST / A / 30-130	UUC	(± dB)	Limit
STD Setting	(dB)	(± dB)	(± dB)
Initial	129.0		
Final	129.0		
Deviated	0.0	0.1	0.3

End of Certificate

The results related only to the item calibrated. The certificate shall not be reproduced except in full, without written approval of the Innovative Instrument Co., Ltd.

PM-700-6134-01 Rev.0 Issue date 01/07/19

**SITHIPORN ASSOCIATES CO.,LTD.**  
**CALIBRATION LABORATORY**

451-451/1 Sirinthorn Rd.,Bangbunru, Bangplud Bangkok 10700 THAILAND.  
Tel.0-2435-8800 Fax.0-2433-1679 e-mail:cal-center@sithiporn.com http://www.sithiporn.com



Cert. No. : ACL22188  
Pages : 1 of 8

**Calibration Certificate**

**Equipment :** SOUND LEVEL METER  
**Manufacturer :** RION  
**Model :** NL-42/ Microphone UC-52 / Preamplifier NH-24  
**Serial No.:** 01173614 / 172176 / 74026  
**ID No.:** NKH\_FS0027

**Condition As Found :** GOOD

**Customer :** ALS LABORATORY GROUP (THAILAND) CO., LTD.  
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,  
KHWAENG PHATTHANAKAN, KHET SUAN LUANG,  
BANGKOK, 10250 THAILAND.

**Location :** -  
**Ambient Temperature :** ( 23.0 ± 3 ) °C  
**Pressure :** ( 101.3 ± 3 ) kPa  
**Relative Humidity :** ( 50.0 ± 20 ) %

**Received Date :** 22 AUGUST 2022  
**Calibration Date :** 26-31 AUGUST 2022  
**Date of Issue :** 02 SEPTEMBER 2022



**Calibrated by :** Nathakorn Pisutpaisan

**Approved by :**

*T. Petchum*  
( Thanakul Petchum )

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

**SITHIPORN ASSOCIATES CO.,LTD.**  
**CALIBRATION LABORATORY**

**Continuation of Calibration Certificate**

Cert. No. : ACL22188  
Job No. : VC65AC0077  
Pages : 2 of 8

**Calibration Procedure :** CP-AC-01

**Calibration Method :**

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.  
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

**Condition of this result of calibration :**

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0007-22	04-Feb-23
Waveform Generator	33511B	MY52302742	EF-0008-22	04-Feb-23
Digital Multimeter	33461A	MY53220104	EEL-BP_04/0265	09-Feb-23
Digital Multimeter	33461A	MY53220076	EEL-BP_03/0265	09-Feb-23
Digital Multimeter	34461A	MY60024273	EEL-BP_05/0265	09-Feb-23
Programmable Attenuator	MAT-1070	62100114	EF-0009-22	07-Feb-23
Condenser Microphone	4180	2977900	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-42KA1	34560495	AA-3005-22	22-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

- 3.1 National Institute of Metrology (Thailand).
- 3.2 Thailand Institute of Scientific and Technological Research (TISTR).

*T. Petchum*



## Continuation of Calibration Certificate

Cert. No. : ACL22188  
Job No. : VC65AC0077  
Pages : 3 of 8

## Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long - term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

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7. Retch

## Continuation of Calibration Certificate

Cert. No. : ACL22188  
Job No. : VC65AC0077  
Pages : 4 of 8

## Result of calibration :

## 1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.95)	93.9	0.0	±0.3

## 2. Self-generated noise

## 2.1 Normal test

Measured Value (dB)
14.8

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A - weight	12.0
C - weight	18.2
Flat	24.0

## 3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.1	0.1	0.1	± 1.5
1000	0.0	0.0	0.0	± 1.0
8000	0.1	0.1	0.1	± 5.0

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7. Retch

## Continuation of Calibration Certificate

Cert. No. : ACL22188  
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Pages : 5 of 8

## 4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	-0.1	-0.1	-0.1	±2.0
125	0.0	0.0	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.0	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.1	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

## 5. Frequency and time weightings at 1 kHz

## 5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	0.0	-
C - weight	94.0	0.0	± 0.2
Flat	94.0	0.0	± 0.2

## 5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	-
Slow	94.0	0.0	± 0.1
Leq	94.0	0.0	± 0.1

## 6. Long - term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	94.0	0.0	± 0.3

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7. Retch

## Continuation of Calibration Certificate

Cert. No. : ACL22188  
Job No. : VC65AC0077  
Pages : 6 of 8

## 7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.0	0.0	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.0	0.0	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	54.0	0.0	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	38.9	-0.1	± 1.1
34.0	33.9	-0.1	± 1.1
30.0	29.9	-0.1	± 1.1
29.0	28.9	-0.1	± 1.1
28.0	27.9	-0.1	± 1.1
27.0	26.9	-0.1	± 1.1
26.0	25.9	-0.1	± 1.1
25.0	24.9	-0.1	± 1.1

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7. Retch



## Continuation of Calibration Certificate

Cert. No. : ACL22188  
Job No. : VC65AC0077  
Pages : 7 of 8

## 8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

## 9. Tone burst response

Time Weighting	Tone burst duration, T <sub>b</sub> (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.1	0.1	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.0	0.0	±1.0

## 10. Peak C' sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, L <sub>peak</sub> (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
One	136.4	135.4	-1.0	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
Positive half cycle	135.4	135.2	-0.2	±2.0
Negative half cycle	135.4	135.2	-0.2	±2.0

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T. Petch

## Continuation of Calibration Certificate

Cert. No. : ACL22188  
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## 11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle	0.0	±1.5
89.6	89.6		

## 12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$  or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

QP-TS12-04-04-020664

T. Petch

SITHIPORN ASSOCIATES CO.,LTD.  
CALIBRATION LABORATORY451-451/1 Sirinthorn Rd., Bangbunru, Bangplud Bangkok 10700 THAILAND.  
Tel.0-2435-8800 Fax.0-2433-1679 e-mail:cal-center@sithiporn.com http://www.sithiporn.comCert. No. : ACL22102  
Pages : 1 of 8

## Calibration Certificate

Equipment : SOUND LEVEL METER  
Manufacturer : RION  
Model : NL-42/ Microphone UC-52 / Preamplifier NH-24  
Serial No.: 00371915 / 169104 / 72249  
ID No.: NKH\_FSD002

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.  
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,  
KHUWAENG PHATTHANAKAN, KHET SUAN LUANG,  
BANGKOK, 10250 THAILAND.

Location : -  
Ambient Temperature : ( 23.0 ± 3 ) °C  
Pressure : ( 101.3 ± 3 ) kPa  
Relative Humidity : ( 50.0 ± 20 ) %

Received Date : 22 APRIL 2022  
Calibration Date : 03-06 MAY 2022  
Date of Issue : 09 MAY 2022



Calibrated by : Nathakorn Pisutpaisan

Approved by :

T. Petch  
( Thanakul Petchunai )

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

QP-TS12-04-04-020664

## Continuation of Calibration Certificate

Cert. No. : ACL22102  
Job No. : VC65AC0051  
Pages : 2 of 8

Calibration Procedure : CP-AC-01

## Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.  
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

## Condition of this result of calibration :

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0007-22	04-Feb-23
Waveform Generator	33511B	MY52302742	EF-0008-22	04-Feb-23
Digital Multimeter	33461A	MY53220104	EEL-BP_04/0265	09-Feb-23
Digital Multimeter	33461A	MY53220076	EEL-BP_03/0265	09-Feb-23
Digital Multimeter	34461A	MY60024273	EEL-BP_05/0265	09-Feb-23
Programmable Attenuator	MAT-1070	62100114	EF-0009-22	07-Feb-23
Condenser Microphone	4180	2977900	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-42KA1	34560495	AA-3005-22	22-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

- 3.1 National Institute of Metrology (Thailand).
- 3.2 Thailand Institute of Scientific and Technological Research (TISTR).

QP-TS12-04-04-020664

T. Petch



## Continuation of Calibration Certificate

Cert. No. : ACL22102  
Job No. : VC65AC0051  
Pages : 3 of 8

## Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long - term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

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T. Petch.

## Continuation of Calibration Certificate

Cert. No. : ACL22102  
Job No. : VC65AC0051  
Pages : 4 of 8

## Result of calibration :

## 1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.95)	93.9	0.0	±0.3

## 2. Self-generated noise

## 2.1 Normal test

Measured Value (dB)
14.2

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A - weight	10.8
C - weight	17.0
Flat	22.8

## 3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			Acceptance Limits
	Flat	C-weight	A-weight	
125	0.3	0.3	0.3	± 1.5
1000	0.0	0.0	0.0	± 1.0
8000	0.0	0.1	0.0	± 5.0

QF-TS12-04-04-020664

T. Petch.

## Continuation of Calibration Certificate

Cert. No. : ACL22102  
Job No. : VC65AC0051  
Pages : 5 of 8

## 4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			Acceptance Limits
	Flat	C-weight	A-weight	
63	0.0	-0.1	0.0	±2.0
125	0.0	0.0	0.0	±1.5
250	0.0	0.0	-0.1	±1.5
500	0.0	0.0	-0.1	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.0	0.0	±5.0

## 5. Frequency and time weightings at 1 kHz

## 5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	0.0	-
C - weight	94.0	0.0	± 0.2
Flat	94.0	0.0	± 0.2

## 5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	-
Slow	94.0	0.0	± 0.1
Leq	94.0	0.0	± 0.1

## 6. Long - term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	94.0	0.0	± 0.3

QF-TS12-04-04-020664

T. Petch.

## Continuation of Calibration Certificate

Cert. No. : ACL22102  
Job No. : VC65AC0051  
Pages : 6 of 8

## 7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.1	0.1	± 1.1
134.0	134.1	0.1	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.1	0.1	± 1.1
114.0	114.1	0.1	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.1	0.1	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	54.0	0.0	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	39.0	0.0	± 1.1
34.0	34.0	0.0	± 1.1
30.0	30.0	0.0	± 1.1
29.0	29.0	0.0	± 1.1
28.0	28.1	0.1	± 1.1
27.0	27.0	0.0	± 1.1
26.0	26.0	0.0	± 1.1
25.0	25.1	0.1	± 1.1

QF-TS12-04-04-020664

T. Petch.



Continuation of Calibration Certificate

Cert. No. : ACL22102  
Job No. : VC65AC0051  
Pages : 7 of 8

8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	116.9	-0.1	1.0 ; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
	0.25	1	99.0	98.8	-0.2	1.5 ; -5.0
SEL	2	8	108.0	107.9	-0.1	1.0 ; -2.5
	200	800	128.0	128.0	0.0	±1.0

10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, Lepeak (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
One	136.4	135.7	-0.7	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
Positive half cycle	135.4	135.1	-0.3	±2.0
Negative half cycle	135.4	135.1	-0.3	±2.0

QF-TS12-04-04-020604

T. Petchuraj

Continuation of Calibration Certificate

Cert. No. : ACL22102  
Job No. : VC65AC0051  
Pages : 8 of 8

11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle		
89.6	89.5	-0.1	±1.5

12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$  or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

QF-TS12-04-04-020604

T. Petchuraj

SITHIPORN ASSOCIATES CO.,LTD.  
CALIBRATION LABORATORY

451-451/1 Sirinthorn Rd.,Bangbunru, Bangplud Bangkok 10700 THAILAND.  
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Cert. No. : ACL22104  
Pages : 1 of 8

Calibration Certificate

Equipment : SOUND LEVEL METER  
Manufacturer : RION  
Model : NL-42/ Microphone UC-52 / Preamplifier NH-24  
Serial No.: 00371917 / 169101 / 72247  
ID No.: NKH\_FS0004

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.  
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,  
KHUWAENG PHATTHANAKAN, KHET SUAN I.UANG,  
BANGKOK, 10250 THAILAND.

Location : -  
Ambient Temperature : ( 23.0 ± 3 ) °C  
Pressure : ( 101.3 ± 3 ) kPa  
Relative Humidity : ( 50.0 ± 20 ) %

Received Date : 22 APRIL 2022  
Calibration Date : 03-06 MAY 2022  
Date of Issue : 09 MAY 2022



Calibrated by : Nathakorn Pisutpaisan

Approved by :

T. Petchuraj  
( Thanakul Petchuraj )

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

QF-TS12-04-04-020604

Continuation of Calibration Certificate

Cert. No. : ACL22104  
Job No. : VC65AC0051  
Pages : 2 of 8

Calibration Procedure : CP-AC-01

Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM). The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments. For tests results of each items were made by observation of each Instruments display and also with SLM's display.

Condition of this result of calibration :

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY4801 7076	EF-0007-22	04-Feb-23
Waveform Generator	33511B	MY52302742	EF-0008-22	04-Feb-23
Digital Multimeter	33461A	MY53220104	EEL-BP_04/0265	09-Feb-23
Digital Multimeter	33461A	MY53220076	EEL-BP_03/0265	09-Feb-23
Digital Multimeter	34461A	MY60024273	EEL-BP_05/0265	09-Feb-23
Programmable Attenuator	MAT-1070	62100114	EF-0009-22	07-Feb-23
Condenser Microphone	4180	2977900	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-42KA1	34560495	AA-3005-22	22-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

QF-TS12-04-04-020604

T. Petchuraj



## Continuation of Calibration Certificate

Cert. No. : ACL22104  
Job No. : VC65AC0051  
Pages : 3 of 8

## Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long - term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

QP-TS12-04-04-020664

T. Retch.

## Continuation of Calibration Certificate

Cert. No. : ACL22104  
Job No. : VC65AC0051  
Pages : 4 of 8

## Result of calibration :

## 1. Absolute sensitivity

Reference Acoustic Signal ( dB )	Measured Value ( dB )	Deviation ( dB )	Acceptance Limit ( dB )
93.9 (93.95)	93.9	0.0	±0.3

## 2. Self-generated noise

## 2.1 Normal test

Measured Value ( dB )
14.8

2.2 The microphone of the sound level meter was replaced by electrical signal input device,

Frequency Weighting	Measured value ( dB )
A - weight	11.6
C - weight	17.9
Flat	23.6

## 3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			Acceptance Limits
	Flat	C-weight	A-weight	
125	0.3	0.3	0.3	± 1.5
1000	0.1	0.1	0.1	± 1.0
8000	0.4	0.5	0.5	± 5.0

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T. Retch.

## Continuation of Calibration Certificate

Cert. No. : ACL22104  
Job No. : VC65AC0051  
Pages : 5 of 8

## 4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	-0.1	0.0	±2.0
125	0.0	0.0	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.0	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

## 5. Frequency and time weightings at 1 kHz

## 5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	0.0	-
C - weight	94.0	0.0	± 0.2
Flat	94.0	0.0	± 0.2

## 5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	94.0	0.0	-
Slow	94.0	0.0	± 0.1
Leq	94.0	0.0	± 0.1

## 6. Long - term stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.3

QP-TS12-04-04-020664

T. Retch.

## Continuation of Calibration Certificate

Cert. No. : ACL22104  
Job No. : VC65AC0051  
Pages : 6 of 8

## 7. Level linearity on the reference level range

Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.0	0.0	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.0	0.0	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	53.9	-0.1	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	39.0	0.0	± 1.1
34.0	34.0	0.0	± 1.1
30.0	30.0	0.0	± 1.1
29.0	29.0	0.0	± 1.1
28.0	28.0	0.0	± 1.1
27.0	27.1	0.1	± 1.1
26.0	26.1	0.1	± 1.1
25.0	25.0	0.0	± 1.1

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T. Retch.



## Continuation of Calibration Certificate

Cert. No. : ACL22104  
Job No. : VC65AC0051  
Pages : 7 of 8

## 8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

## 9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
SEL	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.1	0.1	±1.0

## 10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, L <sub>peak</sub> (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
One	136.4	136.3	-0.1	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
Positive half cycle	135.4	135.2	-0.2	±2.0
Negative half cycle	135.4	135.2	-0.2	±2.0

QP-TS12-04-04-020664

T. Retch

## Continuation of Calibration Certificate

Cert. No. : ACL22104  
Job No. : VC65AC0051  
Pages : 8 of 8

## 11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle	-0.1	±1.5
89.7	89.6		

## 12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$  or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

QP-TS12-04-04-020664

T. Retch

SITHIPORN ASSOCIATES CO.,LTD.  
CALIBRATION LABORATORY451-451/1 Sirinthorn Rd.,Bangbunru, Bangplud Bangkok 10700 THAILAND.  
Tel:0-2435-8800 Fax:0-2433-1679 e-mail:cal-center@sithiporn.com http://www.sithiporn.comCert. No. : ACL22105  
Pages : 1 of 8

## Calibration Certificate

Equipment : SOUND LEVEL METER  
Manufacturer : RION  
Model : NL-42/ Microphone UC-52 / Preamplifier NH-24  
Serial No.: 00371923 / 169100 / 72245  
ID No.: NKH\_FS0005

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.  
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,  
KHWAENG PHATTHANAKAN, KHET SUAN LUANG,  
BANGKOK, 10250 THAILAND.

Location : -  
Ambient Temperature : ( 23.0 ± 3 ) °C  
Pressure : ( 101.3 ± 3 ) kPa  
Relative Humidity : ( 50.0 ± 20 ) %

Received Date : 22 APRIL 2022  
Calibration Date : 03-06 MAY 2022  
Date of Issue : 09 MAY 2022



Calibrated by : Nathakorn Pisutpaisan

Approved by :

T. Retch  
( Thanakul Petchurni )

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

QP-TS12-04-04-020664

## Continuation of Calibration Certificate

Cert. No. : ACL22105  
Job No. : VC65AC0051  
Pages : 2 of 8

Calibration Procedure : CP-AC-01

## Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM). The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.

For tests results of each items were made by observation of each Instruments display and also with SLM's display.

## Condition of this result of calibration :

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0007-22	04-Feb-23
Waveform Generator	33511B	MY52302742	EF-0008-22	04-Feb-23
Digital Multimeter	33461A	MY53220104	EEL_BP_04/0265	09-Feb-23
Digital Multimeter	33461A	MY53220076	EEL_BP_03/0265	09-Feb-23
Digital Multimeter	34461A	MY60024273	EEL_BP_05/0265	09-Feb-23
Programmable Attenuator	MAT-1070	62100114	EF-0009-22	07-Feb-23
Condenser Microphone	4180	2977900	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-42KAI	34560495	AA-3005-22	22-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

- 3.1 National Institute of Metrology (Thailand).
- 3.2 Thailand Institute of Scientific and Technological Research (TISTR).

QP-TS12-04-04-020664

T. Retch



## Continuation of Calibration Certificate

Cert. No. : ACL22105  
Job No. : VC65AC0051  
Pages : 3 of 8

## Summary of Measurement Result:

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long-term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

QF-TS12-04-04-020664

T. Retch.

## Continuation of Calibration Certificate

Cert. No. : ACL22105  
Job No. : VC65AC0051  
Pages : 4 of 8

## Result of calibration:

## 1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.95)	93.9	0.0	±0.3

## 2. Self-generated noise

## 2.1 Normal test

Measured Value (dB)
14.6

## 2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A-weight	10.8
C-weight	17.0
Flat	23.0

## 3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.3	0.4	0.4	±1.5
1000	-0.1	-0.1	-0.1	±1.0
8000	-1.3	-1.3	-1.2	±5.0

QF-TS12-04-04-020664

T. Retch.

## Continuation of Calibration Certificate

Cert. No. : ACL22105  
Job No. : VC65AC0051  
Pages : 5 of 8

## 4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	0.0	0.0	±2.0
125	0.0	0.1	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.0	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

## 5. Frequency and time weightings at 1 kHz

## 5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	0.0	-
C-weight	94.0	0.0	±0.2
Flat	94.0	0.0	±0.2

## 5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	-
Slow	94.0	0.0	±0.1
Leq	94.0	0.0	±0.1

## 6. Long-term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	94.0	0.0	±0.3

QF-TS12-04-04-020664

T. Retch.

## Continuation of Calibration Certificate

Cert. No. : ACL22105  
Job No. : VC65AC0051  
Pages : 6 of 8

## 7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	±1.1
136.0	136.0	0.0	±1.1
135.0	135.0	0.0	±1.1
134.0	134.0	0.0	±1.1
133.0	133.0	0.0	±1.1
132.0	132.0	0.0	±1.1
131.0	131.0	0.0	±1.1
129.0	129.0	0.0	±1.1
124.0	124.0	0.0	±1.1
119.0	119.0	0.0	±1.1
114.0	114.0	0.0	±1.1
109.0	109.0	0.0	±1.1
104.0	104.0	0.0	±1.1
99.0	99.0	0.0	±1.1
94.0	94.0	0.0	±1.1
89.0	89.0	0.0	±1.1
84.0	84.0	0.0	±1.1
79.0	79.0	0.0	±1.1
74.0	74.0	0.0	±1.1
69.0	69.0	0.0	±1.1
64.0	64.0	0.0	±1.1
59.0	59.0	0.0	±1.1
54.0	53.9	-0.1	±1.1
49.0	49.0	0.0	±1.1
44.0	44.0	0.0	±1.1
39.0	38.9	-0.1	±1.1
34.0	34.0	0.0	±1.1
30.0	29.9	-0.1	±1.1
29.0	29.0	0.0	±1.1
28.0	28.0	0.0	±1.1
27.0	27.0	0.0	±1.1
26.0	26.0	0.0	±1.1
25.0	25.0	0.0	±1.1

QF-TS12-04-04-020664

T. Retch.



## Continuation of Calibration Certificate

Cert. No. : ACL22105  
Job No. : VC65AC0051  
Pages : 7 of 8

## 8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

## 9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
SEL	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.0	0.0	±1.0

## 10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, L <sub>peak</sub> (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
One	136.4	136.2	-0.2	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
Positive half cycle	135.4	135.2	-0.2	±2.0
Negative half cycle	135.4	135.2	-0.2	±2.0

QF-TS12-04-04-020664

T. Retan

## Continuation of Calibration Certificate

Cert. No. : ACL22105  
Job No. : VC65AC0051  
Pages : 8 of 8

## 11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle	-0.1	±1.5
89.8	89.7		

## 12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$  or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

QF-TS12-04-04-020664

T. Retan

SITHIPORN ASSOCIATES CO.,LTD.  
CALIBRATION LABORATORY451-451/1 Sirinthorn Rd., Bangbunru, Bangplud Bangkok 10700 THAILAND.  
Tel.0-2435-8800 Fax.0-2433-1679 e-mail:cal-center@sithiporn.com http://www.sithiporn.comCert. No. : ACL22155  
Pages : 1 of 8

## Calibration Certificate

Equipment : SOUND LEVEL METER  
Manufacturer : RION  
Model : NL-42/ Microphone UC-52 / Preamplifier NH-24  
Serial No.: 01000335 / 189260 / 01998  
ID No.: NKH\_FS0073

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.  
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,  
KHWAENG PHATTHANAKAN, KHET SUAN LUANG,  
BANGKOK, 10250 THAILAND.

Location :  
Ambient Temperature : ( 23.0 ± 3 ) °C  
Pressure : ( 101.3 ± 3 ) kPa  
Relative Humidity : ( 50.0 ± 20 ) %

Received Date : 17 JUNE 2022  
Calibration Date : 20-22 JUNE 2022  
Date of Issue : 27 JUNE 2022



Calibrated by : Nathakorn Pisuapaisan

Approved by :

T. Retan  
( Thanakul Petchurni )

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

QF-TS12-04-04-020664

## Continuation of Calibration Certificate

Cert. No. : ACL22155  
Job No. : VC65AC0068  
Pages : 2 of 8

Calibration Procedure : CP-AC-01

## Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM). The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.

For tests results of each items were made by observation of each Instruments display and also with SLM's display.

## Condition of this result of calibration :

## 1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0007-22	04-Feb-23
Waveform Generator	33511B	MY52302742	EF-0008-22	04-Feb-23
Digital Multimeter	33461A	MY53220104	EEL_BP_04/0265	09-Feb-23
Digital Multimeter	33461A	MY53220076	EEL_BP_03/0265	09-Feb-23
Digital Multimeter	34461A	MY60024273	EEL_BP_05/0265	09-Feb-23
Programmable Attenuator	MAT-1070	62100114	EF-0009-22	07-Feb-23
Condenser Microphone	4180	2977900	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-42KAI	34560495	AA-3005-22	22-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

- 3.1 National Institute of Metrology (Thailand).
- 3.2 Thailand Institute of Scientific and Technological Research (TISTR).

QF-TS12-04-04-020664

T. Retan



## Continuation of Calibration Certificate

Cert. No. : ACL22155  
Job No. : VC65AC0068  
Pages : 3 of 8

## Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long - term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

QP-TS12-04-04-020664

T. Petch.

## Continuation of Calibration Certificate

Cert. No. : ACL22155  
Job No. : VC65AC0068  
Pages : 4 of 8

## Result of calibration :

## 1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.95)	93.9	0.0	±0.3

## 2. Self-generated noise

## 2.1 Normal test

Measured Value (dB)
16.2

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A - weight	10.8
C - weight	17.2
Flat	23.0

## 3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			Acceptance Limits
	Flat	C-weight	A-weight	
125	0.4	0.4	0.4	± 1.5
1000	0.0	0.0	0.0	± 1.0
8000	0.0	0.1	0.1	± 5.0

QP-TS12-04-04-020664

T. Petch.

## Continuation of Calibration Certificate

Cert. No. : ACL22155  
Job No. : VC65AC0068  
Pages : 5 of 8

## 4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			Acceptance Limits
	Flat	C-weight	A-weight	
63	-0.1	0.0	0.0	±2.0
125	0.0	0.1	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.1	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.1	0.0	±2.0
4000	0.0	0.1	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

## 5. Frequency and time weightings at 1 kHz

## 5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	0.0	-
C - weight	94.0	0.0	± 0.2
Flat	94.0	0.0	± 0.2

## 5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	-
Slow	94.0	0.0	± 0.1
Leq	94.0	0.0	± 0.1

## 6. Long - term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A - weight	94.0	94.1	0.1	± 0.3

QP-TS12-04-04-020664

T. Petch.

## Continuation of Calibration Certificate

Cert. No. : ACL22155  
Job No. : VC65AC0068  
Pages : 6 of 8

## 7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.1	0.1	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.1	0.1	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	54.0	0.0	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	39.0	0.0	± 1.1
34.0	34.0	0.0	± 1.1
30.0	29.9	-0.1	± 1.1
29.0	28.9	-0.1	± 1.1
28.0	27.9	-0.1	± 1.1
27.0	26.9	-0.1	± 1.1
26.0	25.9	-0.1	± 1.1
25.0	24.9	-0.1	± 1.1

QP-TS12-04-04-020664

T. Petch.



## Continuation of Calibration Certificate

Cert. No. : ACL22155  
Job No. : VC65AC0068  
Pages : 7 of 8

## 8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

## 9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	108.0	0.0	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.1	0.1	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
SEL	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.1	0.1	±1.0

## 10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, Lepeak (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
One	136.4	136.1	-0.3	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	132.9	-0.1	-
Positive half cycle	135.4	135.1	-0.3	±2.0
Negative half cycle	135.4	135.1	-0.3	±2.0

QF-TS12-04-04-020664

T. Petchur

## Continuation of Calibration Certificate

Cert. No. : ACL22155  
Job No. : VC65AC0068  
Pages : 8 of 8

## 11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle	-0.1	±1.5
89.6	89.5		

## 12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$  or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

QF-TS12-04-04-020664

T. Petchur

SITHIPORN ASSOCIATES CO.,LTD.  
CALIBRATION LABORATORY451-451/1 Sirinthorn Rd, Bangbunru, Bangplud Bangkok 10700 THAILAND.  
Tel:0-2435-8800 Fax:0-2433-1679 e-mail:cal-center@sithiporn.com http://www.sithiporn.comCert. No. : ACL22152  
Pages : 1 of 8

## Calibration Certificate

Equipment : SOUND LEVEL METER  
Manufacturer : RION  
Model : NL-42 Microphone UC-52 / Preamplifier NH-24  
Serial No.: 00709777 187363 / 01328  
ID No.: NKH\_FS0071

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.  
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,  
KHWAENG PHATTHANAKAN, KHET SUAN LUANG,  
BANGKOK, 10250 THAILAND.

