

Report No. : 2023-5006997 / 006-2 (Page 1 of 2)

Issued date : July 10, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Noise Dose MEASURED DATE : May 26-June 8, 2023
 MEASURED LOCATION : Well Service, LKU Production Station, MEASURED BY [REDACTED]
 Kamphaeng Phet Province
 CALIBRATION DATA : Calibrator Model : CR-2 Plus, CRIFFER. Serial No. 37001157
 Pre Cal. : 114.0 dB(A), Post Cal. : 114.0 dB(A)
 SOUND LEVEL METER NO. : 1) Model : Sonus 2 Plus, CRIFFER. Serial No. 32005864
 2) Model : Sonus 2 Plus, CRIFFER. Serial No. 32005864
 3) Model : Sonus 2 Plus, CRIFFER. Serial No. 32005864

Station	Sampling Date	Name	Noise Dose (%)	Time Weighted Average [dB(A)]
1) LWO Operation	26/05/2023	[REDACTED]	0.8	63.9
2) Slick-Line	6/06/2023	[REDACTED]	11.6	75.7
3) E-Line	8/06/2023	[REDACTED]	35.5	80.5
Standard ^{1/2/}				85

Remarks : - Working hours per day = 8 hours
 - Setting values for noise dosimeter are as the followings:
 • Range = 70-140 dB • Criterion level = 85 dB
 • Exchange rate = 3 decibels • Threshold level = 80 dB
 • Response time = Slow • Frequency weighting = A
 Source : ^{1/} Notification of the Department of Labour Protection and Welfare, Subject 'The allowable standard for exposure noise level in worker's daily work hours' dated January 25, B.E. 2561 (2018).
^{2/} Notification of the Department of Labour Protection and Welfare, Subject 'The criteria, measurement methods and analysis of working condition related to heat, light or noise including a period of time and a category of business to be carried out, dated March 12, B.E. 2561 (2018).

Siriporn Imwilaiwan
 (Siriporn Imwilaiwan)
 Operational Support Manager



SP/NW/JK/JK

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264599

SGS (Thailand) Limited | Environment, Health and Safety 100 Nanglinchee Road Chongnonsee Yannaava Bangkok 10120
 t +66 (0)2 678 18 13 f +66 (0)2 578 06 22 www.sgs.com

Member of the SGS Group

Report No. : 2023-5006997 / 006-3 (Page 2 of 2)

Issued date : July 10, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Noise Dose MEASURED DATE : May 23, 2023
 MEASURED LOCATION : Well Service, LKU Production Station, MEASURED BY [REDACTED]
 Kamphaeng Phet Province
 CALIBRATION DATA : Calibrator Model : CR-2 Plus, CRIFFER. Serial No. 37001157
 Pre Cal. : 114.0 dB(A), Post Cal. : 114.0 dB(A)
 SOUND LEVEL METER NO. : 1) Model : dBadge2, CASELLA. Serial No. 1167274
 2) Model : Sonus 2 Plus, CRIFFER. Serial No. 32008016
 3) Model : Sonus 2 Plus, CRIFFER. Serial No. 32007009
 4) Model : Sonus 2 Plus, CRIFFER. Serial No. 32005864

Station	Sampling Date	Name	Noise Dose (%)	Time Weighted Average [dB(A)]
1) Cleaning Area 2	23/05/2023	[REDACTED]	4.7	71.6
2) Cleaning Area	23/05/2023	[REDACTED]	3.3	70.2
3) Welding Shop	23/05/2023	[REDACTED]	53.5	82.3
4) Workshop Area	23/05/2023	[REDACTED]	1.2	65.8
Standard ^{1/2/}				85

Remarks : - Working hours per day = 8 hours
 - Setting values for noise dosimeter are as the followings:
 • Range = 70-140 dB • Criterion level = 85 dB
 • Exchange rate = 3 decibels • Threshold level = 80 dB
 • Response time = Slow • Frequency weighting = A
 Source : ^{1/} Notification of the Department of Labour Protection and Welfare, Subject 'The allowable standard for exposure noise level in worker's daily work hours' dated January 26, B.E. 2561 (2018).
^{2/} Notification of the Department of Labour Protection and Welfare, Subject 'The criteria, measurement methods and analysis of working condition related to heat, light or noise including a period of time and a category of business to be carried out, dated March 12, B.E. 2561 (2018).



SP/TS/JK/JK

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264600

SGS (Thailand) Limited | Environment, Health and Safety 100 Nanglinchee Road Chongnonsee Yannaava Bangkok 10120
 t +66 (0)2 678 18 13 f +66 (0)2 578 06 22 www.sgs.com

Report No. : 2023-5006997 / 006-3 (Page 1 of 1) Issued date : July 10, 2023

CLIENT : PTTEP SIAM LIMITED
CONTACT : Khun Panupong Piwpan
ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Noise Dose **MEASURED DATE :** May 31, 2023
MEASURED LOCATION : NTM-A Production Substation, **MEASURED BY :** [REDACTED]
 Sukhothai Province
CALIBRATION DATA : Calibrator Model : CR-2 Plus, CRIFFER. Serial No. 37001157
 Pre Cal. : 114.0 dB(A), Post Cal. : 114.0 dB(A)
SOUND LEVEL METER NO. : Model : Sonus 2 Plus, CRIFFER. Serial No. 32007009

Station	Name	Noise Dose (%)	Time Weighted Average [dB(A)]
• S1 Outstation NTM-A Operator	[REDACTED]	146.6	86.7
Standard ^{1/2/}			85

Remarks : - Working hours per day = 8 hours
 - Setting values for noise dosimeter are as the followings:
 • Range = 70-140 dB • Criterion level = 85 dB
 • Exchange rate = 3 decibels • Threshold level = 80 dB
 • Response time = Slow • Frequency weighting = A
Source : ^{1/} Notification of the Department of Labour Protection and Welfare, Subject 'The allowable standard for exposure noise level in worker's daily work hours' dated January 23, B.E. 2561 (2018).
^{2/} Notification of the Department of Labour Protection and Welfare, Subject 'The criteria, measurement methods and analysis of working condition related to heat, light or noise including a period of time and a category of business to be carried out, dated March 12, B.E. 2561 (2018).

[REDACTED]
 Operational Supports Manager
 License No. 0403-03-2565-0028



SP/NW/JK/JK

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264601

SGS (Thailand) Limited | Environment, Health and Safety 100 Nanglinthae Road Chongnonsee Yannawa Bangkok 10120
 t +66 (0)2 678 18 13 f +66 (0)2 678 36 22 www.sgs.com

Member of the SGS Group

ความเข้มแสง

(Light Intensity)

Report No. : 2023-5006997 / 003-1 (page 1 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126488 E-mail : PanupongP@ptep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
 MEASURED LOCATION : LKU Office Station, MEASURED BY :
 Kamphaeng Phet Province
 DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/ Type of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
	Documentation/Computer	765	<400 ^{1/} 400-500 ^{2/}	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage Routine work in the office such as printing, writing and data recording, Reading and data processing, file storage
	Documentation/Computer	1,588		
	Documentation/Computer	836		
	Documentation/Computer	753		
	Documentation/Computer	404		
	Documentation/Computer	583		
	Documentation/Computer	650		
	Documentation/Computer	975		
	Documentation/Computer	559		
	Documentation/Computer	895		
	Documentation/Computer	801		
	Documentation/Computer	639		
	Documentation/Computer	841		
	Documentation/Computer	782		
	Documentation/Computer	895		
	Documentation/Computer	617		
	Documentation/Computer	739		
	Documentation/Computer	596		
	Documentation/Computer	794		
	Documentation/Computer	575		
	Documentation/Computer	828		

Source : ^{1/} Notification of the Ministry of Industry, Subject 'Safety Protection Measures for Industry about Working Condition' B.E.2546, published in the Royal Government Gazette, Vol. 122 Special Part 138 D, dated December 6, B.E. 2546.
^{2/} Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.

SP/NW/JK/JK

SGS (THAILAND) LIMITED

License No. 0402-03-2565-0029

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264540

SGS (Thailand) Limited Environment, Health and Safety 100 Nanglinchee Road Chongnonsee Yannawa Bangkok 10120
 t +66 (0)2 678 18 13 f +66 (0)2 578 06 22 www.sgs.com

Member of the SGS Group

Report No. : 2023-5006997 / 003-1 (page 2 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126488 E-mail : PanupongP@ptep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
 MEASURED LOCATION : LKU Office Station, MEASURED BY :
 Kamphaeng Phet Province
 DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/ Type of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
	Pantry	446	<300 ^{1/} 300 ^{2/} 347	For the general working area (For area of low degree of delicate work) For the general area utility zone in office, such as pantry
	Walkway	94	<50 ^{1/} 100 ^{2/} 30	Walkway in a building or factory For the general area with roaming of people or vehicles.
	Living Room	251	<100 ^{1/} 50 ^{2/} 57	Area of indelicate work For the general area with relaxation of people.
	Toilet	279	<100 ^{1/} 100 ^{2/} 101	For the general area of Toilet For the general area such as Toilet, Lobby, Canteen, Warehouse
	Toilet	61	<100 ^{1/} 100 ^{2/} 56	For the general area of Toilet For the general area such as Toilet, Lobby, Canteen, Warehouse

Source : ^{1/} Notification of the Ministry of Industry, Subject 'Safety Protection Measures for Industry about Working Condition' B.E.2546, published in the Royal Government Gazette, Vol. 122 Special Part 138 D, dated December 6, B.E. 2546.
^{2/} Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.

SP/NW/JK/JK

SGS (THAILAND) LIMITED

License No. 0402-03-2565-0029

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264541

SGS (Thailand) Limited Environment, Health and Safety 100 Nanglinchee Road Chongnonsee Yannawa Bangkok 10120
 t +66 (0)2 678 18 13 f +66 (0)2 578 06 22 www.sgs.com



Report No. : 2023-5006997 / 003-1 (page 3 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
CONTACT : Khun Panupong Piwpan
ADDRESS : Energy Complex Building A, 19th-36th Floor,
555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
Tel. 080-6126488 E-mail : PanupongP@ptep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
MEASURED LOCATION : LKU Office Station, MEASURED BY : Nuttawat Sirichoi
Kamphaeng Phet Province
DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/ Type of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
	Stairs	1,138	<50 ¹⁾	Stairs in a building or factory
		14	100 ²⁾	For the general area with roaming of people or vehicles.
	Documentation/Computer	617	<400 ¹⁾	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage
	Documentation/Computer	533	400-500 ²⁾	Routine work in the office such as printing, writing and data recording, Reading and data processing, file storage.
	Documentation/Computer	629		
	Documentation/Computer	803		
	Documentation/Computer	897		

Source : ¹⁾ Notification of the Ministry of Industry, Subject 'Safety Protection Measures for Industry about Working Condition' B.E.2546, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
²⁾ Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.



SP/NW/JK/JK

License No. 0402-03-2565-0029

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Clients instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

264542

SGS (Thailand) Limited Environment, Health and Safety 100 Nanglinchae Road Chongnonsee Yannawa Bangkok 10120
t +66 (0)2 678 18 13 f +66 (0)2 578 06 22 www.sgs.com

Member of the SGS Group



Report No. : 2023-5006997 / 003-1 (page 4 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
CONTACT : Khun Panupong Piwpan
ADDRESS : Energy Complex Building A, 19th-36th Floor,
555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
Tel. 080-6126488 E-mail : PanupongP@ptep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
MEASURED LOCATION : LKU Office Station, MEASURED BY : Nuttawat Sirichoi
Kamphaeng Phet Province
DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/ Type of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
	Documentation/Computer	673		
	Documentation/Computer	670		
	Documentation/Computer	996		
	Documentation/Computer	609		
	Documentation/Computer	543		
	Documentation/Computer	538	<400 ¹⁾	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage
	Documentation/Computer	479	400-500 ²⁾	Routine work in the office such as printing, writing and data recording, Reading and data processing, file storage
	Documentation/Computer	425		
	Documentation/Computer	844		
	Documentation/Computer	762		
	Documentation/Computer	596		
	Documentation/Computer	683		
	Documentation/Computer	672		
	Documentation/Computer	1,088		
	Documentation/Computer	665		
	Documentation/Computer	796		
	Documentation/Computer	1,013		
	Documentation/Computer	716		
	Documentation/Computer	598		
	Documentation/Computer	489		

Source : ¹⁾ Notification of the Ministry of Industry, Subject 'Safety Protection Measures for Industry about Working Condition' B.E.2546, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
²⁾ Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.



SP/NW/JK/JK

License No. 0402-03-2565-0029

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Clients instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

264543

SGS (Thailand) Limited Environment, Health and Safety 100 Nanglinchae Road Chongnonsee Yannawa Bangkok 10120
t +66 (0)2 678 18 13 f +66 (0)2 578 06 22 www.sgs.com

Report No. : 2023-5006997 / 003-1 (page 5 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
CONTACT : Khun Panupong Piwpan
ADDRESS : Energy Complex Building A, 19th-36th Floor,
555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
MEASURED LOCATION : LKU Office Station, MEASURED BY :
Kamphaeng Phet Province
DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/Typed of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
Building 30 th Year (Cont'd)				
PS1/O, PS1/S Room (2 nd floor) (Cont'd)				
53. Meeting Room 1 (Large)				
- Average Value	Meeting Room	304	<300 ¹⁾ 300 ²⁾	For the general working area (For area of low degree of delicate work) For the general area utility zone in office, such as Meeting Room, Training Room, Photocopier Room, Reception desk
- Minimum Value		173	150 ²⁾	
54. Meeting Room 2 (small)				
- Average Value	Meeting Room	227	<300 ¹⁾ 300 ²⁾	For the general working area (For area of low degree of delicate work) For the general area utility zone in office, such as Meeting Room, Training Room, Photocopier Room, Reception desk
- Minimum Value		182	150 ²⁾	
55. Walkway (in front of toilet 2 nd floor)				
- Average Value	Walkway	546	<50 ¹⁾ 100 ²⁾	Walkway in a building or factory For the general area with roaming of people or vehicles.
- Minimum Value		135	50 ²⁾	
56. Walkway (in front of meeting room 1 2 nd floor)				
- Average Value	Walkway	1,524	<50 ¹⁾ 100 ²⁾	Walkway in a building or factory For the general area with roaming of people or vehicles.
- Minimum Value		817	50 ²⁾	
57. Walkway (in front of meeting room 2 2 nd floor)				
- Average Value	Walkway	956	<50 ¹⁾ 100 ²⁾	Walkway in a building or factory For the general area with roaming of people or vehicles.
- Minimum Value		545	50 ²⁾	

Source : ¹⁾ Notification of the Ministry of Industry, Subject Safety Protection Measures for Industry about Working Condition' B.E.2546, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
²⁾ Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.



License No. 0402-03-2565-0029

SP/NW/JK/JK

This document is issued by the Company under its General Conditions of Service and is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Clients instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

264544 SGS (Thailand) Limited Environment, Health and Safety 100 Nanglinchee Road Chongnonsee Yannawa Bangkok 10120
t +66 (0)2 678 18 13 f +66 (0)2 578 06 22 www.sgs.com

Member of the SGS Group

Report No. : 2023-5006997 / 003-1 (page 6 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
CONTACT : Khun Panupong Piwpan
ADDRESS : Energy Complex Building A, 19th-36th Floor,
555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
MEASURED LOCATION : LKU Office Station, MEASURED BY :
Kamphaeng Phet Province
DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/Typed of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
Building 30 th Year (Cont'd)				
FS1/O, PS1/S Room (2 nd floor) (Cont'd)				
58. Toilet (Man) 2 nd floor				
- Average Value	Toilet	744	<100 ¹⁾ 100 ²⁾	For the general area of Toilet For the general area, such as Toilet, Lobby, Canteen, Warehouse.
- Minimum Value		133	50 ²⁾	
59. Toilet (Woman) 2 nd floor				
- Average Value	Toilet	135	<100 ¹⁾ 100 ²⁾	For the general area of Toilet For the general area, such as Toilet, Lobby, Canteen, Warehouse.
- Minimum Value		113	50 ²⁾	
60. Break Out Zone				
- Average Value	Pantry	932	<300 ¹⁾ 300 ²⁾	For the general working area (For area of low degree of delicate work) For the general area utility zone in office, such as pantry
- Minimum Value		337	150 ²⁾	
Building #1				
Camp Boss Room				
61. Jidapa's desk	Documentation/Computer	435	<400 ¹⁾	Low fine working: Routine work in the office such as writing, typing, data recording, reading and data processing, file storage
62. Chorpakar's desk	Documentation/Computer	974		
63. Sukanya's desk	Documentation/Computer	418	400-500 ²⁾	Routine work in this office such as printing, writing and data recording. Reading and data processing, file storage
64. Naprapat's desk	Documentation/Computer	638		
65. Janejira's desk	Documentation/Computer	492		

Source : ¹⁾ Notification of the Ministry of Industry, Subject Safety Protection Measures for Industry about Working Condition' B.E.2546, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
²⁾ Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.



License No. 0402-03-2565-0029

SP/NW/JK/JK

This document is issued by the Company under its General Conditions of Service and is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Clients instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

264545 SGS (Thailand) Limited Environment, Health and Safety 100 Nanglinchee Road Chongnonsee Yannawa Bangkok 10120
t +66 (0)2 678 18 13 f +66 (0)2 578 06 22 www.sgs.com

Report No. : 2023-5006997 / 003-1 (page 7 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
 MEASURED LOCATION : LKU Office Station, MEASURED BY : [REDACTED]
 Kamphaeng Phet Province
 DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/ Typed of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
Building #1 (Cont'd)				
<u>Meeting Room</u>				
66. Meeting Room No. 105	Meeting Room	820	<300 ^{1/}	For the general working area (For area of low degree of delicate work)
- Average Value			300 ^{2/}	For the general area utility zone in office, such as Meeting Room, Training Room, Photocopier Room, Reception desk
- Minimum Value			150 ^{2/}	
67. Meeting Room No. 107	Meeting Room	586	<300 ^{1/}	For the general working area (For area of low degree of delicate work)
- Average Value			300 ^{2/}	For the general area utility zone in office, such as Meeting Room, Training Room, Photocopier Room, Reception desk
- Minimum Value			150 ^{2/}	
68. First aid room	Documentation/Computer	410	<400 ^{1/}	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage
			400-500 ^{2/}	Routine work in the office such as printing, writing and data recording, Reading and data processing, file storage
69. First aid room	First aid	250	<50 ^{1/}	Rehabilitation room
- Average Value			50 ^{2/}	For the general area, such as Rehabilitation Room.
- Minimum Value			25 ^{2/}	

Source : ^{1/} Notification of the Ministry of Industry, Subject 'Safety Protection Measures for Industry about Working Condition' B.E.2546, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
^{2/} Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.



Operational Supports Manager
 License No. 0402-03-2565-0029

SP/NW/JK/JK

Report No. : 2023-5006997 / 003-1 (page 8 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
 MEASURED LOCATION : LKU Office Station, MEASURED BY : [REDACTED]
 Kamphaeng Phet Province
 DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/ Typed of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
Building #3				
70. Sirichai's desk	Documentation/Computer	655	<400 ^{1/}	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage
71. Vichai's desk	Documentation/Computer	757	400-500 ^{2/}	Routine work in the office such as printing, writing and data recording, Reading and data processing, file storage.
Building #4				
72. Well site supervisor room (East)	Documentation/Computer	648	<400 ^{1/}	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage
73. Well site supervisor room (West)	Documentation/Computer	559	400-500 ^{2/}	Routine work in the office such as printing, writing and data recording, Reading and data processing, file storage.
74. Well site supervisor room (North)	Documentation/Computer	1,215		
75. CAO Room	Control Room	789	<400 ^{1/}	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage
- Average Value			200 ^{2/}	
- Minimum Value			100 ^{2/}	For the process area, such as Control Room

Source : ^{1/} Notification of the Ministry of Industry, Subject 'Safety Protection Measures for Industry about Working Condition' B.E.2546, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
^{2/} Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.