Location :  
Ambient Temperature : ( 23.0 ± 3 ) °C  
Pressure : ( 101.3 ± 3 ) kPa  
Relative Humidity : ( 50.0 ± 20 ) %

Received Date : 17 JUNE 2022  
Calibration Date : 20-22 JUNE 2022  
Date of Issue : 27 JUNE 2022



Calibrated by : Nithakorn Piatpaisan

Approved by :

T. Petchur  
( Thanakul Petchurai )

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

QF-TS12-04-04-020664

## Continuation of Calibration Certificate

Cert. No. : ACL22152  
Job No. : VC65AC0068  
Pages : 2 of 8

Calibration Procedure : CP-AC-01

## Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM). The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.

For tests results of each items were made by observation of each Instruments display and also with SLM's display.

## Condition of this result of calibration :

## 1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0007-22	04-Feb-23
Waveform Generator	33511B	MY52302742	EF-0008-22	04-Feb-23
Digital Multimeter	33461A	MY53220104	EEL_BP_04/0265	09-Feb-23
Digital Multimeter	33461A	MY53220076	EEL_BP_03/0265	09-Feb-23
Digital Multimeter	34461A	MY60024273	EEL_BP_05/0265	09-Feb-23
Programmable Attenuator	MAT-1070	62100114	EF-0009-22	07-Feb-23
Condenser Microphone	4180	2977900	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-42KAI	34560495	AA-3005-22	22-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

QF-TS12-04-04-020664

T. Petchur



## Continuation of Calibration Certificate

Cert. No. : ACL22152  
Job No. : VC65AC0068  
Pages : 3 of 8

## Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long - term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

QF-TS12-04-04-020664

r BKL

## Continuation of Calibration Certificate

Cert. No. : ACL22152  
Job No. : VC65AC0068  
Pages : 4 of 8

## Result of calibration :

## 1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.95)	93.9	0.0	±0.3

## 2. Self-generated noise

## 2.1 Normal test

Measured Value (dB)
14.8

## 2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A-weight	12.0
C-weight	18.0
Flat	23.5

## 3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.3	0.3	0.3	±1.5
1000	0.1	0.1	0.1	±1.0
8000	0.9	1.0	1.0	±5.0

QF-TS12-04-04-020664

r BKL

## Continuation of Calibration Certificate

Cert. No. : ACL22152  
Job No. : VC65AC0068  
Pages : 5 of 8

## 4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	-0.1	-0.1	±2.0
125	0.0	0.1	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.1	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.1	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

## 5. Frequency and time weightings at 1 kHz

## 5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	0.0	-
C-weight	94.0	0.0	±0.2
Flat	94.0	0.0	±0.2

## 5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	-
Slow	94.0	0.0	±0.1
Leq	94.0	0.0	±0.1

## 6. Long - term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	94.1	0.1	±0.3

QF-TS12-04-04-020664

r BKL

## Continuation of Calibration Certificate

Cert. No. : ACL22152  
Job No. : VC65AC0068  
Pages : 6 of 8

## 7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	±1.1
136.0	136.0	0.0	±1.1
135.0	135.0	0.0	±1.1
134.0	134.0	0.0	±1.1
133.0	133.0	0.0	±1.1
132.0	132.0	0.0	±1.1
131.0	131.0	0.0	±1.1
129.0	129.0	0.0	±1.1
124.0	124.0	0.0	±1.1
119.0	119.0	0.0	±1.1
114.0	114.0	0.0	±1.1
109.0	109.0	0.0	±1.1
104.0	104.1	0.1	±1.1
99.0	99.0	0.0	±1.1
94.0	94.0	0.0	±1.1
89.0	89.0	0.0	±1.1
84.0	84.0	0.0	±1.1
79.0	79.0	0.0	±1.1
74.0	74.0	0.0	±1.1
69.0	69.0	0.0	±1.1
64.0	64.0	0.0	±1.1
59.0	59.0	0.0	±1.1
54.0	54.0	0.0	±1.1
49.0	49.0	0.0	±1.1
44.0	44.0	0.0	±1.1
39.0	39.0	0.0	±1.1
34.0	33.9	-0.1	±1.1
30.0	29.9	-0.1	±1.1
29.0	28.9	-0.1	±1.1
28.0	27.9	-0.1	±1.1
27.0	26.9	-0.1	±1.1
26.0	25.9	-0.1	±1.1
25.0	24.9	-0.1	±1.1

QF-TS12-04-04-020664

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## Continuation of Calibration Certificate

Cert. No. : ACL22152  
Job No. : VC65AC0068  
Pages : 7 of 8

## 8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

## 9. Tone burst response

Time Weighting	Tone burst duration, Tb (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	108.0	0.0	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.1	0.1	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.1	0.1	±1.0

## 10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, L <sub>peak</sub> (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
One	136.4	136.2	-0.2	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.1	0.1	-
Positive half cycle	135.4	135.2	-0.2	±2.0
Negative half cycle	135.4	135.2	-0.2	±2.0

QF-TS12-04-04-020664

## Continuation of Calibration Certificate

Cert. No. : ACL22152  
Job No. : VC65AC0068  
Pages : 8 of 8

## 11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle	0.0	±1.5
89.5	89.5		

## 12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$  or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

QF-TS12-04-04-020664

## CERTIFICATE OF CALIBRATION

ISSUED BY Cirrus Research plc  
DATE OF ISSUE 14/03/22  
CERTIFICATE NUMBER 171616REVIEW BY *Mark P.*  
APPROVED BY *Mark P.*  
NEXT CAL DATE 14/3/23

Page 1 of 1

Test engineer:  
Nigel Smith  
Electronically signed:

## doseBadge Reader

Instrument  
Manufacturer: Cirrus Research plc  
Model Number: RC110A  
Serial Number: 86234  
Notes:

## Calibration Procedure

The tests were carried out in accordance with the requirements of IEC 60942:2003 where applicable.

Date of Calibration: 14 March 2022

## Functionality Results

Function	Result
Keypad	Pass
Battery Power	Pass
Display	Pass
Communication	Pass
2 way IR link	Pass
Clock	Pass

## Calibration Results

	Level (dB)	Frequency (Hz)	Distortion (% THD + Noise)
Initial	113.86	1000.3	0.30
Adjusted	114.00	1000.3	0.30
Uncertainty	± 0.11	± 0.14	± 0.10
Tolerances	± 0.60	± 2.00	± 4.00

## Environmental Conditions

Pressure: 101.30 kPa  
Temperature: 21.0 °C  
Humidity: 40.2 %

Notes

This certificate provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory. The results within this certificate relate only to the items calibrated. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor  $k=2$ , providing a coverage probability of approximately 95%.

## CERTIFICATE OF CALIBRATION

ISSUED BY Cirrus Research plc  
DATE OF ISSUE 07 October 2022  
CERTIFICATE NUMBER 181220REVIEW BY *Mark P.*  
APPROVED BY *Mark P.*  
NEXT CAL DATE 7/10/23

Page 1 of 1

Test engineer:  
Nigel Smith  
Electronically signed:

## doseBadge Reader

Instrument  
Manufacturer: Cirrus Research plc  
Model Number: RC110A  
Serial Number: 95969  
Notes:

## Calibration Procedure

The tests were carried out in accordance with the requirements of IEC 60942:2003 where applicable.

Date of Calibration: 07 October 2022

## Functionality Results

Function	Result
Keypad	Pass
Battery Power	Pass
Display	Pass
Communication	Pass
2 way IR link	Pass
Clock	Pass

## Calibration Results

	Level (dB)	Frequency (Hz)	Distortion (% THD + Noise)
Initial	113.61	998.8	0.53
Adjusted	114.02	998.8	0.48
Uncertainty	± 0.11	± 0.14	± 0.10
Tolerances	± 0.60	± 2.00	± 4.00

## Environmental Conditions

Pressure: 100.25 kPa  
Temperature: 24.1 °C  
Humidity: 47.7 %

Notes

This certificate provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory. The results within this certificate relate only to the items calibrated. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor  $k=2$ , providing a coverage probability of approximately 95%.





# ROTA METER CALIBRATION RESULT OCTOBER 2022

Rotameter ID.	Calibration Date	Regression Result	Coefficient (R <sup>2</sup> )
BKK_FS0577	01 Oct 22	Y = 1.0202x + 0.1976	1.0000
BKK_FS0579	01 Oct 22	Y = 1.0078x + 0.4789	0.9998
BKK_FS0583	01 Oct 22	Y = 1.016x + 0.3922	1.0000
BKK_FS0584	01 Oct 22	Y = 1.0036x + 2.2262	0.9997
BKK_FS0585	01 Oct 22	Y = 1.0189x - 5.6476	0.9997
BKK_FS0586	01 Oct 22	Y = 1.0095x - 1.1524	0.9995
BKK_FS0587	01 Oct 22	Y = 1.013x - 3.6619	0.9996
BKK_FS0588	01 Oct 22	Y = 1.0154x + 4.8357	0.9999
BKK_FS0589	01 Oct 22	Y = 0.9918x + 4.8069	0.9999
BKK_FS0590	01 Oct 22	Y = 1.0038x - 0.4857	0.9996
BKK_FS0591	01 Oct 22	Y = 0.9705x - 52.174	0.9986
BKK_FS0592	01 Oct 22	Y = 0.9646x - 37.642	0.9985
BKK_FS0593	01 Oct 22	Y = 0.9767x - 58.445	0.9988
BKK_FS0594	01 Oct 22	Y = 0.9902x - 62.87	0.9999
BKK_FS0595	01 Oct 22	Y = 1.0249x - 98.162	0.9999
BKK_FS0596	01 Oct 22	Y = 0.9843x - 26.806	0.9991
BKK_FS0597	01 Oct 22	Y = 0.9802x - 61.653	0.9978
BKK_FS1004	01 Oct 22	Y = 0.9762x + 11.724	0.9998
BKK_FS1005	01 Oct 22	Y = 1.0081x + 1.5143	1.0000
BKK_FS1006	01 Oct 22	Y = 1.098x - 2.9327	0.9999
BKK_FS1007	01 Oct 22	Y = 0.9917x + 1.6592	1.0000
BKK_FS1008	01 Oct 22	Y = 1.0132x + 0.7207	1.0000
BKK_FS1009	01 Oct 22	Y = 1.0132x + 1.1633	0.9960
BKK_FS1010	01 Oct 22	Y = 1.0033x + 0.5758	0.9999
BKK_FS1011	01 Oct 22	Y = 1.0234x + 0.1759	0.9996
BKK_FS1012	01 Oct 22	Y = 1.0106x - 2.0048	0.9997
BKK_FS1013	01 Oct 22	Y = 0.9677x - 35.851	0.9997
BKK_FS1014	01 Oct 22	Y = 1.0021x + 0.3148	0.9998
BKK_FS1015	01 Oct 22	Y = 0.9994x + 1.786	1.0000
BKK_FS1016	01 Oct 22	Y = 1.0105x - 80.256	0.9998
BKK_FS1017	01 Oct 22	Y = 0.9995x + 0.649	1.0000
BKK_FS1018	01 Oct 22	Y = 1.0011x + 1.1786	1.0000
BKK_FS1019	01 Oct 22	Y = 1.0023x - 68.424	0.9996
BKK_FS1020	01 Oct 22	Y = 1.0547x - 0.666	0.9998
BKK_FS1021	01 Oct 22	Y = 1.018x - 3.3286	0.9998
BKK_FS1022	01 Oct 22	Y = 0.9932x - 57.035	0.9986
BKK_FS1023	01 Oct 22	Y = 1.0094x + 0.0717	0.9999
BKK_FS1024	01 Oct 22	Y = 1.0042x + 0.4086	0.9997
BKK_FS1025	01 Oct 22	Y = 1.0132x - 88.507	0.9996

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ALS Laboratory Group



# ROTA METER CALIBRATION RESULT OCTOBER 2022

Rotameter ID.	Calibration Date	Regression Result	Coefficient (R <sup>2</sup> )
BKK_FS1026	01 Oct 22	Y = 1.0018x + 1.0776	0.9997
BKK_FS1027	01 Oct 22	Y = 1.0053x + 0.231	0.9995
BKK_FS1028	01 Oct 22	Y = 0.9792x - 60.312	0.9982
BKK_FS1029	01 Oct 22	Y = 0.9935x + 0.8234	1.0000
BKK_FS1030	01 Oct 22	Y = 1.0039x + 0.515	0.9999
BKK_FS1031	01 Oct 22	Y = 1.009x - 79.295	0.9998
BKK_FS1039	01 Oct 22	Y = 0.9967x + 4.5048	0.9999
BKK_FS1040	01 Oct 22	Y = 0.9936x + 32.694	0.9998
BKK_FS1041	01 Oct 22	Y = 1.067x - 1.999	1.0000
BKK_FS1042	01 Oct 22	Y = 1.0019x + 2.1571	1.0000
BKK_FS1043	01 Oct 22	Y = 1.1569x - 96.479	0.8412
BKK_FS1044	01 Oct 22	Y = 1.0318x - 0.9374	0.9999
BKK_FS1161	01 Oct 22	Y = 1.0126x + 0.7738	0.9999
BKK_FS1162	01 Oct 22	Y = 0.9994x + 2.6357	0.9995
BKK_FS1163	01 Oct 22	Y = 0.977x - 55.03	0.9987
BKK_FS1164	01 Oct 22	Y = 0.9914x + 0.8427	0.9997
BKK_FS1165	01 Oct 22	Y = 0.9893x + 6.5919	0.9998
BKK_FS1166	01 Oct 22	Y = 1.0031x - 77.881	0.9996
BKK_FS1200	01 Oct 22	Y = 1.0313x - 0.4602	0.9995
BKK_FS1201	01 Oct 22	Y = 1.0045x + 0.15	0.9996
BKK_FS1202	01 Oct 22	Y = 0.9702x - 44.156	0.9994
RYG_FS0197	01 Oct 22	Y = 1.0039x - 0.179	0.9999
RYG_FS0198	01 Oct 22	Y = 0.9964x + 21.757	1.0000
RYG_FS0199	01 Oct 22	Y = 1.0577x - 1.7486	1.0000

Review By :

(Mr. Wichan Choonharat)

Enviro Field Services Manager

Approved By :

(Mr. Sarayuth Jitranont)

Assistant General Manager

Page 2 of 2

ALS Laboratory Group



63/14-15,67/35-36, Soi Petchkasem 7/71, Petchkasem Rd,  
Wathapra, Banghohyai, Bangkok 10600 Thailand.  
Tel: (66) 02-8680812#13 Fax: (66) 02-8680860 www.jiranatee.com



## CERTIFICATE OF CALIBRATION

Certificate No. : CL-104-65  
Page 1 of 2

Equipment Name: Heat Stress Monitor  
Manufacturer: DeltaOHM  
Model: HD32.2  
Serial No: 22018407  
ID No: 888, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0

Customer  
Name: ALS laboratory group (thailand) Co., Ltd.  
Address: 104 Phatthanakan 40, Phatthanakan  
Rd., Khwaeng Suan Luang, Khet Suan Luang, Bangkok  
10250 Thailand.

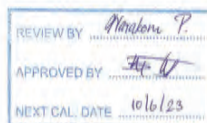
Received date: 06 Jun 2022  
Calibration date: 10 Jun 2022  
Issue date: 15 Jun 2022

Reference Used During Calibration  
1. Standard Temperature Probe Model: STS-100 A500.  
Serial No.: 687682-09, Due date: 23 Mar 2023  
2. Digital Temperature Indicator Model: DTI-1000A MK  
II, Serial No.: 671407-00591 Due date: 04 June 2022

Calibration Condition  
Temperature: (23±3) °C  
Relative Humidity: (55±15)%

Calibration Procedure  
The temperature calibration was done by In-House  
calibration method as WI-CL-001 according to  
comparison method with standard digital temperature  
indicator and standard temperature probe. The  
temperature scale use was based on ITS-90.

Traceability  
The measurement results are traceable to the  
international system of units (SI) through National  
Institute of Metrology Thailand (NIMT) Certificate  
number: TT-0034-22, Certificate number: ER-0032-  
21.



Calibrated by  
Mr. Sorawit Thachalad  
Miss Jitraporn Lertsomphol



Approved Signatory: Mr. Parinya Booncharoen  
Calibration Department Manager

THIS CERTIFICATE REPORT MAY NOT BE REPRODUCED EXCEPT IN FULL UNLESS PERMISSION FOR REPRODUCTION  
HAS BEEN OBTAINED IN WRITING FROM THE LABORATORY.



63/14-15,67/35-36, Soi Petchkasem 7/71, Petchkasem Rd,  
Wathapra, Banghohyai, Bangkok 10600 Thailand.  
Tel: (66) 02-8680812#13 Fax: (66) 02-8680860 www.jiranatee.com



Certificate No. : CL-104-65  
Page 2 of 2

Result of Calibration: ☒ Without Adjustment ☐ With Adjustment

Calibration Range: 20 - 40 °C

Function:

Table 1: This equipment was connected with wet bulb probe Model: HP3201.2 S/N: 22025589.  
Dimension: Diameter 14 mm, Length 170 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
30	20.048	20.0	0.0	0.099
30	25.054	25.0	-0.1	0.099
30	30.047	30.0	0.0	0.099
30	35.041	35.0	0.0	0.099
30	40.039	40.0	0.0	0.099

Table 2: This equipment was connected with temperature probe Model: TP3207.2 S/N: 22025045.  
Dimension: Diameter 14 mm, Length 150 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
70	20.048	20.2	0.2	0.099
70	25.055	25.0	-0.1	0.099
70	30.047	29.9	-0.1	0.099
70	35.041	34.8	-0.2	0.099
70	40.039	39.8	-0.2	0.099

Table 3: This equipment was connected with Globe thermometer probe Model: TP3276.2 S/N: 22023946.  
Dimension: Diameter 8 mm, Length 170 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
110	20.048	20.1	0.1	0.099
110	25.054	25.1	0.0	0.099
110	30.047	30.1	0.1	0.099
110	35.041	35.1	0.1	0.099
110	40.039	40.1	0.1	0.099

UUC\* : Unit Under Calibration  
The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing  
a level of confidence of approximately 95%.

★ End of Certificate ★





## CERTIFICATE OF CALIBRATION

Certificate No. : CL-112-65  
Page 1 of 2

Equipment Name: Heat Stress Monitor  
Manufacturer: DeltaOHM  
Model: HD32.2  
Serial No: 22016415  
ID No: (N/A) 1510101

Customer  
Name: ALS laboratory group (thailand) Co.,Ltd.  
Address: 104 Phatthanakan 40, Phatthanakan  
Rd., Khwaeng Suan Luang, Khet Suan Luang, Bangkok  
10250 Thailand.

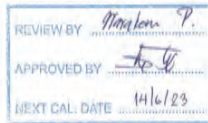
Received date: 06 Jun 2022  
Calibration date: 14 Jun 2022  
Issue date: 15 Jun 2022

Reference Used During Calibration  
1. Standard Temperature Probe Model: STS-100 A500,  
Serial No.: 667682-09, Due date: 23 Mar 2023  
2. Digital Temperature Indicator Model: DTI-1000-A MK  
II, Serial No.: 671407-00591 Due date: 04 June 2022

Calibration Condition  
Temperature: (23±3) °C  
Relative Humidity: (55±15)%

Calibration Procedure  
The temperature calibration was done by In-House  
calibration method as WI-CL-001 according to  
comparison method with standard digital temperature  
indicator and standard temperature probe. The  
temperature scale use was based on ITS-90.

Traceability  
The measurement results are traceable to the  
international system of units (SI) through National  
Institute of Metrology Thailand (NIMT) Certificate  
number: TT-0034-22, Certificate number: ER-0032-  
21



Calibrated by  
☐ Mr. Sorawit Thachalad  
☒ Miss Jitraporn Lertsomphol

Approved Signatory:   
Mr. Parinya Booncharoen  
Calibration Department Manager

THIS CERTIFICATE REPORT MAY NOT BE REPRODUCED EXCEPT IN FULL UNLESS PERMISSION FOR REPRODUCTION  
HAS BEEN OBTAINED IN WRITING FROM THE LABORATORY.

Certificate No. : CL-112-65  
Page 2 of 2

Result of Calibration: ☒ Without Adjustment ☐ With Adjustment

Calibration Range: 20 ~ 40 °C

Function:

Table 1: This equipment was connected with wet bulb probe Model: HP3201.2 S/N: 22015688.  
Dimension: Diameter 14 mm, Length 170 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
30	20.061	20.0	-0.1	0.099
30	25.051	25.0	-0.1	0.099
30	30.047	30.0	0.0	0.099
30	35.043	35.0	0.0	0.099
30	40.036	40.0	0.0	0.099

Table 2: This equipment was connected with temperature probe Model: TP3207.2 S/N: 22025032.  
Dimension: Diameter 14 mm, Length 150 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
70	20.061	20.1	0.0	0.099
70	25.051	24.9	-0.2	0.099
70	30.047	29.9	-0.1	0.099
70	35.043	34.8	-0.2	0.099
70	40.036	39.7	-0.3	0.099

Table 3: This equipment was connected with Globe thermometer probe Model: TP3276.2 S/N: 22023940.  
Dimension: Diameter 8 mm, Length 170 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
110	20.061	20.1	0.0	0.099
110	25.051	25.1	0.0	0.099
110	30.047	30.1	0.1	0.099
110	35.043	35.1	0.1	0.099
110	40.036	40.1	0.1	0.099

UUC\* : Unit Under Calibration

The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing  
a level of confidence of approximately 95%.

★ End of Certificate ★

## CERTIFICATE OF CALIBRATION

Certificate No. : CL-108-65  
Page 1 of 2

Equipment Name: Heat Stress Monitor  
Manufacturer: DeltaOHM  
Model: HD32.2  
Serial No: 22016411  
ID No: (N/A) 1510101

Customer  
Name: ALS laboratory group (thailand) Co.,Ltd.  
Address: 104 Phatthanakan 40, Phatthanakan  
Rd., Khwaeng Suan Luang, Khet Suan Luang, Bangkok  
10250 Thailand.

Received date: 06 Jun 2022  
Calibration date: 13 Jun 2022  
Issue date: 15 Jun 2022

Reference Used During Calibration  
1. Standard Temperature Probe Model: STS-100 A500,  
Serial No.: 667682-09, Due date: 23 Mar 2023  
2. Digital Temperature Indicator Model: DTI-1000-A MK  
II, Serial No.: 671407-00591 Due date: 04 June 2022

Calibration Condition  
Temperature: (23±3) °C  
Relative Humidity: (55±15)%

Calibration Procedure  
The temperature calibration was done by In-House  
calibration method as WI-CL-001 according to  
comparison method with standard digital temperature  
indicator and standard temperature probe. The  
temperature scale use was based on ITS-90.

Traceability  
The measurement results are traceable to the  
international system of units (SI) through National  
Institute of Metrology Thailand (NIMT) Certificate  
number: TT-0034-22, Certificate number: ER-0032-  
21



Calibrated by  
☐ Mr. Sorawit Thachalad  
☒ Miss Jitraporn Lertsomphol

Approved Signatory:   
Mr. Parinya Booncharoen  
Calibration Department Manager

THIS CERTIFICATE REPORT MAY NOT BE REPRODUCED EXCEPT IN FULL UNLESS PERMISSION FOR REPRODUCTION  
HAS BEEN OBTAINED IN WRITING FROM THE LABORATORY.

Certificate No. : CL-108-65  
Page 2 of 2

Result of Calibration: ☒ Without Adjustment ☐ With Adjustment

Calibration Range: 20 ~ 40 °C

Function:

Table 1: This equipment was connected with wet bulb probe Model: HP3201.2 S/N: 22025688.  
Dimension: Diameter 14 mm, Length 170 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
30	20.053	20.1	0.0	0.099
30	25.053	25.1	0.0	0.099
30	30.047	30.1	0.1	0.099
30	35.039	35.1	0.1	0.099
30	40.032	40.1	0.1	0.099

Table 2: This equipment was connected with temperature probe Model: TP3207.2 S/N: 22025035.  
Dimension: Diameter 14 mm, Length 150 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
70	20.053	20.2	0.1	0.099
70	25.054	25.1	0.0	0.099
70	30.047	30.0	0.0	0.099
70	35.039	34.9	-0.1	0.099
70	40.032	39.8	-0.2	0.099

Table 3: This equipment was connected with Globe thermometer probe Model: TP3276.2 S/N: 22023966.  
Dimension: Diameter 8 mm, Length 170 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
110	20.054	20.1	0.0	0.099
110	25.054	25.1	0.0	0.099
110	30.047	30.1	0.1	0.099
110	35.040	35.1	0.1	0.099
110	40.032	40.1	0.1	0.099

UUC\* : Unit Under Calibration

The reported expanded uncertainty is based on standard uncertainty multiplied by a coverage factor k=2 providing  
a level of confidence of approximately 95%.

★ End of Certificate ★





## Certificate of Calibration

Certificate No.: 22PH604  
Page: 1 of 2

Equipment: Lux Meter  
Manufacturer: Delta OHM  
Model: HD2102.2  
Serial No.: 17005861  
ID No.: NKH\_FS0020  
Condition As-Received: Used Item  
Received Date: 15 November 2022  
Calibration Date: 17 November 2022

This certificate may not be reproduced other than in full,  
except with the prior written approval of the head of  
Corporate Services 3: Equipment Calibration and Testing Services.

Reference: 2211-0502WSC  
Ambient Temperature: ( 23 ± 2 ) °C  
Relative Humidity: ( 50 ± 15 ) %

Submitted by: ALS Laboratory Group (Thailand) Co., Ltd.

104 Phatthanakan 40, Phatthanakan Rd.,  
Khwang Phatthanakan, Khet Suan Luang,  
Bangkok 10250 Thailand

Procedure used: Calibration were conducted using In-house calibration procedure CP-PH01 by measuring against  
luminous-intensity standard lamp (source-based method) According to the inverse square law measurement  
method.

### Condition of this result of calibration

#### 1. Reference standards instruments:

Instrument	Model	Serial No.	Certificate No.	Due Date
1) Photometry & Encoder	LMguide 9.6 m	120RC003	DL-0084-22	20 Jul 2025
2) High-accuracy Irradiance Standard	OL-FEL-U	F-1472	TP-1038-21	15 Dec 2022

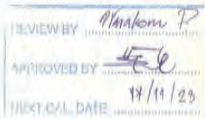
2. This result of calibration was made on requested at the point specified by customer.

3. Test Equipment: Programmable Voltage/Current Source ( Model: OL83A, S/N: 06220284 ).

4. Test Equipment: Illuminance Meter ( Model: 51002, S/N: 080129 ).

5. The certificate is valid only to the item calibrated on date and place of calibration.

6. This Certification is traceable to the International System of Unit maintained at:-  
National Institute of Metrology Thailand (NIMT)



Calibrated by: Nivat Nitaa  
Issue Date: 21 November 2022

Approved Signatory:

Phalinee Prabpaipal  
Chatchawan Khunpiuek  
Nuntawat Khanchai

B 0302315



Cert. No.: 22PH604  
Page: 2 of 2

### Result of calibration:-

Function: Illuminance Measurement Range: Autorange

Standard Value	UUC* Reading	Error	Uncertainty
( lx )	( lx )	( lx )	( ± lx )
0	0.00	0.00	0.060
15	14.99	-0.01	0.24
100	99.98	-0.02	1.6
500	495.5	-4.5	7.9
1000	994.2	-5.8	16
2000	2015	15	32
3000	3016	16	48
4000	4018	18	64
5000	5048	48	80

The reported uncertainty of measurement was based on a standard uncertainty multiplied by  
a coverage factor  $k = 2$ , providing a level of confidence of approximately 95 %

Calibration with probe sensor serial no. 22038132

UUC\* = Unit Under Calibration.

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## Certificate of Calibration

Certificate No.: 22PH3  
Page: 1 of 2

Equipment: Lux Meter  
Manufacturer: PEAKMETER  
Model: PM8612L  
Serial No.: H12A-K20123  
ID No.: -  
Condition As-Received: New Item  
Received Date: 05 January 2022  
Calibration Date: 07 January 2022

This certificate may not be reproduced other than in full,  
except with the prior written approval of the head of  
Corporate Services 3: Equipment Calibration and Testing Services.

Reference: 2201-0084WSC  
Ambient Temperature: ( 23 ± 2 ) °C  
Relative Humidity: ( 50 ± 15 ) %

Submitted by: ALS Laboratory Group (Thailand) Co., Ltd.

104 Phatthanakan 40, Phatthanakan Rd.,  
Khwang Phatthanakan, Khet Suan Luang,  
Bangkok 10250 Thailand

Procedure used: Calibration were conducted using In-house calibration procedure CP-PH01 by measuring against  
luminous-intensity standard lamp (source-based method) According to the inverse square law measurement  
method.

### Condition of this result of calibration

#### 1. Reference standards instruments:

Instrument	Model	Serial No.	Certificate No.	Due Date
1) Photometry & Encoder	LMguide 9.6 m	120RC003	81-140006-1	30 Apr 2022
2) Luminous intensity standard lamp	OL FEL-U	F-1542	TP-1010-21	20 Feb 2022

2. This result of calibration was made on requested at the point specified by customer.

3. Test Equipment: Programmable Voltage/Current Source ( Model: OL83A, S/N: 16221394 ).

4. Test Equipment: Illuminance Meter ( Model: 51002, S/N: 080129 ).

5. The certificate is valid only to the item calibrated on date and place of calibration.

6. This Certification is traceable to the International System of Unit maintained at:-  
National Institute of Metrology Thailand (NIMT)



Calibrated by: Nivat Nitaa  
Issue Date: 10 January 2022

Approved Signatory:

Phalinee Prabpaipal  
Chatchawan Khunpiuek

B 0278199



Cert. No.: 22PH3  
Page: 2 of 2

### Result of calibration:-

Function: Illuminance Measurement Range: Autorange

Standard Value	UUC* Reading	Error	Uncertainty
( lx )	( lx )	( lx )	( ± lx )
0	0.00	0.00	0.060
15	15.01	0.00	0.20
100	99.8	-0.2	1.3
500	498	-2	6.5
1000	998	-2	13
2000	1998	-4	26
3000	2960	-40	39
4000	3940	-60	52
5000	4920	-80	65

The reported uncertainty of measurement was based on a standard uncertainty multiplied by  
a coverage factor  $k = 2$ , providing a level of confidence of approximately 95 %

Light source factor setting:  $L_0 = 1.000$

UUC\* = Unit Under Calibration.

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TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)  
CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES  
534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250  
TEL. 0-2717-3000-27 FAX. 0-2719-9484



Cert.No.: 22CH1222  
Page.: 1 of 2

## Certificate of Calibration

Equipment : pH Meter  
Manufacturer : Mettler Toledo  
Model : Seven Compact S220  
Serial No. : B520948426  
ID No. : BKK\_EN0072  
Condition As-Received: Used Item  
Received Date : 09 September 2022  
Calibration Date : 12 September 2022  
Reference : 2209-0312DSC-1  
Submitted by : ALS Laboratory Group (Thailand) Co., Ltd.  
104 Phatthanakan 40, Phatthanakan Rd.,  
Khwaeng Phatthanakan, Khet Suan Luang,  
Bangkok 10250 Thailand  
Ambient Temperature : (25 ± 2.5) °C  
Relative Humidity : (50 ± 15) %  
Calibration Procedure : In - house method :  
- CP-CH5 by direct measurement with standard  
voltage calibrator and direct measurement  
with certified reference material (CRM)

Calibrated by : Warakorn Lernagatrakul

Approved by :

(✓) Malee Butkruea  
( ) Sathip Meangmai  
( ) Warakorn Lernagatrakul

Issue Date : 15 September 2022

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written  
Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.



Cert.No.: 22CH1222  
Page.: 2 of 2

### Condition of this calibration result

1. Reference Standard Instrument : -  
Instrument Serial No. ID No. Cert. No. Due Date  
1) Document Process Calibrator 54030049 130RC116 22E2769 24 Aug 2023  
This certification is traceable to the International System of Unit maintained at:-  
- Traceable to National Institute of Metrology (Thailand), NIMT

2. Certified Reference Materials : The measurement results are traceable to SI through CPA chem Ltd.,  
ANSI-ASQ National Accreditation Board, Accredited No. AR-1835

Buffer Solution	Manufacturer	Lot No.	Exp. date
pH 4.008	CPA chem	823320	20 June 2024
pH 6.985	CPA chem	794122	14 Feb 2023
pH 10.008	CPA chem	823323	20 June 2023

3. This certificate is valid only to the item calibrated on date and place of calibration.

### Calibration Results

Function : mV Measurement

Performing standard curve by Fluke at pH (4,7,10)

Unit Under Calibration	Nominal Value	Standard Voltage Input	Actual Reading		Uncertainty of Measurement (±mV)	Coverage factor k
			mV	pH		
pH Meter	4.000	177.48	177.4	4.000	0.058	2.00
S/N.: B520948426	7.000	0.00	0.0	7.000	0.058	2.00
	10.000	-177.48	-177.5	10.000	0.058	2.00

### Function : pH Measurement

Performing three buffers standard curve by using buffer nominal pH (4,7,10)

Unit Under Calibration	Standard pH Buffer Solution	Actual pH Reading	Actual mV Reading (mV)	Uncertainty of pH measurement (±)	Coverage factor k
pH Electrode S/N.:PCE-86-EX1001	4.008	3.999	153.9	0.0055	2.09
	6.985	7.017	-13.7	0.0084	2.00
	10.008	9.996	-179.0	0.0078	2.06

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor k, providing a level of confidence of approximately 95 %.

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บริษัท ดับเบิล เอส ไดแอกโนสติกส์ จำกัด  
DOUBLE S DIAGNOSTICS CO., LTD.

4 ซอยสุขุมวิท 14 แขวงคลองเตย เขตคลองเตย กรุงเทพฯ 10260 โทรศัพท์: (02) 747-7009 โทรสาร: (02) 747-7008  
4 Soi Udomwong 14, Bangna, Bangkok 10260 Tel. (02) 747-7009 Fax: (02) 747-7008

Maintenance Plan YEAR : 2022

เดือน	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
รวม						6/1						

### Periodical maintenance check list for Konelab

	6M	12M	Notel
1.Diluent-wash tubing change	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2.ISE tubing change	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
3.Syringe check/change		<input checked="" type="checkbox"/>	
4.Dispensing check/ change		<input checked="" type="checkbox"/>	
5.Waste tubing change when necessary		<input checked="" type="checkbox"/>	
6.Lamp check/change	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
7.Mixer paddle/paddle change(not Konelab20)		<input checked="" type="checkbox"/>	
8.ISE needles check/change		<input checked="" type="checkbox"/>	
9.Pump tubing check/ change	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
10.Broken/worn out part check /change		<input checked="" type="checkbox"/>	
11.Peristaltic pump check /cleaning/ lubrication	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
12.Heating check		<input checked="" type="checkbox"/>	
13.Cooling check		<input checked="" type="checkbox"/>	
14.Dispenser mechanic check/adjustment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
15.Cuvette transfer mechanic check/adjustment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
16.Dispenser movement check/adjustment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
17.Sample/reagent register check/adjustment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
18.Dispensing tubing tightness check	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
19.Photometer and optics cleaning/check/adjustment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
20.Workstation PC cleaning if necessary	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
21.Mechanic cleaning/lubrication	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
22.Instrument cleaning if necessary	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
23.Complete analyzer testing with waterblank/QC or sample	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
24.Test parameters/Adjustment/config. Save to USB key	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
25.UPS Test	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Place: ALS LAB Instrument: Konelab 850

Date/Time: 9/16/22 Serial no: 0000000000

Service done by: 9/16/22 Install date: 9/16/22

Signature of customer: 9/16/22 Date/Time: 9/16/22



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)  
CORPORATE SERVICES 3: EQUIPMENT CALIBRATION AND TESTING SERVICES  
534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250  
TEL. 0-2717-3000-27 FAX. 0-2719-9484



Cert.No.: 22CG3154  
Page.: 1 of 2

## Certificate of Calibration

Equipment : Burette  
Capacity : 50 mL  
Serial No. : -  
ID No. : BKK\_EN0171  
Manufacturer : Wileg  
Made in : Germany  
Submitted by : ALS Laboratory Group (Thailand) Co., Ltd.  
104 Phatthanakan 40, Phatthanakan Rd.  
Khwaeng Phatthanakan, Khet Suan Luang  
Bangkok 10250 Thailand

Ambient Temperature : (20 ± 2.5) °C  
Relative Humidity : (50 ± 10) %  
Barometric Pressure : 759 mmHg  
Calibration Procedure : ASTM E 542 - 01

Calibrated by : Panward Pramklam

Approved by :

( ) Pornthippa Tameyakul  
( ) Malee Butkruea  
(✓) Ponpan Paipim  
( ) Srisuda Khamtha

Issue Date : 31 August 2022

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written  
Approval of the head of Corporate Services 3 : Equipment Calibration and Testing Services.

A 0044607



Equipment : Burette  
Received Date : 26 August 2022  
Condition As-Received : Used Item  
Calibration Date : 30 August 2022  
Reference : 2208-0918DSC-2

Cert.No.: 22CG3154  
Page.: 2 of 2

#### Condition of this result of calibration

##### 1. Reference Standard Instruments :

Instruments	Model	Serial No.	ID. No.	Certificate No.	Traceability	Due date
1) Balance	AE200S	N03679	140RC001	21MM429	NIMT	22 Sep 2022
2) Thermo-Hygrograph	THDX-CE	00016540	140EC001	22H1243	NIST, NIMT	09 June 2023
3) Thermometer	-	1594592	140EC010	22I181	NIMT	10 Feb 2023

This certification is traceable to SI Unit

- The certificate is valid only to the item calibrated on date and place of calibration.
- True value is converted to true volume at the standard temperature of 20 °C

#### Calibration result :

Nominal capacity ( mL )	Reading ( mL )	Uncertainty ( ± mL )	k Factor
50	49.9959	0.010	2.00

Remark mL = cm<sup>3</sup>

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor *k*, providing a level of confidence of approximately 95 %.

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## Metrological Center

SCI ECO Services Company Limited

33/2 Moo 3, T.Banpa, A.Kaengkhohi, Saraburi 18110, Thailand.

Saraburi Tel : +66 3627 3096 Fax : +66 3627 3100

Bangkok Tel : +668 9205 6851 , +669 8247 2360

Website : www.scieco.co.th E-Mail : calibrate@scg.co.th



Certificate No. T221644

Page 1 of 4

## Certificate of Calibration

Equipment : Chamber ( Cold Room )

Manufacturer : KOLDTECH

Model : KM 320

Serial No. : TBN-1012061/05

Customer Code : BKK\_EN0167

ID No. : T2463A3

Customer : ALS Laboratory Group (Thailand) Co.,Ltd.

104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan,

Khet Suan Luang, Bangkok 10250

Customer Location : Environmental Laboratory

Date of Receipt : 27 June 2022

Calibrated By : Sujjar Naknakred ( Site Calibration Manager )

Approved By : / Boonchai Suriyawong (Site Calibration Manager)

Date of Issue : 04 JUL 2022

The uncertainties are for a confidence probability of approximately 95%.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation Scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standard laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Metrological Center.

FM-L14 11/701-02-64



## Metrological Center

SCI ECO Services Company Limited

33/2 Moo 3, T.Banpa, A.Kaengkhohi, Saraburi 18110, Thailand.



Certificate No. T221644

Page 2 of 4

## Calibration Report

Equipment : Chamber ( Cold Room )  
Date of Calibration : 30 June - 1 July 2022  
Environment : Temperature : 18.9-23.7 °C  
Line Voltage : 222.9-226.5 V  
Relative Humidity : 55 - 65 %RH

#### Condition of this results of calibration :

- This equipment was calibrated by insert nine standard thermocouples type T into its chamber , the other one standard thermocouples type T use for ambient temperature measurement . The calibration was done in according to WI-T20 ( based on ASTM E145-94 ( Reapproved 2001) and AS2853-1986 ).

All data show below were final values and the initial data from customer request . The temperature scale used was based on ITS - 90 .

##### 2. Reference Standard Instrument :

Instrument	Model	Instrument No.	Certificate No.	Due Date
TC	TYPE T	TN161-TN170	T210009	30 July 2022
TC	TYPE T	TN171-TN180	T210009	30 July 2022
DATA LOGGER	34970A	T149	T210009	30 July 2022

##### 3. This certificate is traceable to :

National Institute of Metrology ( Thailand ) through Metrological Center ( NSC-TISI-TIS 17025 CALIBRATION 0244.)

##### 4. Condition of calibrated item : good

###### Equipment Description :

Time Constant 3 Hour - Minute At 3 °C  
Fresh Air Damper ☐ Open ☐ Min ☐ Medium ☐ Max  
☐ Close  
☒ Not Available

##### 5. Adjustment :

( ) without adjustment ( X ) after adjustment

Approved By.

Signature

FM-L15 11/715-05-63



## Metrological Center

SCI ECO Services Company Limited

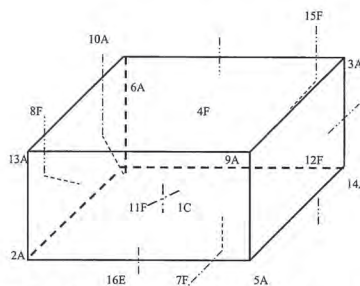
33/2 Moo 3, T.Banpa, A.Kaengkhohi, Saraburi 18110, Thailand.



Certificate No. T221644

Page 3 of 4

## Calibration Report



C = Centre, F = Centre of Face, A = Corner, E = Centre of Edge

1C =	TN161
2A =	TN162
3A =	TN163
4F =	TN164
5A =	TN165
6A =	TN166
7F =	TN167
8F =	TN168
9A =	TN169
10A =	TN170

11F =	TN171
12F =	TN172
13A =	TN173
14A =	TN174
15F =	TN175
16E =	TN176

Approved By.

Signature

FM-L15 11/715-05-63



Certificate No. T221644

Page 4 of 4

## Calibration Report

### Measurement Results:

Calibration Point	Average Standard Reading at each position (°C)									
	TN161	TN162	TN163	TN164	TN165	TN166	TN167	TN168	TN169	TN170
3	2.71	2.82	2.75	2.89	2.95	3.68	3.02	2.96	3.03	2.85
	TN171	TN172	TN173	TN174	TN175	TN176				
	2.97	3.02	2.89	3.04	2.97	3.33				

Chamber ( Cold Room )			Temperature Distribution				
Setting (°C)	Reading (°C)		Average (°C)	Stability (±°C)	Uniformity (°C)	Uncertainty (±°C)	Coverage Factor k
	Min , Max	Average					
3.0	2.9 , 4.0	3.2	2.99	1.05	1.30	1.66	2.00

\* The quoted uncertainty exclude " uniformity "

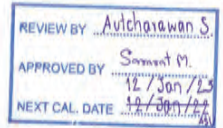
The calibration result apply only the above calibrated item.

The result of test was found accurate as shown on date and place of test only.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor  $k$  which for a t-distribution, providing a level of confidence of approximately 95 % .

Approved By: \_\_\_\_\_

FM-L15 117/15-05-63



## Certificate of Calibration

ICS-2100: Anion (ID#659)

This certificate is to verify that instrument below are calibrated

by Archemica Lab Co., Ltd.

ICS-2100 S/N: 15010977

AS-HV S/N: 5450A36659

For

ALS Laboratory Group (Thailand) Co., Ltd.



Operator Signature: \_\_\_\_\_

Date: Jan 12, 2022

(Mr.Thitipong Piromkripuk)

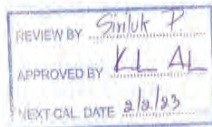
Applications Chemist

Certificate No. T211711

Page 1 of 5

## Certificate of Calibration

Equipment : Digestion Unit  
Manufacturer : Environmental Express  
Model : AIM 600 Block  
Serial No. : 5146000105  
Customer Code : BKK\_EN0141  
ID No. : T5666A3  
Customer : ALS Laboratory Group (Thailand) Co.,Ltd.  
104 Phatthanakan 40, Phutthanakan Rd., Khwaeng Phatthanakan,  
Khet Suan Luang, Bangkok 10250  
Customer Location : Environmental Laboratory  
Date of Receipt : 30 July 2021  
Calibrated By : Sujjar Naknakred ( Site Calibration Manager )  
Approved By : \_\_\_\_\_ / Boonchai Suriyawong ( Site Calibration Manager )  
Date of Issue : 09 AUG 2021



The uncertainties are for a confidence probability of approximately 95%.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation Scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standard laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Metrological Center.

FM-L13 108/20-05-57

Certificate No. T211711

Page 2 of 5

## Calibration Report

Equipment : Digestion Unit  
Date of Calibration : 4-5 August 2021  
Environment : Temperature : 21.1 - 21.8 °C  
Line Voltage : 221.4 - 225.1 V  
Relative Humidity : 55 - 65 %RH

### Condition of this results of calibration :

- This equipment was calibrated by insert four standard thermocouples type S into its chamber , the other one thermocouple type T use for ambient temperature measurement . The calibration was done in according to WI-T10.
- Reference Standard Instrument :
 

Instrument	Model	Instrument No.	Certificate No.	Due Date
TC	Type S	M20A1-(CH17-CH20)	T210011	14 January 2022
DATA LOGGER	34970A	T149	T210011	14 January 2022
- This certificate is traceable to : National Institute of Metrology ( Thailand ) through Metrological Center ( NSC-TISI-TIS 17025 CALIBRATION 0244 )
- Condition of calibrated item : good  
Equipment Description :  
Time Constant : - Hour 51 Minute At 380 °C  
Fresh Air Damper : ☐ Open ☐ Min ☐ Medium ☐ Max  
☐ Close  
☒ Not Available
- Adjustment :  
( X ) without adjustment ( ) after adjustment

Approved By: \_\_\_\_\_

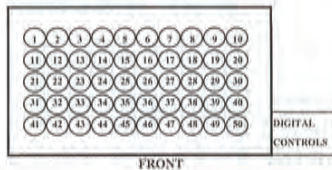
FM-L13 108/20-05-57



Certificate No. T211711

Page 3 of 5

## Calibration Report



FRONT

Cal. Point	Setting	Reading	STD.	Position of Standards at Block									
$^{\circ}\text{C}$	$^{\circ}\text{C}$	$^{\circ}\text{C}$	Reading	Hole1	Hole2	Hole3	Hole4	Hole5	Hole6	Hole7	Hole8	Hole9	Hole10
				NDA1-CH1	NDA1-CH2	NDA1-CH3	NDA1-CH4	NDA1-CH5	NDA1-CH6	NDA1-CH7	NDA1-CH8	NDA1-CH9	NDA1-CH10
			Max $^{\circ}\text{C}$	378.8	379.5	382.0	383.3	381.8	382.3	383.3	382.8	379.5	381.1
			Min $^{\circ}\text{C}$	378.2	378.8	381.4	382.7	381.5	382.0	382.9	382.5	379.2	380.6
			Average $^{\circ}\text{C}$	378.5	379.2	381.7	383.0	381.7	382.1	383.1	382.6	379.3	380.8
			Stability $^{\circ}\text{C}$	0.3	0.3	0.3	0.3	0.1	0.2	0.2	0.1	0.1	0.2

Cal. Point	Setting	Reading	STD.	Position of Standards at Block									
$^{\circ}\text{C}$	$^{\circ}\text{C}$	$^{\circ}\text{C}$	Reading	Hole11	Hole12	Hole13	Hole14	Hole15	Hole16	Hole17	Hole18	Hole19	Hole20
				NDA1-CH11	NDA1-CH12	NDA1-CH13	NDA1-CH14	NDA1-CH15	NDA1-CH16	NDA1-CH17	NDA1-CH18	NDA1-CH19	NDA1-CH20
			Max $^{\circ}\text{C}$	382.9	380.0	382.9	378.7	379.8	380.3	383.0	383.4	383.0	381.6
			Min $^{\circ}\text{C}$	382.5	379.5	382.7	378.4	379.6	380.1	382.8	383.1	382.7	381.3
			Average $^{\circ}\text{C}$	382.7	379.7	382.8	378.8	379.7	380.2	382.9	383.3	382.9	381.4
			Stability $^{\circ}\text{C}$	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

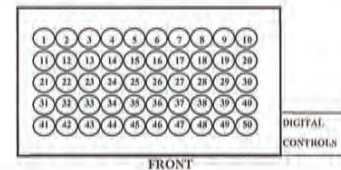
Approved By: 

FM-L13 J08/30-05-57

Certificate No. T211711

Page 4 of 5

## Calibration Report



FRONT

Cal. Point	Setting	Reading	STD.	Position of Standards at Block									
$^{\circ}\text{C}$	$^{\circ}\text{C}$	$^{\circ}\text{C}$	Reading	Hole21	Hole22	Hole23	Hole24	Hole25	Hole26	Hole27	Hole28	Hole29	Hole30
				NDA1-CH21	NDA1-CH22	NDA1-CH23	NDA1-CH24	NDA1-CH25	NDA1-CH26	NDA1-CH27	NDA1-CH28	NDA1-CH29	NDA1-CH30
			Max $^{\circ}\text{C}$	379.0	380.1	383.4	383.4	380.4	380.7	381.9	382.0	380.8	379.7
			Min $^{\circ}\text{C}$	378.7	379.7	382.6	383.1	380.1	380.5	381.7	381.7	380.5	379.2
			Average $^{\circ}\text{C}$	378.8	379.9	383.0	383.2	380.3	380.6	381.8	381.9	380.6	379.5
			Stability $^{\circ}\text{C}$	0.1	0.2	0.8	0.2	0.1	0.1	0.1	0.1	0.2	0.3

Cal. Point	Setting	Reading	STD.	Position of Standards at Block									
$^{\circ}\text{C}$	$^{\circ}\text{C}$	$^{\circ}\text{C}$	Reading	Hole31	Hole32	Hole33	Hole34	Hole35	Hole36	Hole37	Hole38	Hole39	Hole40
				NDA1-CH31	NDA1-CH32	NDA1-CH33	NDA1-CH34	NDA1-CH35	NDA1-CH36	NDA1-CH37	NDA1-CH38	NDA1-CH39	NDA1-CH40
			Max $^{\circ}\text{C}$	379.3	379.4	380.3	381.7	382.6	383.2	382.6	382.7	383.0	381.6
			Min $^{\circ}\text{C}$	378.7	378.5	380.1	381.5	382.3	382.9	382.3	382.8	382.8	381.3
			Average $^{\circ}\text{C}$	379.8	379.0	380.2	381.6	382.4	383.1	382.5	382.6	382.9	381.4
			Stability $^{\circ}\text{C}$	0.3	0.5	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1

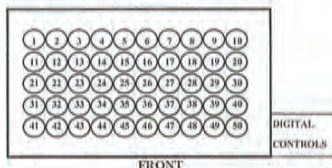
Approved By: 

FM-L13 J08/30-05-57

Certificate No. T211711

Page 5 of 5

## Calibration Report



FRONT

Cal. Point	Setting	Reading	STD.	Position of Standards at Block									
$^{\circ}\text{C}$	$^{\circ}\text{C}$	$^{\circ}\text{C}$	Reading	Hole41	Hole42	Hole43	Hole44	Hole45	Hole46	Hole47	Hole48	Hole49	Hole50
				NDA1-CH41	NDA1-CH42	NDA1-CH43	NDA1-CH44	NDA1-CH45	NDA1-CH46	NDA1-CH47	NDA1-CH48	NDA1-CH49	NDA1-CH50
			Max $^{\circ}\text{C}$	378.0	378.6	381.0	382.3	381.8	383.2	382.4	382.2	383.0	382.4
			Min $^{\circ}\text{C}$	378.6	378.4	380.7	382.1	381.5	383.0	382.2	382.0	382.7	382.0
			Average $^{\circ}\text{C}$	378.8	378.5	380.8	382.2	381.6	383.1	382.3	382.1	382.8	382.2
			Stability $^{\circ}\text{C}$	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2

The expanded uncertainty of temperature measurement is  $\pm 1.73^{\circ}\text{C}$

The calibration result apply only the above calibrated item.

The result of test was found accurate as shown on date and place of test only.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95 %.