Operational Supports Manager
 License No. 0402-03-2565-0029

SP/NW/JK/JK

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264546 SGS (Thailand) Limited Environment, Health and Safety 100 Nanglieng Road Chongnonsri Yannawa Bangkok 10120
 t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

Member of the SGS Group

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264547 SGS (Thailand) Limited Environment, Health and Safety 100 Nanglieng Road Chongnonsri Yannawa Bangkok 10120
 t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

Report No. : 2023-5006997 / 003-1 (page 9 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
 MEASURED LOCATION : LKU Office Station, MEASURED BY : 
 Kamphaeng Phet Province
 DIGITAL LIGHT METER : EXTEC-1, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/ Typed of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
Building #4 (Cont'd)				
<u>Production Supervisor Special</u>				
76. Production Special Supervisor	Documenation/Computer	1,437	<400 ¹⁾	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage
77. Palboon's desk	Documentation/Computer	1,190		
78. Chayada's desk	Documentation/Computer	948		
79. Plant Supervisor's Room	Documentation/Computer	1,397		
80. Worawaf's desk	Documentation/Computer	1,192		
<u>Well Site Team Leader Room</u>				
81. Team leader's desk 1	Documentation/Computer	474	400-500 ²⁾	Routine work in the office such as printing, writing and data recording
82. Team leader's desk 4	Documentation/Computer	419		
<u>Well Site Team Room</u>			400-500 ²⁾	Reading and data processing, file storage
83. Well site's desk ws-11	Documenation/Computer	423		
84. Well site's desk ws-7	Documentation/Computer	480		
85. Meeting Room				
- Average Value	Meeting Room	552	<300 ¹⁾	For the general working area (For area of low degree of delicate work)
			300 ²⁾	For the general area utility zone in office, such as Meeting Room, Training Room, Photocopier Room, Reception desk
- Minimum Value		548	150 ²⁾	
<u>86. Walkway (in front of well site supervisor)</u>				
- Average Value	Walkway	277	<50 ¹⁾	Walkway in a building or factory
			100 ²⁾	For the general area with roaming of people or vehicles.
- Minimum Value		60	50 ²⁾	

Source : ¹⁾ Notification of the Ministry of Industry Subject Safety Protection Measures for Industry about Working Condition' B.E.2546, published in the Royal Government Gazette, Vol. 121 Special Part 138 D, dated December 6, B.E. 2546.
²⁾ Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.

SP/NW/JK/JK



This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264548

SGS (Thailand) Limited Environment, Health and Safety 100 Nanglinchee Road Chongnonsae Yannawa Bangkok 10120
 t +66 (0)2 578 18 13 f +66 (0)2 578 06 22 www.sgs.com

Member of the SGS Group


Report No. : 2023-5006997 / 003-1 (page 10 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
 MEASURED LOCATION : LKU Office Station, MEASURED BY : 
 Kamphaeng Phet Province
 DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/ Typed of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
	Documentation/Computer	740	<400 ¹⁾	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage
	Documentation/Computer	633		
	Documentation/Computer	776		
	Documentation/Computer	739		
	Documentation/Computer	757		
	Documentation/Computer	742		
	Documentation/Computer	634		
	Documentation/Computer	630		
	Documentation/Computer	635		
	Documentation/Computer	751		
	Documentation/Computer	651	400-500 ²⁾	Routine work in the office such as printing, writing and data recording.
	Documentation/Computer	413		
	Documentation/Computer	736		
	Documentation/Computer	739		
	Documentation/Computer	731		
Meeting Room		354	<300 ¹⁾	For the general working area (For area of low degree of delicate work)
		216	300 ²⁾	For the general area utility zone in office, such as Meeting Room, Training Room, Photocopier Room, Reception desk
			150 ²⁾	

Source : ¹⁾ Notification of the Ministry of Industry Subject Safety Protection Measures for Industry about Working Condition' B.E.2546, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
²⁾ Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.

SP/NW/JK/JK



This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264549

SGS (Thailand) Limited Environment, Health and Safety 100 Nanglinchee Road Chongnonsae Yannawa Bangkok 10120
 t +66 (0)2 578 18 13 f +66 (0)2 578 06 22 www.sgs.com

Member of the SGS Group
หน้า 106 of 143

Report No. : 2023-5006997 / 003-1 (page 11 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
 MEASURED LOCATION : LKU Office Station, MEASURED BY : 
 Kamphaeng Phet Province
 DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/ Typed of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
Building #5 (Cont'd)				
2nd Floor				
103. Natnapong's desk	Documentation/Computer	414	400-500 ²⁾	Low fine working: Routine work in the office such as writing, typing, data recording, reading and data processing, file storage
104. Yuwanda's desk	Documentation/Computer	567		
105. Panita's desk	Documentation/Computer	671		
106. Tongthip's desk	Documentation/Computer	685		
107. Pipat's desk	Documentation/Computer	778		
108. Niwat's desk	Documentation/Computer	408		
109. Chirtana's desk	Documentation/Computer	731		
110. Ananchanin's desk	Documentation/Computer	654		
111. Kamapon's desk	Documentation/Computer	656	400-500 ²⁾	Routine work in the office such as printing, writing and data recording, Reading and data processing, file storage.
112. Apiwat's desk	Documentation/Computer	585		
113. Walkway	Walkway	265	<50 ¹⁾	Walkway in a building or factory
- Average Value			100 ²⁾	For the general area with roaming of people or vehicles.
- Minimum Value	Stairs	431	50 ²⁾	Stairs in a building or factory
114. Stairs			<50 ¹⁾	
- Average Value			100 ²⁾	
- Minimum Value	Meeting Room	379	50 ²⁾	For the general area with roaming of people or vehicles.
115. Meeting Room (Small)			<300 ¹⁾	
- Average Value			<300 ¹⁾	
- Minimum Value	Meeting Room	348	150 ²⁾	For the general area utility zone in office, such as Meeting Room, Training Room, Photocopier Room, Reception desk
- Minimum Value			150 ²⁾	

Source : ¹⁾ Notification of the Ministry of Industry, Subject 'Safety Protection Measures for Industry about Working Condition' B.E.2546, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
²⁾ Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.



SP/NW/JK/JK

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Clients instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264550

SGS (Thailand) Limited | Environment, Health and Safety | 100 Nangliuee Road Chongnonsae Yannawa Bangkok 10123
 t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

Member of the SGS Group

Report No. : 2023-5006997 / 003-1 (page 12 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
 MEASURED LOCATION : LKU Office Station, MEASURED BY : 
 Kamphaeng Phet Province
 DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/ Typed of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
Building #5 (Cont'd)				
2nd Floor				
116. Meeting Room (Large)	Meeting Room	588	<300 ¹⁾	For the general working area (For area of low degree of delicate work)
- Average Value			300 ²⁾	For the general area utility zone in office, such as Meeting Room, Training Room, Photocopier Room, Reception desk
- Minimum Value		227	150 ²⁾	
OJT Building				
117. Tanida's desk	Documentation/Computer	909	<400 ¹⁾	Low fine working: Routine work in the office such as writing, typing, data recording, reading and data processing, file storage
118. Prarasaa's desk	Documentation/Computer	909		
119. Atsawakowit's desk	Documentation/Computer	551	400-500 ²⁾	Routine work in the office such as printing, writing and data recording Reading and data processing, file storage.
120. Training Room 1	Training Room	696	<300 ¹⁾	For the general working area (For area of low degree of delicate work)
- Average Value			300 ²⁾	For the general area utility zone in office, such as Meeting Room, Training Room, Photocopier Room, Reception desk
- Minimum Value		405	150 ²⁾	
121. Training Room 2	Training Room	655	<300 ¹⁾	For the general working area (For area of low degree of delicate work)
- Average Value			300 ²⁾	For the general area utility zone in office, such as Meeting Room, Training Room, Photocopier Room, Reception desk
- Minimum Value		314	150 ²⁾	

Source : ¹⁾ Notification of the Ministry of Industry, Subject 'Safety Protection Measures for Industry about Working Condition' B.E.2546, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
²⁾ Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.



SP/NW/JK/JK

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Clients instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264551

SGS (Thailand) Limited | Environment, Health and Safety | 100 Nangliuee Road Chongnonsae Yannawa Bangkok 10123
 t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

หน้า 107 of 143

Report No. : 2023-5006997 / 003-1 (page 13 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
 MEASURED LOCATION : LKU Office Station, MEASURED BY : [REDACTED]
 Kamphaeng Phet Province
 DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/Typical of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
Canteen & Catering				
<u>Canteen</u>				
122. Dining desk				
- Average Value	Canteen Room	558	<300 ^{1/}	For the general working area (For area of low degree of delicate work)
- Minimum Value		224	300 ^{2/}	For the general area utility zone in office, such as pantry
			150 ^{2/}	
Catering and Laundry				
123. Drying Area				
- Average Value	Drying Area	716	<100 ^{1/}	Area of indelicate work
- Minimum Value		548	100 ^{2/}	For the process area, such as Control Room, Laundry Room
			50 ^{2/}	
124. Folding Area				
- Average Value	Folding Area	993	<100 ^{1/}	Area of indelicate work
- Minimum Value		764	100 ^{2/}	For the process area, such as Control Room, Laundry Room
			50 ^{2/}	
125. Galley Area				
- Average Value	Cooking Area	463	<300 ^{1/}	For the general working area (For area of low degree of delicate work)
- Minimum Value		256	300 ^{2/}	For the general area utility zone in office, such as pantry
			150 ^{2/}	
126. Dry Store				
- Average Value	Storage Area	711	<100 ^{1/}	Area of indelicate work, storage transfer area
- Minimum Value		608	100 ^{2/}	For the general area, such as Toilet, Lobby, Canteen, Warehouse.
			50 ^{2/}	

Source : ^{1/} Notification of the Ministry of Industry, Subject 'Safety Protection Measures for Industry about Working Condition' B.E.2546, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
^{2/} Notification of the Department of Labor Protection and Welfare, Subject 'Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561



License No. 0402-03-2565-0029

SP/NW/JK/JK

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Clients instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264552

SGS (Thailand) Limited | Environment, Health and Safety | 100 Nangliuee Road Chongnansae Yannawa Bangkok 10120
 t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

Member of the SGS Group

Report No. : 2023-5006997 / 003-1 (page 14 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
 MEASURED LOCATION : LKU Office Station, MEASURED BY : [REDACTED]
 Kamphaeng Phet Province
 DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/Typical of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
Canteen & Catering				
<u>Catering and Laundry</u>				
127. Kasin's desk	Documentation/Computer	414	<400 ^{1/}	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage
			400-500 ^{2/}	Routine work in the office such as printing, writing and data recording, Reading and data processing, file storage.
128. Fruit Room				
- Average Value	Cooking Area	359	<300 ^{1/}	For the general working area (For area of low degree of delicate work)
- Minimum Value		275	300 ^{2/}	
			<150 ^{1/}	For the general area utility zone in office, such as pantry
Store Extra Charge				
129. Itsaree's desk	Documentation/Computer	425	<400 ^{1/}	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage
130. Thanapon's desk	Documentation/Computer	479		
131. Nuchcharee's desk	Documentation/Computer	470		
Fireman Office				
<u>Fire Station</u>				
132. Praman's desk	Documentation/Computer	776	400-500 ^{2/}	Routine work in the office such as printing, writing and data recording.
133. Nared's desk	Documentation/Computer	890		
134. Ratchanongkol's desk	Documentation/Computer	570		
135. Numpol's desk	Documentation/Computer	731		Reading and data processing, file storage.

Source : ^{1/} Notification of the Ministry of Industry, Subject 'Safety Protection Measures for Industry about Working Condition' B.E.2546, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
^{2/} Notification of the Department of Labor Protection and Welfare, Subject 'Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.

SP/NW/JK/JK



License No. 0402-03-2565-0029

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Clients instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264553

SGS (Thailand) Limited | Environment, Health and Safety | 100 Nangliuee Road Chongnansae Yannawa Bangkok 10120
 t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com



Report No. : 2023-5006997 / 003-1 (page 15 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
CONTACT : Khun Panupong Piwpan
ADDRESS : Energy Complex Building A, 19th-36th Floor,
555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
MEASURED LOCATION : LKU Office Station, MEASURED BY :
Kamphaeng Phet Province
DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/ Typed of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
Laboratory				
136. Technician desk	Documentation/Computer	725	<400 ¹⁾	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage
137. Sorbut's desk	Documentation/Computer	568		
138. Oil Content Room	Documentation	607		
139. Lab Water	Documentation	667		
140. Lab Oil (Water Bath)	Documentation	1,027		
Control Room			400-500 ²⁾	Routine work in the office such as printing, writing and data recording, Reading and data processing, file storage.
141. Leader	Documentation/Computer	608		
142. DC Team Leader	Documentation/Computer	423		
143. Plant Supervisor	Documentation/Computer	471		
144. LKUWS-CCR 1	Documentation/Computer	623		
145. Meeting Room (Small)			<300 ¹⁾	For the general working area (For area of low degree of delicate work)
- Average Value	Meeting Room	279		
- Minimum Value		212		
			300 ²⁾	For the general area utility zone in office, such as Meeting Room, Training Room, Photocopier Room, Reception desk

Source : ¹⁾ Notification of the Ministry of Industry, Subject 'Safety Protection Measures for Industry about Working Condition' B.E.2546, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
²⁾ Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.



SP/NW/JK/JK

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264554

SGS (Thailand) Limited Environment, Health and Safety 100 Nangliwsee Road Chongnonsae Yannawa Bangkok 10122
t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

Member of the SGS Group



Report No. : 2023-5006997 / 003-1 (page 16 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
CONTACT : Khun Panupong Piwpan
ADDRESS : Energy Complex Building A, 19th-36th Floor,
555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
MEASURED LOCATION : LKU Office Station, MEASURED BY :
Kamphaeng Phet Province
DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/ Typed of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
Maintenance Workshop				
146. Workshop Maintenance (Small)	Maintenance	540	<400 ¹⁾	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage
- Average Value			200 ²⁾	
- Minimum Value			100 ²⁾	
147. Workshop Maintenance (Large)	Maintenance	1,497	<400 ¹⁾	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage
- Average Value			200 ²⁾	
- Minimum Value			100 ²⁾	
Instrument Room				
148. Instrument Office	Documentation	820	<400 ¹⁾	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage
- Average Value			400-500 ²⁾	
- Minimum Value			100 ²⁾	
149. Instrument 1 desk	Documentation	604	400-500 ²⁾	Routine work in the office such as printing, writing and data recording, Reading and data processing, file storage
150. Instrument 2 desk	Documentation	791		

Source : ¹⁾ Notification of the Ministry of Industry, Subject 'Safety Protection Measures for Industry about Working Condition' B.E.2546, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
²⁾ Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.



SP/NW/JK/JK

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264555

SGS (Thailand) Limited Environment, Health and Safety 100 Nangliwsee Road Chongnonsae Yannawa Bangkok 10122
t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

Report No. : 2023-5006997 / 003-1 (page 17 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
 MEASURED LOCATION : LKU Office Station, MEASURED BY : [REDACTED]
 Kamphaeng Phet Province
 DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/ Typed of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
Maintenance Workshop (Cont'd)				
Store Maintenance				
151. Store Maintenance (1 st Floor)				
- Average Value	Equipment storage area	618	<100 ^{1/}	Area of indicate work, storage transfer area
- Minimum Value		245	100 ^{2/}	For the general area, such as Toilet, Lobby, Canteen, Warehouse.
152. Store Maintenance (2 nd Floor)				
- Average Value	Equipment storage area	1,082	<100 ^{1/}	Area of indicate work, storage transfer area
- Minimum Value		709	100 ^{2/}	For the general area, such as Toilet, Lobby, Canteen, Warehouse.
153. Store Maintenance (in front of Air Conditioning room)				
- Average Value	Equipment storage area	266	<100 ^{1/}	Area of indicate work, storage transfer area
- Minimum Value		55	100 ^{2/}	For the general area, such as Toilet, Lobby, Canteen, Warehouse
154. Store Maintenance (Outside)				
- Average Value	Equipment storage area	258	<100 ^{1/}	Area of indicate work, storage transfer area
- Minimum Value		105	100 ^{2/}	For the general area, such as Toilet, Lobby, Canteen, Warehouse

Source : ^{1/} Notification of the Ministry of Industry, Subject 'Safety Protection Measures for Industry about Working Condition' B.E.2546, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
^{2/} Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.

SP/NW/JK/JK



Operational Supports Manager
 License No. 0402-03-2565-0029

Report No. : 2023-5006997 / 003-1 (page 18 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
 MEASURED LOCATION : LKU Office Station, MEASURED BY : [REDACTED]
 Kamphaeng Phet Province
 DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/ Typed of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
Maintenance Workshop (Cont'd)				
Store Maintenance Office				
155. Issara's desk	Documentation/Computer	909	<400 ^{1/}	Low line working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage
156. Panuwa's desk	Documentation/Computer	914		
157. Anuluk's desk	Documentation/Computer	505		
158. Sombat's desk	Documentation/Computer	894		
Maintenance Office				
159. Dam's desk	Documentation/Computer	753	400-500 ^{2/}	Routine work in the office such as printing, writing and data recording, Reading and data processing, file storage.
160. Suwit's desk	Documentation/Computer	500		
161. Suchat's desk	Documentation/Computer	620		
162. Marit's desk	Documentation/Computer	702		
163. Kanitha's desk	Documentation/Computer	517		
164. Sarawut's desk	Documentation/Computer	478		
165. Apirom's desk	Documentation/Computer	612		
166. Jarun's desk	Documentation/Computer	608		
167. Peera's desk	Documentation/Computer	761		

Source : ^{1/} Notification of the Ministry of Industry, Subject 'Safety Protection Measures for Industry about Working Condition' B.E.2546, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
^{2/} Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.

SP/NW/JK/JK



License No. 0402-03-2565-0029

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264556

SGS (Thailand) Limited | Environment, Health and Safety 100 Nanglinchee Road Chongnonsee Yannawa Bangkok 10120
 t +66 (0)2 678 18 13 f +66 (0)2 578 06 22 www.sgs.com

Member of the SGS Group

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264557

SGS (Thailand) Limited | Environment, Health and Safety 100 Nanglinchee Road Chongnonsee Yannawa Bangkok 10120
 t +66 (0)2 678 18 13 f +66 (0)2 578 06 22 www.sgs.com

Member of the SGS Group

Report No. : 2023-5006997 / 003-1 (page 19 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
 MEASURED LOCATION : LKU Office Station, MEASURED BY :
 Kamphaeng Phet Province
 DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/ Typed of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
Maintenance Workshop (Cont'd)				
Maintenance Office (Cont'd)				
168. Prasert's desk	Documentation/Computer	1,060		
169. Apichat's desk	Documentation/Computer	856		
170. Jakkrit's desk	Documentation/Computer	713		
171. Ukrit's desk	Documentation/Computer	654		
172. Sarawut's desk	Documentation/Computer	813	<400 ¹⁾	Low fine working; Routine work in the
173. Narongrit's desk	Documentation/Computer	989		office such as writing, typing, data
174. Thapakorn's desk	Documentation/Computer	728		recording, reading and data
175. Thanit's desk	Documentation/Computer	971		processing, file storage
176. Hiran's desk	Documentation/Computer	896	400-500 ²⁾	Routine work in the office such as
177. Thossaphon's desk	Documentation/Computer	434		printing, writing and data recording.
178. Rattarawadee's desk	Documentation/Computer	637		Reading and data processing, file
179. Jirawat's desk	Documentation/Computer	633		storage.
180. Wichayapong's desk	Documentation/Computer	577		
181. Kunchit's desk	Documentation/Computer	686		
182. Wichchanee's desk	Documentation/Computer	738		
183. Vichot's desk	Documentation/Computer	530		
184. Anuchit's desk	Documentation/Computer	997		

Source : ¹⁾ Notification of the Ministry of Industry, Subject 'Safety Protection Measures for Industry about Working Condition' B.E.2546, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
²⁾ Notification of the Department of Labor Protection and Welfare, Subject: Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.



SP/NW/JK/JK

This document is issued by the Company under its General Conditions of Service printed hereon. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264558

SGS (Thailand) Limited | Environment, Health and Safety | 100 Nanglinchae Road Chongnonsee Yennawa Bangkok 10122
 t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

Member of the SGS Group

Report No. : 2023-5006997 / 003-1 (page 20 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
 MEASURED LOCATION : LKU Office Station, MEASURED BY :
 Kamphaeng Phet Province
 DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/ Typed of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
Maintenance Workshop (Cont'd)				
Maintenance Office (Cont'd)				
185. Canteen				
- Average Value	Canteen Room	591	<300 ¹⁾	For the general working area (For area of low degree of delicate work)
- Minimum Value		389	300 ²⁾	For the general area utility zone in office, such as pantry
OGAS Office				
186. Krit's desk	Documentation/Computer	532		
187. Nappaporn's desk	Documentation/Computer	1,231		
SIWA Office				
188. Ekkraluck's desk	Documentation/Computer	442		
189. Kitt's desk	Documentation/Computer	554		
190. Arissa's desk	Documentation/Computer	732	<400 ¹⁾	Low fine working; Routine work in the
191. Manop's desk	Documentation/Computer	674		office such as writing, typing, data
192. Spare's desk	Documentation/Computer	754		recording, reading and data
193. Pornthep's desk	Documentation/Computer	447	400-500 ²⁾	Routine work in the office such as
Material Yard & Warehouse				
Office 1				
194. Jureerat's desk	Documentation/Computer	622		printing, writing and data
195. Nichakam's desk	Documentation/Computer	1,063		recording, Reading and data
196. Nattapong's desk	Documentation/Computer	846		processing, file storage.
197. Nawaporn's desk	Documentation/Computer	735		
198. Rungsima's desk	Documentation/Computer	759		
199. Wasana's desk	Documentation/Computer	1,011		
200. Naphakorn's desk	Documentation/Computer	1,017		

Source : ¹⁾ Notification of the Ministry of Industry, Subject 'Safety Protection Measures for Industry about Working Condition' B.E.2546, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
²⁾ Notification of the Department of Labor Protection and Welfare, Subject: Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.