Approved By: 

FM-L13 J08/30-05-57



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)  
CORPORATE SERVICES & EQUIPMENT CALIBRATION AND TESTING SERVICES  
5344 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250  
TEL. 0-2717-3000-27 FAX. 0-2719-9484



Cert. No.: 21TM1629  
Page: 1 of 3

## Certificate of Calibration

Equipment :	Hot Air Oven
Manufacturer :	Memmert
Model :	UFE 500
Serial No. :	G511.0314
ID No. :	BKK_EN0009
Submitted by :	ALS Laboratory Group (Thailand) Co., Ltd. 104 Phatthanakan 40, Phatthanakan Rd., Kwaeng Suan Luang, Khet Suan Luang, Bangkok 10250
Location :	Oven Room
Received Order :	2 September 2021
Calibration Date :	2 September 2021
Ambient Temperature :	( $26 \pm 10$ ) $^{\circ}\text{C}$
Relative Humidity :	( $50 \pm 30$ ) %
Calibrated by :	Man Pattanapongpaiboon

Approved by:   
Approved Signatory

( ) Pornthippa Tameyakul  
( ) Malee Butkruea  
( ) Suwit Imjai

Issue Date : 14 September 2021

The Uncertainties are for a confidence probability of approximately 95%

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Approval of the head of Corporate Services : Equipment Calibration and Testing Services.

A 0031775





Equipment : Hot Air Oven  
Condition As-Received : Used Item  
Reference : 2109-0004OC-1  
Procedure Used :-

Cert. No.: 21TM1629  
Page: 2 of 3

Calibration were conducted using calibration procedure CP-OT02 according to direct measurement method with Data Acquisition which connected with Resistance Temperature Detector ( RTD ).

The temperature scale used was based on ITS-90.

#### Condition of this result of calibration

##### 1. Reference standard instrument:-

Instrument	Model	Serial No.	Cert. No.	Due Date
1 ) Data Acquisition	34972A	MY57013711	21LM7	16 Jun 2022

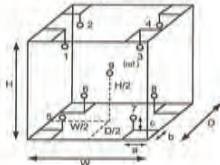
2. This certificate is valid only to the item calibrated on date and place of calibration.

3. This certification is traceable to the International System of Unit.

Result of Calibration :- ( \* ) Without Adjustment

Function of UUC\* : Temperature Source

Fresh air setting : Close



##### Probe Installation Details :

a = 5.0 cm  
b = 5.0 cm  
c = 5.0 cm

##### Dimension of Chamber :

D = 0.40 m  
W = 0.56 m  
H = 0.48 m  
Capacity = 0.11 m<sup>3</sup>

Environment during calibration		
	Beginning	Finished
Temp. ( °C )	25	25
REL.Humid. ( % )	56	56
AC Supply ( Volt )	221	222

Position :	Ref. Std. ID No.:
1	18-18RTD-01
2	18-18RTD-02
3	18-18RTD-03
4	18-18RTD-04
5	18-18RTD-05
6	18-18RTD-06
7	18-18RTD-07
8	18-18RTD-08
9 (ref.)	18-18RTD-09

1071653



Equipment : Hot Air Oven  
Condition As-Received : Used Item  
Reference : 2109-0004OC-1  
Result of Calibration :- ( \* ) Without Adjustment  
Function of UUC\* : Temperature Source  
Fresh air setting : Close

Cert. No.: 21TM1629  
Page: 3 of 3

Calibration Point ( °C )	UUC* Setting ( °C )	UUC* Reading ( °C )	Temperature stability ( ± °C )	Temperature uniformity ( °C )	Overall Variation ( °C )	Uncertainty ( ± °C )	Coverage Factor k
60.0	60.0	60.0	0.047	0.32	0.52	0.42	2
95.0	95.0	95.0	0.034	0.51	0.83	0.42	2
103.0	103.0	103.0	0.053	0.57	1.0	0.42	2
104.0	104.0	104.0	0.096	0.82	1.1	0.43	2

Calibration Point ( °C )		Measured Temperature ( °C )								
		Position								
		1	2	3	4	5	6	7	8	9 (ref.)
60.0	59.912	59.968	59.859	59.772	60.200	60.076	60.203	60.120	60.067	
95.0	94.767	94.809	94.720	94.582	95.347	95.025	95.098	95.018	94.879	
103.0	102.814	102.866	102.712	102.555	103.482	103.204	103.288	103.190	102.976	
104.0	103.742	103.794	103.643	103.484	104.486	104.180	104.265	104.154	103.924	

Average\* : The average of 30 values in each position.

Temperature stability : One-half of the greatest maximum difference of measured temperature at any one sensor  
Temperature uniformity : The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time or at as close an observation time as possible to determine the temperature pattern or homogeneity within the chamber under steady-state conditions.

Overall Variation : The Difference of the maximum and minimum measured temperatures throughout observation, UUC\* : Unit Under Calibration

Note : The reported uncertainty of measurement was included stability and excluded uniformity

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor k, providing a level of confidence of approximately 95 %.

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1071652



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TEL. 0-2717-3000-27 FAX. 0-2719-9484



Cert. No.: 21TM2189  
Page: 1 of 3

## Certificate of Calibration

Equipment : Hot Air Oven

Manufacturer : Memmert

Model : UFE 500

Serial No. : G511.1574

ID No. : BKK\_EN0007

Submitted by : ALS Laboratory Group (Thailand) Co.,Ltd.  
104 Phatthanakan 40, Phatthanakan Rd.,  
Khwaeng Phatthanakan, Khet Suan Luang,  
Bangkok 10250 Thailand

Location : Oven Room

Received Order : 1 December 2021

Calibration Date : 1 December 2021

Ambient Temperature : ( 26 ± 10 ) °C

Relative Humidity : ( 50 ± 30 ) %

Calibrated by : Khil Rutanaprapachai

Approved by :   
Approved Signatory

( ) Pornthipha Tameyakul  
( ) Malee Butkruea  
( ) Suwit Imjai

Issue Date : 7 December 2021

The Uncertainties are for a confidence probability of approximately 95%.

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Approval of the head of Corporate Services & Equipment Calibration and Testing Services.

A 0032815



Equipment : Hot Air Oven  
Condition As-Received : Used Item  
Reference : 2112-0002OC-1

Cert. No.: 21TM2189  
Page: 2 of 3

#### Procedure Used :-

Calibration were conducted using calibration procedure CP-OT02 according to direct measurement method with Data Acquisition which connected with Resistance Temperature Detector ( RTD ) and Thermocouple Type T.

The temperature scale used was based on ITS-90.

#### Condition of this result of calibration

##### 1. Reference standard instrument:-

Instrument	Model	Serial No.	Cert. No.	Due Date
1 ) Data Acquisition	34970A	MY44080450	21LM4/1	06 Mar 2022

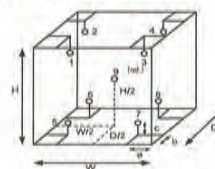
2. This certificate is valid only to the item calibrated on date and place of calibration.

3. This certification is traceable to the International System of Unit.

Result of Calibration :- ( \* ) Without Adjustment

Function of UUC\* : Temperature Source

Fresh air setting : Close



##### Probe Installation Details :

a = 5.0 cm  
b = 5.0 cm  
c = 5.0 cm

##### Dimension of Chamber :

D = 0.40 m  
W = 0.55 m  
H = 0.48 m  
Capacity = 0.11 m<sup>3</sup>

Environment during calibration		
	Beginning	Finished
Temp. ( °C )	25	25
REL.Humid. ( % )	51	53
AC Supply ( Volt )	221	222

Ref. Std. ID No. : @ Calibration Point		
Position :	( 104 ) °C	( 121,176,180 ) °C
1	19-14RTD-01	19-14TC-01
2	19-14RTD-02	19-14TC-02
3	19-14RTD-03	19-14TC-03
4	19-14RTD-04	19-14TC-04
5	19-14RTD-05	19-14TC-05
6	19-14RTD-06	19-14TC-06
7	21-14RTD-07	19-14TC-07
8	19-14RTD-08	19-14TC-08
9 (ref.)	19-14RTD-09	19-14TC-09

1085618





Equipment : Hot Air Oven  
 Condition As-Received : Used Item  
 Reference : 2112-0002OC-1  
 Result of Calibration : ( \* ) Without Adjustment  
 Function of UUC\* : Temperature Source  
 Fresh air setting : Close

Cert. No.: 21TM2189  
 Page.: 3 of 3

Calibration Point (°C)	UUC* Setting (°C)	UUC* Reading (°C)	Temperature stability (± °C)	Temperature uniformity (°C)	Overall Variation (°C)	Uncertainty (±°C)	Coverage Factor k
104.0	104.0	104.0	0.059	0.52	0.59	0.45	2
121.0	121.0	121.0	0.11	0.75	1.2	1.1	2
175.0	175.0	175.0	0.13	0.90	1.6	1.1	2
180.0	180.0	180.0	0.13	0.93	1.6	1.1	2

Calibration Point (°C)	Measured Temperature (°C)								
	Position								
	1	2	3	4	5	6	7	8	9 (ref.)
104.0	104.265	104.229	104.080	103.922	104.390	104.304	104.284	103.994	103.909
121.0	120.838	120.519	120.661	120.524	121.162	120.855	120.703	120.126	120.726
175.0	175.021	174.603	174.848	174.652	175.830	175.321	175.411	174.440	175.222
180.0	179.792	179.374	179.575	179.376	180.643	180.081	180.174	179.217	180.014

Average\* : The average of 30 values in each position.  
 Temperature stability : One-half of the greatest maximum difference of measured temperature at any one sensor.  
 Temperature uniformity : The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location, which are observed at the same time or at as close an observation time as possible to determine the temperature pattern or homogeneity within the chamber under steady-state conditions.  
 Overall Variation : The Difference of the maximum and minimum measured temperatures throughout observation.  
 UUC\* : Unit Under Calibration  
 Note : The reported uncertainty of measurement was included stability and excluded uniformity

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor  $k$ , providing a level of confidence of approximately 95 %.

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a 1085617



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)  
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 TEL. 0-2717-3000-24 FAX. 0-2719-9484

Cert.No.: 21CH1589  
 Page.: 1 of 2

## Certificate of Calibration

Equipment : Conductivity Meter  
 Manufacturer : Mettler Toledo  
 Model : SevenCompact  
 Serial No. : B429832167  
 ID No. : BKK\_EN0065  
 Condition As-Received : Used Item  
 Received Date : 17 November 2021  
 Calibration Date : 19 November 2021  
 Reference : 2111-0586DSC-6  
 Submitted by : ALS Laboratory Group (Thailand) Co., Ltd.  
 104 Phatthanakan 40, Phatthanakan Rd.,  
 Khwaeng Phatthanakan, Khet Suan Luang,  
 Bangkok 10250 Thailand  
 Ambient Temperature : (25 ± 2.5) °C  
 Relative Humidity : (50 ± 15) %  
 Calibration Procedure : In-house method :  
 - CP-CH6 : based on direct measurement by  
 using reference material (RM)

Calibrated by : Walalak Sirirathan

Approved by :   
 Approved Signatory

( / ) Malee Butkruea  
 ( ) Saithip Meangmai  
 ( ) Warakorn Lernagatrakul

Issue Date : 23 November 2021

The Uncertainties are for a confidence probability of approximately 95 %.

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Cert.No.: 21CH1589  
 Page.: 2 of 2

### Condition of this result of calibration

1. Reference Standard Instrument :-  
 Instrument Serial No. ID No. Certificate No. Due date  
 1) Thermometer 9549224 130RC003 211451 15 Apr 2022

This certification is traceable to the International System of Unit maintained at:-  
 - Traceable to National Institute of Metrology (Thailand), NIMT

2. Certified Reference Materials :-  
 - Conductivity calibration solution, Thermo Scientific (traceable to NIST)

Conductivity Solution	Manufacturer	Lot No.	Exp. date
84 µS/cm	Thermo Scientific	081/02	23 Feb 2022
1413.0 µS/cm	Thermo Scientific	171/02	30 Apr 2024
12.880 mS/cm	Thermo Scientific	230/01	07 June 2023

- Control Conductivity calibration solution temperature by Water bath (25±0.1) °C

3. This certificate is valid only to the item calibrated on date and place of calibration.

### Calibration results

Function : Conductivity Measurement

( \* ) After Adjustment at 1413 µS/cm

Conductivity Electrode Serial No.: 5821270404

Standard Conductivity Solution	Before Adjustment UUC* Reading	After Adjustment UUC* Reading	Uncertainty of Measurement (±)	Coverage factor k
84 µS/cm	85.92 µS/cm	85.52 µS/cm	4.3 µS/cm	2.00
1413 µS/cm	1419 µS/cm	1413 µS/cm	15 µS/cm	2.00
12.88 mS/cm	12.92 mS/cm	12.79 mS/cm	0.14 mS/cm	2.00

Remark - UUC\* = Unit Under Calibration  
 - Adjustment Cell constant = 0.559929 cm<sup>-1</sup>

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor  $k$ , providing a level of confidence of approximately 95 %.

-o0o-

Malee



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 TEL. 0-2717-3000 FAX. 0-2719-9484

Cert.No.: 22TW122  
 Page.: 1 of 2

## Certificate of Testing

Equipment : DO Meter  
 Manufacturer : YSI  
 Model : 5000-230V  
 Serial No. : 09J101147  
 ID No. : BKK\_EN0017  
 Received Date : 20 May 2022  
 Test Date : 24 May 2022  
 Reference : 2205-0638DSC-8  
 Submitted by : ALS Laboratory Group (Thailand) Co., Ltd.  
 104 Phatthanakan 40, Phatthanakan Rd.,  
 Khwaeng Phatthanakan, Khet Suan Luang,  
 Bangkok 10250 Thailand  
 Laboratory Condition : Temperature (25 ± 5) °C  
 Humidity (50 ± 20) %  
 Test Procedure : In-house method : CP-CH9  
 by Comparison Technique with Azide Modification Method  
 Tested by : Warakorn Lernagatrakul

Approved by :   
 Approved Signatory

( / ) Malee Butkruea  
 ( ) Saithip Meangmai  
 ( ) Warakorn Lernagatrakul

Issue Date : 31 May 2022

B 0285244





Cert.No.: 22TW122  
Page.: 2 of 2

#### Condition of this result of calibration

##### 1. Reference Standard Instruments :

This certification is traceable to the International System of Unit through the reference standards laboratory of Industrial Calibration Center, Technology Promotion Association (Thailand-Japan).

Instruments	Serial No.	ID No.	Certificate No.	Due Date
1) Burette	-	130BU10	21CG1389	25 Mar 2023
2) Balance	1126143764	140RC004	21MM430	21 Sep 2022

##### 2. Standard Material :-

Material	Manufacturer	Lot.No.	Assay
Sodium Thiosulfate pentahydrate	Merck	AM1763316	100.2%

**Result :** Dissolved Oxygen Meter Adjustment With Air 100 %

Dissolved Oxygen Probe No.: 16K100498

Titration Method (Azide Modification Method)	DO Meter Reading	Standard Deviation
(mg/L)	(mg/L)	(mg/L)
8.12	8.13	0.015

This report was certified only for the instrument we tested. It is allowable to use for study the system efficiency, The environmental impact control and present to organization it may concerned intend to use for advertising and referral purpose is prohibited. This report may not be reproduced other in full, without written approval of the laboratory

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*Malu*

a 1110482



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TEL. 0-2717-3000-27 FAX. 0-2719-9484



Cert. No.: 22LM83  
Page.: 1 of 2

## Certificate of Calibration

**Equipment :** DO Meter with Sensor  
**Manufacturer :** YSI  
**Model :** 5000-230V  
**Serial No. :** 09J 101147  
**ID No. :** BKK\_EN0017  
**Submitted by :** ALS Laboratory Group (Thailand) Co., Ltd.  
104 Phatthanakan 40, Phatthanakan Rd.,  
Khaeng Phatthanakan, Khet Suan Luang,  
Bangkok 10250 Thailand  
**Location :** TPA On Site Calibration Laboratory  
**Received Order :** 20 May 2022  
**Calibrated Date :** 30 May 2022  
**Ambient Temperature :** (26 ± 10) °C  
**Relative Humidity :** (50 ± 30) %  
**AC Line Voltage :** (220 ± 22) V  
**Calibrated by :** Tawatchai Pama

**Approved by :** *Malu*  
Approved Signatory

( ) Pornthippa Tameyakul  
(✓) Malee Butkruea  
( ) Suwit Imjai

**Issue Date :** 31 May 2022

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written approval of the head of Corporate Services 3: Equipment Calibration and Testing Services.

A 0039957



**Equipment :** DO Meter with Sensor  
**Condition As-Received :** Used Item  
**Reference :** 2205-0638DSC-10

Cert. No.: 22LM83  
Page.: 2 of 2

#### Procedure Used :-

Calibration were conducted using in-house calibration procedure CP-OT01 according to comparison with Industrial Platinum Resistance Thermometer (IPRT) into Temperature Bath.

The temperature scale used was based on ITS-90.

#### Condition of this result of calibration

##### 1. Reference standard instrument:-

Instrument	Model	Serial No.	Cert. No.	Due Date
1) Digital Thermometer	1502A	A09204	2218	04 Jan 2023

2. This certificate is valid only to the item calibrated on date and place of calibration.

3. This certification is traceable to the International System of Unit.

**Result of Calibration :-** ( \* ) Without Adjustment

**Function :** Temperature measurement.

This instrument was connected with thermistor sensor, ID No.: 16K100498

Calibration Point (°C)	Immersion Depth (mm)	Standard Temperature (°C)	UUC* Reading (°C)	Error (°C)	Uncertainty (± °C)	Coverage Factor k
20.00	60	20.003	20.01	0.007	0.15	2.00

UUC\* : Unit Under Calibration

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor k, providing a level of confidence of approximately 95 %.

-o0o-

*Malu*

a 1090806



## Metrological Center

SCI ECO Services Company Limited

33/2 Moo 3, T.Banpa, A.Kaengkhoh, Saraburi 18110, Thailand.

Saraburi Tel : +66 3627 3096 Fax : +66 3627 3100

Bangkok Tel : +668 9205 6851, +668 8247 2360

Website : www.scieco.co.th E-Mail : calibrate@scieco.co.th

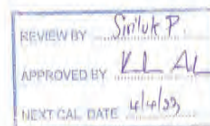


Certificate No. T212123

Page 1 of 3

## Certificate of Calibration

**Equipment :** Chamber ( Incubator )  
**Manufacturer :** SHEL LAB  
**Model :** 2020-2E  
**Serial No. :** 802899  
**Customer Code :** BKK\_EN0005  
**ID No. :** T7499A0  
**Customer :** ALS Laboratory Group (Thailand) Co., Ltd.  
104 Phatthanakan 40, Phatthanakan Rd., Khaeng Phatthanakan,  
Khet Suan Luang, Bangkok 10250  
**Customer Location :** Wet Chemistry Lab2  
**Date of Receipt :** 1 October 2021  
**Calibrated By :** Sujjar Naknakred ( Site Calibration Manager )  
**Approved By :** *Sujjar* /Boonchai Suriyawong (Site Calibration Manager)  
**Date of Issue :** 07 OCT 2021



The uncertainties are for a confidence probability of approximately 95%.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation Scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standard laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Metrological Center.

FM-L14(1701)-02-64



## Calibration Report

Equipment : Chamber ( Incubator )  
 Date of Calibration : 4-5 October 2021  
 Environment : Temperature : 23.8-24.9 °C  
 Line Voltage : 227.5-231.1 V  
 Relative Humidity : 55 - 65 %RH

## Condition of this results of calibration :

1. This equipment was calibrated by insert nine resistance thermometer detectors into its chamber , the other one resistance thermometer detector use for ambient temperature measurement . The calibration was done in according to WI-T20 ( based on ASTM E145-94 ( Reapproved 2001 ) and AS2853-1986 ) .  
 All data show below were final values and the initial data from customer request . The temperature scale used was based on ITS - 90 .

## 2. Reference Standard Instrument :

Instrument	Model	Instrument No.	Certificate No.	Due Date
RTD	100 ohm	29-(CH1)-10	T210118	2 February 2022
DATA LOGGER	34970A	T47	T210118	2 February 2022

## 3. This certificate is traceable to :

National Institute of Metrology ( Thailand ) through Metrological Center ( NSC-TISI-TIS 17025 CALIBRATION 0244 )

## 4. Condition of calibrated item : good

## Equipment Description :

Time Constant : 2 Hour 20 Minute At 20 °C  
 Fresh Air Damper : ☐ Open ☐ Min ☐ Medium ☐ Max  
☐ Close  
☒ Not Available

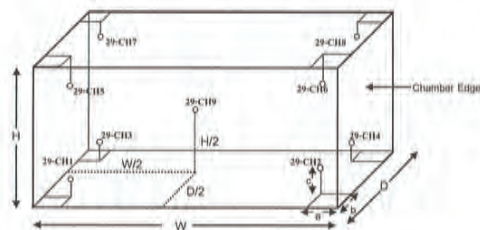
## 5. Adjustment :

( ) without adjustment ( X ) after adjustment

Approved By: 

FM-L13 117/15-05-63

## Calibration Report



## Remark :

Internal Dimensions of Chamber : W (Width) = 70 cm., H (Height) = 130 cm. and D (Depth) = 55 cm.  
 Size of Installed Standard sensor number 29-CH1 to number 29-CH8 : a = 5 cm., b = 5 cm. and c = 5 cm.  
 Size of Installed Standard sensor number 29-CH9 : W/2 = 70 cm./2, H/2 = 130 cm./2 and D/2 = 55 cm./2

## Measurement Results

Calibration Point	Average Standard Reading at each position (°C)								
	29-CH1	29-CH2	29-CH3	29-CH4	29-CH5	29-CH6	29-CH7	29-CH8	29-CH9
20	20.04	20.06	20.19	19.86	19.68	20.08	20.12	19.80	20.07
25	24.99	25.06	25.18	24.89	24.74	25.12	25.16	24.80	25.10

Setting (°C)	Chamber ( Incubator )		Temperature Distribution			
	Reading (°C)		Stability (± °C)	Uniformity (°C)	Uncertainty (± °C)	Coverage Factor k
	Min	Max				
20.0	-	20.0	0.05	1.01	0.38	2.00
25.0	-	25.0	0.07	0.96	0.38	2.00

\* The quoted uncertainty exclude "uniformity"

The calibration result apply only the above calibrated item.

The result of test was found accurate as shown on date and place of test only.



The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k which for a t-distribution, providing a level of confidence of approximately 95 %.

Approved By: 

FM-L13 117/15-05-63

## Certificate of Calibration

Equipment : HOT BLOCK  
 Manufacturer : Environmental Express  
 Model : B3000- 240  
 Serial No. : 2017CODW116  
 Customer Code : BKK\_EN0222  
 ID No. : T6769A4  
 Customer : ALS Laboratory Group (Thailand) Co.,Ltd.  
 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan,  
 Khet Suan Luang, Bangkok 10250  
 Customer Location : Wet Chemistry Lab2  
 Date of Receipt : 21 March 2022  
 Calibrated By : Watcharapon Sangtong (Technician )  
 Approved By :  / Sujjar Nakanakred ( Site Calibration Manager )  
 Date of Issue : 03 APR 2022

REVIEW BY   
 APPROVED BY   
 NEXT CAL. DATE 01/03/23

The uncertainties are for a confidence probability of approximately 95%.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation Scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standard laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Metrological Center.

FM-L12 109/30-05-57

## Calibration Report

Equipment : HOT BLOCK  
 Date of Calibration : 21 March 2022  
 Environment : Temperature : 21.8-23.1 °C  
 Line Voltage : 221.6-226.3 V  
 Relative Humidity : 55 - 65 %RH

## Condition of this results of calibration :

1. This equipment was calibrated by insert nine standard thermocouples type T into its chamber , the other one standard thermocouples type T use for ambient temperature measurement , The calibration was done in according to WI-T20.

All data show below were final values and the initial data from customer request . The temperature scale used was based on ITS - 90 .