SP/NW/JK/JK

This document is issued by the Company under its General Conditions of Service printed hereon. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264559

SGS (Thailand) Limited | Environment, Health and Safety | 100 Nanglinchae Road Chongnonsee Yennawa Bangkok 10122
 t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

Member of the SGS Group

Report No. : 2023-5006997 / 003-1 (page 21 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
 MEASURED LOCATION : LKU Office Station, MEASURED BY :
 Kamphaeng Phet Province
 DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A036635 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/ Typed of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions	
Material Yard & Warehouse (Cont'd)					
<u>Office Warehouse (1st Floor)</u>					
201. Numpol's desk	Documentation/Computer	758	<400 ^{1/}	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage	
202. Praki's desk	Documentation/Computer	823			
<u>Office Warehouse (2nd Floor)</u>					
203. Praki's desk	Documentation/Computer	789	400-500 ^{2/}		
204. Jureeruch's desk	Documentation/Computer	768			
205. Withaya's desk	Documentation/Computer	561			
206. Withawat's desk	Documentation/Computer	475			
207. Sethawut's desk	Documentation/Computer	820			
<u>Material Yard Storage Area</u>					
208. Warehouse Yard 1 (Large)	Warehouse	1,077	<100 ^{1/}	Area of indicate work, storage transfer area	
- Average Value			100 ^{2/}	For the general area such as Toilet, Lobby, Canteen, Warehouse.	
- Minimum Value			50 ^{2/}		
209. Warehouse Yard 3 (Middle)	Warehouse	99	<100 ^{1/}	Area of indicate work, storage transfer area	
- Average Value			100 ^{2/}	For the general area such as Toilet, Lobby, Canteen, Warehouse.	
- Minimum Value			50 ^{2/}		
210. Warehouse Yard 1 (Small)	Warehouse	271	<100 ^{1/}	Area of indicate work, storage transfer area	
- Average Value			<100 ^{2/}	For the general area such as Toilet, Lobby, Canteen, Warehouse.	
- Minimum Value			50 ^{2/}		

Source : ^{1/} Notification of the Ministry of Industry, Subject Safety Protection Measures for Industry about Working Condition B.E.2546, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
^{2/} Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 36 D, dated February 21, B.E. 2561.



License No. 0402-03-2565-0029

SP/NW/JK/JK

This document is issued by the Company under its General Conditions of Service and is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264560 SGS (Thailand) Limited Environment, Health and Safety 100 Nanglinchee Road Chongnonsee Yannawa Bangkok 10120
 t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

Member of the SGS Group

Report No. : 2023-5006997 / 003-1 (page 22 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
 MEASURED LOCATION : LKU Office Station, MEASURED BY :
 Kamphaeng Phet Province
 DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. AC56635 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/ Typed of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
Material Yard & Warehouse (Cont'd)				
211. Warehouse Yard 1 (Small) (Close)	Warehouse	179	<100 ^{1/}	Area of indicate work, storage transfer area
- Average Value			<100 ^{2/}	For the general area such as Toilet, Lobby, Canteen, Warehouse.
- Minimum Value		37	50 ^{2/}	
212. Cool Room 1	Warehouse	125	<100 ^{1/}	Area of indicate work, storage transfer area
- Average Value			<100 ^{2/}	For the general area such as Toilet, Lobby, Canteen, Warehouse.
- Minimum Value		36	50 ^{2/}	
213. Cool Room 2	Warehouse	178	<100 ^{1/}	Area of indicate work, storage transfer area
- Average Value			<100 ^{2/}	For the general area such as Toilet, Lobby, Canteen, Warehouse.
- Minimum Value		52	50 ^{2/}	
Material Yard Storage Area				
Container 1				
214. Thanawat's desk	Documentation/Computer	1,135	<400 ^{1/}	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage
215. Sarawat's desk	Documentation/Computer	1,071		
Container 2				
216. Wuthikrai's desk	Documentation/Computer	932	400-500 ^{2/}	Routine work in the office such as printing, writing and data recording, Reading and data processing, file storage.
217. Surawit's desk	Documentation/Computer	875		
218. Jitawat's desk	Documentation/Computer	790		
219. Chaiwat's desk	Documentation/Computer	460		
220. Thammat's desk	Documentation/Computer	962		
221. Montra's desk	Documentation/Computer	761		

Source : ^{1/} Notification of the Ministry of Industry, Subject Safety Protection Measures for Industry about Working Condition B.E.2546, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
^{2/} Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 36 D, dated February 21, B.E. 2561.



License No. 0402-03-2565-0029

SP/NW/JK/JK

This document is issued by the Company under its General Conditions of Service and is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264561 SGS (Thailand) Limited Environment, Health and Safety 100 Nanglinchee Road Chongnonsee Yannawa Bangkok 10120
 t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

Report No. : 2023-5006997 / 003-1 (page 23 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126486 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
 MEASURED LOCATION : LKJ Office Station, MEASURED BY : [REDACTED]
 DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zerning : 0 LUX

Measurement Locations	Activities/ Type of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
Well Service Office & Workshop 222. Well Service Workshop	Workshop	1,166	<400 ¹⁾	Low fine working; Routine work in the office such as writing, typing, data processing, file storage
Average Value			300 ²⁾	For the process area such as preparation room, process area, Machinery area.
Minimum Value			150 ²⁾	
Sub Workshop	Documentation/Computer	456	<400 ¹⁾	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage Routine work in the office such as printing, writing and data recording, Reading and data processing, file storage.
223. Pakphum's desk				
224. Aungkoon's desk				
225. Pattanan's desk				
226. Copy room (1 st Floor)	Copy	252	<300 ¹⁾	For the general working area (For area of low degree of delicate work)
Average Value			300 ²⁾	For the general area utility zone in office, such as Meeting Room, Training Room, Photocopier Room, Reception desk
Minimum Value			150 ²⁾	

Source : ¹⁾ Notification of the Ministry of Industry, Subject Safety Protection Measures for Industry about Working Condition B.E.2546, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
²⁾ Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.



License No. 0402-03-2565-0029

SP/NW/JK/JK

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264562 SGS (Thailand) Limited Environment, Health and Safety 100 Nanglinchee Road Chornnonsee Yarnawa Bangkok 10120
 t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

Member of the SGS Group

Report No. : 2023-5006997 / 003-1 (page 24 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126486 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
 MEASURED LOCATION : LKJ Office Station, MEASURED BY : [REDACTED]
 DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zerning : 0 LUX

Measurement Locations	Activities/ Type of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
Well Service Office & Workshop Workshop & Operation Support	Documentation/Computer	515	<400 ¹⁾	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage
227. Thodsapon's desk				
228. Kitsana's desk				
229. Chairat's desk				
230. Sorriat's desk	Documentation/Computer	533	400-500 ²⁾	Routine work in the office such as printing, writing and data recording, Reading and data processing, file storage.
SSHE Office				
231. Salanruch's desk				
232. Chuwaporn's desk				
233. Warangkana's desk	Documentation/Computer	923		
234. Suprommin's desk				
Administration Room				
235. Orrapan's desk				
236. Athikarn's desk	Documentation/Computer	419		
237. VIP Room				
238. Break Room	Pantry	743	<300 ¹⁾	For the general working area (For area of low degree of delicate work)
Average Value			300 ²⁾	For the general area utility zone in office, such as pantry
Minimum Value			573	

Source : ¹⁾ Notification of the Ministry of Industry, Subject Safety Protection Measures for Industry about Working Condition B.E.2546, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
²⁾ Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.



License No. 0402-03-2565-0029

SP/NW/JK/JK

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264563 SGS (Thailand) Limited Environment, Health and Safety 100 Nanglinchee Road Chornnonsee Yarnawa Bangkok 10120
 t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

Member of the SGS Group
หน้า 113 of 143

Report No. : 2023-5006997 / 003-1 (page 25 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
 MEASURED LOCATION : LKU Office Station, MEASURED BY : [REDACTED]
 DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. AC56635 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/ Type of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
Well Service Office & Workshop (Cont'd)				
E-Line Room				
239. Copy room (2 nd Floor)				
- Average Value	Copy	645	<300 ^{1/}	For the general working area (For area of low degree of delicate work)
- Minimum Value		565	300 ^{2/}	For the general area utility zone in office, such as Meeting Room, Training Room, Photocopier Room, Reception desk
240. Thanagorn's desk	Documentation/Computer	699		
241. Thanakorn's desk	Documentation/Computer	895		
242. Somrak's desk	Documentation/Computer	826		
Well Completion/Workover Superintendent				
243. Charin's desk	Documentation/Computer	422	<400 ^{1/}	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage
Workshop Superintendent				
244. Thamanoon's desk	Documentation/Computer	308		
Well Operation Superintendent				
245. Panya's desk	Documentation/Computer	488	400-500 ^{2/}	Routine work in the office such as printing, writing and data recording, Reading and data processing, file storage.
Stick Line Office				
246. Natthapong's desk	Documentation/Computer	871		
247. Wire's desk	Documentation/Computer	404		
248. Mai's desk	Documentation/Computer	491		
249. PC No. LKU-WV 25	Documentation/Computer	412		
250. PC No. LKU-WV 1	Documentation/Computer	439		
251. PC No. LKU-WV 28	Documentation/Computer	435		

Source :^{1/} Notification of the Ministry of Industry, Subject 'Safety Protection Measures for Industry about Working Condition' B.E.2546, published in the Royal Government Gazette, Vol. 120 Special Part 133 D, dated December 6, B.E. 2546.
^{2/} Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561

SP/NW/JK/JK



License No. 0402-03-2565-0029

This document is issued by the Company under its General Conditions of Service printed upon attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264564

SGS (Thailand) Limited | Environment, Health and Safety 100 Nanglinchee Road Chongnonsee Yamawa Bangkok 10120
 t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

Member of the SGS Group

Report No. : 2023-5006997 / 003-1 (page 26 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22-June 1, 2023
 MEASURED LOCATION : LKU Office Station, MEASURED BY : [REDACTED]
 DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. AC56635 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/ Type of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
Well Service Office & Workshop (Cont'd)				
Stick Line Office				
252. Meeting Desk				
- Average Value	Meeting Room	581	<300 ^{1/}	For the general working area (For area of low degree of delicate work)
- Minimum Value		538	300 ^{2/}	For the general area utility zone in office, such as Meeting Room, Training Room, Photocopier Room, Reception desk
Office Store				
253. Panotku's desk	Documentation/Computer	835		
254. Songkran's desk	Documentation/Computer	798		
255. Anan's desk	Documentation/Computer	557	<400 ^{1/}	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage
Gas Lift Room				
256. Phanuwat's desk	Documentation/Computer	792		
Mechanical Room				
257. Sani's desk	Documentation/Computer	453	400-500 ^{2/}	Routine work in the office such as printing, writing and data recording, Reading and data processing, file storage.
258. Boonrit's desk	Documentation/Computer	434		
259. Atinon's desk	Documentation/Computer	413		
AL Engineer				
260. Sasipong's desk	Documentation/Computer	405		
261. Prasert's desk	Documentation/Computer	498		
262. Phuthit's desk	Documentation/Computer	445		
263. Supakan's desk	Documentation/Computer	495		

Source :^{1/} Notification of the Ministry of Industry, Subject 'Safety Protection Measures for Industry about Working Condition' B.E.2546, published in the Royal Government Gazette, Vol. 120 Special Part 133 D, dated December 6, B.E. 2546.
^{2/} Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561

SP/NW/JK/JK



License No. 0402-03-2565-0029

This document is issued by the Company under its General Conditions of Service printed upon attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264565

SGS (Thailand) Limited | Environment, Health and Safety 100 Nanglinchee Road Chongnonsee Yamawa Bangkok 10120
 t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

Report No. : 2023-5006997 / 003-1 (page 27 of 27)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Daytime) MEASURED DATE : May 22, 2023
 MEASURED LOCATION : LKU Office Station, MEASURED BY : [REDACTED]
 DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zeroing: 0 LUX

Measurement Locations	Activities/ Type of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
Well Service Office & Workshop (Cont'd)				
Office BES (A106)				
258. Sunisa's desk	Documentation/Computer	475	<400 ¹⁾	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage
259. Chulikam's desk	Documentation/Computer	579		
260. Satarat's desk	Documentation/Computer	550		
261. Meeting Room	Meeting Room	362	<300 ²⁾	Routine work in the office such as printing, writing and data recording. Reading and data processing, file storage.
Average Value				
Minimum Value				
Wellhead Maintenance Office 1				
262. LKUWS-WV 4	Documentation/Computer	887	<400 ¹⁾	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage
263. LKUWS-WV 31	Documentation/Computer	737		
264. LKUWS-WV 15	Documentation/Computer	853		
265. Canteen	Canteen	503	<300 ²⁾	Routine work in the office such as printing, writing and data recording. Reading and data processing, file storage.
Average Value				
Minimum Value				

Source : ¹⁾ Notification of the Ministry of Industry, Subject 'Safety Protection Measures for Industry about Working Condition' B.E. 2546, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
²⁾ Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E. 2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.



SP/NW/JK/JK

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264566

SGS (Thailand) Limited Environment, Health and Safety 100 Nanglinchae Road Chongnonsee Yamawa Bangkok 10120
 t +66 (0)2 678 18 13 f +66 (0)2 673 06 22 www.sgs.com

Member of the SGS Group

Report No. : 2023-5006997 / 003-2 (page 1 of 1)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity MEASURED DATE : May 21, 2023
 MEASURED LOCATION : NTM-A Office, Sukothai Province MEASURED BY : [REDACTED]
 DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zeroing: 0 LUX

Measurement Locations	Activities/ Type of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
NTM-A Office				
1. Computer desk 1 / A4	Documentation/Computer	560	<400 ¹⁾	Low fine working; Routine work in the office such as writing, data typing, recording, reading and data processing, file storage
2. Computer desk 2 / A1	Documentation/Computer	656		
3. Computer desk 3 / A2	Documentation/Computer	548		
4. Computer desk 4 / A3	Documentation/Computer	552	400-500 ²⁾	Routine work in the office such as printing, writing and data recording, reading and data processing, file storage
NTM-A Lab Cabin				
5. Laboratory helper's desk	Documentation	462	700-800 ²⁾	Fine working; Calibration and Dyeing
6. Laboratory hood	Laboratory Room	469		

Source : ¹⁾ Notification of the Ministry of Industry, Subject 'Safety Protection Measures for Industry about Working Condition' B.E. 2546, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
²⁾ Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E. 2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.

SP/NW/JK/JK



Operational Support Manager
 License No. 0402-03-2565-0029

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264567

SGS (Thailand) Limited Environment, Health and Safety 100 Nanglinchae Road Chongnonsee Yamawa Bangkok 10120
 t +66 (0)2 678 18 13 f +66 (0)2 673 06 22 www.sgs.com



Report No. : 2023-5006997 / 003-3 (page 1 of 2)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
CONTACT : Khun Panupong Piwpan
ADDRESS : Energy Complex Building A, 15th-36th Floor,
555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity
MEASURED LOCATION : Bung Phra Depot, Phitsanulok Province
DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zeroing : 0 LUX
MEASURED DATE : May 31, 2023
MEASURED BY : [REDACTED]

Measurement Locations	Activities/ Typed of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
BPR Office				
1. Monitor desk 1	Computer	494	<400 ¹⁾ 400-500 ²⁾	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage
2. Computer desk 5	Documentation/Computer	646		
3. Computer desk 2	Documentation/Computer	419		
4. Computer desk 1	Documentation/Computer	643		
Manager BPR Office				
5. Jitti's desk	Documentation/Computer	1,154		Routine work in the office such as printing, writing and data recording, Reading and data processing, file storage
BPR Meeting Room				
6. Conference Room	Meeting Room	433	<300 ¹⁾	For the general working area (For area of low degree of delicate work) For the general area utility zone in office, such as Meeting Room, Training Room, Photocopier Room, Reception desk
- Average Value			300 ²⁾	
- Minimum Value		308	150 ³⁾	
BPR Bay Load Area				
7. Rail Loading Bay Gentry A	Oil loading	516	<200 ¹⁾	Area of less delicate work; eye checking or counting for large size stock, and storage area
- Average Value			200 ²⁾	
- Minimum Value			509	

Source : ¹⁾ Notification of the Ministry of Industry, Subject 'Safety Protection Measures for Industry about Working Condition' B.E.2546, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
²⁾ Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.

SP/NW/JK/JK



Operational Supports Manager
License No. 0402-03-2565-0029

E 264568

SGS (Thailand) Limited Environment, Health and Safety 100 Nanglinchee Road Chongnonsee Yarnawa Bangkok 10120
t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

Member of the SGS Group



Report No. : 2023-5006997 / 003-3 (page 2 of 2)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
CONTACT : Khun Panupong Piwpan
ADDRESS : Energy Complex Building A, 15th-36th Floor,
555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity
MEASURED LOCATION : Bung Phra Depot, Phitsanulok Province
DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056635 Standard CIE 1931, Photometer Zeroing : 0 LUX
MEASURED DATE : May 31, 2023
MEASURED BY : [REDACTED]

Measurement Locations	Activities/ Typed of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
BPR Bay Load Area (Cont'd)				
8. Rail Loading Bay Gentry B	Oil loading	683	<200 ¹⁾	Area of less delicate work; eye checking or counting for large size stock, and storage area
- Average Value			200 ²⁾	For the process area, such as Control Room, Loading Area
- Minimum Value			100 ³⁾	
9. Truck Loading Bay 5	Oil loading	2,360	200 ¹⁾	Area of less delicate work; eye checking or counting for large size stock, and storage area
- Average Value			200 ²⁾	For the process area, such as Control Room, Loading Area
- Minimum Value			100 ³⁾	
10. Truck Loading Bay 3	Oil loading	2,346	200 ¹⁾	Area of less delicate work; eye checking or counting for large size stock, and storage area
- Average Value			200 ²⁾	For the process area, such as Control Room, Loading Area
- Minimum Value			100 ³⁾	

Source : ¹⁾ Notification of the Ministry of Industry, Subject 'Safety Protection Measures for Industry about Working Condition' B.E.2546, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
²⁾ Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.

SP/NW/JK/JK



Operational Supports Manager
License No. 0402-03-2565-0029

E 264569

SGS (Thailand) Limited Environment, Health and Safety 100 Nanglinchee Road Chongnonsee Yarnawa Bangkok 10120
t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

หน้า 116 of 143

Report No. : 2023-5006997 / 003-4 (page 1 of 2)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
CONTACT : Khun Panupong Piwpan
ADDRESS : Energy Complex Building A, 19th-36th Floor,
555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Night Time) MEASURED DATE : June 1, 2023
MEASURED LOCATION : LKU Production Station, MEASURED BY :
Kamphaeng Phet Province
DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056458 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/Typical of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
1. Weighing Station	Weighing	125	<400 ¹⁾ 400-500 ²⁾	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage Routine work in the office such as printing, writing and data recording, Reading and data processing, file storage
2. Bay 4	Connect Valve	13		
3. A5523	Control Panel	11		
4. 55-FIC-0401	Reading	110		
5. K-5501A Cooling Water Temp	Reading	69		
6. UCP 5502A	Control Panel	57		
7. V5523 / PG 0202	Reading	79		
8. 55-PDG-1005	Reading	6		
9. 55-HIC-1150 / Hot Oil F5501	Reading	127		
10. 54-LP-5400	Control Panel	48		
11. Fire Pump Skid	Reading	246		
12. Power Plant (new) Panel Temp	Reading	44		
13. UCP-3451 Unit	Reading	43		
14. K 3950	Reading	9		
15. K 3900	Reading	36		

Source :
1) Notification of the Ministry of Industry, Subject Safety Protection Measures for Industry about Working Condition B.E.2543, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
2) Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.

SP/NW/JK/JK



Operational Supports Manager
License No. 0402-03-2555-0029

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264570

SGS (Thailand) Limited Environment, Health and Safety 100 Nanglinchee Road Chongnonsree Yannawa Bangkok 10120
t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

Member of the SGS Group

Report No. : 2023-5006997 / 003-4 (page 2 of 2)

Issued date : July 5, 2023

CLIENT : PTTEP SIAM LIMITED
CONTACT : Khun Panupong Piwpan
ADDRESS : Energy Complex Building A, 19th-36th Floor,
555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Light Intensity (Night Time) MEASURED DATE : June 1, 2023
MEASURED LOCATION : LKU Production Station, MEASURED BY :
Kamphaeng Phet Province
DIGITAL LIGHT METER : EXTECH, Model 407026, Serial No. A056458 Standard CIE 1931, Photometer Zeroing : 0 LUX

Measurement Locations	Activities/Typical of Work	Light Intensity (LUX)	Standards (LUX)	Standard Conditions
16. E-2050 / 02-TG-2058	Reading	91	<400 ¹⁾ 400-500 ²⁾	Low fine working; Routine work in the office such as writing, typing, data recording, reading and data processing, file storage Routine work in the office such as printing, writing and data recording, Reading and data processing, file storage
17. K 375C	Control Panel	337		
18. Lube Oil (03-LG-3508)	Reading	420		
19. F 309 A Boiler	Reading	2		
20. Boiler Control Panel	Control Panel	45		
21. S-00206-PG-206	Reading	4		
22. 21-TG-1004	Reading	18		
23. Tank Chemical EPT(T-0103)	Reading	192		
24. P-4122 B	Reading	105		
25. P-4121	Reading	26		
26. 15-HS 277	Reading	18		
27. 8P 15110-9141	Reading	36		
28. Receiver 02-PG-035	Reading	54		
29. P Receiver 01-PG-006	Reading	8		
30. Glycol Unit D4303	Reading	110		

Source :
1) Notification of the Ministry of Industry, Subject Safety Protection Measures for Industry about Working Condition B.E.2543, published in the Royal Government Gazette, Vol. 120 Special Part 138 D, dated December 6, B.E. 2546.
2) Notification of the Department of Labor Protection and Welfare, Subject Light Intensity Standard B.E.2560, published in the Royal Government Gazette, Vol. 135 Special Part 39 D, dated February 21, B.E. 2561.

SP/NW/JK/JK



Operational Supports Manager
License No. 0402-03-2555-0029

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264571

SGS (Thailand) Limited Environment, Health and Safety 100 Nanglinchee Road Chongnonsree Yannawa Bangkok 10120
t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

Member of the SGS Group



Report No. : 2023-5006997 / 002-1 (Page 1 of 1)

Issued date: June 16, 2023

CLIENT : PTTEP SIAM LIMITED
CONTACT : Khun Panupong Piwpan
ADDRESS : Energy Complex Building A, 19th-36th Floor,
555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
Tel. 080-6126488 E-mail : PanupongP@ptep.com

Analysis Report

SAMPLE DESIGNATED AS : Heat Stress
SAMPLING LOCATION : BPR Bung Phra Depot, Phitsanulok Province
HEAT STRESS MONITOR NO.: BFR Loading Bay: Model QT-36, 3M Thailand Co.,Ltd. Serial No. TKR030004
BFR Process Area: Model QT-36, 3M Thailand Co.,Ltd. Serial No. TKR030002

SAMPLING DATE : May 29, 2023

SAMPLING BY : [REDACTED]

Type	Station	Sampling Date	Sampling Time	Heat Stress (WBGT, °C)	Standard (WBGT, °C)
Indoor	BPR Loading Bay	29/05/2023	10:06-12:06	30.4	32 ^{2/}
Outdoor	BPR Process Area	29/05/2023	09:52-11:52	33.3	34 ^{1/}

- Remark :**
- Sampling and analytical method was followed the Standard Method of National Institute for Occupational Safety and Health (NIOSH)
 - Work load category is determined by averaging metabolic rates for tasks as follows:
 - ^{1/} Light work load : <200 kcal/hour.
 - ^{2/} Moderate work load : >200-350 kcal/hour.
 - ^{3/} Heavy work load : >350-500 kcal/hour.
- Sources :**
- Ministerial regulation of the Ministry of Labour, subject "The standard of Safety Administration and Management and Working Condition about Heat stress, Light and Noise" B.E. 2559, dated October 7, B.E. 2559 (2016).
 - Notification of the Ministry of Industry, subjected "Safety Protection Measure for Industry About Working Condition", dated December 3, B.E. 2546 (2003).

ระดับความร้อน

(Heat Stress)

SP/NW/JK/JK



This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

264533

SGS (Thailand) Limited | Environment, Health and Safety 100 Nanglinsee Road Chongnonsee Yannawa Bangkok 10120
t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

Report No. : 2023-5006997 / 002-2 (page 1 of 4)

Issued date: June 16, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126438 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Heat Stress
 SAMPLING LOCATION : LKU F/S, LKU Production Station,
 Kamphaeng Phet Province
 HEAT STRESS MONITOR NO.: LKU Fire Station: Model QT-34, 3M thailand Co.,Ltd. Serial No. TEM030023,
 Compressor Area 3400: Model QT-36, 3M thailand Co.,Ltd. Serial No. TKR030002,
 API Operation Area: Model QT-36, 3M thailand Co.,Ltd. Serial No. TKR030004,
 LKU Well Site (MPF): Model QT-36, 3M thailand Co.,Ltd. Serial No. TKR030002

Type	Station	Sampling Date	Sampling Time	Heat Stress (WBGT, °C)	Standard (WBGT, °C)
Indoor	LKU Fire Station	19/05/2023	12:30-14:30	30.2	34 ^{1/}
Outdoor	Compressor Area 3400	01/06/2023	12:18-14:18	35.6	32 ^{2/}
Outdoor	API Operation Area	01/06/2023	12:28-14:28	34.3	32 ^{2/}
Outdoor	LKU Well Site (MPF)	25/05/2023	10:19-12:19	33.4	32 ^{2/}

Remark : - Sampling and analytical method was followed the Standard Method of National Institute for Occupational Safety and Health (NIOSH)
 - Work load category is determined by averaging metabolic rates for tasks as follows:
^{1/} Light work load : <200 kcal/hour.
^{2/} Moderate work load : >200-350 kcal/hour.
^{3/} Heavy work load : >350-500 kcal/hour.
Sources : - Ministerial regulation of the Ministry of Labour, subject "The standard of Safety Administration and Management and Working Condition about Heat stress, Light and Noise" B.E. 2559, dated October 7, B.E. 2559 (2016).
 - Notification of the Ministry of Industry, subjected "Safety Protection Measure for Industry About Working Condition", dated December 3, B.E. 2546 (2003).

SP/TS/JK/JK



This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Clients instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264534

SGS (Thailand) Limited | Environment, Health and Safety 100 Nanglinchee Road Chongnonsee Yannawa Bangkok 10120
 t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

Member of the SGS Group

Report No. : 2023-5006997 / 002-2 (page 2 of 4)

Issued date: June 16, 2023

CLIENT : PTTEP SIAM LIMITED
 CONTACT : Khun Panupong Piwpan
 ADDRESS : Energy Complex Building A, 19th-36th Floor,
 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
 Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Heat Stress
 SAMPLING LOCATION : LKU F/S, LKU Production Station,
 Kamphaeng Phet Province
 HEAT STRESS MONITOR NO.: LKU Office-Canteen: Model QT-34, 3M thailand Co.,Ltd. Serial No. TEM030023,
 LKU Office-Catering: Model QT-36, 3M thailand Co.,Ltd. Serial No. TKR030002,
 LKU Office-Laundry: Model QT-36, 3M thailand Co.,Ltd. Serial No. TKR030004

Type	Station	Sampling Date	Sampling Time	Heat Stress (WBGT, °C)	Standard (WBGT, °C)
Indoor	LKU Office-Canteen	22/05/2023	10:17-12:17	26.3	32 ^{1/}
Indoor	LKU Office-Catering	22/05/2023	10:17-12:17	23.4	32 ^{2/}
Indoor	LKU Office-Laundry	22/05/2023	10:53-12:53	31.6	32 ^{1/}

Remark : - Sampling and analytical method was followed the Standard Method of National Institute for Occupational Safety and Health (NIOSH)
 - Work load category is determined by averaging metabolic rates for tasks as follows:
^{1/} Light work load : <200 kcal/hour.
^{2/} Moderate work load : >200-350 kcal/hour.
^{3/} Heavy work load : >350-500 kcal/hour.
Sources : - Ministerial regulation of the Ministry of Labour, subject "The standard of Safety Administration and Management and Working Condition about Heat stress, Light and Noise" B.E. 2559, dated October 7, B.E. 2559 (2016).
 - Notification of the Ministry of Industry, subjected "Safety Protection Measure for Industry About Working Condition", dated December 3, B.E. 2546 (2003).

(Siriporn Imwilaiwan)
 Operational Supports Manager
 License No. 0403-03-2565-0028

SP/TS/JK/JK



This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Clients instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264535

SGS (Thailand) Limited | Environment, Health and Safety 100 Nanglinchee Road Chongnonsee Yannawa Bangkok 10120
 t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

Member of the SGS Group



Report No. : 2023-5006997 / 002-2 (page 3 of 4)

Issued date: June 16, 2023

CLIENT : PTTEP SIAM LIMITED
CONTACT : Khun Panupong Piwpan
ADDRESS : Energy Complex Building A, 19th-36th Floor,
555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
Tel. 080-8126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Heat Stress
SAMPLING LOCATION : LKU F/S, LKU Production Station
Kamphaeng Phet Province
HEAT STRESS MONITOR NO.: Model QT-34, 3M thailand Co.,Ltd. Serial No. TEM030023
SAMPLING DATE : May 19-June 1, 2023
SAMPLING BY : [REDACTED]

Type	Station	Sampling Date	Sampling Time	Heat Stress (WBGT, °C)	Standard (WBGT, °C)
Indoor	LKU Depot-LKU Loading Bay	19/05/2023	10:14-12:14	29.5	32 ^{2/}

- Remark :**
- Sampling and analytical method was followed the Standard Method of National Institute for Occupational Safety and Health (NIOSH)
 - Work load category is determined by averaging metabolic rates for tasks as follows;
 - ^{1/} Light work load : <200 kcal/hour.
 - ^{2/} Moderate work load : >200-350 kcal/hour.
 - ^{3/} Heavy work load : >350-500 kcal/hour.
- Sources :**
- Ministerial regulation of the Ministry of Labour, subject "The standard of Safety Administration and Management and Working Condition about Heat stress, Light and Noise" B.E. 2559, dated October 7, B.E. 2559 (2016).
 - Notification of the Ministry of Industry, subjected "Safety Protection Measure for Industry About Working Condition", dated December 3, B.E. 2546 (2003).

SP/TS/JK/JK



This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

264536

SGS (Thailand) Limited | Environment, Health and Safety 100 Nanglinsee Road Chongnonsee Yannawa Bangkok 10120
t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

Member of the SGS Group



Report No. : 2023-5006997 / 002-2 (page 4 of 4)

Issued date: June 16, 2023

CLIENT : PTTEP SIAM LIMITED
CONTACT : Khun Panupong Piwpan
ADDRESS : Energy Complex Building A, 19th-36th Floor,
555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
Tel. 080-8126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Heat Stress
SAMPLING LOCATION : Well Operation, LKU Production Station
Kamphaeng Phet Province
HEAT STRESS MONITOR NO.: Model QT-36, 3M thailand Co.,Ltd. Serial No. TKR030002
SAMPLING DATE : May 19-June 1, 2023
SAMPLING BY : [REDACTED]

Type	Station	Sampling Date	Sampling Time	Heat Stress (WBGT, °C)	Standard (WBGT, °C)
Outdoor	LWO-Operation	26/05/2023	10:21-12:21	32.5	32 ^{2/}

- Remark :**
- Sampling and analytical method was followed the Standard Method of National Institute for Occupational Safety and Health (NIOSH)
 - Work load category is determined by averaging metabolic rates for tasks as follows;
 - ^{1/} Light work load : <200 kcal/hour.
 - ^{2/} Moderate work load : >200-350 kcal/hour.
 - ^{3/} Heavy work load : >350-500 kcal/hour.
- Sources :**
- Ministerial regulation of the Ministry of Labour, subject "The standard of Safety Administration and Management and Working Condition about Heat stress, Light and Noise" B.E. 2559, dated October 7, B.E. 2559 (2016).
 - Notification of the Ministry of Industry, subjected "Safety Protection Measure for Industry About Working Condition", dated December 3, B.E. 2546 (2003).

SP/TS/JK/JK



This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

264537

SGS (Thailand) Limited | Environment, Health and Safety 100 Nanglinsee Road Chongnonsee Yannawa Bangkok 10120
t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

Member of the SGS Group



Report No. : 2023-5006997 / 002-3 (page 1 of 1)

Issued date : June 16, 2023

CLIENT : PTTEP SIAM LIMITED
CONTACT : Khun Panupong Piwpan
ADDRESS : Energy Complex Building A, 19th-36th Floor,
555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Heat Stress
SAMPLING LOCATION : LKU Flow Station,
Kamphaeng Phet Province
HEAT STRESS MONITOR NO.: Model QT-36, 3M thailand Co.,Ltd. Serial No. TKR030005
SAMPLING DATE : May 31, 2023
SAMPLING BY : [REDACTED]

Type	Station	Sampling Date	Sampling Time	Heat Stress (WBGT, °C)	Standard (WBGT, °C)
Outdoor	Fire Training Ground	31/05/2023	13:39-15:39	32.7	34 ^{2/}

- Remark :**
- Sampling and analytical method was followed the Standard Method of National Institute for Occupational Safety and Health (NIOSH)
 - Work load category is determined by averaging metabolic rates for tasks as follows;
 - ^{1/} Light work load : <200 kcal/hour.
 - ^{2/} Moderate work load : >200-350 kcal/hour.
 - ^{3/} Heavy work load : >350-500 kcal/hour.
- Sources :**
- Ministerial regulation of the Ministry of Labour, subject "The standard of Safety Administration and Management and Working Condition about Heat stress, Light and Noise" B.E. 2559, dated October 7, B.E. 2559 (2016).
 - Notification of the Ministry of Industry, subjected "Safety Protection Measure for Industry About Working Condition", dated December 3, B.E. 2546 (2003).



SP/NW/JK/JK

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264538

SGS (Thailand) Limited | Environment, Health and Safety 100 Nanglinsee Road Chongnonsi Yanna Bangkok 10120
t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

Member of the SGS Group



Report No. : 2023-5006997 / 002-4 (page 1 of 1)

Issued date : June 16, 2023

CLIENT : PTTEP SIAM LIMITED
CONTACT : Khun Panupong Piwpan
ADDRESS : Energy Complex Building A, 19th-36th Floor,
555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900
Tel. 080-6126488 E-mail : PanupongP@pttep.com

Analysis Report

SAMPLE DESIGNATED AS : Heat Stress
SAMPLING LOCATION : NTM-A Production Substation,
Sukhothai Province
HEAT STRESS MONITOR NO.: NTM-A Guard House Office: Model QT-36, 3M thailand Co.,Ltd. Serial No. TKR030002
NTM-A Process Area: Model QT-36, 3M thailand Co.,Ltd. Serial No. TKR030004
SAMPLING DATE : May 31, 2023
SAMPLING BY : [REDACTED]

Type	Station	Sampling Date	Sampling Time	Heat Stress (WBGT, °C)	Standard (WBGT, °C)
Indoor	NTM-A Guard House Office	31/05/2023	12:20-14:20	31.6	34 ^{1/}
Outdoor	NTM-A Process Area	31/05/2023	12:20-14:20	34.6	32 ^{2/}

- Remark :**
- Sampling and analytical method was followed the Standard Method of National Institute for Occupational Safety and Health (NIOSH)
 - Work load category is determined by averaging metabolic rates for tasks as follows;
 - ^{1/} Light work load : <200 kcal/hour.
 - ^{2/} Moderate work load : >200-350 kcal/hour.
 - ^{3/} Heavy work load : >350-500 kcal/hour.
- Sources :**
- Ministerial regulation of the Ministry of Labour, subject "The standard of Safety Administration and Management and Working Condition about Heat stress, Light and Noise" B.E. 2559, dated October 7, B.E. 2559 (2016).
 - Notification of the Ministry of Industry, subjected "Safety Protection Measure for Industry About Working Condition", dated December 3, B.E. 2546 (2003).



SP/NW/JK/JK

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

E 264539

SGS (Thailand) Limited | Environment, Health and Safety 100 Nanglinsee Road Chongnonsi Yanna Bangkok 10120
t +66 (0)2 678 18 13 f +66 (0)2 678 06 22 www.sgs.com

Member of the SGS Group



ที่ รว ๐๖๐๔/ทส.๑

กรมสวัสดิการและคุ้มครองแรงงาน
ถนนปิ่นเกล้า กรุงเทพมหานคร ๑๐๕๐๐

๒ มีนาคม ๒๕๖๕

เรื่อง การขอผู้ปฏิบัติงานเป็นผู้ให้บริการสวัสดิการตรวจวัดและวิเคราะห์ระดับความเข้มข้นเสียง การนำผู้ให้บริการวัด แอซไนด์ (ประเทศไทย) จำกัด

อ้างถึง แบบคำขอและใบคำขอใบอนุญาต ของบริษัท แอซไนด์ (ประเทศไทย) จำกัด

ลี้ขัณฐ์ชัย ๑. ใบอนุญาตเป็นผู้ให้บริการตรวจวัดและวิเคราะห์ระดับความเข้มข้นเสียง และรายชื่อผู้ปฏิบัติงานแบบที่ใบอนุญาต ลงวันที่ ๒๒ มีนาคม พ.ศ. ๒๕๖๕ จำนวน ๑ ฉบับ
๒. ใบอนุญาตเป็นผู้ให้บริการตรวจวัดและวิเคราะห์ระดับความเข้มข้นเสียงแบบที่ใบอนุญาต ลงวันที่ ๒๒ มีนาคม พ.ศ. ๒๕๖๕ จำนวน ๑ ฉบับ
๓. ใบอนุญาตเป็นผู้ให้บริการตรวจวัดและวิเคราะห์ระดับความเข้มข้นเสียงแบบที่ใบอนุญาต ลงวันที่ ๒๒ มีนาคม พ.ศ. ๒๕๖๕ จำนวน ๑ ฉบับ
และรายชื่อผู้ปฏิบัติงานแบบที่ใบอนุญาต ลงวันที่ ๒๒ มีนาคม พ.ศ. ๒๕๖๕ จำนวน ๑ ฉบับ

ตามลี้ขัณฐ์ชัยทั้ง ๓ บริษัท แอซไนด์ (ประเทศไทย) จำกัด ได้ยื่นแบบคำขอและใบคำขอใบอนุญาต (ก.ก.พ. ๑-๑ (ป.ก.พ.๑๑)) เป็นผู้ใช้บริการตรวจวัดและวิเคราะห์ระดับความเข้มข้นเสียง และรายชื่อผู้ปฏิบัติงานแบบที่ใบอนุญาตให้ผู้ให้บริการเพื่อส่งเสริมความปลอดภัย และสภาพแวดล้อมในการทำงาน พ.ศ. ๒๕๖๕ เพื่อให้การปฏิบัติงานและคุ้มครองแรงงานมีความปลอดภัยยิ่งขึ้น

กรมสวัสดิการและคุ้มครองแรงงาน ได้พิจารณาแล้วเห็นว่า การยื่นแบบคำขอและใบคำขอ ใบอนุญาตให้บริการตรวจวัดและวิเคราะห์ระดับความเข้มข้นเสียง และรายชื่อผู้ปฏิบัติงาน และรายชื่อผู้ปฏิบัติงานแบบที่ใบอนุญาต เป็นไปตามกฎกระทรวงกำหนดเงื่อนไขการปฏิบัติงานเพื่อส่งเสริมความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน พ.ศ. ๒๕๖๕ และดำเนินการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงานเกี่ยวกับความร้อน แสงสว่าง และเสียง พ.ศ. ๒๕๕๘ ร้อยละใบอนุญาตให้ บริษัท แอซไนด์ (ประเทศไทย) จำกัด เป็นผู้ให้บริการตรวจวัดและวิเคราะห์ระดับความเข้มข้นเสียง และรายชื่อผู้ปฏิบัติงานแบบที่ใบอนุญาต จำนวน ๑๑ ราย โดยใบอนุญาตเลขที่ ๐๖๐๔-๐๔-๒๕๖๕-๐๐๐๔ ใบอนุญาตเลขที่ ๐๖๐๔-๐๔-๒๕๖๕-๐๐๐๕ และใบอนุญาตเลขที่ ๐๖๐๔-๐๔-๒๕๖๕-๐๐๐๖ รายละเอียดปรากฏตามเอกสารแนบท้าย ทั้งนี้ ขอให้นำใบคำขอปฏิบัติงานตรวจวัดและวิเคราะห์ระดับความเข้มข้นเสียงและการอนุญาตให้ผู้ให้บริการเพื่อส่งเสริมความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน พ.ศ. ๒๕๖๕ ไปปฏิบัติการทำงาน จำนวน ๑๑ ราย ด้วยชื่อแผนกท้ายใบอนุญาต

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

กมลดาญดาโตยศิริธรรมงาม
โทรศัพท์ ๐ ๒๐๔๘ ๓๒๒๕ - ๓๔ ๓๐๒๖
โทรสาร ๐ ๒๐๔๘ ๓๒๓๓

อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน



แบบ รว.๑๖๐๔
๒๕๖๓

กรมสวัสดิการและคุ้มครองแรงงาน

ใบอนุญาต

เป็นผู้ให้บริการตรวจวัดและวิเคราะห์ผลการทำงานเกี่ยวกับระดับความเข้มข้น

ใบอนุญาตเลขที่ ๐๖๐๔-๐๔-๒๕๖๕-๐๐๐๔

อนุญาตให้ บริษัท แอซไนด์ (ประเทศไทย) จำกัด

ลงทะเบียนเป็นผู้ให้บริการตรวจวัดและวิเคราะห์ระดับความเข้มข้นเสียง และรายชื่อผู้ปฏิบัติงาน