## 2. Reference Standard Instrument :

Instrument	Model	Instrument No.	Certificate No.	Due Date
TC	TYPE T	TN51-TN60	T220275	28 February 2023
TC	TYPE T	TN61-TN70	T220275	28 February 2023
DATA LOGGER	34970A	T47	T220275	28 February 2023

## 3. This certificate is traceable to :

National Institute of Metrology ( Thailand ) through Metrological Center ( NSC-TISI-TIS 17025 CALIBRATION 0244 )

## 4. Condition of calibrated item : good

## Equipment Description :

Time Constant : 1 Hour - Minute At 150 °C  
 Fresh Air Damper : ☐ Open ☐ Min ☐ Medium ☐ Max  
☐ Close  
☒ Not Available

## 5. Adjustment :

( ) without adjustment ( X ) after adjustment

Approved By: 

FM-L12 109/30-05-57





## Metrological Center

SCI ECO Services Company Limited

33/2 Moo 3, T.Banpa, A.Kaengkhoh, Saraburi 18110

Telephone : +66 2 586 5792-4 Fax : +66 2 586 5109

Website : www.scieco.co.th E-Mail : calibrate@scg.co.th

Certificate No. T220630

Page 3 of 5

### Calibration Report

R7	49	50	51	52	53	54	55	56
R6	41	42	43	44	45	46	47	48
R5	33	34	35	36	37	38	39	40
R4	25	26	27	28	29	30	31	32
R3	17	18	19	20	21	22	23	24
R2	9	10	11	12	13	14	15	16
R1	1	2	3	4	5	6	7	8

Controller

○ STANDARD THERMOCOUPLE TYPE T

No.1 = TN51	No.13 = TN63	No.25 = TN55	No.37 = TN67	No.49 = TN59
No.2 = TN52	No.14 = TN64	No.26 = TN56	No.38 = TN68	No.50 = TN60
No.3 = TN53	No.15 = TN65	No.27 = TN57	No.39 = TN69	No.51 = TN61
No.4 = TN54	No.16 = TN66	No.28 = TN58	No.40 = TN70	No.52 = TN62
No.5 = TN55	No.17 = TN67	No.29 = TN59	No.41 = TN71	No.53 = TN63
No.6 = TN56	No.18 = TN68	No.30 = TN60	No.42 = TN72	No.54 = TN64
No.7 = TN57	No.19 = TN69	No.31 = TN61	No.43 = TN73	No.55 = TN65
No.8 = TN58	No.20 = TN70	No.32 = TN62	No.44 = TN74	No.56 = TN66
No.9 = TN59	No.21 = TN71	No.33 = TN63	No.45 = TN75	
No.10 = TN60	No.22 = TN72	No.34 = TN64	No.46 = TN76	
No.11 = TN61	No.23 = TN73	No.35 = TN65	No.47 = TN77	
No.12 = TN62	No.24 = TN74	No.36 = TN66	No.48 = TN78	

Approved By:

PM-L13 108/30-05-57



## Metrological Center

SCI ECO Services Company Limited

33/2 Moo 3, T.Banpa, A.Kaengkhoh, Saraburi 18110

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Certificate No. T220630

Page 4 of 5

### Calibration Report

#### Measurement Results

Calibration Point	Average Standard Reading at each position (°C)							
	R1	TN51	TN52	TN53	TN54	TN55	TN56	TN57
CAL POINT 150	Max	149.42	150.39	149.10	149.91	150.93	150.58	151.54
	Min	149.27	150.15	148.51	149.65	150.72	150.39	151.43
	Average	149.35	150.27	148.81	149.78	150.83	150.48	151.49
	R2	TN59	TN60	TN61	TN62	TN63	TN64	TN65
	Max	150.66	150.45	151.00	151.76	150.66	150.67	150.73
	Min	150.46	150.16	150.74	151.51	150.48	150.48	150.56
	Average	150.56	150.31	150.87	151.63	150.57	150.58	150.65
	R3	TN67	TN68	TN69	TN70	TN51	TN52	TN53
	Max	150.90	151.18	151.10	151.05	150.16	150.55	150.39
	Min	150.68	151.00	150.84	150.75	149.36	149.17	148.95
	Average	150.79	151.09	150.97	150.90	149.76	149.86	149.41
	R4	TN55	TN56	TN57	TN58	TN59	TN60	TN61
	Max	150.82	150.07	151.63	150.72	150.35	149.78	150.24
	Min	149.53	149.71	149.37	148.67	148.46	148.86	149.81
	Average	150.17	149.89	150.60	149.70	149.61	149.32	149.50
	R5	TN63	TN64	TN65	TN66	TN67	TN68	TN69
	Max	150.00	149.68	150.31	149.66	150.34	150.48	150.09
	Min	149.81	149.38	149.49	149.42	149.20	149.60	149.38
	Average	149.90	149.03	149.90	149.54	149.77	150.04	149.49
	R6	TN51	TN52	TN53	TN54	TN55	TN56	TN57
	Max	149.25	150.37	148.53	149.06	150.91	150.04	151.13
	Min	149.07	150.18	148.28	148.78	150.69	149.83	150.95
	Average	149.16	150.28	148.41	148.92	150.80	149.94	151.04
	R7	TN59	TN60	TN61	TN62	TN63	TN64	TN65
	Max	149.38	149.24	149.88	150.17	149.72	149.45	149.63
	Min	149.22	149.05	149.68	149.99	149.61	149.34	149.48
	Average	149.30	149.15	149.78	150.08	149.67	149.40	149.43

Approved By:

PM-L13 108/30-05-57



## Metrological Center

SCI ECO Services Company Limited

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Certificate No. T220630

Page 5 of 5

### Calibration Report

#### Measurement Results:

HOT BLOCK		Temperature Distribution		
Setting (°C)	Reading (°C)		Stability (± °C)	Uncertainty (± °C)
	Min , Max	Average		
150.0	149.9 , 150.1	150.0	1.04	1.44

\* The quoted uncertainty exclude \* uniformity \*

The calibration result apply only the above calibrated item.

The result of test was found accurate as shown on date and place of test only.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k which for a t-distribution, providing a level of confidence of approximately 95 % .

Approved By:

PM-L13 108/30-05-57



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)  
CORPORATE SERVICES & EQUIPMENT CALIBRATION AND TESTING SERVICES  
534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250  
TEL. 0-2717-3000-27 FAX. 0-2719-0484



Cert.No.: 22CH199  
Page.: 1 of 2

### Certificate of Calibration

Equipment : pH Meter  
Manufacturer : Mettler Toledo  
Model : Seven2Go S2  
Serial No. : B617388431  
ID No. : BKK\_LG0004  
Condition As-Received : Used Item  
Received Date : 08 February 2022  
Calibration Date : 10 February 2022  
Reference : 2202-0244DSC-12  
Submitted by : ALS Laboratory Group (Thailand) Co.,Ltd.  
104 Phatthanakan 40, Phatthanakan Rd.,  
Khwaeng Phatthanakan, Khet Suan Luang,  
Bangkok 10250 Thailand  
Ambient Temperature : (25 ± 2.5) °C  
Relative Humidity : (50 ± 15) %  
Calibration Procedure : In - house method ;  
- CP-CH5 by direct measurement with standard  
voltage calibrator and direct measurement  
with certified reference material (CRM)

Calibrated by : Uthen Kankawi

Approved by :  
(/ ) Malee Butkruea  
( ) Sathip Meangmai  
( ) Warakorn Lernagitrakul

Issue Date : 14 February 2022

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full, except with the prior written  
Approval of the head of Corporate Services & Equipment Calibration and Testing Services.

A 0037920





Cert. No.: 22CH199  
Page.: 2 of 2

#### Condition of this calibration result

##### 1. Reference Standard Instrument

**Instrument**      **Serial No.**      **ID No.**      **Cert. No.**      **Due Date**  
1) Document Process Calibrator      43160006      130RC092      21E1223/1      27 Apr 2022  
This certification is traceable to the International System of Unit maintained at:-  
- Traceable to National Institute of Metrology (Thailand), NIMT

##### 2. Certified Reference Materials

The measurement results are traceable to SI through CPA chem Ltd., ANSI-ASQ National Accreditation Board, Accredited No. AR-1835

**Buffer Solution**      **Manufacturer**      **Lot No.**      **Exp. date**  
pH 4.008      CPA chem      766820      23 Sep 2023  
pH 6.983      CPA chem      766822      04 Sep 2022  
pH 10.015      CPA chem      766824      04 Sep 2022

3. This certificate is valid only to the item calibrated on date and place of calibration.

#### Calibration Results

##### Function : mV Measurement

##### Performing standard curve by Fluke at pH (4,7,10)

Unit Under Calibration	Nominal Value		Standard Voltage Input		Actual Reading		Uncertainty of Measurement ( $\pm$ mV)	Coverage factor k
	pH	mV	mV	pH	mV	pH		
pH Meter S/N.: B617388431	4.00	177.48	177	4.00	0.58	2.00	0.58	2.00
	7.00	0.00	0	7.00	0.58	2.00	0.58	2.00
	10.00	-177.48	-178	10.00	0.58	2.00	0.58	2.00

##### Function : pH Measurement

##### Performing three buffers standard curve by using buffer nominal pH (4,7,10)

Unit Under Calibration	Standard pH Buffer Solution	Actual pH Reading	Actual mV Reading (mV)	Uncertainty of pH measurement ( $\pm$ )	Coverage factor k
pH Electrode S/N.: 2026288	4.008	4.01	178	0.0079	2.00
	6.983	6.98	3	0.0099	2.00
	10.015	10.02	-174	0.0092	2.00

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor  $k$ , providing a level of confidence of approximately 95 %.

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TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)  
CORPORATE SERVICES & EQUIPMENT CALIBRATION AND TESTING SERVICES  
534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250  
TEL. 0-2719-3000-27 FAX. 0-2719-9494



Cert. No.: 22LM11  
Page.: 1 of 2

## Certificate of Calibration

**Equipment :** pH Meter with Sensor  
**Manufacturer :** Mettler Toledo  
**Model :** Seven2Go S2  
**Serial No. :** B617388431  
**ID No. :** BKK\_LG0004  
**Submitted by :** ALS Laboratory Group (Thailand) Co., Ltd.  
104 Phatthanakan 40, Phatthanakan Rd.,  
Khwaeng Phatthanakan, Khet Suan Luang,  
Bangkok 10250 Thailand  
**Location :** TPA On Site Calibration Laboratory  
**Received Order :** 8 February 2022  
**Calibration Date :** 11 February 2022  
**Ambient Temperature :** (26  $\pm$  10) °C  
**Relative Humidity :** (50  $\pm$  30) %  
**AC Line Voltage :** (220  $\pm$  22) V  
**Calibrated by :** Preecha Hiahib  
**Approved by :**   
( ) Pornthippa Tameyakul  
( ) Malee Butkruea  
( ) Suwit Imjai  
**Issue Date :** 18 February 2022

The Uncertainties are for a confidence probability of approximately 95%

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Approval of the head of Corporate Services & Equipment Calibration and Testing Services.

0037968



**Equipment :** pH Meter with Sensor  
**Condition As-Received :** Used Item  
**Reference :** 2202-0244DSC-16  
**Procedure Used :-**

Cert. No.: 22LM11  
Page.: 2 of 2

Calibration were conducted using in-house calibration procedure CP-OT01 according to comparison with Industrial Platinum Resistance Thermometer (IPRT) into Temperature Bath.  
The temperature scale used was based on ITS-90.

#### Condition of this result of calibration

##### 1. Reference standard instrument:-

**Instrument**      **Model**      **Serial No.**      **Cert. No.**      **Due Date**  
1) Digital Thermometer      1523      2188080      21H1273      22 Nov 2022

2. This certificate is valid only to the item calibrated on date and place of calibration.

3. This certification is traceable to the International System of Unit.

**Result of Calibration :-** ( \* ) Without Adjustment

**Function :** Temperature measurement.

This instrument was connected with temperature sensor, S/N.: 2026288

Calibration Point (°C)	Immersion Depth (mm)	Standard Temperature (°C)	UUC* Reading (°C)	Error (°C)	Uncertainty ( $\pm$ °C)	Coverage Factor k
20.0	120	20.003	20.2	0.197	0.16	2.00
25.0	120	25.003	25.2	0.197	0.16	2.00
30.0	120	30.004	30.3	0.296	0.16	2.00
35.0	120	35.002	35.3	0.298	0.16	2.00
40.0	120	40.002	40.3	0.298	0.16	2.00
45.0	120	45.005	45.3	0.295	0.16	2.00
50.0	120	50.005	50.3	0.295	0.16	2.00

UUC\* : Unit Under Calibration

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor  $k$ , providing a level of confidence of approximately 95 %.

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1095819



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)  
CORPORATE SERVICES & EQUIPMENT CALIBRATION AND TESTING SERVICES  
534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250  
TEL. 0-2719-3000-27 FAX. 0-2719-9494



Cert.No.: 22CH200  
Page.: 1 of 3

## Certificate of Calibration

**Equipment :** pH Meter  
**Manufacturer :** Mettler Toledo  
**Model :** Seven2Go S2  
**Serial No. :** B829137689  
**ID No. :** NNG\_FS0002  
**Condition As-Received :** Used Item  
**Received Date :** 08 February 2022  
**Calibration Date :** 09 - 10 February 2022  
**Reference :** 2202-0244DSC-2  
**Submitted by :** ALS Laboratory Group (Thailand) Co., Ltd.  
104 Phatthanakan 40, Phatthanakan Rd.,  
Khwaeng Phatthanakan, Khet Suan Luang,  
Bangkok 10250 Thailand  
**Ambient Temperature :** (25  $\pm$  2.5) °C  
**Relative Humidity :** (50  $\pm$  15) %  
**Calibration Procedure :**  
- CP-CH5 by direct measurement with standard voltage calibrator and direct measurement with certified reference material (CRM)  
- CP-CH8 by comparison with standard thermometer

**Calibrated by :** Uthen Kankawi

**Approved by :**   
Approved Signatory

( ) Malee Butkruea  
( ) Sathip Meangmal  
( ) Warakorn Lerngagrakul

**Issue Date :** 14 February 2022

The Uncertainties are for a confidence probability of approximately 95%

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Approval of the head of Corporate Services & Equipment Calibration and Testing Services.

0037921





Cert.No.: 22CH200  
Page: 2 of 3

#### Condition of this calibration result

##### 1. Reference Standard Instrument

Instrument	Serial No.	ID No.	Cert. No.	Due Date
1) Document Process Calibrator	43160066	130RC092	21E1223/1	27 Apr 2022
2) Ref. Standard Thermometer	2189080	130RC044	21I1273	21 Nov 2022

This certification is traceable to the International System of Unit maintained at:-  
- Traceable to National Institute of Metrology (Thailand), NIMT

##### 2. Certified Reference Materials

The measurement results are traceable to SI through CPA chem Ltd.,  
ANSI-ASQ National Accreditation Board, Accredited No. AR-1835

Buffer Solution	Manufacturer	Lot No.	Exp. date
pH 4.008	CPA chem	766820	23 Sep 2023
pH 6.983	CPA chem	766822	04 Sep 2022
pH 10.015	CPA chem	766824	04 Sep 2022

3. This certificate is valid only to the item calibrated on date and place of calibration.

#### Calibration Results

##### Function : mV Measurement

##### Performing standard curve by Fluke at pH (4,7,10)

Unit Under Calibration	Nominal Value	Standard Voltage Input	Actual Reading		Uncertainty of Measurement ( $\pm$ mV)	Coverage factor k
	pH	mV	mV	pH		
pH Meter	4.00	177.48	177	4.00	0.58	2.00
S/N.: B829137689	7.00	0.00	0	7.00	0.58	2.00
	10.00	-177.48	-177	10.00	0.58	2.00

Melu.

1094610



Cert.No.: 22CH200  
Page: 3 of 3

#### Calibration Results

##### Function : pH Measurement

##### Performing three buffers standard curve by using buffer nominal pH (4,7,10)

Unit Under Calibration	Standard pH Buffer Solution	Actual pH Reading	Actual mV Reading (mV)	Uncertainty of pH measurement ( $\pm$ )	Coverage factor k
pH Electrode	4.008	4.00	177	0.013	2.20
S/N.: 8244704	6.983	6.99	6	0.015	2.16
	10.015	10.01	-165	0.019	2.32

##### Function : Temperature Measurement

##### (\*) Without adjustment

This equipment was connected with Temperature Probe;

- Model :	InLab Expert Go-ISM
- Serial No. :	8244704
- Dimension of probe :	
- Length :	120 mm.
- Diameter :	12 mm.
- Immersion Depth :	100 mm.

Calibration Point ( $^{\circ}$ C)	Standard Temperature ( $^{\circ}$ C)	UUC* Reading ( $^{\circ}$ C)	Error ( $^{\circ}$ C)	Uncertainty of measurement ( $\pm$ $^{\circ}$ C)	Coverage factor k
25.0	25.011	25.1	0.089	0.13	2.00
45.0	45.007	45.2	0.193	0.13	2.00

Remark : - UUC\* = Unit Under Calibration

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor k, providing a level of confidence of approximately 95 %.

-000-

Melu.

1094609

BKK\_EL0037

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Agilent CrossLab Compliance Services

## Certificate of System Qualification

ES-QQ

System ID: MY16010005  
Organization Name: ALS Laboratory Group (Thailand) Co., Ltd.  
Organization Location: 104 Phatthanakan 40 Phatthanakan Rd., Bangkok 10250

Date: September 13, 2021 5:49:11 PM  
EQP Name: AgilentRecommended  
EQP Revision: ES.02.50  
Overall Qualification Status: Pass

#### Preparation

Pass

#### Instrument Tests

Pass

#### Autosampler Operation

Pass

REVIEW BY: Thirapong B.  
APPROVED BY: Sawatun N.  
NEXT CAL. DATE: 12 Mar 23

Date: September 13, 2021 5:49:11 PM  
System ID: MY16010005

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## Metrological Center

SCI ECO Services Company Limited

33/2 Moo 3, T.Banpa, A.Kaengkhoh, Saraburi 18110

Telephone : +66 2 586 5792-4 Fax : +66 2 586 5109

Website : www.scieco.co.th E-Mail : calibrate@scg.co.th

Certificate No. T220730

Page 1 of 6

## Certificate of Calibration

Equipment : HEATING BLOCK

Manufacturer : Environmental Express

Model : SC 196

Serial No. : 6974CECW3285

Customer Code : BKK\_EL0054

ID No. : T5306A3

Customer : ALS Laboratory Group (Thailand) Co.,Ltd.  
104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan,  
Khet Suan Luang, Bangkok 10250

Customer Location : Acid Digestion Lab

Date of Receipt : 30 March 2022

Calibrated By : Watcharapon Sangtong (Technician)

Approved By : / Sujjar Nakhakred (Site Calibration Manager)

Date of Issue : 12 APR 2022

REVIEW BY: Thirapong B.  
APPROVED BY: Sawatun N.  
NEXT CAL. DATE: 7/10/23

The uncertainties are for a confidence probability of approximately 95%.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation Scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standard laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Metrological Center.

PM-E.12.10930-05-57





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Certificate No. T220730

Page 2 of 6

### Calibration Report

Equipment : HEATING BLOCK  
Date of Calibration : 7 April 2022  
Environment : Temperature : 21.8-23.1 °C  
Line Voltage : 221.6-226.3 V  
Relative Humidity : 55-65 %RH

#### Condition of this results of calibration :

1. This equipment was calibrated by insert nine standard thermocouples type T into its chamber , the other one standard thermocouples type T use for ambient temperature measurement . The calibration was done in according to WI-T20.  
All data show below were final values and the initial data from customer request . The temperature scale used was based on ITS - 90 .

#### 2. Reference Standard Instrument :

Instrument	Model	Instrument No.	Certificate No.	Due Date
TC	TYPE T	TN221-TN230	T210008	08 June 2022
TC	TYPE T	TN231-TN240	T210008	08 June 2022
DATA LOGGER	34970A	T149	T210008	08 June 2022

#### 3. This certificate is traceable to :

National Institute of Metrology ( Thailand ) through Metrological Center ( NSC-TISI-TIS 17025 CALIBRATION 0244 )

#### 4. Condition of calibrated item : good

#### Equipment Description :

Time Constant : 2 Hour 25 Minute At 95 °C  
Fresh Air Damper : ☐ Open ☐ Min ☐ Medium ☐ Max  
☐ Close  
☒ Not Available

#### 5. Adjustment :

( ) without adjustment ( X ) after adjustment

Approved By.

PM-L13 108/30-05-57



## Metrological Center

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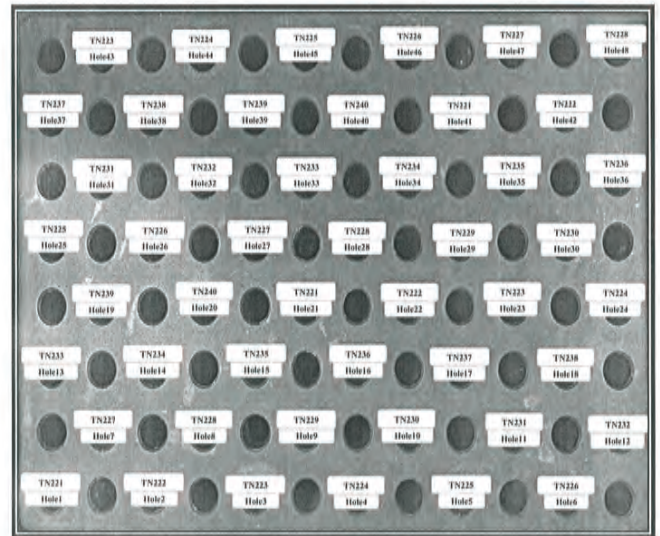
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Website : www.scieco.co.th E-Mail : calibrate@scg.co.th

Certificate No. T220730

Page 3 of 6

### Calibration Report



#### FRONT CONTROL

Approved By.

PM-L13 108/30-05-57



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Website : www.scieco.co.th E-Mail : calibrate@scg.co.th

Certificate No. T220730

Page 4 of 6

### Calibration Report

Measurement Results		Average Standard Reading at each position (°C)					
Calibration Point		TN221	TN222	TN223	TN224	TN225	TN226
R1 Hole1-Hole6	CAL POINT	Max	93.69	93.82	94.05	94.20	94.36
		Min	93.07	93.26	93.51	93.66	93.82
	Average	93.33	93.54	93.78	93.93	94.09	93.98
R2 Hole7-Hole12	CAL POINT	Max	94.59	94.79	94.63	94.55	94.82
		Min	94.05	94.25	94.08	93.97	94.26
	Average	94.32	94.52	94.36	94.26	94.54	94.72
R3 Hole13-Hole18	CAL POINT	Max	95.03	94.54	94.78	94.84	95.06
		Min	94.46	93.98	94.20	94.28	94.49
	Average	94.74	94.26	94.49	94.56	94.78	94.45
R4 Hole19-Hole24	CAL POINT	Max	94.89	94.82	95.73	95.85	95.73
		Min	94.33	94.26	95.51	95.62	95.51
	Average	94.61	94.54	95.62	95.73	95.62	95.97
R5 Hole25-Hole30	CAL POINT	Max	96.28	96.39	96.37	96.54	96.19
		Min	96.01	96.10	96.02	96.20	95.89
	Average	96.15	96.24	96.20	96.37	96.04	95.88
R6 Hole31-Hole36	CAL POINT	Max	96.84	96.97	97.03	96.48	96.33
		Min	96.53	96.65	96.71	96.08	95.98
	Average	96.68	96.81	96.87	96.28	96.16	95.60
R7 Hole37-Hole42	CAL POINT	Max	96.46	96.13	96.19	96.06	96.95
		Min	96.13	95.84	95.85	95.72	96.64
	Average	96.30	95.99	96.02	95.89	96.80	96.91
R8 Hole43-Hole48	CAL POINT	Max	96.91	96.58	96.13	96.19	96.34
		Min	96.55	96.21	95.80	95.87	96.03
	Average	96.73	96.40	95.96	96.03	96.18	96.03

Approved By.

PM-L13 108/30-05-57



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Certificate No. T220730

Page 5 of 6

### Calibration Report

Measurement Results		Average Standard Reading at each position (°C)					
Calibration Point		TN221	TN222	TN223	TN224	TN225	TN226
R1 Hole1-Hole6	CAL POINT	Max	104.47	104.65	104.79	105.31	105.47
		Min	104.15	104.27	104.45	104.98	105.14
	Average	104.31	104.46	104.62	105.15	105.31	105.33
R2 Hole7-Hole12	CAL POINT	Max	105.55	105.73	105.65	105.84	105.97
		Min	105.28	105.43	105.35	105.52	105.68
	Average	105.42	105.58	105.50	105.68	105.82	105.95
R3 Hole13-Hole18	CAL POINT	Max	106.14	106.06	105.81	106.05	105.81
		Min	105.85	105.81	105.55	105.80	105.53
	Average	106.00	105.94	105.68	105.92	105.67	105.75
R4 Hole19-Hole24	CAL POINT	Max	105.86	105.60	104.44	104.51	104.28
		Min	105.61	105.37	104.27	104.35	104.12
	Average	105.74	105.48	104.35	104.43	104.20	104.69
R5 Hole25-Hole30	CAL POINT	Max	104.94	104.93	104.97	105.08	104.68
		Min	104.77	104.75	104.76	104.90	104.51
	Average	104.85	104.84	104.86	104.99	104.60	104.59
R6 Hole31-Hole36	CAL POINT	Max	105.44	105.45	105.61	104.93	104.84
		Min	105.27	105.27	105.44	104.76	104.66
	Average	105.36	105.36	105.53	104.86	104.75	104.23
R7 Hole37-Hole42	CAL POINT	Max	105.17	104.70	104.59	104.51	105.22
		Min	105.00	104.53	104.41	104.33	105.04
	Average	105.08	104.62	104.50	104.43	105.13	105.45
R8 Hole43-Hole48	CAL POINT	Max	105.61	105.43	105.10	104.77	104.87
		Min	105.44	105.28	104.92	104.60	104.70
	Average	105.53	105.37	105.01	104.69	104.79	104.93

Approved By.

PM-L13 108/30-05-57



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Website : www.scieco.co.th E-Mail : calibrate@scg.co.th

Certificate No. T220730

Page 5 of 6

### Calibration Report

#### Measurement Results:

HEATING BLOCK			Temperature Distribution	
Setting (°C)	Reading (°C)		Stability (± °C)	Uncertainty (± °C)
	Min , Max	Average		
100.0	100.0 , 100.4	100.1	0.29	0.83
105.0	105.0 , 105.4	105.1	0.20	0.79

\* The quoted uncertainty exclude " uniformity "

The calibration result apply only the above calibrated item.

The result of test was found accurate as shown on date and place of test only.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k which for a t-distribution, providing a level of confidence of approximately 95 %

Approved By: \_\_\_\_\_

PM-L13 108/30-05-57

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Agilent CrossLab Compliance Services



Agilent CrossLab Compliance Services

Agilent  
CrossLab  
From Insight to Outcome

### EQUIPMENT QUALIFICATION REPORT (EQR)

#### Agilent CrossLab Compliance

Qualification Type: ICPMS-OQ  
System ID: JP15471169  
EQP Name: AgilentRecommended  
EQP Revision: ICPMS.02.50  
EQP Publish Date: March 2020  
Date: September 30, 2021 4:07:18 PM  
Report Type: Report  
Org. Name: ALS Laboratory Group ( Thailand ) Co.,Ltd.  
Org. Location: 104 Phattanakam 40, Suan Luang, Bangkok 10250.

REVIEW BY: Sophan H.  
APPROVED BY: Sophon N.  
NEXT CAL. DATE: 29 March 2023

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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Agilent CrossLab Compliance Services

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Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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Agilent CrossLab Compliance Services

### Test Summary

#### Purpose

This section includes a status for each scheduled test and the overall qualification. For each test that is run, (1) the status is automatically determined based on pre-defined limits, and (2) the total number of times the test was run is displayed. For detailed results and specifications for a test, refer to the test results in this EQR.

Details	Status	Runs
Test		
Autosampler Check : SP84	Pass	1
Integrated Sample Introduction System (ISIS) Check : ISIS3	Pass	1
Autotune : G8403A	Pass	1
Background (No Gas Mode) : G8403A	Pass	1
Background (Gas Modes) : G8403A	Pass	1
20-Minute Stability (No Gas Mode) : G8403A	Pass	1
Overall Qualification Status	Pass	

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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Service Details

Purpose  
This section includes local contact and delivery details for this service.

General Details	
Service Order No./Request:	6004937154
BQP Name:	AgilentRecommended
BQP Revision:	ICPMS.02.50
Report Type:	Report
Organization Details	
Name:	ALS Laboratory Group (Thailand) Co.,Ltd.
Location:	104 Phattanasarn 40, Suan Luang, Bangkok 10250.
Local Contact Details	
Name:	Chatchanal Komarakul
Job Title:	Manager
Qualification Location:	Laboratory
Operator Details	
Name:	Pantap Jurasathain
Job Title:	Field Service Engineer
Data Acquisition Details	
Acquisition Software Name:	MassHunter
Acquisition Software Revision:	C.01.04
Customer Data System (CDS):	ICPMS: MassHunter

Instrument Details

Purpose  
This section describes the as found system configuration.