ตั้งอยู่ เลขที่ ๑๑๑ ถนนปิ่นเกล้า แขวงปิ่นเกล้า เขตปทุมธานี กรุงเทพมหานคร

เป็นผู้ให้บริการตรวจวัดและวิเคราะห์ระดับความเข้มข้นเสียง และรายชื่อผู้ปฏิบัติงานแบบที่ใบอนุญาต ลงวันที่ ๒๒ มีนาคม พ.ศ. ๒๕๖๕ จำนวน ๑ ฉบับ
๒. ใบอนุญาตเป็นผู้ให้บริการตรวจวัดและวิเคราะห์ระดับความเข้มข้นเสียงแบบที่ใบอนุญาต ลงวันที่ ๒๒ มีนาคม พ.ศ. ๒๕๖๕ จำนวน ๑ ฉบับ
๓. ใบอนุญาตเป็นผู้ให้บริการตรวจวัดและวิเคราะห์ระดับความเข้มข้นเสียงแบบที่ใบอนุญาต ลงวันที่ ๒๒ มีนาคม พ.ศ. ๒๕๖๕ จำนวน ๑ ฉบับ
และรายชื่อผู้ปฏิบัติงานแบบที่ใบอนุญาต ลงวันที่ ๒๒ มีนาคม พ.ศ. ๒๕๖๕ จำนวน ๑ ฉบับ

ตามลี้ขัณฐ์ชัยทั้ง ๓ บริษัท แอซไนด์ (ประเทศไทย) จำกัด ได้ยื่นแบบคำขอและใบคำขอใบอนุญาต (ก.ก.พ. ๑-๑ (ป.ก.พ.๑๑)) เป็นผู้ใช้บริการตรวจวัดและวิเคราะห์ระดับความเข้มข้นเสียง และรายชื่อผู้ปฏิบัติงานแบบที่ใบอนุญาตให้ผู้ให้บริการเพื่อส่งเสริมความปลอดภัย และสภาพแวดล้อมในการทำงาน พ.ศ. ๒๕๖๕ และดำเนินการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงานเกี่ยวกับความร้อน แสงสว่าง และเสียง พ.ศ. ๒๕๕๘ ร้อยละใบอนุญาตให้ บริษัท แอซไนด์ (ประเทศไทย) จำกัด เป็นผู้ให้บริการตรวจวัดและวิเคราะห์ระดับความเข้มข้นเสียง และรายชื่อผู้ปฏิบัติงานแบบที่ใบอนุญาต จำนวน ๑๑ ราย ด้วยชื่อแผนกท้ายใบอนุญาต

จึงเรียนมาเพื่อทราบ

กมลดาญดาโตยศิริธรรมงาม

โทรศัพท์ ๐ ๒๐๔๘ ๓๒๒๕ - ๓๔ ๓๐๒๖

โทรสาร ๐ ๒๐๔๘ ๓๒๓๓

อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน

ภาคผนวก ข

- สำเนาหนังสือรับรองขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน บริษัท เอสจีเอส (ประเทศไทย) จำกัด
- สำเนาใบรับรองมาตรฐาน ISO 9001 : 2015
- สำเนาใบรับรองมาตรฐาน ISO 17020 : 2012
- สำเนาใบรับรองมาตรฐาน ISO 17025 : 2017
- สำเนาเอกสารใบอนุญาตเป็นนิติบุคคลผู้ให้บริการตรวจวัดและวิเคราะห์สภาวะการทำงานเกี่ยวกับระดับความร้อน แสงสว่าง และเสียง ตามกฎกระทรวงแรงงานฯ
- สำเนาเอกสารใบอนุญาตเป็นนิติบุคคลผู้ให้บริการตรวจวัดระดับความเข้มข้นของสารเคมีอันตรายในบรรยากาศของสถานที่ทำงานและสถานที่เก็บรักษา สารเคมีอันตราย ตามกฎกระทรวงแรงงานฯ

รายชื่อบุคลากรแบบท้ายใบอนุญาต
เป็นนิติบุคคลผู้ให้บริการตรวจวัดและวิเคราะห์ผลการดำเนินงานเกี่ยวกับระดับความยั่งยืน
ของบริษัท เอสซีเอส (ประเทศไทย) จำกัด
ใบอนุญาตเลขที่ ๐๔๐๑-๐๓-๒๕๖๕-๐๐๒๘



ทั้งนี้ ตั้งแต่วันที่ ๒๒ มีนาคม พ.ศ. ๒๕๖๕ ถึงวันที่ ๒๑ มีนาคม พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๒๒ มีนาคม พ.ศ. ๒๕๖๕



อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน

เลขทะเบียนควบคุม



แบบ ภค.บญ
นิติบุคคล

กรมสวัสดิการและคุ้มครองแรงงาน
ใบอนุญาต
เป็นนิติบุคคลผู้ให้บริการตรวจวัดและวิเคราะห์ผลการดำเนินงานเกี่ยวกับระดับความยั่งยืน

ใบอนุญาตเลขที่ ๐๔๐๑-๐๓-๒๕๖๕-๐๐๒๘

อนุญาตให้ บริษัท เอสซีเอส (ประเทศไทย) จำกัด

เลขทะเบียนนิติบุคคล ๐๑๐๕๕๐๒๒๐๖๐๖๓๙

ตั้งอยู่เลขที่ ๑๐๐ ถนนวงจันทร์ แขวงคลองเตย เขตวัฒนา กรุงเทพมหานคร
เป็นนิติบุคคลผู้ให้บริการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน ตามกฎกระทรวงกำหนด
มาตรฐานในการบริหาร จัดการ และดำเนินการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน
เมื่อ ๑๖ กรกฎาคม ๒๕๖๑ และเมื่อ พ.ศ. ๒๕๖๔ ในการตรวจวัดและวิเคราะห์ผลการดำเนินงานเกี่ยวกับระดับความยั่งยืน
ประกอบกับกฎกระทรวงการขึ้นทะเบียนและการอนุญาตให้บริการเพื่อส่งเสริม ความปลอดภัย อาชีวอนามัย
และสภาพแวดล้อมในการทำงาน พ.ศ. ๒๕๖๔ แห่งพระราชบัญญัติความปลอดภัย อาชีวอนามัย และสภาพแวดล้อม
ในการทำงาน พ.ศ. ๒๕๕๔ โดยมีบุคลากร จำนวน ๑๑ ราย ดังรายชื่อแนบท้ายใบอนุญาตนี้

ทั้งนี้ ตั้งแต่วันที่ ๒๒ มีนาคม พ.ศ. ๒๕๖๕ ถึงวันที่ ๒๑ มีนาคม พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๒๒ มีนาคม พ.ศ. ๒๕๖๕



อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน

เลขทะเบียนควบคุม



รายชื่อบุคลากรแบบท้ายใบอนุญาต
เป็นนิติบุคคลผู้ให้บริการตรวจวัดและวิเคราะห์ผลการดำเนินงานเกี่ยวกับระดับเสียง
ของบริษั น เอสซีแอล (ประเทศไทย) จำกัด
ใบอนุญาตเลขที่ ๐๔๐๒-๐๓-๒๕๖๕-๐๐๒๔

๑. นางศิวพร	อัมมิไกรวรรณ
๒. นางสาวอุษิตา	เอี่ยมภักติกุล
๓. นางสาววิภาพร	กมลวิลาศ
๔. นางสาวสิริกุล	วัฒนาภักกิจ
๕. นางสาวอมรรัตน์	ทองน้อย
๖. นางสาวณัฐชา	อุ้นทองดี
๗. นางสาวอัสิตา	คันเจริญ
๘. นางสาวชานันท์	เดิณสิหาณชัย
๙. นายสุทธิศักดิ์	จตุรภัทรพิสุทธิ
๑๐. นายณัฐวัฒน์	ศิริโชติ
๑๑. นายธาดา	สุวรรณมณี

ทั้งนี้ ตั้งแต่วันที่ ๒๒ มีนาคม พ.ศ. ๒๕๖๕ ถึงวันที่ ๒๑ มีนาคม พ.ศ. ๒๕๖๕

ให้ไว้ ณ วันที่ ๒๒ มีนาคม พ.ศ. ๒๕๖๕



อธิบดีกรมส่งเสริมการค้าระหว่างประเทศ



แบบ ก.ก.บญ
ฉ.๒๒๓

กรมส่งเสริมการค้าระหว่างประเทศ
ใบอนุญาต
เป็นนิติบุคคลผู้ให้บริการตรวจวัดและวิเคราะห์ผลการดำเนินงานเกี่ยวกับระดับเสียง

ใบอนุญาตเลขที่ ๐๔๐๒-๐๓-๒๕๖๕-๐๐๒๔

อนุญาตให้...บริษัท เอสซีแอล (ประเทศไทย) จำกัด

เลขทะเบียนนิติบุคคล ๐๑๐๘๕๓๒๐๖๐๒๔

ตั้งอยู่เลขที่ ๑๐๐ ถนนพหลโยธิน แขวงจอมพล เขตจตุจักร กรุงเทพมหานคร

เป็นนิติบุคคลผู้ให้บริการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน ตามกฎกระทรวงกำหนดมาตรฐานในการบริหาร จัดการ และดำเนินการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน เกี่ยวกับความปลอดภัย ๒๕๖๔ ในการตรวจวัดและวิเคราะห์ผลการดำเนินงานเกี่ยวกับระดับเสียง ประกอบกับกฎกระทรวงการขึ้นทะเบียนและการอนุญาตให้บริการเพื่อส่งเสริม ความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน พ.ศ. ๒๕๖๔ แห่งพระราชบัญญัติความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน พ.ศ. ๒๕๕๔ โดยมีบุคลากร จำนวน ๑๑ ราย ดังรายชื่อแบบท้ายใบอนุญาตนี้

ทั้งนี้ ตั้งแต่วันที่ ๒๒ มีนาคม พ.ศ. ๒๕๖๕ ถึงวันที่ ๒๑ มีนาคม พ.ศ. ๒๕๖๕

ให้ไว้ ณ วันที่ ๒๒ มีนาคม พ.ศ. ๒๕๖๕



อธิบดีกรมส่งเสริมการค้าระหว่างประเทศ

รายชื่อบุคลากรแบบท้ายใบอนุญาต
เป็นนิติบุคคลผู้ให้บริการตรวจวัดและวิเคราะห์ผลการดำเนินงานเกี่ยวกับระดับเสียง
ของบริษั น เอสซีแอล (ประเทศไทย) จำกัด
ใบอนุญาตเลขที่ ๐๔๐๓-๐๓-๒๕๖๕-๐๐๒๔

๑. นางศิวพร	อัมมิไกรวรรณ
๒. นางสาวอุษิตา	เอี่ยมภักติกุล
๓. นางสาววิภาพร	กมลวิลาศ
๔. นางสาวสิริกุล	วัฒนาภักกิจ
๕. นางสาวอมรรัตน์	ทองน้อย
๖. นางสาวณัฐชา	อุ้นทองดี
๗. นางสาวอัสิตา	คันเจริญ
๘. นางสาวชานันท์	เดิณสิหาณชัย
๙. นายสุทธิศักดิ์	จตุรภัทรพิสุทธิ
๑๐. นายณัฐวัฒน์	ศิริโชติ
๑๑. นายธาดา	สุวรรณมณี

ทั้งนี้ ตั้งแต่วันที่ ๒๒ มีนาคม พ.ศ. ๒๕๖๕ ถึงวันที่ ๒๑ มีนาคม พ.ศ. ๒๕๖๕

ให้ไว้ ณ วันที่ ๒๒ มีนาคม พ.ศ. ๒๕๖๕



อธิบดีกรมส่งเสริมการค้าระหว่างประเทศ

นางสาวอุษิตา



รายชื่อบุคลากรแนบท้ายใบอนุญาต
เป็นนิติบุคคลผู้ให้บริการตรวจวัดระดับความเข้มข้นของสารเคมีอันตรายในบรรยากาศของสถานที่ทำงาน
และสถานที่เก็บรักษาสารเคมีอันตราย
ของ บริษัท เอสซีเอส (ประเทศไทย) จำกัด
ใบอนุญาตเลขที่ ๑๒๐๓-๐๓-๒๕๖๕-๐๐๕๐



ทั้งนี้ ตั้งแต่วันที่ ๑๕ มิถุนายน พ.ศ. ๒๕๖๕ ถึงวันที่ ๑๓ มิถุนายน พ.ศ. ๒๕๖๘

ให้ไว้ ณ วันที่ ๑๕ มิถุนายน พ.ศ. ๒๕๖๕



รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน

เลขทะเบียนควบคุม

(ลงนาม)

ทะเบียน)



แบบ ก.บ.ญ
นิติบุคคล

กรมสวัสดิการและคุ้มครองแรงงาน

ใบอนุญาต

เป็นนิติบุคคลผู้ให้บริการตรวจวัดระดับความเข้มข้นของสารเคมีอันตราย
ในบรรยากาศของสถานที่ทำงานและสถานที่เก็บรักษาสารเคมีอันตราย

ใบอนุญาตเลขที่ ๑๒๐๓-๐๓-๒๕๖๕-๐๐๕๐

อนุญาตให้ บริษัท เอสซีเอส (ประเทศไทย) จำกัด

เลขทะเบียนนิติบุคคล ๑๙๐๘๖๕๐๒๐๖๐๗๙

ตั้งอยู่ เลขที่ ๑๑๐ ถนนวิภาวดีรังสิต แขวงคลองจั่น เขตจตุจักร กรุงเทพมหานคร

เป็นนิติบุคคลผู้ให้บริการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน ตามกฎกระทรวง
กำหนดมาตรฐานในการบริหาร จัดการ และดำเนินการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อม
ในการทำงานเกี่ยวกับสารเคมีอันตราย พ.ศ. ๒๕๖๖ ในการเป็นผู้ให้บริการวิเคราะห์ระดับความเข้มข้น
ของสารเคมีอันตรายในบรรยากาศของสถานที่ทำงานและสถานที่เก็บรักษาสารเคมีอันตราย ประกอบกับ
กฎกระทรวงการขึ้นทะเบียนและการอนุญาตให้บริการเพื่อส่งเสริมความปลอดภัย อาชีวอนามัย และสภาพแวดล้อม
ในการทำงาน พ.ศ. ๒๕๖๔ แห่งพระราชบัญญัติความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน
พ.ศ. ๒๕๕๔ โดยมีบุคลากร จำนวน ๑๐ ราย ดังรายชื่อแนบท้ายใบอนุญาตนี้

ทั้งนี้ ตั้งแต่วันที่ ๑๕ มิถุนายน พ.ศ. ๒๕๖๕ ถึงวันที่ ๑๓ มิถุนายน พ.ศ. ๒๕๖๘


ให้ไว้ ณ วันที่ ๑๕ มิถุนายน พ.ศ. ๒๕๖๕



อธิบดีกรมสวัสดิการและคุ้มครองแรงงาน

เลขทะเบียนควบคุม

ผู้จำหน่ายการทดสอบความปลอดภัย



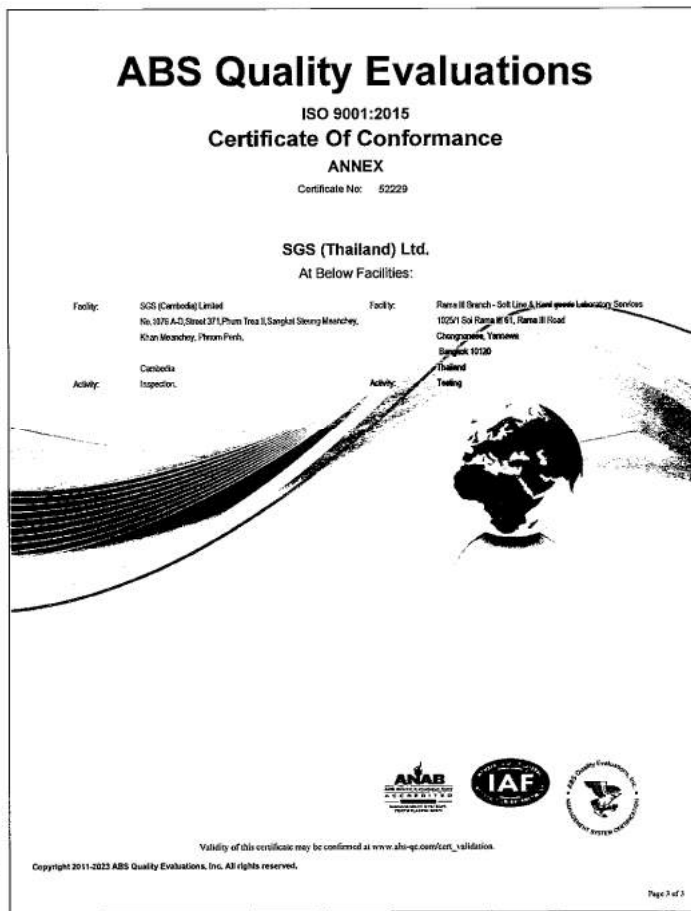
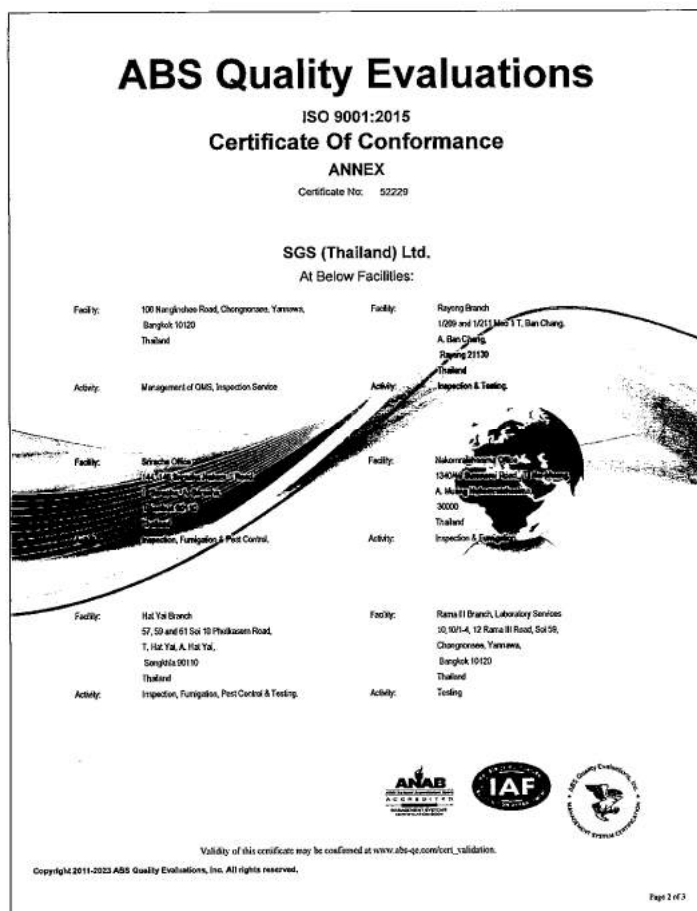
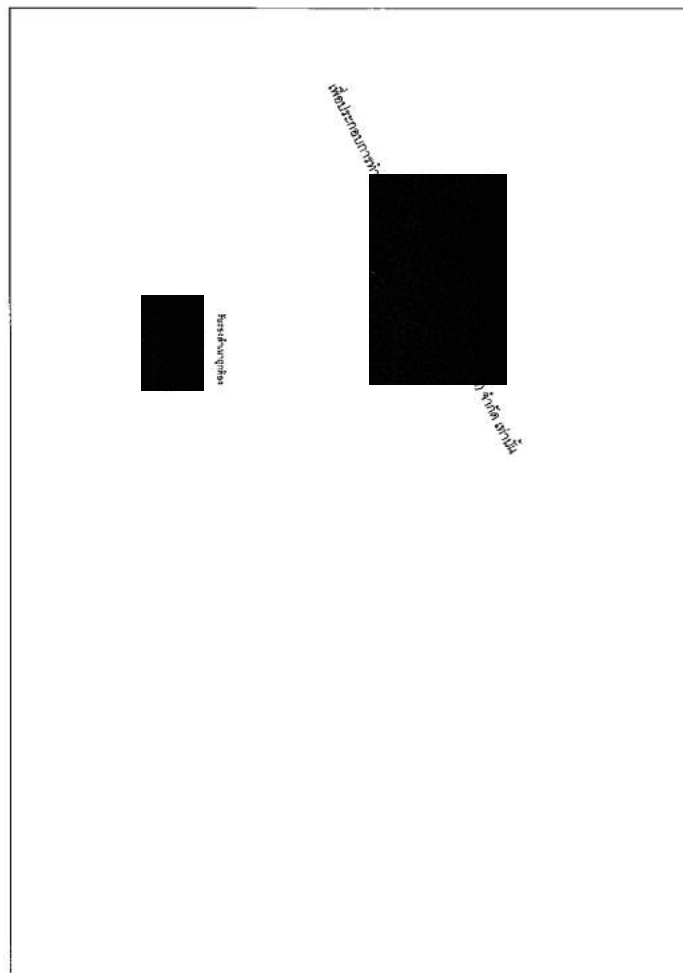
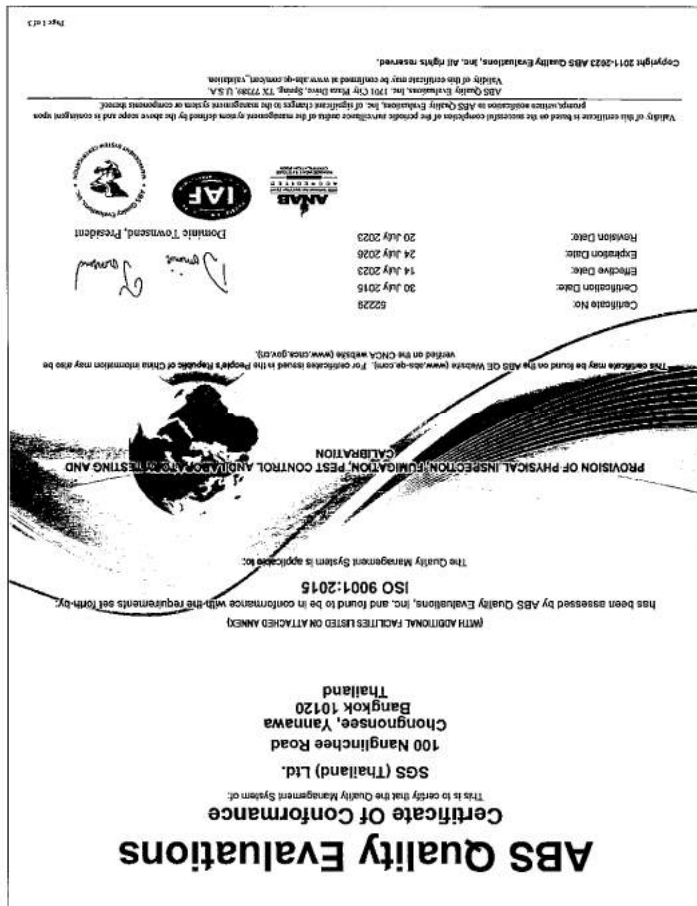
ให้ไว้ ณ วันที่ ๑๕ มิถุนายน พ.ศ. ๒๕๖๕

[illegible]

A large black rectangular redaction box covers the central portion of the page, obscuring all text and graphics that might have been present. The box is solid black and extends across most of the width and height of the document area.