Details	
ICP-MS 1	
Manufacturer	Agilent Technologies
Name	7900
Model Number	G8403A
Installed Options	#100H: Standard Package with Hydrogen option
Detector Type	SQ
Nebulizer	Mira Mix (G3161)
Spray Chamber	Quartz
Torch	Quartz
Sampling Cone	NI
Skimmer Cone	NI
Serial Number	JP15471169
Firmware Revision	C.01.04
ISIS 1	
Manufacturer	Agilent Technologies
Name	ISIS3
Model Number	G8411A
Type	Peristaltic pump system
Serial Number	JP15510227
Autosampler 1	
Manufacturer	Agilent Technologies
Name	SPS4
Model Number	G8410A
Serial Number	AU15430722

Chiller 1	
Manufacturer	Agilent Technologies
Name	Chiller
Model Number	G3392A
Serial Number	3U1610713

Calculation Formulas

Purpose  
This section includes calculation formulas for all available tests. Depending upon which tests are scheduled, all or some apply to your qualification.  
  
For a description of calculations for ICP-MS tests performed by the MassHunter software, refer to the MassHunter application and documentation.

## Protocol Details

### Purpose

This section lists the revisions for all test units used in this report. For complete test-specific and high-level change details, refer to the Revision History document.

Test Revision	Test
ICPMS.02.80	20-Minute Stability (No Gas Mode)
ICPMS.02.30	Autosampler Check
ICPMS.02.80	Autotune
ICPMS.02.50	Background (Gas Modes)
ICPMS.02.50	Background (No Gas Mode)
ICPMS.02.50	Integrated Sample Introduction System (ISIS) Check

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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## Autosampler Check

### Purpose

This test demonstrates that the autosampler module is correctly installed and connected. It does not test module performance.

#### Setpoint

#### Results

Criteria	Observed Result	Expected Result	Status
After the self test, is probe in the home position?	Yes	Yes	Pass
As commanded, is the probe positioned at vial 2?	Yes	Yes	Pass
Setpoint Status:	Pass		Runs: 1

#### Overall Autosampler Check Test Status

Pass

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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## Integrated Sample Introduction System (ISIS) Check

### Purpose

This test demonstrates that the ISIS module is correctly installed and connected. It does not test module performance.

#### Setpoint

#### Results

Criteria	Observed Result	Expected Result	Status
As commanded, does the pump rotate?	Yes	Yes	Pass
As commanded, do the valves load and inject?	Yes	Yes	Pass
Setpoint Status:	Pass		Runs: 1

#### Overall Integrated Sample Introduction System (ISIS) Check Test Status

Pass

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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## Autotune

### Purpose

This test uses traceable checkout standards to run a software-executed autotune in all modes. The tune report provides values for peak width, mass axis, sensitivity, oxide species, and doubly-charged species tests.

#### Setpoint

#### Results

Peakwidth Mass 7	0.719	AMU
Agilent Recommended:	>= 0.65 <= 0.80	
Status:	Pass	
Peakwidth Mass 89	0.750	AMU
Agilent Recommended:	>= 0.65 <= 0.80	
Status:	Pass	
Peakwidth Mass 205	0.713	AMU
Agilent Recommended:	>= 0.65 <= 0.80	
Status:	Pass	
Mass Axis 7	7.05	AMU
Agilent Recommended:	>= 6.9 <= 7.1	
Status:	Pass	
Mass Axis 89	88.95	AMU
Agilent Recommended:	>= 88.9 <= 89.1	
Status:	Pass	
Mass Axis 205	205.00	AMU
Agilent Recommended:	>= 204.9 <= 205.1	
Status:	Pass	

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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Mass 7 Sensitivity No Gas

Agilent Recommended:

Status:

94.28	Mcps/ppm
>= 25.5	
Pass	

Mass 89 Sensitivity No Gas

Agilent Recommended:

Status:

307.15	Mcps/ppm
>= 127.5	
Pass	

Mass 205 Sensitivity No Gas

Agilent Recommended:

Status:

203.77	Mcps/ppm
>= 78.5	
Pass	

Mass 59 Sensitivity He

Agilent Recommended:

Status:

28.38	Mcps/ppm
>= 23.8	
Pass	

Mass 89 Sensitivity H<sub>2</sub>

Agilent Recommended:

Status:

129.27	Mcps/ppm
>= 68	
Pass	

Oxide Ratio 158/140

Agilent Recommended:

Status:

1.047	%
<= 1.38	
Pass	

Doubly Charged Species Ratio 70/140

Agilent Recommended:

Status:

1.482	%
<= 2.3	
Pass	

Setpoint Status:

Pass

Runs: 1

Overall Autotune Test Status

Pass

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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## Background (No Gas Mode)

Purpose

This test examines the background of the ICP-MS in no gas mode by monitoring ions during a blank run.

Setpoint

Conditions

Masses:	7	AMU
	89	AMU
	205	AMU

Measurements and Results

Masses (AMU):

Measured Value:

Agilent Recommended:

Status:

7	89	205
3.200	3.300	9.900
<= 6.9	<= 4.8	<= 11.6
Pass	Pass	Pass

Setpoint Status:

Pass

Runs: 1

Overall Background (No Gas Mode) Test Status

Pass

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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## Background (Gas Mode)

Purpose

This test examines the background of the ICP-MS in the various gas modes by monitoring ions during a blank run.

Setpoint Gas Mode: Helium

Conditions

Mass:	78	AMU
Integration Time:	1.0	sec
Cycles:	20	

Measurements and Results

Mass (AMU):

Measured Value:

Agilent Recommended:

Status:

78	cps
42.8500	
<= 115	
Pass	

Setpoint Status:

Pass

Runs: 1

Setpoint Gas Mode: Hydrogen

Conditions

Mass:	78	AMU
Integration Time:	1.0	sec
Cycles:	20	

Measurements and Results

Mass (AMU):

Measured Value:

Agilent Recommended:

Status:

78	cps
2.1500	
<= 4.8	
Pass	

Setpoint Status:

Pass

Runs: 1

Overall Background (Gas Mode) Test Status

Pass

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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## 20-Minute Stability (No Gas Mode)

Purpose

This test monitors the abundance of ions present in the checkout standard over a 20-minute period to verify that the signal is stable. The %RSD of the abundance of given ions is calculated internally by the software and compared to the limit.

Setpoint

Conditions

Mode:	Spectrum	
Masses:	7, 9, 59, 89, 140, 205	
Integration Time:	9.99	sec
Peak Pattern:	3	points/peak
Repetitions:	20	
Sweeps/Replicates:	100	

Measurements and Results

Masses (AMU):

Stability RSD:

Agilent Recommended:

Status:

7	89	205
0.98400	0.51495	0.73011
<= 2.3	<= 2.3	<= 2.3
Pass	Pass	Pass

Setpoint Status:

Pass

Runs: 1

Overall 20-Minute Stability (No Gas Mode) Test Status

Pass

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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## Declaration of Change Control

This document is under change control. Revision history is maintained and printed on each document. Access to the master documents is limited to process owners. Documents receive periodic review and cannot be assigned an evergreen status. The qualification performed according to this document refers only to the hardware/software configuration in place at the time of the qualification. Agilent Technologies recommends that instrument configuration change management procedures be in place in order to maintain the validation process. Any changes to the analytical or computer hardware or software must be clearly specified. A change management system provides a means for determining the degree of requalification required according to the extent of the changes made. All details of the changes must be thoroughly recorded and documented, together with details of completed tests and their results. Note: Hardware/software configuration management is the customer's responsibility.

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471168

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## Attachments

Training requirements note: The delivery engineer attaches an ACE technique-specific training certificate to the Equipment Qualification Report (EQR). Obtaining ACE technique-specific certification includes pre-require training for Data Integrity, General Compliance topics (GMP, GLP, ALCOA, etc.), instrument hardware and software components, and the ACE technique itself. The one certificate encompasses all pre-require trainings as documented in the Agilent Learning Management System called Success Factors.


Location	Category	Document Name	Page
EQR	General	Certificate of System Qualification	18
EQR	General	Operator's training certificate and qualifications	19
EQR	General	Certificate of Qualification for ACE	20
EQR	General	Certificate of Qualification for ACE	21
EQR	General	Tune reports	22
EQR	General	Test Report	25
EQR	General	Test Report	27
EQR	General	Two Report	28

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471168

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General

Document Name: Certificate of System Qualification

 **Agilent Technologies**

**Agilent Compliance Engine Self Qualification**

Date: September 14, 2021 4:59:15 PM  
Drive Serial #: ACA292C8 Platform Revision: ACE 3.11

Individual self-qualification reports for each specific technique installed are also available upon request. They provide additional details in the general report from the coaches summary and are structured by the actual algorithms challenged during the process. There is not a one-to-one relationship between algorithm and CO program level because some algorithms are used by several tests and across multiple serial hardware components of the qualified systems.

Technique Type	Tests Completed	Result
Atomic Absorption	7	Confirms
Capillary Electrophoresis	10	Confirms
Dissolution	6	Confirms
Immersion Spectroscopy	3	Confirms
Gas Chromatography - GCMS	17	Confirms
Gas Chromatography	20	Confirms
Gas Permeation Chromatography	5	Confirms
ICP-MS	6	Confirms
Infrared Spectroscopy	7	Confirms
Liquid Chromatography	17	Confirms
Liquid Chromatography - LCMS	8	Confirms
Microfluidics	16	Confirms
Sample Preparation - Gas Chromatography	9	Confirms
Sample Preparation - Liquid Chromatography	8	Confirms
Supercritical Fluid Chromatography	18	Confirms
Software	8	Confirms
UV-Vis Spectrophotometer	13	Confirms

Overall Qualification Status  
Confirms

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471168

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General

Document Name: Operator's training certificate and qualifications

 **Agilent Technologies**

**Certificate of Completion**

Learner Name: Puthip Kurethan

Title Of Course: AP/CE/CPMS-2-038-A/Agilent 7990/CPMS (SE) update training

Completion Date: June 7, 2014

Certified By Company: Learning at Agilent

All Service and Support training certificates have the following specific limitations:

A certificate for Service and Support training is only valid while employed by Agilent Technologies or while working as an Agilent authorized service provider, through which the service employee has ongoing access to Agilent's Safety Alerts, Service Status, internal scheduled updates, update training, support documentation, technical support, current parts, and parts pricing. Completion of training alone, without being employed by Agilent Technologies, does not qualify an individual to sell, install, service or maintain Agilent products.

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471168

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General

Document Name: Certificate of Qualification for ACE

Agilent Technologies

## Certificate of Completion

Learner Name: Pasitop Kousanlian  
 Title Of Course: AN-CE-SS-II-030-A: ACE 3.5 User Update Training  
 Completion Date: July 7, 2020  
 Certified By Company: Learning at Agilent

All Service and Support training certificates have the following specific limitations:  
A certificate for Service and Support training is only valid while employed by Agilent Technologies or while working as an Agilent authorized service provider, through which the service employee has ongoing access to Agilent's Safety Alerts, Service Notes, internal technical notices, update training, expert documentation, technical support, course parts, and parts updates. Completion of training alone, without being employed by Agilent Technologies, does not qualify an individual to safety alerts, service or maintain Agilent products.

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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General

Document Name: Certificate of Qualification for ACE

Agilent Technologies

## Certificate of Completion

Learner Name: Pasitop Kousanlian  
 Title Of Course: AN-CE-ICPMS-2-035-B: CrossLab Compliance Hardware Specific Delivery for Agilent ICP-MS Systems  
 Completion Date: October 31, 2020  
 Certified By Company: Learning at Agilent

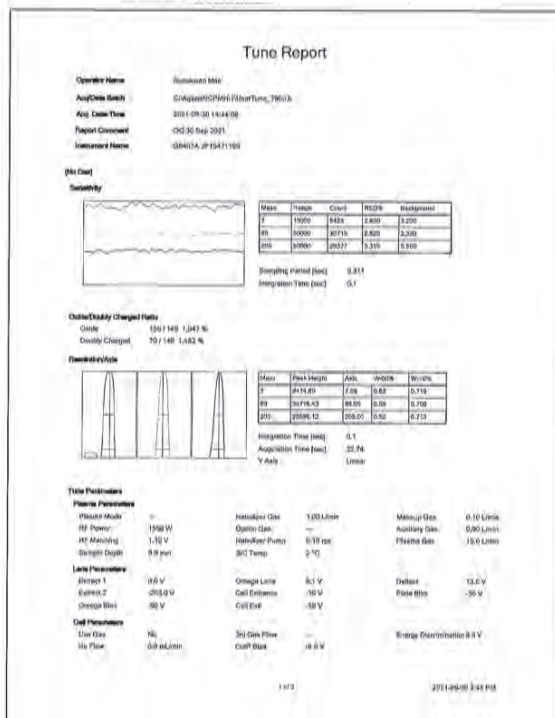
All Service and Support training certificates have the following specific limitations:  
A certificate for Service and Support training is only valid while employed by Agilent Technologies or while working as an Agilent authorized service provider, through which the service employee has ongoing access to Agilent's Safety Alerts, Service Notes, internal technical notices, update training, expert documentation, technical support, course parts, and parts updates. Completion of training alone, without being employed by Agilent Technologies, does not qualify an individual to safety alerts, service or maintain Agilent products.

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System ID: JP15471169

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General

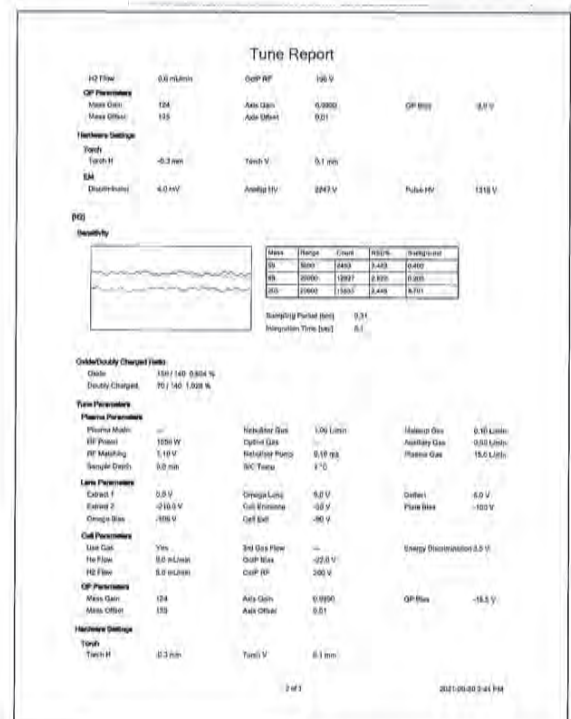
Document Name: Tune reports



Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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Document Name: Tune reports



Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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Document Name:

Tune reports



Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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General

Document Name:

Test Report

Batch Summary Report							
Batch Folder:		C:\Agilent\2021\09\30\210930					
Analysis File:		80 Hz Batch 101					
Tune Step:		#1 101					
Run	File	Acq. Date/Time	Data File	Sample Name	Type	Level	Position
1	2021-09-30 2:04 PM	80 Hz 101		Sample			10000

Page 1 / 2 2021-09-30 14:03:36

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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Document Name:

Test Report

Batch Summary Report							
Analysis File:		C:\Agilent\2021\09\30\210930					
Sample Name:		CPS					
Tune Step:		#1 101					
Run	File	Acq. Date/Time	Data File	Sample Name	Type	Level	Position
1	2021-09-30 2:04 PM	80 Hz 101		Sample			10000

Page 1 / 2 2021-09-30 14:03:36

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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General

Document Name:

Test Report

Batch Summary Report							
Batch Folder:		C:\Agilent\2021\09\30\210930					
Analysis File:		80 Hz Batch 101					
Tune Step:		#1 101					
Run	File	Acq. Date/Time	Data File	Sample Name	Type	Level	Position
1	2021-09-30 2:04 PM	80 Hz 101		Sample			10000

Page 1 / 2 2021-09-30 14:03:36

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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Document Name: Test Report

## Batch Summary Report

Analyte Table	
Sample Name	CPS
Batch ID	31300

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2021-09-30 15:10:31

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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General

Document Name: Test Report

## Batch Summary Report

Batch Folder: D:\Agilent Service\001 58 Sep 2021\2021M034  
Analysis File: 20210930\_38\_1241  
Batch Size: 41 No. Gels

Run	Acq. Date/Time	Duration	Sample Name	Type	Level	Duration
1	2021-09-30 15:12:41	20:34:48	31300	Sample		1:00:00

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2021-09-30 15:10:31

Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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Document Name: Test Report

## Batch Summary Report

Analyte Table	
Sample Name	CPS
Batch ID	31300

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2021-09-30 15:10:31

Date: September 30, 2021 4:07:18 PM  
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## Electronic Signature

## Purpose

This signature page was created and published because the ACE sign-off action was executed, which is valid for the entire document, including attachments. The ACE sign-off is an electronic signature that requires two distinct identification components: unique username and personal password. The Agilent representative who has delivered this service understands the meaning and legal status of an electronic signature. As a trained official operator, the Agilent representative has a unique password and login to access ACE and electronically sign this document. (Other e-signatures can be applied to this document using a Document Content Management or other suitable method defined in your data access and control procedures.)

## Details

Full Name of Signer: Panthep Kurassathwin  
Logged On User Name: panthep\_kurassathwin@agilent.com  
Signature Creation Date: September 30, 2021  
Reason for Signature: Executed protocol and published this original version of document

## Regulatory Disclaimer

This document provides a protocol to verify and record instrument configuration and evidence of proper operation. It has been prepared from our interpretation of applicable regulations as well as industry best practices. The document is designed to provide an important component of a complete compliance package. Validation depends upon many factors and use of this protocol alone does not assure compliance. Agilent Technologies makes no promises or representations as to its sufficiency for any specific regulatory program.

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Date: September 30, 2021 4:07:18 PM  
System ID: JP15471169

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User Name: johndoe.john@abc.com

Hostname: ASBKKWVX15

Syslog ID: JP16471-110

Print Date: September 30, 2021 07:28 PM

ALS OQHVV 7899 33Sep21 Transaction log :

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
September 30, 2021 3:50:07 PM	Audit	Session Created	Session	Name
September 30, 2021 3:50:07 PM	Start	Configuration	Session	Name
September 30, 2021 3:50:07 PM	Audit	Enrollment	Learning	User is Failsafe (ignore) and does not require pin unlock code.
September 30, 2021 3:52:52 PM	Audit	Failsafe failed	Initiate	EDP details for primary biometric (biMaj) - File path: [Personalization]systemConfig\enrollments\biSamples\61210.caj [aj] EGP Pin Name: [aj]M6102_55.esq], EGP Name: [aj]entiretheismemoes]
September 30, 2021 3:52:54 PM	Roll	Configuration	Status	Name
September 30, 2021 3:52:57 PM	Roll	Verification	Session	OQ
September 30, 2021 3:52:57 PM	Start	Execution	Autosampler Check / SPSE4	Name
September 30, 2021 3:53:00 PM	Roll	Execution	Autosampler Check / SPSE4	Run Count : 1
September 30, 2021 3:53:04 PM	Start	Execution	[Integrated Sample Introduction System (IBIS) Check / IBSC Integrated Sample Introduction System (IBIS) Check	Name
September 30, 2021 3:53:06 PM	Roll	Initiation	[Integrated Sample Introduction System (IBIS) Check / IBSC Integrated Sample Introduction System (IBIS) Check	Run Count : 1

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Date: September 30, 2021 4:07:16 PM  
System ID: JP15471160

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User Name: jsmith@jordan.com		System ID: JPS1471108		
Hostname: ASRKKW315		Print Date: September 30, 2021 4:07:23 PM		
ALS QGHW 7908 30Sep21 Transaction log				
Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
September 30, 2021 9:53:10 PM	Start	Execution	Autosave - QGH03A; Autosave 1	None
September 30, 2021 9:55:08 PM	End	Execution	Autosave - QGH03A; Autosave 1	Run Count: 1
September 30, 2021 9:55:12 PM	Start	Execution	Background (No Gas Mode) - QGH03A; No Gas Mode Background 1	None
September 30, 2021 9:56:40 PM	End	Execution	Background (No Gas Mode) - QGH03A; No Gas Mode Background 1	Run Count: 1
September 30, 2021 9:58:43 PM	Start	Execution	Background (Gas Modes) - QGH03C; Gas Mode Background-Hydrogen	None
September 30, 2021 9:59:17 PM	End	Execution	Background (Gas Modes) - QGH03C; Gas Mode Background-Hydrogen	Run Count: 1
September 30, 2021 9:59:18 PM	Start	Execution	Background (Gas Modes) - QGH03B; Gas Mode Background-Hydrogen	None
September 30, 2021 9:59:50 PM	End	Execution	Background (Gas Modes) - QGH03B; Gas Mode Background-Hydrogen	Run Count: 1
September 30, 2021 9:59:51 PM	Start	Execution	20 Minute Stability (No Gas Mode) - QGH03A; 20 Minute Stability (No Gas Mode) 1	None
September 30, 2021 9:59:52 PM	End	Execution	20 Minute Stability (No Gas Mode) - QGH03A; 20 Minute Stability (No Gas Mode) 1	Run Count: 1
September 30, 2021 9:59:54 PM	Start	Configuration	Session	OK
September 30, 2021 9:59:54 PM	Stop	Reporting	Session	None

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Date: September 30, 2021 4:07:16 PM  
System ID: JP15471188

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Time	Transaction Date	Activity Performed	Type of Transaction	Optional Information
September 30, 2021 4:03:07 PM	Auto	Reporting	Session	Report Generated: Conflicts
September 30, 2021 4:03:17 PM	Auto	Reporting	Session	Report Generated: Report
September 30, 2021 4:03:58 PM	Start	Qualification	Session	OQ
September 30, 2021 4:04:38 PM	End	Qualification	Session	OQ
September 30, 2021 4:05:06 PM	Start	Reporting	Session	None
September 30, 2021 4:04:20 PM	Auto	Reporting	Session	Report Generated: Report
September 30, 2021 4:04:38 PM	Auto	Reporting	Session	Report Generated: Report

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Date: September 30, 2021 4:07:16 PM  
System ID: JP15471160

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REVIEW BY Sudarat N.  
APPROVED BY Savitree N.  
NEXT CAL. DATE 5/06/2013

## Maintenance Protocol

Atomic Fluorescence Spectrometer  
**mercur DUO /**  
**mercur DUO plus**

Serial-No.: K190A0143 Customer-No.: C04-002  
Date: 6/06/2022 Carried out by: Mr. Satchai Pak-on

Maintenance with following Operational Qualification (OQ)  
(requires a separate OQ protocol) ☐

Company	<u>บริษัท 10102106 จำกัด</u>
User	<u>สมิทธิ์ สมบูรณ์</u>
Department	<u>Lab</u>
Street	<u>101 ถนนวิภาวดีรังสิต แขวงจตุจักร เขตจตุจักร กรุงเทพฯ</u>
Zip Code, City	<u>17250 กรุงเทพฯ 10250</u>
Country	<u>Thailand</u>
Phone	
Fax	
E-mail	

## Maintenance works basic unit

lightness visual check inside the Mercur ☒  
visual check if gold-traps are broken ☒  
visual check if spectrometer is contaminated ☒  
visual check of the fluorescence cell ☒  
visual check of the absorption cell, incl. window ☒  
reactor cleaning ☒  
check pump-hose, if necessary change it ☒  
check swivel drive (SEV) ☒  
check drying-hose, output gas-liquid-separator ☒  
test Bubble-Sensor ☒  
check gas flows ☒  
check volume flows, reagents ☒  
recording stray light values ☒  
measurement with 30 ng/l ☒

## Maintenance works Autosampler

Serial No.: 52 1102 250

lubricate the dosing-winding (Teflon-grease-spray) ☒  
clean the dosing cylinder, if necessary exchange it ☒  
lubricate the winding system of the height drive with some drops of oil ☒  
check the toothed belt ☒  
check the position of the mechanical stopper (height: 13mm) ☒  
check the pump rate of mixing pump (<14s AS52, typ.7s/<20s AS52S, typ.10s) ☒  
check the pump rate of washing cup ☒  
check the electrical hose connections for good contact ☒  
check the connectors of the magnetic valves ☒  
check the dosing hose for buckling, if necessary exchange it ☒

Device parameter	nominal value	actual value
visual check general tightness inside the Mercur	o.k.: <input checked="" type="checkbox"/>	changed: <input type="checkbox"/>
visual check Goldtraps <u>(Goldtraps 2 / No)</u>	o.k.: <input checked="" type="checkbox"/>	changed: <input type="checkbox"/>
visual check spectrometer		
Fluorescence cell	o.k.: <input checked="" type="checkbox"/>	changed: <input type="checkbox"/>
Absorption cell, incl. window	o.k.: <input checked="" type="checkbox"/>	changed: <input type="checkbox"/>
lens	o.k.: <input checked="" type="checkbox"/>	changed: <input type="checkbox"/>
Swivel drive (SEV)	o.k.: <input checked="" type="checkbox"/>	changed: <input type="checkbox"/>
check pump hoses	o.k.: <input checked="" type="checkbox"/>	changed: <input type="checkbox"/>
check hoses and hose connectors	o.k.: <input checked="" type="checkbox"/>	changed: <input type="checkbox"/>
check and clean reactor	o.k.: <input checked="" type="checkbox"/>	changed: <input type="checkbox"/>
check drying hose output Gas-liquid-separator	o.k.: <input checked="" type="checkbox"/>	changed: <input type="checkbox"/>
check bubble-sensor	o.k.: <input checked="" type="checkbox"/>	not o.k.: <input type="checkbox"/>
Check gasflow		
Argon pressure valve 4	1.2 - 1.5 bar	<u>1.5 bar</u>
Valve 1	10 Nl/h or 0.166 NL/min	<u>0.166</u>
Valve 2	50 Nl/h or 0.833 NL/min	<u>0.831</u>
Valve 3	5 Nl/h or 0.083 NL/min	<u>0.084</u>
Valve 4	10 Nl/h or 0.166 NL/min	<u>0.169</u>
Check liquidflow		
Acid	2.5ml/min ± 1 ml	<u>2.5 ml/min</u>
Red.-agent	2.5ml/min ± 1 ml	<u>2.5 ml/min</u>
Sample	10ml/min ± 2 ml	<u>10 ml/min</u>
Adventitious light - values	(V)	from file
100	0	0
200	0	0
300	0	0
350	0	1
400	1	3
450	4	7
500	9	17
550	19	36
575	26	51
600	36	71

Device parameter	nominal value	actual value
Analytical parameters Fluorescence cell		
Conditions: max. conc.: 10 µg/L PMT-voltage: <u>369</u> V		
Blank-solution		Int. <u>0.0003</u>
without enrichment / FBR 30 ng/L	Int > 0.0015 RSD < 3 %	Int. <u>0.0053</u> RSD <u>1.07</u> %
Conditions: max. conc.: 1.7 µg/L PMT-voltage: <u>352</u> V		
Blank-solution		Int. <u>0.0040</u>
with enrichment / FBR 30 ng/L	Int > 0.008 RSD < 3 % Fok.-factor (Int <sub>2</sub> / Int <sub>1</sub> ) ≥ 3.5	Int. <u>0.0244</u> RSD <u>0.87</u> % <u>4.206</u>
Analytical parameters Absorption cell		
Blank-solution		Ext. <u>0.0010</u>
without enrichment / FBR 100 ng/L	Ext. > 0.0012 RSD < 5 %	Ext. <u>0.0048</u> RSD <u>3.32</u> %
Comments		