Kesimpulan

[illegible]



รายละเอียดแนบท้ายใบรับรองระบบงานหน่วยตรวจ
ใบรับรองเลขที่ 22-IB0007



ชื่อหน่วยตรวจ : บริษัท เอสจีเอส (ประเทศไทย) จำกัด
หมายเลขการรับรอง : หน่วยตรวจ 0034
ประเภทของหน่วยตรวจ : ประเภท A

หมวดหมู่ / สาขาการตรวจ	ขั้นตอนและช่วงการตรวจ	ข้อกำหนดที่ใช้
9. สิ่งแวดล้อม (เฉพาะสำนักงานใหญ่)	การตรวจคุณภาพสิ่งแวดล้อมภายในอาคาร ใน รายการต่อไปนี้ - ระดับเสียง - ความร้อนสะสม - ปริมาณ CO, CO ₂ , PM-10, Ozone, Total VOCs - อุณหภูมิ - ความชื้นสัมพัทธ์ - ความเร็วลม - ระดับความเข้มแสง	- ขั้นตอนการดำเนินงานของบริษัท หมายเลข PR-TH-IE-IN-035, PR-TH-IE-IN-036, PR-TH-IE-IN-038, PR-TH-IE-IN-050, PR-TH-IE-IN-051, PR-TH-IE-IN-052, PR-TH-IE-IN-054 และ PR-TH-IE-IN-055 - ข้อกำหนดของลูกค้า - กฎหมาย กฎและระเบียบต่าง ๆ ที่ เกี่ยวข้อง
	การตรวจคุณภาพสิ่งแวดล้อมภายนอกอาคาร ในรายการต่อไปนี้ - ระบบการตรวจสอบคุณภาพอากาศ จากห้องแบบอัตโนมัติอย่างต่อเนื่อง (Continuous Emission Monitoring Systems : CEMS) ตัวเครื่องมือหรือ เครื่องอุปกรณ์พิเศษ (ปริมาณ CO, SO ₂ , NO ₂ , O ₃ , CO ₂ , NO และ NO _x)	- ขั้นตอนการดำเนินงานของบริษัท หมายเลข PR-TH-IE-IN-015 และ PR-TH-IE-IN-032 - ข้อกำหนดของลูกค้า - กฎหมาย กฎและระเบียบต่าง ๆ ที่ เกี่ยวข้อง
	การตรวจคุณภาพน้ำ ในรายการ - การเก็บตัวอย่างน้ำ - ลักษณะทางกายภาพ (สี กลิ่น รส) - ความเป็นกรด-ด่าง - อุณหภูมิ - ปริมาณออกซิเจนที่ละลายน้ำ (Dissolved Oxygen : DO) - ค่าการนำไฟฟ้า - ค่าความเค็ม - ค่าความขุ่น	- ขั้นตอนการดำเนินงานของบริษัท หมายเลข PR-TH-IE-IN-043 - ข้อกำหนดของลูกค้า - กฎหมาย กฎและระเบียบต่าง ๆ ที่ เกี่ยวข้อง

ออกให้ครั้งแรกเมื่อวันที่ 11 กันยายน พ.ศ. 2561
กระทรวงอุตสาหกรรม สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม

หน้า 4/5

รายละเอียดแนบท้ายใบรับรองระบบงานหน่วยตรวจ
ใบรับรองเลขที่ 22-IB0007



ชื่อหน่วยตรวจ : บริษัท เอสจีเอส (ประเทศไทย) จำกัด
หมายเลขการรับรอง : หน่วยตรวจ 0034
ประเภทของหน่วยตรวจ : ประเภท A

หมวดหมู่ / สาขาการตรวจ	ขั้นตอนและช่วงการตรวจ	ข้อกำหนดที่ใช้
10. สินค้าเกษตร : ข้าวสารและกากข้าวเหลือง* (เฉพาะสำนักงานใหญ่และ สำนักงานศรีราชา)	การตรวจสอบสภาพทั่วไป การสุ่มตัวอย่าง และการสังเกตการณ์การขึ้นน้ำหนัก	- GAFTA Weighing Rules No. 123 - GAFTA Sampling Rules No.124 - วิธีปฏิบัติงานของบริษัทหมายเลข PR-TH-NR-AGR-IN-006 - ข้อกำหนดของลูกค้า

หมายเหตุ : * สาขาและขอเข้าใช้ใบรับรองระบบงานเพิ่มเติม วันที่ 8 ธันวาคม 2564

ตั้งแต่ วันที่ 8 ธันวาคม พ.ศ. 2564
ถึง วันที่ 10 กันยายน พ.ศ. 2569
ออกให้ ณ วันที่ 31 มกราคม พ.ศ. 2565

ออกให้ครั้งแรกเมื่อวันที่ 11 กันยายน พ.ศ. 2561
กระทรวงอุตสาหกรรม สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม

หน้า 5/5

Scope of Accreditation for Inspection Body
Certificate No. 22-IB0007



Name of Inspection Body : SGS (Thailand) Limited
Addresses and contact details
Head office or primary location : 100 Nanglinchee Road, Chongnonsee, Yaninawa, Bangkok
Additional Locations (if different from Head Office)
1) Sriracha Office : 144, 146 Sriracha Nakhon 1 Road, Sriracha, Sriracha, Chonburi
2) Nakhon Ratchasima Office : 1340/46 Suranarai Road, Nak-Muang, Muang, Nakhonratchasima
3) Hat Yai Branch : 57, 59 and 61 Sol 10, Phetkasem Road, Hat Yai, Hat Yai, Songkhla
Accreditation No. : INSPECTION 0034
Type of Inspection Body : Type A

Category / Field of Inspection	Stage and Range of Inspection	Inspection Requirements or Criteria
1. Apparel : Readymade Garment (Head office)	In-line process and Pre-shipment Inspection of readymade garment with the items as follows : - General appearance - Style, Size and Weight of unit - Quantity and Packing (Pre-shipment inspection)	- Work instruction of SGS (Thailand) Limited : P-INSP-WI-SL-001 - Customer's requirements
2. Food Products : Food Inspection (Head Office and Hat Yai Branch)	During process inspection and Pre-shipment inspection of food products covering frozen food products and canned food products	- Operating procedure of SGS (Thailand) Limited : P-CORP-I-09 - Customer's requirements
3. Motor Vehicle : Automotive (Head Office)	Pre-shipment inspection of general condition of vehicle with the items as follows : - Quantity - Visual inspection of external condition e.g. glass, body, tires, wheels, cleanliness etc.	- Operating procedure of SGS (Thailand) Limited : PR-TH-NR- OGC-IN-001 and PR-TH-NR-OGC- IN-002 - New Vehicle Receiving and Inspection Procedures Issued May 1, 1989 of Federal Chamber of Automotive Industries

Date of Initial Issue: 11 September B.E. 2561 (2018)
Ministry of Industry Thailand, Thai Industrial Standards Institute

Page 1/5

Scope of Accreditation for Inspection Body
Certificate No. 22-IB0007



Name of Inspection Body : SGS (Thailand) Limited
Accreditation No. : INSPECTION 0034
Type of Inspection Body : Type A

Category / Field of Inspection	Stage and Range of Inspection	Inspection Requirements or Criteria
4. Machinery : LPG Cylinder (Head Office)	Production process and quality control inspection with the items as follows : - Component parts - During assembly - Heat treatment - Mechanical, Hydraulic pressure leak, Volumetric expansion, Burst test and Capacity check - Pre-delivery inspection	- Operating procedure of SGS (Thailand) Limited : PR-TH-IE-IN- 071 - Customer's requirements
5. Agricultural Products : Thai Hom Mali Rice (Head Office and Nakhon Ratchasima Office)	Pre-shipment inspection with the items as follows : - Quantity - Physical quality and general feature as follows : • Type, Grade • Purity • Moisture • Kernel size • Composition (whole kernel, broken, head rice) • Rice and matters that may be present (damaged kernel, yellow kernel, chalky kernel, red kernel, etc.) • No live insects • Milling degree Not covering the purity check by laboratory analysis for determination of Amylose content and Alkali spreading value	- Notification of Ministry of Commerce on Criteria and procedures of organizing the inspection of commodity standards and the inspection of the standards of Thai Hom Mali Rice - Operating procedure of SGS (Thailand) Limited : PR-TH-NR-AGR- IN-004 and PR-TH-NR-AGR-IN-005 - Customer's requirements

Date of Initial Issue: 11 September B.E. 2561 (2018)
Ministry of Industry Thailand, Thai Industrial Standards Institute

Page 2/5

Scope of Accreditation for Inspection Body
Certificate No. 22-IB0007



Name of Inspection Body : SGS (Thailand) Limited
Accreditation No. : INSPECTION 0034
Type of Inspection Body : Type A

Category / Field of Inspection	Stage and Range of Inspection	Inspection Requirements or Criteria
6. Agricultural Products : White sugar and raw sugar (Head Office and Nakhon Ratchasima Office)	General appearance and quantity inspection Excluding analysis by laboratory testing	- Operating procedure of SGS (Thailand) Limited : PR-TH-NR-AGR-IN-002 and PR-TH-NR-AGR-IN-003 - Customer's requirements
7. Bulk Solids : Coal, cement, gypsum, clinker, limestone and sedimentary rock (Head Office, Sriracha Office and Hat Yai Branch)	General appearance inspection and sampling	- Operating procedure of SGS (Thailand) Limited : PR-TH-NR-MIN-IN-001 and PR-TH-NR-MIN-IN-002
8. Manufacturing inspection for product certification (Head Office)	Production process and quality control system inspection including the evaluation of the following group of products : - Construction materials, concretes, sanitary wares, ceramics, and furniture - Electrical lighting and similar equipment - Electrical power devices - Electronic appliances - Electronic apparatus, parts, and components - Consumer goods and toys - Rubbers, chemicals, textiles, petroleum, and food products - Automotive products, parts, and mechanical products	- Criteria for product certification of Thai Industrial Standards Institute - Criteria for the relevant particular requirements and Thai Industrial Standards for product certification - Operating procedure of SGS (Thailand) Limited : TH.IPP.01

Date of Initial Issue: 11 September B.E. 2561 (2018)
Ministry of Industry Thailand, Thai Industrial Standards Institute

Page 3/5

Scope of Accreditation for Inspection Body
Certificate No. 22-IB0007



Name of Inspection Body : SGS (Thailand) Limited
Accreditation No. : INSPECTION 0034
Type of Inspection Body : Type A

Category / Field of Inspection	Stage and Range of Inspection	Inspection Requirements or Criteria
9. Environmental (Head Office)	Indoor Environment inspection with the items as follows : - Sound level - Heat stress - CO ₂ , CO, PM-10, Ozone, Total VOCs - Temperature - Relative humidity - Air velocity - Light intensity	- Operating procedure of SGS (Thailand) Limited : PR-TH-IE-IN-035, PR-TH-IE-IN-036, PR-TH-IE-IN-038, PR-TH-IE-IN-050, PR-TH-IE-IN-051, PR-TH-IE-IN-052, PR-TH-IE-IN-054, and PR-TH-IE-IN-055 - Customer's requirement - Related laws and regulations
	Outdoor environment inspection, the items as follows : - Continuous Emission Monitoring System : CEMS (CO, SO ₂ , NO ₂ , O ₂ , CO ₂ , NO, and NO _x)	- Operating procedure of SGS (Thailand) Limited : PR-TH-IE-IN-015 and PR-TH-IE-IN-032 - Customer's requirement - Related laws and regulations
	Water Inspection, the items as follows : - Water sampling - Physical appearance (Color, Suspended Solids) - pH - Temperature - Dissolved Oxygen : DO - Conductivity - Salinity - Turbidity Excludes laboratory analysis result	- Operating procedure of SGS (Thailand) Limited : PR-TH-IE-IN-043 - Customer's requirement - Related laws and regulations

Date of Initial Issue: 11 September B.E. 2561 (2018)
Ministry of Industry Thailand, Thai Industrial Standards Institute

Page 4/5

Scope of Accreditation for Inspection Body
Certificate No. 22-IB0007



Name of Inspection Body : SGS (Thailand) Limited
Accreditation No. : INSPECTION 0034
Type of Inspection Body : Type A

Category / Field of Inspection	Stage and Range of Inspection	Inspection Requirements or Criteria
10. Agricultural Products : Wheat and soybean meal* (Head Office and Sriracha Office)	General appearance inspection, Sampling, and weighing observation	- GAFTA Weighing Rules No. 123 - GAFTA Sampling Rules No.124 - Operating procedure of SGS (Thailand) Limited : PR-TH-NR-AGR-IN-006 - Customer's requirement

Note: * Extent scope: 8 December B.E. 2564 (2021)

Valid from : 8 December B.E. 2564 (2021)
Until : 10 September B.E. 2569 (2026)
Issue Date : 31 January B.E. 2565 (2022)

Date of Initial Issue: 11 September B.E. 2561 (2018)
Ministry of Industry Thailand, Thai Industrial Standards Institute

Page 5/5



ใบรับรองระบบงาน
(Certificate of Accreditation)

อาศัยอำนาจความในพระราชบัญญัติการมาตรฐานแห่งชาติ พ.ศ. ๒๕๕๑
(By Virtue of National Standardization Act B.E. 2551 (2008))

เลขาธิการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม
(Secretary-General, Thai Industrial Standards Institute)

ออกใบรับรองฉบับนี้ให้
(Issues this certificate to)

บริษัท เอสจีเอส (ประเทศไทย) จำกัด
SGS (Thailand) Limited

ตั้งอยู่เลขที่
(Address)

๑๐๐ ถนนบางลำไย แขวงคลองบางลำไย เขตบางนา กรุงเทพมหานคร
(100 Bangkhai Road, Bangna District, Bangkok)

ได้รับการรับรองความสามารถ
(Certificate of competence)

ตามมาตรฐานเลขที่ มอก. ๑๙๐๒๐ - ๒๕๕๖
(Standard No. ISO/IEC 17020 : 2012)

การตรวจสอบและรับรองข้อกำหนดสำหรับหน่วยตรวจ
(Conformity assessment - Requirements for the operation of various types of bodies performing inspection)

หมายเลขการรับรองที่ หน่วยตรวจ ๐๐๓๔
(Accreditation No. INSPECTION 0034)

โดยมีรายละเอียดสาขาและขอบข่ายที่ใบรับรอง แสดงไว้ใน QR CODE และ www.tisi.go.th
(Details of the scheme and scope of the certificate are shown in QR CODE and www.tisi.go.th)

ออกให้ ณ วันที่ ๓๑ มกราคม พ.ศ. ๒๕๖๕
(Issue Date : 31 January B.E. 2565 (2022))


รองเลขาธิการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม
ปฏิบัติราชการแทน
เลขาธิการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม





กระทรวงอุตสาหกรรม สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม
Ministry of Industry Thailand, Thai Industrial Standards Institute

รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ
(Scope of Accreditation for Testing)
ใบรับรองเลขที่ 23-LB0119
(Certification No. 23-LB0119)



ชื่อห้องปฏิบัติการ
(Laboratory Name)
หมายเลขการรับรอง
(Accreditation No.)
ฉบับที่ 02
(Issue No.)
สถานภาพห้องปฏิบัติการ
(Laboratory Status)

บริษัท เอสซีเอส (ประเทศไทย) จำกัด ห้องปฏิบัติการทดสอบสิ่งแวดล้อม (สาขารอยง)
(SIS (Thailand) Limited, Environmental Laboratory (Rayong Branch))
ทดสอบ 0470
(Testing 0470)
ออกให้ตั้งแต่วันที่ 19 ธันวาคม พ.ศ. 2565
(Valid from (19 December B.E. 2565 (2022))
☒ ถาวร ☐ นอกสถานที่ ☐ชั่วคราว
(Permanent) (Site) (Temporary)


ถึงวันที่ 10 พฤศจิกายน พ.ศ. 2570
(Until (10 November B.E. 2570 (2027))
☐ เคลื่อนที่ ☐ หลายสถานที่
(Mobile) (Multisite)

สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
สาขาสังแวดล้อม (Environmental field) น้ำและน้ำเสีย (Water and wastewater)	- Arsenic (As) 0.01 mg/L to 0.50 mg/L - Barium (Ba) 0.01 mg/L to 10 mg/L - Cadmium (Cd) 0.002 mg/L to 10 mg/L - Chromium (Cr) 0.01 mg/L to 10 mg/L - Copper (Cu) 0.01 mg/L to 10 mg/L - Iron (Fe) 0.02 mg/L to 10 mg/L - Lead (Pb) 0.01 mg/L to 10 mg/L - Manganese (Mn) 0.01 mg/L to 5 mg/L - Nickel (Ni) 0.004 mg/L to 10 mg/L - Selenium (Se) 0.01 mg/L to 0.50 mg/L - Silver (Ag) 0.01 mg/L to 10 mg/L - Zinc (Zn) 0.02 mg/L to 10 mg/L	- Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23 rd edition, 2017, part 3120 B and part 3020 K

กระทรวงอุตสาหกรรม สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม
(Ministry of Industry, Thai Industrial Standards Institute)

หน้าที่ 1/3

รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ
(Scope of Accreditation for Testing)
ใบรับรองเลขที่ 23-LB0119
(Certification No. 23-LB0119)



ฉบับที่ 02
(Issue No.)
สถานภาพห้องปฏิบัติการ
(Laboratory Status)

ออกให้ตั้งแต่วันที่ 19 ธันวาคม พ.ศ. 2565
(Valid from (19 December B.E. 2565 (2022))
☒ ถาวร ☐ นอกสถานที่ ☐ชั่วคราว
(Permanent) (Site) (Temporary)


ถึงวันที่ 10 พฤศจิกายน พ.ศ. 2570
(Until (10 November B.E. 2570 (2027))
☐ เคลื่อนที่ ☐ หลายสถานที่
(Mobile) (Multisite)

สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
สาขาสังแวดล้อม (Environmental field) น้ำและน้ำเสีย (ต่อ) (Water and wastewater) (Cont.)	- Biochemical oxygen demand (BOD) 2 mg/L to 5 000 mg/L - Chemical oxygen demand (COD) 40 mg/L to 10 000 mg/L - Chloride (Cl) 1 mg/L to 10 000 mg/L - Chromium hexavalent (Cr(VI)) 0.01 mg/L to 2.00 mg/L - Oil and grease 2 mg/L to 100 mg/L - pH 2.0 to 10.0 - Phenol 0.01 mg/L to 1.00 mg/L	- Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23 rd edition, 2017, part 5210 B and part 4500-O G - Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23 rd edition, 2017, part 5220 C - Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23 rd edition, 2017, part 4500-Cl D - Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23 rd edition, 2017, part 3500-Cr B - Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23 rd edition, 2017, part 5520 B - Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23 rd edition, 2017, part 4500-HI B - Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23 rd edition, 2017, part 5530 D

กระทรวงอุตสาหกรรม สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม
(Ministry of Industry, Thai Industrial Standards Institute)

หน้าที่ 2/3

รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ
(Scope of Accreditation for Testing)
ใบรับรองเลขที่ 23-LB0119
(Certification No. 23-LB0119)



ฉบับที่ 02
(Issue No.)
สถานภาพห้องปฏิบัติการ
(Laboratory Status)

ออกให้ตั้งแต่วันที่ 19 ธันวาคม พ.ศ. 2565
(Valid from (19 December B.E. 2565 (2022))
☒ ถาวร ☐ นอกสถานที่ ☐ชั่วคราว
(Permanent) (Site) (Temporary)

ถึงวันที่ 10 พฤศจิกายน พ.ศ. 2570
(Until (10 November B.E. 2570 (2027))
☐ เคลื่อนที่ ☐ หลายสถานที่
(Mobile) (Multisite)

สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
สาขาสังแวดล้อม (Environmental field) น้ำและน้ำเสีย (ต่อ) (Water and wastewater) (Cont.)	- Sulfate (SO ₄ ²⁻) 1 mg/L to 40 mg/L - Total hardness 1 mg/L to 1 000 mg/L (expressed as CaCO ₃) - Total solids (TS) 2.5 mg/L to 10 000 mg/L - Total dissolved solids (TDS) 2.5 mg/L to 20 000 mg/L - Total suspended solids (TSS) 2.5 mg/L to 10 000 mg/L	- Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23 rd edition, 2017, part 4500-SO ₄ ²⁻ E - Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23 rd edition, 2017, part 2340 C - Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23 rd edition, 2017, part 2540 B - Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23 rd edition, 2017, part 2540 C - ENWA-10243 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23 rd edition, 2017, part 2540 C (dried at 103 - 105 °C) - Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23 rd edition, 2017, part 2540 D

กระทรวงอุตสาหกรรม สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม
(Ministry of Industry, Thai Industrial Standards Institute)

หน้าที่ 3/3

ภาคผนวก ค

สำเนาใบรับรองการสอบเทียบเครื่องมือตรวจวัด

INNOVATIVE INSTRUMENT CALIBRATION LAB
INNOVATIVE INSTRUMENT CO., LTD. HEAD OFFICE
1100 WONG WATTHANONGKARN 11 TOWN RANG KAT
ANUTHEE BANGKOK MARKET PRACHIN PRATHEE 10400 THAILAND
TEL: 0840-210660 FAX: 0840-210661

Page 1 of 2

Certificate of Calibration

Customer: SCS (Thailand) Limited
Address: 100 Nanglietee Road, Chongnong, Yomasa, Bangkok 10100

Certificate No: 12-DPM-24
Request No: Req 2022-190

Link Under Calibration Details

Measurement Item: Roomair Sample
Manufacturer: Aspire
Model: Microflow II
Serial Number: M1813
ID: 1102-1432

Resolution: 0.001 inch H₂O

Calibration Environment and Details

Temperature: 25 °C ± 1 °C
Humidity: 55 % ± 5 % RH
Start Date: 4 November 2022
Calibration Date: 9 November 2022
Calibration By: Mr. Nopadol Jongsat
Location of Calibration: LAB 4 Air Velocity
Calibration Procedure: In-house method CP-DPM-02 by Comparison With Standard D (Formal) Pressure Transducer

Reference Standard

Model	Serial Number	Due Calibration
ADT402-05 DPM-02	2119000023	4 July 2023
Thermohygrometer	81001	09/07/21

Traceability: This certificate provides traceability of measurements to recognized national standards, and to the realization of the International System of Units (SI) National Institute of Metrology (Thailand) (NIMT).

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: [Signature]
Service Calibration Engineer

Approved By: [Signature]
Calibration Engineer Supervisor

Issue Date: 9 November 2022

VERIFIED

This certificate may not be reproduced without the prior written approval of the Innovation Instrument Co., Ltd.

INNOVATIVE INSTRUMENT CALIBRATION LAB
INNOVATIVE INSTRUMENT CO., LTD. HEAD OFFICE
1100 WONG WATTHANONGKARN 11 TOWN RANG KAT
ANUTHEE BANGKOK MARKET PRACHIN PRATHEE 10400 THAILAND
TEL: 0840-210660 FAX: 0840-210661

Page 1 of 2

Certificate of Calibration

Customer: SCS (Thailand) Limited
Address: 100 Nanglietee Road, Chongnong, Yomasa, Bangkok 10100

Certificate No: 12-DPM-24
Request No: Req 2022-190

Calibration Results: Without Adjustment

Flow Rate Accuracy	Flow Rate Accuracy	Flow Rate Accuracy	Flow Rate Accuracy	Flow Rate Accuracy
Flow Rate (L/min)	Flow Rate (L/min)	Flow Rate (L/min)	Flow Rate (L/min)	Flow Rate (L/min)
20	0.014	0.014	0.0%	0.0003
40	0.016	0.016	0.0%	0.0003
60	0.018	0.018	0.1%	0.0003
80	0.018	0.018	0.1%	0.0003
100	0.018	0.018	0.1%	0.0003
120	0.018	0.018	0.1%	0.0003

Note:
Note: The average standard of 4 tests on each flow rate.
Note: H₂O = 24.0000 mmHg
Note: DPM-02 Pressure

This certificate may not be reproduced without the prior written approval of the Innovation Instrument Co., Ltd.

CERTIFICATE OF CALIBRATION

Date of Issue: 13 March 2023
Order Item No: 2303013

Certificate Number: QH23-4632
Page: 1 of 2

REBORN
Quality Reborn Co., Ltd.
42/267 Leeklong Road, Prachin Buri
Nanglietee, Bangkok 10100
Tel: 0840-447332, Fax: 0840-447333

Customer: SCS (Thailand) Limited
100 Nanglietee Road, Chongnong, Yomasa, Bangkok 10100

Date Received: 02 March 2023
Date of Calibration: 09 March 2023

Instrument Description

Model: 633
Serial Number: 01171946
ID Number: BEQ018
Manufacturer: Testo
Site: Quality Reborn Co., Ltd.
Location: Calibration Room 1

Environmental Conditions

Temperature: 25 °C ± 1 °C
Relative Humidity: 55 % ± 5 %

Calibration Method Used

This instrument was calibrated by comparison of indication with the dew point hygrometer with chilled mirror sensor and standard thermometer with PRT in humidity/temperature chamber according to calibration procedure no. CP-1003-01.

Traceability of Measurement

This certificate of calibration documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI).

Calibrated By: Ms. Nisak Buranont
Approved By: [Signature]

VERIFIED

This certificate may not be reproduced without the prior written approval of Quality Reborn Co., Ltd.

Certificate No.: QH23-4632
Order Item No.: 2303013
Page: 2 of 2

Results of Calibration

1. Reference Standard Equipment Used:

Description: Dew Point Hygrometer Model: 12310 Optow S/N: 173778
Connected with Sensor Model: OPT-61 D2 S/N: 189510
Reference Thermometer 1234 S/N: 1023108 connected with
Fast Response RTD NR-351 S/N: 4060903-002 (Channel T1)
Fast Response RTD NR-351 S/N: 406046-001 (Channel T2)

2. The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

3. Condition of calibration item: normal condition, no indication for any damage or malfunction.

4. The results reported herein relate only to the item calibrated.

5. Uncertainty of humidity measurement was include temperature dependency test at 25 °C ± 0.50 °C.

Result of Calibration (Without Adjustment)

Function 1: Humidity Measurement at Reference Temperature 25 °C

Standard Humidity (%RH)	UUC* Resulting (%RH)	Humidity Correction (%RH)	Uncertainty of Measurement (%RH)
11.25	11.25	0.04	0.09
50.05	49.97	2.63	1.1
75.24	74.7	0.64	1.6

Result of Calibration (Without Adjustment)

Function 1: Temperature Measurement

Standard Temperature (°C)	UUC* Resulting (°C)	Temperature Correction (°C)	Uncertainty of Measurement (°C)
15.884	15.1	-0.066	0.19
24.965	24.9	0.065	0.19
35.030	34.9	0.130	0.19

UUC* = Unit Under Calibration

This 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%.

-0.04



CERTIFICATE OF ANALYSIS

Date: Sep 22, 2022
Order Number: 2022/021101
Lot Number: 20442000431-3

Customer: CalGas LTD
Use Before: 12/12/2024

Component	Specified Concentration	Analytical Result (±1%)
Hydrogen Sulfide	20 PPM	20.0 PPM
Carbon Monoxide	100 PPM	100.1 PPM
Nitrogen	2.0% vol.	2.00% vol.
Oxygen	18% vol.	18.01% vol.
Nitrogen	Balance	Balance

Cylinder Size: 1.2 Cu. Ft.
Contents: 24 Liter

Valve: 6" - 1800/P
Pressure: 200 psig

For your protection we find by direct comparison to calibration standards traceable to NIST, weight and/or A.I.E.S. Gas Reference materials.

Analyst



GASCO AFFILIATE, LLC.
320 Searles Ave.
Olathe, KS 64677
(913) 815-0551
Fax: (913) 755-8922
www.gasconet.com

CERTIFICATE OF ANALYSIS

Date: Sep 22, 2022
Order Number: PC-8021063
Lot Number: 20442000431-3

Customer: ECOMM Technologies Inc
Use Before: 09/12/2025

Component	Specification (±1%)	Analytical Result (±1%)
Oxygen	25.0% vol.	25.0% vol.
Nitrogen	Balance	Balance

Cylinder Size: 4.0 Cu. Ft.
Contents: 118 Liter (EcoComm)

Valve: 6" - 1800/P
Pressure: 1500 psig

The calibration gas analyzed by Gasco is contained in a certified cylinder. It is prepared by gravimetry, or other pressure methods. The calibration gas is contained in a certified cylinder. It is prepared by gravimetry, or other pressure methods. The calibration gas is contained in a certified cylinder. It is prepared by gravimetry, or other pressure methods.

Analyst

INNOVATIVE INSTRUMENT CALIBRATION LAB
INNOVATIVE INSTRUMENT CO., LTD. HEAD OFFICE
7100 HWY 10, SUITE 100, VANCOUVER, BC V6N 1C1, CANADA
VANCOUVER, BC V6N 1C1, CANADA
TEL: (604) 276-1000 FAX: (604) 276-1001



Certificate No.: 22-0794-171
Request No.: Req-2022-1718

Certification Results - Without Adjustment

Flow Rate Accuracy	Flow Rate (SLPM)	Flow Rate (SLPM)	Flow Rate (SLPM)	Error	Uncertainty (1)
30	0.014	0.014	0.014	0.0000	0.0012
40	0.020	0.020	0.020	0.0000	0.0012
50	0.026	0.026	0.026	0.0000	0.0012
60	0.032	0.032	0.032	0.0000	0.0012
70	0.038	0.038	0.038	0.0000	0.0012

Note:
Notes: The average standard of 4 values on each flow rate.
Flow Rate = 20.000 SLPM
Flow Rate = 20.000 SLPM

Analyst

INNOVATIVE INSTRUMENT CALIBRATION LAB
INNOVATIVE INSTRUMENT CO., LTD. HEAD OFFICE
7100 HWY 10, SUITE 100, VANCOUVER, BC V6N 1C1, CANADA
VANCOUVER, BC V6N 1C1, CANADA
TEL: (604) 276-1000 FAX: (604) 276-1001



Certificate No.: 22-0794-171
Request No.: Req-2022-1412

Customer: 1: SCS (Thailand) Limited
Address: 1: 180 Nongkhai Road, Chongprad, Yommarong Bangkok 10120

Certificate No.: 22-0794-171
Request No.: Req-2022-1412
Page: 1/2

Use Under Calibration Results

Calibration Parameter: 1: Temperature
Instrument Name: 1: Area Flow Sensor Monitor
Manufacturer: 1: JAI
Model: 1: QF-38
Serial Number: 1: TCR000000
Resolution: 1: 0.1 °C
ID Number: 1: 0000000000

Calibration Environment and Details
Temperature: 1: 23 °C ± 0.1 °C
Humidity: 1: 55 %RH ± 1 %RH
Relative Date: 1: 1 September 2022
Calibration Date: 1: 1 September 2022

Calibration Procedure: 1: In-house verified CP-1794-01 by Comparison with Standard Thermometer

Reference Standard: 1: Digital Thermometer with Sensor, Manufacturer: OMEGA-GENCO, Model: GT11-B (DIN EN 60751, EN 60751, IEC 60751) which was calibrated on 10 March 2022, Calibration Certificate No.: Q022-0278

Traceability: 1: This Certificate is traceable to SI Unit through Quality Reference Co., Ltd., NIST-QMS Accreditation No.: Calibration 0290

Note:
The reported uncertainty is based on standard uncertainty multiplied by the Coverage Factor k=2, providing a level of confidence approximately 95 %.

VERIFIED

Approved By: [Signature]
Issue Date: 1 September 2022

This result is valid only for the use indicated. The certificate shall not be reproduced except in full, without written approval of the Issuing Laboratory Co., Ltd.
For 1000-0000-01 Rev 001 Issue Date: 01/01/2020



GASCO AFFILIATE, LLC.
320 Searles Ave.
Olathe, KS 64677
(913) 815-0551
Fax: (913) 755-8922
www.gasconet.com

CERTIFICATE OF ANALYSIS

Date: Sep 15, 2021
Order Number: PC-8021063
Lot Number: 20442000431-3

Customer: ECOMM Technologies Inc
Use Before: 09/12/2025

Component	Specification (±1%)	Analysis Result (±1%)
Nitrogen	95.00% vol.	95.00% vol. nitrogen purity

Cylinder Size: 4.0 Cu. Ft.
Contents: 118 Liter

Valve: 6" - 1800/P
Pressure: 1500 psig

The calibration gas analyzed by Gasco is contained in a certified cylinder. It is prepared by gravimetry, or other pressure methods. The calibration gas is contained in a certified cylinder. It is prepared by gravimetry, or other pressure methods. The calibration gas is contained in a certified cylinder. It is prepared by gravimetry, or other pressure methods.

Analyst

INNOVATIVE INSTRUMENT CALIBRATION LAB
INNOVATIVE INSTRUMENT CO., LTD. HEAD OFFICE
7100 HWY 10, SUITE 100, VANCOUVER, BC V6N 1C1, CANADA
VANCOUVER, BC V6N 1C1, CANADA
TEL: (604) 276-1000 FAX: (604) 276-1001



Certificate No.: 22-0794-171
Request No.: Req-2022-1718

Customer: 1: SCS (Thailand) Limited
Address: 1: 180 Nongkhai Road, Chongprad, Yommarong Bangkok 10120

Use Under Calibration Results
Calibration Parameter: 1: Temperature
Instrument Name: 1: Area Flow Sensor Monitor
Manufacturer: 1: JAI
Model: 1: QF-38
Serial Number: 1: TCR000000
Resolution: 1: 0.1 °C
ID Number: 1: 0000000000

Calibration Environment and Details
Temperature: 1: 23 °C ± 0.1 °C
Humidity: 1: 55 %RH ± 1 %RH
Relative Date: 1: 1 September 2022
Calibration Date: 1: 1 September 2022

Calibration Procedure: 1: In-house verified CP-1794-01 by Comparison with Standard Thermometer

Reference Standard: 1: Digital Thermometer with Sensor, Manufacturer: OMEGA-GENCO, Model: GT11-B (DIN EN 60751, EN 60751, IEC 60751) which was calibrated on 10 March 2022, Calibration Certificate No.: Q022-0278

Traceability: 1: This Certificate is traceable to SI Unit through Quality Reference Co., Ltd., NIST-QMS Accreditation No.: Calibration 0290

Note:
The reported uncertainty is based on standard uncertainty multiplied by the Coverage Factor k=2, providing a level of confidence approximately 95 %.

Approved By: [Signature]
Issue Date: 1 September 2022

This result is valid only for the use indicated. The certificate shall not be reproduced except in full, without written approval of the Issuing Laboratory Co., Ltd.
For 1000-0000-01 Rev 001 Issue Date: 01/01/2020

INNOVATIVE INSTRUMENT CALIBRATION LAB
INNOVATIVE INSTRUMENT CO., LTD. HEAD OFFICE
7100 HWY 10, SUITE 100, VANCOUVER, BC V6N 1C1, CANADA
VANCOUVER, BC V6N 1C1, CANADA
TEL: (604) 276-1000 FAX: (604) 276-1001



Certificate No.: 22-0794-171
Request No.: Req-2022-1718

Customer: 1: SCS (Thailand) Limited
Address: 1: 180 Nongkhai Road, Chongprad, Yommarong Bangkok 10120

Flow Rate Accuracy	Flow Rate (SLPM)	Flow Rate (SLPM)	Flow Rate (SLPM)	Error	Uncertainty (1)
30	0.014	0.014	0.014	0.0000	0.0012
40	0.020	0.020	0.020	0.0000	0.0012
50	0.026	0.026	0.026	0.0000	0.0012
60	0.032	0.032	0.032	0.0000	0.0012
70	0.038	0.038	0.038	0.0000	0.0012

Analyst

INNOVATIVE INSTRUMENT CALIBRATION LAB
INNOVATIVE INSTRUMENT CO., LTD. HEAD OFFICE
7100 HWY 10, SUITE 100, VANCOUVER, BC V6N 1C1, CANADA
VANCOUVER, BC V6N 1C1, CANADA
TEL: (604) 276-1000 FAX: (604) 276-1001



Certificate No.: 22-0794-171
Request No.: Req-2022-1412

Customer: 1: SCS (Thailand) Limited
Address: 1: 180 Nongkhai Road, Chongprad, Yommarong Bangkok 10120

Certificate No.: 22-0794-171
Request No.: Req-2022-1412
Page: 1/2

Use Under Calibration Results

Calibration Parameter: 1: Temperature
Instrument Name: 1: Area Flow Sensor Monitor
Manufacturer: 1: JAI
Model: 1: QF-38
Serial Number: 1: TCR000000
Resolution: 1: 0.1 °C
ID Number: 1: 0000000000

Calibration Environment and Details
Temperature: 1: 23 °C ± 0.1 °C
Humidity: 1: 55 %RH ± 1 %RH
Relative Date: 1: 1 September 2022
Calibration Date: 1: 1 September 2022

Calibration Procedure: 1: In-house verified CP-1794-01 by Comparison with Standard Thermometer

Reference Standard: 1: Digital Thermometer with Sensor, Manufacturer: OMEGA-GENCO, Model: GT11-B (DIN EN 60751, EN 60751, IEC 60751) which was calibrated on 10 March 2022, Calibration Certificate No.: Q022-0278

Traceability: 1: This Certificate is traceable to SI Unit through Quality Reference Co., Ltd., NIST-QMS Accreditation No.: Calibration 0290

Note:
The reported uncertainty is based on standard uncertainty multiplied by the Coverage Factor k=2, providing a level of confidence approximately 95 %.