Mr. Satchai Pak-on  
Signature Technician

Bangkok, 6/06/2022  
Place, Date (DD/MM/YYYY)

สมิทธิ์ สมบูรณ์  
Signature Customer

6/06/2022  
Place, Date (DD/MM/YYYY)



REVIEW BY	Sudart N.
APPROVED BY	Sudart N.
NEXT CAL. DATE	06/06/2023

## Maintenance Protocol

### Atomic Fluorescence Spectrometer mercur / mercur plus

Serial-No.: 1900124 Customer-No.: C04-C02  
Date: 9/06/2022 Carried out by: Mr. Syechi Falea

Maintenance with following Operational Qualification (OQ)  
(requires a separate OQ protocol) ☐

Company	PT. SUDART N. MANUFACTURING CO. / CUMMINS ENGINE
User	gungunband nmta.2017
Department	Lab
Street	104 roadwinds 40 roadwinds roadwinds
Zip Code, City	roadwinds roadwinds roadwinds 1250
Country	Indonesia
Phone	
Fax	
E-mail	

#### Maintenance works basic unit

tightness visual check inside the Mercur ☒  
visual check if gold-traps are broken ☒  
visual check if spectrometer is contaminated ☒  
reactor cleaning ☒  
check pump-hose, if necessary change it ☒  
check drying-hose, output gas-liquid-separator ☒  
test Bubble-Sensor ☒  
check gas flows ☒  
check volume flows, reagents ☒  
recording stray light values ☒  
measurement with 30 ng/l ☒

#### Maintenance works Autosampler

Serial No.: 901 939

lubricate the dosing-winding (Teflon-grease-spray) ☒  
clean the dosing cylinder, if necessary exchange it ☒  
lubricate the winding system of the height drive with some drops of oil ☒  
check the toothed belt ☒  
check the position of the mechanical stopper (height: 13mm) ☒  
check the pump rate of mixing pump (<14s AS52, typ.7s/<20s AS52S, typ.10s) ☒  
check the pump rate of washing cup ☒  
check the electrical hose connections for good contact ☒  
check the connectors of the magnetic valves ☒  
check the dosing hose for buckling, if necessary exchange it ☒

Device parameter	nominal value	actual value
visual check general tightness inside the Mercur	o.k.:	<input checked="" type="checkbox"/> changed: <input type="checkbox"/>
visual check Goldtraps	o.k.:	<input checked="" type="checkbox"/> changed: <input type="checkbox"/>
visual check spectrometer		
	cuvette	o.k.:
	lens	o.k.:
check pump hoses	o.k.:	<input checked="" type="checkbox"/> changed: <input type="checkbox"/>
check hoses and hose connectors	o.k.:	<input checked="" type="checkbox"/> changed: <input type="checkbox"/>
check and clean reactor	o.k.:	<input checked="" type="checkbox"/> changed: <input type="checkbox"/>
check drying hose output Gas-liquid-separator	o.k.:	<input checked="" type="checkbox"/> changed: <input type="checkbox"/>
check bubble-sensor	o.k.:	<input checked="" type="checkbox"/> not o.k.: <input type="checkbox"/>
Check gasflow		
Argon pressure valve 4		1.2 - 1.5 bar
	Valve 1	10 Nl/h or 0.166 NL/min
	Valve 2	50 Nl/h or 0.833 NL/min
	Valve 3	5 Nl/h or 0.083 NL/min
	Valve 4	10 Nl/h or 0.166 NL/min
Check liquid flow		
	Acid	2.5 ml/min ± 1 ml
	Red.-agent	2.5 ml/min ± 1 ml
	Sample	10 ml/min ± 2 ml
Adventitious light - values		
	(V)	from file
	100	0
	200	0
	300	0
	350	0
	400	1
	450	2
	500	6
	550	13
	575	19
	600	27

Device parameter	nominal value	actual value
<b>Analytical parameters</b>		
Conditions : max conc.: 10 µg/L PMT-voltage: 404 V		
Blank-solution without enrichment / FBR 30 ng/L	Int > 0.0015 RSD < 3 %	Int 0.0005 Int 0.0024 RSD 1.12 %
Conditions : max conc.: 1.7 µg/L PMT-voltage: 395 V		
Blank-solution with enrichment / FBR 30 ng/L	Int > 0.008 RSD < 3 %	Int 0.0018 Int 0.0104 RSD 0.89 %
Fok factor (Int <sub>2</sub> / Int <sub>1</sub> )	> 3,5	4
<b>Comments</b>		

Mr. Sribhai Pak-on -  
Signature Technician

Signature Customer

Bangkok, 9/06/2022  
Place, Date (DD/MM/YYYY)

06/06/2022  
Place, Date (DD/MM/YYYY)

Standard: Protocol menu 1 (revision) plus update 27.06.2016 (version 2.1) (new);  
Analytik Jena AG | Koepfer-Strasse 30 | 07745 Jena | Germany

5/3



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)  
CORPORATE SERVICES & EQUIPMENT CALIBRATION AND TESTING SERVICES  
534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250  
TEL: 0-2717-3000-27 FAX: 0-2719-9484



Cert.No.: 22CHO30  
Page: 1 of 3

## Certificate of Calibration

Equipment : Spectrophotometer

Manufacturer : HACH

Model : DR3900

Serial No. : 2021559

ID No. : BKK\_EN0356

Condition As-Received: Used Item

Received Date : 21 January 2022

Calibration Date : 21 January 2022

Reference : 2201-0616OC-4

Submitted by : ALS Laboratory Group (Thailand) Co., Ltd.  
104 Phatthanakan 40, Phatthanakan Rd.,  
Khwaeng Phatthanakan, Khet Suan Luang,  
Bangkok 10250 Thailand

Calibration Place : Wet Chemistry Lab 2

Ambient Temperature : ( 22.8 - 22.3 ) °C (On-Site)

Relative Humidity : ( 60.3 - 61.8 ) % (On-Site)

In - house method :

CP-0CH4 based on ASTM E 275-01

Calibrated by : Kunchit Promprat

Approved by :  
Approved Signatory

( ) Malee Butkruea  
( ) Sathip Meangmai  
( ) Warakorn Lernagatrakul

Issue Date : 3 February 2022

The Uncertainties are for a confidence probability of approximately 95%.

This certificate may not be reproduced other than in full, except with the prior written  
Approval of the head of Corporate Services & Equipment Calibration and Testing Services.

A 0037380



Cert. No. : 22CHO30

Page : 2 of 3

### Condition of calibration result

#### 1. Reference Standard Material :

Material	Serial No.	Certificate No.	Due date
1. Absorbance Standard set	8331	86623	08 Sep 2022
2. Wavelength Standard set	14536	89302	19 Jan 2023
3. Wavelength Standard set	14537	89303	19 Jan 2023

#### 2. This certificate is valid only to the item calibrated on date and place of calibration.

#### 3. This certificate is traceable to the International System of Unit maintained at :

- National Physical Laboratory (NPL), The United Kingdom of Great Britain and Northern Ireland
- National Institute of Standards and Technology (NIST), The United States of America

4. Spectral BandWidth : 5 nm  
Scan Speed : - nm/min

### Calibration Results : without adjustment

#### Wavelength Accuracy

Certified Values of Reference Material ( nm )	UUC Reading ( nm )	Uncertainty of Measurement ( ± nm )	Coverage Factor k
418.40	418	0.59	2.00
479.88	479	0.59	2.00
513.75	513	0.59	2.00
537.00	536	0.59	2.00
638.00	638	0.59	2.00
747.61	748	0.59	2.00
807.04	807	0.59	2.00



Cert. No. : 22CHO30

Page : 3 of 3

### Calibration Results : without adjustment

#### Photometric Accuracy

Wavelength ( nm )	Certified Values of Reference Material ( Abs )	UUC Reading ( Abs )	Uncertainty of Measurement ( ± Abs )	Coverage Factor k
420.0	Zero	0.000	0.0028	2.00
	0.5723	0.570	0.0033	2.00
	0.7522	0.750	0.0031	2.00
	1.0907	1.089	0.0032	2.00
440.0	Zero	0.000	0.0028	2.00
	0.5616	0.559	0.0034	2.00
	0.7345	0.731	0.0032	2.00
	1.0646	1.062	0.0033	2.00
465.0	Zero	0.000	0.0028	2.00
	0.5118	0.513	0.0034	2.00
	0.6773	0.678	0.0031	2.00
	0.9809	0.983	0.0033	2.00
546.1	Zero	0.000	0.0028	2.00
	0.5228	0.522	0.0030	2.00
	0.6861	0.684	0.0030	2.00
	0.9941	0.994	0.0030	2.00
590.0	Zero	0.000	0.0028	2.00
	0.5546	0.553	0.0029	2.00
	0.7159	0.713	0.0030	2.00
	1.0369	1.034	0.0030	2.00
635.0	Zero	0.000	0.0028	2.00
	0.5401	0.539	0.0029	2.00
	0.6835	0.681	0.0029	2.00
	0.9889	0.987	0.0030	2.00

### Remark

- Each individual filter is measured against the empty filter holder (blank) used to zero the spectrophotometer.  
The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor k, providing a level of confidence of approximately 95 %.

-000-

1092303

1092302



## ภาคผนวก จ

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สำเนาหนังสือใบอนุญาตขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน



ที่ อก ๐๓๑๐(๑)/ ๑๐๖๙



กรมโรงงานอุตสาหกรรม  
ถนนพระรามที่ ๖ เขตราชเทวี  
กรุงเทพมหานคร ๑๐๕๐๐

๒๘ มกราคม ๒๕๖๕

เรื่อง ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

เรียน กรรมการผู้จัดการ บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน  
ลงวันที่ ๓๐ กรกฎาคม ๒๕๖๓

- สิ่งที่ส่งมาด้วย ๑. รายชื่อผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๑ แผ่น  
๒. รายชื่อเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๕ แผ่น  
๓. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๓๑ แผ่น

ตามหนังสือที่อ้างถึง บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด ขอต่ออายุ  
หนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๒๐๔ สถานที่ตั้งเลขที่ ๑๐๔  
ซอยพัฒนาการ ๔๐ ถนนพัฒนาการ แขวงพัฒนาการ เขตสวนหลวง กรุงเทพมหานคร  
ต่อกรมโรงงานอุตสาหกรรม นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย)  
จำกัด ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน โดยมีองค์ประกอบดังนี้

- ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๖ ราย ตามสิ่งที่ส่งมาด้วย ๑  
ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๑๖๒ ราย ตามสิ่งที่ส่งมาด้วย ๒  
ค. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนให้วิเคราะห์ในน้ำเสีย จำนวน ๕๙ รายการ น้ำใต้ดิน  
จำนวน ๑๒๖ รายการ อากาศเสีย ๑๖ รายการ สิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว จำนวน ๓๕ รายการ และดิน  
จำนวน ๑๒๕ รายการ รวมทั้งสิ้นจำนวน ๓๖๑ รายการ ตามสิ่งที่ส่งมาด้วย ๓

หนังสือฉบับนี้จะหมดอายุในวันที่ ๒ กันยายน ๒๕๖๖ หากประสงค์จะต่ออายุหนังสือ  
รับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ให้ยื่นคำขอต่ออายุพร้อมเอกสารประกอบคำขอ  
ต่อกรมโรงงานอุตสาหกรรม ภายใน ๓๐ วัน ก่อนวันสิ้นอายุของหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์  
เอกชน ซึ่งคำขอต่ออายุดังกล่าวขอรับได้ที่กรมโรงงานอุตสาหกรรม

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

(นายศิริระ จันทรเจต)

นักวิทยาศาสตร์ชำนาญการพิเศษ รักษาการแทน  
ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน  
ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๒๐๒ ๔๑๔๖ ๐ ๒๒๐๒ ๔๐๐๒

โทรสาร ๐ ๒๓๕๔ ๓๒๐๘ ๐ ๒๓๕๔ ๓๔๑๕

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

เลขทะเบียน ว-๒๐๔

ที่ อก ๐๓๑๐(๑)/

ลงวันที่ ๒๘ มกราคม ๒๕๖๕

ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๖ ราย

- |                                |                            |
|--------------------------------|----------------------------|
| ๑) นางสาวยุพาพร จันทร์เปล่ง    | ทะเบียนเลขที่ ว-๒๐๔-ค-๔๗๐๐ |
| ๒) นางสาวชัชชัย โกมารกุล ณ นคร | ทะเบียนเลขที่ ว-๒๐๔-ค-๔๗๐๑ |
| ๓) นายศรายุทธ จิตรานนท์        | ทะเบียนเลขที่ ว-๒๐๔-ค-๔๗๐๒ |
| ๔) นางสาวกนกกร เอนก            | ทะเบียนเลขที่ ว-๒๐๔-ค-๖๑๑๑ |
| ๕) นายสุริยา สอนแก้ว           | ทะเบียนเลขที่ ว-๒๐๔-ค-๖๑๑๒ |
| ๖) นายวิชาญ ชูณหะวัณ           | ทะเบียนเลขที่ ว-๒๐๔-ค-๖๑๑๓ |



(นายศิริระ จันทร์เจิด)

นักวิทยาศาสตร์ชำนาญการพิเศษ รักษาการแทน

ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน

ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

เลขทะเบียน ว-๒๐๔

ที่ อก ๐๓๑๐(๑)/ ๑๐๖๙

ลงวันที่ ๒๘ มกราคม ๒๕๖๕

ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๑๖๒ ราย

๑) นางสาวจินดา ไชจุลธรรม	ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๐๘
๒) นางสาวสาวิตรี น้อยเสงี่ยม	ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๐๙
๓) นางสาวชนัญญาญจน์ อัมขม	ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๑๐
๔) นางสาวนรินทร์ สายเส็ง	ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๑๕
๕) นางสาวนันทวดี สมบูรณ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๑๖
๖) นางสาวศรัณยา เฉลิมธำรงค์	ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๑๗
๗) นางสาวสรารักษ์ มงคลจิรวุฒิ	ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๑๙
๘) นางสาวศิริลักษณ์ พึ่งแพง	ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๒๐
๙) นายณพพงศ์ จันทรพันธุ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๐๘
๑๐) นายนรเศรษฐ์ โกมลาลัย	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๑๑
๑๑) นายธันวา จรียา	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๑๔
๑๒) นางสาวเกศรินทร์ แก้วมัน	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๑๖
๑๓) นางสาวสุวิมล ชัยเรืองวุฒิ	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๑๗
๑๔) นางสาวสุชาดา ธรรมถาวร	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๒๑
๑๕) นางสาวเบมิกา ชัยเดชธนกุล	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๒๓
๑๖) นางสาวศศิธร หมูสวัสดิ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๒๔
๑๗) นางสาวเสาวลักษณ์ ภู่นภาอำพร	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๒๕
๑๘) นายอภิสิทธิ์ สิงหา	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๒๖
๑๙) นายศักดิ์สิทธิ์ ไพศาลพิสุทธิ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๒๗
๒๐) ว่าที่ร้อยตรีหญิง พรรณีภา ขำเจริญ	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๒๘
๒๑) นางจิตดา คำภูแก้ว	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๔๓๑
๒๒) นางสาวอรรวรรณ รักยง	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๑๕
๒๓) นางสาวนพรัตน์ แยมกรานต์	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๑๙
๒๔) นายจุลเดช วารินทร์	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๐
๒๕) นางสาวดาญรัตน์ ร้องคำ	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๑
๒๖) นายนคร สุขเจริญ	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๒
๒๗) นายบัญชา นามเขตต์	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๓
๒๘) นายพรมมี ศรีปัตเนตร	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๕
๒๙) นายอุทิศ อุ่นสิม	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๖
๓๐) ว่าที่ร้อยตรี เฉลิมเกียรติ อมรศรีเสริม	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๘
๓๑) นางสาววริยา สร้างนา	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๙
๓๒) นายอนุพงศ์ รัตนศรีประเสริฐ	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๓๐
๓๓) นางสาวจุฑารัตน์ โอนสันเทียะ	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๔๒
๓๔) นางสาวจรรวรรณ พิมพ์อริกฤติยา	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๗๖

(นายศิระ จันทร์เจ็ด)

๓๕) นางสาวปรารค์ทิพย์...

นักวิทยาศาสตร์ชำนาญการพิเศษ วิชาการการแพทย์

ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน

สำนักงานคณะกรรมการอาหารและยา

๓๕) นางสาวปรางค์ทิพย์ กิจไพศาลศักดิ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๗๙
๓๖) นางสาวเดือนใจ ทางกลาง	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๐
๓๗) นางสาวจิราพร ศิริเวช	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๑
๓๘) นายวรกร ผูกרך	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๒
๓๙) นายทอง วิริยะสทกิจ	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๓
๔๐) นายธนิต เจนจบ	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๔
๔๑) นายคณิศร ขำเพชร	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๕
๔๒) นายอรรคพล นิยมวิทยาพันธ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๖
๔๓) นายภูวิช พรหมสะอาด	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๗
๔๔) นายธนเดช โภคาพิพัฒน์	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๘
๔๕) นายชวฤทธิ์ วงษ์จันทร์	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๙
๔๖) นายอาทิตย์ ศรีแสน	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๙๐
๔๗) นายเจษฎินทร์ คงศักดิ์ไทย	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๙๑
๔๘) นายจรัส บุญยั้ง	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๙๒
๔๙) นายธนาณัติ เอนก	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๙๓
๕๐) นายอภิวัฒน์ ทุมหนู	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๙๔
๕๑) นางสาวสุภาขวัญ มาก	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๙๕
๕๒) นางสาวทัตพร ขวาลสมบูรณ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๐
๕๓) นางสาวธิดิมา บุญเพ็ง	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๑
๕๔) นางสาวกนกอร เข้มเพ็ชร	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๒
๕๕) นางสาวพัชรียา หงษ์สมดี	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๓
๕๖) นางสาวภาวนิดา สุรวงศ์ตระกูล	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๔
๕๗) นางสาวภาณุมาศ นามวัฒน์	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๕
๕๘) นางสาวอุไรรัตน์ ทิงสร้างแป้น	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๖
๕๙) นายธีรวัฒน์ ปวงสุข	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๗
๖๐) นายอิทธิพล ยะโส	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๘
๖๑) นายประพจน์ วรรณชูชัย	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๙
๖๒) นายชยธร พวงทิพย์	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๑๐
๖๓) นางสาวกนกวรรณ จันทบาล	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๑๑
๖๔) นางสาวเกษร หลักบุญ	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๑๒
๖๕) นายสิทธิโชค ธงเงิน	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๑๓
๖๖) นางศิลปวรรณ ใจบุญ	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๕๐๕
๖๗) นางสาวพรรณธิดา พุ่มคง	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๕๐๘
๖๘) นางสาวศรณีย์ ยิ่งดี	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๕๐๙
๖๙) นายนวกัทร ศรีวิริยะ	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๕๑๐
๗๐) นายสุวิชา ทองอ่อน	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๕๑๑
๗๑) นายวิญญู บุญตะนัย	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๕๑๓

(นายศิระ จันทรเจ็ด)

นักวิทยาศาสตร์ชำนาญการพิเศษ รักษาการแทน

ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน

กระทรวงอุตสาหกรรม

๗๒) นายสมบูรณ์...

[illegible]

(นายศิระ จันทรเจ็ด)

**นักวิทยาศาสตร์ชำนาญการพิเศษ รักษาการแทน**

ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน

ปฏิบัติการทางทะเลถึงได้ครบถ้วนสมบูรณ์

๑๐๙) นายนนทชัย...



๑๐๙) นายพนนพชัย อุปถัมภ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๘๕๙๔
๑๑๐) นายณัฐพล คุณสุทธิ	ทะเบียนเลขที่ ว-๒๐๔-จ-๘๕๙๕
๑๑๑) นายณันทวัฒน์ สาริน	ทะเบียนเลขที่ ว-๒๐๔-จ-๘๕๙๖
๑๑๒) นายปิยะนัฐ พลมะศรี	ทะเบียนเลขที่ ว-๒๐๔-จ-๘๕๙๗
๑๑๓) นายพงศ์สิริ โสมเขียว	ทะเบียนเลขที่ ว-๒๐๔-จ-๘๕๙๘
๑๑๔) นายพีรพัฒน์ กำคำ	ทะเบียนเลขที่ ว-๒๐๔-จ-๘๕๙๙
๑๑๕) นายภาณุพงศ์ มานิตย์	ทะเบียนเลขที่ ว-๒๐๔-จ-๘๖๐๐
๑๑๖) นายมงคล ผลาทิพย์	ทะเบียนเลขที่ ว-๒๐๔-จ-๘๖๐๑
๑๑๗) นายมนุรินทร์ พูลศิริ	ทะเบียนเลขที่ ว-๒๐๔-จ-๘๖๐๒
๑๑๘) นายสิรินันท์ ทองอ้น	ทะเบียนเลขที่ ว-๒๐๔-จ-๘๖๐๓
๑๑๙) นายอเนชา ทันสมัย	ทะเบียนเลขที่ ว-๒๐๔-จ-๘๖๐๔
๑๒๐) นายอดิศักดิ์ ผมไผ	ทะเบียนเลขที่ ว-๒๐๔-จ-๘๖๐๕
๑๒๑) นายอนันตชัย วิสุม	ทะเบียนเลขที่ ว-๒๐๔-จ-๘๖๐๖
๑๒๒) นายณัฐดนัย เจือละออง	ทะเบียนเลขที่ ว-๒๐๔-จ-๘๖๐๗
๑๒๓) นายวรวิธ ดินัก	ทะเบียนเลขที่ ว-๒๐๔-จ-๘๖๐๘
๑๒๔) นายแสงตะวัน นະตะສັດ	ทะเบียนเลขที่ ว-๒๐๔-จ-๘๖๐๙
๑๒๕) นายยุทธพงศ์ รัตนะ	ทะเบียนเลขที่ ว-๒๐๔-จ-๘๖๑๐
๑๒๖) นายชัยณวุฒิ ไชยชนะนิจ	ทะเบียนเลขที่ ว-๒๐๔-จ-๘๖๑๑
๑๒๗) นายวิศรุต ศรีธรรมมา	ทะเบียนเลขที่ ว-๒๐๔-จ-๘๖๑๒
๑๒๘) นายพนนทกร เผือกผ่อง	ทะเบียนเลขที่ ว-๒๐๔-จ-๘๖๑๓
๑๒๙) นายกำชัย สุทธะ	ทะเบียนเลขที่ ว-๒๐๔-จ-๘๖๑๔
๑๓๐) นางสาวณัฐภรณ์ รักทะเล	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๑๙
๑๓๑) นางสาวประภาภรณ์ บุตรพรม	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๒๐
๑๓๒) นางสาวนิลาวัลย์ นามพรม	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๒๑
๑๓๓) นางสาวพัชรินทร์ แสนสร้อย	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๒๒
๑๓๔) นายไพโรวัลย์ เปี่ยมพิมาย	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๒๓
๑๓๕) นางสาวศุภมาศ ทองมาก	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๒๔
๑๓๖) นางสาวลลิตา จิตรสว่าง	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๒๕
๑๓๗) นางสาวชไมพร เสิกภูเขียว	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๒๖
๑๓๘) นางสาวกฤติมาพร คำมีแก่น	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๒๗
๑๓๙) นางสาวสกลรัตน์ ภาควุฒิ	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๒๘
๑๔๐) นางสาวกาญจนา คงคุณ	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๒๙
๑๔๑) นางสาวไพรินทร์ ศรีรูปี	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๓๐
๑๔๒) นางสาวทิพนันทร ผุยปัญญา	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๓๑
๑๔๓) นางสาวสาธิตา ปานทอง	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๓๒
๑๔๔) นางสาวอริสา ทองนวล	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๓๓
๑๔๕) นางสาวอริยา คำคลอง	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๓๔

(นายศิริะ จันทรเจ็ด)

นักวิทยาศาสตร์ชำนาญการพิเศษ รักษาการแทน

ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน

๑๔๖) นางสาวบุตดาภรณ์...

๑๔๖) นางสาวชุตานกรณ์ สุนทรสนาน	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๓๕
๑๔๗) นางสาวสุดารัตน์ นนท์ประสาท	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๓๖
๑๔๘) นางสาวรัชนิกร เนียมกลาง	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๓๗
๑๔๙) นางสาวกัญญารัตน์ ศรีนิลทา	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๓๘
๑๕๐) นางสาวอัญชลี คำจันทร์	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๓๙
๑๕๑) นายบุญฤทธิ์ เอี่ยมเทศ	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๔๐
๑๕๒) นายศิริวัฒน์ พานิชย์	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๔๑
๑๕๓) นางสาวศุภรดา ปันมยุรา	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๔๒
๑๕๔) นางสาวพาฤดี คุณนาน	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๔๓
๑๕๕) นางสาวจิราเจต พองดา	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๔๔
๑๕๖) นางสาวกนกภรณ์ อุระ	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๔๕
๑๕๗) นางสาวอารยา มีชัย	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๔๖
๑๕๘) นางสาวจิตสุภา ประเทืองสุข	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๔๗
๑๕๙) นางสาวอริสา วิริยขันติธรรม	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๔๘
๑๖๐) นางสาววิษุตา นาคผจญ	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๔๙
๑๖๑) นางสาวพนิดา ยอดอินทร์	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๕๐
๑๖๒) นางสาวนันทิยา จันทะสุน	ทะเบียนเลขที่ ว-๒๐๔-จ-๙๒๕๑



(นายศิริระ จันท์เจ็ด)

นักวิทยาศาสตร์ชำนาญการพิเศษ รักษาการแทน

ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน

ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

เลขทะเบียน ว-๒๐๔

ที่ อก ๐๓๑๐(๑)/ ๑๐๖๕

ลงวันที่ ๒๘ มกราคม ๒๕๖๕

ขอขยายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๓๖๑ รายการ

น้ำเสีย จำนวน 59 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Aldicarb	High-Performance Liquid Chromatographic Method <sup>[4]</sup>
2	Aldicarb Sulfone	High-Performance Liquid Chromatographic Method <sup>[4]</sup>
3	Aldicarb Sulfoxide	High-Performance Liquid Chromatographic Method <sup>[4]</sup>
4	Aldrin	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup>
5	Arsenic	1) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[4]</sup>
6	Barium	1) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[4]</sup>
7	$\alpha$ -BHC	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup>
8	$\beta$ -BHC	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup>
9	$\delta$ -BHC	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup>
10	$\gamma$ -BHC	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup>
11	Biochemical Oxygen Demand	1) 5-Day BOD Test, Azide Modification Method <sup>[4]</sup> 2) 5-Day BOD Test, Membrane Electrode Method <sup>[4]</sup>
12	Carbaryl	High-Performance Liquid Chromatographic Method <sup>[4]</sup>
13	Carbofuran	High-Performance Liquid Chromatographic Method <sup>[4]</sup>
14	Cadmium	1) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[4]</sup>
15	Chemical Oxygen Demand	1) Closed Reflux, Colorimetric Method <sup>[4]</sup> 2) Closed Reflux, Titrimetric Method <sup>[4]</sup>
16	Chlordane	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup>
17	Chromium	1) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[4]</sup>
18	Color	ADMI Weighted-Ordinate Spectrophotometric Method

(นางริกาญจน์ จันทรกุลวิไล)

ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ

และทะเบียนห้องปฏิบัติการ

19 Copper...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
19	Copper	1) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[4]</sup>
20	Cyanide	Distillation, Colorimetric Method <sup>[4]</sup>
21	2,4'-DDD	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup>
22	4,4'-DDD	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup>
23	2,4'-DDE	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup>
24	4,4'-DDE	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup>
25	2,4'-DDT	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup>
26	4,4'-DDT	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup>
27	Dieldrin	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup>
28	Endosulfan Sulfate	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup>
29	Endosulfan I	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup>
30	Endosulfan II	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup>
31	Endrin	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup>
32	Endrin Aldehyde	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup>
33	Formaldehyde	Distillation, Colorimetric Method <sup>[3]</sup>
34	Free Chlorine	1) DPD Ferrous Titrimetric Method <sup>[4]</sup> 2) Iodometric Method <sup>[4]</sup>
35	Heptachlor	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup>
36	Heptachlor epoxide	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup>
37	Hexavalent Chromium	Filtration, Colorimetric Method <sup>[4]</sup>
38	3-Hydroxycarbofuran	High-Performance Liquid Chromatographic Method <sup>[4]</sup>
39	Lead	1) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[4]</sup>
40	Manganese	1) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[4]</sup>
41	Mercury	1) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/Mass spectrometric Method <sup>[4]</sup>
42	Methiocarb	High-Performance Liquid Chromatographic Method <sup>[4]</sup>
43	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup>

วิมล

44 Methomy...

(นางริกาญจน์ อัครสกุลวิไล)

ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ

กรมส่งเสริมการค้าระหว่างประเทศ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
44	Methomyl	High-Performance Liquid Chromatographic Method <sup>[4]</sup>
45	Nickel	1) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[4]</sup>
46	Oil & Grease	1) Liquid-Liquid, Partition-Gravimetric Method <sup>[4]</sup> 2) Soxhlet Extraction Method <sup>[4]</sup>
47	Oxamyl	High-Performance Liquid Chromatographic Method <sup>[4]</sup>
48	Propoxur	High-Performance Liquid Chromatographic Method <sup>[4]</sup>
49	pH	Electrometric Method <sup>[4]</sup>
50	Phenols	1) Distillation, Chloroform Extraction Method <sup>[4]</sup> 2) Distillation, Direct Photometric Method <sup>[4]</sup>
51	Selenium	1) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[4]</sup>
52	Sulfide	Iodometric Method <sup>[4]</sup>
53	Temperature	Laboratory and Field Methods <sup>[4]</sup>
54	Total Dissolved Solids	Dried at 180 °C <sup>[4]</sup>
55	Total Kjeldahl Nitrogen	Semi-Micro Kjeldahl Method <sup>[4]</sup>
56	Total Suspended Solids	Dried at 103-105 °C <sup>[4]</sup>
57	Toxaphene	Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup>
58	Trivalent Chromium	1) Digestion, Inductively Coupled Plasma Method; Colorimetric Method; Calculation <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method; Colorimetric Method; Calculation <sup>[4]</sup>
59	Zinc	1) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[4]</sup>

น้ำใต้ดิน จำนวน 126 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Acenaphthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
2	Acetone	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>

วิมล

3 Aldrin...

(นางริภาญจน์ ฉัตรสกุลวิไล)

ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ  
และทะเบียนห้องปฏิบัติการ



ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
3	Aldrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
4	Anthracene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
5	Antimony	1) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[4]</sup>
6	Arsenic	1) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[4]</sup>
7	Atrazine	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
8	Barium	1) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[4]</sup>
9	Benz(a)anthracene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
10	Benzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
11	Benzo(b)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
12	Benzo(k)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
13	Benzoic Acid	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
14	Benzo(a)pyrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
15	Benzo[g,h,i]perylene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
16	Beryllium	1) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[4]</sup>
17	Bis(2-chloroethyl)ether	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>

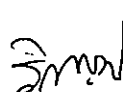
วิธีทาง

18 Bis(2-ethylhexyl)phthalate...

(นางริกาญจน์ ฉัตรสกุลวิไล)

ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ  
และทะเบียนห้องปฏิบัติการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
18	Bis(2-ethylhexyl)phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
19	Bromodichloromethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
20	Bromoform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
21	Butanol	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
		Equilibrium Headspace, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
22	Butyl Benzyl Phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
23	Cadmium	1) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[4]</sup>
24	Carbazole	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
25	Carbon Disulfide	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
26	Carbon tetrachloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
27	Chlordane	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
28	p-Chloroaniline	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
29	Chlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
30	Chlorodibromomethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
31	Chloroform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
32	2-Chlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
33	Chromium	1) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[4]</sup>



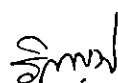
34 Chromium (III)...

(นางริกาญจน์ จิตรสกุลไธ)

ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ



ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
51	cis-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
52	trans-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
53	2,4-Dichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
54	1,2-Dichloropropane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
55	1,3-Dichloropropane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
56	1,3-Dichloropropene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
57	Dieldrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
58	Diethyl Phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
59	2,4-Dimethylphenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
60	2,4-Dinitrophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
61	2,4-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
62	2,6-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
63	Di-n-Octyl Phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
64	Endosulfan	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
65	Endrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
66	Ethylbenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
67	Fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>



(นางริกาญจน์ จิตรสกุลวิไล)

ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ  
และทะเบียนห้องปฏิบัติการ

68 Fluorene...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
68	Fluorene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
69	Heptachlor	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
70	Heptachlor epoxide	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
71	Hexachlorobenzene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
72	Hexachloro-1,3-butadiene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
73	n-Hexane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
74	$\alpha$ -HCH	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
75	$\beta$ -HCH	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
76	$\gamma$ -HCH	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
77	Hexachlorocyclopentadiene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
78	Hexachloroethane	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
79	Indeno(1,2,3-cd)pyrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
80	Isophorone	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
81	Lead	1) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[4]</sup>
82	Manganese	1) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[4]</sup>
83	Mercury	1) Cold Vapor Atomic Absorption Spectrometric Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[4]</sup>

ร.พ.ว

84 Methanol...

(นางริกาญจน์ ฉัตรสกุลวิไล)

ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ

แบบฟอร์มแจ้งผลการวิเคราะห์



ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
84	Methanol	1) Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup> 2) Equilibrium Headspace, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
85	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
86	Methyl Bromide	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
87	Methylene Chloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
88	2-Methylphenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
89	2-Methylnaphthalene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
90	Methyl tert-Butyl Ether	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
91	Naphthalene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
92	Nickel	1) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[4]</sup>
93	Nitrobenzene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
94	N-Nitrosodiphenylamine	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
95	N-Nitrosodi-n-Propylamine	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
96	Polychlorinated Biphenyls - PCB 1016 - PCB 1221 - PCB 1232 - PCB 1242 - PCB 1248 - PCB 1254 - PCB 1260	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>

วิมล

97 Pentachlorophenol...

(นางริกาญจน์ ฉัตรสกุลวิไล)

ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ

และทะเบียนห้องปฏิบัติการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
97	Pentachlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
98	pH	Electrometric Method <sup>[4]</sup>
99	Phenanthrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
100	Phenol	1) Distillation, Direct Photometric Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
101	Pyrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
102	Selenium	1) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[4]</sup>
103	Silver	1) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[4]</sup>
104	Styrene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
105	1,1,2,2-Tetrachloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
106	Tetrachloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
107	Toluene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
108	Toxaphene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
109	TPH (C <sub>5</sub> -C <sub>9</sub> )	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[13,24]</sup>
110	TPH (C <sub>8</sub> -C <sub>16</sub> )	Solvent Extraction, Gas Chromatographic Method <sup>[9,21]</sup>
111	TPH (C <sub>16</sub> -C <sub>35</sub> )	Solvent Extraction, Gas Chromatographic Method <sup>[9,21]</sup>
112	1,2,4-Trichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
113	1,1,1-Trichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>

วิมล

114 1,1,2-Trichloroethane...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
114	1,1,2-Trichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
115	Trichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
116	2,4,5-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
117	2,4,6-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
118	1,3,5-Trimethylbenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
119	Vanadium	1) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[4]</sup>
120	Vinyl Acetate	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
121	Vinyl Chloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
122	m-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
123	o-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
124	p-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
125	Xylene (Total)	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[4]</sup>
126	Zinc	1) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[4]</sup>

**อากาศเสีย (ปล่อยระบาย) จำนวน 16 รายการ**

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Antimony	Isokinetic, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
2	Arsenic	Isokinetic, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>

*วิทย์*

3 Carbon Monoxide...

(นางริกาญจน์ ฉัตรสกุลวิไล)

ผู้อำนวยการกลุ่มมาตรฐานวิชาการวิเคราะห์ทดสอบมลพิษ

และหน่วยงานที่เกี่ยวข้อง

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
3	Carbon Monoxide	1) Sampling Bag Non-Dispersive Infrared Method <sup>[5]</sup> 2) Non-Dispersive Infrared Method <sup>[5]</sup> 3) Instrumental Analyzer Method <sup>[5]</sup>
4	Chlorine	1) Absorption Sampling, Ion Chromatographic Method <sup>[5]</sup> 2) Isokinetic Sampling, Ion Chromatographic Method <sup>[5]</sup>
5	Copper	Isokinetic, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
6	Dioxins	Isokinetic Sampling, Analysis by ISO/IEC 17025 Accredited Laboratory or Analysis by Department of Industrial Works Registered Laboratory (Dioxins/Furans Analysis Approved) <sup>[5]</sup>
7	Hydrogen Chloride	1) Absorption Sampling, Ion Chromatographic Method <sup>[5]</sup> 2) Isokinetic Sampling, Ion Chromatographic Method <sup>[5]</sup>
8	Hydrogen Sulfide	Absorption Sampling, Iodometric Method <sup>[5]</sup>
9	Lead	Isokinetic, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
10	Mercury	1) Isokinetic Sampling, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[5]</sup> 2) Isokinetic, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
11	Opacity	Ringelmann's Method <sup>[2]</sup>
12	Oxides of Nitrogen	1) Absorption Sampling, Phenoldisulfonic Acid Method <sup>[5]</sup> 2) Chemiluminescence Method <sup>[5]</sup> 3) Instrumental Analyzer Method <sup>[5]</sup>
13	Sulfur Dioxide	1) Absorption Sampling, Barium-Thorin Titrimetric Method <sup>[5]</sup> 2) UV Fluorescence Method <sup>[5]</sup> 3) Instrumental Analyzer Method <sup>[5]</sup>
14	Sulfuric Acid	Isokinetic Sampling, Barium-Thorin Titrimetric Method <sup>[5]</sup>
15	Total Suspended Particulate	Isokinetic Sampling, Gravimetric Method <sup>[5]</sup>
16	Xylene	Adsorption Sampling, Gas Chromatographic Method <sup>[5]</sup>

วิมล

สิ่งปลูก...

(นางริกาญจน์ ฉัตรสกุลวิไล)

ผู้อำนวยการกลุ่มมาตรฐานวิชาการวิเคราะห์ทดสอบมลพิษ

กรมควบคุมมลพิษ

สิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว จำนวน 35 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Aldrin	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1,9,25]</sup> 2) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>[22,31]</sup>
2	Antimony	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[1,6,15]</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[1,6,16]</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[7,16]</sup>
3	Arsenic	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[1,6,15]</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[1,6,16]</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[7,16]</sup>
4	Barium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[1,6,15]</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[1,6,16]</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[7,16]</sup>
5	Beryllium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[1,6,15]</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[1,6,16]</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[7,16]</sup>



6 Cadmium...

(นางริกาญจน์ จิตรสกุลไธ)

ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ

และทะเบียนห้องปฏิบัติการ



ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
6	Cadmium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[1,6,15]</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[1,6,16]</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[7,16]</sup>
7	Chlordane	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1,19,25]</sup> 2) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>[22,31]</sup>
8	Chromium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[1,6,15]</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[1,6,16]</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[7,16]</sup>
9	Chromium (III)	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method; Waste Extraction, Colorimetric Method; Calculation Method <sup>[1,6,15,17]</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method; Waste Extraction, Colorimetric Method; Calculation Method <sup>[1,6,16,17]</sup> 3) Digestion, Inductively Coupled Plasma Method; Alkaline Digestion, Colorimetric Method; Calculation Method <sup>[7,8,15,17]</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method; Alkaline Digestion, Colorimetric Method; Calculation Method <sup>[7,8, 16,17]</sup>
10	Chromium (VI)	1) Waste Extraction, Colorimetric Method <sup>[1,6,17]</sup> 2) Alkaline Digestion, Colorimetric Method <sup>[8,17]</sup>



(นางริกาญจน์ จิตรสกุลวิไล)

11 Cobalt...

ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ

.....เรียน...../.....

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
11	Cobalt	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[1,6,15]</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[1,6,16]</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[7,16]</sup>
12	Copper	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[1,6,15]</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[1,6,16]</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[7,16]</sup>
13	2,4-D	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1,9,25]</sup> 2) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>[22,31]</sup>
14	DDD	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1,9,25]</sup> 2) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>[22,31]</sup>
15	DDE	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1,9,25]</sup> 2) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>[22,31]</sup>
16	DDT	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1,9,25]</sup>

จิราพร

2) Soxhlet...

(นางริกาญจน์ จัตรสกุลวิไล)

ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ

และทะเบียนห้องปฏิบัติการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
17	Dieldrin	2) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>[22,31]</sup> 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1,9,25]</sup>
18	Endrin	2) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>[22,31]</sup> 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1,9,25]</sup>
19	Heptachlor	2) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>[22,31]</sup> 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1,9,25]</sup>
20	Lead	2) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>[22,31]</sup> 1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[1,6,15]</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[1,6,16]</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[7,16]</sup>
21	Lindane	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1,9,25]</sup> 2) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>[22,31]</sup>
22	Mercury	1) Waste Extraction, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[1,6,18]</sup>

วิมล

2) Waste Extraction...

(นางริกาญจน์ ฉัตรสกุลวิไล)

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
23	Methoxychlor	2) Waste Extraction, Thermal Decomposition Amalgamation and Atomic Absorption Spectrometric Method <sup>[1,6,19]</sup> 3) Waste Extraction, Digestion, Cold-Vapor Atomic Fluorescence Spectrometric Method <sup>[1,6,20]</sup> 4) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[18]</sup> 5) Thermal Decomposition Amalgamation and Atomic Absorption Spectrometric Method <sup>[19]</sup> 6) Digestion, Cold-Vapor Atomic Fluorescence Spectrometric Method <sup>[20]</sup>
24	Mirex	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1,9,25]</sup> 2) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>[22,31]</sup>
25	Molybdenum	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1,9,25]</sup> 2) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>[22,31]</sup>
26	Nickel	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[1,6,15]</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[1,6,16]</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[7,16]</sup>
		1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[1,6,15]</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[1,6,16]</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[7,16]</sup>

วิมล

27 Polychlorinated...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
27	<p>Polychlorinated biphenyls (PCBs)</p> <ul style="list-style-type: none"> <li>- Aroclor 1016</li> <li>- Aroclor 1221</li> <li>- Aroclor 1232</li> <li>- Aroclor 1242</li> <li>- Aroclor 1248</li> <li>- Aroclor 1254</li> <li>- Aroclor 1260</li> <li>- 2-Chlorobiphenyl</li> <li>- 2,3-Dichlorobiphenyl</li> <li>- 2,2',5-Trichlorobiphenyl</li> <li>- 2,4',5-Trichlorobiphenyl</li> <li>- 2,2',3,5'-Tetrachlorobiphenyl</li> <li>- 2,2',5,5'-Tetrachlorobiphenyl</li> <li>- 2,3',4,4'-Tetrachlorobiphenyl</li> <li>- 2,2',3,4,5'-Pentachlorobiphenyl</li> <li>- 2,2',4,5,5'-Pentachlorobiphenyl</li> <li>- 2,3,3',4',6-Pentachlorobiphenyl</li> <li>- 2,2',3,4,4',5'-Hexachlorobiphenyl</li> <li>- 2,2',3,4,5,5'-Hexachlorobiphenyl</li> <li>- 2,2',3,5,5',6-Hexachlorobiphenyl</li> <li>- 2,2',4,4',5,5'-Hexachlorobiphenyl</li> <li>- 2,2',3,3',4,4',5-Heptachlorobiphenyl</li> <li>- 2,2',3,4,4',5,5'-Heptachlorobiphenyl</li> <li>- 2,2',3,4,4',5',6-Heptachlorobiphenyl</li> <li>- 2,2',3,4',5,5',6-Heptachlorobiphenyl</li> <li>- 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl</li> </ul>	<p>1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method<sup>[1,9,23]</sup></p> <p>2) Soxhlet Extraction, Gas Chromatographic Method<sup>[10,23]</sup></p> <p>3) Automated Soxhlet Extraction, Gas Chromatographic Method<sup>[22,31]</sup></p>

วิมล

(นางริกาญจน์ ฉัตรสกุลวิไล)

ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ

28 Pentachlorophenol...



ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
28	Pentachlorophenol	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1,9,25]</sup> 2) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>[22,31]</sup>
29	pH	Electrometric Method <sup>[29,30]</sup>
30	Selenium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[1,6,15]</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[1,6,16]</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[7,16]</sup>
31	Silver	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[1,6,15]</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[1,6,16]</sup>
32	Thallium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[1,6,15]</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[1,6,16]</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[7,16]</sup>
33	Toxaphene	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1,9,25]</sup> 2) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 3) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>[22,31]</sup>
34	Vanadium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[1,6,15]</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[1,6,16]</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup>

วิมล

(นางริกาญจน์ ฉัตรสกุลวิไล)

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4) Digestion...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
35	Zinc	4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[7,16]</sup> 1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[1,6,15]</sup> 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[1,6,16]</sup> 3) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[7,16]</sup>

ดิน จำนวน 125 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Acenaphthene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
2	Acetone	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>
3	Aldrin	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
4	Anthracene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
5	Antimony	1) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[7,16]</sup>
6	Arsenic	1) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[7,16]</sup>
7	Atrazine	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
8	Barium	1) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[7,16]</sup>

วิมล

(นางริกาณจน์ ฉัตรสกุลวิไล)

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9 Benz(a)anthracene...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
9	Benz(a)anthracene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
10	Benzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>
11	Benzo(b)fluoranthene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
12	Benzo(k)fluoranthene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
13	Benzoic acid	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
14	Benzo(a)pyrene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
15	Benzo(g,h,i)perylene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
16	Beryllium	1) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[7,16]</sup>
17	Bis(2-chloroethyl)ether	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
18	Bis(2-ethylhexyl)phthalate	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
19	Bromodichloromethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>
20	Bromoform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>
21	Butanol	Equilibrium Headspace, Gas Chromatographic/ Mass Spectrometric Method <sup>[12,24]</sup>
22	Butyl Benzyl Phthalate	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
23	Cadmium	1) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[7,16]</sup>
24	Carbazole	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
25	Carbon Disulfide	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>

วิกรม

26 Carbon tetrachloride...

(นางริกาญจน์ ฉัตรสกุลวิไล)

ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
26	Carbon tetrachloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>
27	Chlordane	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
28	p-Chloroaniline	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
29	Chlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>
30	Chlorodibromomethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>
31	Chloroform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>
32	2-Chlorophenol	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
33	Chromium	1) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[7,16]</sup>
34	Chromium (III)	1) Digestion, Inductively Coupled Plasma Method; Alkaline Digestion, Colorimetric Method; Calculation Method <sup>[7,8,15,17]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method; Alkaline Digestion, Colorimetric Method; Calculation Method <sup>[7,8,16,17]</sup>
35	Chromium (VI)	Alkaline Digestion, Colorimetric Method <sup>[8,17]</sup>
36	Chrysene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
37	Cyanide	Extraction, Distillation, Colorimetric Method <sup>[26,27,28]</sup>
38	2,4-D	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
39	DDD	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>

วิฑูรย์

(นางวิภาณูจน์ ฉัตรสกุลวิไล)

ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ

40 DDE...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
40	DDE	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
41	DDT	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
42	Dibenz(a,h)anthracene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
43	Di-n-Butyl Phthalate	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
44	1,2-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,24]</sup>
45	1,3-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,24]</sup>
46	1,4-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,24]</sup>
47	3,3-Dichlorobenzidine	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
48	1,1-Dichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,24]</sup>
49	1,2-Dichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,24]</sup>
50	1,1-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,24]</sup>
51	cis-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,24]</sup>
52	trans-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,24]</sup>
53	2,4-Dichlorophenol	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
54	1,2-Dichloropropane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,24]</sup>
55	1,3-Dichloropropane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,24]</sup>
56	1,3-Dichloropropene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,24]</sup>

วิภาณ

57 Dieldrin...

(นางริกาญจน์ ฉัตรสกุลวิไล)

ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ



ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
57	Dieldrin	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
58	Diethyl Phthalate	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
59	2,4-Dimethylphenol	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
60	2,4-Dinitrophenol	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
61	2,4-Dinitrotoluene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
62	2,6-Dinitrotoluene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
63	Di-n-Octyl Phthalate	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
64	Endosulfan	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
65	Endrin	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
66	Ethylbenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,24]</sup>
67	Fluoranthene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
68	Fluorene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
69	Heptachlor	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
70	Heptachlor Epoxide	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
71	Hexachlorobenzene	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
72	Hexachloro-1,3-butadiene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,24]</sup>
73	n-Hexane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,24]</sup>
74	$\alpha$ -HCH	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
75	$\beta$ -HCH	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
76	$\gamma$ -HCH	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
77	Hexachlorocyclopentadiene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
78	Hexachloroethane	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
79	Indeno(1,2,3-cd)pyrene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
80	Isophorone	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
81	Lead	1) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 2) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[7,16]</sup>
82	Manganese	1) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 2) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[7,16]</sup>
83	Mercury	1) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[18]</sup>

วิฑูรย์

(นางริกาญจน์ ฉัตรสกุลวิไล)

ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ

และหน่วยงานบังคับใช้กฎหมาย

2) Thermal...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
84	Methanol	2) Thermal Decomposition, Amalgamation, and Atomic Absorption Spectrophotometry <sup>[19]</sup> 3) Digestion, Cold-Vapor Atomic Fluorescence Spectrometric Method <sup>[20]</sup> Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method <sup>[12,24]</sup>
85	Methoxychlor	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
86	Methyl Bromide	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,24]</sup>
87	Methylene Chloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,24]</sup>
88	2-methylphenol	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
89	2-Methylnaphthalene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
90	Methyl tert-Butyl Ether	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,24]</sup>
91	Naphthalene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
92	Nickel	1) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 2) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method <sup>[7,16]</sup>
93	Nitrobenzene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
94	N-Nitrosodiphenylamine	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
95	N-Nitrosodi-n-propylamine	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
96	Polychlorinated biphenyls (PCBs) - Aroclor 1016 - Aroclor 1221 - Aroclor 1232	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,23]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>[23,32]</sup>

วิฑูรย์

(นางริกาญจน์ ฉัตรสกุลวิไล)

- Aroclor 1242...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
	<ul style="list-style-type: none"> <li>- Aroclor 1242</li> <li>- Aroclor 1248</li> <li>- Aroclor 1254</li> <li>- Aroclor 1260</li> <li>- 2-Chlorobiphenyl</li> <li>- 2,2',3,5'-Tetrachlorobiphenyl</li> <li>- 2,2',5,5'-Tetrachlorobiphenyl</li> <li>- 2,3',4,4'-Tetrachlorobiphenyl</li> <li>- 2,2',3,4,5'-Pentachlorobiphenyl</li> <li>- 2,2',4,5,5'-Pentachlorobiphenyl</li> <li>- 2,3,3',4',6-Pentachlorobiphenyl</li> <li>- 2,2',3,4,4',5'-Hexachlorobiphenyl</li> <li>- 2,2',3,4,5,5'-Hexachlorobiphenyl</li> <li>- 2,2',3,5,5',6-Hexachlorobiphenyl</li> <li>- 2,2',4,4',5,5'-Hexachlorobiphenyl</li> <li>- 2,2',3,3',4,4',5-Heptachlorobiphenyl</li> <li>- 2,2',3,4,4',5,5'-Heptachlorobiphenyl</li> <li>- 2,2',3,4,4',5',6-Heptachlorobiphenyl</li> <li>- 2,2',3,4',5,5',6-Heptachlorobiphenyl</li> <li>- 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl</li> </ul>	
97	Pentachlorophenol	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
98	Phenanthrene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
99	Phenol	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>
100	Pyrene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[25,31]</sup>

วิกรม

(นางริกาญจน์ ฉัตรสกุลวิไล)

ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ  
และทะเบียนห้องปฏิบัติการ

101 Selenium...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
101	Selenium	1) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[7,16]</sup>
102	Silver	1) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[7,16]</sup>
103	Styrene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>
104	1,1,2,2-Tetrachloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>
105	Tetrachloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>
106	Toluene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>
107	Toxaphene	1) Soxhlet Extraction, Gas Chromatographic Method <sup>[10,22]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
108	TPH (C <sub>5</sub> -C <sub>8</sub> )	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>
109	TPH (C <sub>8</sub> - C <sub>16</sub> )	1) Solvent Extraction, Gas Chromatographic Method <sup>[11,21]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>[21,31]</sup>
110	TPH (C <sub>16</sub> - C <sub>35</sub> )	1) Solvent Extraction, Gas Chromatographic Method <sup>[11,21]</sup> 2) Automated Soxhlet Extraction, Gas Chromatographic Method <sup>[21,31]</sup>
111	1,2,4-Trichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>
112	1,1,1-Trichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>
113	1,1,2-Trichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>
114	Trichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>
115	2,4,5-Trichlorophenol	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>

วิมล

116 2,4,6-Trichlorophenol...

(นางริกาญจน์ ฉัตรสกุลวิไล)

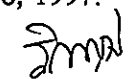
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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
116	2,4,6-Trichlorophenol	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[25,31]</sup>
117	1,3,5-Trimethylbenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>
118	Vanadium	1) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[7,16]</sup>
119	Vinyl Acetate	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>
120	Vinyl Chloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>
121	m-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>
122	o-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>
123	p-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>
124	Xylene (Total)	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method <sup>[14,24]</sup>
125	Zinc	1) Digestion, Inductively Coupled Plasma Method <sup>[7,15]</sup> 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method <sup>[7,16]</sup>

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ติดต่อเรา