VERIFIED

Approved By: [Signature]
Issue Date: 1 September 2022

This result is valid only for the use indicated. The certificate shall not be reproduced except in full, without written approval of the Issuing Laboratory Co., Ltd.
For 1000-0000-01 Rev 001 Issue Date: 01/01/2020



Calibration No. : 13-1794-073
Report No. REP-002-1044
Page : 1/2

Result of Calibration :

S.U.C Device	Product Description	UUT Reading mV	Reference mV	Correction mV	Uncertainty mV
WET	25.00	25.0	0.0	0.0	0.14
	25.00	25.0	0.0	0.0	0.14
	45.00	45.0	0.0	0.0	0.14
DWT	25.00	25.0	0.0	0.0	0.14
	25.00	25.0	0.0	0.0	0.14
	45.00	45.0	0.0	0.0	0.14
GLOBE	25.00	25.0	0.0	0.0	0.14
	25.00	25.0	0.0	0.0	0.14
	45.00	45.0	0.0	0.0	0.14

End of Certificate
Calibrated By : [Signature]

The reader should only refer to the data contained. The certificate shall not be reproduced except in full without written approval of the Issuing Institution Co., Ltd.
PAB 100-1794-01 Rev.01 Issue date 13-10-20



Calibration No. : 13-1794-073
Report No. REP-002-1044
Page : 1/2

Unit Under Calibration Details
Calibration Parameter : Temperature
Instrument Name : Area Heat Flow Monitor
Manufacturer : JIM
Model : Q70-08
Serial Number : T1000000
Resolution : 0.1 °C
ID Number : EN507-1789

Range Calibration : 25 °C to 45 °C
Type of Sensor : RTD
Sensor Diameter (mm) : 4.5
Calibration Function Used : 47.5
Instrument Status : Good

Calibration Environment and Details
Temperature : 23 °C ± 0.3 °C
Humidity : 55% RH ± 5% RH
Received Date : 1 September 2022
Calibrated Date : 1 September 2022
Calibration Procedure : In house method CP-1794-01 by Comparison with Standard Thermometers

Reference Standard : Digital Thermometer with Sensor, Manufacturer: OGD-GOINCO, Model: GT11187D, RN, RN
6000017, ID: 62-1794 which was calibrated on 10 March 2022, Calibration Certificate No. : (QK2)-0178

Traceability : This Certificate is traceable to SI Unit through Quality Reference Co., Ltd., NIST-GNRC Accreditation No. : Calibration 0200

Note
The reported uncertainty is based on standard uncertainty multiplied by the Coverage Factor k=2, providing a level of confidence approximately 95%.

VERIFIED

Approved By : [Signature]
Issue Date : 1 September 2022

The reader should only refer to the data contained. The certificate shall not be reproduced except in full without written approval of the Issuing Institution Co., Ltd.
PAB 100-1794-01 Rev.01 Issue date 13-10-20



Calibration No. : 13-1794-073
Report No. REP-002-1044
Page : 1/2

Result of Calibration :

S.U.C Device	Product Description	UUT Reading mV	Reference mV	Correction mV	Uncertainty mV
WET	25.00	25.0	0.0	0.0	0.14
	25.00	25.0	0.0	0.0	0.14
	45.00	45.0	0.0	0.0	0.14
DWT	25.00	25.0	0.0	0.0	0.14
	25.00	25.0	0.0	0.0	0.14
	45.00	45.0	0.0	0.0	0.14
GLOBE	25.00	25.0	0.0	0.0	0.14
	25.00	25.0	0.0	0.0	0.14
	45.00	45.0	0.0	0.0	0.14

End of Certificate
Calibrated By : [Signature]

The reader should only refer to the data contained. The certificate shall not be reproduced except in full without written approval of the Issuing Institution Co., Ltd.
PAB 100-1794-01 Rev.01 Issue date 13-10-20

100/20-21 Prachinburi Rd., Samet Prayut, Prachin,
Bangkok 10400 Thailand
Tel : +66 (0) 815 4499
Fax : +66 (0) 815 4444
E-mail : cal@gilcal.co.th



CERTIFICATE No. : CAL00173-23 PAGE : 1 OF : 3

Certificate of Calibration

Equipment : DIGITAL LIGHT METER
Manufacturer : EXTECH
Model / Type : 457208
Serial No. : A.00444
ID No. : ENWP22213
Customer : BGS (Thailand) Limited
100 Hengchao Road, Chongnonsi, Yomvut, Bangkok 10120.

C.S.R. No. : LX000223-23
Received Date : 08 February 2023
Calibration Date : 08 February 2023

Calibrated By : MR. TONTAKKARN BRACHA
Approved By : MR. NATTAPOLO KHONGNADW
Issue Date : 09 February 2023

VERIFIED

The uncertainties are for a level of confidence of approximately 95%.
This Certificate may not be reproduced except in full unless permission for the reproduction has been
granted by the laboratory.

GILCAL-FM-7.3-001 Rev.00 (2001/02)



Calibration No. : 13-1794-073
Report No. REP-002-1044
Page : 1/2

Result of Calibration :

S.U.C Device	Product Description	UUT Reading mV	Reference mV	Correction mV	Uncertainty mV
WET	25.00	25.0	0.0	0.0	0.14
	25.00	25.0	0.0	0.0	0.14
	45.00	45.0	0.0	0.0	0.14
DWT	25.00	25.0	0.0	0.0	0.14
	25.00	25.0	0.0	0.0	0.14
	45.00	45.0	0.0	0.0	0.14
GLOBE	25.00	25.0	0.0	0.0	0.14
	25.00	25.0	0.0	0.0	0.14
	45.00	45.0	0.0	0.0	0.14

End of Certificate
Calibrated By : [Signature]

The reader should only refer to the data contained. The certificate shall not be reproduced except in full without written approval of the Issuing Institution Co., Ltd.
PAB 100-1794-01 Rev.01 Issue date 13-10-20



Calibration No. : 13-1794-073
Report No. REP-002-1044
Page : 1/2

Unit Under Calibration Details
Calibration Parameter : Temperature
Instrument Name : Area Heat Flow Monitor
Manufacturer : JIM
Model : Q70-08
Serial Number : T1000000
Resolution : 0.1 °C
ID Number : EN507-081

Range Calibration : 25 °C to 45 °C
Type of Sensor : RTD
Sensor Diameter (mm) : 4.5
Calibration Function Used : 47.5
Instrument Status : Good

Calibration Environment and Details
Temperature : 23 °C ± 0.3 °C
Humidity : 55% RH ± 5% RH
Received Date : 1 February 2023
Calibrated Date : 1 February 2023
Calibration Procedure : In house method CP-1794-01 by Comparison with Standard Thermometers

Reference Standard : Digital Thermometer with Sensor, Manufacturer: OGD-GOINCO, Model: GT11187D, RN, RN
6000017, ID: 62-1794 which was calibrated on 10 March 2022, Calibration Certificate No. : (QK2)-0178

Traceability : This Certificate is traceable to SI Unit through Quality Reference Co., Ltd., NIST-GNRC Accreditation No. : Calibration 0200

Note
The reported uncertainty is based on standard uncertainty multiplied by the Coverage Factor k=2, providing a level of confidence approximately 95%.

VERIFIED

Approved By : [Signature]
Issue Date : 1 February 2023

The reader should only refer to the data contained. The certificate shall not be reproduced except in full without written approval of the Issuing Institution Co., Ltd.
PAB 100-1794-01 Rev.01 Issue date 13-10-20

CERTIFICATE No. : CAL00173-23 PAGE : 2 OF : 3

CALIBRATION REPORT

Condition of this calibration result:

- Environment : Temperature : 23 ± 0.3 °C
Relative Humidity : 50 ± 10 %
- Reference / Procedure Used :
This instrument was calibrated by substitution with reference luminance meter, the instrument and reference luminance meter were mounted with the plane of its diffuser vertical and normal to the direction of measurement. Illuminance was illuminated by the luminous standard lamp (powered at colour temperature 2856K) according to GIL Calibration Laboratory calibration procedure (GILCAL-CP-01).
- Reference Standard Instrument :
Instrument : Model : Serial No : Certificate No : Due Date
Luminance meter : PNA220 / PNA2130 : 25531 / C15000 : TP-1016-22 : 21 Jul 23
- This Calibration is traceable to the SI unit through :
- The National Institute of Metrology (Thailand).
- Uncertainty :
- The reported uncertainty of measurement was estimated and based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%.

GILCAL-FM-7.3-002 Rev.00 (2001/02)

CERTIFICATE No. : CAL00173-23 PAGE : 3 OF : 3

CALIBRATION REPORT

All data shown below were at received value : Without adjustment

Calibration result:

Function: Illuminance Measurement					
LUC Range	Standard Setting	LUC Reading	Error	Uncertainty of measurement	
lux	lux	lux	lux	lux	lux
2000	0	0	0	0.82	
	50	47	-1	1.6	
	250	249	-1	5.5	
	500	503	3	13	
	1000	1011	11	26	
3000	1500	1499	-1	47	
	2000	1990	-10	46	
	3000	2960	-40	72	
	4000	3920	-80	96	
	5000	4890	-110	132 lux	

LUC = Unit Under Calibration

This result of calibration was found accurate as shown on date and place of calibration only.
- END -

GILCAL-FM-7.3-003 Rev.00 (2001/02)

Calibration Certificate

Certificate number: CRV4844/2022

Date of calibration: 03/11/2022
Issue date: 08/11/2022

Result:

Table 1: Linearity of response to steady signal									
Measured Level	Measured Level	Deviation Measured	Tolerance dB	Measured Level	Measured Level	Coverage Factor	Expanded Uncertainty		
dB	dB	dB		dB	dB			(%)	
130	130	0	1	135.7	135.7	2	0.3		
130	130	0	1	136.7	136.7	2	0.4		
130	130	0	1	137.7	137.7	2	0.5		
130	130	0	1	138.7	138.7	2	0.6		
130	130	0	1	139.7	139.7	2	0.7		
130	130	0	1	140.7	140.7	2	0.8		
130	130	0	1	141.7	141.7	2	0.9		
130	130	0	1	142.7	142.7	2	1.0		
130	130	0	1	143.7	143.7	2	1.1		
130	130	0	1	144.7	144.7	2	1.2		
130	130	0	1	145.7	145.7	2	1.3		
130	130	0	1	146.7	146.7	2	1.4		
130	130	0	1	147.7	147.7	2	1.5		
130	130	0	1	148.7	148.7	2	1.6		
130	130	0	1	149.7	149.7	2	1.7		
130	130	0	1	150.7	150.7	2	1.8		
130	130	0	1	151.7	151.7	2	1.9		
130	130	0	1	152.7	152.7	2	2.0		
130	130	0	1	153.7	153.7	2	2.1		
130	130	0	1	154.7	154.7	2	2.2		
130	130	0	1	155.7	155.7	2	2.3		
130	130	0	1	156.7	156.7	2	2.4		
130	130	0	1	157.7	157.7	2	2.5		
130	130	0	1	158.7	158.7	2	2.6		
130	130	0	1	159.7	159.7	2	2.7		
130	130	0	1	160.7	160.7	2	2.8		
130	130	0	1	161.7	161.7	2	2.9		
130	130	0	1	162.7	162.7	2	3.0		
130	130	0	1	163.7	163.7	2	3.1		
130	130	0	1	164.7	164.7	2	3.2		
130	130	0	1	165.7	165.7	2	3.3		
130	130	0	1	166.7	166.7	2	3.4		
130	130	0	1	167.7	167.7	2	3.5		
130	130	0	1	168.7	168.7	2	3.6		
130	130	0	1	169.7	169.7	2	3.7		
130	130	0	1	170.7	170.7	2	3.8		
130	130	0	1	171.7	171.7	2	3.9		
130	130	0	1	172.7	172.7	2	4.0		
130	130	0	1	173.7	173.7	2	4.1		
130	130	0	1	174.7	174.7	2	4.2		
130	130	0	1	175.7	175.7	2	4.3		
130	130	0	1	176.7	176.7	2	4.4		
130	130	0	1	177.7	177.7	2	4.5		
130	130	0	1	178.7	178.7	2	4.6		
130	130	0	1	179.7	179.7	2	4.7		
130	130	0	1	180.7	180.7	2	4.8		
130	130	0	1	181.7	181.7	2	4.9		
130	130	0	1	182.7	182.7	2	5.0		
130	130	0	1	183.7	183.7	2	5.1		
130	130	0	1	184.7	184.7	2	5.2		
130	130	0	1	185.7	185.7	2	5.3		
130	130	0	1	186.7	186.7	2	5.4		
130	130	0	1	187.7	187.7	2	5.5		
130	130	0	1	188.7	188.7	2	5.6		
130	130	0	1	189.7	189.7	2	5.7		
130	130	0	1	190.7	190.7	2	5.8		
130	130	0	1	191.7	191.7	2	5.9		
130	130	0	1	192.7	192.7	2	6.0		
130	130	0	1	193.7	193.7	2	6.1		
130	130	0	1	194.7	194.7	2	6.2		
130	130	0	1	195.7	195.7	2	6.3		
130	130	0	1	196.7	196.7	2	6.4		
130	130	0	1	197.7	197.7	2	6.5		
130	130	0	1	198.7	198.7	2	6.6		
130	130	0	1	199.7	199.7	2	6.7		
130	130	0	1	200.7	200.7	2	6.8		
130	130	0	1	201.7	201.7	2	6.9		
130	130	0	1	202.7	202.7	2	7.0		
130	130	0	1	203.7	203.7	2	7.1		
130	130	0	1	204.7	204.7	2	7.2		
130	130	0	1	205.7	205.7	2	7.3		
130	130	0	1	206.7	206.7	2	7.4		
130	130	0	1	207.7	207.7	2	7.5		
130	130	0	1	208.7	208.7	2	7.6		
130	130	0	1	209.7	209.7	2	7.7		
130	130	0	1	210.7	210.7	2	7.8		
130	130	0	1	211.7	211.7	2	7.9		
130	130	0	1	212.7	212.7	2	8.0		
130	130	0	1	213.7	213.7	2	8.1		
130	130	0	1	214.7	214.7	2	8.2		
130	130	0	1	215.7	215.7	2	8.3		
130	130	0	1	216.7	216.7	2	8.4		
130	130	0	1	217.7	217.7	2	8.5		
130	130	0	1	218.7	218.7	2	8.6		
130	130	0	1	219.7	219.7	2	8.7		
130	130	0	1	220.7	220.7	2	8.8		
130	130	0	1	221.7	221.7	2	8.9		
130	130	0	1	222.7	222.7	2	9.0		
130	130	0	1	223.7	223.7	2	9.1		
130	130	0	1	224.7	224.7	2	9.2		
130	130	0	1	225.7	225.7	2	9.3		
130	130	0	1	226.7	226.7	2	9.4		
130	130	0	1	227.7	227.7	2	9.5		
130	130	0	1	228.7	228.7	2	9.6		
130	130	0	1	229.7	229.7	2	9.7		
130	130	0	1	230.7	230.7	2	9.8		
130	130	0	1	231.7	231.7	2	9.9		
130	130	0	1	232.7	232.7	2	10.0		
130	130	0	1	233.7	233.7	2	10.1		
130	130	0	1	234.7	234.7	2	10.2		
130	130	0	1	235.7	235.7	2	10.3		
130	130	0	1	236.7	236.7	2	10.4		
130	130	0	1	237.7	237.7	2	10.5		
130	130	0	1	238.7	238.7	2	10.6		
130	130	0	1	239.7	239.7	2	10.7		
130	130	0	1	240.7	240.7	2	10.8		
130	130	0	1	241.7	241.7	2	10.9		
130	130	0	1	242.7	242.7	2	11.0		
130	130	0	1	243.7	243.7	2	11.1		
130	130	0	1	244.7	244.7	2	11.2		
130	130	0	1	245.7	245.7	2	11.3		
130	130	0	1	246.7	246.7	2	11.4		
130	130	0	1	247.7	247.7	2	11.5		
130	130	0	1	248.7	248.7	2	11.6		
130	130	0	1	249.7	249.7	2	11.7		
130	130	0	1	250.7	250.7	2	11.8		
130	130	0	1	251.7	251.7	2	11.9		
130	130	0	1	252.7	252.7	2	12.0		
130	130	0	1	253.7	253.7	2	12.1		
130	130	0	1	254.7	254.7	2	12.2		
130	130	0	1	255.7	255.7	2	12.3		
130	130	0	1	256.7	256.7	2	12.4		
130	130	0	1	257.7	257.7	2	12.5		
130	130	0	1	258.7	258.7	2	12.6		
130	130	0	1	259.7	259.7	2	12.7		
130	130	0	1	260.7	260.7	2	12.8		
130	130	0	1	261.7	261.7	2	12.9		
130	130	0	1	262.7	262.7	2	13.0		
130	130	0	1	263.7	263.7	2	13.1		
130	130	0	1	264.7	264.7	2	13.2		
130	130	0	1	265.7	265.7	2	13.3		
130	130	0	1	266.7	266.7	2	13.4		
130	130	0	1	267.7	267.7	2	13.5		
130	130	0	1	268.7	268.7	2	13.6		
130	130	0	1	269.7	269.7	2	13.7		
130	130	0	1	270.7	270.7	2	13.8		
130	130	0	1	271.7	271.7	2	13.9		
130	130	0	1	272.7	272.7	2	14.0		
130	130	0	1	273.7	273.7	2	14.1		
130	130	0	1	274.7	274.7	2	14.2		
130	130	0	1	275.7	275.7	2	14.3		
130	130	0	1	276.7	276.7	2	14.4		
130	130	0	1	277.7	277.7	2	14.5		
130	130	0	1	278.7	278.7	2	14.6		
130	130	0	1	279.7	279.7	2	14.7		
130	130	0	1	280.7	280.7	2	14.8		
130	130	0	1	281.7	281.7	2	14.9		
130	130	0	1	282.7	282.7	2	15.0		
130	130	0	1	283.7	283.7	2	15.1		
130	130	0	1	284.7	284.7	2	15.2		
130	130	0	1	285.7	285.7	2	15.3		
130	130	0	1	286.7	286.7	2	15.4		
130	130	0	1	287.7	287.7	2	15.5		
130	130	0	1	288.7	288.7	2	15.6		
130	130	0	1	289.7	289.7	2	15.7		
130	130	0	1	290.7	290.7	2	15.8		
130	130	0	1	291.7	291.7	2	15.9		
130	130	0	1	292.7	292.7	2	16.0		
130	130	0	1	293.7	293.7	2	16.1		
130	130	0	1	294.7	294.7	2	16.2		
130	130	0	1	295.7	295.7	2	16.3		
130	130	0	1	296.7	296.7	2	16.4		
130	130	0	1	297.7	297.7	2	16.5		
130	130	0	1						

Contract No.	1	IS-01-01-07
Report No.	1	Rep-2023-1

15°C Sealing	Debitum base rubber compound			ENCRUSTIVITY (g/8h)	Absorption (g/8h)
ENCRUSTIVITY	Welding temperature				
250 Sealing	A (g/8h)	C (g/8h)	E (g/8h)		
10 Hz	-0.1	-0.1	0.0	0.2	2.8
125 Hz	-0.1	0.0	0.0		1.8
125 Hz	-0.1	0.0	0.0		1.8
300 Hz	0.0	0.0	0.0		1.9
1000 Hz	0.0	0.0	0.0		2.0
2000 Hz	0.0	0.1	0.0		2.0
4000 Hz	0.0	0.2	0.0		3.0
8000 Hz	-0.1	-0.2	0.0		3

1

UIC Sorting	STO	Dinner		CONCENTRITY	Accuracy
FAST (20-3)	REF	UIC	DIFF		
UIC Hopping	H01	H03	1000	(2.00)	(2.00)
A	114.00	119.0	0.5	0.3	0.2
C	114.00	115.0	-0.1		0.2
E	114.00	113.0	-0.1		0.2

11

UCC Setting	FD	Maximal		UNDERSTANDY	Accuracy
20 (32.4)	RF	UCC	RR		
UCC Time Regress	100	100	100	1.000	1.000
Fast	11.60	11.40	0.0	0.2	0.3
Slow	11.60	11.40	0.0		0.1
Top	11.60	11.40	0.0		0.1

The results shown only in the non-controlled. The α values shall not be reported except to full, a three values appear in the brackets in parentheses 1, 1, 1

Contract No. : 20-12.00-01
Request No. : RFP-2023-

UCC Setting	STD	Skewness		UNCERTAINTY	Acceptance
		UCC	EDR		
EXIT A	MEP	UCC	EDR		Link
UCC Range	MEP	MEP	MEP	(±40)	(±40)
20 123	41.1	42.3	0.2	0.2	3.2
	11.4	114.0	0.9		5.1

Unit	Unit
------	------

GSC Time Response		1st	2nd	3rd	4th	1st 4th	2nd 4th
Fast	200	130.0	170.1	-0.2			
	1	112.0	110.0	0.0			+0.4-0.4
	0.75	105.0	105.0	0.0			+0.5-0.5
	200	102.0	102.0	0.0			
Slow	1	100.0	102.0	-0.1			+0.4-0.4
	200	101.0	102.1	-0.1			
	2	102.0	102.1	-0.1			
	1	102.0	102.0	0.0			+0.6-0.6
STE	0.25	90.0	91.0	-0.2			+0.8-0.8

EUC Setting	Asymptote	Nonzero		UNCERTAINTY (\pm RR)	Acceptance (\pm RR)
		UTC	ERR		
FAST ($\times 24$) 13	RR	1481	1481		2.8
STD 13	RR	1481	1481		2.8
Complex cycle	176.4	176.1	46.50		2.8
Positive half cycle	122.4	137.8	-6.26	3.2	2.8
Negative half cycle	127.4	127.2	-0.20		2.8

The results related only to the issue considered. The conditions shall not be reproduced except in full, without written approval of the International Brotherhood of Tanners, L.B.

The results related only to the issue considered. The conditions shall not be reproduced except in full, without written approval of the International Brotherhood of Tanners, L.B.

